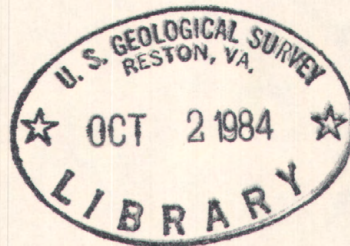




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Water Resources Data Puerto Rico and the U.S. Virgin Islands Water Year 1983



U.S. GEOLOGICAL SURVEY WATER DATA REPORT PR-83-1

Prepared in cooperation with the Commonwealth of Puerto Rico,
the Government of the U.S. Virgin Islands, and other agencies

CALENDAR FOR WATER YEAR 1983

1982

OCTOBER

S	M	T	W	T	F	S
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1983

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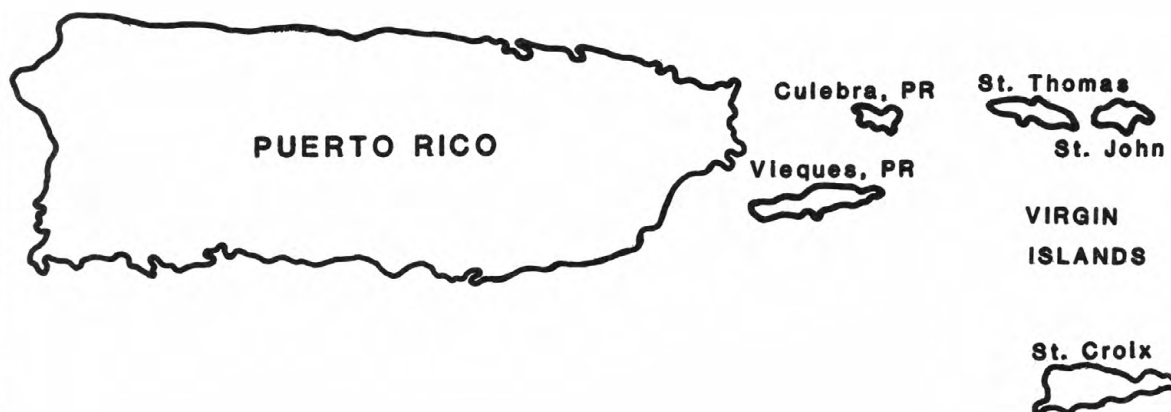
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Water Resources Data Puerto Rico and the U.S. Virgin Islands Water Year 1983

by Russell E. Curtis, Senén Guzmán-Ríos, and Pedro L. Díaz



U.S. GEOLOGICAL SURVEY WATER DATA REPORT PR-83-1

Prepared in cooperation with the Commonwealth of Puerto Rico,
the Government of the U.S. Virgin Islands, and other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

WILLIAM P. CLARK, Secretary

GEOLOGICAL SURVEY

Dallas L. Peck, Director

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San Juan, PR 00936

(Telephone: (809) 753-4414)

PREFACE

This annual hydrologic data report of Puerto Rico and the U.S. Virgin Islands 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 Trust Territories. 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.

The report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey, Water Resources Division 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 personnel contributed significantly to the collection, processing and tabulations of the data:

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George Arroyo	Felipe Hernández
Eloy Colón-Dieppa	Carlos Martínez
Margarita Concepción	Rafael Peña-Cortes
René García	Luis Santiago-Rivera
José R. González	Pedro Vázquez

Carmen A. García typed the text of the report.

José Alicea-Ortiz and Gilberto Peña-Cruz prepared the illustrations.

This report was prepared in cooperation with agencies of the Commonwealth of Puerto Rico, the Government of the U.S. Virgin Islands, and with other federal agencies, under the general supervision of Ferdinand Quiñones, District Chief, Caribbean District, San Juan, Puerto Rico.

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ERRATA

Please make the following change in the Conversion Table on page VI:

Million gallons per year (Mgal/yr)	0.00424	Cubic ₃ feet per second (ft ₃ /s)
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WATER RESOURCES DATA FOR PUERTO RICO AND THE U.S. VIRGIN ISLANDS, 1983

INTRODUCTION

Water resources data for the 1983 water year for Puerto Rico and the U.S. Virgin Islands consists of stage, discharge, and water quality of streams; stage and water quality of lakes and lagoons; and water levels and quality of ground water. This report contains discharge records for 46 gaging stations; stage only records for three lakes; water quality for 63 streamflow or lagoon sites, 13 partial-record sites, 6 miscellaneous sites, and 10 wells; and water levels for 97 observation wells. Also included are data for 131 low-flow and 1 crest-stage partial record-stations. These data represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating local and federal agencies in Puerto Rico and the U.S. Virgin Islands.

Water-resources data for Puerto Rico for calendar years 1958-67 were released in a series of reports entitled "Water Records of Puerto Rico". Water-resources data for the U.S. Virgin Islands for the calendar years 1962-69 were released in a report entitled "Water Records of U.S. Virgin Islands." Included were records of streamflow, ground-water levels, and water-quality data for both surface and ground water.

Beginning with the 1968 calendar year, surface-water records for Puerto Rico were released separately on an annual basis. Ground-water level records and water-quality data for surface and ground water were released in companion reports covering periods of several years. Data for the 1973-74 reports were published under separate covers. Water-resources data reports for 1975-76, 1977, 1978, 1979-80 and 1981-82 water years consist of one volume each and contain data for streamflow, water quality and ground water. 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 PR-83-1." Water Data reports are for sale by the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia, 22161.

COOPERATION

The U.S. Geological Survey has had cooperative agreements with organizations of the Commonwealth of Puerto Rico and the Territory of the U.S. Virgin Islands for the systematic collections of water resources data since 1958. Organizations that supplied data are acknowledged in the station descriptions. Organizations that assisted in collecting data through cooperative agreements with the Survey are:

- Puerto Rico Environmental Quality Board
- Puerto Rico Aqueduct and Sewer Authority
- Puerto Rico Department of Agriculture
- Puerto Rico Industrial Development Company
- Puerto Rico Department of Public Works
- Puerto Rico Highway Authority
- Puerto Rico Department of Natural Resources
- Puerto Rico Department of Health
- Puerto Rico Electric and Power Authority

WATER RESOURCES DATA FOR PUERTO RICO AND THE U.S. VIRGIN ISLANDS, 1983

Puerto Rico Rice Corporation
Puerto Rico Administration for Agricultural Development
Puerto Rico Land Administration
Center for Energy and Environment Research, University
of Puerto Rico
Water Resources Institute, University of Puerto Rico
Water Resources Institute, College of the Virgin Islands
Department of Public Works of the U.S. Virgin Islands

Funds were also provided by the Corps of Engineers, U.S. Army, for the collection of records at five gaging stations published in this report. Ground-water quality data at selected sites was collected with support from the U.S. Environmental Protection Agency.

SUMMARY OF HYDROLOGIC CONDITIONS

Streamflow

Streamflow in Puerto Rico during the 1983 water year was generally normal in the north and east but below normal to deficient in the south and west (figs. 1 to 4). The water year began with streamflows deficient in most parts of the Island. For many areas, this was the driest October in the last 20 years. The rivers and streams gradually returned to normal during the winter months but by late February and early March, dry conditions returned and streamflow again became deficient.

The rainy season began in mid-April, resulting in the wettest month of the year with island-wide monthly average of over eight inches, almost twice the normal. Streamflow increased to above normal over the entire Island and remained high in most areas throughout the summer. No flooding of consequence occurred during the year.

By late summer, unusually dry weather conditions prevailed throughout Puerto Rico and by September 1983, streamflow again became deficient island-wide. Many areas experienced the driest September in the last 20 years.

Streamflow conditions in the Virgin Islands usually follow the same general pattern as Puerto Rico. The 1983 water year was no exception except for the intense rains of April 1983.

On April 18th, a low-pressure trough stalled over St. Thomas and St. John and produced one of the most intense rainfall events ever recorded in this area (fig. 5). Continuous-recording rain gages operated by National Oceanic Atmospheric Administration-National Weather Service recorded intensities of up to 2.5 inches in 1 hour and a total of 16.5 inches in 19 hours. Almost instantaneous runoff caused widespread flooding near the coastlines of St. Thomas and St. John. Parts of Charlotte Amalie in St. Thomas were inundated with four feet or more of flood water and mud. Harry S. Truman Airport was flooded for two days with two to three feet of ponded water. On St. John, rural areas near Guinea Gut, Fish Bay, and Coral Bay were flooded.

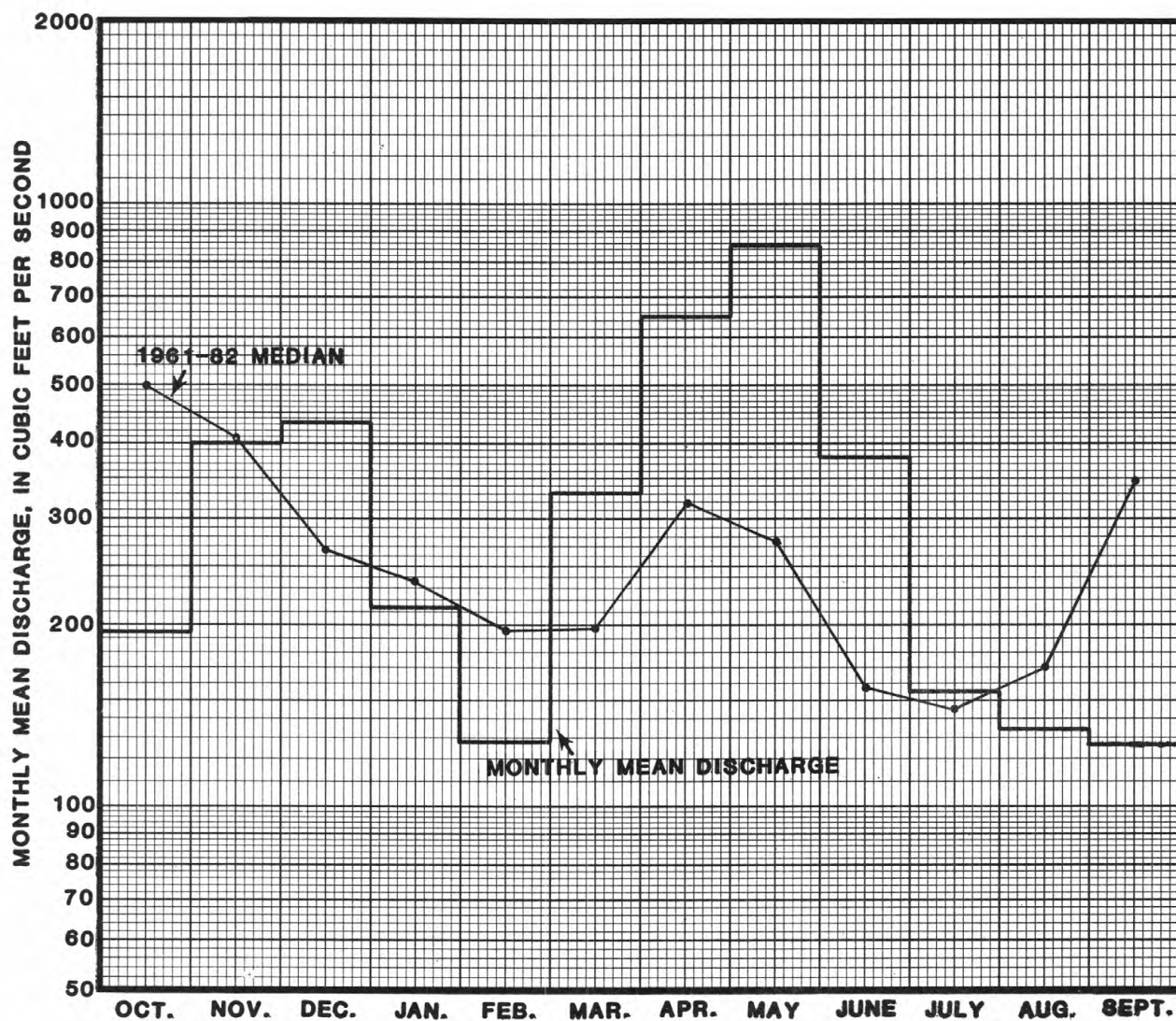


Figure 1.--Comparison of monthly-mean discharges for the 1983 water year with long-term medians at Río Grande de Manatí at Highway 2 near Manatí, Puerto Rico (50038100).

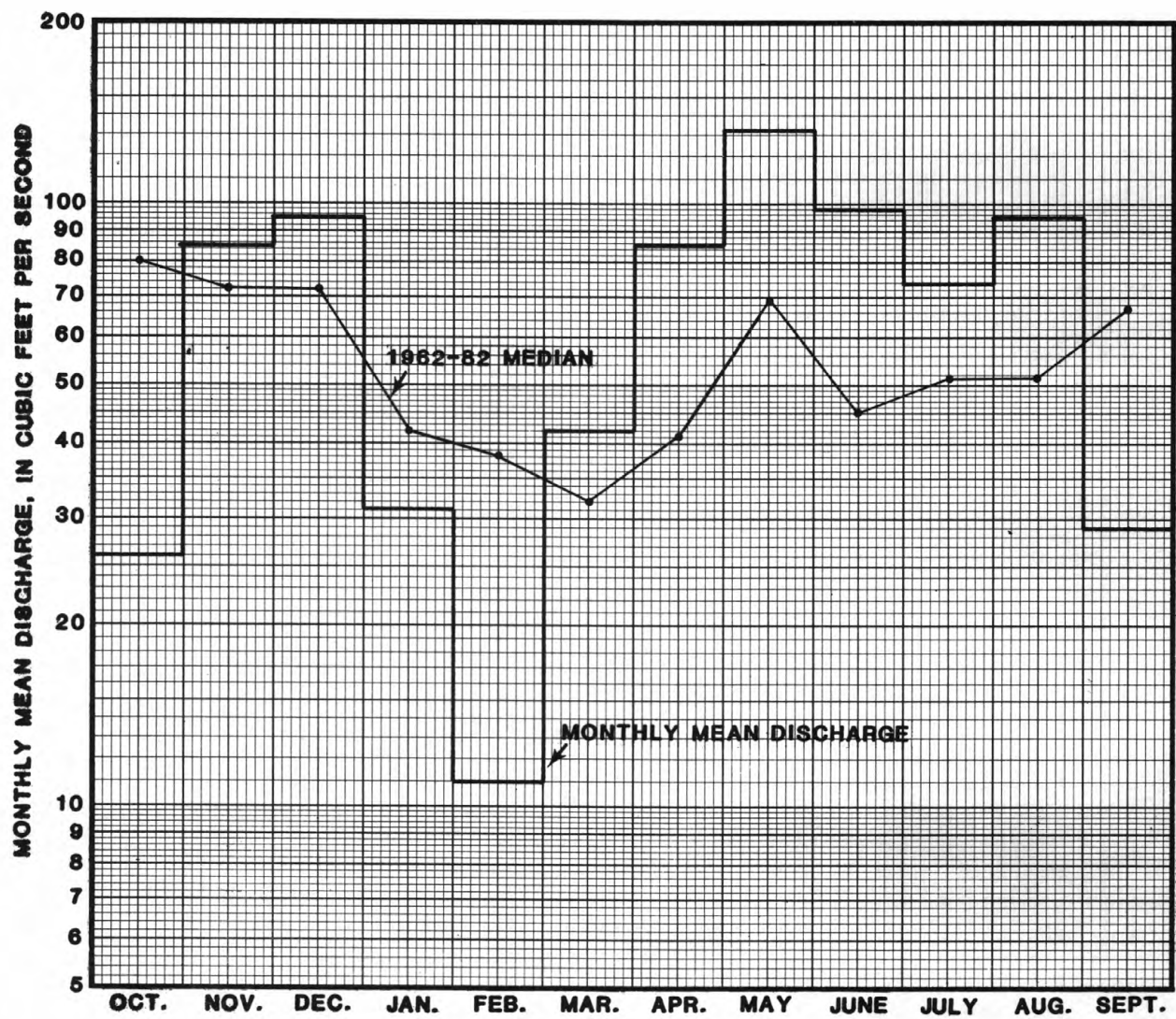


Figure 2.--Comparison of monthly-mean discharges for the 1983 water year with long-term medians at Río Fajardo near Fajardo, Puerto Rico (50071000).

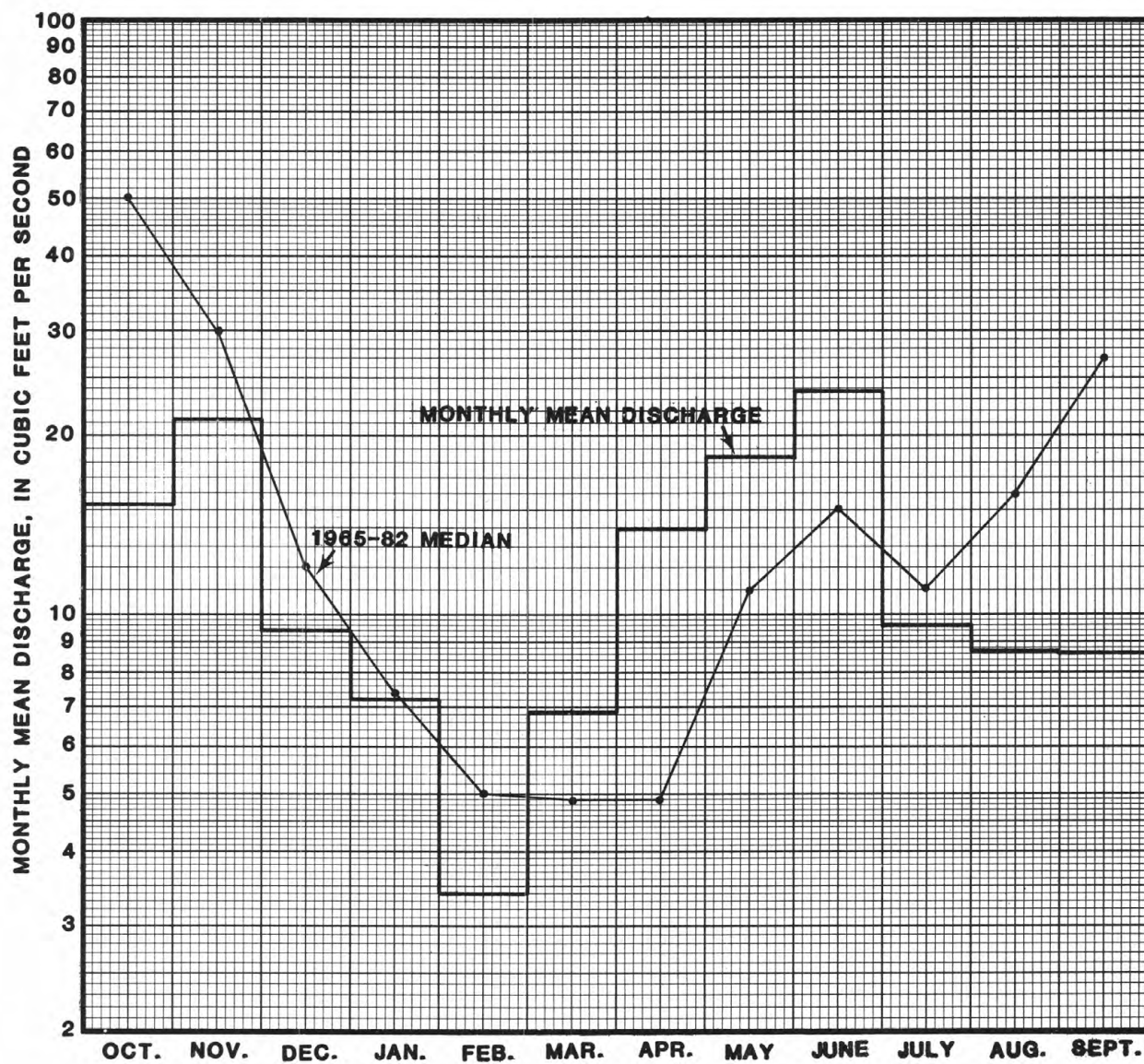


Figure 3.--Comparison of monthly-mean discharges for the 1983 water year with long-term medians at Río Inabón at Real Abajo, Puerto Rico (50112500).

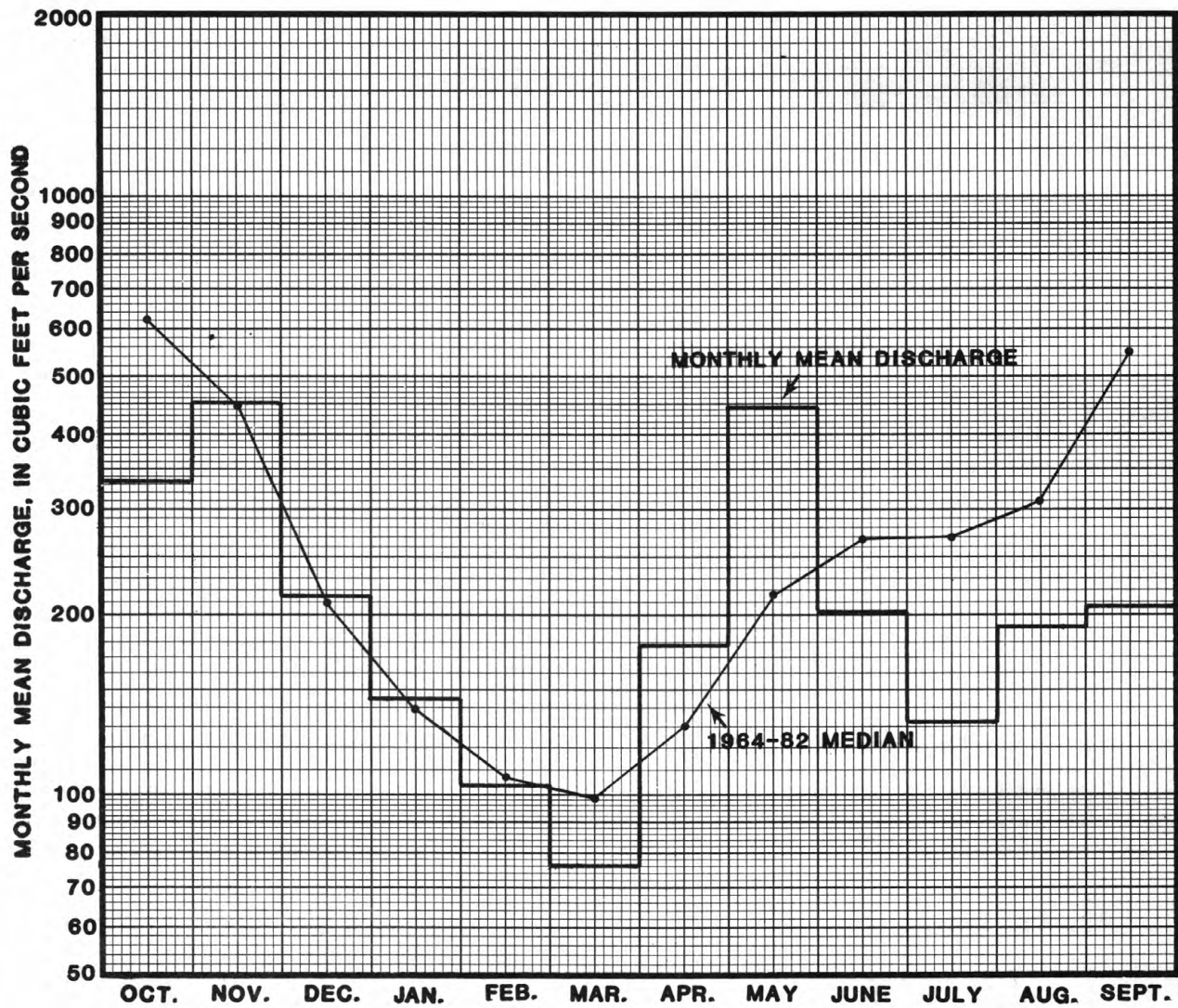
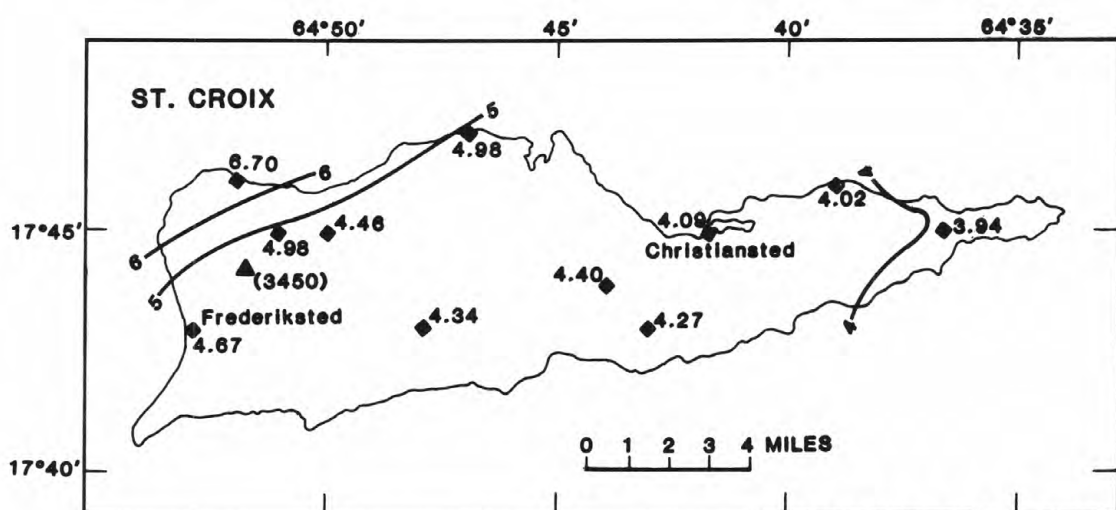
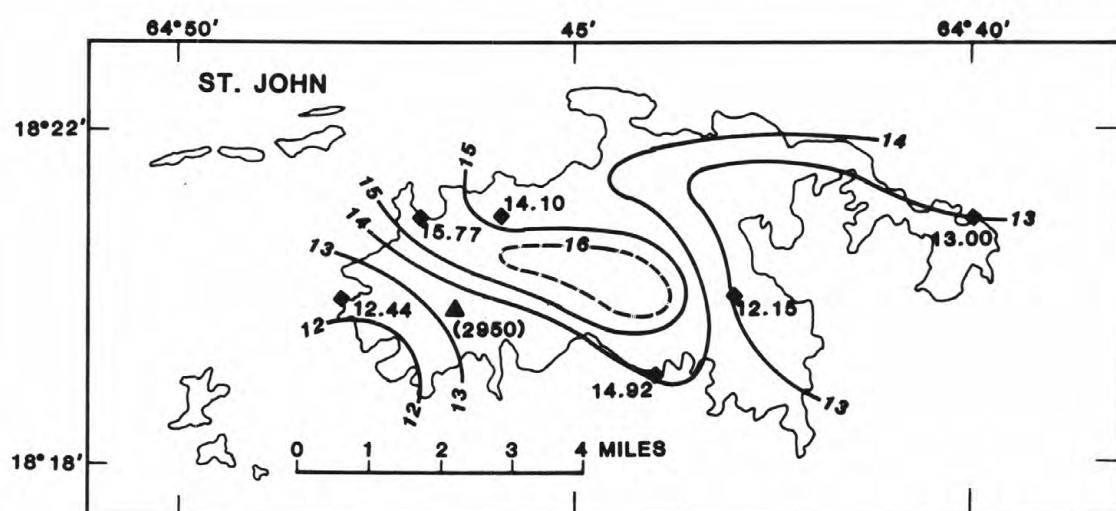
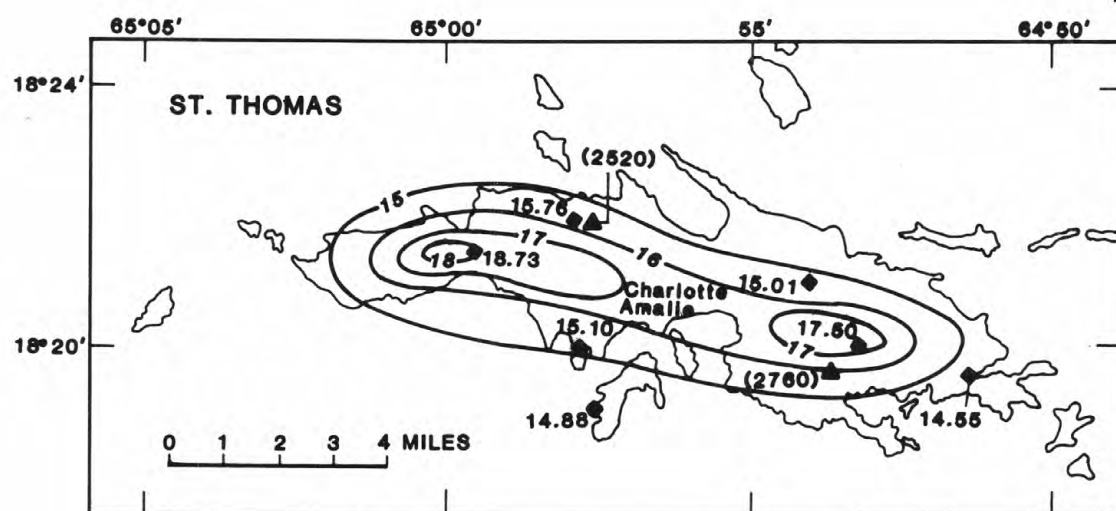


Figure 4.--Comparison of monthly-mean discharges for the 1983 water year with long-term medians at Río Grande de Añasco near San Sebastián, Puerto Rico (50144000).



(Data from NOAA (NWS))

EXPLANATION

- 6 — 6 LINE OF EQUAL RAINFALL - Contour Interval 1 inch.
- ◆ 4.34 NOAA WEATHER STATION - Number means precipitation in inches.
- ▲ (3450) USGS GAGING STATION AND STATION NUMBER

Figure 5.--Rainfall distribution during April 18, 1983
in the U.S. Virgin Islands.

TABLE 1.--Peak discharges at gaging stations in St. Thomas and St. John, U.S. Virgin Islands.

∞

Station number	Station name	Drainage area (mi ²)	Period of record	Maximum previously known discharge			Maximum discharge for April 18, 1983			
				Date	Discharge (ft ³ /s)	Unit discharge	Time	Discharge (ft ³ /s)	Unit discharge	Frequency (years)
50252000	<u>St. Thomas</u> Bonne Resolution Gut at Bonne Resolution	0.49	1963-64, 1979-83	9-4-79	218	445	1315	1,650	3,370	100+
50276000	Turpentine Run at Mariendal	2.97	1963-69 1979-83	9-4-79	2,500	840	-	9,700	3,270	100+
50295000	<u>St. John</u> Guinea Gut at Bethany	0.37	1963-66, 1982-83	11-4-65	111	300	-	946	2,560	100+

WATER RESOURCES DATA FOR PUERTO RICO AND THE U.S. VIRGIN ISLANDS, 1983

Damages on St. Thomas and St. John were estimated by the Federal Emergency Management Administration at 12-13 million dollars and both islands were declared eligible for Federal Disaster Aid. In contrast, rainfall on St. Croix was not unusually heavy and almost no runoff occurred.

The flood peaks at the two gaging stations on St. Thomas and the gage on St. John were much higher than any previously recorded peak, (table 1). The gage on Bonne Resolution Gut in St. Thomas was the only one of the three that was not damaged by the floods. The frequency of the April 18 floods in St. Thomas was estimated from unit discharges and flood-frequency data for stations in Puerto Rico. The estimates indicate that the flood frequency exceeded significantly the 100-year recurrence interval (1 percent probability of occurring in any year).

Ground Water

By the end of the 1982 water year the ground-water levels in Puerto Rico increased in response to the above average rainfall on September 12-13, 1982. In some areas a maximum rise of six feet was recorded. During the months of October and November 1982 the ground-water levels declined. This trend was reversed in response to above average precipitation during late November and December. From January through March, ground-water levels declined in response to below-average rainfall and increased ground-water withdrawals for public water supply, industries and irrigation. In April, a near-stationary trough produced above normal rainfall, causing a general increase in ground-water levels with a maximum rise of six feet in the south coast alluvial aquifers.

Precipitation for May and June was generally normal maintaining the ground-water levels on an increasing trend. After this period, the ground-water levels along the north coast limestone aquifers remained practically unchanged while the south coast alluvium aquifers showed some fluctuations probably in response to irrigation demands. Elsewhere in the island the declining trend was predominant. Above normal precipitation during late August reversed this trend islandwide. The rainfall for the last two months of the 1983 water year varied from below average to normal causing a decline during September.

Ground-water levels in the U.S. Virgin Islands followed a pattern similar to Puerto Rico. During April the ground-water levels increased significantly due to the intense rainfall of April 18. Ground-water levels at some wells in St. Thomas increased almost 20 feet in response to recharge from the April floods. The other two Virgin Islands, St. John and St. Croix, reflected lesser ground-water level increases.

Water-Quality

The results of the surface-water sampling program during water year 1983 indicate high concentrations of fecal coliform and fecal streptococcal bacteria and some contamination with trace organic compounds in the streams. In general, the water quality of the streams in Puerto Rico was essentially the same as the previous two years.

WATER RESOURCES DATA FOR PUERTO RICO AND THE U.S. VIRGIN ISLANDS, 1983

Monitoring stations located close to urban zones, industrial parks and suburban zones not served by sewerage system showed the highest concentrations in bacteria population. Fecal coliform bacteria, a microorganism present in the intestines of warm-blooded animals, and which is often used as indication of the sanitary quality of the water, was found in concentrations in the thousands of colonies per hundred milliliters of sample in many streams. At some sites, concentrations were as high as millions of colonies per hundred milliliter of sample. Examples of this are: Quebrada Blasina near Carolina (station number 50050300); Río Chico at Central Providencia (sta. 50091800), Río Guayanilla at Central Rufina (sta. 50124700) and Río Bairoa near Caguas (sta. 50055400). Septic tanks, cesspools, leaks in sewage systems, run-off from beef cattle feedlots, and percolation from waste ponds appear to be the main source of bacterias in streams throughout Puerto Rico.

A considerable increase in the concentration of some inorganics serves as one of the important indexes of the pollution of a body of water. The inorganics which are normally absent or nearly so in the natural environment are arsenic, cadmium, chromium, lead, mercury, selenium, and silver. These inorganics have been designated as having a detrimental effect on human health. The National Interim Primary Drinking Water Regulations (Environmental Protection Agency, 1976) fixed the maximum permissible level for those inorganics in drinking water as follows:

<u>Constituent</u>	<u>Concentration</u> <u>Micrograms per Liter</u>
Arsenic	50
Cadmium	10
Chromium	50
Lead	50
Mercury	2
Selenium	10
Silver	50

Mercury is one of the most dangerous of those inorganics. This metal is used widely in electronic devices and incandescent street lights.

Water samples for analyses of these inorganics were collected twice during the water year at most of the monitoring sites. At the National Stream Quality Accounting Network (NASQAN) stations, a federal funded water-quality program, the dissolved inorganics were analyzed two times a year. Some results are listed in table 2.

Table 2.--Concentrations of dissolved inorganics at NASQAN Stations, micrograms per liter (ug/L).

Station name	Chromium	Lead	Mercury
Río Grande de Manatí	1	2	0.2
Río de la Plata	3	3	1.0
Río Grande de Patillas	1	4	.3
Río Grande de Añasco	1	4	.1

WATER RESOURCES DATA FOR PUERTO RICO AND THE U.S. VIRGIN ISLANDS, 1983

Thousands of different toxic organics are used today to control undesirable insects, weeds, rodents and fungi. These synthetic-organic pesticides can contribute significantly to the contamination of a stream or a body of water by their direct discharge, spray drift, treated land runoff, treated land erosion, atmospheric precipitation, accidental spills and leachates from garbage dumps and sanitary landfills. Water bodies may receive not only the toxic chemicals, but also the intermediary and accessory products of their synthesis.

Water samples were collected once at selected sites for analyses on the most common organics. Lindane or chlordane, two synthetic organics, were detected in over 20 % of the sampled sites. The rest of the organics for which laboratory analyses were performed, did not exceed the analytical detection limits.

In the proposed mining area, the water quality did not change significantly during the water year. Samples from two stations (Numbers 50021000, 50023000) do not show significant changes in pH, alkalinity, or concentration of selected ions.

The measurements of some physical and chemical parameters can help in the determination if a body of water is fresh, salty or saline. Specific conductance, dissolved solids and chlorides concentration are among them. Water with a specific conductance around 50,000 umhos/cm and a chloride concentration of 19,300 mg/l is said to be seawater.

Dissolved solids are chiefly the mineral constituents dissolved from weathering of rocks and soils. Water containing more than 1,000 mg/l are unsuitable for many purposes. The U.S. Geological Survey classifies the degree of salinity of these more mineralized bodies of water as follows (Swenson and Baldwin, 1965):

<u>Dissolved Solids, mg/l</u>	<u>Degree of salinity</u>
Less than 1,000	nonsaline
1,000 to 3,000	slightly saline
3,000 to 10,000	moderately saline
10,000 to 35,000	very saline

Chloride is found in large amounts in ancient brines, seawater, sewage and industrial brines. About 300 mg/l chloride in combination with sodium gives a salty taste to water. The maximum chloride concentration permissible in drinking water is 250 mg/l (EPA, 1976). At Río Hondo at Flood Channel near Cataño (50047530), and Bahía de San Juan No. 5 (50049920) salinities can fluctuate between nonsaline and very saline.

WATER RESOURCES DATA FOR PUERTO RICO AND THE U.S. VIRGIN ISLANDS, 1983

DEFINITION OF TERMS

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

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

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

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

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.

Fecal coliform bacteria are bacteria that are present in the intestines 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 $44.5^{\circ}\text{C} + 0.2^{\circ}\text{C}$ on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

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

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

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at 35°C. In the laboratory these bacteria are defined as the organisms which produce colonies within 24 hours when incubated at 35°C + 1.0°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

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

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.

Bottom material: See Bed 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 contained cells per sample, usually milliliters (mL) or liters (L).

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

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

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 saltwater.

Crest-stage station is a special form of partial-record station that records the highest stage of the stream that occurred between periodic visits to the station. A stage-discharge relation for each gage may be developed from discharge measurements made by indirect methods or by current meter.

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

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

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

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

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

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

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

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

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

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

Ground-water station is a well at which observations of ground-water level are made, either continuously by recorder, or periodically by hand. In addition, various chemical or physical parameters may be obtained, usually on a periodic basis.

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 (CaCO₃).

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

Micrograms per liter (UG/L, ug/L) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligrams per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represent the mass of solute per unit volume (liter) of water. Concentration of suspended sediment also is expressed in mg/L, and is based on the mass of sediment per liter of water-sediment mixture. Conversion of chemical concentrations in Mg/L to milliequivalents per liter can be done by using the factors in table 3.

TABLE 3.--Factors for conversion of chemical constituents in milligrams per liter to milliequivalents per liter.

<u>Ion</u>	<u>Multiply by</u>	<u>Ion</u>	<u>Multiply by</u>
Aluminum (Al ⁺³) *	0.11119	Iodide (I ⁻¹)	0.00788
Ammonia as NH ₄ ⁺¹	.05544	Iron (Fe ⁺³) *	.05372
Barium (Ba ⁺²)	.01456	Lead (Pb ⁺²) *	.00965
Bicarbonate (HCO ₃ ⁻¹)	.01639	Lithium (Li ⁺¹) *	.14411
Bromide (Br ⁻¹)	.01251	Magnesium (Mg ⁺²)	.08226
Calcium (Ca ⁺²)	.04990	Manganese (Mn ⁺²) *	.03640
Carbonate (CO ₃ ⁻²)	.03333	Nickel (Ni ⁺²) *	.03406
Chloride (Cl ⁻¹)	.02821	Nitrate (NO ₃ ⁻¹)	.01613
Chromium (Cr ⁺⁶) *	.11539	Nitrite (NO ₂ ⁻¹)	.02174
Cobalt (Co ⁺²) *	.03394	Phosphate (PO ₄ ⁻³)	.03159
Copper (Cu ⁺²) *	.03148	Potassium (K ⁺¹)	.02557
Cyanide (CN ⁻¹) *	.03844	Sodium (Na ⁺¹)	.04350
Fluoride (F ⁻¹)	.05264	Strontium (Sr ⁺²) *	.02283
Hydrogen (H ⁺¹)	.99209	Sulfate (SO ₄ ⁻²)	.02082
Hydroxide (OH ⁻¹)	.05880	Zinc (Zn ⁺²) *	.03060

* Constituent reported in micrograms per liter; multiply by factor and divide results by 1,000.

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

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square meters (m²), acres, or hectares. Periphyton, benthic organisms, and macrophytes are expressed in these terms.

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

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

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

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

Particle-size classification used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

The suspended-sediment concentration (mg/L) and suspended-sediment discharge (tons/day) except in stations 50028000 and 50071000 are based on instantaneous discharge and do not necessarily represent the actual daily discharge of suspended sediment.

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

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

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

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

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

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

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

Surficial bed material is that part (0.1 to 0.2 ft) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

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

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 day.

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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.

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, limbata is the following:

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

Water year in 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 water year beginning October 1, 1976 and ending September 30, 1977 is called the "1977 water year."

Weighted average is used in this report to indicate discharge-weighted average for days 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 the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

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

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

DOWNSTREAM ORDER AND STATION NUMBER

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a main-stream station are listed before that station. A station on a tributary that enters between two main-stream stations is listed between them. A similar order is followed in listing stations in first rank, second rank, and other ranks of tributaries.

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As an added means of identification, each hydrologic station and partial-record station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for each station such as 50028000, which appears just to the left of the station name, includes the 2-digit part number "50" plus the 6-digit downstream order number "028000."

NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

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

The well and miscellaneous site numbering system of the U.S. Geological Survey is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude, the next 7 digits denote degrees, minutes, and seconds longitude, and the last 2 digits (assigned sequentially) identify the wells or other sites within a 1-second grid. The numbers shown in the grid correspond to the local numbers assigned to each well as visited in the field. An example is well 16 (fig. 6, below).

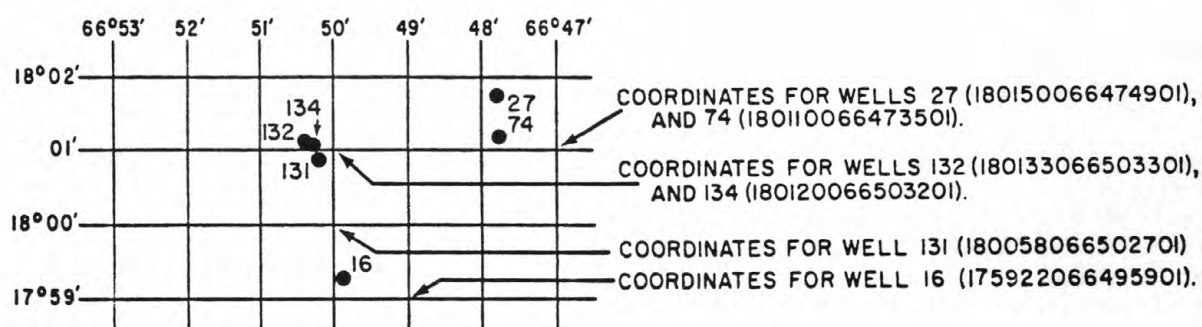


Figure 6.--System for numbering wells and miscellaneous sites (latitude and longitude).

SPECIAL NETWORKS AND PROGRAMS

National stream-quality accounting network (NASQAN) is a data collection network designed by the U.S. Geological Survey to meet many of the information demands of agencies or groups involved in national or regional water-quality planning and management. Both accounting and broad-scale monitoring objectives

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have been incorporated into the network design. Areal configuration of the network is based on river-basin accounting units (identified by 8-digit hydrologic-unit numbers) designated by the Office of Water Data Coordination in consultation with the Water Resources Council. Primary objectives of the network are (1) to depict areal variability of streamflow and water-quality conditions nationwide on a year-by-year basis and (2) to detect and assess long-term changes in streamflow and stream quality.

Pesticide program is a network of regularly sampled water-quality stations where samples are collected to determine the concentration and distribution of pesticides in streams where potential contamination could result from the application of the commonly used insecticides and herbicides. Operation of the network is a Federal interagency activity.

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

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. In addition, observations of factors affecting the stage-discharge relation or the weather records, and other information are used to supplement base data in determining the daily flow. Records of stage are obtained either from direct readings on a nonrecording gage or from a water-stage recorder that gives either a continuous graph of the fluctuations or a tape punched at selected time intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey. These methods are described in standard textbooks, in Water-Supply Paper 2175, and in U.S. Geological Survey Techniques of Water Resources Investigations, book 3, chapter A6.

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

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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 the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in computing discharge.

For some gaging stations there are periods when no gage-height record is obtained or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is loose 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.

The data in this report generally comprise a description of the station and tabulations of daily and monthly figures. For gaging stations on streams a table showing the daily discharge and monthly and yearly discharge is given. 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 elevation. The location of the gaging station and the drainage area are obtained from the most accurate maps available. River mileage, given under "LOCATION" for some stations, is that determined and used by the Corps of Engineers or other agencies. Periods for which there are published records for the present station or for stations generally equivalent to the present one are given under "PERIOD OF RECORD."

Previously published streamflow records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISED RECORDS" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1965 stands for the water year October 1, 1964, to September 30, 1965. If no daily, monthly, or annual figures of discharge are affected by the revision, the fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given. It should be noted that for all

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stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

The type of gage currently in use, the datum of the present gage above mean sea level, and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." In references to datum of gage, the phrase "mean sea level" denotes "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 the time of occurrence and corresponding gage heights are published in tabular format. The base discharge, which is given in the table heading, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330. The minimums for these stations are published in a separate paragraph following the table of peaks.

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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. Period of backwater from an unusual source, or 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. The methods used in computing discharge for various unusual conditions have been explained in preceding paragraphs.

Data collected at partial-record water-quality stations follows the information for continuous-record sites. Data for partial-record discharge stations are presented in one table. This table shows the annual maximum stage and discharge at crest-stage 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 cu ft/s; to tenths between 1.0 and 10 cu ft/s; to whole numbers between 10 and 1,000 cu ft/s; and to 3 significant figures above 1,000 cu ft/s. The number of significant figures used is based solely on the magnitude of the figure. The same rounding rules apply to discharge figures listed for partial-record stations.

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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.

Access to WATSTORE Data

The National Water Data Storage and Retrieval System (WATSTORE) was established for handling water data collected through the activities of the U.S. Geological Survey and to provide for more effective and efficient means of releasing the data to the public. The system is operated and maintained on the central computer facilities of the Survey at its National Center in Reston, Virginia.

WATSTORE can provide a variety of useful products ranging from simple data tables to complex statistical analyses. A minimal fee, plus the actual computer cost incurred in producing a desired product, is charged to the requester. Information about the availability of specific types of data, the acquisition of data or products, and user charges can be obtained locally from each of the Water Resources Division's Division's district offices (see address given on the back of the title page).

General inquiries about WATSTORE may be directed to:

Chief Hydrologist
U.S. Geological Survey
437 National Center
Reston, Virginia 22092

EXPLANATION OF WATER-QUALITY RECORDS

Collection and examination of data

Surface-water samples for analyses usually are collected at or near gaging stations. The quality-of-water records are given immediately following the discharge records at these stations. The descriptive heading for water-quality records gives the period of record for all water-quality data; the period of daily record for parameters that are measured on a daily basis (sediment discharge); extremes for the period of daily record; extremes for the current year; and general remarks.

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

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Water analysis

Most methods for collecting and analyzing water samples are described in the U.S. Geological Survey Techniques of Water-Resources Investigations. One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross sections is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load.

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

Water temperature

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

Table 4.--Conversion of Temperature Scales Degrees Celcius (°C) to Degrees Farenheit (°F)

°C	°F	°C	°F	°C	°F
15.0	59	21.0	70	27.0	81
15.5	60	21.5	71	27.5	82
16.0	61	22.0	72	28.0	82
16.5	62	22.5	72	28.5	83
17.0	63	23.0	73	29.0	84
17.5	64	23.5	74	29.5	85
18.0	64	24.0	75	30.0	86
18.5	65	24.5	76	30.5	87
19.0	66	25.0	77	31.0	88
19.5	67	25.5	78	31.5	89
20.0	68	26.0	79	32.0	90
20.5	69	26.5	80		

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

WATER RESOURCES DATA FOR PUERTO RICO AND THE U.S. VIRGIN ISLANDS, 1983

Sediment

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

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

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

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

EXPLANATION OF GROUND-WATER LEVEL RECORDS

Collection 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 figure 6.

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 RESOURCES DATA FOR PUERTO RICO AND THE U.S. VIRGIN ISLANDS, 1983

Water-level measurements in this report are given in feet with reference either to 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 is given in each well description. The height of the measuring point (M.P.) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every day.

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth to water of several hundred feet, the error in determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between successive measurements may be only a hundredth of 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 large unit.

Surface
and
Quality-of-Water Records
for
Puerto Rico

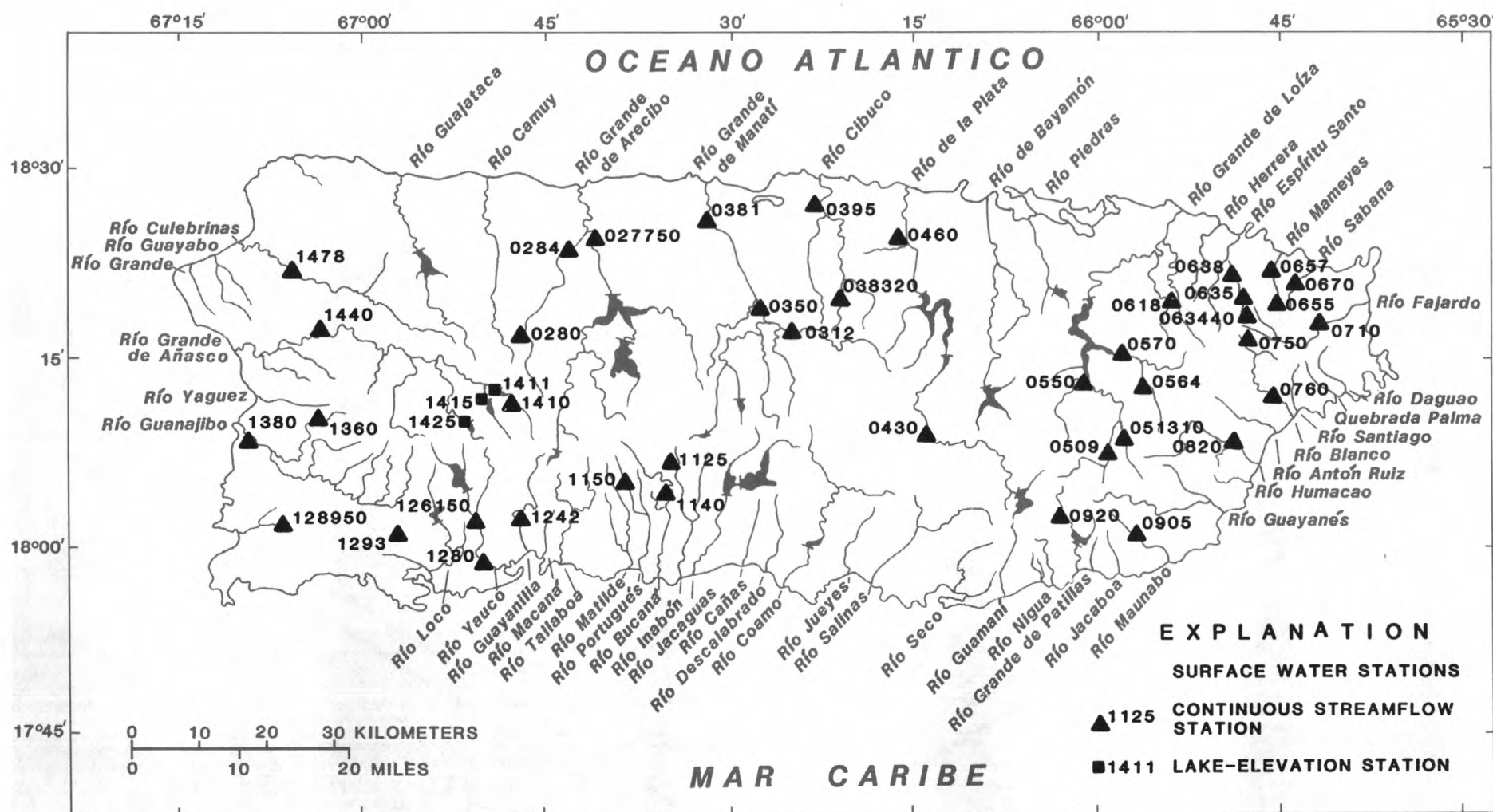


Figure 7.--Continuous surface-water stations in Puerto Rico.

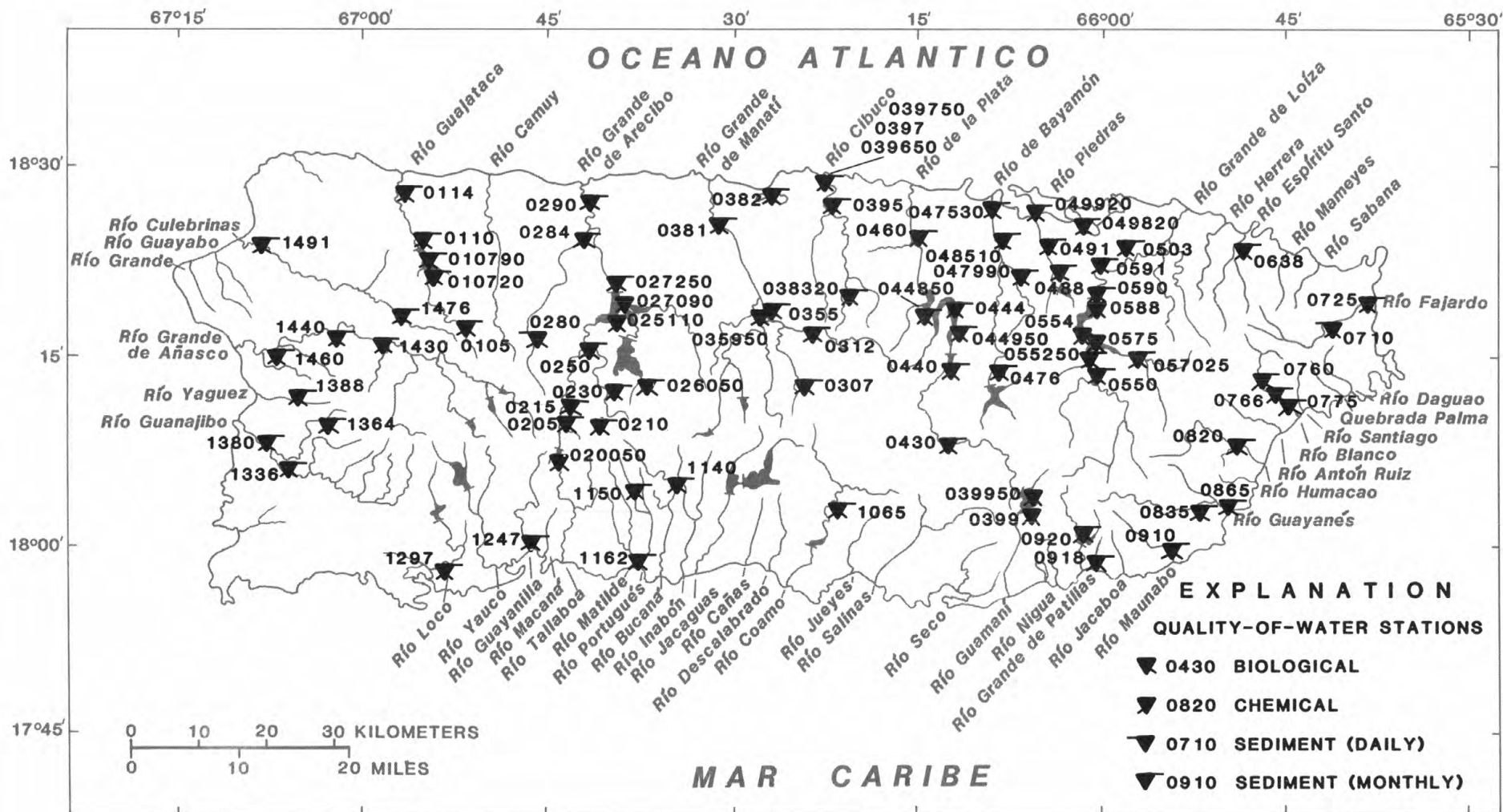


Figure 8.--Water-quality stations in Puerto Rico.

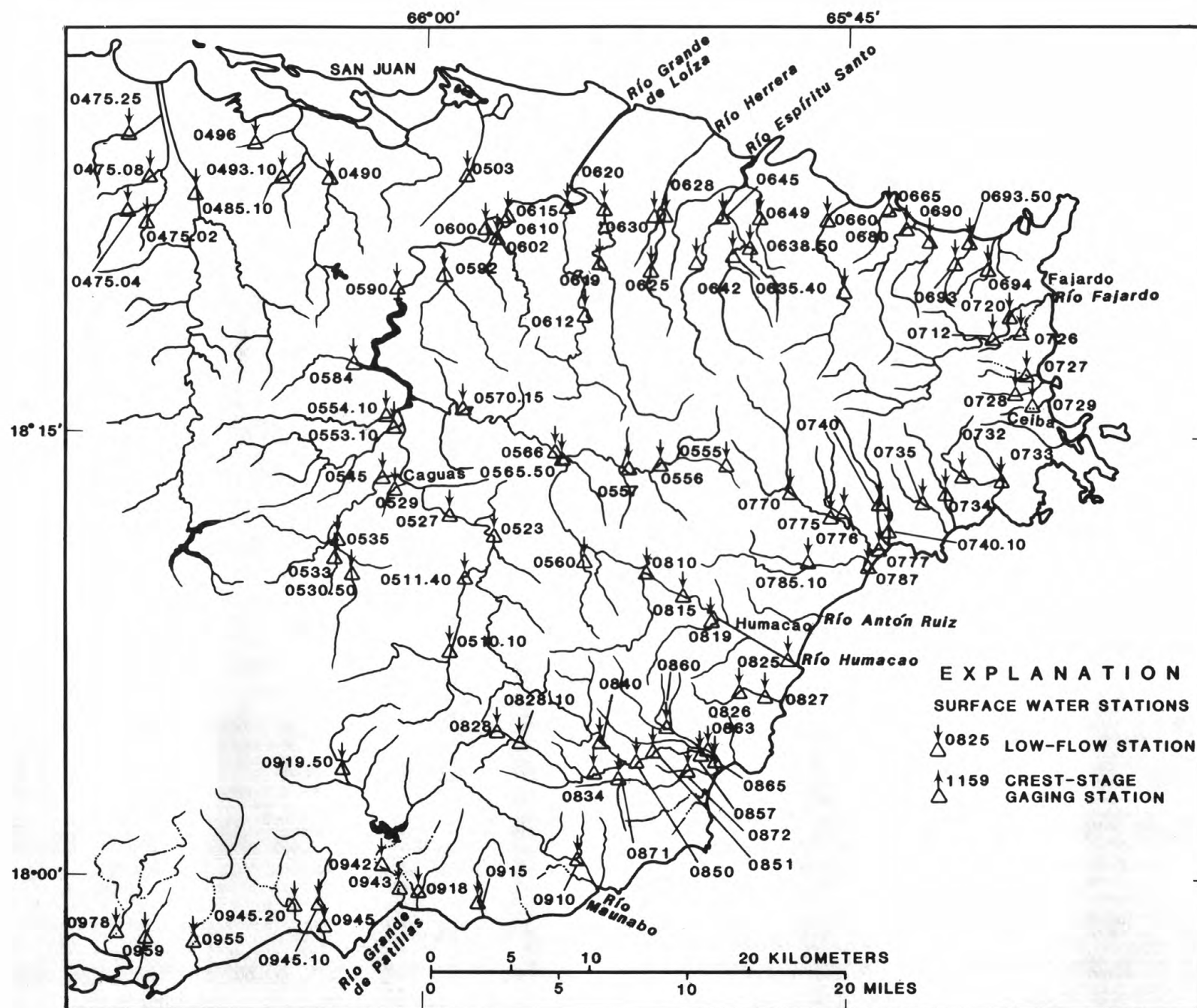


Figure 9.--Low-flow partial-record stations in Eastern Puerto Rico.

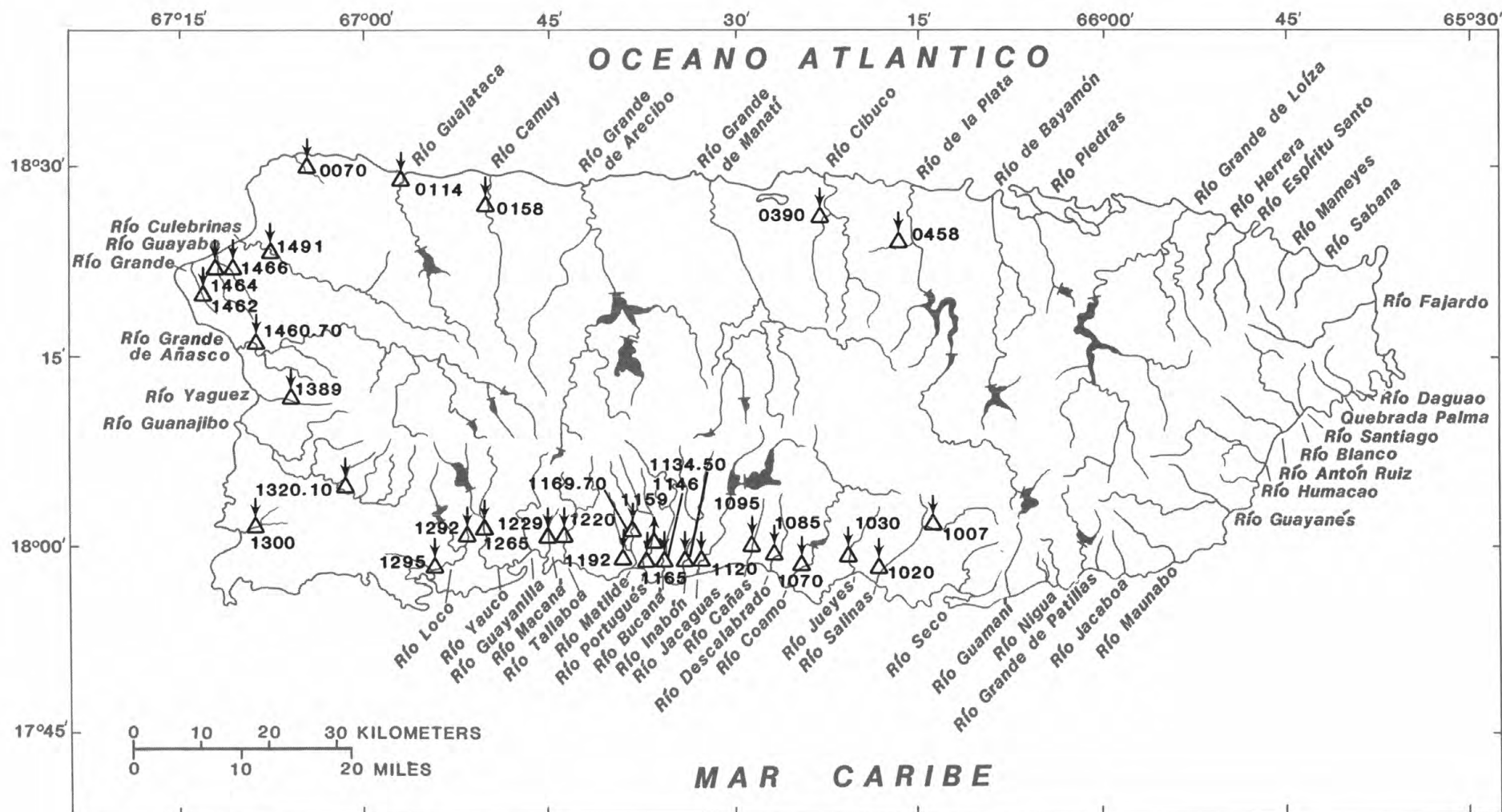


Figure 10.--Partial-record stations in Central and Western Puerto Rico.

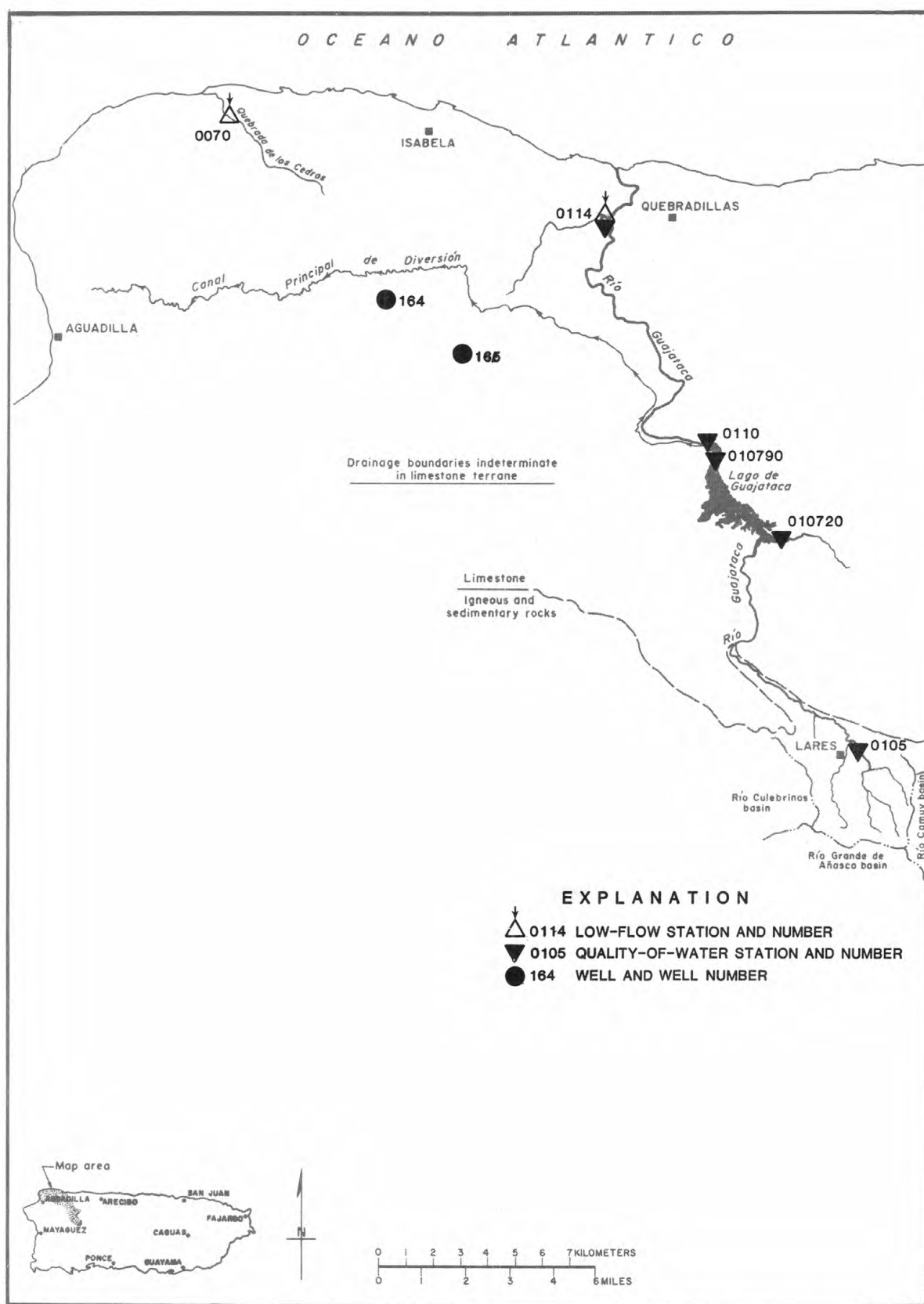


Figure 11.--Río Guajataca basin.

RIO GUAJATACA BASIN
50010500 RIO GUAJATACA AT LARES, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°18'01", long 66°52'24", at bridge on Highway 111 (km 32.9), 0.1 mi (0.2 km) upstream from Quebrada Anón, and 0.4 mi (0.6 km) northeast of Lares Plaza.

DRAINAGE AREA.--3.16 sq mi (8.18 sq km).

PERIOD OF RECORD.--Water years 1958-71, 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV / 1982											
10...	1115	5.1	255	7.7	23.0	12	7.2	86	18	K66000	25000
JAN / 1983											
31...	1425	1.5	243	7.3	21.0	1.6	9.4	108	12	540	1200
MAR											
23...	1045	1.3	280	7.6	23.0	<1.0	7.0	84	14	5700	64000
MAY											
11...	1300	3.6	245	7.5	25.0	3.4	7.8	98	<10	K1500	3500
AUG											
24...	1130	2.7	234	8.0	24.0	1.9	11.2	137	16	K1300	570

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (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)
NOV / 1982											
10...	--	--	--	--	--	--	--	87	--	--	--
JAN / 1983											
31...	90	1	26	6.2	14	.7	2.0	90	9.0	9.2	.40
MAR											
23...	--	--	--	--	--	--	--	130	--	--	--
MAY											
11...	93	0	28	5.6	11	.5	2.9	93	15	11	.10
AUG											
24...	95	2	28	6.0	12	.6	2.1	93	8.2	11	.20

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982											
10...	--	--	--	16	1.5	.020	1.5	<.010	1.3	1.30	2.8
JAN / 1983											
31...	31	152	.62	5	1.1	.020	1.1	.020	.18	.20	1.3
MAR											
23...	--	--	--	4	.75	.050	.80	.090	.21	.30	1.1
MAY											
11...	25	154	1.5	8	1.1	<.010	1.1	<.010	.19	.20	1.3
AUG											
24...	28	151	1.1	6	1.0	.060	1.1	.030	.47	.50	1.6

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982										
10...	12	.110	--	--	--	--	--	--	--	--
JAN / 1983										
31...	5.8	.100	2	200	2	3	7	.4	<1	2
MAR										
23...	4.9	.240	--	--	--	--	--	--	--	--
MAY										
11...	5.8	.060	--	--	--	--	--	--	--	--
AUG										
24...	7.1	.110	2	100	<1	<1	9	<.1	<1	<1

K = non-ideal count

50011000 CANAL PRINCIPAL DE DIVERSIONES AT LAGO DE GUAJATACA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°24'02", long 66°55'27", off Highway 476 at Lago Guajataca outlet, 3.0 mi (4.8 km) southwest of Segunda Unidad Baldorioty de Castro, and 5.3 mi (8.5 km) south of Quebradillas Plaza.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--Water years 1958-64, 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT / 1982											
01...	1020	50	322	7.1	25.0	1.5	.9	11	37	K10	K13
NOV											
18...	1250	50	320	7.1	25.0	3.1	.0	0	23	K170	52
JAN / 1983											
20...	1110	59	303	7.3	25.0	1.0	2.5	31	26	K5	K4
MAR											
30...	1300	45	305	7.8	27.0	1.0	6.4	82	<10	K100	K100
MAY											
23...	1420	40	323	7.1	25.5	1.9	2.0	2810	<10	92	310
AUG											
26...	1005	55	309	7.5	27.0	2.2	2.1	27	20	500	260

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
OCT / 1982											
01...	150	43	56	3.1	4.4	.2	1.8	110	7.0	6.7	.10
NOV											
18...	--	--	--	--	--	--	--	150	--	--	--
JAN / 1983											
20...	140	0	49	3.6	5.4	.2	1.9	140	8.0	7.8	.10
MAR											
30...	--	--	--	--	--	--	--	130	--	--	--
MAY											
23...	150	9	54	3.4	4.8	.2	1.9	140	13	8.0	.10
AUG											
26...	150	6	54	3.7	5.9	.2	1.4	143	12	8.5	.10

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDEO (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN+AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
OCT / 1982											
01...	6.3	151	20.4	3	--	<.010	<.10	.050	.45	.50	--
NOV											
18...	--	--	--	6	--	<.010	<.10	.500	1.2	1.70	--
JAN / 1983											
20...	1.7	161	25.8	2	--	.010	<.10	.040	.36	.40	--
MAR											
30...	--	--	--	1	--	<.010	<.10	<.010	--	.30	--
MAY											
23...	5.1	174	18.8	6	.47	.030	.50	.470	.63	1.10	1.6
AUG											
26...	6.2	178	26.5	6	--	<.010	<.10	.150	.35	.50	--

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
OCT / 1982										
01...	--	.030	3	100	1	<1	2	.2	<1	<1
NOV										
18...	--	.040	--	--	--	--	--	--	--	--
JAN / 1983										
20...	--	.060	3	<100	1	3	13	.3	<1	<1
MAR										
30...	--	<.010	--	--	--	--	--	--	--	--
MAY										
23...	7.1	.010	--	--	--	--	--	--	--	--
AUG										
26...	--	.030	3	100	1	<1	7	<.1	<1	<1

K = non-ideal count

50011400 RIO GUAJATACA ABOVE MOUTH NEAR QUEBRADILLAS, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°28'31", long 66°57'46", at ford, 1.7 mi (2.7 km) upstream from bridge on Highway 2, 2.1 mi (3.4 km) from the Atlantic Ocean, 6.6 mi (10.6 km) downstream from Lago Guajataca, and 1.6 mi (2.6 km) west of Quebradillas Plaza.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--Water years 1969 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, Q.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT / 1982											
01...	0825	11	533	7.2	24.0	<1.0	3.3	40	26	200	240
NOV											
13...	1125	71	408	7.8	24.0	4.0	8.2	99	22	530	490
JAN / 1983											
20...	0905	18	314	7.4	23.5	1.0	6.3	74	28	54	590
MAR											
30...	1045	11	425	7.6	25.0	<1.0	7.1	86	16	K580	1300
MAY											
12...	1510	11	510	7.6	26.0	.80	8.4	104	16	100	110
AUG											
26...	0820	12	530	7.8	24.5	<1.0	3.8	46	20	60	550

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
OCT / 1982											
01...	230	18	77	8.6	13	.5	1.3	210	8.0	33	<.10
NOV											
13...	--	--	--	--	--	--	--	170	--	--	--
JAN / 1983											
20...	190	0	64	7.2	16	.5	1.3	190	9.0	23	<.10
MAR											
30...	--	--	--	--	--	--	--	180	--	--	--
MAY											
12...	210	1	71	8.1	18	.6	1.3	210	11	35	<.10
AUG											
26...	230	20	78	9.0	20	.6	1.0	212	8.3	33	<.10

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTIT- UENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
OCT / 1982											
01...	5.7	278	8.2	4	1.7	.020	1.7	.040	.06	.10	1.8
NOV											
13...	--	--	--	6	--	<.010	.70	.030	1.7	1.70	2.4
JAN / 1983											
20...	5.6	240	11.7	2	--	<.010	1.6	.040	3.4	3.40	5.0
MAR											
30...	--	--	--	2	1.3	.010	1.3	.010	.19	.20	1.5
MAY											
12...	5.5	276	8.2	3	1.7	<.010	1.7	<.010	.09	.10	1.8
AUG											
26...	6.4	283	9.2	4	2.1	.040	2.1	.020	.28	.30	2.4

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
OCT / 1982										
01...	8.0	.010	2	100	1	<1	2	.2	<1	<1
NOV										
13...	11	.020	--	--	--	--	--	--	--	--
JAN / 1983										
20...	22	.010	2	<100	1	3	10	.2	<1	<1
MAR										
30...	6.6	<.010	--	--	--	--	--	--	--	--
MAY										
12...	8.0	.010	--	--	--	--	--	--	--	--
AUG										
26...	11	.030	2	100	1	<1	5	<.1	<1	<1

K = non-ideal count

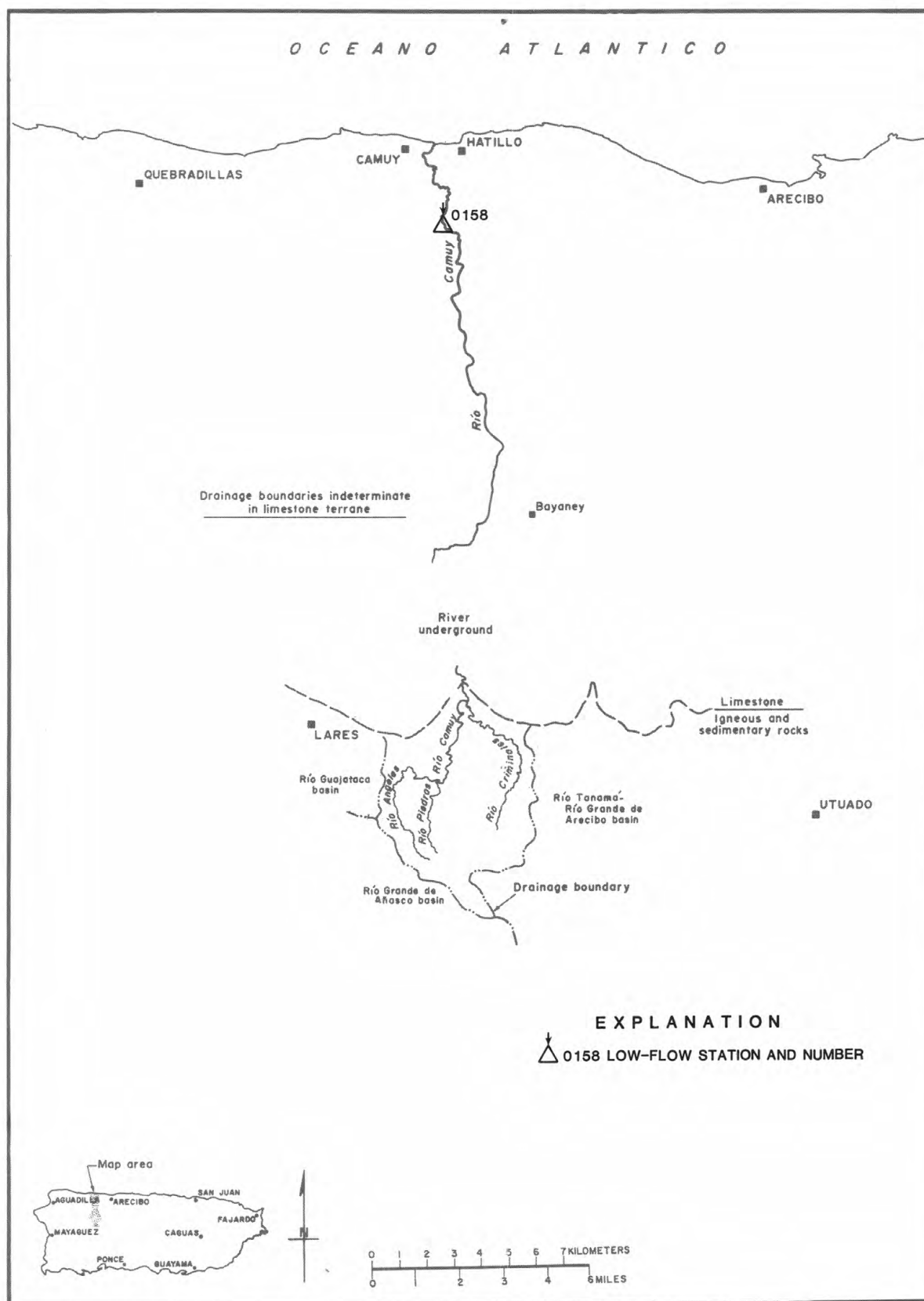


Figure 12.--Río Camuy basin.

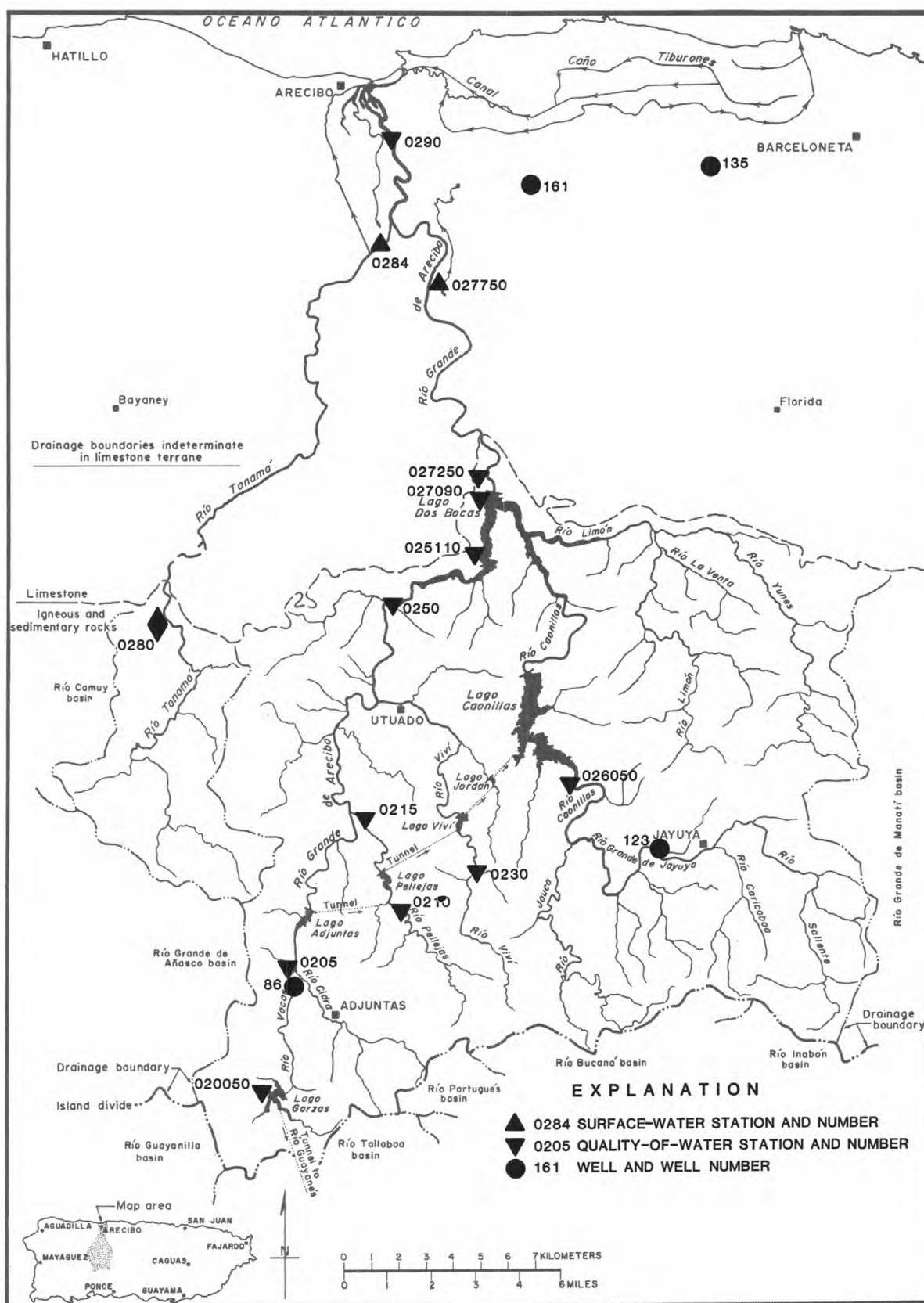


Figure 13.--Río Grande de Arecibo basin.

RIO GRANDE DE ARECIBO BASIN
50020500 RIO GRANDE DE ARECIBO NEAR ADJUNTAS, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°10'54", long 66°44'12", at Highway 135 bridge, 1.0 mi (1.6 km) upstream from Lago Adjuntas, and 1.5 mi (2.4 km) northwest of Adjuntas.

DRAINAGE AREA.--12.7 sq mi (32.9 sq km) this does not include 6.0 sq mi (15.6 sq km) above Lago Garzas.

PERIOD OF RECORD.--Water years 1969-74, 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV / 1982											
09...	0930	16	336	7.8	22.0	2.9	8.1	97	42	5000	4500
JAN / 1983											
18...	0905	13	540	7.7	19.0	2.0	8.2	93	22	K16000	8600
MAR											
17...	1435	15	320	7.6	26.0	7.2	7.1	93	29	K1800	5700
MAY											
09...	1545	17	300	8.6	23.0	1.2	9.0	122	23	3200	3100
AUG											
23...	0825	17	328	7.9	22.0	6.0	10.4	125	24	K14000	K12000

DATE	HARD- NESS (MG/L CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L CAC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV / 1982											
09...	--	--	--	--	--	--	--	110	--	--	--
JAN / 1983											
18...	120	5	28	11	63	2.8	2.9	110	10	89	.10
MAR											
17...	--	--	--	--	--	--	--	98	--	--	--
MAY											
09...	100	3	26	9.2	20	.9	2.3	100	12	28	<.10
AUG											
23...	110	4	29	10	20	.8	1.7	110	9.9	27	.10

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982											
09...	--	--	--	10	.71	.090	.80	.150	.95	1.10	1.9
JAN / 1983											
18...	25	300	10.5	2	.80	.100	.90	.180	.42	.60	1.5
MAR											
17...	--	--	--	8	.82	.080	.90	.390	.41	.80	1.7
MAY											
09...	26	183	8.5	6	.66	.240	.90	.070	.63	.70	1.6
AUG											
23...	30	194	8.9	12	1.1	.020	1.1	.200	.20	.40	1.5

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982										
09...	3.4	.130	--	--	--	--	--	--	--	--
JAN / 1983										
18...	6.6	.170	1	<100	1	5	22	.3	<1	<1
MAR										
17...	7.5	.200	--	--	--	--	--	--	--	--
MAY										
09...	7.1	.260	--	--	--	--	--	--	--	--
AUG										
23...	6.6	.010	1	100	1	<1	8	<.1	<1	<1

K = non-ideal count

RIO GRANDE DE ARECIBO BASIN

50025000 RIO GRANDE DE ARECIBO NEAR UTUADO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°18'11", long 66°41'59", at bridge near Highway 10 at km 56.4, 0.5 mi (0.8 km)) downstream from Río de Caguana, and 2.5 mi (4.0 km) north of Utuado plaza.

DRAINAGE AREA.--66.0 sq mi (170.9 sq km) this excludes 6.0 sq mi (15.5 sq km) upstream from Lago Garzas, which is a diversion to Río Guayanés in the Río Tallaboa basin.

PERIOD OF RECORD.--Water years 1959-74, 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, D.F. UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)
NOV / 1982												
03...	1415	59	289	8.0	23.0	6.5	7.4	95	17	3800	K1200	--
JAN / 1983												
17...	1545	35	265	8.0	27.0	3.6	7.3	93	29	5800	K1500	98
MAR												
18...	0910	38	258	8.0	23.0	2.9	8.1	96	17	4600	860	--
MAY												
10...	1210	64	253	7.8	23.0	36	7.1	92	15	112000	27000	92
AUG												
22...	1335	86	258	8.1	31.0	150	9.2	125	110	K150000	27000	92

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (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)
NOV / 1982											
08...	--	--	--	--	--	--	87	--	--	--	--
JAN / 1983											
17...	11	26	8.1	16	.7	2.4	87	20	11	.10	30
MAR											
18...	--	--	--	--	--	--	52	--	--	--	--
MAY											
10...	8	24	7.8	14	.7	2.6	84	26	13	.10	26
AUG											
22...	13	24	7.7	14	.7	2.0	79	21	15	.20	26

DATE	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)
NOV / 1982											
03...	--	--	24	.93	.070	1.0	.070	.83	.90	1.9	8.4
JAN / 1983											
17...	166	15.7	<1	1.4	.100	1.5	.040	.26	.30	1.8	8.0
MAR											
18...	--	--	<1	1.2	.020	1.2	.030	.17	.20	1.4	6.2
MAY											
10...	164	28.3	54	1.1	.060	1.2	.200	.50	.70	1.9	8.4
AUG											
22...	157	36.5	212	1.2	.110	1.3	.160	.24	.40	1.7	7.5

DATE	PHOS- PHORUS, TOTAL (UG/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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
NOV / 1982											
03...	.140	--	--	--	--	--	--	--	--	--	--
JAN / 1983											
17...	.190	1	100	1	5	13	.1	<1	<1	--	--
MAR											
18...	.120	--	--	--	--	--	--	--	--	96	10
MAY											
10...	.200	--	--	--	--	--	--	--	--	--	--
AUG											
22...	.090	1	200	1	<1	12	<.1	<1	<1	--	--

X = non-ideal count

RIO GRANDE DE ARECIBO BASIN

50026050 RIO CAONILLAS ABOVE LAGO CAONILLAS NEAR JAYUYA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°13'26", long 66°38'22", 300 ft (91.m) off Highway 531, 700 ft (213 m) upstream from Lago Caonillas, 3.3 mi (5.3 km) northwest of Jayuya plaza.

DRAINAGE AREA.--40.4 sq mi (104.6 sq km).

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)
NOV / 1982												
09...	1245	65	158	7.9	25.0	8.5	8.0	99	18	3000	K1500	--
JAN / 1983												
18...	1310	35	208	8.5	21.0	1.2	8.9	103	31	470	200	76
MAR												
17...	1045	53	207	8.0	24.0	34	8.1	100	11	K1700	6200	--
MAY												
10...	0845	51	193	7.8	24.0	34	8.0	98	14	4000	540	70
AUG												
23...	1205	32	215	8.2	27.5	6.7	10.6	138	20	K1000	K180	78

DATE	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY FIELD (MG/L AS CAC03)	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)
NOV / 1982											
09...	--	--	--	--	--	--	51	--	--	--	--
JAN / 1983											
18...	2	19	7.0	14	.7	1.6	74	15	10	.10	22
MAR											
17...	--	--	--	--	--	--	64	--	--	--	--
MAY											
10...	1	18	6.0	10	.5	1.6	69	19	11	<.10	24
AUG											
23...	8	21	6.3	11	.6	1.4	70	14	11	<.10	24

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)
NOV / 1982											
09...	--	--	15	--	<.010	.40	.010	.49	.50	.90	4.0
JAN / 1983											
18...	133	12.6	1	.49	.010	.50	.020	.28	.30	.80	3.5
MAR											
17...	--	--	4	1.1	.020	1.1	.080	.12	.20	1.3	5.8
MAY											
10...	131	18.0	2	.47	.030	.50	.030	.37	.40	.90	4.0
AUG											
23...	131	11.3	<1	.39	.010	.40	.020	.58	.60	1.0	4.4

DATE	PHOS- PHORUS, TOTAL (UG/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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
NOV / 1982											
09...	.070	--	--	--	--	--	--	--	--	--	--
JAN / 1983											
18...	.070	1	<100	1	6	11	<.1	10	<1	--	--
MAR											
17...	.090	--	--	--	--	--	--	--	--	96	14
MAY											
10...	.090	--	--	--	--	--	--	--	--	--	--
AUG											
23...	.110	--	--	--	--	--	--	--	--	--	--

K = non-ideal count

RIO GRANDE DE ARECIBO BASIN

50027250 RIO GRANDE DE ARECIBO BELOW LAGO DOS BOCAS NEAR FLORIDA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°20'50", long 66°40'02", at pedestrian bridge, 0.7 mi (1.1 km) downstream from Lago Dos Bocas and 6.6 mi (10.6 km) west of Florida plaza.

DRAINAGE AREA.--169 sq mi (436 sq km) does not include 6.0 sq mi (15.6 sq km) above Lago Garzas.

PERIOD OF RECORD.--Water years 1970-71, 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV / 1982											
08...	1150	136	203	7.4	26.0	3.2	5.7	70	22	400	52
JAN / 1983											
17...	1450	187	204	7.3	25.0	3.1	5.9	72	19	K36	160
MAR											
18...	1210	23	212	7.6	25.0	2.7	7.1	87	12	80	70
MAY											
10...	1400	E500	181	6.8	25.5	19	5.1	63	16	270	310
AUG											
22...	1120	E700	222	7.3	27.5	13	3.4	43	16	370	550

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV / 1982											
08...	--	--	--	--	--	--	--	69	--	--	--
JAN / 1983											
17...	73	1	19	6.1	12	.6	2.1	72	11	9.7	<.10
MAR											
18...	--	--	--	--	--	--	--	75	--	--	--
MAY											
10...	64	4	17	5.3	9.1	.5	2.2	60	14	11	<.10
AUG											
22...	76	1	20	6.4	11	.6	1.8	75	13	11	.10

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982											
08...	--	--	--	6	--	<.010	.20	.080	.92	1.00	1.2
JAN / 1983											
17...	21	124	62.6	12	--	<.010	.60	.040	.26	.30	.90
MAR											
18...	--	--	--	<1	.09	.010	.10	.090	.01	.10	.20
MAY											
10...	17	112	--	15	.59	.010	.60	.020	.38	.40	1.0
AUG											
22...	18	126	--	<1	--	.040	<.10	.190	.41	.60	--

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982										
08...	5.3	.020	--	--	--	--	--	--	--	--
JAN / 1983										
17...	4.0	.020	1	<100	1	3	11	.2	<1	<1
MAR										
18...	.89	.030	--	--	--	--	--	--	--	--
MAY										
10...	4.4	.040	--	--	--	--	--	--	--	--
AUG										
22...	--	.050	1	100	4	<1	6	<.1	<1	<1

K = non-ideal count
E = estimate

RIO GRANDE DE ARECIBO BASIN

50028000 RIO TANAMA NEAR UTUADO, PR

LOCATION.--Lat 18°18'02", long 66°46'58", Hydrologic Unit 21010001, on downstream side of left abutment of bridge on Highway 111, 1.2 mi (1.9 km) upstream from natural tunnel, 1.5 mi (2.4 km) northeast of Angeles, and 5.8 mi (9.3 km) northwest of Utuado.

DRAINAGE AREA.--18.4 sq mi (47.7 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1944 to June 1958 (daily stage and two to four measurements per month by Puerto Rico Water Resources Authority), November 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 938.32 ft (286.000 m) above mean sea level. Prior to Nov. 17, 1966, non-recording gage and Nov. 17, 1966 to Sept. 30, 1978 recording gage, both at present site and datum 3.00 ft (0.914 m) higher.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--23 years (1961-83), 48.4 cu ft/s (1.371 cu m/s), 35.72 in/yr (907 mm/yr), 35,070 acre-ft/yr (43.2 cu hm/yr); median of yearly mean discharges, 47 cu ft/s (1.33 cu m/s), 34,100 acre-ft/yr (42 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,950 cu ft/s (253 cu m/s) May 17, 1963, gage height, 13.29 ft (4.051 m) datum then in use, from floodmark, from rating curve extended above 500 cu ft/s (14.2 cu m/s) on basis of slope-area measurement of peak flow; minimum, 6.6 cu ft/s (0.187 cu m/s) June 12, 1977, gage height, 0.12 ft (0.037 m) datum then in use.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 cu ft/s (85.0 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
Nov. 24	1715	*1,480 41.9	8.88 2.707

Minimum discharge, 8.0 cu ft/s (0.226 cu m/s) Apr. 9, 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	27	28	37	39	19	15	9.8	29	27	19	22	22		
2	29	26	35	34	19	14	9.7	22	25	22	21	21		
3	26	26	34	31	18	15	9.3	21	59	16	58	21		
4	25	25	35	30	18	14	9.5	45	47	19	72	20		
5	25	25	32	30	19	24	9.6	37	31	21	33	22		
6	29	24	31	29	18	17	10	56	27	19	23	86		
7	80	24	30	29	17	14	9.5	60	24	16	20	40		
8	52	24	30	23	16	14	9.1	57	24	15	25	24		
9	36	45	33	27	17	14	8.6	39	25	53	33	20		
10	32	57	30	25	17	13	8.3	36	23	34	55	20		
11	31	53	29	25	16	13	8.8	66	21	60	35	39		
12	30	52	29	25	16	20	8.7	43	21	31	24	28		
13	29	54	50	25	16	18	14	76	20	21	25	21		
14	41	36	35	24	16	14	15	51	20	19	58	19		
15	46	41	53	24	16	13	48	39	19	13	47	19		
16	32	52	41	22	16	13	32	33	19	42	34	13		
17	33	92	35	22	16	12	13	64	19	57	79	59		
18	71	89	32	21	16	12	12	92	24	42	48	45		
19	75	55	30	21	16	12	12	57	19	25	33	29		
20	52	44	33	24	16	12	15	33	18	23	29	23		
21	38	33	39	21	25	11	118	35	18	21	41	21		
22	33	36	34	21	17	11	28	70	17	20	32	50		
23	31	34	32	21	16	11	22	54	16	29	27	60		
24	30	137	31	20	16	11	20	74	16	25	25	36		
25	29	61	30	20	15	10	18	53	15	19	30	27		
26	29	47	30	21	15	10	17	56	16	19	34	24		
27	28	59	41	21	15	11	16	39	16	19	39	22		
28	28	53	44	20	15	10	16	33	16	20	30	21		
29	28	42	67	20	---	10	43	31	15	21	25	21		
30	34	39	64	19	---	10	35	31	17	21	24	20		
31	29	---	46	19	---	9.9	---	28	---	22	23	---		
TOTAL	1138	1418	1157	758	472	407.9	604.9	1465	674	808	1104	898		
MEAN	36.7	47.3	37.3	24.5	16.9	13.2	20.2	47.3	22.5	26.1	35.6	29.9		
MAX	30	137	67	39	25	24	118	92	59	60	79	86		
MIN	25	24	29	19	15	9.9	8.3	21	15	15	20	13		
CFSM	2.00	2.57	2.03	1.33	.92	.72	1.10	2.57	1.22	1.42	1.94	1.63		
IN.	2.30	2.87	2.34	1.53	.95	.82	1.22	2.96	1.36	1.63	2.23	1.82		
AC-FT	2260	2810	2290	1500	936	809	1200	2910	1340	1600	2190	1780		
CAL YR 1982	TOTAL	11912.0	MEAN	32.6	MAX	431	MIN	14	CFSM	1.77	IN	24.08	AC-FT	23630
WTR YR 1983	TOTAL	10904.3	MEAN	29.9	MAX	137	MIN	8.3	CFSM	1.63	IN	22.05	AC-FT	21630

RIO GRANDE DE ARECIBO BASIN
50028000 RIO TANAMA NEAR UTUADO, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958 to current year.

PERIOD OF DAILY RECORD.--

SUSPENDED SEDIMENT DISCHARGE: January 1968 to current year.

REMARKS.--Sediment samples were collected by a local observer on a weekly basis and during high flow events. Estimates for period of missing daily record were made from a sediment transport curve developed from a period of record of 10 years.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SEDIMENT CONCENTRATIONS: Maximum daily mean, 20,400 mg/L November 27, 1968; minimum daily mean, 0.0 mg/L during many years.

SEDIMENT LOADS: Maximum daily, 110,000 tons (100,000 tonnes) November 27, 1968, minimum daily, 0.0 ton (0.0 tonne) during many years.

EXTREMES FOR CURRENT YEAR.--

SEDIMENT CONCENTRATIONS: Maximum daily mean, 1210 mg/L Apr. 21, 1983; minimum daily mean, 0.0 mg/L several days during 1983.

SEDIMENT LOADS: Maximum daily, 1,470 tons (1,330 tonnes) Nov. 24, 1982; minimum daily, 0.0 ton (0.0 tonne) several days during 1983.

WATER-QUALITY DATA, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	
NOV , 1982													
15...	1315	29	160	7.8	24.0	14	8.3	103	<10	600	730	--	
DEC													
15...	1215	78	177	7.7	21.0	--	9.3	108	36	K190	40000	56	
JAN , 1983													
26...	1120	22	173	8.1	22.0	1.9	8.7	103	<10	K100	K150	62	
FEB													
16...	1225	17	172	8.3	21.5	2.1	9.0	105	--	2500	K160	63	
MAR													
28...	1320	10	170	8.7	24.5	<1.0	8.4	104	15	K130	280	--	
MAY													
11...	1020	37	136	7.4	23.0	270	8.3	100	61	K8300	47000	49	
AUG													
29...	1205	26	177	8.3	25.0	5.0	9.0	113	16	340	440	67	
DATE		HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
NOV , 1982													
15...	--	--	--	--	--	--	--	52	--	--	--	--	--
DEC													
15...	0	16	3.9	7.7	.5	2.7	56	8.0	7.9	.10	18	--	--
JAN , 1983													
26...	3	15	6.0	8.8	.5	1.5	59	12	7.6	<.10	27	--	--
FEB													
16...	7	16	5.7	8.1	.5	1.4	57	13	7.9	<.10	25	110	--
MAR													
28...	--	--	--	--	--	--	61	--	--	--	--	--	--
MAY													
11...	3	13	4.0	6.9	.4	2.0	46	9.0	7.9	<.10	19	--	--
AUG													
29...	8	17	6.0	8.1	.4	1.6	59	12	7.8	<.10	26	--	--
DATE		SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, DIS- SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	
NOV , 1982													
15...	--	--	--	15	.69	.010	.70	--	<.010	--	.30	1.0	
DEC													
15...	98	20.6	--	--	--	--	--	.85	--	--	--	--	
JAN , 1983													
26...	113	6.7	1	--	--	<.010	.70	--	.020	--	<.10	--	
FEB													
16...	111	5.0	--	--	--	<.010	.60	--	.040	.46	.50	1.1	
MAR													
28...	--	--	--	6	.29	.010	.30	--	<.010	--	.30	.60	
MAY													
11...	89	8.8	279	.91	.290	1.2	--	--	.600	.00	.50	1.7	
AUG													
29...	114	8.0	9	--	--	<.010	.50	--	<.010	--	.30	.80	

K = non-ideal count

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHOPHOS- PHATE, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS- PENDED TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, SUS- PENDED RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)
NOV / 1982											
15...	4.4	.090	--	--	--	--	--	--	--	--	--
DEC											
15...	--	--	<.010	--	--	--	--	--	--	--	--
JAN / 1983											
26...	--	.010	--	1	--	--	100	--	--	5	--
FEB											
16...	4.9	.030	--	1	0	1	100	70	34	<1	1
MAR											
28...	2.7	.030	--	--	--	--	--	--	--	--	--
MAY											
11...	7.5	.250	--	--	--	--	--	--	--	--	--
AUG											
29...	3.5	.020	--	1	--	--	<100	--	--	1	--

DATE	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, SUS- PENDED RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	CHRO- MIUM, FM BOT- TOM MA- TERIAL (UG/G)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, SUS- PENDED RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, SUS- PENDED RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	COPPER, FM BOT- TOM MA- TERIAL (UG/G AS CU)
NOV / 1982											
15...	--	--	--	3	--	--	--	--	--	--	19
DEC											
15...	--	--	--	--	--	--	--	--	--	--	--
JAN / 1983											
26...	<1	--	--	--	--	--	--	--	--	--	--
FEB											
16...	20	0	20	--	1	0	1	8	4	4	--
MAR											
28...	--	--	--	--	--	--	--	--	--	--	--
MAY											
11...	--	--	--	--	--	--	--	--	--	--	--
AUG											
29...	<1	--	--	--	--	--	--	--	--	--	--

DATE	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, SUS- PENDED RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, SUS- PENDED RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY SUS- PENDED RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)
NOV / 1982											
15...	--	--	--	--	--	--	--	--	--	--	--
DEC											
15...	--	--	68	--	--	--	--	17	--	--	--
JAN / 1983											
26...	--	--	--	<1	--	--	--	--	.2	--	--
FEB											
16...	490	480	14	<1	<1	30	20	7	.5	.3	.2
MAR											
28...	--	--	--	--	--	--	--	--	--	--	--
MAY											
11...	--	--	--	--	--	--	--	--	--	--	--
AUG											
29...	--	--	--	4	--	--	--	--	<.1	--	--

DATE	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, SUS- PENDED RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	NICKEL, FM BOT- TOM MA- TERIAL (UG/G AS NI)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	ZINC, FM BOT- TOM MA- TERIAL (UG/G AS ZN)
NOV / 1982											
15...	--	--	--	<10	--	--	--	--	--	--	24
DEC											
15...	--	--	--	--	--	--	--	--	--	--	--
JAN / 1983											
26...	--	--	--	--	<1	--	2	--	--	--	--
FEB											
16...	77	72	5	--	<1	<1	<1	<1	20	<3	--
MAR											
28...	--	--	--	--	--	--	--	--	--	--	--
MAY											
11...	--	--	--	--	--	--	--	--	--	--	--
AUG											
29...	--	--	--	--	<1	--	<1	--	--	--	--

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
OCT, 04	1333	25	170	25.0	JUL, 12	1253	28	131	24.5
APR, 12	1200	8.5	207	24.5	SEP, 07	1022	214	186	26.0
JUN, 01	1315	25	179	--					

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)
JUN / 1983								
03...	1240	<.10	<.01	<.10	<.01	<.01	<.01	<.01

DATE	DI- ELDRIN TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA- THION, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL (UG/L)
JUN / 1983									
03...	<.01	<.10	<.01	<.01	<.01	<.01	<.01	<.01	<.01

DATE	TIME	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR, TOTAL (UG/L)	PER- THANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)
JUN, 1983	03...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDE (MG/L)	SED.	SED.	SED.	SED.
				SUSP. FALL DIAM. % FINER THAN .002 MM	SUSP. FALL DIAM. % FINER THAN .004 MM	SUSP. FALL DIAM. % FINER THAN .008 MM	SUSP. FALL DIAM. % FINER THAN .016 MM
AUG , 1983							
10...	1750	E2860	3500	1	4	14	26
10...	1805	E3350	3960	3	6	17	31
10...	1820	E2780	3320	2	5	12	32
10...	1830	E2110	2660	2	3	7	24

DATE	TIME	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .125 MM	SED. SUSP. FALL DIAM. % FINER THAN .250 MM	SED. SUSP. FALL DIAM. % FINER THAN .500 MM	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM
AUG	10...	44	32	83	94	97	99
	10...	53	84	92	96	98	99
	10...	54	84	91	94	97	99
	10...	48	79	90	93	95	99

		SED.	SED.	SED.	SED.	SED.	SED.	SED.	
		SUSP.	SUSP.	SUSP.	SUSP.	SUSP.	SUSP.	SUSP.	
		FALL	FALL	FALL	FALL	FALL	FALL	FALL	
		DIAM.	DIAM.	DIAM.	DIAM.	DIAM.	DIAM.	DIAM.	
		% FINER	% FINER	% FINER	% FINER	% FINER	% FINER	% FINER	
		THAN	THAN	THAN	THAN	THAN	THAN	THAN	
DATE	TIME	(CFS)	002 MM	.004 MM	.008 MM	.016 MM	.031 MM	.062 MM	.125 MM
DEC 15...	1215	78	0	1	1	1	2	2	1
JAN 26...	1120	22	0	0	0	1	1	1	0
FEB 16...	1225	17	0	0	0	0	1	1	0
		BED	BED	BED	BED	BED	BED	BED	BED
		MAT.	MAT.	MAT.	MAT.	MAT.	MAT.	MAT.	MAT.
		FALL	SIEVE	SIEVE	SIEVE	SIEVE	SIEVE	SIEVE	SIEVE
		DIAM.	DIAM.	DIAM.	DIAM.	DIAM.	DIAM.	DIAM.	DIAM.
		% FINER	% FINER	% FINER	% FINER	% FINER	% FINER	% FINER	% FINER
		THAN	THAN	THAN	THAN	THAN	THAN	THAN	THAN
DATE		.062 MM	.062 MM	.125 MM	.250 MM	.500 MM	1.00 MM	2.00 MM	4.00 MM
DEC 15...		2	2	3	5	22	54	74	89
JAN 26...		1	1	1	3	7	25	52	68
FEB 16...		1	1	1	3	13	38	61	72

E = estimate

RIO GRANDE DE ARECIBO BASIN
50028000 RIO TANAMA NEAR UTUADO, PR--Continued
WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
OCTOBER				NOVEMBER			DECEMBER		
1	27	10	.73	28	11	.83	37	211	22
2	29	99	8.7	26	19	1.3	35	164	15
3	26	64	4.6	26	69	4.8	34	152	14
4	25	24	1.6	25	9	.61	35	164	15
5	25	5	.34	25	36	2.4	32	123	11
6	29	104	13	24	22	1.4	31	7	.59
7	80	793	622	24	14	.91	30	96	7.8
8	52	590	96	24	25	1.6	30	96	7.8
9	36	89	8.7	45	268	79	33	151	16
10	32	17	1.5	57	457	142	30	115	9.3
11	31	10	.84	53	329	59	29	82	6.4
12	30	12	.97	52	333	70	29	82	6.4
13	29	22	1.7	54	372	69	50	320	133
14	41	235	63	36	185	20	35	226	24
15	46	359	51	41	236	47	53	348	65
16	32	21	1.8	52	416	77	41	218	25
17	33	133	13	92	845	414	35	164	15
18	71	583	583	89	932	309	32	123	11
19	75	911	263	55	549	86	30	96	7.8
20	52	392	58	44	326	40	38	203	24
21	38	23	2.4	38	207	21	39	222	23
22	33	43	3.8	36	112	11	34	152	14
23	31	20	1.7	34	152	14	32	123	11
24	30	8	.65	137	1170	1470	31	110	9.2
25	29	12	.94	61	648	116	30	96	7.8
26	29	3	.23	47	360	51	30	96	7.8
27	28	8	.60	59	470	85	41	262	37
28	28	14	1.1	53	432	62	44	300	36
29	28	148	11	42	145	16	67	542	146
30	34	15	1.4	39	231	25	64	582	125
31	29	11	.86	---	---	---	46	336	43
TOTAL	1138	---	1818.16	1418	---	3296.85	1157	---	895.89
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
JANUARY				FEBRUARY			MARCH		
1	39	222	23	19	5	.26	15	0	.00
2	34	152	14	19	5	.26	14	0	.00
3	31	13	1.1	18	3	.15	15	0	.00
4	30	96	7.8	18	3	.15	14	0	.00
5	30	96	7.8	19	5	.26	24	123	28
6	29	82	6.4	18	3	.15	17	3	.15
7	29	82	6.4	17	30	1.4	14	45	1.7
8	28	69	5.2	16	1	.04	14	0	.00
9	27	58	4.2	17	2	.09	14	0	.00
10	25	60	4.1	17	2	.09	13	0	.00
11	25	36	2.4	16	1	.04	13	0	.00
12	25	36	2.4	16	1	.04	20	50	5.3
13	25	36	2.4	16	1	.04	18	10	.65
14	24	27	1.7	16	56	2.4	14	41	1.5
15	24	27	1.7	16	1	.04	13	0	.00
16	22	16	.95	16	1	.04	13	0	.00
17	22	60	3.6	16	1	.04	12	0	.00
18	21	11	.62	16	1	.04	12	0	.00
19	21	11	.62	16	1	.04	12	0	.00
20	24	27	1.7	16	1	.04	12	0	.00
21	21	11	.62	25	37	2.5	11	65	1.9
22	21	11	.62	17	2	.09	11	0	.00
23	21	11	.62	16	1	.04	11	0	.00
24	20	104	5.6	16	1	.04	11	0	.00
25	20	8	.43	15	0	.00	10	0	.00
26	21	11	.62	15	0	.00	10	0	.00
27	21	11	.62	15	0	.00	11	0	.00
28	20	8	.43	15	0	.00	10	37	1.0
29	20	8	.43	---	---	---	10	0	.00
30	19	5	.26	---	---	---	10	0	.00
31	19	39	2.0	---	---	---	9.9	0	.00
TOTAL	758	---	110.34	472	---	8.28	407.9	---	40.20

50028000 RIO TANAMA NEAR UTUADO, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
APRIL				MAY			JUNE		
1	9.8	0	.00	29	110	16	27	58	4.2
2	9.7	0	.00	22	16	1.0	25	36	2.4
3	9.3	0	.00	21	16	1.0	59	583	372
4	9.5	27	.69	45	367	132	47	346	55
5	9.6	0	.00	37	200	25	31	110	9.2
6	10	0	.00	56	462	206	27	58	4.2
7	9.5	0	.00	60	552	164	24	27	1.7
8	9.1	0	.00	57	494	115	24	27	1.7
9	8.6	0	.00	39	226	26	25	36	2.4
10	8.3	0	.00	36	176	40	23	20	1.2
11	8.8	57	1.4	66	587	222	21	11	.62
12	8.7	0	.00	43	285	35	21	11	.62
13	14	30	2.8	76	730	228	20	8	.43
14	15	3	.16	51	406	56	20	8	.43
15	48	434	226	39	226	24	19	5	.26
16	32	161	28	33	137	12	19	5	.26
17	13	0	.00	64	526	209	19	5	.26
18	12	34	1.1	92	959	496	24	27	1.7
19	12	0	.00	57	498	84	19	5	.26
20	15	88	30	38	219	23	18	3	.15
21	118	1210	642	35	180	18	18	3	.15
22	28	69	5.5	70	651	268	17	2	.09
23	22	16	.95	54	445	68	16	1	.04
24	20	8	.43	74	701	241	16	1	.04
25	18	27	1.3	53	441	66	15	0	.00
26	17	2	.09	56	469	108	16	1	.04
27	16	1	.04	39	227	25	16	1	.04
28	16	1	.04	33	137	12	16	1	.04
29	43	385	181	31	110	9.2	15	0	.00
30	35	182	26	31	110	9.2	17	2	.09
31	---	---	---	28	69	5.2	---	---	---
TOTAL	604.9	---	1147.50	1465	---	2944.6	674	---	459.52
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
JULY				AUGUST			SEPTEMBER		
1	19	30	4.0	22	19	1.4	22	16	.95
2	22	37	3.3	21	14	.84	21	11	.62
3	16	1	.04	58	454	291	21	11	.62
4	19	36	3.7	72	643	250	20	8	.43
5	21	17	1.1	33	150	17	22	16	.95
6	19	8	.44	23	20	1.2	86	975	1330
7	16	1	.04	20	8	.43	40	249	33
8	15	0	.00	25	121	28	24	27	1.8
9	53	440	278	33	150	20	20	8	.43
10	34	167	24	55	540	355	20	8	.43
11	60	514	224	35	169	19	39	255	72
12	31	112	11	24	27	1.7	28	71	6.3
13	21	11	.62	25	49	4.4	21	11	.62
14	19	5	.26	58	544	284	19	5	.26
15	18	3	.15	47	353	55	19	5	.26
16	42	310	109	34	163	17	18	3	.15
17	57	522	184	79	725	299	59	479	253
18	42	270	39	48	361	51	45	313	56
19	25	36	2.4	33	128	11	29	86	7.5
20	23	20	1.2	29	83	7.0	23	20	1.2
21	21	11	.62	41	255	32	21	11	.62
22	20	8	.43	32	124	11	50	433	197
23	29	219	53	27	58	4.2	60	484	197
24	25	58	5.1	25	36	2.4	36	180	19
25	19	5	.26	30	116	22	27	58	4.2
26	19	5	.26	34	152	16	24	27	1.7
27	19	5	.26	39	235	49	22	16	.95
28	20	8	.43	30	90	7.6	21	11	.62
29	21	11	.62	25	36	2.4	21	11	.62
30	21	11	.62	24	27	1.7	20	8	.43
31	22	16	.95	23	20	1.2	---	---	---
TOTAL	808	---	948.80	1104	---	1363.47	898	---	2188.66
YEAR	10904.8		15722.27						

RIO GRANDE DE ARECIBO BASIN

50028400 RIO TANAMA AT CHARCO HONDO, PR

LOCATION.--Lat 18°24'52", long 66°42'52", on right bank of abandoned power house at Charco Hondo, 1.5 mi (2.4 km) upstream from mouth, and 4 mi (6 km) south of Arecibo.

DRAINAGE AREA.--57.6 sq mi (149.2 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1969 to June 1971, October 1981 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 60 ft (18 m), from topographic map.

REMARKS.--Records fair. Diversion 0.8 mi (1.3 km) upstream from municipal supply of Arecibo.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,120 cu ft/s (117 cu m/s) Apr. 21, 1969, gage height, 12.22 ft (3.725 m) from floodmark, from rating curve extended above 1,000 cu ft/s (28 cu m/s); minimum, 30 cu ft/s (0.850 cu m/s) Apr. 11-13, 1983.

EXTREMES FOR WATER YEARS 1982-83.--Peak discharges above base of 1,000 cu ft/s (28.3 cu m/s) and maximums (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)	Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
Oct. 25, 1981	1800	1,910 54.1	9.95 3.033	Nov. 9, 1981	1300	3,420 96.8	11.88 3.621
Nov. 3	1830	1,460 41.3	9.19 2.801	Dic. 14	0900	2,040 57.8	10.14 3.091
Nov. 5	1900	1,560 44.2	9.37 2.856	Sept. 13, 1982	0400	*3,970 112	12.45 3.795
Nov. 8	1830	1,840 52.1	9.83 2.996	Nov. 24	2030	*1,360 38.5	9.00 2.743
Nov. 9	0230	2,680 75.9	11.03 3.362				

Minimum discharges, 46 cu ft/s (1.303 cu m/s) Apr. 24, 25, May 2, 3, 1982; 30 cu ft/s (0.850 cu m/s) Apr. 11-13, 1983.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	72	231	103	123	75	57	52	51	113	51	58	100
2	78	204	100	118	76	55	52	46	101	50	68	121
3	72	369	96	113	89	56	52	126	180	49	59	71
4	71	344	94	109	75	55	53	123	130	50	66	63
5	71	430	92	103	86	54	131	163	110	75	118	60
6	79	443	88	97	90	54	70	180	100	174	60	65
7	160	253	85	94	80	54	58	190	110	155	56	114
8	120	346	84	93	75	54	53	180	120	76	85	66
9	107	1270	82	92	70	54	52	120	101	61	112	60
10	91	530	80	89	67	54	53	110	85	104	117	71
11	155	360	175	86	67	53	72	200	76	59	146	85
12	155	264	166	86	64	54	54	130	65	53	78	123
13	119	186	490	82	67	53	53	240	60	53	89	836
14	97	168	1160	81	67	53	52	160	58	67	77	253
15	90	152	630	80	66	54	52	120	56	89	109	136
16	98	138	444	78	66	55	93	100	55	67	71	100
17	155	121	332	77	67	54	71	200	54	92	63	115
18	155	131	261	76	66	54	57	120	53	62	67	192
19	111	221	237	76	62	54	55	81	52	80	62	205
20	204	178	210	76	61	54	52	123	51	208	58	138
21	254	117	200	76	61	54	52	173	50	245	56	109
22	164	113	194	75	61	53	50	100	50	94	55	90
23	184	114	183	74	60	51	51	138	49	86	75	82
24	260	162	178	74	58	51	46	122	49	72	61	77
25	433	112	172	74	56	52	50	126	49	72	69	74
26	306	146	167	74	56	52	50	96	48	84	85	67
27	228	303	156	105	56	52	49	116	48	71	60	64
28	253	152	143	179	57	51	48	220	48	62	70	61
29	243	117	136	85	---	51	52	194	51	61	144	60
30	284	109	128	90	---	51	54	158	53	62	83	81
31	260	---	126	80	---	59	---	130	---	59	64	---
TOTAL	5129	7789	6792	2315	1901	1663	1744	4336	2225	2643	2441	3739
MEAN	165	260	219	90.8	67.9	53.6	58.1	140	74.2	85.3	78.7	125
MAX	433	1270	1160	179	90	59	131	240	180	245	146	336
MIN	71	109	80	74	56	51	46	46	48	49	55	60
CFSM	2.87	4.51	3.80	1.58	1.18	.93	1.01	2.43	1.29	1.43	1.37	2.17
IN.	3.31	5.03	4.39	1.82	1.23	1.07	1.13	2.80	1.44	1.71	1.58	2.41
AC-FT	10170	15450	13470	5580	3770	3300	3460	8600	4410	5240	4840	7420

WTR YR 1982 TOTAL 43217 MEAN 113 MAX 1270 MIN 46 CFSM 2.05 IN 27.91 AC-FT 85720

RIO GRANDE DE ARECIBO BASIN

50028400 RIO TANAMA AT CHARCO HONDO, PR--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71	53	95	100	51	40	33	63	59	39	43	46
2	58	51	90	90	51	39	32	91	52	45	44	45
3	76	50	85	85	50	39	31	47	68	39	41	44
4	74	50	86	81	49	41	31	52	117	39	122	44
5	93	49	81	76	48	43	31	118	70	49	92	43
6	76	48	72	76	49	65	32	137	94	43	49	81
7	92	48	70	72	49	42	32	193	88	39	46	112
8	125	43	69	67	48	40	31	164	64	38	45	60
9	85	82	67	64	48	39	31	161	61	40	64	50
10	60	169	71	62	48	38	31	87	60	109	62	47
11	58	134	64	61	48	38	30	108	62	76	90	50
12	58	145	66	60	48	37	30	181	60	88	59	76
13	57	136	62	57	48	47	34	272	52	50	50	51
14	56	88	100	55	47	39	50	376	50	44	65	46
15	81	76	75	58	47	38	40	178	48	43	103	45
16	80	190	110	56	47	36	116	116	46	52	60	45
17	59	123	90	55	47	36	48	177	46	81	156	66
18	58	185	75	55	47	35	40	219	48	100	156	106
19	150	188	70	55	46	34	43	185	46	54	69	87
20	104	133	70	55	46	35	45	104	45	48	57	55
21	74	96	85	52	53	35	241	86	44	45	62	52
22	64	88	85	51	49	34	70	138	43	44	68	68
23	62	81	75	51	45	34	47	163	41	42	53	86
24	60	217	70	51	44	34	42	143	40	67	50	77
25	59	330	70	51	43	33	38	157	40	45	48	65
26	58	135	70	50	42	34	36	166	38	41	59	63
27	62	110	70	50	41	33	34	204	38	40	62	53
28	57	135	90	51	40	33	33	123	38	40	76	63
29	56	120	95	51	---	33	41	93	38	41	52	55
30	56	110	135	52	---	32	114	90	38	43	47	47
31	56	---	110	52	---	33	---	94	---	44	48	---
TOTAL	2235	3478	2523	1902	1319	1168	1487	4486	1654	1608	2098	1328
MEAN	72.1	116	81.4	61.4	47.1	37.7	49.6	145	55.1	51.9	67.7	60.9
MAX	150	330	135	100	53	65	241	376	117	109	156	112
MIN	56	48	62	50	40	32	30	47	38	33	41	43
CFSM	1.25	2.01	1.41	1.07	.82	.66	.86	2.52	.96	.90	1.18	1.06
IN.	1.44	2.25	1.63	1.23	.85	.75	.96	2.90	1.07	1.04	1.35	1.18
AC-FT	4430	6900	5000	3770	2620	2320	2950	8900	3230	3190	4160	3630

CAL YR 1982 TOTAL 31743 MEAN 87.0 MAX 836 MIN 46 CFSM 1.51 IN 20.50 AC-FT 62960
WTR YR 1983 TOTAL 25786 MEAN 70.6 MAX 376 MIN 30 CFSM 1.23 IN 16.65 AC-FT 51150

WATER-QUALITY RECORDS

PERIOD OF RECORD--MARCH TO SEPTEMBER 1983

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
MAR	14 1322	39	311	24.0	JUL	13 1003	49	265	24.0
APR	05 1320	31	354	23.0	AUG	09 1407	65	248	25.5
MAY	16 1532	140	303	24.5	SEP	01 1503	46	259	27.0
JUN	02 1420	62	276	--					

RIO GRANDE DE ARECIBO BASIN

50029000 RIO GRANDE DE ARECIBO AT CENTRAL CAMBALACHE, PR

LOCATION.--Lat 18°27'20", long 66°42'10", Hydrologic Unit 21010002, at bridge on unimproved road, about 500 ft (152 m) upstream from Central Cambalache, near Highway 2, 13.9 mi (22.4 km) downstream from Dos Bocas Reservoir, 1.9 mi (3.1 km) downstream from Río Tanamá, and 1.6 mi (2.6 km) southeast of Arecibo.

DRAINAGE AREA.--200 sq mi (520 sq km), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1963 to January 1965 (monthly measurements only), February 1965 to April 1969 (occasional measurements only), May 1969 to September 1983 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 3.73 ft (1.137 m) above mean sea level.

REMARKS.--Records very poor. Flow regulated by Lago Dos Bocas dam, 13.9 mi (22.4 km) upstream.

AVERAGE DISCHARGE.--14 years (1970-83), 510 cu ft/s (14.44 cu m/s), 369,500 acre-ft/yr (456 cu hm/yr); median of yearly mean discharges, 504 cu ft/s (14.27 cu m/s), 365,000 acre-ft/yr (450 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,100 cu ft/s (739 cu m/s) Aug. 31, 1979, gage height, 13.74 ft (4.188 m) from rating curve extended above 6,000 cu ft/s (170 cu m/s); minimum, 50 cu ft/s (1.416 cu m/s) Feb. 26, 1974, gage height, 4.25 ft (1.295 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Approximate discharges and elevations above mean sea level of major floods at valley cross sections along Expressway PR-22 about 1.0 mi (1.6 km) above gage site are as follows: Aug. 8, 1899, 195,000 cu ft/s (5,520 cu m/s), gage height, 24.4 ft (7.44 m); Sept. 13, 1928, 105,000 cu ft/s (2,970 cu m/s), gage height, 21.6 ft (6.58 m); Oct. 13, 1954, 76,000 cu ft/s (2,150 cu m/s), gage height, 19.1 ft (5.82 m); and Nov. 26, 1968, 21,000 cu ft/s (595 cu m/s) gage height, 16.6 ft (5.06 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,350 cu ft/s (123 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
Apr. 21	1345	8,680 246	11.66 3.554

Minimum daily discharge, 63 cu ft/s (1.784 cu m/s) Mar. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1020	465	283	150	850	114	138	320	400	210	267	240
2	319	277	270	700	169	90	270	500	183	138	137	193
3	279	403	169	110	99	63	208	250	560	135	103	86
4	222	289	453	300	85	191	252	400	532	144	169	97
5	598	184	222	300	156	151	124	1100	284	728	610	290
6	564	377	586	350	127	136	104	1200	458	678	220	397
7	514	254	988	300	266	137	227	140	420	721	121	526
8	318	386	686	180	328	138	398	200	419	677	390	128
9	162	555	730	250	204	198	521	800	447	284	501	166
10	314	425	476	900	260	260	223	1200	494	590	541	129
11	338	602	553	1100	279	192	181	600	470	185	310	119
12	137	803	252	250	243	271	254	550	306	189	295	131
13	479	1930	374	550	133	642	143	2000	483	117	415	410
14	423	852	495	170	107	524	313	1800	460	143	314	753
15	305	952	265	110	173	162	314	1200	566	126	350	170
16	150	2110	489	95	233	153	323	400	292	100	291	369
17	176	334	360	600	244	247	265	400	427	274	476	892
18	400	952	268	1200	177	252	380	1000	599	377	441	474
19	828	1110	114	1100	188	281	292	2000	480	276	217	673
20	766	453	330	400	234	627	229	2000	690	216	132	372
21	186	314	629	1200	322	346	7000	1100	161	415	250	777
22	578	827	449	450	130	196	2000	1200	264	410	574	297
23	417	717	336	400	165	376	1600	2500	120	137	309	178
24	358	951	150	1000	320	154	1300	1300	508	211	158	153
25	474	2410	100	150	174	218	600	1700	251	104	150	128
26	241	1430	120	130	222	154	200	1300	268	691	95	183
27	304	310	2000	220	133	186	120	2000	288	155	201	468
28	213	1260	1500	350	166	113	160	1000	401	242	270	380
29	505	1050	1000	200	---	281	800	250	426	198	478	516
30	510	291	1800	250	---	361	300	1000	397	149	374	161
31	411	---	600	600	---	165	---	900	---	102	477	---
TOTAL	12509	24283	17047	15065	6187	7379	19239	32310	12054	9122	9636	10356
MEAN	404	809	550	486	221	233	641	1042	402	294	311	362
MAX	1020	2410	2000	1200	850	642	7000	2500	690	728	610	892
MIN	137	184	100	95	35	63	104	140	120	100	95	86
AC-FT	24810	48170	33810	29880	12270	14640	38160	64090	23910	18090	19110	21530
CAL YR 1982	TOTAL	166790	MEAN	457	MAX	3200	MIN	60	AC-FT	330800		
WTR YR 1983	TOTAL	175637	MEAN	481	MAX	7000	MIN	63	AC-FT	348500		

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963-66, 1969 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	
NOV / 1982												
11...	1300	E1460	257	7.1	25.5	49	7.1	87	18	22000	3500	
FEB / 1983												
01...	1400	147	247	7.7	24.0	9.3	10.3	122	12	2000	K140	
MAR												
25...	1245	86	290	8.0	28.0	<1.0	13.0	166	47	K50	K140	
MAY												
02...	1115	E300	245	7.4	25.0	12	7.6	92	12	K1700	3000	
JUN												
16...	1115	E235	253	8.2	27.0	--	--	--	--	--	--	
AUG												
12...	1125	118	255	7.9	27.0	65	7.6	96	27	2400	3200	
DATE		HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (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)
NOV / 1982												
11...	--	--	--	--	--	--	--	--	92	--	--	--
FEB / 1983												
01...	110	4	36	5.9	9.7	.4	1.4	110	10	9.8	<.10	
MAR												
25...	--	--	--	--	--	--	--	--	120	--	--	--
MAY												
02...	110	11	35	4.7	8.3	.4	1.8	96	14	10	<.10	
JUN												
16...	110	0	36	5.5	9.2	.4	1.6	120	10	9.8	.10	
AUG												
12...	110	0	36	5.3	8.3	.4	1.6	112	9.7	9.4	.10	
DATE		SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982												
11...	--	--	--	--	122	.49	.010	.50	.020	.68	.70	1.2
FEB / 1983												
01...	17	156	61.8	9	.49	.010	.50	.020	--	<.10	--	--
MAR												
25...	--	--	--	4	.29	.010	.30	<.010	--	<.10	--	--
MAY												
02...	14	145	--	16	.88	.020	.90	.060	.24	.30	1.2	
JUN												
16...	17	161	--	--	--	--	--	--	--	--	--	--
AUG												
12...	14	152	48.3	60	.57	.030	.60	.080	.32	.40	1.0	
DATE		NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	
NOV / 1982												
11...	5.3	.110	--	--	--	--	--	--	--	--	--	
FEB / 1983												
01...	--	.040	1	100	1	3	1	.3	<1	3		
MAR												
25...	--	.010	--	--	--	--	--	--	--	--	--	
MAY												
02...	5.3	.080	--	--	--	--	--	--	--	--	--	
JUN												
16...	--	--	--	--	--	--	--	--	--	--	--	
AUG												
12...	4.4	.040	2	100	1	<1	9	<.1	<1	<1		
DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)			
OCT, 15	1010	222	272	25.5	JUL, 12	0955	219	257	26.5			
APR, 07	1030	79	300	25.0	SEP, 07	1022	214	186	26.0			
JUN, 01	1015	300	209	--								

K = non-ideal count
E = estimate

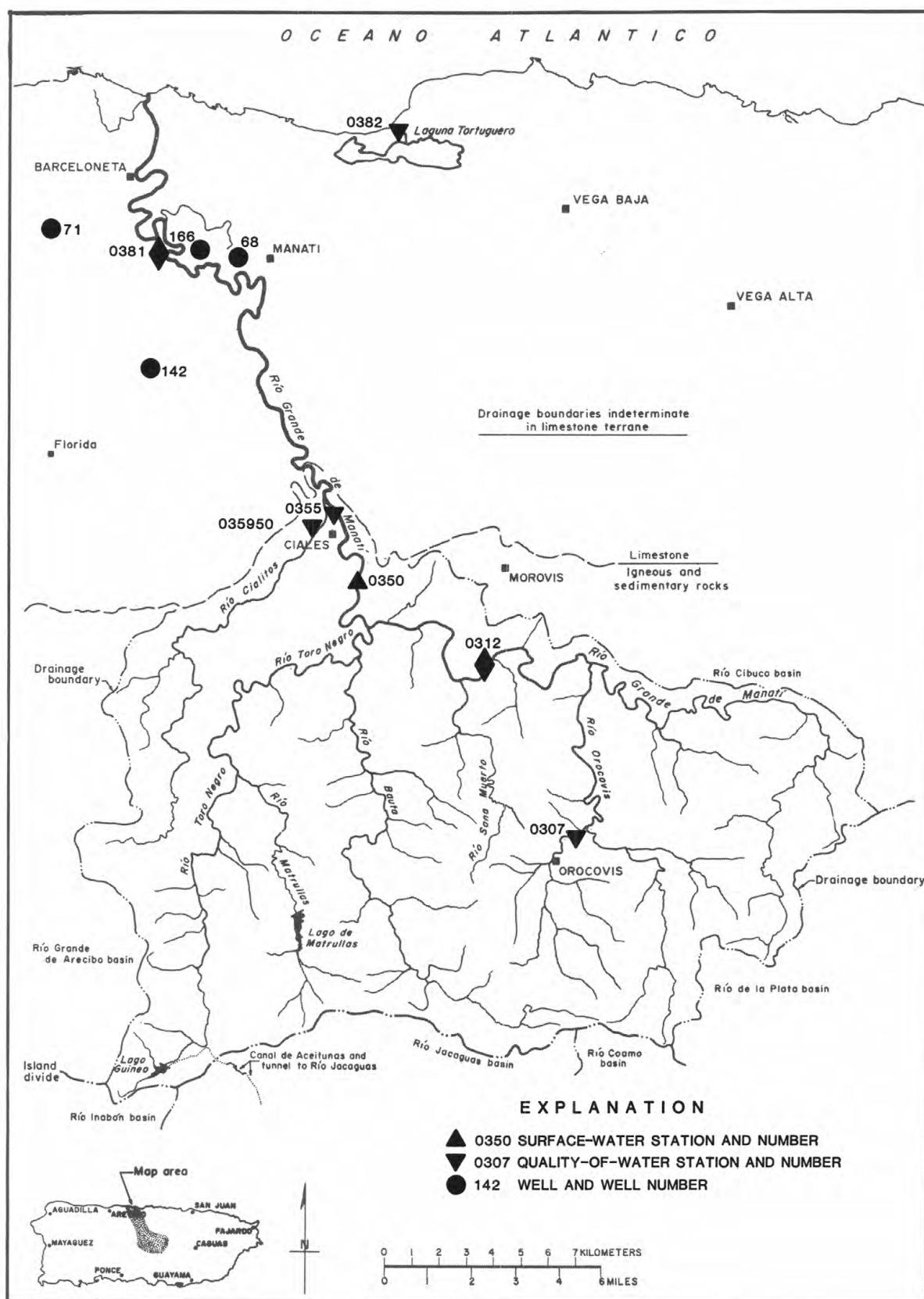


Figure 14.--Río Grande de Manatí basin.

RIO GRANDE DE MANATI BASIN
50030700 RIO OROCOVIS NEAR OROCOVIS, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°14'20", long 66°22'58", at flat low bridge about 300 ft (91 m) northwest of Highway 568, 1.0 mi (1.6 km) north of Orocovis plaza.

DRAINAGE AREA.--10.1 sq mi (26.2 sq km).

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)
NOV / 1982												
22...	1350	6.5	331	8.3	22.0	4.6	8.6	105	45	2300	620	--
JAN / 1983												
05...	1020	11	272	8.1	20.0	15	8.4	97	11	4400	3900	120
MAR												
14...	1135	14	232	7.8	22.0	40	8.2	99	30	K3800	17000	--
MAY												
03...	1310	13	272	8.3	23.5	70	8.0	99	24	K83000	9300	120
AUG												
11...	1325	9.1	288	8.4	27.5	9.5	6.3	84	40	56000	13000	130

DATE	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)
NOV / 1982											
22...	--	--	--	--	--	--	120	--	--	--	--
JAN / 1983											
05...	0	30	11	14	.6	2.2	120	9.0	14	.10	35
MAR											
14...	--	--	--	--	--	--	75	--	--	--	--
MAY											
03...	5	28	11	14	.6	2.5	110	11	14	.20	32
AUG											
11...	6	31	12	13	.5	1.7	121	8.9	14	.20	34

DATE	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N03)
NOV / 1982											
22...	--	--	4	--	<.010	2.3	.010	.19	.20	2.5	11
JAN / 1983											
05...	187	5.6	5	.89	.010	.90	.040	.16	.20	1.1	4.9
MAR											
14...	--	--	35	.97	.030	1.0	.080	.22	.30	1.3	5.8
MAY											
03...	179	6.3	41	.95	.050	1.0	.080	.32	.40	1.4	6.2
AUG											
11...	187	4.6	30	.74	.060	.80	.240	3.0	3.20	4.0	18

DATE	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
NOV / 1982											
22...	.460	--	--	--	--	--	--	--	--	--	--
JAN / 1983											
05...	.420	1	100	2	<1	5	.1	<1	<1	--	--
MAR											
14...	.080	--	--	--	--	--	--	--	--	76	2.9
MAY											
03...	.190	--	--	--	--	--	--	--	--	--	--
AUG											
11...	.420	2	200	1	<1	9	<.1	<1	3	--	--

K = non-ideal count

RIO GRANDE DE MANATI BASIN

50031200 RIO GRANDE DE MANATI NEAR MOROVIS, PR

LOCATION.--Lat 18°17'45", long 66°24'47", Hydrologic Unit 21010001, on left bank, 0.1 mi (0.2 km) downstream from Quebrada Perchas, 0.8 mi (1.3 km) upstream from Río Sana Muerto, and 2.2 mi (3.5 km) south of Morovis.

DRAINAGE AREA.--55.2 sq mi (143.0 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1965 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 440 ft (134.1 m), from topographic map. Feb. 2, 1966 to Apr. 27, 1967, staff gage read twice daily.

REMARKS.--Records fair. Public water-supply pumpage, about 300 ft (91 m) above the station, influences low-flow discharges.

AVERAGE DISCHARGE.--18 years (1966-83), 107 cu ft/s (3.030 cu m/s), 26.32 in/yr (669 mm/yr), 77,520 acre-ft/yr (95.6 cu hm/yr); median of yearly mean discharges 99 cu ft/s (2.80 cu m/s), 71,700 acre-ft/yr (88 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,000 cu ft/s (991 cu m/s) Oct. 9, 1970, gage height, 20.3 ft (6.19 m), from flood-marks, from rating curve extended above 200 cu ft/s (5.7 cu m/s) on basis of computations of flow over broad-crested weir and indirect measurements of peak flow at 13.5 ft (4.11 m), 16.0 ft (4.88 m) and 20.3 ft (6.19 m); minimum daily, 13 cu ft/s (0.368 cu m/s) Aug. 26, 1974, Oct. 21-23, 1978.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,500 cu ft/s (99.1 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)	Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
Mar. 12	1515	5,940 168	6.51 1.984	May 11	2100	6,200 176	6.64 2.024
Apr. 21	0230	14,600 413	9.97 3.039	May 13	2045	*22,500 637	12.21 3.722

Minimum discharge, 25 cu ft/s (0.708 cu m/s) Apr. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62	33	160	154	44	31	32	67	79	53	45	31
2	47	32	99	120	44	32	32	64	79	66	50	34
3	63	31	91	102	42	31	31	66	74	63	45	39
4	62	31	75	92	41	32	33	60	73	73	40	30
5	66	31	68	83	43	32	32	54	71	74	36	32
6	46	33	59	79	41	30	32	53	68	72	34	66
7	36	45	53	80	40	31	32	52	66	69	33	66
8	36	39	51	73	39	31	30	64	64	59	34	44
9	36	39	46	80	36	31	29	63	64	52	35	51
10	34	43	46	89	37	28	28	48	61	50	33	35
11	34	42	58	71	37	27	28	542	57	51	34	37
12	65	309	44	69	36	1160	29	519	57	50	36	33
13	95	508	50	64	36	305	28	1490	54	47	36	32
14	74	173	46	101	36	114	29	731	56	45	34	29
15	52	131	162	203	37	74	37	316	54	45	32	29
16	48	74	161	89	35	56	31	169	188	46	33	29
17	46	56	95	73	35	49	28	123	156	51	51	29
18	46	47	74	66	35	46	151	411	120	52	58	46
19	45	43	62	62	34	43	190	373	100	47	35	60
20	45	44	79	59	35	41	247	393	90	46	34	36
21	39	63	116	53	56	39	2730	283	80	44	74	39
22	38	53	91	56	41	33	254	213	70	44	130	48
23	35	56	72	54	35	37	134	166	64	45	50	44
24	34	103	64	54	34	37	169	129	62	51	44	43
25	34	100	61	49	34	36	95	118	60	43	99	35
26	33	82	255	48	33	37	77	115	56	40	63	31
27	33	174	600	47	33	36	67	110	59	41	63	34
28	34	310	300	47	32	43	64	95	63	40	45	29
29	48	182	203	46	---	36	129	90	55	44	38	32
30	37	286	132	46	---	34	115	88	55	50	35	29
31	36	---	151	44	---	33	---	82	---	43	33	---
TOTAL	1439	3193	3614	2358	1061	2630	4993	7157	2255	1606	1442	1152
MEAN	46.4	106	117	75.1	37.9	84.8	156	231	75.2	51.8	46.5	38.4
MAX	95	508	600	203	56	1160	2730	1490	188	74	130	66
MIN	33	31	44	44	32	27	28	48	54	40	32	29
CFSM	.34	1.92	2.12	1.38	.69	1.54	3.01	4.19	1.36	.94	.84	.70
IN.	.97	2.15	2.44	1.59	.72	1.77	3.36	4.82	1.52	1.08	.97	.78
AC-FT	2850	6330	7170	4680	2100	5220	9900	14200	4470	3190	2860	2280
CAL YR 1982	TOTAL	27046	MEAN 74.1	MAX 1290	MIN 16	CFSM 1.34	IN 18.23	AC-FT 53650				
WTR YR 1983	TOTAL	32900	MEAN 90.1	MAX 2780	MIN 27	CFSM 1.63	IN 22.17	AC-FT 65260				

RIO GRANDE DE MANATI BASIN

50031200 RIO GRANDE DE MANATI NEAR MOROVIS, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV / 1982											
19...	1205	43	273	8.2	27.0	5.1	7.6	98	27	K200	170
JAN / 1983											
05...	1330	82	253	8.2	23.0	7.3	8.6	102	10	410	280
MAR											
10...	1245	29	282	8.5	25.5	1.8	8.4	105	11	K30	K27
MAY											
03...	1020	57	255	8.0	24.5	21	9.1	111	<10	K760	650
AUG											
11...	1035	33	266	7.4	28.0	2.7	8.4	109	31	K130	80

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY FIELD (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)
NOV / 1982											
19...	--	--	--	--	--	--	--	100	--	--	--
JAN / 1983											
05...	110	5	24	11	13	.6	1.5	100	8.0	13	<.10
MAR											
10...	--	--	--	--	--	--	--	110	--	--	--
MAY											
03...	100	6	24	10	13	.6	2.5	95	10	12	.10
AUG											
11...	110	6	26	11	13	.6	1.8	104	8.0	14	.20

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982											
19...	--	--	--	12	--	<.010	.80	.030	1.5	1.50	2.3
JAN / 1983											
05...	30	160	35.6	6	--	<.010	.90	.030	.37	.40	1.3
MAR											
10...	--	--	--	6	.27	.030	.30	.020	.18	.20	.50
MAY											
03...	28	157	24.1	<1	.59	.010	.60	.010	.19	.20	.80
AUG											
11...	28	164	14.6	2	--	<.010	.20	.030	.17	.20	.40

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982										
19...	10	.070	--	--	--	--	--	--	--	--
JAN / 1983										
05...	5.8	.210	1	100	2	<1	4	<.1	<1	<1
MAR										
10...	2.2	.060	--	--	--	--	--	--	--	--
MAY										
03...	3.5	.090	--	--	--	--	--	--	--	--
AUG										
11...	1.8	.050	2	100	1	<1	2	<.1	<1	<1

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
OCT, 07	1000	36	210	25.0	JUN, 21	1120	81	210	28.5
DEC, 16	1220	156	244	22.0	JUL, 18	1050	51	240	28.0
FEB, 02	1230	45	299	23.5	SEP, 06	1436	30	252	29.5
APR, 08	1245	28	265	26.0					

K = non-ideal count

RIO GRANDE DE MANATI BASIN

50035000 RIO GRANDE DE MANATI AT CIALES, PR

LOCATION.--Lat 18°19'26", long 66°27'36", Hydrologic Unit 21010001, on left bank, 1.6 mi (2.6 km) upstream from Hwy 145 bridge, 0.8 mi (1.3 km) downstream from Quebrada Saliente, 0.9 mi (1.4 km) upstream from Quebrada Cojo Valés, and 1.2 mi (1.9 km) southeast of Ciales.

DRAINAGE AREA.--128 sq mi (332 sq km), excludes 6.0 sq mi (15.5 sq km), the runoff from which is diverted through Guineo and de Matrullas reservoirs.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1946 to September 1953, May 1956 to December 1957 (unpublished, available in files of Caribbean District Office and in the National Water Data Storage and Retrieval System, Washington, D.C.); February 1959 to September 1960 (monthly discharge measurements only); October 1960 to current year.

Equivalent record from January 1971 to December 1972 published as 50035200 Río Grande de Manatí at Highway 145 at Ciales at site 1.6 mi (2.6 km) downstream, drainage area 132 sq mi (342 sq km).

GAGE.--Water-stage recorder. Altitude of gage is 140 ft (42.7 m), from topographic map. Prior to Apr. 1, 1962, staff gage, read twice daily, at site 100 ft (30.5 m) upstream at same datum. January 1971 to December 1972 at site 1.6 mi (2.6 km) downstream at different datum.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--23 years (1961-83), 261 cu ft/s (7.392 cu m/s) 27.69 in/yr (703 mm/yr), 189,100 acre-ft/yr (233 cu hm/yr); median of yearly mean discharges, 246 cu ft/s (6.97 cu m/s), 178,000 acre-ft/yr (219 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 125,000 cu ft/s (3,540 cu m/s) Oct. 9, 1970, gage height, 24.0 ft (7.32 m), from floodmark, from rating curve extended above 3,000 cu ft/s (85.0 cu m/s) on basis of slope-area measurements of peak flow at gage heights 13.2 ft (4.02 m), 15.0 ft (4.57 m), 19.0 ft (5.79 m), and 24.0 ft (7.32 m), datum then in use; minimum daily, 24 cu ft/s (0.680 cu m/s) July 13-15, 1974.

EXTREMES OUTSIDE PERIOD OF RECORD.--Approximate gage heights of major floods, pointed out by local residents are as follows: August 1899, 50 ft (15.2 m), September 1928, 36 ft (11.0 m), and September 1932, 34 ft (10.4 m) at site 1.6 mi (2.6 km) upstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 7,000 cu ft/s (198 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)	Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
Mar. 12	1500	12,900 365	8.76 2.670	May 13	2045	25,000 708	11.88 3.621
Apr. 21	0300	*29,100 824	12.74 3.883	June 16	0845	7,680 217	6.89 2.100
May 11	2030	14,500 411	9.24 2.816				

Minimum discharge, 51 cu ft/s (1.444 cu m/s) Mar. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	163	65	385	322	92	69	65	188	180	132	76	71
2	112	62	228	260	90	67	64	156	163	142	89	71
3	115	57	180	220	89	66	63	185	157	147	95	74
4	305	56	158	195	88	65	64	203	173	162	71	68
5	238	54	144	176	88	61	65	209	153	160	67	67
6	130	57	127	170	87	67	65	151	147	149	67	126
7	127	68	116	165	85	65	63	129	140	136	65	290
8	173	60	107	154	82	64	60	418	133	127	64	135
9	103	74	102	156	86	63	56	323	129	116	67	94
10	83	98	134	150	85	59	57	202	123	110	62	71
11	76	105	230	139	79	54	56	1790	120	152	60	74
12	89	590	119	132	75	4850	56	1400	114	152	64	88
13	179	1420	106	129	75	998	58	3250	115	116	64	68
14	241	429	113	126	74	334	84	3500	118	108	64	63
15	187	333	360	434	75	183	178	980	112	105	62	60
16	130	167	483	182	76	134	75	590	1570	101	60	58
17	101	125	244	152	74	113	62	430	1300	106	96	60
18	103	99	174	138	73	102	395	850	1630	110	100	62
19	125	113	141	123	73	95	336	1100	587	98	69	93
20	97	96	199	122	74	90	1080	1050	351	93	63	66
21	92	218	271	116	119	85	8390	666	252	85	104	66
22	87	189	221	113	103	82	790	749	216	83	228	70
23	77	302	167	110	82	80	406	568	190	84	91	74
24	69	354	142	108	78	77	367	353	171	91	75	70
25	65	304	133	105	76	76	231	290	162	85	118	108
26	62	187	572	104	74	77	180	268	155	81	88	128
27	62	474	1580	102	72	74	150	244	153	80	113	73
28	61	752	804	95	71	83	138	215	164	77	99	76
29	130	500	527	93	---	77	467	206	146	79	82	88
30	78	633	346	92	---	71	382	209	139	83	77	65
31	73	---	307	92	---	68	---	183	---	77	71	---
TOTAL	3733	8041	8920	4775	2295	8449	14503	21055	9313	3427	2571	2577
MEAN	120	268	288	154	82.0	273	483	679	310	111	82.9	85.9
MAX	305	1420	1580	434	119	4850	8390	3500	1680	162	228	290
MIN	61	54	102	92	71	54	56	129	112	77	60	58
CFSM	.94	2.09	2.25	1.20	.64	2.13	3.77	5.31	2.42	.87	.65	.67
IN-	1.08	2.34	2.59	1.39	.67	2.46	4.21	6.12	2.71	1.00	.75	.75
AC-FT	7400	15950	17690	9470	4550	16760	28770	41760	18470	6800	5100	5110
CAL YR 1982	TOTAL	62990	MEAN 173	MAX 5520	MIN 48	CFSM 1.35	IN 18.31	AC-FT 124900				
WTR YR 1983	TOTAL	89659	MEAN 246	MAX 8390	MIN 54	CFSM 1.92	IN 26.06	AC-FT 177800				

RIO GRANDE DE MANATI BASIN

50035000 RIO GRANDE DE MANATI AT CIALES, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS 1979 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
OCT, 06	0945	144	190	25.0	MAY, 04	1249	185	207	26.5
NOV, 15	1435	274	173	26.0	JUN, 21	1400	251	186	30.0
DEC, 20	1225	190	260	23.0	JUL, 18	1305	112	222	31.0
JAN, 05	1335	169	245	24.0	AUG, 10	1105	63	246	28.5
FEB, 01	1200	90	300	25.0	SEP, 07	1438	95	221	29.0
APR, 07	1353	64	276	27.5					

RIO GRANDE DE MANATI BASIN

50035500 RIO GRANDE DE MANATI AT HIGHWAY 149 AT CIALES, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°20'46", long 66°28'06", at bridge on Highway 149, about 800 ft (244 m) upstream from confluence with Río Cialitos, 0.5 mi (0.8 km) north of Ciales plaza.

DRAINAGE AREA.--136 sq mi (352 sq km) this excludes the 6 sq mi (15.5 sq km) upstream from Lago El Guineo and Lago de Matrullas, flow from which is diverted to Río Jacaguas.

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV / 1982											
12...	1145	E120	217	7.7	25.0	57	6.0	73	14	45000	43000
JAN / 1983											
24...	1340	105	252	8.1	24.0	3.6	8.8	105	39	190	K30
MAR											
11...	1050	60	260	8.3	26.5	2.1	8.4	105	<10	K30	K180
MAY											
23...	0900	E560	161	7.4	24.0	26	8.4	100	<10	K1900	4700
AUG											
30...	1330	65	240	8.2	29.5	<1.0	8.0	105	16	420	K90

DATE	HARD- NESS (MG/L CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV / 1982											
12...	--	--	--	--	--	--	--	79	--	--	--
JAN / 1983											
24...	96	0	23	9.3	13	.6	1.8	98	10	11	.10
MAR											
11...	--	--	--	--	--	--	--	100	--	--	--
MAY											
23...	65	6	16	6.0	8.9	.5	1.3	59	7.4	9.5	<.10
AUG											
30...	93	4	23	8.7	12	.6	1.8	89	9.3	13	.10

DATE	SILICA, DIS- SOLVED (MG/L SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982											
12...	--	--	--	107	.58	.020	.60	.050	.95	1.00	1.6
JAN / 1983											
24...	27	154	43.6	2	.59	.010	.60	.040	--	<.10	--
MAR											
11...	--	--	--	13	--	<.010	.20	.020	.28	.30	.50
MAY											
23...	24	109	--	26	.59	.010	.60	.020	.38	.40	1.0
AUG											
30...	28	149	26.2	6	--	<.010	.40	<.010	--	.30	.70

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, RECOV- ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982										
12...	7.1	.140	--	--	--	--	--	--	--	--
JAN / 1983										
24...	--	.070	1	100	1	<1	15	.1	<1	<1
MAR										
11...	2.2	.060	--	--	--	--	--	--	--	--
MAY										
23...	4.4	.060	--	--	--	--	--	--	--	--
AUG										
30...	3.1	.070	1	100	1	<1	5	<.1	<1	<1

E = estimate

K = non-ideal count

RIO GRANDE DE MANATI BASIN

50035950 RIO CIALITOS AT HIGHWAY 649 AT CIALES, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°20'18", long 66°28'28", 100 ft (30 m) upstream from bridge on Highway 649, 0.7 mi (1.1 km) upstream from mouth, and about 0.4 mi (0.6 km) west of Ciales plaza.

DRAINAGE AREA.--17.0 sq mi (44.0 sq km).

PERIOD OF RECORD.--Water years 1969-71, 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	
NOV / 1982												
12...	1030	25	208	7.8	23.0	45	8.3	97	15	K8200	9500	
JAN / 1983												
24...	1125	20	248	8.2	21.5	1.0	9.2	104	53	840	1500	
MAR												
11...	1405	8.9	265	8.4	26.0	1.4	8.5	106	<10	K37	360	
MAY												
23...	1045	69	187	7.9	24.0	8.0	8.2	98	<10	K1100	3600	
AUG												
30...	1040	11	243	8.2	26.0	6.0	8.3	103	11	K860	840	
DATE		HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (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)
NOV / 1982												
12...	--	--	--	--	--	--	--	--	79	--	--	--
JAN / 1983												
24...	95	0	27	6.8	12	.6	1.2	98	7.0	11	.10	
MAR												
11...	--	--	--	--	--	--	--	--	110	--	--	--
MAY												
23...	75	3	22	4.8	9.0	.5	1.6	72	15	9.2	<.10	
AUG												
30...	100	5	30	6.6	11	.5	1.6	97	9.8	12	.20	
DATE		SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982												
12...	--	--	--	--	45	.98	.020	1.0	.030	.77	.80	1.8
JAN / 1983												
24...	31	155	8.4	2	--	<.010	.90	.020	.28	.30	1.2	
MAR												
11...	--	--	--	--	14	--	<.010	.60	.020	.28	.30	.90
MAY												
23...	26	131	24.4	5	--	<.010	.70	<.010	--	.40	1.1	
AUG												
30...	29	158	4.7	10	--	<.010	.80	<.010	--	.50	1.3	
DATE		NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	
NOV / 1982												
12...	8.0	.100	--	--	--	--	--	--	--	--	--	
JAN / 1983												
24...	5.3	.190	2	100	1	<1	12	.1	<1	<1		
MAR												
11...	4.0	.080	--	--	--	--	--	--	--	--		
MAY												
23...	4.9	.070	--	--	--	--	--	--	--	--		
AUG												
30...	5.8	.080	1	<100	1	<1	5	<.1	<1	<1		

K = non-ideal count

RIO GRANDE DE MANATI BASIN

50038100 RIO GRANDE DE MANATI AT HIGHWAY 2 NEAR MANATI, PR

LOCATION.--Lat 18°25'52", long 66°31'37", Hydrologic Unit 21010002, at bridge on Highway 2, and 2.3 mi (3.7 km) west of Manatí.

DRAINAGE AREA.--197 sq mi (510 sq km), approximately, of which about 38 sq mi (98 sq km) is partly or entirely noncontributing, excludes 6.0 sq mi (15.5 sq km) upstream from Lago El Guineo and Lago de Matrullas.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1963-68 (annual maximum discharge only), February 1970 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 14 ft (4.3 m), from topographic map. Prior to 1968 crest-stage gage at same site and datum 3.57 ft (1.088 m) lower.

REMARKS.--Records good.

AVERAGE DISCHARGE.--13 years (1971-83), 375 cu ft/s (10.62 cu m/s), 25.85 in/yr (657 mm/yr), 271,700 acre-ft/yr (335 cu hm/yr); median of yearly mean discharges, 335 cu ft/s (9.49 cu m/s), 243,000 acre-ft/yr (300 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 119,000 cu ft/s (3,370 cu m/s) Oct. 9, 1970, gage height, 33.3 ft (10.15 m) from rating curve extended above 15,000 cu ft/s (425 cu m/s) on basis of slope-area measurement of peak flow; minimum, 50 cu ft/s (1.42 cu m/s) Sept. 4, 1977, Aug. 12-14, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Approximate gage heights to gage datum of major floods, pointed out by local residents, are as follows: Sept. 13, 1928, 36.6 ft (11.16 m), Sept. 27, 1932, 36.3 ft (11.06 m), and Aug. 4, 1945, 34.3 ft (10.45 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 9,000 cu ft/s (255 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)	Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
Mar. 12	1915	13,900 394	28.70 8.748	May 14	0030	20,800 589	29.52 8.998
Apr. 21	0630	*39,600 1,121	30.84 9.400				

Minimum discharge, 86 cu ft/s (2.436 cu m/s) Sept. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	245	116	597	427	143	104	106	290	309	181	116	101
2	211	111	396	359	144	102	103	236	283	183	134	94
3	200	106	332	307	142	102	102	238	267	191	151	102
4	261	103	294	276	144	101	100	293	267	208	129	97
5	508	101	278	262	145	101	100	295	248	226	115	91
6	280	103	255	247	142	103	102	241	241	204	113	90
7	200	115	237	233	132	106	99	203	235	190	106	267
8	276	110	224	224	135	101	96	253	223	180	103	278
9	203	151	213	219	137	101	92	683	215	164	108	170
10	169	133	210	215	136	99	90	266	207	155	106	121
11	152	193	331	209	133	95	90	375	205	187	100	114
12	144	295	233	204	128	4020	92	2800	209	249	115	129
13	231	2040	209	195	126	2060	92	1910	195	170	119	113
14	267	743	322	187	123	492	111	5650	194	152	105	101
15	229	510	343	444	123	304	195	1310	189	146	102	101
16	284	349	747	251	123	229	134	729	1290	140	99	101
17	179	283	395	196	119	189	108	522	902	140	106	98
18	158	241	303	178	118	169	304	1090	2090	160	176	96
19	241	240	259	165	117	157	288	1530	765	146	123	135
20	169	307	292	168	117	148	609	1470	456	133	102	110
21	161	311	413	160	143	141	12200	912	339	131	111	108
22	148	486	366	155	155	135	1260	737	289	125	300	114
23	139	415	299	152	126	130	612	894	260	123	168	116
24	128	478	264	154	118	127	506	512	238	127	125	114
25	120	682	253	150	115	122	365	552	224	130	147	121
26	114	370	586	149	114	122	287	475	211	122	149	211
27	112	566	2000	147	110	121	247	467	208	117	154	129
28	126	1000	1130	144	107	123	220	371	216	117	281	126
29	154	700	749	144	---	125	237	348	199	116	150	136
30	135	696	511	143	---	114	714	380	189	128	118	126
31	122	---	404	143	---	109	---	383	---	121	109	---
TOTAL	6066	12054	13445	6611	3621	10252	19661	26415	11363	4872	4140	3310
MEAN	196	402	434	213	129	331	655	852	379	157	134	127
MAX	508	2040	2000	444	155	4020	12200	5650	2090	249	300	278
MIN	112	101	209	143	107	95	90	203	189	116	99	90
CFSM	1.00	2.04	2.20	1.03	.66	1.68	3.33	4.33	1.92	.80	.68	.65
IN.	1.15	2.28	2.54	1.25	.68	1.94	3.71	4.99	2.15	.92	.78	.72
AC-FT	12030	23910	26670	13110	7180	20330	39000	52390	22540	9660	8210	7560
CAL YR 1982	TOTAL	94365	MEAN 259	MAX 7300	MIN 80	CFSM 1.32	IN 17.82	AC-FT 187200				
WTR YR 1983	TOTAL	122310	MEAN 335	MAX 12200	MIN 90	CFSM 1.70	IN 23.10	AC-FT 242600				

RIO GRANDE DE MANATI BASIN

50038100 RIO GRANDE DE MANATI AT HIGHWAY 2 NEAR MANATI, PR--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, O.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)
OCT / 1982												
08...	1345	324	250	7.7	31.0	30	8.0	109	48	<10	830	99
NOV												
30...	1400	432	235	7.2	25.0	60	7.4	90	12	4100	K620	94
FEB / 1983												
02...	1310	145	310	7.5	25.0	4.4	9.2	112	16	360	3200	140
APR												
11...	1115	90	325	7.9	26.0	8.0	8.4	104	20	K470	390	140
JUN												
10...	1245	207	295	8.0	29.0	2.1	8.3	108	33	510	K87	130
AUG												
04...	1355	126	280	7.7	30.0	3.3	7.8	104	22	--	--	120

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY FIELD (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, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
OCT / 1982												
08...	0	29	6.4	10	.5	1.2	110	7.0	11	.10	20	160
NOV												
30...	14	27	6.4	10	.5	2.1	80	11	9.5	<.10	23	162
FEB / 1983												
02...	6	40	3.6	13	.5	1.4	130	8.7	11	<.10	22	179
APR												
11...	0	43	7.3	11	.4	1.6	140	8.0	14	.10	18	190
JUN												
10...	0	38	8.1	12	.5	1.9	130	9.0	13	.20	21	174
AUG												
04...	5	37	7.8	11	.4	1.9	120	8.6	13	.10	20	201

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS/ PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS P04)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHOPHOS- PHATE, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHOPHOS- PHATE, DIS- SOLVED (MG/L AS P04)
OCT / 1982												
08...	151	140	16	.72	.050	.06	.70	.150	.46	.080	.090	.28
NOV												
30...	137	211	80	.97	.080	.10	.80	.200	.61	.090	.090	.28
FEB / 1983												
02...	183	70.1	5	.72	.060	.08	.20	.130	.40	.080	.070	.21
APR												
11...	183	45.9	14	.48	<.010	--	.40	.100	.31	.060	.070	.21
JUN												
10...	182	97.2	6	.31	<.010	--	.40	1.30	4.0	.050	.040	.12
AUG												
04...	172	68.4	18	--	--	--	--	--	--	--	--	--

E = estimate
K = non-ideal count

RIO GRANDE DE MANATI BASIN

50038100 RIO GRANDE DE MANATI AT HIGHWAY 2 NEAR MANATI, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)
OCT / 1982											
08...	30	2	49	<1	<1	<1	<3	11	<3	<1	<4
NOV											
30...	--	--	--	--	--	--	--	--	--	--	--
FEB / 1983											
02...	10	1	49	<1	<1	1	<3	6	12	2	<4
APR											
11...	--	--	--	--	--	--	--	--	--	--	--
JUN											
10...	20	1	56	1	2	<1	3	10	15	<1	4
AUG											
04...	20	1	83	<1	<1	<1	<3	2	10	<1	7

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT / 1982											
08...	17	<.1	<10	1	<1	<1	140	6.0	4	62	54
NOV											
30...	--	--	--	--	--	--	--	--	--	99	129
FEB / 1983											
02...	23	.2	<10	2	<1	<1	190	<6.0	16	17	6.7
APR											
11...	--	--	--	--	--	--	--	--	--	58	14
JUN											
10...	26	.1	10	<1	<1	<1	180	10	5	23	13
AUG											
04...	29	<.1	<10	1	<1	<1	180	9.0	<3	23	7.8

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
NOV, 05	0915	101	340	25.0	MAY, 03	1127	209	261	26.5
JAN, 05	1010	259	296	24.0	JUL, 07	1049	189	266	27.5
MAR, 09	1005	101	325	25.0	AUG, 25	0934	116	--	27.5

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)	DI- ELDRIN, TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)
JUN / 1983										
10...	1245	<.10	<.01	<.10	<.01	<.01	<.01	.01	<.01	<.01

DATE	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR, EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA- THION, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL (UG/L)	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)
JUN / 1983										
10...	<.01	.01	<.01	<.01	<.01	.01	<.01	.01	.01	<.01

DATE	PARA- THION, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR, TOTAL (UG/L)	PER- THANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JUN / 1983									
10...	.01	<.10	<.10	<1	.01	<.01	<.01	<.01	<.01

RIO GRANDE DE MANATI BASIN

50038100 RIO GRANDE DE MANATI AT HIGHWAY 2 NEAR MANATI, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT / 1982				
08...	1345	324	62	85
NOV				
30...	1350	472	99	69
FEB / 1983				
02...	1310	145	17	65
APR				
11...	1115	90	58	97
JUN				
10...	1245	207	23	48
AUG				
04...	1355	126	23	61

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM
AUG / 1983			
04...	1200	E126	2

E = estimate

LAGUNA TORTUGUERO BASIN

50038200 LAGUNA TORTUGUERO OUTLET NEAR VEGA BAJA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°28'29", long 66°26'50", at bridge on Highway 686, 4.2 mi (6.8 km) northeast of Manatí, and 4.4 mi (7.1 km) northwest of Vega Baja plaza.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--Water years 1964-66, 1969-71, 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	ALKA- LITY (MG/L AS CAC03)
NOV / 1982											
05...	1515	22	1680	7.9	29.0	8.1	106	65	K10	K82	130
FEB / 1983											
02...	0940	14	1380	7.7	25.0	7.2	87	48	K3	89	150
MAR											
14...	1025	14	2900	8.0	27.0	7.6	96	76	K13	550	160
MAY											
09...	1500	19	1390	8.0	31.5	9.4	129	110	20	600	260
AUG											
04...	1035	13	2000	8.0	29.5	8.3	116	74	K19	K10	93

DATE	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)
NOV / 1982										
05...	6	.63	.020	.70	.340	.86	1.20	1.9	8.4	.030
FEB / 1983										
02...	4	.63	.020	.70	.730	.57	1.30	2.0	8.9	.010
MAR										
14...	<1	.98	.020	1.0	.640	.26	.90	1.9	8.4	<.010
MAY										
09...	8	.58	.020	.60	.030	.82	.90	1.5	6.6	.010
AUG										
04...	2	.48	.020	.50	.120	1.2	1.30	1.8	8.0	.030

K = non-ideal count

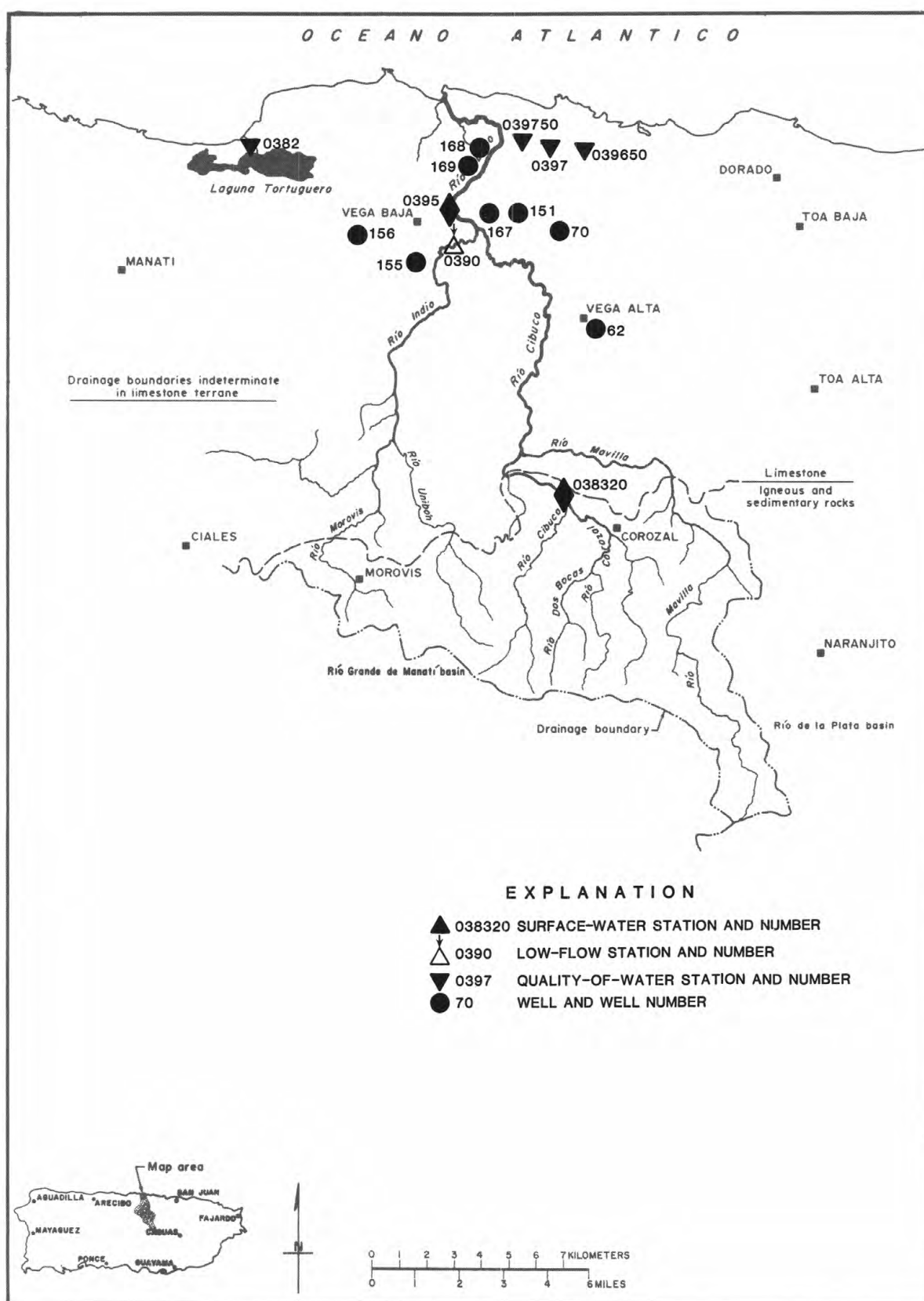


Figure 15.--Río Cibuco basin.

RIO CIBUCO BASIN

50038320 RIO CIBUCO BELOW COROZAL, PR

LOCATION.--Lat 18°21'13", long 66°20'07", Hydrologic Unit 21010001, on right bank, 150 ft (46 m) downstream from Rio Corozal, and 1.4 mi (2.3 km) northwest of Corozal.

DRAINAGE AREA.--15.1 sq mi (39.1 sq km).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Altitude of gage is 195 ft (59.4 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--14 years (1970-83), 29.3 cu ft/s (0.830 cu m/s), 26.35 in/yr (669 mm/yr), 21,230 acre-ft/yr (26.2 cu hm/yr); median of yearly mean discharges, 31 cu ft/s (0.88 cu m/s), 22,500 acre-ft/yr (28 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,600 cu ft/s (385 cu m/s) Nov. 7, 1979, gage height, 19.80 ft (6.025 m), from rating curve extended above 100 cu ft/s (2.83 cu m/s) on basis of float and slope-area measurements of peak flow; minimum daily discharge, 1.3 cu ft/s (0.037 cu m/s) July 24-26, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 cu ft/s (70.8 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
Apr. 21	0100	*2,800 79.3	11.21 3.417

Minimum discharge, 5.4 cu ft/s (0.153 cu m/s) Apr. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	32	9.5	21	45	13	7.6	12	16	24	14	10	11		
2	26	9.4	19	35	11	7.6	11	15	23	18	53	12		
3	41	9.1	20	32	11	7.8	11	15	22	14	17	11		
4	23	9.4	19	31	11	7.4	12	15	21	34	14	11		
5	16	9.3	18	31	12	7.2	12	16	20	24	10	11		
6	12	8.8	17	33	10	7.9	10	15	19	20	9.8	26		
7	11	8.7	16	23	10	8.3	9.0	15	19	16	9.0	42		
8	11	8.6	16	25	10	7.7	8.0	29	19	14	9.8	19		
9	10	10	15	25	11	7.3	7.3	18	19	14	9.9	13		
10	9.5	63	15	22	10	7.1	7.2	14	18	14	8.7	12		
11	9.7	25	15	21	9.9	7.4	7.3	28	18	11	9.3	14		
12	16	190	14	22	10	373	6.6	39	17	11	101	12		
13	13	104	14	21	10	47	6.2	176	17	11	27	10		
14	11	40	15	19	9.4	27	6.2	86	17	10	20	9.9		
15	9.8	27	68	20	9.6	16	6.2	45	17	10	13	12		
16	9.1	22	26	13	9.4	13	6.0	29	17	17	13	11		
17	8.7	20	20	13	9.3	12	7.2	25	27	14	45	10		
18	16	26	17	17	9.1	12	21	181	23	15	23	112		
19	14	20	16	20	8.8	12	11	147	17	13	14	34		
20	12	22	19	16	9.2	14	31	130	16	11	12	22		
21	11	23	43	16	17	15	492	79	15	11	54	59		
22	10	21	20	15	11	13	65	90	15	10	33	43		
23	9.5	22	19	15	10	11	48	56	14	12	17	25		
24	9.0	17	18	15	9.4	13	66	43	14	15	20	22		
25	8.9	18	25	15	9.3	14	30	35	15	11	25	17		
26	10	25	274	15	8.7	14	24	109	14	10	19	15		
27	9.0	30	133	14	8.0	14	21	47	15	10	20	13		
28	8.9	74	94	13	8.2	14	20	33	16	9.9	17	13		
29	11	43	60	13	---	14	18	23	13	11	13	13		
30	9.9	28	44	13	---	14	17	28	13	10	12	12		
31	11	---	49	13	---	13	---	26	---	9.3	12	---		
TOTAL	424.0	942.8	1179	656	235.3	758.8	1059.2	1628	534	424.2	675.5	646.9		
MEAN	13.7	31.4	38.0	21.2	10.2	24.5	35.3	52.5	17.8	13.7	21.8	21.6		
MAX	41	190	274	45	17	373	492	181	27	34	101	112		
MIN	8.7	8.6	14	13	8.0	7.1	6.0	14	13	9.3	8.7	9.9		
CFSM	.91	2.08	2.52	1.40	.68	1.62	2.34	3.48	1.18	.91	1.44	1.43		
IN.	1.04	2.32	2.90	1.62	.70	1.87	2.61	4.01	1.32	1.04	1.66	1.59		
AC-FT	841	1870	2340	1300	566	1510	2100	3230	1060	841	1340	1280		
CAL YR 1982	TOTAL	9221.7	MEAN	25.3	MAX	531	MIN	6.1	CFSM	1.68	IN	22.72	AC-FT	18290
WTR YR 1983	TOTAL	9213.7	MEAN	25.2	MAX	492	MIN	6.0	CFSM	1.67	IN	22.70	AC-FT	18280

RIO CIBUCO BASIN

50038320 RIO CIBUCO BELOW COROZAL, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	
NOV / 1982												
22...	1105	21	311	7.8	23.0	14	8.5	102	47	K5200	2300	
JAN / 1983												
07...	1135	28	338	7.9	22.0	6.5	7.8	90	13	2000	2100	
MAR												
09...	1135	7.8	380	7.6	24.0	1.2	7.6	91	<10	K1100	490	
MAY												
09...	1125	18	288	7.8	26.0	3.7	74.0	925	21	56000	K12000	
AUG												
10...	1125	9.2	348	8.0	27.5	4.1	6.6	84	22	2500	830	
DATE		HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV / 1982												
22...	--	--	--	--	--	--	--	--	100	--	--	--
JAN / 1983												
07...	130	0	31	12	19	.8	2.5	130	14	21	.10	
MAR												
09...	--	--	--	--	--	--	--	130	--	--	--	
MAY												
09...	120	0	30	11	18	.7	3.9	120	19	24	.20	
AUG												
10...	120	0	30	10	18	.8	2.7	160	15	25	.20	
DATE		SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982												
22...	--	--	--	--	19	.87	.230	1.1	.530	.47	1.00	2.1
JAN / 1983												
07...	32	210	16.0	8	1.0	.100	1.1	.780	.72	1.50	2.6	
MAR												
09...	--	--	--	8	.55	.150	.70	1.80	.00	1.80	2.5	
MAY												
09...	31	209	10.2	<1	.99	.610	1.6	1.70	.80	2.50	4.1	
AUG												
10...	31	228	5.7	13	.85	.250	1.1	1.10	.60	1.70	2.8	
DATE		NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	
NOV / 1982												
22...	9.3	.330	--	--	--	--	--	--	--	--	--	
JAN / 1983												
07...	12	.500	1	100	2	<1	6	<.1	<1	<1	<1	
MAR												
09...	11	.660	--	--	--	--	--	--	--	--	--	
MAY												
09...	18	1.00	--	--	--	--	--	--	--	--	--	
AUG												
10...	12	.390	1	100	2	49	7	<.1	<1	<1	<1	
DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)			
OCT, 07	1245	12	361	27.0	JUN, 20	1320	16	305	30.0			
DEC, 16	0930	27	300	21.5	JUL, 03	1005	14	359	26.5			
FEB, 02	0900	12	347	21.0	SEP, 13	1052	11	313	26.0			
APR, 08	0925	7.9	338	23.0								

K = non-ideal count

RIO CIBUCO BASIN

50039500 RIO CIBUCO AT VEGA BAJA, PR

LOCATION.--Lat 18°26'53", long 66°22'29", Hydrologic Unit 21010002, 0.6 mi (1.0 km) downstream from Río Indio, and 0.8 mi (1.3 km) east of Vega Baja.

DRAINAGE AREA.--99.1 sq mi (256.7 sq km), of which 25.4 sq mi (65.8 sq km), does not contribute directly to surface runoff.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 7.79 ft (2.374 m) above mean sea level.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--10 years (1974-83), 125 cu ft/s (3.540 cu m/s), 17.13 in/yr (435 mm/yr), 90,560 acre-ft/yr (112 cu hm/yr); median of yearly mean discharges, 116 cu ft/s (3.29 cu m/s), 84,000 acre-ft/yr (104 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,300 cu ft/s (858 cu m/s) Dec. 13, 1981, gage height, 18.84 ft (5.742 m), from rating curve extended above 3,000 cu ft/s (85 cu m/s) on the basis of indirect measurements; minimum, 6.1 cu ft/s (0.173 cu m/s) July 24, 25, 1977, gage height, 5.04 ft (1.536 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 11, 1965 reached a stage of 26.2 ft (7.99 m), datum unknown, discharge about 28,000 cu ft/s (793 cu m/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,200 cu ft/s (90.6 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
May 13	2245	*4,640 131	16.29 4.965

Minimum discharge, 20 cu ft/s (0.566 cu m/s) April 9, 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	42	130	167	49	33	31	63	107	61	42	51
2	120	42	103	148	52	33	29	66	99	71	121	47
3	110	37	110	132	50	34	29	62	96	65	92	56
4	237	35	99	121	49	35	29	71	92	66	47	49
5	190	35	94	113	49	34	27	90	89	110	41	48
6	83	41	86	115	47	34	40	104	86	76	35	46
7	65	70	83	113	44	36	36	63	84	63	31	177
8	55	45	79	98	43	34	29	84	82	60	29	196
9	48	42	76	96	43	31	22	125	84	51	34	93
10	45	80	72	93	43	30	21	88	77	50	30	65
11	40	146	70	85	41	28	22	62	73	47	28	73
12	39	175	68	79	39	481	25	289	78	46	136	69
13	92	601	66	75	37	242	24	347	97	47	276	57
14	49	227	133	72	36	102	24	1110	110	44	92	50
15	42	126	193	84	38	64	26	294	99	42	76	61
16	39	101	170	73	38	52	26	192	91	46	68	71
17	42	89	110	67	37	43	29	156	76	82	108	83
18	55	80	89	66	35	39	63	422	110	82	148	83
19	115	91	77	62	35	37	60	399	69	72	74	198
20	65	71	94	62	35	35	67	536	65	55	57	79
21	63	93	229	62	47	33	1730	273	64	43	99	162
22	60	165	148	60	52	31	379	292	59	46	250	226
23	53	91	108	53	40	35	539	282	57	45	103	146
24	46	77	99	58	37	41	256	178	58	64	78	112
25	41	90	111	55	35	39	141	224	59	52	90	90
26	39	99	461	54	34	41	118	336	58	43	121	73
27	47	135	878	53	32	39	33	283	61	41	81	64
28	34	256	362	51	31	43	79	164	74	43	90	60
29	67	215	294	50	---	41	67	133	58	44	67	57
30	46	134	182	50	---	34	55	125	56	56	58	53
31	47	---	168	49	---	33	---	124	---	53	53	---
TOTAL	2134	3531	5042	2521	1148	1867	4166	7547	2368	1776	2655	2695
MEAN	68.8	113	163	81.3	41.0	60.2	139	243	78.9	57.3	85.6	89.8
MAX	237	601	878	167	52	481	1730	1110	110	110	276	226
MIN	34	35	66	49	31	28	21	62	56	41	28	46
CFSM	.69	1.19	1.65	.82	.41	.61	1.40	2.45	.80	.58	.86	.91
IN.	.80	1.33	1.89	.95	.43	.70	1.56	2.83	.89	.67	1.00	1.01
AC-FT	4230	7000	10000	5000	2280	3700	3260	14970	4700	3520	5270	5350
CAL YR 1982	TOTAL	36773	MEAN 101	MAX 1180	MIN 30	CFSM 1.02	IN 13.80	AC-FT 72940				
WTR YR 1983	TOTAL	37450	MEAN 103	MAX 1780	MIN 21	CFSM 1.04	IN 14.06	AC-FT 74280				

50039500 RIO CIBUCO AT VEGA BAJA, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	
NOV / 1982												
05...	1130	34	464	7.5	25.5	2.5	4.6	56	35	2300	220	
JAN / 1983												
20...	1155	62	414	7.5	24.0	5.4	5.6	66	35	4100	490	
MAR												
14...	1410	87	353	7.6	26.0	23	6.0	74	32	2300	310	
MAY												
02...	1350	67	370	7.8	26.5	16	5.8	72	15	46000	2000	
AUG												
04...	1415	46	359	7.8	28.5	1.4	5.6	72	20	K1800	610	
		HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (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)
NOV / 1982												
05...	--	--	--	--	--	--	--	--	170	--	--	--
JAN / 1983												
20...	170	12	54	9.4	16	.6	2.7	162	14	22	.10	
MAR												
14...	--	--	--	--	--	--	--	--	130	--	--	--
MAY												
02...	190	17	60	9.0	15	.5	3.2	170	19	23	.10	
AUG												
04...	160	14	52	8.3	14	.5	3.5	150	15	20	.20	
		SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982												
05...	--	--	--	--	8	1.5	.040	1.5	.020	.28	.30	1.8
JAN / 1983												
20...	21	236	39.6	2	1.5	.060	1.6	.090	.61	.70	2.3	
MAR												
14...	--	--	--	--	26	1.8	.050	1.8	.170	.53	.70	2.5
MAY												
02...	20	251	45.1	7	1.1	.080	1.2	.110	.29	.40	1.6	
AUG												
04...	19	222	27.6	33	1.4	.080	1.5	.120	.58	.70	2.2	
		NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	
NOV / 1982												
05...	8.0	.320	--	--	--	--	--	--	--	--	--	--
JAN / 1983												
20...	10	.190	3	<100	1	1	10	.8	<1	<1	<1	
MAR												
14...	11	.160	--	--	--	--	--	--	--	--	--	--
MAY												
02...	7.1	.190	--	--	--	--	--	--	--	--	--	--
AUG												
04...	9.7	.220	2	--	1	--	7	<.1	<1	<1	<1	
DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)			
OCT, 08	1220	53	456	27.0	MAR, 09	1345	31	436	26.0			
NOV, 17	1030	97	408	24.0	APR, 08	0925	7.9	338	23.0			
DEC, 20	0910	84	435	22.5	JUN, 20	1100	59	355	28.5			
JAN, 03	1020	130	427	23.0	JUL, 07	1323	65	403	27.0			
FEB, 01	0925	49	418	24.0	SEP, 06	1340	45	418	28.5			
FEB, 16	0910	38	427	23.5								

K = non-ideal count

RIO CIBUCO BASIN

50039650 DRAINAGE DITCH BELOW WARNER LAMBERT LABORATORY NR SABANA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°27'17", long 66°21'09", 0.3 mile (0.5 km) northwest of Warner Lambert Laboratory, 0.6 mile (1.0 km) south of Sabana, and 1.1 miles (1.8 km) above confluence with Río Cibuco.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--Water years 1982 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
NOV / 1982										
16...	1115	4.9	419	6.5	26.0	16	.5	6	28	K7800
FEB / 1983										
07...	1315	.00	500	6.7	25.0	7.0	.7	8	100	6500
MAR										
24...	1000	.00	730	7.1	25.5	<1.0	.0	0	39	730
MAY										
25...	1100	E19	195	6.8	29.0	4.8	.0	0	47	K170
AUG										
24...	1010	.00	538	7.0	26.5	6.0	.0	0	58	4000

DATE	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)
NOV / 1982										
16...	4100	--	--	--	--	--	--	--	95	--
FEB / 1983										
07...	320	130	9	40	7.0	42	1.7	2.4	120	7.0
MAR										
24...	3200	--	--	--	--	--	--	--	150	--
MAY										
25...	540	69	5	21	4.0	13	.7	2.4	64	12
AUG										
24...	570	160	40	49	8.0	42	1.5	2.4	116	14

DATE	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 DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDEd (MG/L)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)
NOV / 1982										
16...	--	--	--	--	--	30	.020	<.10	.110	.79
FEB / 1983										
07...	71	<.10	10	251	.00	13	.010	<.10	<.010	--
MAR										
24...	--	--	--	--	--	5	<.010	<.10	.140	.46
MAY										
25...	24	<.10	11	126	--	7	.010	<.10	.070	.93
AUG										
24...	89	.10	9.7	284	.00	14	<.010	<.10	.110	.99

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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982										
16...	.90	.030	--	--	--	--	--	--	--	--
FEB / 1983										
07...	1.20	.180	2	100	1	7	14	.7	<1	<1
MAR										
24...	.60	.180	--	--	--	--	--	--	--	--
MAY										
25...	1.00	.150	--	--	--	--	--	--	--	--
AUG										
24...	1.10	.130	2	--	1	<1	10	<.1	<1	<1

K = non-ideal count
E = estimate

RIO CIBUCO BASIN

50039700 DRAINAGE DITCH AT RIO CIBUCO BELOW CENTRAL SAN VICENTE, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°27'44", long 66°21'52", 60 ft (18 m), above confluence with Río Cibuco, 984 ft (300 m) east of Central San Vicente, and 0.7 mi (1.2 km) west of Sabana.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--Water years 1982 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI KF AGAR (COLS. PER 100 ML)
NOV / 1982											
16...	1315	22	737	6.9	26.5	16	3.0	37	23	K8300	2900
FEB / 1983											
04...	1420	3.8	765	7.0	24.0	3.5	1.1	13	46	4600	280
MAR											
24...	1200	3.4	1200	7.4	27.0	2.7	3.0	38	34	270	700
MAY											
23...	1345	E31	304	7.2	29.0	24	2.4	32	24	2500	3800
AUG											
24...	1220	6.0	791	7.3	28.0	3.5	2.2	28	36	240	770

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV / 1982											
16...	--	--	--	--	--	--	--	130	--	--	--
FEB / 1983											
04...	240	62	77	12	50	1.5	2.2	180	15	120	.10
MAR											
24...	--	--	--	--	--	--	--	170	--	--	--
MAY											
23...	140	30	45	6.6	24	.9	2.8	110	21	44	.10
AUG											
24...	240	75	77	12	61	1.8	2.4	167	19	130	.10

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN+AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982											
16...	--	--	--	44	.67	.230	.90	.490	.91	1.40	2.3
FEB / 1983											
04...	12	396	4.0	14	--	<.010	<.10	.130	.27	.40	--
MAR											
24...	--	--	--	16	.18	.020	.20	.180	.22	.40	.60
MAY											
23...	14	223	--	26	.15	.050	.20	.080	1.1	1.20	1.4
AUG											
24...	14	416	6.7	<1	--	<.010	<.10	.060	.54	.60	--

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982										
16...	10	.090	--	--	--	--	--	--	--	--
FEB / 1983										
04...	--	.110	2	100	1	7	7	.4	<1	<1
MAR										
24...	2.7	.060	--	--	--	--	--	--	--	--
MAY										
23...	6.2	.100	--	--	--	--	--	--	--	--
AUG										
24...	--	.100	2	--	1	<1	5	<.1	<1	<1

K = non-ideal count
E = estimate

RIO CIBUCO BASIN

50039750 RIO CIBUCO BELOW CENTRAL SAN VICENTE, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°27'47", long 66°21'53", at bridge on Highway 688, 1,000 ft (305 m) northeast of Central San Vicente, 0.8 mi (1.3 km) west of Sabana, and 1.3 mi (2.1 km) northwest of Warner Lambert Laboratory.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--Water years 1982 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)
NOV , 1982												
16...	1435	127	465	7.4	25.0	18	7.3	89	10	2700	670	--
FEB , 1983												
04...	1300	45	454	7.5	24.0	8.2	7.4	88	24	K1300	440	180
MAR												
24...	1300	28	470	7.8	27.5	1.1	7.0	89	15	510	590	--
MAY												
23...	1300	398	281	7.8	27.0	110	5.6	70	10	4800	K10000	150
JUN												
06...	1050	91	442	8.0	27.5	--	6.4	81	--	--	--	--
AUG												
24...	1420	69	460	7.8	29.0	9.7	7.0	91	28	2900	550	190

DATE	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LILITY FIELD (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 SI02)
NOV , 1982											
16...	--	--	--	--	--	--	140	--	--	--	--
FEB , 1983											
04...	24	58	9.5	20	.7	2.3	160	14	31	.10	17
MAR											
24...	--	--	--	--	--	--	180	--	--	--	--
MAY											
23...	20	49	6.6	15	.6	3.1	130	18	24	.10	15
JUN											
06...	--	--	--	--	--	--	180	--	--	--	--
AUG											
24...	26	62	9.3	21	.7	3.0	167	18	36	.20	20

DATE	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)
NOV , 1982											
16...	--	--	30	1.0	.070	1.1	.150	.45	.60	1.7	7.5
FEB , 1983											
04...	248	30.2	9	1.3	.040	1.3	.040	.66	.70	2.0	8.9
MAR											
24...	--	--	10	1.4	.120	1.5	.070	.13	.20	1.7	7.5
MAY											
23...	209	224	100	.65	.050	.70	.100	.80	.90	1.6	7.1
JUN											
06...	--	--	--	--	--	--	--	--	--	--	--
AUG											
24...	270	50.2	<1	.97	.030	1.0	.070	.53	.60	1.6	7.1

K = non-ideal count

RIO CIBUCO BASIN

50039750 RIO CIBUCO BELOW CENTRAL SAN VICENTE, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
NOV / 1982											
16...	.100	--	--	--	--	--	--	--	--	--	--
FEB / 1983											
04...	.200	2	100	1	4	2	.6	<1	4	--	--
MAR											
24...	.230	--	--	--	--	--	--	--	--	--	--
MAY											
23...	.120	--	--	--	--	--	--	--	--	290	311
JUN											
06...	--	--	--	--	--	--	--	--	--	--	--
AUG											
24...	.020	2	--	1	<1	7	<.1	<1	<1	--	--

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)
JUN / 1983								
06...	1050	<.10	<.01	<.10	<.01	<.01	<.01	<.01

DATE	DI- ELDRIN, TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA- THION, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL (UG/L)
JUN / 1983									
06...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01

DATE	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR, TOTAL (UG/L)	PER- THANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)
JUN / 1983								
06...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01

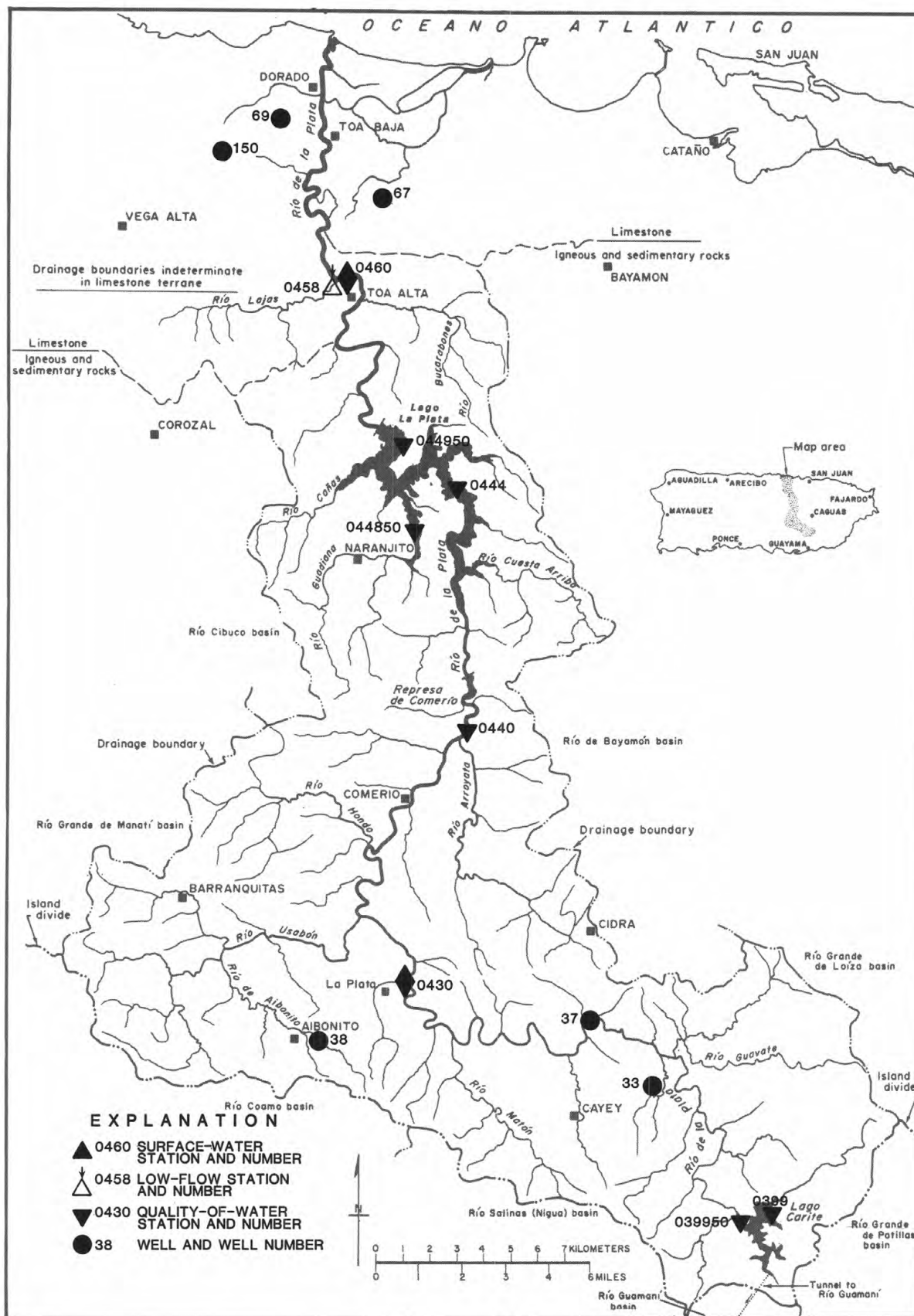


Figure 16.--Río de la Plata basin.

RIO DE LA PLATA BASIN

50043000 RIO DE LA PLATA AT PROYECTO LA PLATA, PR

LOCATION.--Lat 18°09'37", long 66°13'44", Hydrologic Unit 21010005, at upstream side of bridge on Highway 173, 0.4 mi (0.6 km) northeast of Proyecto La Plata, and 2.5 mi (4.0 km) upstream from Río Usabón.

DRAINAGE AREA.--54.8 sq mi (142 sq km), excludes 8.2 sq mi (21.1 sq km) upstream from Carite Reservoir, the flow of which is diverted to Río Guamfí.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1958 (occasional measurements only), February 1959 to March 1960 (monthly measurements only), April 1960 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 850 ft (259 m), from topographic map. Prior to Mar. 29, 1961, wire-weight gage read twice daily at same site and datum.

REMARKS.--Records fair. The Puerto Rico Aqueduct and Sewer Authority operates a pumping plant about 5 mi (8 km) upstream which can divert as much as 23 cu ft/s (0.65 cu m/s) into Cidra Reservoir.

AVERAGE DISCHARGE.--23 years (1961-83), 114 cu ft/s (3.228 cu m/s), 28.25 in/yr (718 mm/yr), 82,590 acre-ft/yr (102 cu hm/yr); median of yearly mean discharges, 88 cu ft/s (2.49 cu m/s), 63,800 acre-ft/yr (79 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 59,600 cu ft/s (1,688 cu m/s) Aug. 27, 1961, gage height, 32.21 ft (9.818 m), from rating curve extended above 7,000 cu ft/s (198 cu m/s) on basis of slope-area measurement; minimum daily, 2.6 cu ft/s (0.074 cu m/s) July 25, 1974.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,000 cu ft/s (113 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)	Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
Nov. 20	1915	5,200 147	10.80 3.292	June 16	0815	*11,430 324	14.38 4.383
Mar. 12	1830	7,530 213	12.18 3.712	Aug. 21	1630	4,700 133	10.52 3.206
Apr. 21	0915	4,320 122	10.32 3.146				

Minimum discharge, 7.9 cu ft/s (0.224 cu m/s) Apr. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	204	154	469	96	21	20	12	33	15	49	78	49		
2	122	70	225	59	21	16	13	31	12	82	146	68		
3	79	56	153	42	21	14	13	36	11	75	91	65		
4	61	47	134	44	20	14	12	32	11	357	68	41		
5	50	43	115	87	20	14	13	31	13	796	71	36		
6	47	40	93	90	20	13	13	28	15	468	65	34		
7	44	48	83	83	20	13	12	30	18	481	57	30		
8	41	36	72	59	21	14	11	28	14	240	48	27		
9	39	35	61	158	20	20	9.8	24	14	141	41	25		
10	35	34	55	80	23	18	9.4	23	17	104	38	25		
11	30	41	51	49	24	12	9.7	17	14	85	35	24		
12	30	122	48	59	24	1520	10	15	15	78	36	25		
13	114	148	46	49	23	293	9.7	21	16	74	63	25		
14	132	93	45	39	24	77	9.0	192	16	61	35	22		
15	50	65	175	38	25	47	9.7	115	61	52	31	22		
16	39	55	151	38	22	36	13	49	2920	52	30	27		
17	37	51	71	35	22	29	18	32	585	51	214	25		
18	34	46	55	30	23	26	132	162	988	54	212	26		
19	32	92	49	28	21	23	53	157	355	50	92	22		
20	171	850	75	28	20	21	45	235	175	42	63	23		
21	150	410	81	27	28	20	936	66	118	45	884	294		
22	125	161	53	27	33	19	134	53	88	41	358	209		
23	140	158	48	26	23	19	56	34	72	43	129	60		
24	119	117	46	25	22	17	38	50	60	348	78	51		
25	80	96	45	25	23	17	28	64	54	114	61	42		
26	65	84	63	34	22	17	23	39	50	74	58	55		
27	54	240	125	30	21	15	207	27	51	57	52	37		
28	47	251	79	24	18	14	198	22	65	49	341	31		
29	48	154	66	23	---	15	108	19	47	213	102	27		
30	44	588	51	25	---	13	46	19	45	208	67	26		
31	59	---	302	27	---	11	---	20	---	102	60	---		
TOTAL	2322	4385	3185	1484	625	2417	2201.3	1704	5935	4686	3704	1473		
MEAN	74.9	146	103	47.9	22.3	78.0	73.4	55.0	198	151	119	49.1		
MAX	204	850	469	158	33	1520	936	235	2920	796	884	294		
MIN	30	34	45	23	18	11	9.0	15	11	41	30	22		
CFSM	1.37	2.66	1.88	.87	.41	1.42	1.34	1.00	3.61	2.76	2.17	.90		
IN.	1.58	2.98	2.16	1.01	.42	1.64	1.49	1.16	4.03	3.18	2.51	1.00		
AC-FT	4610	8700	6320	2940	1240	4790	4370	3380	11770	9290	7350	2920		
CAL YR 1982	TOTAL	28888.4	MEAN	79.1	MAX	3000	MIN	5.7	CFSM	1.44	IN	19.61	AC-FT	57300
WTR YR 1983	TOTAL	34121.3	MEAN	93.5	MAX	2920	MIN	9.0	CFSM	1.71	IN	23.16	AC-FT	67680

RIO DE LA PLATA BASIN

50043000 RIO DE LA PLATA AT PROYECTO LA PLATA, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV / 1982											
15...	1220	62	234	7.2	25.0	32	8.4	105	18	2800	550
JAN / 1983											
12...	1305	51	318	7.6	24.0	15	9.0	110	29	780	240
MAR											
08...	1345	15	485	8.4	25.5	4.9	10.0	127	19	K220	1300
MAY											
05...	1045	32	363	8.2	26.0	9.5	8.4	107	35	660	750
AUG											
12...	1115	33	333	8.4	29.0	2.2	9.6	129	29	K160	160

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV / 1982											
15...	--	--	--	--	--	--	--	71	--	--	--
JAN / 1983											
12...	110	3	27	11	22	.9	1.6	110	13	21	.10
MAR											
08...	--	--	--	--	--	--	--	190	--	--	--
MAY											
05...	160	5	39	14	31	1.1	2.7	150	20	30	.30
AUG											
12...	120	0	30	12	26	1.0	1.6	126	14	24	.20

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982											
15...	--	--	--	20	.92	.080	1.0	.080	.52	.60	1.6
JAN / 1983											
12...	23	185	25.2	14	1.2	.030	1.2	.040	.26	.30	1.5
MAR											
08...	--	--	--	10	1.1	.020	1.1	.030	.77	.80	1.9
MAY											
05...	27	254	21.9	6	1.9	.080	2.0	.020	.38	.40	2.4
AUG											
12...	25	208	13.6	<1	1.2	.030	1.2	.020	.48	.50	1.7

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982										
15...	7.1	.270	--	--	--	--	--	--	--	--
JAN / 1983										
12...	6.6	.250	2	<100	2	14	5	<.1	3	<1
MAR										
08...	8.4	.490	--	--	--	--	--	--	--	--
MAY										
05...	11	.510	--	--	--	--	--	--	--	--
AUG										
12...	7.5	.420	2	100	1	<1	3	<.1	<1	<1

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
OCT, 04	1100	61	237	27.0	JUN, 13	1400	14	483	---
DEC, 14	1155	43	367	24.0	JUL, 11	1340	85	269	30.0
FEB, 07	1325	21	450	25.5	SEP, 14	1325	22	400	31.0
APR, 04	1440	13	532	30.0					

K = non-ideal count

RIO DE LA PLATA BASIN

50044000 RIO DE LA PLATA NEAR COMERIO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°14'33", long 66°12'28", at bridge on Highway 156, 0.56 mi (0.9 km) upstream from dam, about 2.0 mi (3.2 km) northeast of Comerio plaza.

DRAINAGE AREA.--139 sq mi (360 sq km).

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, O.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)
NOV / 1982												
10...	1040	59	337	7.8	26.0	3.6	10.1	127	14	3600	1600	--
JAN / 1983												
11...	1150	126	336	7.7	22.5	25	8.6	102	18	4000	660	120
MAR												
28...	1120	38	436	8.4	25.5	<1.0	9.8	122	19	K1300	370	--
MAY												
12...	0945	66	304	8.4	26.5	13	8.8	112	16	K1800	3000	130
AUG												
19...	1100	158	243	8.0	27.0	37	8.6	110	83	26000	K1100	83

DATE	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY FIELD (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)
NOV / 1982											
10...	--	--	--	--	--	--	120	--	--	--	--
JAN / 1983											
11...	22	29	12	25	1.0	2.2	100	13	26	.10	26
MAR											
28...	--	--	--	--	--	--	170	--	--	--	--
MAY											
12...	0	32	13	23	.9	3.1	140	19	26	.20	24
AUG											
19...	4	20	8.0	18	.9	2.0	79	11	21	.10	21

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)
NOV / 1982											
10...	--	--	6	.78	.020	.80	.050	.75	.80	1.6	7.1
JAN / 1983											
11...	193	65.7	14	.30	.100	.40	.250	4.6	4.80	5.2	23
MAR											
28...	--	--	7	.56	.040	.60	.040	.26	.30	.90	4.0
MAY											
12...	224	40.0	14	.88	.020	.90	.020	.28	.30	1.2	5.3
AUG											
19...	148	63.3	25	.66	.040	.70	.010	.69	.70	1.4	6.2

DATE	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
NOV / 1982											
10...	.270	--	+	--	--	--	--	--	--	--	--
JAN / 1983											
11...	.360	2	100	2	<1	5	<.1	<1	<1	--	--
MAR											
28...	.340	--	--	--	--	--	--	--	--	--	--
MAY											
12...	.360	--	--	--	--	--	--	--	--	99	18
AUG											
19...	.240	2	100	1	2	3	<.1	<1	<1	--	--

K = non-ideal count

RIO DE LA PLATA BASIN

50044850 RIO GUADIANA NEAR NARANJITO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°18'39", long 66°13'28", at steel-cross-bridge 0.8 mi (1.3 km) northwest of Highway 164, 1.2 mi (1.9 km) upstream from mouth and about 2.0 mi (3.2 km) northeast of Naranjito plaza.

DRAINAGE AREA.--4.0 sq mi (10.3 sq km).

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-HF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)
NOV / 1982												
10...	1340	3.9	336	7.8	26.5	2.6	8.2	103	27	900	1200	--
JAN / 1983												
11...	1450	11	320	8.1	25.0	1.6	9.0	110	16	K9300	450	130
MAR												
28...	1335	5.3	318	8.6	26.0	1.4	9.0	111	17	K1200	660	--
MAY												
12...	1245	30	253	8.0	27.5	24	8.0	102	22	K18000	3600	98
AUG												
19...	1345	7.6	319	8.0	30.0	2.3	8.2	109	20	5800	K1100	130

DATE	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY FIELD (MG/L CAC03)	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)
NOV / 1982											
10...	--	--	--	--	--	--	120	--	--	--	--
JAN / 1983											
11...	24	29	15	18	.7	1.7	110	16	18	.20	29
MAR											
28...	--	--	--	--	--	--	120	--	--	--	--
MAY											
12...	21	21	11	13	.6	2.8	77	21	20	.10	23
AUG											
19...	21	30	14	16	.6	2.5	112	18	21	.20	27

DATE	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)
NOV / 1982											
10...	--	--	8	1.6	.010	1.6	.030	.57	.60	2.2	9.7
JAN / 1983											
11...	193	5.6	4	1.7	.010	1.7	.020	.98	1.00	2.7	12
MAR											
28...	--	--	16	1.3	.030	1.3	.010	.29	.30	1.6	7.1
MAY											
12...	158	12.8	22	1.9	.020	1.9	.030	.27	.30	2.2	9.7
AUG											
19...	196	4.0	1	--	<.010	1.6	<.010	--	.30	1.9	8.4

DATE	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
NOV / 1982											
10...	.320	--	--	--	--	--	--	--	--	--	--
JAN / 1983											
11...	.510	1	100	1	<1	5	<.1	<1	<1	--	--
MAR											
28...	.330	--	--	--	--	--	--	--	--	--	--
MAY											
12...	.160	--	--	--	--	--	--	--	--	82	6.6
AUG											
19...	.320	2	100	1	1	2	<.1	<1	<1	--	--

K = non-ideal count

RIO DE LA PLATA BASIN

50046000 RIO DE LA PLATA AT TOA ALTA, PR

LOCATION.--Lat 18°23'50", long 66°15'17", Hydrologic Unit 21010005, on left bank, at upstream side of bridge on Highway 165, 800 ft (244 m) downstream from Río Lajas, and 0.6 mi (1.0 km) northwest of Toa Alta, 10 mi (16 km) downstream from Puerto Rico Aqueduct and Sewer Authority reservoir.

DRAINAGE AREA.--200 sq mi (518 sq km), excludes 8.2 sq km (21.2 sq km) upstream from Lago Carite, flow from which is diverted to Río Guamaní.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1959 (measurement only), January 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is 8.55 ft (2.606 m) above mean sea level (levels by Puerto Rico Department of Public Works). Prior to Feb. 25, 1960, wire-weight gage at same site and datum.

REMARKS.--Records fair. Regulation at all stages by Puerto Rico Aqueduct and Sewer Authority reservoir upstream from gage.

AVERAGE DISCHARGE.--23 years (1961-83), 276 cu ft/s (7.816 cu m/s), 18.74 in/yr (476 mm/yr), 200,000 acre-ft/yr (247 cu hm/yr); median of yearly mean discharges 220 cu ft/s (6.23 cu m/s), 159,000 acre-ft/yr (196 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 95,500 cu ft/s (2,704 cu m/s) Sep. 6, 1960, gage height, 36.35 ft (11.079 m), from floodmark, from rating curve extended above 12,000 cu ft/s (340 cu m/s) on basis of contracted-opening measurement of peak flow; minimum, 3.1 cu ft/s (0.088 cu m/s) Mar. 12, 1974, gage height, 6.51 ft (1.984 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Approximate discharges and elevations to gage datum of major floods, as pointed out by local residents are as follows: Sept. 13, 1928, 120,000 cu ft/s (3,400 cu m/s), gage height, 37.4 ft (11.4 m); June 16, 1943, 82,000 cu ft/s (2,320 cu m/s), gage height, 34.4 ft (10.48 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 6,000 cu ft/s (170 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)	Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
Apr. 21	1415	7,500 212	17.41 5.306	Apr. 22	2145	*16,700 473	22.04 6.718

Minimum discharge, 6.9 cu ft/s (0.195 cu m/s) Apr. 11-13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	276	31	898	766	25	12	7.7	111	58	49	31	35
2	388	51	513	411	24	12	7.7	79	51	54	30	32
3	178	65	264	243	23	12	8.0	78	47	54	29	35
4	96	60	200	193	23	11	9.2	56	46	116	28	33
5	59	55	167	165	20	11	8.1	50	46	725	108	31
6	43	48	140	161	19	11	9.4	46	42	706	78	30
7	34	41	94	175	18	11	9.0	42	44	489	64	130
8	27	36	45	174	17	10	8.3	38	46	534	53	140
9	22	32	32	160	16	10	7.5	39	55	58	46	60
10	21	37	29	205	16	10	7.2	37	45	52	40	45
11	19	95	29	180	16	10	7.1	120	37	71	36	40
12	18	115	29	147	15	243	6.9	473	32	113	983	42
13	19	1010	31	126	15	1120	9.0	1230	31	60	509	56
14	70	559	32	108	15	390	9.7	1250	30	50	333	50
15	152	240	76	99	15	183	9.1	1010	29	47	178	85
16	79	127	277	96	15	99	8.0	548	1610	43	313	47
17	43	132	285	92	14	57	8.3	304	1420	43	229	41
18	30	88	167	103	14	26	30	487	1390	55	308	42
19	28	61	117	83	14	16	19	1770	1120	47	348	47
20	31	41	96	62	13	13	54	2100	584	42	258	49
21	65	534	329	64	13	11	4720	883	322	38	596	619
22	127	520	157	44	13	10	3800	760	133	36	1460	285
23	128	197	119	39	13	9.9	2020	530	71	35	59	450
24	100	128	99	41	13	9.5	762	314	57	37	50	489
25	113	99	120	39	12	8.9	303	238	46	38	46	238
26	59	111	581	37	12	8.7	160	296	38	34	48	163
27	45	120	2090	34	12	8.4	101	317	36	32	51	126
28	38	513	1110	31	12	9.6	144	190	40	32	143	100
29	34	501	677	28	---	8.7	241	128	42	32	49	82
30	30	544	348	28	---	8.2	186	93	42	37	42	72
31	31	---	277	26	---	7.9	---	73	---	34	38	---
TOTAL	2403	6191	9428	4165	447	2367.8	12680.2	13690	7590	3793	6584	3694
MEAN	77.5	206	304	134	16.0	76.4	423	442	253	122	212	123
MAX	388	1010	2090	766	25	1120	4720	2100	1610	725	1460	619
MIN	18	31	29	26	12	7.9	6.9	37	29	32	28	30
CFSM	.39	1.03	1.52	.67	.08	.38	2.12	2.21	1.27	.61	1.06	.62
IN.	.45	1.15	1.75	.77	.08	.44	2.36	2.55	1.41	.71	1.22	.69
AC-FT	4770	12280	18700	8260	887	4700	25150	27150	15050	7520	13060	7330

CAL YR 1982	TOTAL	55493.0	MEAN	152	MAX	5390	MIN	12	CFSM	.76	IN	10.32	AC-FT	110100
WTR YR 1983	TOTAL	73033.0	MEAN	200	MAX	4720	MIN	6.9	CFSM	1.00	IN	13.58	AC-FT	144900

RIO DE LA PLATA BASIN

50046000 RIO DE LA PLATA AT TOA ALTA, PR--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

LOCATION.--Samples collected at bridge on Highway 2, 1.2 mi (1.9 km) downstream from discharge station.

PERIOD OF RECORD.--Water years 1958 to current year

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)
OCT / 1982												
12...	1225	18	458	7.6	30.0	3.5	8.0	108	K60	<10	170	5
DEC												
01...	1400	864	255	6.8	25.0	17	6.6	80	K1400	K200	92	8
FEB / 1983												
04...	0950	19	474	7.0	24.0	1.2	9.5	114	200	400	200	144
APR												
05...	1150	7.6	608	7.0	26.5	2.4	6.0	75	K100	K200	230	12
JUN												
13...	1130	31	495	8.3	30.5	3.4	9.0	120	K250	K23	180	15
AUG												
05...	1215	113	330	7.4	29.0	4.5	6.0	78	3400	130	130	6
DATE		CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
OCT / 1982												
12...		50	12	24	.8	2.2	170	17	36	.20	21	276
DEC												
01...		23	8.4	17	.8	3.0	84	13	15	.10	20	165
FEB / 1983												
04...		57	13	26	.8	1.5	52	17	36	.20	20	272
APR												
05...		68	15	33	1.0	2.4	220	16	49	.20	22	333
JUN												
13...		54	12	24	.8	2.5	170	24	36	.20	17	272
AUG												
05...		34	10	18	.7	3.5	120	13	23	.10	21	230
DATE		SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS PO4)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHOPHOS- PHATE, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHOPHOS- PHATE, DIS- SOLVED (MG/L AS PO4)
OCT / 1982												
12...		265	13.2	.14	.080	.10	.50	.130	.40	.110	.090	.28
DEC												
01...		151	385	.20	.240	.31	.70	.270	.83	.180	.200	.61
FEB / 1983												
04...		202	13.9	--	--	--	--	--	--	--	--	--
APR												
05...		338	6.8	<.10	.060	.08	.20	.120	.37	.160	.120	.37
JUN												
13...		272	22.8	<.10	.010	.01	.80	.130	.40	.080	.050	.15
AUG												
05...		196	70.0	.30	.220	.28	.60	.190	.58	.170	.150	.46
DATE		ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CAESIUM, DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)
OCT / 1982												
12...		--	2	67	<1	<1	<1	<3	4	7	<1	<4
DEC												
01...		--	--	--	--	--	--	--	--	--	--	--
FEB / 1983												
04...		10	2	61	<1	<1	3	<3	6	15	3	<4
APR												
05...		--	--	--	--	--	--	--	--	--	--	--
JUN												
13...		10	2	67	1	1	<1	3	6	13	1	4
AUG												
05...		90	3	87	<1	<1	<1	<3	3	42	1	5

K = non-ideal count

50046000 RIO DE LA PLATA AT TOA ALTA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	MANGANESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT / 1982											
12...	88	.1	10	2	<1	<1	240	<6.0	6	3	.15
DEC											
01...	--	--	--	--	--	--	--	--	--	24	56
FEB / 1983											
04...	69	.6	<10	4	<1	<1	230	<6.0	8	11	.56
APR											
05...	--	--	--	--	--	--	--	--	--	48	.98
JUN											
13...	130	1.0	10	<1	<1	<1	250	6.0	4	4	.33
AUG											
05...	67	.2	<10	2	<1	<1	150	8.0	<3	12	3.7

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
NOV, 15	0950	265	285	26.0	MAY, 04	0843	58	423	27.5
JAN, 18	0940	105	343	26.0	SEP, 13	1456	57	410	29.5
MAR, 11	1445	10	475	26.0					

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)	DI- ELDRIN, TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)
JUN / 1983										
13...	1130	<.10	<.01	<.10	<.01	<.01	<.01	.01	<.01	<.01

DATE	TIME	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA- THION, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL (UG/L)	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)
JUN / 1983											
13...		<.01	.01	<.01	<.01	<.01	.01	<.01	.01	.01	<.01

DATE	TIME	PARA- THION, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR, TOTAL (UG/L)	PER- THANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JUN / 1983										
13...		.01	<.10	<.10	<1	.01	.01	<.01	<.01	<.01

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDE (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT / 1982				
12...	1225	18	3	100
DEC				
01...	1400	864	24	79
FEB / 1983				
04...	0950	19	11	100
APR				
05...	1150	7.6	48	85
JUN				
13...	1130	31	4	75
AUG				
05...	1215	113	12	100

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM
AUG / 1983			
05...	1410	E112	1

E = estimate

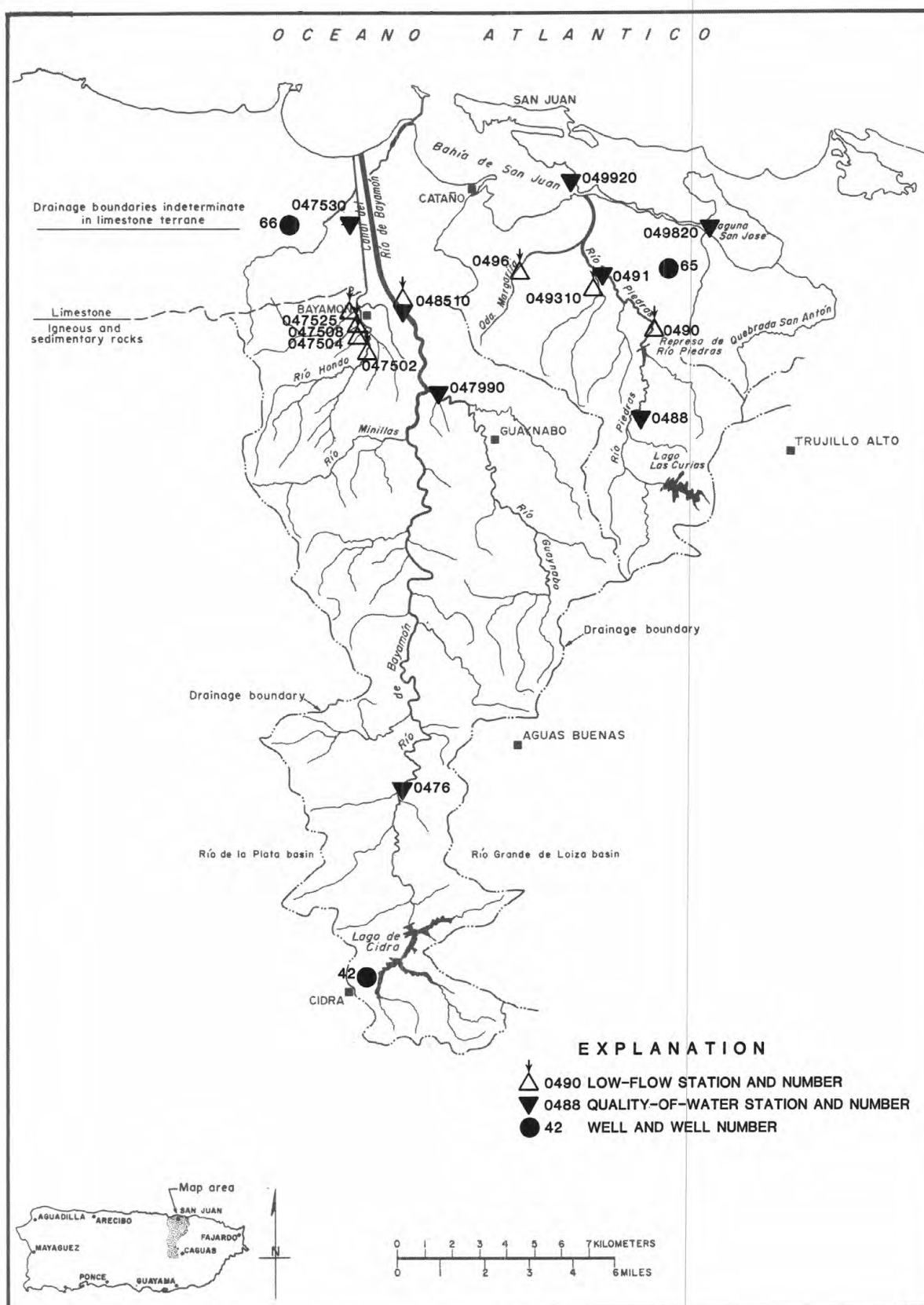


Figure 17.--Río Hondo, Río de Bayamón, and Río Puerto Nuevo basins.

RIO HONDO BASIN

50047530 RIO HONDO AT FLOOD CHANNEL NEAR CATANO, PR
(Formerly published as 50048530 Río Hondo below Río Hondo nr Bayamón, PR)

WATER-QUALITY RECORDS

LOCATION.--Lat 18°26'13", long 66°09'36", at Río Hondo Channel, 800 ft (245 m) below junction with Río Hondo, 0.9 mi (1.5 km) downstream from bridge on de Diego Expressway and 1.1 mi (1.8 km) above mouth.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0-7 UM-MF (COLS./100 ML)	STREPTOCOCCI, FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CaCO3)
NOV / 1982											
24...	1315	17500	7.5	28.0	4.0	.0	0	710	34000	K450	--
*24...	1325	36000	7.9	27.0	25	2.8	40	2300	K12000	2000	--
FEB / 1983											
08...	1400	31200	8.5	30.5	8.0	--	--	730	K91000	K60	3900
MAR											
25...	1425	35200	8.5	31.5	5.5	14.2	218	1500	4600	<100	--
MAY											
24...	1455	13700	8.8	33.0	5.0	24.6	337	--	3000	K730	2200
AUG											
25...	1315	11000	8.4	31.0	3.2	20.0	278	340	49000	--	1200

DATE	HARDNESS, NONCARBONATE (MG/L AS CaCO3)	CALCIUM, DIS-SOLVED (MG/L AS Ca)	MAGNESIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM, AD-SORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	ALKALINITY, FIELD (MG/L AS CaCO3)	SULFATE, DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS Cl)	FLUORIDE, DIS-SOLVED (MG/L AS F)
NOV / 1982										
24...	--	--	--	--	--	--	130	--	5800	--
24...	--	--	--	--	--	--	120	--	16000	--
FEB / 1983										
08...	3710	150	850	7200	51	250	170	1800	14000	.60
MAR										
25...	--	--	--	--	--	--	170	--	14000	--
MAY										
24...	2100	150	440	3300	31	140	120	800	6300	.04
AUG										
25...	1030	110	220	1900	24	68	156	470	3400	.30

DATE	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)
NOV / 1982										
24...	--	--	8	.13	.070	.20	2.80	.00	2.80	3.0
24...	--	--	45	.05	.050	.10	.750	.05	.80	.90
FEB / 1983										
08...	.1	24400	49	.05	.050	.10	3.20	2.2	5.40	5.5
MAR										
25...	--	--	72	.07	.030	.10	2.00	2.0	4.00	4.1
MAY										
24...	4.6	11200	36	.15	.050	.20	.24	1.2	1.40	1.6
AUG										
25...	13	6270	12	.00	.120	.10	1.80	1.5	3.30	3.4

DATE	NITROGEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOVERABLE (UG/L AS Pb)	MERCURY, TOTAL RECOVERABLE (UG/L AS Hg)	SELENIUM, TOTAL (UG/L AS Se)	SILVER, TOTAL RECOVERABLE (UG/L AS Ag)
NOV / 1982										
24...	13	.660	--	--	--	--	--	--	--	--
24...	4.0	.200	--	--	--	--	--	--	--	--
FEB / 1983										
08...	24	1.90	4	200	1	13	5	1.7	<1	1
MAR										
25...	18	1.30	--	--	--	--	--	--	--	--
MAY										
24...	7.1	.310	--	--	--	--	--	--	--	--
AUG										
25...	15	.130	4	--	1	9	8	<.1	<1	<1

* = sampling depth seven (7) feet
K = non-ideal count

RIO DE BAYAMON BASIN

50047600 RIO DE BAYAMON NEAR AGUAS BUENAS, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°14'39", long 66°08'39", at bridge on Highway 156, and 2.9 mi (4.7 km) west of Aguas Buenas plaza.

DRAINAGE AREA.--18.5 sq mi (47.9 sq km).

PERIOD OF RECORD.--Water years 1958-65, 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV / 1982											
23...	1015	29	228	7.2	22.0	8.5	8.0	94	150	400	690
JAN / 1983											
18...	1115	31	246	7.6	21.0	2.9	9.0	104	28	480	530
MAR											
17...	1425	27	244	8.2	27.0	3.3	8.0	105	17	290	2000
MAY											
05...	1350	22	234	8.6	26.5	3.1	9.0	116	26	220	490
AUG											
12...	1440	28	226	8.4	27.0	3.3	8.0	103	70	370	750

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV / 1982											
23...	--	--	--	--	--	--	--	75	--	--	--
JAN / 1983											
18...	87	3	19	9.7	16	.8	2.9	84	9.0	16	.10
MAR											
17...	--	--	--	--	--	--	--	93	--	--	--
MAY											
05...	94	0	21	10	19	.9	2.4	97	10	18	.10
AUG											
12...	85	0	19	9.2	16	.8	1.9	92	9.4	16	.10

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982											
23...	--	--	--	6	.69	.010	.70	.030	.27	.30	1.0
JAN / 1983											
18...	23	146	12.1	2	--	<.010	.50	.020	.48	.50	1.0
MAR											
17...	--	--	--	<1	--	<.010	.30	.010	.49	.50	.80
MAY											
05...	24	163	9.7	<1	--	<.010	.20	<.010	--	.20	.40
AUG											
12...	23	150	11.4	<1	--	<.010	.20	.010	.19	.20	.40

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982										
23...	4.4	.080	--	--	--	--	--	--	--	--
JAN / 1983										
18...	4.4	.050	2	<100	1	<1	9	.1	<1	<1
MAR										
17...	3.5	.040	--	--	--	--	--	--	--	--
MAY										
05...	1.8	.040	--	--	--	--	--	--	--	--
AUG										
12...	1.8	.050	2	100	1	<1	3	<.1	<1	<1

RIO DE BAYAMON BASIN

50047990 RIO GUAYNABO NEAR BAYAMON, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°22'32", long 66°07'59", at bridge on Highway 833, 0.2 mi (0.3 km) upstream from Río de Bayamón, and 2.3 mi (3.7 km) southeast of Bayamón Plaza.

DRAINAGE AREA.--73.2 sq mi (189.6 sq km).

PERIOD OF RECORD.--Water years 1958, 1964, 1971-73, 1976, 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV / 1982											
04...	1350	16	430	7.2	27.5	4.0	3.6	46	26	34000	830
JAN / 1983											
13...	1225	23	412	7.1	24.0	1.8	3.4	40	--	K13000	K270
MAR											
18...	1210	15	497	7.5	28.5	1.8	.0	0	59	180000	5400
MAY											
17...	1230	30	340	7.3	28.0	5.4	3.9	50	56	4200	K1500
AUG											
18...	1240	33	362	7.7	28.0	26	5.2	66	36	K90000	4200

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV / 1982											
04...	--	--	--	--	--	--	--	140	--	--	--
JAN / 1983											
13...	140	0	38	12	25	.9	3.8	150	15	35	.10
MAR											
18...	--	--	--	--	--	--	--	170	--	--	--
MAY											
17...	150	10	40	12	29	1.1	3.8	140	25	35	.20
AUG											
18...	130	6	34	9.9	22	.9	3.4	120	21	27	.20

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982											
04...	--	--	--	18	.07	.030	.10	2.70	.80	3.50	3.6
JAN / 1983											
13...	30	249	15.7	8	.27	.030	.30	1.50	.90	2.40	2.7
MAR											
18...	--	--	--	<1	--	.020	<.10	4.00	1.5	5.50	--
MAY											
17...	28	257	20.8	8	.35	.050	.40	1.30	.00	1.30	1.7
AUG											
18...	26	215	19.2	32	.42	.080	.50	.950	.95	1.90	2.4

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982										
04...	16	.900	--	--	--	--	--	--	--	--
JAN / 1983										
13...	12	.830	2	100	1	9	3	.3	<1	<1
MAR										
18...	--	2.80	--	--	--	--	--	--	--	--
MAY										
17...	7.5	.490	--	--	--	--	--	--	--	--
AUG										
18...	11	.300	4	200	1	2	3	<.1	<1	<1

K = non-ideal count

RIO DE BAYAMON BASIN

50048510 RIO DE BAYAMON AT FLOOD CHANNEL AT BAYAMON, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°24'29", long 66°09'04", at bridge on Highway 890, 1.0 (1.6 km) downstream from bridge on Highway 2, and 3.2 mi (5.1 km) above mouth. (Revised)

DRAINAGE AREA.--71.9 sq mi (186.2 sq km).

PERIOD OF RECORD.--Water years 1974 to current year.

REMARKS.--Prior to 1979 sampling site was 0.8 mile (1.3 km) downstream but was changed because of flood channel construction.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV / 1982											
04...	0950	92	355	7.1	25.5	17	4.4	54	19	K90000	5300
JAN / 1983											
13...	0915	53	400	6.9	23.0	1.5	3.6	42	--	45000	2100
MAR											
18...	0955	28	470	7.6	27.5	1.3	3.4	43	28	52000	5700
MAY											
17...	0905	66	306	7.4	26.0	9.5	4.2	52	76	58000	6700
JUN											
06...	1315	44	446	7.5	29.0	--	6.4	83	--	--	--
AUG											
18...	0925	116	304	7.6	26.0	71	5.6	69	36	60000	39000

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV / 1982											
04...	--	--	--	--	--	--	--	120	--	--	--
JAN / 1983											
13...	140	0	36	12	24	.9	3.7	140	17	32	.20
MAR											
18...	--	--	--	--	--	--	--	170	--	--	--
MAY											
17...	150	9	38	13	26	1.0	3.4	140	24	27	.20
JUN											
06...	--	--	--	--	--	--	--	160	--	--	--
AUG											
18...	110	9	29	9.4	18	.8	3.1	102	16	21	.20

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982											
04...	--	--	--	40	.33	.070	.40	1.10	.50	1.60	2.0
JAN / 1983											
13...	29	238	34.3	22	.44	.160	.60	1.50	4.1	5.60	6.2
MAR											
18...	--	--	--	<1	--	.020	<.10	3.80	.60	4.40	--
MAY											
17...	27	243	43.2	12	.51	.090	.60	.890	.31	1.20	1.8
JUN											
06...	--	--	--	--	--	--	--	--	--	--	--
AUG											
18...	23	181	56.6	<1	.40	.100	.50	.420	.78	1.20	1.7

K = non-ideal count

RIO DE BAYAMON BASIN

50048510 RIO DE BAYAMON AT FLOOD CHANNEL AT BAYAMON, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV , 1982										
04...	8.9	.530	--	--	--	--	--	--	--	--
JAN , 1983										
13...	27	.670	1	100	1	9	4	.7	<1	<1
MAR										
18...	--	1.10	--	--	--	--	--	--	--	--
MAY										
17...	8.0	.400	--	--	--	--	--	--	--	--
JUN										
06...	--	--	--	--	--	--	--	--	--	--
AUG										
18...	7.5	.260	2	200	1	2	3	<.1	<1	<1

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)
JUN , 1983								
06...	1315	<.10	<.01	<.10	<.01	<.01	<.01	<.01

DATE	DI- ELDRIN TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA- THION, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL (UG/L)
JUN , 1983									
06...	<.01	<.01	<.01	<.01	<.01	<.01	.03	<.01	<.01

DATE	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	PER- THANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)
JUN , 1983								
06...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01

50048800 RIO PIEDRAS NEAR RIO PIEDRAS, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°22'15", long 66°03'40", at bridge on Winston Churchill Avenue in the El Señorial Housing area, 0.5 mi (0.8 km) west of Highway 176, and 2.5 mi (4.0 km) southwest of Rio Piedras plaza.

DRAINAGE AREA.--8.17 sq mi (20.9 sq km).

PERIOD OF RECORD.--Water years 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW- INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV / 1982											
01...	1055	6.2	345	7.4	25.5	--	9.0	110	10	36000	34000
JAN / 1983											
17...	1110	5.5	386	7.3	22.0	3.0	8.0	92	30	K73000	47000
MAR											
15...	1010	4.2	540	7.4	25.0	4.9	5.2	63	36	K67000	17000
MAY											
16...	1220	12	293	7.8	26.0	4.7	7.6	94	50	3600	23000
JUN											
06...	1540	5.0	377	7.8	29.0	--	8.6	112	--	--	--
AUG											
15...	0855	6.5	294	7.6	24.5	43	7.2	86	24	K10000	52000

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV / 1982											
01...	--	--	--	--	--	--	--	120	--	--	--
JAN / 1983											
17...	140	0	35	12	27	1.0	2.6	140	15	28	.20
MAR											
15...	--	--	--	--	--	--	--	140	--	--	--
MAY											
16...	130	9	32	12	27	1.1	2.6	120	24	27	.10
JUN											
06...	--	--	--	--	--	--	--	140	--	--	--
AUG											
15...	110	0	28	9.4	19	.8	2.4	118	15	22	<.10

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982											
01...	--	--	--	8	.93	.070	1.0	.160	.44	.60	1.6
JAN / 1983											
17...	37	241	3.6	18	1.3	.130	1.4	.720	.38	1.10	2.5
MAR											
15...	--	--	--	<1	.90	.200	1.1	.940	1.4	2.30	3.4
MAY											
16...	33	230	7.7	4	.78	.020	.80	.230	.17	.40	1.2
JUN											
06...	--	--	--	--	--	--	--	--	--	--	--
AUG											
15...	29	196	3.4	30	.77	.130	.90	.050	.85	.90	1.8

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982										
01...	7.1	.220	--	--	--	--	--	--	--	--
JAN / 1983										
17...	11	.300	2	100	1	<1	5	1.0	<1	<1
MAR										
15...	15	.410	--	--	--	--	--	--	--	--
MAY										
16...	5.3	.170	--	--	--	--	--	--	--	--
JUN										
06...	--	--	--	--	--	--	--	--	--	--
AUG										
15...	8.0	.180	2	200	2	<1	4	<.1	<1	<1

K = non-ideal count

RIO PUERTO NUEVO BASIN

50048800 RIO PIEDRAS NEAR RIO PIEDRAS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)
JUN , 1983								
06...	1540	<.10	<.01	<.10	<.01	<.01	<.01	<.01

DATE	DI- ELDRIN TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA- THION, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL (UG/L)
JUN , 1983									
06...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01

DATE	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	PER- THANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)
JUN , 1983								
06...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01

RIO PUERTO NUEVO BASIN

50049100 RIO PIEDRAS AT HATO REY, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°24'34", long 66°04'10", at bridge on Avenida Piñero at Expreso Las Américas, and 0.8 mi (1.3 km) southwest of Hato Rey.

DRAINAGE AREA.--15.4 sq mi (39.9 sq km).

PERIOD OF RECORD.--Water years 1971 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV , 1982											
01...	1445	11	385	7.6	30.0	--	8.3	110	19	100000	5100
JAN , 1983											
17...	1345	13	430	7.8	25.0	3.9	10.8	131	30	33000	3200
MAR											
15...	1300	11	422	7.6	27.5	2.0	4.4	56	46	210000	53000
MAY											
16...	1510	23	340	7.6	29.0	7.0	6.6	86	58	K77000	K19000
AUG											
15...	1140	17	326	7.4	29.0	--	3.1	40	35	340000	81000

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (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)
NOV , 1982											
01...	--	--	--	--	--	--	--	140	--	--	--
JAN , 1983											
17...	160	0	44	12	29	1.0	3.3	160	17	32	.20
MAR											
15...	--	--	--	--	--	--	--	160	--	--	--
MAY											
16...	160	7	43	12	29	1.0	3.5	150	25	28	.20
AUG											
15...	110	0	32	8.2	23	1.0	3.1	115	17	25	.20

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV , 1982											
01...	--	--	--	7	1.3	.150	1.4	.330	.47	.80	2.2
JAN , 1983											
17...	32	265	9.0	2	1.3	.120	1.4	.530	.37	.90	2.3
MAR											
15...	--	--	--	178	.96	.140	1.1	1.50	1.1	2.60	3.7
MAY											
16...	28	259	16.1	10	.72	.080	.80	.540	.00	.50	1.3
AUG											
15...	25	202	9.3	25	.78	.220	1.0	.360	2.5	2.90	3.9

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV , 1982										
01...	9.7	.430	--	--	--	--	--	--	--	--
JAN , 1983										
17...	10	.380	2	100	1	<1	8	.3	<1	<1
MAR										
15...	16	.730	--	--	--	--	--	--	--	--
MAY										
16...	5.8	.250	--	--	--	--	--	--	--	--
AUG										
15...	17	--	2	100	2	1	19	.4	<1	<1

K = non-ideal count

RIO PUERTO NUEVO BASIN

50049820 LAGUNA SAN JOSE NO. 2 AT SAN JUAN, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°25'46", long 66°02'10", 0.2 mi (0.3 km) east of Caño de Martín Peña, and 650 ft (200 m) south of Isla Guachinango.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--Water years 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV / 1982									
24...	0945	1.00	26100	8.5	27.0	6.0	82	K1100	K10
FEB / 1983									
08...	0955	1.00	23600	8.2	25.5	1.8	24	K96000	8300
MAR									
25...	1240	1.00	30500	8.5	29.0	8.0	115	K8200	K550
MAY									
24...	1010	1.00	11900	8.5	28.5	4.9	66	52000	6000
AUG									
25...	1010	1.00	13800	8.8	28.5	9.0	123	K10000	K1000

DATE	ALKA- LINEITY FIELD (MG/L AS CAC03)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
NOV / 1982									
24...	140	4	.020	<.10	.160	1.3	1.50	.540	8.3
FEB / 1983									
08...	150	34	.020	<.10	.660	1.9	2.60	.710	9.2
MAR									
25...	160	77	.020	<.10	.390	2.4	2.80	.840	11
MAY									
24...	120	42	.020	<.10	.080	2.5	2.60	.690	14
AUG									
25...	95	88	.010	<.10	.080	1.8	1.90	.450	13

K = non-ideal count

RIO PUERTO NUEVO BASIN

50049920 BAHIA DE SAN JUAN NO. 5 AT SAN JUAN, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°26 37", long 66°05'11", 0.4 mi (0.6 km) west of Puente de la Constitución, and 0.5 mi (0.8 km) south from U.S. Naval Reservation.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--Water years 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	ALKA- LINEITY FIELD (MG/L AS CAC03)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)
NOV / 1982											
24...	1140	1.00	43700	7.5	28.0	2.8	42	K8800	2600	140	6
FEB / 1983											
08...	1125	1.00	38500	7.6	25.5	1.6	22	230000	4500	140	32
MAR											
25...	1100	1.00	41300	7.3	27.0	1.0	15	430000	K11000	150	66
MAY											
24...	1210	1.00	12200	7.9	27.0	4.8	63	K95000	3000	110	78
AUG											
25...	1145	1.00	32200	7.8	29.5	5.4	79	280000	4700	129	56

DATE	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
NOV / 1982										
24...	.51	.090	.60	1.00	.60	1.60	2.2	9.7	.310	5.5
FEB / 1983										
08...	.13	.070	.20	1.70	.70	2.40	2.6	12	.560	7.0
MAR										
25...	.06	.040	.10	1.90	.50	2.40	2.5	11	.680	9.7
MAY										
24...	--	.020	<.10	.46	1.0	1.50	--	--	.490	5.9
AUG										
25...	.07	.030	.10	.95	.55	1.50	1.6	7.1	.310	4.9

RIO GRANDE DE LOIZA BASIN

50050300 QUEBRADA BLASINA NEAR CAROLINA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°23'27", long 65°58'28", at bridge on Highway 3, 1.4 mi (2.3 km) south of Valle Arriba Heights housing area, and 1.2 mi (1.9 km) west-southwest of Carolina plaza.

DRAINAGE AREA.--2.96 sq mi (7.67 sq km).

PERIOD OF RECORD.--Water years 1973 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
NOV / 1982										
08...	1010	4.1	590	7.1	28.0	4.9	.0	0	63	2400000
JAN / 1983										
14...	1400	4.9	557	6.8	27.0	4.8	.0	0	--	K8400000
MAR										
09...	1025	4.2	634	7.4	26.0	3.1	.0	0	76	>1000000
MAY										
10...	1430	6.4	478	7.2	30.0	4.5	.0	0	74	K1.0E+07
AUG										
15...	1440	5.4	563	6.9	31.0	--	.0	0	220	5800000

DATE	100 ML)	STREP- TOCOCCEI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)
NOV / 1982											
08...	K110000	--	--	--	--	--	--	--	--	190	--
JAN / 1983											
14...	K550000	150	0	47	8.4	43	1.6	7.1	170	21	
MAR											
09...	>1000000	--	--	--	--	--	--	--	200	--	
MAY											
10...	6100000	160	0	51	8.6	47	1.7	6.5	200	23	
AUG											
15...	K982000	170	10	55	8.8	40	1.4	6.0	164	14	

DATE	AS CL)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)
NOV / 1982											
08...	--	--	--	--	--	--	14	.020	<.10	12.0	.00
JAN / 1983											
14...	54	.20	26	309	4.1	30	.030	<.10	13.0	47	
MAR											
09...	--	--	--	--	--	--	6	.010	<.10	11.0	5.0
MAY											
10...	52	.20	26	334	5.8	<1	.020	<.10	6.30	3.0	
AUG											
15...	48	.20	25	295	4.3	13	.060	<.10	.040	13	

DATE	AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (UG/L AS N)	PHOS- PHORUS, TOTAL (UG/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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982											
08...	12.0	2.50	--	--	--	--	--	--	--	--	--
JAN / 1983											
14...	60.0	2.80	3	100	1	10	4	.2	<1	<1	
MAR											
09...	16.0	2.90	--	--	--	--	--	--	--	--	--
MAY											
10...	9.30	3.10	--	--	--	--	--	--	--	--	--
AUG											
15...	13.0	--	3	200	4	<1	8	1.0	<1	<1	

K = non-ideal count; (1.0E+07 = 10000000)

LOCATION.--Lat 18°07'10", long 65°59'22", Hydrologic Unit 21010005, at intersection of Highways 181 and 9990, 0.2 mi (0.3 km) above confluence with Río Emajagua and about 7.1 mi (11.4 km) southwest of San Lorenzo.

DRAINAGE AREA.--6.00 sq mi (15.54 sq km).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Altitude of gage is 175 ft (53.3 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--6 years (1978-83), 31.4 cu ft/s (0.889 cu m/s), 71.07 in/yr (1,810 mm/yr), 22,750 acre-ft/yr (28.1 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,950 cu ft/s (253 cu m/s) July 18, 1979, gage height 13.4 ft (4.08 m) from floodmark, from rating curve extended above 500 cu ft/s (14.2 cu m/s) on basis of step-backwater analysis; minimum, 2.8 cu ft/s (0.079 cu m/s) May 5, 1979.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 cu ft/s (56.6 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)	Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
June 16	0245	*2,660 75.3	8.92 2.719	June 18	0500	2,000 56.6	8.20 2.499

Minimum discharge, 4.9 cu ft/s (0.139 cu m/s) Apr. 8-13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	38	94	20	10	6.9	5.9	7.6	13	25	134	23
2	19	24	46	18	10	6.4	5.9	8.1	12	46	63	41
3	17	22	33	16	9.8	6.6	5.6	8.8	10	41	32	28
4	16	23	40	21	11	6.4	5.4	7.4	11	291	27	24
5	15	53	30	44	11	5.9	5.4	8.0	11	174	33	21
6	15	40	26	28	10	5.3	5.9	16	20	91	24	19
7	14	33	24	22	10	6.2	5.4	10	12	88	21	18
8	14	39	22	22	9.8	12	5.1	7.7	12	48	20	18
9	14	29	21	84	9.2	17	4.9	7.0	26	38	19	17
10	13	34	20	31	8.9	6.6	4.9	6.6	13	33	20	16
11	12	42	20	23	8.5	6.4	4.9	5.8	11	30	25	17
12	11	66	19	29	8.2	64	4.9	6.0	11	27	31	18
13	34	42	17	20	8.7	22	5.4	6.4	21	26	32	16
14	14	26	17	17	9.9	12	6.2	11	92	25	33	15
15	12	23	26	16	8.5	11	5.9	10	95	23	31	18
16	13	24	18	17	7.8	9.2	5.6	8.7	296	25	72	25
17	56	23	16	16	8.5	8.1	13	13	60	26	188	18
18	30	52	15	14	7.7	7.8	30	14	192	34	78	16
19	53	61	14	13	7.2	7.6	12	97	39	29	43	14
20	67	136	22	12	7.2	7.4	18	27	34	30	38	16
21	55	39	16	12	8.5	7.2	115	13	27	23	178	102
22	31	28	22	11	7.2	7.2	16	10	23	21	43	39
23	167	30	15	11	6.8	7.0	9.8	23	22	81	28	38
24	32	25	16	11	6.9	7.1	8.1	172	20	52	25	48
25	28	24	14	15	6.9	6.7	7.1	44	19	22	59	65
26	25	22	14	19	6.9	5.9	6.6	24	18	19	54	128
27	21	22	13	13	7.5	5.8	8.8	18	31	18	36	38
28	27	28	13	12	7.5	5.8	16	16	20	62	92	37
29	20	27	12	11	---	5.4	9.3	14	17	125	33	25
30	39	99	21	12	---	5.6	7.0	18	44	36	29	58
31	46	---	78	11	---	5.9	---	14	---	36	25	---
TOTAL	955	1174	774	621	240.1	304.4	364.0	652.1	1232	1645	1566	976
MEAN	30.8	39.1	25.0	20.0	8.58	9.82	12.1	21.0	41.1	53.1	50.5	32.5
MAX	167	136	94	84	11	64	115	172	296	291	188	128
MIN	11	22	12	11	6.8	5.3	4.9	5.8	10	18	19	14
CFSM	5.13	6.52	4.17	3.33	1.43	1.64	2.02	3.50	6.85	8.85	8.42	5.42
IN.	5.92	7.28	4.80	3.85	1.49	1.89	2.26	4.04	7.64	10.20	9.71	6.05
AC-FT	1890	2330	1540	1230	476	604	722	1290	2440	3260	3110	1940

CAL YR 1982	TOTAL	10241.8	MEAN 28.1	MAX 304	MIN 5.6	CFSM 4.68	IN 63.49	AC-FT 20310
WTR YR 1983	TOTAL	10503.6	MEAN 28.8	MAX 296	MIN 4.9	CFSM 4.80	IN 65.11	AC-FT 20830

WATER-QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
OCT, 12	1345	11	132	29.0	MAY, 12	0915	6.4	157	26.0
NOV, 03	1350	20	140	26.5	JUN, 22	1330	23	129	29.0
DEC, 15	1200	17	--	23.5	JUL, 13	1245	26	178	27.0
JAN, 18	1000	15	163	22.5	JUL, 27	0920	20	142	26.0
FEB, 10	1200	9.2	180	23.5	AUG, 02	1110	52	113	26.0
MAR, 01	1212	6.9	152	27.0	SEP, 08	1355	18	133	29.5
APR, 19	1200	8.8	165	28.0					

RIO GRANDE DE LOIZA BASIN

104

50051310 RIO CAYAGUAS AT CERRO GORDO, PR

LOCATION.--Lat 18°09'27", long 65°57'29", Hydrologic Unit 21010005, on top of pumphouse at dam off Highway 912, at Barrio Cerro Gordo, 2.0 mi (3.2 km) south of San Lorenzo.

DRAINAGE AREA.--10.2 sq mi (26.4 sq km).

WATER DISCHARGE RECORDS

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

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

REMARKS.--Records fair.

AVERAGE DISCHARGE.--6 years (1978-83), 49.4 cu ft/s (1.399 cu m/s), 65.77 in/yr (1,671 mm/yr), 35,790 acre-ft/yr (44.1 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,200 cu ft/s (374 cu m/s), Aug. 31, 1979, gage height 9.44 ft (2.877 m), from rating curve extended above, 1,000 cu ft/s (28.3 cu m/s) on the basis of slope-area measurement; minimum discharge, 7.1 cu ft/s (0.201 cu m/s), Feb. 4, May 3, 1981, Apr. 12, 13, 16, 17, 1983.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 cu ft/s (70.8 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)	Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
June 18	0615	*5,920 168	7.27 2.216	Aug. 21	1230	3,250 92	6.01 1.832

Minimum discharge, 7.1 cu ft/s (0.201 cu m/s) Apr. 12, 13, 16, 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	55	187	34	21	15	12	17	18	27	110	43
2	29	43	55	32	21	14	11	18	17	38	109	71
3	27	37	44	29	20	13	11	17	16	38	40	48
4	26	37	45	31	21	13	12	15	18	145	36	43
5	26	70	44	41	20	13	11	18	16	806	36	40
6	25	55	38	40	19	13	9.9	17	17	172	35	38
7	24	40	36	32	19	14	9.5	18	14	90	31	37
8	24	49	35	31	19	20	9.2	14	15	58	30	36
9	23	38	34	53	18	21	8.3	13	24	47	28	35
10	23	43	33	42	18	15	8.3	13	17	41	29	34
11	22	54	32	34	18	15	8.5	12	14	38	27	35
12	23	43	32	42	18	119	8.2	11	16	37	25	33
13	29	51	31	31	18	42	8.5	13	14	35	25	31
14	28	37	32	29	19	26	10	17	24	34	30	30
15	24	34	37	28	19	23	11	19	27	32	25	32
16	24	44	33	28	17	22	8.3	18	184	34	35	38
17	51	38	31	26	17	22	9.7	17	51	47	218	33
18	47	46	31	26	17	21	39	16	702	58	70	31
19	86	88	29	25	17	20	19	21	47	41	39	30
20	178	105	39	25	17	19	23	25	36	35	34	30
21	51	65	31	24	18	17	87	15	34	33	476	47
22	49	42	31	23	17	16	29	14	29	31	78	44
23	209	43	29	23	16	15	21	22	27	36	51	43
24	50	37	30	23	17	16	19	168	26	83	47	86
25	44	37	27	30	17	16	17	62	24	32	88	44
26	40	35	28	32	17	15	16	34	21	29	104	92
27	37	33	28	24	16	14	17	27	34	28	57	39
28	38	38	28	23	16	14	33	25	25	32	91	35
29	33	40	27	22	---	13	26	22	21	123	53	30
30	42	101	28	22	---	12	17	20	24	48	51	32
31	48	---	73	21	---	12	---	20	---	46	45	---
TOTAL	1411	1483	1238	926	507	640	529.4	758	1552	2374	2153	1240
MEAN	45.5	49.4	39.9	29.9	18.1	20.6	17.6	24.5	51.7	76.6	69.5	41.3
MAX	209	105	187	53	21	119	87	168	702	806	476	92
MIN	22	33	27	21	16	12	8.2	11	14	27	25	30
CFSM	4.46	4.84	3.91	2.93	1.78	2.02	1.73	2.40	5.07	7.51	6.81	4.05
IN.	5.15	5.41	4.51	3.38	1.85	2.33	1.93	2.76	5.66	8.66	7.85	4.52
AC-FT	2800	2940	2460	1840	1010	1270	1050	1500	3080	4710	4270	2460

CAL YR 1982	TOTAL	14811.1	MEAN	40.6	MAX	741	MIN	7.8	CFSM	3.98	IN	54.01	AC-FT	29380
WTR YR 1983	TOTAL	14811.4	MEAN	40.6	MAX	306	MIN	8.2	CFSM	3.98	IN	54.01	AC-FT	29380

WATER-QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
OCT, 12	1030	24	121	25.5	MAY, 11	1330	12	136	30.0
NOV, 03	1040	36	128	24.0	JUN, 28	1216	26	---	28.5
DEC, 15	1000	31	112	22.0	JUL, 14	1240	34	133	27.5
JAN, 17	1320	27	156	23.0	JUL, 26	1350	29	126	30.0
FEB, 10	0940	19	173	21.0	AUG, 18	1025	68	90	25.0
MAR, 01	0929	16	136	23.5	SEP, 07	1400	38	122	28.0
APR, 21	1615	97	175	28.0					

RIO GRANDE DE LOIZA BASIN

50055000 RIO GRANDE DE LOIZA AT CAGUAS, PR

LOCATION.--Lat 18°14'33", long 66°00'34", Hydrologic Unit 21010005, on right bank 250 ft (76 m) upstream from bridge on Highway 189, 1.2 mi (1.9 km) downstream from Río Turabo, and 1.8 mi (2.9 km) east of Plaza de Caguas.

DRAINAGE AREA.--89.8 sq mi (232.6 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1959 (low-flow measurement only), February to November 1959 (monthly measurements only), December 1959 to current year.

GAGE.--Water-stage recorder.--Datum of gage is 143.28 ft (43.672 m) above mean sea level (datum of 1941).

REMARKS.--Records fair.

AVERAGE DISCHARGES.--23 years (1961-83), 219 cu ft/s (6.202 cu m/s), 33.12 in/yr (841 mm/yr), 158,700 acre-ft/yr (196 cu hm/yr); median of yearly mean discharges, 210 cu ft/s (5.95 cu m/s), 152,000 acre-ft/yr (187 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 71,500 cu ft/s (2,025 cu m/s) Sep. 6, 1960, gage height, 31.17 ft (9.501 m), from rating curve extended above 6,000 cu ft/s (170 cu m/s) on basis of slope-area measurement; minimum daily discharge, 10 cu ft/s (0.283 cu m/s) Apr. 5, 10, 29, 1968.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 8,000 cu ft/s (227 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)	Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
Mar. 12	1700	9,090 257	14.42 4.395	July 5	1400	*11,800 334	15.63 4.764
July 4	2130	9,090 257	14.42 4.395	Aug. 21	1330	10,200 289	14.95 4.557

Minimum discharge, 34 cu ft/s (0.963 cu m/s) Apr. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	235	491	873	223	84	59	46	69	80	118	194	208
2	160	236	381	162	86	53	45	75	73	281	550	420
3	142	185	281	140	83	53	44	77	71	178	199	260
4	131	169	239	152	81	51	44	75	72	1060	163	210
5	126	241	258	188	85	51	40	81	70	3940	167	180
6	120	255	190	216	75	50	45	71	117	1200	163	150
7	115	198	174	177	75	63	41	95	105	847	131	140
8	111	196	161	152	74	74	40	67	68	474	120	140
9	106	163	153	401	71	123	40	56	131	296	113	130
10	102	185	143	268	70	71	38	52	96	229	113	120
11	100	386	137	182	70	57	41	48	68	192	107	130
12	98	646	132	244	65	2060	40	47	73	171	134	140
13	562	779	128	166	70	532	36	67	66	157	175	124
14	235	235	124	142	72	161	49	193	203	146	131	115
15	125	183	331	132	74	113	52	136	171	132	121	129
16	114	186	202	130	66	94	35	92	1830	141	213	141
17	232	175	141	124	67	81	41	80	445	200	1710	130
18	296	190	127	122	68	74	300	609	1780	358	550	121
19	448	512	114	115	63	68	84	507	334	191	227	116
20	1020	758	293	115	65	66	115	460	228	155	162	106
21	408	467	158	114	128	64	979	415	170	141	2680	454
22	390	230	135	111	79	61	193	180	137	127	671	264
23	1100	219	123	106	67	57	101	181	125	118	393	208
24	366	183	122	102	65	60	82	717	110	431	279	286
25	266	188	119	101	65	64	66	498	104	150	612	282
26	212	201	284	162	64	55	56	231	93	131	509	565
27	190	304	240	110	63	51	147	153	130	119	344	247
28	183	330	162	98	64	52	175	125	133	140	657	195
29	173	266	132	94	---	52	130	109	91	785	358	149
30	207	1510	115	96	---	46	78	97	121	351	264	206
31	301	---	817	92	---	46	---	90	---	225	230	---
TOTAL	8374	10267	6989	4737	2059	4562	3223	5753	7295	13184	12440	6066
MEAN	270	342	225	153	73.5	147	107	186	243	425	401	202
MAX	1100	1510	873	401	128	2060	979	717	1830	3940	2680	565
MIN	98	163	114	92	63	46	35	47	66	118	107	106
CFSM	3.01	3.81	2.51	1.70	.82	1.64	1.19	2.07	2.71	4.73	4.47	2.25
IN.	3.47	4.25	2.90	1.96	.85	1.89	1.34	2.38	3.02	5.46	5.15	2.51
AC-FT	16610	20360	13860	9400	4080	9050	6390	11410	14470	26150	24670	12030

CAL YR 1982	TOTAL	82677	MEAN 227	MAX 3600	MIN 37	CFSM 2.53	IN 34.25	AC-FT 164000
WTR YR 1983	TOTAL	84949	MEAN 233	MAX 3940	MIN 35	CFSM 2.60	IN 35.19	AC-FT 168500

RIO GRANDE DE LOIZA BASIN

50055000 RIO GRANDE DE LOIZA AT CAGUAS, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1959 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV / 1982											
09...	1320	164	192	7.3	27.5	20	8.0	102	18	K8500	270
JAN / 1983											
19...	1300	116	220	7.1	25.0	22	8.4	102	30	3800	600
MAR											
10...	1125	71	231	7.5	26.5	320	6.8	85	54	K67000	15000
MAY											
04...	1045	78	223	7.6	27.5	35	7.1	91	10	580	6700
AUG											
11...	1215	109	212	7.4	29.0	20	7.6	99	180	K6800	310

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L CAC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV / 1982											
09...	--	--	--	--	--	--	--	59	--	--	--
JAN / 1983											
19...	70	0	17	6.8	21	1.1	1.9	72	13	16	.10
MAR											
10...	--	--	--	--	--	--	--	71	--	--	--
MAY											
04...	72	0	18	6.6	20	1.1	2.1	75	17	20	.20
AUG											
11...	65	0	16	6.0	20	1.1	1.5	70	12	17	.20

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982											
09...	--	--	--	28	.48	.020	.50	.050	.55	.60	1.1
JAN / 1983											
19...	33	152	47.6	6	.54	.060	.60	.220	.38	.60	1.2
MAR											
10...	--	--	--	586	.67	.230	.90	.860	.34	1.20	2.1
MAY											
04...	34	163	34.3	22	.60	.100	.70	.240	.36	.60	1.3
AUG											
11...	34	149	43.8	16	.45	.050	.50	.200	.30	.50	1.0

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982										
09...	4.9	.110	--	--	--	--	--	--	--	--
JAN / 1983										
19...	5.3	.220	2	100	1	5	11	.2	1	<1
MAR										
10...	9.3	.620	--	--	--	--	--	--	--	--
MAY										
04...	5.8	.290	--	--	--	--	--	--	--	--
AUG										
11...	4.4	.190	2	100	1	--	6	<.1	<1	<1

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
OCT, 08	1320	113	197	29.0	JUN, 22	1055	140	--	29.0
DEC, 23	0950	123	247	23.5	JUL, 28	1015	121	209	29.5
FEB, 09	0950	67	280	24.0	SEP, 12	1655	139	217	30.0
APR, 06	1030	44	326	28.0					

K = non-ideal count

RIO GRANDE DE LOIZA BASIN

50055250 RIO CAGUITAS AT HIGHWAY 30 AT CAGUAS, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°15'11", long 66°01'26", at Highway 30 bridge, and 0.8 mi (1.3 km) east of Caguas plaza.

DRAINAGE AREA.--14.1 sq mi (36.5 sq km).

PERIOD OF RECORD.--Water years 1972 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 83

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, O.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV / 1982											
23...	1350	16	463	6.8	26.0	7.5	.6	7	25	K610000	68000
JAN / 1983											
18...	1510	12	528	7.1	27.0	5.0	5.0	63	69	39000	K13000
MAR											
10...	1420	4.7	585	7.4	29.0	5.1	2.4	32	79	K6200000	215000
MAY											
11...	1330	8.1	544	7.4	32.5	.90	2.0	28	38	560000	31000
AUG											
16...	1240	14	385	7.4	29.0	--	3.6	47	63	43000	48000

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV / 1982											
23...	--	--	--	--	--	--	--	130	--	--	--
JAN / 1983											
18...	180	42	48	15	39	1.3	3.3	140	66	40	.40
MAR											
10...	--	--	--	--	--	--	--	150	--	--	--
MAY											
11...	200	27	54	15	50	1.6	4.9	170	87	48	.60
AUG											
16...	130	31	37	10	27	1.1	3.5	103	42	28	.30

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982											
23...	--	--	--	20	1.3	.220	1.5	1.90	1.6	3.50	5.0
JAN / 1983											
18...	34	330	10.6	<1	1.5	.150	1.6	1.10	1.1	2.20	3.8
MAR											
10...	--	--	--	11	.98	.220	1.2	2.80	2.3	5.10	6.3
MAY											
11...	36	397	8.7	5	.81	.290	1.1	2.70	2.8	5.50	6.6
AUG											
16...	25	235	8.9	42	.94	.160	1.1	.150	1.8	1.90	3.0

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982										
23...	22	.820	--	--	--	--	--	--	--	--
JAN / 1983										
18...	17	.790	2	<100	5	13	6	.2	<1	<1
MAR										
10...	28	1.70	--	--	--	--	--	--	--	--
MAY										
11...	29	1.90	--	--	--	--	--	--	--	--
AUG										
16...	13	--	2	<100	2	2	22	.4	<1	<1

K = non-ideal count

RIO GRANDE DE LOIZA BASIN

50055400 RIO BAIRAO NEAR CAGUAS, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°15'28", long 66°02'13", at bridge on Highway 1, about 2.5 mi (4.0 km) upstream from Río Grande de Loíza, and 1.4 mi (2.3 km) north of Caguas plaza.

DRAINAGE AREA.--5.4 sq mi (14.0 sq km).

PERIOD OF RECORD.--Water years 1958, 1962-66, 1973-74, 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV / 1982											
02...	1435	3.6	358	7.3	25.5	29	6.6	81	22	72000	21000
JAN / 1983											
05...	1435	7.5	418	6.8	24.0	25	3.8	45	59	280000	210000
MAR											
16...	1120	2.6	485	7.8	26.5	1.1	7.0	88	23	27000	K2100
MAY											
04...	1435	2.3	418	7.7	27.5	42	6.2	79	18	4300	77000
AUG											
17...	1010	24	259	7.4	26.5	140	6.4	80	40	K730000	660000

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV / 1982											
02...	--	--	--	--	--	--	--	110	--	--	--
JAN / 1983											
05...	140	13	34	14	30	1.1	5.1	130	20	31	.20
MAR											
16...	--	--	--	--	--	--	--	140	--	--	--
MAY											
04...	160	11	38	16	31	1.1	4.9	150	22	51	.30
AUG											
17...	78	0	20	6.9	16	.8	5.0	82	15	20	.20

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982											
02...	--	--	--	14	1.4	.080	1.5	.150	.75	.90	2.4
JAN / 1983											
05...	29	241	4.9	12	1.3	.120	1.4	2.80	2.4	5.20	6.6
MAR											
16...	--	--	--	<1	1.8	.030	1.8	.120	.18	.30	2.1
MAY											
04...	32	285	1.8	42	1.3	.050	1.3	.260	.44	.70	2.0
AUG											
17...	6.3	139	9.0	26	.89	.110	1.0	1.10	2.6	3.70	4.7

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982										
02...	11	.610	--	--	--	--	--	--	--	--
JAN / 1983										
05...	29	2.20	3	200	--	--	--	.6	<1	<1
MAR										
16...	9.3	.540	--	--	--	--	--	--	--	--
MAY										
04...	8.9	.770	--	--	--	--	--	--	--	--
AUG										
17...	21	1.10	3	100	2	20	16	<.1	<1	--

K = non-ideal count

LOCATION.--Lat 18°12'58", long 66°55'34", Hydrologic Unit 21010005, on left bank at Highway 919, 0.5 mi (0.8 km) upstream from Quebrada Don Victor, 1.7 mi (2.7 km) upstream from Río Gurabo and 1.0 mi (1.6 km) south of Juncos.

DRAINAGE AREA.--16.4 sq mi (42.5 sq km).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Altitude of gage is 320 ft (98 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--12 years (1972-83), 50.1 cu ft/s (1.419 cu m/s), 41.49 in/yr (1,054 mm/yr), 36,300 acre-ft/yr (44.8 cu hm/yr); median of yearly mean discharges, 51 cu ft/s (1.44 cu m/s), 36,900 acre-ft/yr (45 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,300 cu ft/s (660 cu m/s) Aug. 31, 1979, gage height, 20.17 ft (6.148 m), from rating curve extended above 100 cu ft/s (2.83 cu m/s) on basis of slope-area measurement and step-backwater analysis; minimum, 2.3 cu ft/s (0.065 cu m/s) July 10, 1977, gage height, 0.29 ft (0.088 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Approximate discharges (no stages were recorded) of major floods are as follows: Sept. 6, 1960, 37,100 cu ft/s (1,050 cu m/s); Oct. 9, 1970, 18,200 cu ft/s (515 cu m/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,400 cu ft/s (96.3 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)	Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
Mar 12	1630	4,200 119	8.42 2.566	Aug. 17	0615	4,020 114	8.26 2.518
July 5	1700	*7,340 208	11.23 3.423	Aug. 21	1830	6,890 195	10.87 3.313

Minimum discharge, 6.0 cu ft/s (0.170 cu m/s) Mar. 31, Apr. 1, 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	141	124	36	14	9.7	6.4	12	14	23	35	36
2	33	49	57	30	14	9.6	6.6	24	14	90	63	90
3	28	36	47	24	14	9.6	7.4	18	13	35	32	49
4	26	34	42	31	14	9.5	9.3	16	20	135	27	36
5	26	47	40	28	14	9.2	8.8	26	20	1840	26	32
6	25	83	35	38	13	9.3	10	19	27	252	33	29
7	24	41	33	32	13	9.6	8.3	18	24	129	23	27
8	23	42	29	29	13	13	7.7	14	16	70	21	26
9	22	41	28	48	13	32	7.3	13	57	51	21	24
10	21	33	27	31	12	12	7.1	12	25	42	21	23
11	21	76	27	24	12	12	7.2	18	17	38	19	27
12	20	74	26	26	12	764	7.3	10	43	35	18	40
13	27	70	25	22	12	89	7.2	11	19	32	19	25
14	25	39	24	21	13	29	31	17	24	30	23	23
15	21	36	34	20	12	21	14	23	54	28	19	29
16	20	74	28	19	12	16	9.1	17	256	31	83	27
17	35	49	24	19	12	15	9.6	28	67	56	702	25
18	57	69	22	19	12	14	70	17	220	54	104	26
19	188	229	22	18	11	12	15	29	51	31	40	24
20	166	64	83	17	11	10	24	25	34	29	32	22
21	98	56	32	18	13	9.4	440	16	29	26	1860	34
22	122	45	28	17	11	9.1	43	13	23	25	170	30
23	110	62	27	17	11	8.9	22	47	21	30	59	28
24	42	46	27	17	11	9.5	17	167	20	59	44	47
25	40	42	27	17	11	11	14	60	20	27	159	65
26	33	35	43	26	11	8.1	13	41	20	24	131	67
27	31	34	42	17	10	7.6	14	25	65	22	157	33
28	66	40	33	17	10	7.6	17	22	37	21	100	26
29	34	38	32	16	---	7.3	14	21	20	197	67	23
30	53	598	28	16	---	7.0	17	18	24	52	64	26
31	100	---	164	15	---	6.6	---	16	---	42	41	---
TOTAL	1586	2323	1260	725	341	1197.6	884.3	313	1294	3556	4213	1019
MEAN	51.2	77.4	40.6	23.4	12.2	38.6	29.5	26.2	43.1	115	136	34.0
MAX	188	598	164	48	14	764	440	167	256	1840	1860	90
MIN	20	33	22	15	10	6.6	6.4	10	13	21	18	22
CFSM	3.12	4.72	2.48	1.43	.74	2.35	1.80	1.60	2.63	7.01	8.29	2.07
IN.	3.60	5.27	2.86	1.64	.77	2.72	2.01	1.84	2.93	8.07	9.56	2.31
AC-FT	3150	4610	2500	1440	676	2380	1750	1610	2570	7050	8360	2020

CAL YR 1982	TOTAL	19192.1	MEAN 52.6	MAX 1470	MIN 6.7	CFSM 3.21	IN 43.53	AC-FT 38070
WTR YR 1983	TOTAL	19211.9	MEAN 52.6	MAX 1860	MIN 6.4	CFSM 3.21	IN 43.58	AC-FT 38110

WATER-QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
OCT, 04	1520	26	216	28.5	APR, 20	1000	34	293	28.0
NOV, 04	1345	32	234	25.0	MAY, 11	0653	11	282	27.0
DEC, 22	0925	28	223	22.0	JUL, 14	1025	31	237	27.0
JAN, 13	1335	23	286	24.0	JUL, 26	1230	26	237	28.5
FEB, 08	1230	14	319	23.5	AUG, 10	1045	21	223	26.5
FEB, 28	1541	11	290	28.0	SEP, 06	1420	29	238	29.5

RIO GRANDE DE LOIZA BASIN

50057000 RIO GURABO AT GURABO, PR

LOCATION.--Lat 18°15'30", long 65°58'05", Hydrologic Unit 21010005, on left bank, at bridge on Highway 181, 0.3 mi (0.5 km) east of Gurabo, and 4.5 mi (7.6 km) upstream from Río Grande de Loíza.

DRAINAGE AREA.--60.2 sq mi (155.9 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1958 (occasional low-flow measurements only), January to September 1959 (monthly measurements only), October 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 136.58 ft (41.630 m) above mean sea level.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--24 years (1960-83), 132 cu ft/s (3.738 cu m/s), 29.78 in/yr (756 mm/yr), 95,630 acre-ft/yr (118 cu hm/yr); median of yearly mean discharges, 127 cu ft/s (3.60 cu m/s), 92,000 acre-ft/yr (113 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 74,600 cu ft/s (2,133 cu m/s) Sept. 6, 1960, gage height, 27.7 ft (8.44 m), from floodmark, from rating curve extended above 8,000 cu ft/s (227 cu m/s) on basis of slope-area measurement at gage height 21.6 ft (6.58 m), contracted opening, culvert and flow over road measurement at gage height 23.76 ft (7.242 m), and estimate of peak flow based on slope-area measurements of Río Gurabo and Río Valenciano, 7.0 mi (11.3 km) upstream, adjusted for channel storage and flow from intervening area; minimum, 4.5 cu ft/s (0.127 cu m/s) Feb. 21, 25, 1968.

EXTREMES OUTSIDE PERIOD OF RECORD.--Approximate elevation to gage datum of the Aug. 4, 1945 flood, as pointed out by local residents, 26.6 ft (8.11 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 cu ft/s (85.0 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)	Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
Nov. 30	0915	3,360 95.2	8.94 2.725	Aug. 17	0815	3,520 99.7	9.17 2.795
Mar. 12	2115	4,530 128	10.57 3.222	Aug. 21	1915	*32,300 915	22.32 6.803
Apr. 21	0745	4,880 138	11.02 3.359	Aug. 25	1730	3,500 99.1	9.14 2.786
July 5	2015	14,800 419	17.76 5.413	Aug. 27	2045	6,190 175	12.60 3.840

Minimum discharge, 15 cu ft/s (0.425 cu m/s) Apr 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	85	184	187	128	32	21	19	38	47	56	85	218
2	79	115	104	90	31	21	19	41	44	143	160	492
3	67	94	95	74	30	20	19	40	42	96	76	228
4	62	107	85	72	30	20	19	36	59	349	64	111
5	60	94	79	74	29	19	19	40	64	4710	62	97
6	57	119	71	110	29	19	19	52	65	1540	80	89
7	56	95	67	63	28	20	18	57	149	325	54	84
8	56	81	64	58	28	23	18	48	60	192	49	81
9	54	82	61	53	28	42	17	35	434	131	45	77
10	51	73	60	51	28	30	16	31	119	105	43	72
11	51	87	58	50	27	24	16	29	60	92	41	72
12	50	209	59	50	26	1040	16	28	86	84	39	86
13	77	285	56	49	26	268	15	28	51	77	39	68
14	86	97	56	49	26	59	40	36	50	71	41	63
15	55	82	72	48	28	41	39	97	328	66	36	64
16	58	155	92	48	26	32	26	72	1030	66	114	66
17	63	107	62	47	25	29	26	89	208	73	1270	62
18	114	145	58	46	25	27	142	59	739	122	346	61
19	200	435	54	45	25	26	43	75	155	75	92	60
20	306	132	290	44	25	25	67	187	77	70	64	56
21	125	119	84	42	26	23	1270	80	90	66	8290	59
22	180	90	70	42	25	22	122	57	61	59	1170	73
23	247	184	62	40	24	22	72	317	53	57	248	72
24	128	96	61	40	22	21	48	410	46	138	186	77
25	100	89	82	39	22	23	38	178	45	68	774	104
26	95	79	283	38	23	22	35	119	42	55	410	128
27	86	97	275	37	22	20	269	114	73	50	1450	76
28	102	110	230	36	21	20	114	69	85	47	742	62
29	84	94	131	35	---	20	56	67	49	336	306	59
30	94	920	84	34	---	20	44	58	55	155	450	81
31	123	---	760	33	---	19	---	52	---	105	334	---
TOTAL	3051	4656	3852	1665	737	2038	2681	2639	4466	9579	17160	2998
MEAN	98.4	155	124	53.7	26.3	65.7	89.4	85.1	149	309	554	99.9
MAX	306	920	760	128	32	1040	1270	410	1030	4710	8290	492
MIN	50	73	54	33	21	19	15	28	42	47	36	56
CFSM	1.64	2.58	2.06	.89	.44	1.09	1.49	1.41	2.48	5.13	9.20	1.66
IN.	1.89	2.88	2.38	1.03	.46	1.26	1.66	1.63	2.76	5.92	10.60	1.85
AC-FT	6050	9240	7640	3300	1460	4040	5320	5230	8860	19000	34040	5950
CAL YR 1982	TOTAL	45253	MEAN 124	MAX 6830	MIN 14	CFSM 2.06	IN 27.96	AC-FT	89760			
WTR YR 1983	TOTAL	55522	MEAN 152	MAX 8290	MIN 15	CFSM 2.53	IN 34.31	AC-FT	110100			

RIO GRANDE DE LOIZA BASIN

50057000 RIO GURABO AT GURABO, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
OCT, 04	1130	61	291	28.5	MAY, 05	0828	36	357	27.5
NOV, 04	1025	102	267	26.0	JUN, 22	1515	60	--	30.0
DEC, 23	1300	62	340	25.0	JUL, 26	1520	55	305	32.5
JAN, 17	1030	47	367	24.0	AUG, 11	0907	40	312	27.5
FEB, 09	1310	28	563	26.5	SEP, 07	1150	86	318	29.5
APR, 06	1430	19	439	28.0					

RIO GRANDE DE LOIZA BASIN
50057025 RIO GURABO NEAR GURABO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°15'56", long 65°59'04", at bridge on Highway 941, 1.2 mi (1.9 km) west-northwest from gaging station 50057000, and 1.0 mi (1.6 km) northwest of Gurabo plaza.

DRAINAGE AREA.--62.8 sq mi (162.7 sq km).

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, O.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI KF AGAR (COLS. PER 100 ML)
NOV / 1982											
02...	1130	128	263	7.0	25.5	37	5.6	69	22	31000	5500
JAN / 1983											
05...	1135	80	321	6.8	24.0	17	5.6	67	21	K10000	K1700
MAR											
16...	1415	39	334	7.4	27.5	5.6	5.0	64	25	K1400	840
MAY											
11...	1045	29	320	7.6	30.0	4.2	3.0	40	22	K76000	7500
AUG											
16...	1040	42	357	7.4	29.0	11	4.2	55	24	K6000	7500

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV / 1982											
02...	--	--	--	--	--	--	--	78	--	--	--
JAN / 1983											
05...	110	10	25	11	28	1.2	3.4	98	15	23	.10
MAR											
16...	--	--	--	--	--	--	--	100	--	--	--
MAY											
11...	110	0	25	12	28	1.2	4.9	120	25	31	.20
AUG											
16...	110	0	25	12	29	1.2	3.8	115	19	29	.20

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982											
02...	--	--	--	48	1.2	.200	1.4	.390	.71	1.10	2.5
JAN / 1983											
05...	31	195	42.2	18	1.3	.130	1.4	.260	1.1	1.40	2.8
MAR											
16...	--	--	--	12	1.4	.150	1.5	.540	.26	.80	2.3
MAY											
11...	31	229	17.9	3	1.3	.160	1.5	.480	.82	1.30	2.8
AUG											
16...	34	221	25.1	4	1.3	.190	1.5	.110	.69	.80	2.3

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982										
02...	11	.420	--	--	--	--	--	--	--	--
JAN / 1983										
05...	12	.530	2	200	2	<1	5	.3	<1	<1
MAR										
16...	10	.520	--	--	--	--	--	--	--	--
MAY										
11...	12	.920	--	--	--	--	--	--	--	--
AUG										
16...	10	.450	2	100	1	<1	2	<.1	<1	<1

K = non-ideal count

RIO GRANDE DE LOIZA BASIN
50059000 LAGO LOIZA AT DAMSITE, PR
WATER-QUALITY RECORDS

LOCATION.--Lat 18°19'49", long 66°01'00", at pumphouse at damsite, and 1.9 mi (3.1 km) south of Trujillo Alto Plaza.

DRAINAGE AREA.--208 sq mi (539 sq km).

PERIOD OF RECORD.--Water years 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	ALKA- LITY FIELD (MG/L AS CAC03)
NOV , 1982											
03...	1240	124	222	6.7	27.0	2.8	35	19	46	K41	62
JAN , 1983											
14...	0850	124	718	6.4	24.0	1.2	14	--	K50	41	64
MAR											
17...	1120	124	253	7.0	27.0	.8	10	<10	K1400	3500	80
MAY											
13...	1135	124	232	6.8	28.0	.0	0	30	70	40	87
AUG											
17...	1425	139	232	7.2	29.0	.0	0	27	96	120	72

DATE	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)
NOV , 1982										
03...	11	.31	.090	.40	.120	.38	.50	.90	4.0	.170
JAN , 1983										
14...	28	.48	.020	.50	.110	.69	.80	1.3	5.8	.360
MAR										
17...	<1	.48	.220	.70	.330	.07	.40	1.1	4.9	.200
MAY										
13...	10	--	<.010	<.10	.390	.21	.60	--	--	.470
AUG										
17...	10	--	.020	<.10	.200	.80	1.00	--	--	.160

K = non-ideal count

RIO GRANDE DE LOIZA BASIN

50059100 RIO GRANDE DE LOIZA BELOW TRUJILLO ALTO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°21'35", long 66°00'15", 100 ft (30 m) downstream of Highway 181 bridge, 0.4 mi (0.6 km) northwest of Trujillo Alto plaza, and 2.2 mi (3.5 km) northeast of Lago Loiza Reservoir.

DRAINAGE AREA.--213 sq mi (552 sq km).

PERIOD OF RECORD.--Water years 1981 to current year.

REMARKS: Flow controlled by Lago Loiza reservoir.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV / 1982											
03...	1020	16	235	7.2	27.5	5.7	6.4	81	--	240	K140
JAN / 1983											
14...	1105	24	294	7.3	25.0	5.3	8.0	97	--	400	330
MAR											
17...	1000	7.0	301	7.6	28.0	3.2	6.3	81	13	620	K170
MAY											
13...	0930	9.4	289	8.0	29.0	3.5	7.4	97	28	600	K170
AUG											
17...	1220	60	230	7.5	29.0	5.0	2.8	36	27	4800	4000

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV / 1982											
03...	--	--	--	--	--	--	--	67	--	--	--
JAN / 1983											
14...	75	2	18	7.4	18	.9	3.2	74	15	19	.10
MAR											
17...	--	--	--	--	--	--	--	98	--	--	--
MAY											
13...	110	0	27	11	25	1.1	3.0	120	23	26	.20
AUG											
17...	70	0	17	6.7	18	1.0	2.7	73	12	17	.20

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982											
03...	--	--	--	14	.68	.020	.70	.030	.67	.70	1.4
JAN / 1983											
14...	24	149	9.8	16	.68	.020	.70	.030	2.5	2.50	3.2
MAR											
17...	--	--	--	<1	.98	.020	1.0	.030	.17	.20	1.2
MAY											
13...	23	210	5.3	4	.28	.020	.30	.010	.39	.40	.70
AUG											
17...	25	142	23.1	5	--	.030	<.10	.210	.59	.80	--

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982										
03...	6.2	.220	--	--	--	--	--	--	--	--
JAN / 1983										
14...	14	.450	2	100	1	10	3	.2	<1	<1
MAR										
17...	5.3	.220	--	--	--	--	--	--	--	--
MAY										
13...	3.1	.220	--	--	--	--	--	--	--	--
AUG										
17...	--	.180	2	200	1	<1	4	.1	<1	--

K = non-ideal count

LOCATION.--Lat 18°19'08", long 65°53'21", Hydrologic Unit 21010005, at center pier on downstream side of bridge, on paved secondary road, 0.4 mi (0.6 km) northeast of junction of Highways 185 and 186, 1.5 mi (2.4 km) south of Campo Rico, and 4.4 mi (7.1 km) south of Loíza.

DRAINAGE AREA.--9.84 sq mi (25.48 sq km).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Altitude of gage is 225 ft (68.6 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--16 years (1968-83), 28.2 cu ft/s (0.799 cu m/s), 38.92 in/yr (989 mm/yr), 20,430 acre-ft/yr (25.2 cu hm/yr); median of yearly mean discharges, 25 cu ft/s (0.71 cu m/s), 18,100 acre-ft/yr (22 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,000 cu ft/s (425 cu m/s) Sept. 13, 1982, gage height, 13.1 ft (3.993 m), from floodmarks, from rating curve extended above 350 cu ft/s (9.91 cu m/s) on basis of slope-area measurements and step-backwater analysis made in 1981; minimum daily, 0.80 cu ft/s (0.023 cu m/s) July 24, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 cu ft/s (70.8 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)	Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
July 5	1400	3,590 102	7.36 2.243	Aug. 21	1330	*6,910 196	977 2.978

Minimum discharge, 2.6 cu ft/s (0.074 cu m/s) Apr. 10, 14, 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	12	21	46	10	5.6	3.8	5.2	4.8	10	23	21
2	12	13	18	34	10	5.5	3.7	5.0	4.7	31	54	18
3	11	18	18	28	9.7	5.4	3.6	5.1	4.6	42	16	17
4	10	14	17	27	9.8	5.2	3.7	4.7	5.1	116	13	17
5	9.0	13	18	25	9.5	5.2	3.7	4.6	4.9	605	11	15
6	10	13	14	27	9.3	5.3	3.8	7.4	4.5	143	11	13
7	15	12	13	23	9.7	5.9	3.8	10	4.5	54	9.8	13
8	12	11	11	21	9.3	6.2	3.0	7.0	4.4	34	9.2	15
9	11	10	11	22	9.1	7.1	3.1	5.3	31	24	8.8	13
10	10	10	10	20	9.0	5.9	2.8	4.7	11	19	9.0	12
11	10	12	11	19	8.9	5.4	3.1	4.5	5.9	17	8.5	11
12	11	62	10	18	8.4	57	3.3	4.5	5.4	15	8.6	11
13	81	49	9.7	17	8.1	26	3.0	4.6	5.3	15	8.3	12
14	57	15	9.5	16	8.2	8.9	3.0	7.3	5.1	13	7.6	13
15	22	12	60	15	8.4	6.3	3.0	9.6	21	13	7.6	15
16	15	11	29	16	8.1	5.4	2.8	11	282	13	12	12
17	14	11	22	14	7.7	5.3	3.6	12	35	19	70	12
18	23	11	14	14	7.3	5.1	42	16	54	19	37	13
19	53	12	12	14	7.2	4.9	9.1	35	22	14	13	13
20	44	11	98	14	7.1	4.6	25	27	14	14	11	12
21	23	12	34	13	9.6	4.6	254	13	13	13	772	12
22	18	11	22	13	8.1	4.7	19	15	11	12	71	12
23	41	21	21	13	7.0	4.6	12	21	9.2	11	30	12
24	24	15	21	12	6.7	4.5	8.9	16	8.1	30	33	12
25	18	11	41	12	6.7	4.1	6.7	11	8.0	15	54	19
26	17	14	226	14	6.7	3.9	6.1	7.7	7.8	12	42	14
27	15	19	138	12	6.2	3.8	13	6.7	8.8	11	78	11
28	14	43	224	11	5.9	4.5	16	6.0	10	11	42	11
29	13	29	64	11	---	4.4	6.9	5.7	7.7	35	30	11
30	12	43	37	11	---	4.3	5.6	5.4	11	18	34	20
31	14	---	93	11	---	3.8	---	5.0	---	12	25	---
TOTAL	653.0	550	1347.2	563	231.7	233.4	481.1	303.0	623.8	1410	1559.4	412
MEAN	21.1	13.3	43.5	18.2	8.28	7.53	16.0	9.77	20.8	45.5	50.3	13.7
MAX	81	62	226	46	10	57	254	35	282	605	772	21
MIN	9.0	10	9.5	11	5.9	3.8	2.8	4.5	4.4	10	7.6	11
CFSM	2.14	1.86	4.42	1.85	.84	.77	1.63	.99	2.11	4.62	5.11	1.39
IN.	2.47	2.08	5.09	2.13	.88	.83	1.82	1.15	2.36	5.33	5.89	1.56
AC-FT	1300	1090	2670	1120	460	463	954	601	1240	2800	3090	817

CAL YR 1982	TOTAL	9446.5	MEAN 25.9	MAX 1000	MIN 5.4	CFSM 2.63	IN 35.71	AC-FT 18740
WTR YR 1983	TOTAL	8367.6	MEAN 22.9	MAX 772	MIN 2.8	CFSM 2.33	IN 31.63	AC-FT 16600

WATER-QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
OCT, 21	1030	20	136	25.0	APR, 19	1345	11	181	26.0
NOV, 02	1030	13	220	24.0	MAY, 06	0812	4.6	254	25.0
DEC, 15	1020	13	239	23.0	JUN, 23	1205	9.4	182	29.0
JAN, 12	1330	18	235	24.0	JUL, 25	1045	14	167	27.0
FEB, 03	1225	9.8	265	23.0	AUG, 08	1224	9.3	223	28.5
MAR, 03	1626	5.5	246	23.5	SEP, 14	0923	12	212	25.0

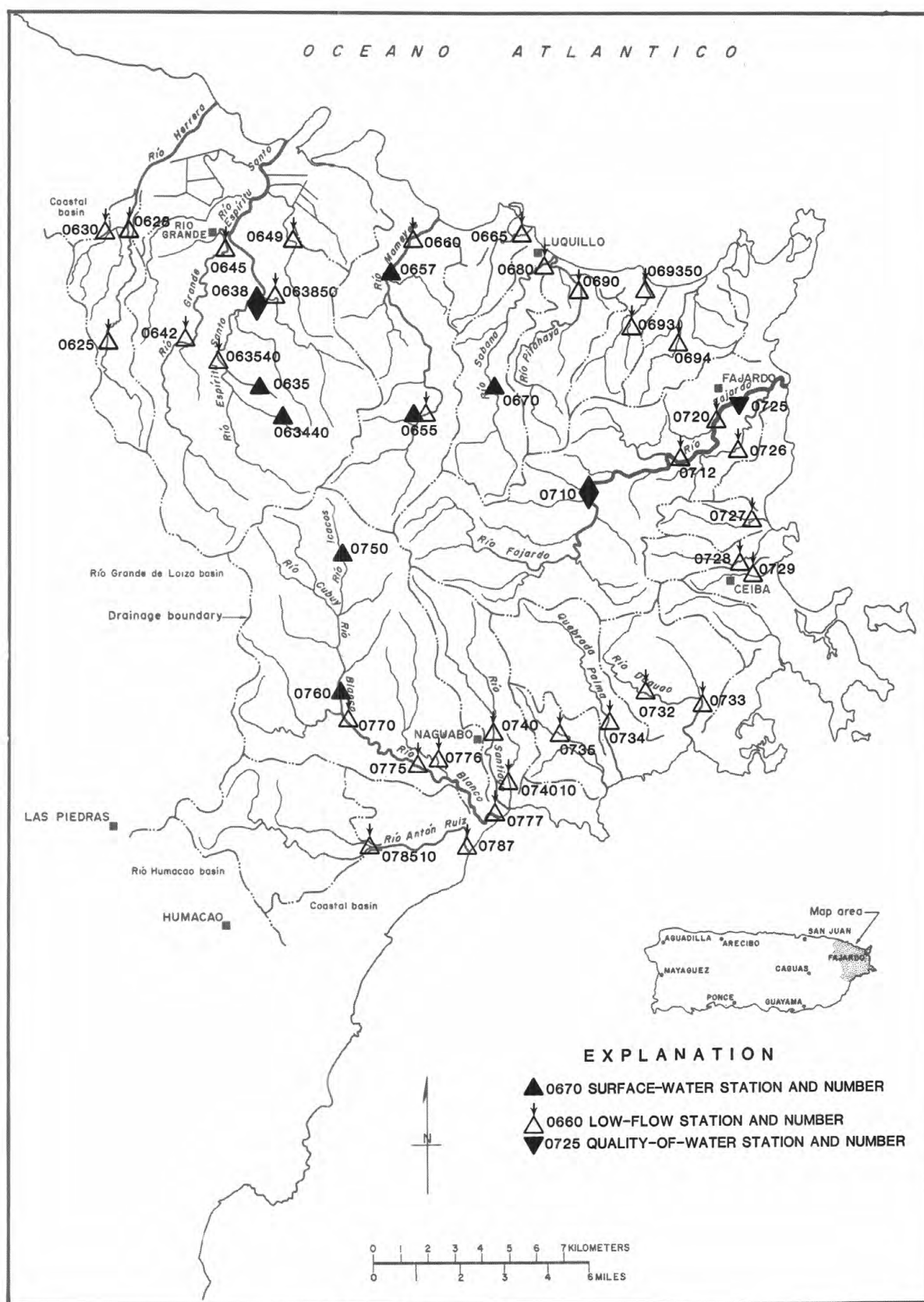


Figure 19.--Northeastern rivers basin--Río Herrera to Río Antón Ruiz basins.

RIO ESPIRITU SANTO BASIN

50063440 QUEBRADA SONADORA NEAR EL VERDE, PR

LOCATION.--Lat 18°19'24", long 65°49'03", Hydrologic Unit 21010005, in Caribbean National Forest, at El Yunque, 0.55 mi (0.88 km) upstream from Río Espíritu Santo, 0.23 mi (0.42 km) upstream from Highway 186, and about 1.2 mi (1.9 km) south of El Verde.

DRAINAGE AREA.--1.01 sq mi (2.62 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March to September 1983.

GAGE.--Water-stage recorder. Altitude of gage is 1,230 ft (375 m), from topographic map.

REMARKS.--Records poor.

EXTREMES FOR CURRENT PERIOD.--Peak discharges above base of 500 cu ft/s (14.2 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)	Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
Apr. 21	0245	573 16.2	7.25 2.210	July 5	1400	586 16.6	7.28 2.219
June 17	2315	*1,210 34.3	8.35 2.545				

Minimum discharge, 0.48 cu ft/s (0.014 cu m/s) Apr. 12-14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						---	2.4	1.6	1.6	22	38	4.4
2						---	2.1	3.4	1.5	18	15	4.9
3						---	1.9	2.6	1.4	22	3.3	5.3
4						---	1.6	1.8	2.2	42	3.0	6.7
5						---	1.5	1.5	2.0	80	4.9	4.1
6						---	1.7	10	4.2	28	6.8	3.5
7						---	1.9	2.3	7.5	28	2.7	3.2
8						---	1.3	1.4	3.3	9.8	2.3	3.1
9						---	1.0	.80	8.3	7.1	2.1	3.0
10						---	.87	.72	2.2	5.8	2.5	3.0
11						---	1.6	.71	1.6	4.9	2.8	5.1
12						---	1.1	.91	1.3	4.5	3.0	4.5
13						---	.48	.77	5.5	4.1	3.0	3.0
14						---	.56	6.0	2.8	3.8	2.1	2.6
15						---	1.0	40	10	3.6	2.7	7.0
16						---	1.3	4.2	60	3.8	12	3.0
17						---	4.9	1.9	43	14	30	3.9
18						---	12	4.7	34	9.4	5.8	8.4
19						---	15	29	6.8	6.8	2.8	6.0
20						---	12	14	7.1	10	3.5	3.2
21						---	71	17	5.3	4.6	74	6.2
22						---	3.8	14	4.0	4.4	16	7.6
23						---	2.5	16	3.6	5.2	6.2	4.9
24						---	2.1	13	3.4	12	6.6	6.9
25						---	1.8	6.4	3.1	4.0	32	12
26						---	1.7	2.9	2.9	3.4	13	3.9
27						---	1.5	2.4	6.6	3.1	21	3.1
28						---	1.6	2.1	15	3.5	14	2.0
29						---	3.0	2.2	2.5	3.5	21	1.8
30						---	2.7	1.5	1.9	17	5.1	4.4
31						---	2.6	---	1.7	---	4.0	---
TOTAL						---	155.91	208.21	270.7	397.9	357.5	140.7
MEAN						---	5.20	6.72	9.02	12.8	11.5	4.69
MAX						---	71	40	60	80	74	12
MIN						---	.48	.71	1.3	3.1	2.1	1.8
CFSM						---	5.15	6.65	8.93	12.7	11.4	4.64
IN.						---	5.74	7.66	9.96	14.64	13.15	5.18
AC-FT						---	309	413	537	789	709	279

WATER-QUALITY RECORDS

PERIOD OF RECORD.--APRIL TO SEPTEMBER 1983

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
APR, 21	1135	18	86	21.5	JUL, 19	0950	9.1	45	23.0
MAY, 10	0947	.72	55	22.0	AUG, 09	0948	2.2	51	22.5
JUN, 15	1343	10	44	24.0	SEP, 14	1146	2.5	56	23.0

RIO ESPIRITU SANTO BASIN

50063500 QUEBRADA TORONJA AT EL VERDE, PR

LOCATION.--Lat 18°19'43", long 65°49'14", Hydrologic Unit 21010005, in Caribbean National Forest, at downstream side of culvert on Highway 186, 0.22 mi (0.35 km) upstream from Río Espíritu Santo, and about 0.9 mi (1.4 km) south of El Verde.

DRAINAGE AREA.--0.064 sq mi (0.166 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April to September 1983.

GAGE.--Water-stage recorder and broad-V-notch crested weir. Altitude of gage is 876 ft (267 m), from topographic map.

REMARKS.--Records poor.

EXTREMES FOR CURRENT PERIOD.--Peak discharges above base of 50 cu ft/s (1.42 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
July 5	1400	*18.0 0.51	1.71 0.521

No flow for part of each day Apr. 10, 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							.05	.04	.05	.83	1.3	.29
2							.05	.04	.05	.54	.89	.29
3							.02	.04	.04	.73	.25	.25
4							.02	.04	.07	2.7	.23	.24
5							.02	.04	.06	4.3	.24	.22
6							.02	.05	.20	2.4	.22	.20
7							.02	.03	.30	1.8	.15	.20
8							.02	.03	.10	.88	.13	.18
9							.02	.03	.40	.66	.12	.17
10							.01	.03	.07	.52	.12	.18
11							.01	.03	.05	.43	.13	.18
12							.01	.03	.04	.38	.12	.16
13							.01	.04	.20	.33	.12	.15
14							.01	.19	.10	.29	.10	.13
15							.01	1.3	.10	.27	.11	.17
16							.02	.19	1.6	.25	.14	.13
17							.06	.12	.77	.43	.46	.24
18							.24	.12	1.8	.31	.16	.47
19							.08	.57	.33	.26	.12	.19
20							.11	.42	.25	.23	.13	.24
21							1.9	.68	.21	.20	3.7	.26
22							.14	.52	.19	.19	1.1	.20
23							.09	.45	.17	.19	.47	.15
24							.09	.40	.16	.30	.41	.30
25							.05	.30	.15	.17	.97	.34
26							.05	.10	.15	.15	.55	.17
27							.05	.08	.22	.15	1.0	.13
28							.05	.07	.34	.15	.71	.09
29							.05	.08	.15	.42	.53	.08
30							.05	.06	.38	.16	.39	.14
31							---	.05	---	.15	.34	---
TOTAL							3.33	6.17	8.70	20.77	15.41	6.14
MEAN							.11	.20	.29	.67	.50	.20
MAX							1.9	1.3	1.8	4.3	3.7	.47
MIN							.01	.03	.04	.15	.10	.08
CFSM							1.83	3.33	4.83	11.2	8.33	3.33
IN.							1.91	3.53	4.98	11.89	8.82	3.51
AC-FT							6.6	12	17	41	31	12

WATER-QUALITY RECORDS

PERIOD OF RECORD.--APRIL TO SEPTEMBER 1983

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
APR, 21	1015	2.0	127	22.0	JUL, 19	1115	.30	100	24.0
MAY, 10	0753	.03	120	23.0	AUG, 09	0748	.13	104	23.0
JUN, 15	1155	.12	115	24.0	SEP, 14	1035	.11	118	23.5

RIO ESPIRITU SANTO BASIN

50063800 RIO ESPIRITU SANTO NEAR RIO GRANDE, PR

LOCATION.--Lat 18°21'37", long 65°48'49", Hydrologic Unit 21010005, at left abutment, on downstream side of bridge on Highway 966, 0.1 mi (0.2 km) upstream from Quebrada Jiménez, and 1.9 mi (3.1 km) southeast of Rio Grande.

DRAINAGE AREA.--8.62 sq mi (22.33 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1959 to April 1963 (annual low flow and occasional measurements only), August 1966 to current year.

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

REMARKS.--Records fair.

AVERAGE DISCHARGE.--17 years (1967-83), 57.0 cu ft/s (1.614 cu m/s), 89.80 in/yr (2,280 mm/yr), 41,300 acre-ft/yr (50.9 cu hm/yr); median of yearly mean discharges, 52 cu ft/s (1.47 cu m/s), 37,700 acre-ft/yr (46 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,800 cu ft/s (334 cu m/s) Oct. 26, 1978, gage height, 11.85 ft (3.612 m), from rating curve extended above 600 cu ft/s (17.0 cu m/s) on basis of step-backwater analysis; minimum, 4.0 cu ft/s (0.113 cu m/s) July 3-5, 1975, gage height 2.43 ft (0.741 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 cu ft/s (85.0 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)	Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
Apr. 21	0300	5,350 152	8.84 2.694	July 5	1430	5,730 162	9.06 2.761
June 16	0145	3,380 95.7	7.51 2.289	Aug. 21	Unknown	5,400 153	8.87 2.704
June 17	2400	*7,460 211	9.97 3.039				

Minimum discharge, 6.0 cu ft/s (0.170 cu m/s) Apr. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	27	31	56	107	14	7.7	8.1	7.9	13	191	289	40		
2	19	29	74	67	13	7.5	8.3	17	13	111	188	37		
3	16	54	45	40	13	7.2	7.8	13	12	151	32	40		
4	15	24	67	41	13	6.9	7.7	11	13	495	25	38		
5	15	62	47	99	12	7.1	7.8	8.6	16	1060	31	35		
6	15	71	24	122	11	10	8.2	66	17	299	30	28		
7	13	23	29	53	11	22	8.1	22	52	247	31	27		
8	13	16	22	59	11	60	7.8	14	16	73	27	37		
9	13	17	19	58	11	31	7.2	9.4	62	51	35	28		
10	12	16	17	42	11	14	7.2	8.1	20	40	57	23		
11	13	17	17	41	10	11	6.8	7.7	14	34	31	25		
12	13	137	15	53	9.8	206	7.2	9.0	13	31	54	23		
13	14	74	15	34	9.6	47	6.7	8.1	26	28	41	22		
14	12	57	15	20	9.8	16	6.7	37	26	25	31	20		
15	11	37	173	27	10	12	7.0	328	84	22	49	25		
16	12	97	42	31	9.3	10	9.8	39	559	23	76	24		
17	26	31	70	25	8.7	9.6	8.6	15	189	78	155	38		
18	62	28	20	24	8.6	9.1	115	35	457	56	55	49		
19	40	28	17	23	8.3	8.5	68	145	40	34	34	40		
20	43	19	233	22	8.0	9.8	73	96	28	47	33	35		
21	72	32	133	21	20	12	718	176	27	27	490	30		
22	23	19	120	21	14	11	27	99	20	23	103	37		
23	51	27	89	21	10	9.8	15	103	18	27	49	35		
24	27	18	91	20	9.2	9.2	12	85	16	78	41	46		
25	31	15	86	20	10	8.7	10	45	15	24	215	66		
26	33	38	281	24	9.7	8.3	9.5	23	14	20	121	29		
27	35	63	122	20	8.6	7.9	8.9	18	24	18	136	24		
28	15	238	196	15	8.0	12	8.7	16	62	19	151	19		
29	13	105	75	14	---	10	10	18	17	142	94	18		
30	15	109	64	16	---	8.6	8.7	15	117	31	78	45		
31	25	---	269	15	---	8.0	---	13	---	24	50	---		
TOTAL	744	1532	2543	1195	301.6	617.9	1214.8	1507.8	2000	3529	2832	983		
MEAN	24.0	51.1	82.0	38.5	10.8	19.9	40.5	48.6	66.7	114	91.4	32.8		
MAX	72	238	281	122	20	206	718	328	559	1060	490	66		
MIN	11	15	15	14	8.0	6.9	6.7	7.7	12	18	25	18		
CFSM	2.78	5.93	9.51	4.47	1.25	2.31	4.70	5.64	7.74	13.2	10.6	3.81		
IN.	3.21	6.61	10.97	5.16	1.30	2.67	5.24	6.51	8.63	15.23	12.22	4.24		
AC-FT	1480	3040	5040	2370	598	1230	2410	2990	3970	7000	5620	1950		
CAL YR 1982	TOTAL	21048.7	MEAN	57.7	MAX	890	MIN	6.6	CFSM	6.69	IN	90.83	AC-FT	41750
WTR YR 1983	TOTAL	19000.1	MEAN	52.1	MAX	1060	MIN	6.7	CFSM	6.04	IN	81.99	AC-FT	37690

RIO ESPIRITU SANTO BASIN

50063800 RIO ESPIRITU SANTO NEAR RIO GRANDE, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958, 1961-66, 1968 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	
NOV / 1982											
08...	1400	16	106	7.2	26.0	2.6	8.4	104	15	2400	
JAN / 1983											
28...	1020	14	128	7.8	23.0	1.0	8.4	98	<10	K110	
MAR											
09...	1400	27	7	7.6	24.0	2.4	9.4	112	59	K820	
MAY											
10...	1135	8.2	94	8.2	29.0	.80	8.0	104	17	290	
AUG											
03...	1240	30	85	7.5	26.0	3.4	9.0	110	<10	4000	
DATE	TIME	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
NOV / 1982											
08...	380	--	--	--	--	--	--	--	--	30	--
JAN / 1983											
28...	210	39	0	8.2	4.4	8.6	.6	.4	43	<5.0	
MAR											
09...	K1100	--	--	--	--	--	--	--	--	18	--
MAY											
10...	3400	31	0	6.8	3.5	7.5	.6	.5	34	4.1	
AUG											
03...	2100	25	0	5.4	2.9	5.9	.5	.4	28	4.2	
DATE	TIME	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 DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)
NOV / 1982											
08...	--	--	--	--	--	--	8	<.010	<.10	<.010	--
JAN / 1983											
28...	10	<.10	22	--	--	--	<1	<.010	<.10	.020	--
MAR											
09...	--	--	--	--	--	--	6	<.010	<.10	.020	.28
MAY											
10...	10	<.10	20	73	1.6	<1	.020	<.10	<.010	--	--
AUG											
03...	8.8	<.10	15	59	4.8	2	<.010	<.10	.020	.08	--
DATE	TIME	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982											
08...	.70	.020	--	--	--	--	--	--	--	--	--
JAN / 1983											
28...	<.10	<.010	1	100	2	3	<1	.3	<1	<1	2
MAR											
09...	.30	.020	--	--	--	--	--	--	--	--	--
MAY											
10...	<.10	.020	--	--	--	--	--	--	--	--	--
AUG											
03...	.10	.020	<1	--	--	--	--	--	<.1	<1	--
DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)		
OCT, 06	1025	14	95	25.5	JUL, 25	1145	23	93	27.5		
MAR, 04	1145	7.0	123	30.5	SEP, 15	1212	60	77	24.5		

K = non-ideal count

RIO MAMEYES BASIN

50065500 RIO MAMEYES NEAR SABANA, PR

LOCATION.--Lat 18°19'46", long 65°45'04", on left bank, at bridge on Highway 988, 1.4 mi (2.3 km) west of Sabana, 2.0 mi (3.2 km) downstream from Río de la Mina, and 3.2 mi (5.1 km) southeast of Mameyes.

DRAINAGE AREA.--6.88 sq mi (17.8 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1967 to December 1973. June to September, 1983.

GAGE.--Water-stage recorder. Altitude of gage is 275 ft (83.8 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--6 years (1968-73), 59.9 cu ft/s (1.696 cu m/s), 118.23 in/yr (3,003 mm/yr), 43,400 acre-ft/yr (53.5 cu hm/yr).

EXTREMES FOR CURRENT PERIOD.--Peak discharges above base of 4,000 cu ft/s (113 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)		Gage height (ft) (m)	
June 17	2315	*6,130	174	8.70	2.652

Minimum daily discharge, 24 cu ft/s (0.680 cu m/s) Aug. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1									32	124	154	34
2									30	54	80	34
3									29	56	33	34
4									40	72	29	32
5									38	229	33	28
6									33	88	30	28
7									56	76	27	27
8									30	41	24	39
9									180	35	29	28
10									42	35	44	32
11									37	31	32	31
12									34	30	41	31
13									106	28	40	29
14									59	28	28	27
15									88	25	38	45
16									215	25	53	28
17									241	48	113	28
18									291	33	40	29
19									57	28	30	29
20									68	35	40	30
21									53	31	291	37
22									36	29	63	55
23									35	29	42	37
24									37	66	38	46
25									35	36	141	61
26									39	32	78	39
27									34	29	91	34
28									46	27	84	30
29									26	98	64	31
30									72	39	50	55
31									---	31	39	---
TOTAL									2119	1568	1919	1048
MEAN									70.6	50.6	61.9	34.9
MAX									291	229	291	61
MIN									26	25	24	27
CFSM									10.3	7.36	9.00	5.07
IN.									11.46	8.48	10.37	5.67
AC-FT									4200	3110	3810	2080

WATER-QUALITY RECORDS

PERIOD OF RECORD.--JUNE TO SEPTEMBER 1983

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
JUN, 17	1005	58	78	25.0	AUG, 18	1218	39	121	24.5
JUL, 14	1625	27	93	26.0	SEP, 15	1212	60	77	24.5

50065700 RIO MAMEYES AT HIGHWAY 191 AT MAMEYES, PR

LOCATION.--Lat 18°22'03", long 65°46'14", Hydrologic Unit 21010005, on left bank, 0.2 mi (0.3 km) upstream from Quebrada Anón, 0.3 mi (0.5 km) downstream from Quebrada Tabonuco, and 0.3 mi (0.5 km) south of Mameyes.

DRAINAGE AREA.--11.8 sq mi (30.6 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1966 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 22 ft (6.7 m), from topographic map. Prior to Jan. 1, 1974 at datum 4.88 ft (1.487 m) higher and Jan. 1, 1974 to Mar. 25, 1976 at datum 4.00 ft (1.219 m) higher.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--17 years (1967-83), 73.2 cu ft/s (2.073 cu m/s), 84.24 in/yr (2,140 mm/yr), 53,030 acre-ft/yr (65.4 cu hm/yr); median of yearly mean discharges, 72 cu ft/s (2.04 cu m/s), 52,200 acre-ft/yr (64 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,200 cu ft/s (742 cu m/s), Oct. 24, 1974, gage height, 18.79 ft (5.727 m), present datum, from rating curve extended above 200 cu ft/s (5.66 cu m/s) on basis of slope-area measurement of peak flow; minimum, 5.0 cu ft/s (0.142 cu m/s) Apr. 28, 1975.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 5,300 cu ft/s (150 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)	Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
Apr.-21	0315	*16,200 459	17.17 5.233	June 17	2345	12,100 343	16.20 4.938
May 15	0915	5,460 155	12.96 3.950				

Minimum daily discharge, 8.0 cu ft/s (0.226 cu m/s) Apr. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	59	72	111	17	9.0	10	26	39	190	262	51
2	28	60	93	88	17	9.4	12	39	36	146	199	47
3	26	89	72	58	18	14	10	24	35	123	39	51
4	26	37	63	56	21	12	10	19	49	250	33	48
5	24	119	55	115	18	15	11	18	48	604	40	45
6	23	150	39	130	18	17	12	87	40	372	38	36
7	21	44	42	63	15	23	11	38	68	327	40	34
8	20	35	37	71	15	85	10	25	36	114	34	47
9	19	53	32	74	14	46	9.0	19	226	76	45	36
10	19	41	30	54	16	19	9.0	17	42	69	73	30
11	18	34	29	53	18	20	8.0	16	33	57	39	32
12	21	206	28	68	17	385	9.0	18	31	59	69	30
13	23	118	27	43	15	99	10	58	301	46	53	28
14	29	62	26	38	16	50	9.0	140	111	41	39	26
15	23	78	176	34	18	35	10	509	169	37	63	56
16	40	150	49	39	15	29	13	62	363	37	98	31
17	41	60	69	32	14	26	12	21	426	139	202	49
18	60	61	31	31	13	25	122	190	796	99	71	63
19	45	109	28	29	13	23	86	335	114	70	43	51
20	41	44	192	28	13	21	63	163	183	57	42	45
21	75	40	249	27	51	18	1160	182	129	37	642	38
22	33	36	162	27	27	15	45	110	64	38	133	47
23	53	99	93	27	15	13	31	218	52	38	63	45
24	41	36	64	26	13	12	25	175	44	86	53	59
25	30	43	59	25	13	12	21	87	38	34	284	85
26	55	65	179	31	10	13	19	45	33	27	158	37
27	49	114	103	25	9.6	11	18	45	53	31	176	31
28	23	229	145	22	9.5	17	22	42	92	48	198	24
29	20	123	85	21	---	11	20	60	35	258	122	23
30	26	116	170	25	---	12	17	39	138	77	100	58
31	59	---	251	21	---	11	---	38	---	52	64	---
TOTAL	1046	2515	2750	1492	469.1	1107.4	1824.0	2865	3824	3639	3515	1283
MEAN	33.7	83.8	88.7	48.1	16.8	35.7	60.8	92.4	127	117	113	42.8
MAX	75	229	251	130	51	385	1160	509	796	604	642	85
MIN	18	34	26	21	9.5	9.0	8.0	16	31	27	33	23
CFSM	2.86	7.10	7.52	4.08	1.42	3.03	5.15	7.83	10.8	9.92	9.58	3.63
IN.	3.30	7.93	8.67	4.70	1.48	3.49	5.75	9.03	12.05	11.47	11.08	4.04
AC-FT	2070	4990	5450	2960	930	2200	3620	5680	7580	7220	6970	2540

CAL YR 1982	TOTAL	24729.0	MEAN 67.8	MAX 907	MIN 11	CFSM 5.75	IN 77.95	AC-FT 49050
WTR YR 1983	TOTAL	26329.5	MEAN 72.1	MAX 1160	MIN 8.0	CFSM 6.11	IN 83.00	AC-FT 52220

WATER-QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
OCT, 06	1245	23	125	27.5	APR, 19	1055	24	140	25.0
NOV, 01	1220	52	110	25.5	MAY, 06	1216	18	134	28.0
DEC, 14	1325	27	160	25.0	JUN, 17	1005	57	69	25.0
JAN, 12	1035	102	136	22.5	JUL, 14	1155	41	132	28.0
FEB, 03	0945	18	201	22.0	JUL, 25	1510	32	130	30.0
MAR, 04	1148	12	158	28.0	AUG, 19	1430	44	132	28.0

LOCATION.--Lat 18°19'52", long 65°43'52", Hydrologic Unit 21010005, on right bank along Highway 988, 0.3 mi (0.5 km) north of junction of Highways 988 and 983 in Sabana, and 3.3 mi (5.3 km) south of Luquillo.

DRAINAGE AREA.--3.96 sq mi (10.26 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1979 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 260 ft (80 m), from topographic map.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,010 cu ft/s (255 cu m/s) Apr. 21, 1983, gage height, 19.35 ft (5.898 m), from floodmark, from rating curve extended above 200 cu ft/s (5.66 cu m/s) on basis of step-backwater analysis and slope-area measurement; minimum discharge, 0.86 cu ft/s (0.024 cu m/s) Apr. 17, 1983.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 cu ft/s (42.5 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Dec. 21	2045	1,750	49.6	12.53	3.819	May 13	1600	4,730	134	16.00	4.877
Mar. 12	1330	1,500	42.5	12.13	3.697	June 17	1830	1,840	52	12.66	3.859
Apr. 21	0315	*9,010	255	19.35	5.898	June 18	0045	2,110	60	13.06	3.981

Minimum discharge, 0.86 cu ft/s (0.024 cu m/s) Apr. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.8	11	10	19	4.2	1.5	1.2	22	11	97	97	13
2	3.2	13	17	15	4.1	1.3	1.2	17	10	28	49	12
3	2.9	14	13	13	3.8	1.3	1.2	7.4	9.6	18	13	12
4	2.7	6.2	13	14	3.9	1.3	1.2	5.2	12	20	12	12
5	2.9	67	11	23	3.6	1.3	1.1	7.1	8.9	96	12	11
6	3.4	35	9.2	19	3.5	2.3	1.1	5.5	9.4	53	9.9	10
7	2.4	11	8.8	12	3.7	2.9	1.0	33	9.3	41	9.1	10
8	2.4	12	8.5	12	3.2	2.6	1.0	12	7.9	22	8.6	11
9	2.1	27	7.9	13	3.0	8.7	.99	5.6	23	18	14	9.9
10	1.9	11	7.3	11	2.6	2.3	.96	4.4	7.6	16	22	9.3
11	1.9	12	7.1	10	2.4	1.8	.98	3.7	6.8	16	12	8.8
12	1.6	122	6.7	12	2.4	208	1.0	3.5	6.2	31	33	8.3
13	2.0	26	7.9	9.4	2.6	16	1.2	230	80	16	18	8.4
14	8.6	10	7.0	8.7	2.7	7.2	1.8	60	38	14	11	8.0
15	2.3	20	29	9.1	2.4	4.8	1.2	153	66	13	12	11
16	8.0	20	10	8.5	2.3	3.8	1.2	23	124	13	13	8.8
17	13	10	10	7.7	1.9	3.4	12	44	243	17	23	13
18	12	10	7.2	7.6	2.0	2.9	29	120	194	13	15	14
19	6.8	50	6.9	7.0	1.9	2.4	62	151	33	12	10	11
20	8.6	12	135	6.7	1.6	2.3	14	47	40	11	10	8.8
21	15	9.2	190	6.9	8.5	2.4	545	31	27	11	199	8.7
22	6.4	8.3	38	6.5	3.0	2.0	19	24	21	11	21	9.6
23	18	77	17	6.2	2.4	2.2	11	43	19	11	14	8.2
24	12	11	12	6.0	1.9	1.8	8.7	37	17	17	12	9.7
25	6.9	9.7	12	6.0	2.7	2.1	7.4	27	16	10	53	13
26	12	14	21	6.0	2.3	1.7	6.2	19	15	9.3	22	8.9
27	11	15	16	5.4	2.0	1.6	5.6	18	24	9.1	37	8.7
28	5.2	39	17	5.0	1.8	1.9	6.4	15	26	9.2	42	7.4
29	4.5	17	16	5.2	---	1.4	5.4	15	14	59	17	7.3
30	4.4	15	37	7.4	---	1.3	4.6	13	23	13	20	26
31	13	---	59	5.0	---	1.3	---	12	---	11	14	---
TOTAL	200.9	714.4	767.5	303.3	82.4	321.2	754.63	1213.4	1141.7	735.6	854.6	317.8
MEAN	6.48	23.8	24.8	9.78	2.94	10.4	25.2	39.1	38.1	23.7	27.6	10.6
MAX	18	122	190	23	8.5	208	545	230	243	97	199	26
MIN	1.6	6.2	6.7	5.0	1.6	1.3	.96	3.5	6.2	9.1	8.6	7.3
CFSM	1.64	6.01	6.26	2.47	.74	2.63	6.36	9.87	9.62	5.99	6.97	2.68
IN.	1.89	6.71	7.21	2.85	.77	3.02	7.09	11.40	10.72	6.91	8.03	2.98
AC-FT	398	1420	1520	602	163	637	1500	2410	2260	1460	1700	630

CAL YR 1982 TOTAL 6451.80 MEAN 17.7 MAX 681 MIN 1.6 CFSM 4.47 IN 60.59 AC-FT 12800
WTR YR 1983 TOTAL 7407.43 MEAN 20.3 MAX 545 MIN .96 CFSM 5.13 IN 69.57 AC-FT 14690

WATER-QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

WATER QUALITY DATA, OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
OCT, 05	1230	4.0	113	27.0	MAY, 09	1505	5.9	111	27.5
NOV, 05	1029	7.2	118	24.0	JUN, 16	1145	122	46	25.5
DEC, 13	1252	7.2	108	23.5	JUL, 15	1453	13	139	26.5
JAN, 11	1420	11	118	23.5	JUL, 25	1350	9.6	109	27.5
FEB, 04	1300	4.0	168	24.0	AUG, 18	0950	14	91	24.5
MAR, 03	0858	1.2	146	23.5	SEP, 15	1454	9.5	100	27.0
APR, 20	1255	12	118	23.5					

RIO FAJARDO BASIN

50071000 RIO FAJARDO NEAR FAJARDO, PR

LOCATION.--Lat 18°17'56", long 65°41'42", Hydrologic Unit 21010005, on left bank off Highway 976, 0.1 mi (0.2 km) upstream from Highway 977 bridge, 0.3 mi (0.5 km) downstream from Quebrada Peñón, 1.1 mi (1.8 km) northeast of Colonia Paraíso, and 3.3 mi (5.3 km) southwest of Fajardo.

DRAINAGE AREA.--14.9 sq mi (38.6 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1960-61 (occasional low- and peak-flow measurements only), March 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 137.60 ft (41.940 m) above mean sea level. Due to flood damage, gage datum has had changes as follows: Mar. 24, 1961 to May 5, 1969, 138.95 ft (42.352 m); May 6, 1969 to Mar. 16, 1972, 135.05 ft (41.163 m); Mar. 17, 1972 to Mar 25, 1975, 138.60 ft (42.245 m).

REMARKS.--Records fair. Low flow affected by diversions for water supply.

AVERAGE DISCHARGE.--22 years (1962-83), 68.9 cu ft/s (1,951 cu m/s), 62.80 in/yr (1,595 mm/yr), 49,920 acre-ft/yr (61.6 cu hm/yr); median of yearly mean discharges, 69 cu ft/s, (1.95 cu m/s), 50,000 acre-ft/yr (62 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,600 cu ft/s (555 cu m/s), Oct. 24, 1974, gage height, 13.62 ft (4.151 m), datum then in use, from rating curve extended above 100 cu ft/s (2.83 cu m/s) on basis of step-backwater analyses and slope-area measurements of peak discharges; minimum, 1.5 cu ft/s (0.042 cu m/s) Apr. 3, May 13, 14, 1977, gage height 1.57 ft (0.479 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,500 cu ft/s (99.1 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)	Date	Time	Discharge (cu ft/s) (cu m/s)	(ft) (m)
Dec. 20	0230	6,290 178	9.92 3.024	May 15	0945	5,040 143	9.01 2.746
Apr. 21	0400	*15,100 428	14.82 4.517	June 17	1930	9,920 281	12.17 3.701
May 13	1630	3,880 110	8.07 2.460				

Minimum discharge, 3.7 cu ft/s (0.105 cu m/s) Apr. 10, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	31	38	69	14	6.1	5.8	43	44	72	162	46
2	18	26	63	57	13	5.4	5.6	62	40	86	167	50
3	15	50	48	47	12	5.1	5.0	33	37	100	37	53
4	14	18	48	42	12	5.4	4.6	24	47	135	34	42
5	15	143	41	79	11	5.3	4.8	24	37	373	31	33
6	14	106	35	79	10	31	5.3	68	35	222	25	23
7	12	26	32	42	10	42	4.9	117	62	132	20	25
8	12	34	28	49	9.7	164	4.7	46	37	66	17	31
9	11	150	25	44	9.8	58	4.1	29	66	53	49	25
10	10	43	22	33	9.8	14	3.9	24	33	46	31	21
11	9.8	127	20	32	11	17	4.3	21	28	45	27	23
12	9.6	335	18	42	9.3	664	4.9	19	32	75	60	27
13	30	126	17	27	8.8	97	4.4	500	79	44	68	20
14	41	33	16	23	8.8	31	12	179	99	39	25	17
15	13	80	115	22	11	21	18	538	197	35	40	25
16	17	150	35	22	9.2	16	14	117	371	34	38	16
17	49	38	36	22	8.3	14	100	81	668	46	132	15
18	59	38	18	20	8.0	14	169	243	282	48	46	19
19	21	180	16	18	7.4	11	221	405	77	42	28	25
20	31	45	533	17	7.0	11	68	201	138	40	33	15
21	31	34	423	16	36	10	1500	181	69	34	496	19
22	17	30	136	15	13	9.4	90	130	55	30	86	18
23	123	265	53	17	9.3	8.9	53	202	46	37	55	20
24	45	41	44	16	9.7	8.2	38	211	40	69	55	17
25	21	37	38	17	10	7.9	30	126	35	31	204	87
26	40	52	238	19	8.7	7.2	25	109	27	25	175	31
27	33	56	83	16	7.5	6.9	35	103	42	23	236	21
28	22	138	209	14	7.0	7.4	59	73	37	22	260	18
29	17	63	61	13	---	7.3	28	75	25	216	106	17
30	14	56	86	21	---	6.2	19	55	150	41	93	72
31	24	---	374	18	---	6.1	---	51	---	30	58	---
TOTAL	817.4	2551	2949	968	301.3	1317.8	2541.3	4090	2935	2296	2944	376
MEAN	26.4	85.0	95.1	31.2	10.8	42.5	84.7	132	97.8	74.1	95.0	29.2
MAX	123	335	533	79	36	664	1500	538	668	373	496	87
MIN	9.6	18	16	13	7.0	5.1	3.9	19	25	22	17	15
CFSM	1.77	5.71	6.38	2.09	.73	2.85	5.69	8.86	6.56	4.97	6.38	1.96
IN.	2.04	6.37	7.36	2.42	.75	3.29	6.34	10.21	7.33	5.73	7.35	2.19
AC-FT	1620	5060	5850	1920	598	2610	5040	8110	5820	4550	5840	1740
CAL YR 1982	TOTAL	23426.0	MEAN 64.2	MAX 851	MIN 3.9	CFSM 4.31	IN 58.48	AC-FT 46470				
WTR YR 1983	TOTAL	24586.8	MEAN 67.4	MAX 1500	MIN 3.9	CFSM 4.52	IN 61.38	AC-FT 48770				

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960 to current year.

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: October 1982 to current year.

INSTRUMENTATION.--Automatic sediment sampler since January 1983. USD-49 Sediment sampler since February 1983.

REMARKS.--Automatic sediment sampler set to collect samples above a streamflow of 100 ft³/sec. In addition to automatic sediment sampler, samples were collected by a local observer once daily during low flow and more than once daily during high flow events for concentration and particle size analyses. Discontinued as National Stream-Quality Accounting Network Station on September 1983 and continued operating as a regular pollution network station since that.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SEDIMENT CONCENTRATIONS:

Maximum daily mean, 1,360 mg/L April 21; Minimum daily mean, 0.0 mg/L May 9.

SEDIMENT LOADS:

Maximum daily, 19,800 tons (17,960 tonnes) April 21; minimum daily, 0.0 tons (0.0 tonnes) May 9.

EXTREMES FOR CURRENT YEAR.--

SEDIMENT CONCENTRATIONS:

Maximum daily mean, 1,360 mg/L April 21; Minimum daily mean, 0.0 mg/L May 9.

SEDIMENT LOADS:

Maximum daily, 19,800 tons (17,960 tonnes) April 21; minimum daily, 0.0 tons (0.0 tonnes) May 9.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV / 1982											
17...	1525	38	106	6.7	27.0	13	8.0	101	25	K680	200
JAN / 1983											
04...	1325	41	113	7.0	25.0	3.5	9.0	109	14	210	360
MAR											
07...	1230	30	105	7.6	25.5	4.1	9.4	116	47	800	830
MAY											
03...	1200	36	92	8.2	27.0	1.7	10.2	128	<10	250	180
JUN											
02...	1215	40	126	8.2	28.0	--	9.8	126	--	--	--
AUG											
02...	1345	81	81	7.4	27.0	14	9.3	117	23	2100	3200

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV / 1982											
17...	--	--	--	--	--	--	--	23	--	--	--
JAN / 1983											
04...	32	2	6.8	3.6	12	1.0	.9	30	4.0	11	<.10
MAR											
07...	--	--	--	--	--	--	--	27	--	--	--
MAY											
03...	27	0	5.9	2.9	11	1.0	1.1	30	5.4	11	<.10
JUN											
03...	--	--	--	--	--	--	--	38	--	--	--
AUG											
02...	21	0	4.6	2.3	6.8	.7	1.3	22	5.4	9.1	<.10

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982											
17...	--	--	--	12	.18	.020	.20	.030	1.1	1.10	1.3
JAN / 1983											
04...	26	82	9.0	2	--	<.010	.20	.030	.07	.10	.30
MAR											
07...	--	--	--	6	.37	.030	.40	.010	.29	.30	.70
MAY											
03...	23	78	7.6	<1	--	<.010	<.10	<.010	--	<.10	--
JUN											
03...	--	--	--	--	--	--	--	--	--	--	--
AUG											
02...	17	60	13.1	14	.29	.010	.30	.040	.16	.20	.50

K = non-ideal count

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982										
17...	5.8	.030	--	--	--	--	--	--	--	--
JAN / 1983										
04...	1.3	.200	1	100	2	<1	7	.5	<1	<1
MAR										
07...	3.1	.030	--	--	--	--	--	--	--	--
MAY										
03...	--	.010	--	--	--	--	--	--	--	--
JUN										
03...	--	--	--	--	--	--	--	--	--	--
AUG										
02...	2.2	.040	<1	--	--	--	--	<.1	<1	--

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
NOV / 01	1600	46	110	27.5	APR / 21	1315	375	142	28.0
DEC / 13	0955	16	123	23.5	JUL / 27	1150	24	118	30.0
FEB / 07	1040	10	155	25.0	SEP / 01	1030	46.9	106	28.5
MAR / 04	0918	5.6	138	25.0					

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDO, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)
JUN / 1983								
03...	1215	<.10	<.01	<.10	<.01	<.01	<.01	<.01

DATE	DI- ELDRIN TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR, EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA- THION, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL (UG/L)
JUN / 1983									
03...	<.01	<.10	<.01	<.01	<.01	<.01	<.01	<.01	<.01

DATE	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	PER- THANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)
JUN / 1983								
03...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDE (MG/L)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM
JUN / 1983							
13...	1615	E156	2350	11	20	33	50
13...	1630	E208	2030	9	17	32	60
13...	1645	E233	2370	16	22	38	61
13...	1700	E203	2000	18	24	40	58

DATE	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM
JUN						
13...	74	93	95	98	99	99
13...	73	94	97	98	99	99
13...	76	88	95	98	100	100
13...	82	87	94	97	99	99

E = estimate

RIO FAJARDO BASIN

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
OCTOBER			NOVEMBER			DECEMBER			
1	29	17	1.5	31	18	1.7	38	5	.27
2	18	5	.24	26	17	1.2	63	3	.24
3	15	8	.32	50	41	13	48	17	1.4
4	14	2	.08	18	7	.34	48	1	.08
5	15	3	.12	143	196	244	41	1	.05
6	14	1	.04	106	128	94	35	2	.11
7	12	5	.16	26	14	1.1	32	7	.38
8	12	14	.45	34	29	4.6	28	14	.76
9	11	2	.06	150	206	389	25	2	.11
10	10	8	.22	43	32	6.1	22	1	.05
11	9.8	7	.19	127	153	211	20	5	.23
12	9.6	5	.13	335	374	1500	18	6	.28
13	30	30	5.4	126	134	102	17	6	.28
14	41	32	5.0	33	20	1.8	16	6	.26
15	13	19	.67	80	86	118	115	209	316
16	17	7	.49	150	180	140	35	26	3.3
17	49	44	18	38	58	13	36	17	1.9
18	59	54	12	38	27	2.9	18	8	.39
19	21	11	.77	180	80	17	16	10	.43
20	31	18	1.8	45	18	1.9	533	618	5060
21	31	19	2.0	34	27	2.2	423	420	2120
22	17	13	.60	30	8	.43	136	176	142
23	123	163	204	265	108	29	53	7	1.0
24	45	38	7.9	41	27	2.2	44	10	1.2
25	21	16	.91	37	44	2.4	38	5	.51
26	40	25	3.5	52	36	2.9	238	292	340
27	33	22	2.8	56	20	1.6	83	86	22
28	22	24	1.4	138	24	4.5	209	294	427
29	17	7	.32	63	23	1.9	61	37	6.9
30	14	51	1.9	56	36	2.9	86	88	33
31	24	11	.98	---	---	---	374	559	931
TOTAL	817.4	---	273.95	2551	---	2912.67	2949	---	9411.13
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
JANUARY			FEBRUARY			MARCH			
1	69	53	9.9	14	5	.19	6.1	10	.16
2	57	7	1.1	13	5	.18	5.4	1	.01
3	47	5	.63	12	13	.42	5.1	1	.01
4	42	4	.45	12	6	.19	5.4	1	.02
5	79	121	67	11	11	.33	5.3	1	.01
6	79	44	13	10	10	.27	31	22	5.1
7	42	9	1.0	10	10	.27	42	36	18
8	49	32	6.4	9.7	13	.34	164	223	220
9	44	34	4.0	9.8	11	.29	58	46	15
10	33	19	1.7	9.8	1	.03	14	4	.15
11	32	13	1.1	11	1	.03	17	7	.42
12	42	28	3.4	9.3	4	.10	664	641	3570
13	27	13	.95	8.8	3	.07	97	128	57
14	23	11	.68	8.8	5	.12	31	32	2.7
15	22	10	.59	11	4	.12	21	40	2.3
16	22	11	.65	9.2	3	.07	16	23	1.1
17	22	10	.59	8.3	1	.02	14	23	.87
18	20	8	.43	8.0	3	.06	14	31	1.2
19	18	7	.34	7.4	2	.04	11	21	.68
20	17	6	.28	7.0	5	.09	11	23	.68
21	16	6	.26	36	311	.47	10	22	.59
22	15	5	.20	13	3	.11	9.4	56	1.4
23	17	6	.28	9.3	3	.08	8.9	53	1.3
24	16	6	.26	9.7	7	.18	8.2	51	1.2
25	17	6	.28	10	2	.05	7.9	43	.95
26	19	8	.41	8.7	1	.02	7.2	21	.42
27	16	6	.26	7.5	2	.04	6.9	51	.99
28	14	4	.15	7.0	4	.08	7.4	44	.88
29	13	4	.14	---	---	---	7.3	34	.68
30	21	8	.57	---	---	---	6.2	44	.76
31	18	8	.41	---	---	---	6.1	34	.83
TOTAL	968	---	117.41	301.3	---	50.79	1317.8	---	3905.41

RIO FAJARDO BASIN

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
APRIL			MAY			JUNE			
1	5.8	37	.60	43	37	10	44	16	1.9
2	5.6	25	.39	62	60	15	40	39	4.2
3	5.0	39	.54	33	12	1.1	37	9	.90
4	4.6	36	.44	24	3	.19	47	28	4.6
5	4.8	29	.38	24	4	.26	37	6	.60
6	5.3	31	.44	68	63	35	35	13	1.2
7	4.9	36	.50	117	133	67	62	29	5.2
8	4.7	34	.42	46	27	3.4	37	18	1.8
9	4.1	32	.35	29	0	.00	66	67	18
10	3.9	36	.38	24	4	.26	33	17	1.5
11	4.3	35	.40	21	4	.23	28	7	.53
12	4.9	28	.39	19	3	.15	32	7	.60
13	4.4	31	.38	500	671	3960	79	257	123
14	12	4	.16	179	326	199	99	70	23
15	18	8	.89	538	930	5740	197	276	432
16	14	7	.36	117	65	27	371	481	615
17	100	232	1050	81	50	22	668	739	8040
18	169	277	325	243	365	1010	282	483	670
19	221	318	868	405	458	1360	77	16	3.3
20	68	59	14	201	93	71	138	120	147
21	1500	1360	19800	181	192	111	69	7	1.3
22	90	29	7.0	130	135	50	55	1	.15
23	53	27	3.9	202	229	143	46	1	.12
24	38	35	3.6	211	293	231	40	5	.54
25	30	25	2.1	126	135	46	35	2	.19
26	25	17	1.5	109	123	62	27	18	1.3
27	35	24	5.1	103	130	45	42	31	5.3
28	59	64	17	73	8	1.6	37	25	2.7
29	28	22	1.5	75	12	2.4	25	12	.81
30	19	6	.31	55	7	1.0	150	214	396
31	---	---	---	51	12	1.7	---	---	---
TOTAL	2541.3	---	22106.03	4090	---	13216.29	2935	---	10502.74
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
JULY			AUGUST			SEPTEMBER			
1	72	65	31	162	220	457	46	11	1.4
2	86	94	28	167	186	184	50	2	.27
3	100	132	86	37	24	2.4	53	4	.57
4	135	214	145	34	25	2.3	42	1	.11
5	378	535	1720	31	13	1.1	33	7	.62
6	222	369	305	25	25	1.7	28	11	.83
7	132	74	26	20	10	.54	25	11	.74
8	66	13	2.8	17	9	.41	31	18	1.8
9	53	40	6.5	49	43	8.9	25	12	.81
10	46	4	.56	81	85	30	21	9	.51
11	45	46	5.6	27	17	1.2	23	8	.50
12	75	50	14	60	55	15	27	5	.36
13	44	20	2.4	68	65	15	20	6	.32
14	39	11	1.2	25	13	.88	17	16	.73
15	35	8	.76	40	24	3.9	25	12	.97
16	34	12	1.1	38	28	3.5	16	23	.99
17	46	10	1.2	132	156	95	15	15	.61
18	48	14	1.8	46	36	4.5	19	7	.36
19	42	9	1.0	28	6	.45	25	17	1.1
20	40	13	1.4	33	11	.98	15	7	.28
21	34	4	.37	496	723	2010	19	7	.36
22	30	11	.89	86	94	24	18	9	.44
23	37	6	.60	55	61	11	20	4	.22
24	69	46	11	55	50	8.8	17	2	.09
25	31	6	.50	204	290	439	87	121	74
26	25	1	.07	175	216	181	31	18	1.7
27	23	5	.31	236	277	624	21	5	.28
28	22	10	.59	260	319	311	18	6	.29
29	216	314	397	106	124	44	17	6	.28
30	41	7	.77	93	99	31	72	81	48
31	30	5	.41	58	49	7.7	---	---	---
TOTAL	2296	---	2793.83	2944	---	4520.26	876	---	139.54
YEAR	24586.8		69950.05						

RIO FAJARDO BASIN

50072500 RIO FAJARDO BELOW FAJARDO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°19'35", long 65°38'47", 1.2 mi (1.9 km) southwest of Playa de Fajardo, and 0.5 mi (0.8 km) east of Fajardo Plaza.

DRAINAGE AREA.--23.4 sq mi (60.6 sq km).

PERIOD OF RECORD.--Water years 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV / 1982											
17...	1050	67	139	6.7	25.5	15	8.4	102	23	52000	3900
JAN / 1983											
21...	1415	25	192	7.6	28.0	3.5	10.6	135	31	90000	400
MAR											
11...	1335	20	184	7.6	29.5	14	8.4	111	<10	--	1100
MAY											
06...	1435	27	157	7.5	31.0	5.0	8.8	119	14	5600	3400
AUG											
05...	1440	57	151	7.5	32.0	15	9.5	130	22	K13000	2000

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV / 1982											
17...	--	--	--	--	--	--	--	26	--	--	--
JAN / 1983											
21...	51	5	12	5.0	17	1.1	1.6	46	5.0	25	.10
MAR											
11...	--	--	--	--	--	--	--	40	--	--	--
MAY											
06...	47	6	12	4.2	17	1.1	1.4	41	6.5	24	.20
AUG											
05...	45	3	11	4.3	14	.9	1.5	42	6.5	19	.10

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE (MG/L AS N)	NITRO- GEN, NITRITE (MG/L AS N)	NITRO- GEN, NO2+NO3 (MG/L AS N)	NITRO- GEN, AMMONIA (MG/L AS N)	NITRO- GEN, ORGANIC (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982											
17...	--	--	--	12	--	<.010	.20	.120	.88	1.00	1.2
JAN / 1983											
21...	22	115	7.8	1	.19	.010	.20	.320	.18	.50	.70
MAR											
11...	--	--	--	18	.18	.020	.20	.140	.26	.40	.60
MAY											
06...	21	111	8.1	<1	--	.010	<.10	.030	.07	.10	--
AUG											
05...	21	103	15.8	24	.18	.020	.20	.120	.28	.40	.60

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982										
17...	5.3	.040	--	--	--	--	--	--	--	--
JAN / 1983										
21...	3.1	.090	1	<100	1	<1	11	.3	<1	<1
MAR										
11...	2.7	.070	--	--	--	--	--	--	--	--
MAY										
06...	--	.030	--	--	--	--	--	--	--	--
AUG										
05...	2.7	.070	<1	100	1	--	5	<.1	<1	<1

K = non-ideal count

LOCATION.--Lat 18°16'38", long 65°47'09", Hydrologic Unit 21010001, in Caribbean National Forest, off Highway 191, at El Yunque, 1.6 mi (2.6 km) upstream from confluence with Río Cubuy, 2.8 mi (4.5 km) north of Florida, and 5.3 mi (8.5 km) northwest of Naguabo Plaza.

DRAINAGE AREA.--1.26 sq mi (3.26 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1945 to March 1953 (operated by Puerto Rico Water Resources Authority), annual maximum, water years 1953-62, annual low-flow measurements 1962-66, October 1979 to current year.

GAGE.--Water-stage recorder and broad-crested weir. Altitude of gage is 2,020 ft (616 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--11 years (1946-52, 1980-83), 15.7 cu ft/s (0.445 cu m/s), 169.21 in/yr (4,298 mm/yr), 11,370 acre-ft/yr (14.0 cu hm/yr); median of yearly mean discharges, 14 cu ft/s (0.40 cu m/s), 10,100 acre-ft/yr (12 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,860 cu ft/s (81.0 cu m/s) Apr. 21, 1983, gage height, 8.96 ft (2.731 m), from rating curve extended above 30 cu ft/s (0.850 cu m/s) on basis of step-backwater analysis; minimum daily, 1.5 cu ft/s (0.042 cu m/s) Mar. 22, Apr. 10, 1946.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 650 cu ft/s (18.4 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)	Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
Apr. 21	0315	*2,860 81.0	8.96 2.731	July 5	1415	945 26.8	6.06 1.847

Minimum discharge, 3.1 cu ft/s (0.088 cu m/s) Apr. 26, 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.0	9.7	10	13	6.0	3.9	3.9	4.0	6.3	21	37	9.6
2	6.4	11	14	9.2	6.0	3.9	3.9	8.4	6.1	23	20	11
3	6.0	21	18	8.5	5.7	3.8	3.9	4.0	6.0	20	7.7	10
4	6.0	7.1	13	8.7	5.6	3.6	3.9	3.6	6.5	30	7.2	11
5	8.7	19	9.4	19	5.6	3.6	3.9	3.9	6.0	153	8.1	9.1
6	5.9	11	8.3	20	5.5	4.2	3.9	33	6.9	27	7.6	8.5
7	5.6	6.2	8.2	9.9	5.4	8.9	3.9	6.6	14	24	6.3	8.4
8	5.6	6.1	7.8	13	5.2	17	3.8	4.4	7.3	12	6.3	9.3
9	5.5	17	7.0	13	5.2	7.2	3.5	3.8	13	11	6.3	8.6
10	5.3	7.2	6.9	8.6	5.1	4.8	3.5	3.6	7.5	10	15	8.1
11	5.2	9.6	6.7	9.1	4.6	5.5	3.8	3.5	9.7	9.9	8.8	7.9
12	5.5	49	6.4	16	4.5	91	3.6	3.8	7.6	9.7	10	8.6
13	6.3	11	6.4	7.7	4.5	7.8	4.3	4.1	14	9.3	11	7.6
14	8.5	13	6.0	7.1	5.0	5.2	4.3	7.2	8.9	9.0	6.7	7.4
15	5.7	28	62	8.4	4.6	4.6	5.3	51	32	8.7	17	11
16	5.6	22	14	8.3	4.5	4.3	3.6	7.3	65	12	18	7.1
17	22	8.3	11	7.0	4.5	4.2	29	5.8	23	14	27	7.9
18	24	17	6.1	6.6	4.3	4.2	15	28	32	11	9.5	9.3
19	9.9	17	5.6	6.4	4.2	4.0	17	69	10	10	7.3	11
20	9.6	7.2	56	6.2	4.2	3.9	13	29	9.4	11	9.3	7.4
21	9.2	6.5	29	6.0	6.0	3.9	267	31	8.8	8.2	89	8.7
22	6.2	6.3	16	6.0	4.8	3.9	7.3	14	8.2	9.0	12	8.8
23	22	21	11	5.9	4.4	3.9	4.3	24	7.9	11	8.5	8.6
24	7.6	8.3	12	6.0	4.5	3.9	3.8	18	7.8	16	8.3	11
25	11	17	9.3	6.2	4.4	3.7	3.4	10	7.4	7.9	53	25
26	15	23	42	7.4	4.1	3.6	3.2	7.9	8.2	7.3	41	10
27	7.8	48	15	5.9	3.9	3.7	5.9	7.3	9.5	6.9	43	8.1
28	6.2	54	35	5.7	3.9	5.4	7.7	7.4	9.7	7.1	22	7.4
29	5.8	13	11	5.6	---	4.2	3.8	8.0	7.3	38	22	7.3
30	6.5	29	22	6.3	---	4.0	3.3	6.4	30	9.5	13	10
31	8.4	---	64	6.0	---	4.0	---	6.1	---	8.5	10	---
TOTAL	272.0	524.0	549.1	277.7	136.2	239.8	446.7	424.1	396.0	565.0	567.9	283.7
MEAN	8.77	17.5	17.7	8.96	4.86	7.74	14.9	13.7	13.2	18.2	18.3	9.46
MAX	24	54	64	20	6.0	91	267	69	65	153	89	25
MIN	5.2	6.1	5.6	5.6	3.9	3.6	3.2	3.5	6.0	6.9	6.3	7.1
CFSM	6.96	13.9	14.0	7.11	3.86	6.14	11.8	10.9	10.5	14.4	14.5	7.51
IN.	8.02	15.46	16.20	8.19	4.02	7.07	13.18	12.51	11.68	16.67	16.75	8.37
AC-FT	540	1040	1090	551	270	476	886	841	785	1120	1130	563

CAL YR 1982 TOTAL 4926.8 MEAN 13.5 MAX 145 MIN 3.9 CFSM 10.7 IN 145.34 AC-FT 9770
WTR YR 1983 TOTAL 4632.2 MEAN 12.8 MAX 267 MIN 3.2 CFSM 10.2 IN 133.13 AC-FT 9290

WATER-QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHDS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHDS)	TEMPERA- TURE (DEG C)
OCT, 05	1630	26	49	21.5	APR, 20	1035	9.7	88	20.0
NOV, 05	1400	7.5	66	21.0	MAY, 09	1211	3.9	59	21.0
DEC, 14	1040	5.8	66	20.0	JUN, 17	1220	11	51	22.0
JAN, 11	1140	8.8	60	20.0	JUL, 15	1204	8.4	95	21.0
FEB, 04	1005	5.6	78	19.5	AUG, 19	1115	7.5	80	22.0
MAR, 03	1156	4.0	66	20.0	SEP, 16	1106	6.8	61	21.5

RIO BLANCO BASIN

50076000 RIO BLANCO NEAR FLORIDA, PR

LOCATION.--Lat 18°13'45", long 65°47'06", Hydrologic Unit 2101005, on left bank of Highway 191, 0.5 mi (0.8 km) upstream from Quebrada Sonadora, 0.7 mi (1.1 km) upstream from intersection of Highway 191 and 31, 0.8 mi (1.3 km) south of Florida.

DRAINAGE AREA.--12.3 sq mi (31.9 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1982 to September 1983.

GAGE.--Water-stage recorder. Altitude of gage is 50 ft (15 m), from topographic map.

REMARKS.--Records fair. Low flow affected by diversion for water supply.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 cu ft/s (85.0 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)	Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
Dec. 20	0230	4,370 124	17.26 5.261	July 5	1445	3,880 110	16.68 5.084
Apr. 21	0330	*11,000 312	22.76 6.937	Aug. 21	1345	3,060 86.7	15.46 4.712

Minimum discharge, 8.8 cu ft/s (0.249 cu m/s) Apr. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58	57	50	82	20	14	11	27	24	73	300	53
2	36	51	52	60	19	13	11	38	26	131	100	84
3	30	106	39	47	18	13	11	32	22	142	80	66
4	28	41	56	48	19	12	11	28	23	204	70	61
5	30	50	42	85	18	12	11	33	33	766	60	50
6	26	46	30	91	17	23	11	125	23	204	50	45
7	25	26	39	53	17	50	11	85	43	136	40	43
8	24	25	30	73	16	112	10	37	38	69	35	43
9	23	65	26	54	16	48	10	24	77	50	60	42
10	23	34	25	43	16	21	9.6	24	55	44	160	47
11	22	34	22	44	16	32	13	21	32	41	60	43
12	21	203	20	68	15	492	10	17	63	43	140	43
13	77	56	19	38	16	60	9.7	23	27	41	70	41
14	48	27	17	34	18	27	15	35	41	39	50	36
15	48	77	232	39	17	22	20	282	159	36	80	47
16	31	99	51	47	15	20	14	80	371	36	70	36
17	77	41	51	35	15	18	75	66	106	63	194	37
18	162	97	23	32	15	17	102	116	167	56	74	45
19	40	96	21	30	15	16	99	234	62	48	51	45
20	109	33	405	28	14	15	84	135	46	60	65	36
21	89	25	118	27	26	14	1220	158	46	40	610	43
22	39	23	35	26	18	14	96	91	30	35	98	44
23	148	136	76	25	15	14	42	206	31	38	61	52
24	61	57	91	24	15	13	38	153	31	105	63	69
25	44	57	92	23	18	13	31	75	30	45	214	91
26	64	110	346	26	16	13	27	76	41	37	181	50
27	46	202	154	23	15	12	154	74	35	35	248	37
28	34	186	230	21	14	25	98	42	43	44	152	37
29	28	65	69	21	---	18	40	46	27	400	128	36
30	30	176	84	24	---	14	26	31	109	80	74	68
31	43	---	332	21	---	12	---	26	---	60	58	---
TOTAL	1564	2301	2977	1292	469	1199	2320.3	2440	1861	3201	3696	1470
MEAN	50.5	76.7	96.0	41.7	16.8	38.7	77.3	78.7	62.0	103	119	49.0
MAX	162	203	405	91	26	492	1220	282	371	766	610	91
MIN	21	23	17	21	14	12	9.6	17	22	35	35	36
CFSM	4.11	6.24	7.81	3.39	1.37	3.15	6.29	6.40	5.04	8.37	9.68	3.98
IN.	4.73	6.96	9.00	3.91	1.42	3.63	7.02	7.38	5.63	9.68	11.18	4.45
AC-FT	3100	4560	5900	2560	930	2380	4600	4840	3690	6350	7330	2920

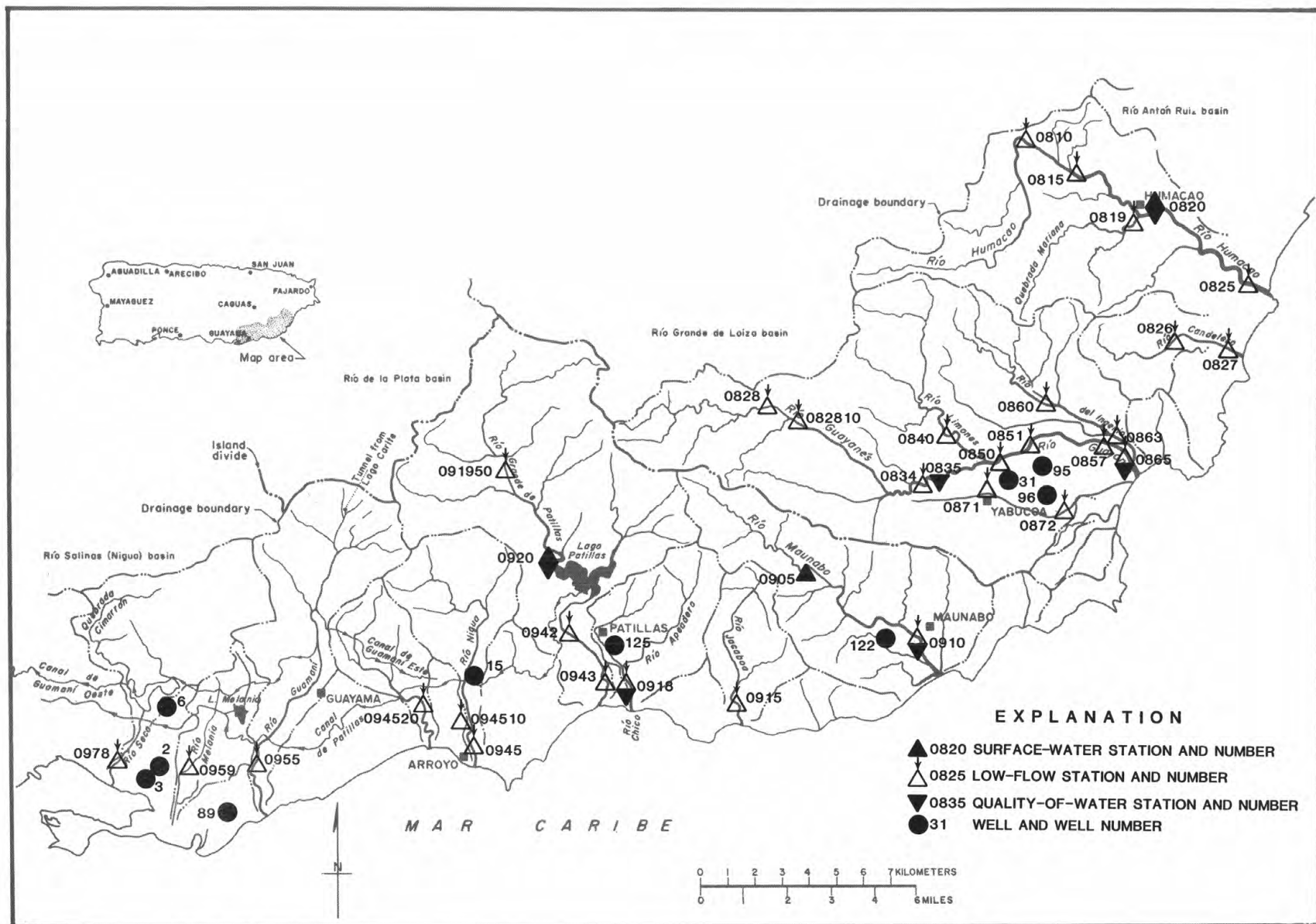
WTR YR 1983 TOTAL 24790.3 MEAN 67.9 MAX 1220 MIN 9.6 CFSM 5.52 IN 74.97 AC-FT 49170

WATER-QUALITY RECORDS

PERIOD OF RECORD.--OCTOBER 1982 TO SEPTEMBER 1983

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
OCT, 21	1345	107	83	26.0	MAR, 02	1340	13	115	28.0
NOV, 09	1159	23	107	27.5	MAY, 10	1307	25	105	29.0
DEC, 21	1240	65	93	23.5	JUN, 21	1600	47	--	28.0
JAN, 13	1020	39	107	21.5	JUL, 26	1040	34	101	27.0
FEB, 07	1305	17	172	26.0	SEP, 01	1300	52	100	28.0



RIO HUMACAO BASIN

50082000 RIO HUMACAO AT HIGHWAY 3 AT HUMACAO, PR

LOCATION.--Lat 18°08'49", long 65°49'37", at bridge on Highway 3, 300 ft (91 m) downstream from Quebrada Mariana, and 0.4 mi (0.6 km) south of Humacao.

DRAINAGE AREA.--17.3 sq mi (44.8 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1982 to September 1983.

GAGE.--Water-stage recorder and concrete control. Datum of gage 33.33 ft (10.16 m) above mean sea level.

REMARKS.--Records fair.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 cu ft/s (56.6 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)	Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
Nov. 19	0345	3,780 107	11.97 3.648	Aug. 17	0545	2,840 80.4	11.27 3.435
Apr. 21	0445	2,720 77.0	11.17 3.405	Aug. 21	1715	8,810 249	14.56 4.438
July 5	1700	*9,940 282	15.00 4.572				

Minimum discharge, 10 cu ft/s (0.283 cu m/s) many days in March and April.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	74	87	190	40	27	14	11	21	23	41	53	56
2	56	64	101	40	23	13	12	41	23	84	78	83
3	47	55	68	31	21	15	10	31	22	64	49	61
4	43	49	66	35	22	14	11	28	29	102	48	50
5	43	161	59	42	22	14	12	37	27	1470	43	50
6	41	155	50	41	20	14	11	31	26	194	42	47
7	39	74	47	33	20	15	11	34	26	116	39	51
8	37	71	45	36	19	18	11	26	20	90	41	49
9	36	51	45	62	19	25	11	25	39	68	46	51
10	34	52	43	43	18	16	11	22	31	55	41	52
11	34	55	44	34	18	22	11	21	25	52	35	55
12	33	59	40	36	17	130	11	22	68	47	34	54
13	45	45	41	37	17	37	12	22	27	44	37	41
14	41	39	41	30	16	15	13	26	25	45	45	41
15	34	42	45	29	16	13	12	73	86	42	40	55
16	28	69	39	28	15	13	11	35	136	59	83	47
17	58	56	38	27	15	13	18	83	53	102	391	43
18	66	92	36	30	16	14	47	36	100	71	109	47
19	153	412	36	29	16	12	13	34	43	48	68	40
20	147	153	40	28	14	12	17	37	33	38	61	43
21	79	76	46	29	14	12	336	25	36	35	1760	72
22	72	74	42	28	14	13	37	27	37	35	151	54
23	65	149	37	23	14	12	25	40	33	45	107	52
24	49	71	36	28	16	13	24	274	34	74	100	118
25	47	72	35	28	15	13	23	75	34	37	138	125
26	45	52	52	32	14	12	23	67	33	33	124	102
27	43	58	46	27	13	12	24	35	85	32	98	64
28	93	78	57	26	13	11	42	31	47	35	110	55
29	49	52	49	26	---	11	28	27	40	232	87	48
30	78	347	43	26	---	12	28	25	37	97	76	54
31	108	---	105	27	---	11	---	24	---	123	60	---
TOTAL	1817	2870	1662	1016	484	571	866	1335	1278	3610	4194	1760
MEAN	58.6	95.7	53.6	32.8	17.3	18.4	28.9	43.1	42.6	116	135	58.7
MAX	153	412	190	62	27	130	336	274	136	1470	1760	125
MIN	28	39	35	26	13	11	10	21	20	32	34	40
CFSM	3.39	5.53	3.10	1.90	1.00	1.06	1.67	2.49	2.46	6.71	7.80	3.39
IN.	3.91	6.17	3.57	2.18	1.04	1.23	1.86	2.87	2.75	7.76	9.02	3.78
AC-FT	3600	5690	3300	2020	960	1130	1720	2650	2530	7160	8320	3490

WTR YR 1983 TOTAL 21463 MEAN 58.8 MAX 1760 MIN 10 CFSM 3.40 IN 46.15 AC-FT 42570

RIO HUMACAO BASIN

50082000 RIO HUMACAO AT HIGHWAY 3 AT HUMACAO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°08'49", long 65°49'37", at bridge on Highway 3, 300 ft (91 m) downstream from Quebrada Mariana, and 0.4 mi (0.6 km) south of Humacao plaza.

DRAINAGE AREA.--17.3 sq mi (44.8 sq km).

PERIOD OF RECORD.--Water years 1958-66, 1969 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV / 1982											
22...	1225	51	234	7.0	25.0	16	7.3	89	42	K130000	29000
JAN / 1983											
21...	1100	28	282	7.1	25.5	6.5	9.0	109	26	260000	41000
MAR											
11...	1000	29	274	7.6	26.0	65	6.8	0	<10	54000	K16000
APR											
21...	1100	E257	146	--	25.0	--	--	--	--	--	--
21...	1105	E254	146	--	25.0	--	--	--	--	--	--
21...	1110	--	146	--	25.0	--	--	--	--	--	--
21...	1115	E244	146	--	25.0	--	--	--	--	--	--
21...	1120	E231	--	--	--	--	--	--	--	--	--
MAY											
06...	1110	31	235	7.7	27.0	75	6.8	86	18	270000	11000
AUG											
05...	1040	45	236	7.4	29.0	16	7.6	98	29	K84000	26000

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV / 1982											
22...	--	--	--	--	--	--	--	68	--	--	--
JAN / 1983											
21...	82	0	22	6.5	24	1.2	2.0	83	12	26	.20
MAR											
11...	--	--	--	--	--	--	--	50	--	--	--
APR											
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	35	8	9.2	2.8	13	1.0	3.6	--	13	15	<.10
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
MAY											
06...	77	0	21	5.9	24	1.2	2.3	77	14	25	.20
AUG											
05...	73	0	20	5.6	21	1.1	1.7	74	9.7	22	.20

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982											
22...	--	--	--	32	.68	.020	.70	.260	.14	.40	1.1
JAN / 1983											
21...	39	181	13.7	1	.85	.050	.90	.440	.46	.90	1.8
MAR											
11...	--	--	--	100	.04	.060	.10	.230	.97	1.20	1.3
APR											
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	19	92	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
MAY											
06...	35	174	14.5	104	.61	.090	.70	.390	.51	.90	1.6
AUG											
05...	38	163	19.6	57	.73	.070	.80	.250	.55	.80	1.6

K = non-ideal count
E = estimate

RIO HUMACAO BASIN

50082000 RIO HUMACAO AT HIGHWAY 3 AT HUMACAO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SEDI- MENT, SUS- PENDE (MG/L)
NOV , 1982											
22...	4.9	.170	--	--	--	--	--	--	--	--	--
JAN , 1983											
21...	8.0	.310	2	<100	1	1	12	.3	<1	<1	--
MAR											
11...	5.8	.370	--	--	--	--	--	--	--	--	--
APR											
21...	--	--	--	--	--	--	--	--	--	--	863
21...	--	--	--	--	--	--	--	--	--	--	815
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	788
21...	--	--	--	--	--	--	--	--	--	--	15400
MAY											
06...	7.1	.380	--	--	--	--	--	--	--	--	--
AUG											
05...	7.1	.300	--	--	--	--	--	--	--	--	--

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
OCT, 21	1530	86	193	29.0	JUN, 21	1152	37	--	29.5
DEC, 21	0955	44	268	23.5	JUL, 26	0855	34	243	28.0
FEB, 08	0930	19	312	23.0	SEP, 06	1110	53	234	29.5
MAR, 02	1627	14	303	31.0					

RIO GUAYANES BASIN

50083500 RIO GUAYANES AT YABUCOA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°03'33", long 65°54'03", at bridge on Highway 182, 1.4 mi (2.2 km) west-northwest of Yabucoa plaza.

DRAINAGE AREA.--17.2 sq mi (44.6 sq km).

PERIOD OF RECORD.--Water years 1958-62, 1968-70, 1980 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)
NOV / 1982												
18...	1050	104	120	6.5	24.0	88	7.6	90	22	22000	45000	--
JAN / 1983												
27...	1220	43	158	7.5	24.0	15	7.8	93	<10	2200	K1900	44
MAR												
22...	1400	21	164	7.5	28.0	5.4	7.2	92	<10	K1400	5100	--
MAY												
18...	1240	32	136	7.4	26.0	24	7.8	97	60	K1200	3800	44
JUN												
03...	1240	30	166	7.4	28.0	--	7.8	100	--	--	--	--
AUG												
22...	1045	139	106	7.2	26.0	--	8.4	103	--	4100	9500	--

DATE	HARD- NESS, NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LILITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)
NOV / 1982											
18...	--	--	--	--	--	--	32	--	--	--	--
JAN / 1983											
27...	0	11	3.9	14	1.0	1.4	56	<5.0	11	.10	36
MAR											
22...	--	--	--	--	--	--	62	--	--	--	--
MAY											
18...	0	11	4.1	15	1.0	1.4	54	7.2	11	.10	37
JUN											
03...	--	--	--	--	--	--	61	--	--	--	--
AUG											
22...	--	--	--	--	--	--	34	--	--	--	--

DATE	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)
NOV / 1982											
18...	--	--	162	.46	.040	.50	.070	1.2	1.30	1.8	8.0
JAN / 1983											
27...	--	--	7	--	<.010	.40	.080	.12	.20	.60	2.7
MAR											
22...	--	--	13	--	<.010	.20	.020	.28	.30	.50	2.2
MAY											
18...	119	10.3	28	--	<.010	.30	.060	.14	.20	.50	2.2
JUN											
03...	--	--	--	--	--	--	--	--	--	--	--
AUG											
22...	--	--	--	.25	.050	.30	.030	.27	.30	.60	2.7

K = non-ideal counts

RIO GUAYANES BASIN

50083500 RIO GUAYANES AT YABUCOA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
NOV / 1982											
18...	.150	--	--	--	--	--	--	--	--	219	61
JAN / 1983											
27...	.070	1	100	5	1	<1	.3	<1	2	--	--
MAR											
22...	.030	--	--	--	--	--	--	--	--	--	--
MAY											
18...	.080	--	--	--	--	--	--	--	--	--	--
JUN											
03...	--	--	--	--	--	--	--	--	--	--	--
AUG											
22...	.100	--	--	--	--	--	--	--	--	--	--

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)
JUN / 1983								
03...	1240	<.10	<.01	<.10	<.01	<.01	<.01	<.01

DATE	DI- ELDRIN TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA- THION, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL (UG/L)
JUN / 1983									
03...	<.01	<.10	<.01	<.01	<.01	<.01	<.01	<.01	<.01

DATE	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR, TOTAL (UG/L)	PER- THANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)
JUN / 1983								
03...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01

DATE	TIME	SED. SUSP. FALL DIAM. % FINER THAN (CFS)	SED. SUSP. FALL DIAM. % FINER THAN 002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .003 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .004 MM
JAN / 1983									
27...	1220	43	0	0	0	0	0	0	0

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM
JAN								
27...	0	0	1	5	19	47	73	93

RIO GUAYANES BASIN

50086500 RIO GUAYANES ABOVE MOUTH AT PLAYA DE GUAYANES, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°03'45", long 65°49'42", at old railroad crossing, 0.2 mi (0.3 km) from mouth, 0.4 mi (0.6 km) west of Playa de Guayanés, and 3.5 mi (5.6 km) northeast of Yabucoa Plaza.

DRAINAGE AREA.--34.0 sq mi (88.1 sq km).

PERIOD OF RECORD.--Water years 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-HF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)
NOV / 1982												
18...	1330	154	144	6.9	25.0	96	7.2	87	<10	30000	9800	--
JAN / 1983												
27...	1025	62	167	7.6	23.0	14	7.8	91	10	K1500	K1800	47
MAR												
22...	1135	31	189	7.8	30.0	9.4	8.0	106	<10	470	K110	--
MAY												
18...	0945	121	145	7.3	26.5	35	7.0	87	43	45000	59000	41
AUG												
22...	1400	425	113	7.0	28.0	95	8.0	102	24	5400	9800	28

DATE	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CAC03)	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)
NOV / 1982											
18...	--	--	--	--	--	--	39	--	--	--	--
JAN / 1983											
27...	0	12	4.2	16	1.0	1.7	56	6.0	14	.10	35
MAR											
22...	--	--	--	--	--	--	70	--	--	--	--
MAY											
18...	0	10	4.0	17	1.2	4.4	43	17	16	.10	28
AUG											
22...	0	7.2	2.5	10	.8	2.5	30	10	10	<.10	21

DATE	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)
NOV / 1982											
18...	--	--	161	.47	.030	.50	.080	1.6	1.70	2.2	9.7
JAN / 1983											
27...	123	20.5	11	.49	.010	.50	.070	--	<.10	--	--
MAR											
22...	--	--	22	.19	.010	.20	.060	.44	.50	.70	3.1
MAY											
18...	122	39.9	77	.28	.020	.30	.060	.24	.30	.60	2.7
AUG											
22...	81	93.1	109	.23	.070	.30	.040	.36	.40	.70	3.1

K = non-ideal count

RIO GUAYANES BASIN

50086500 RIO GUAYANES ABOVE MOUTH AT PLAYA DE GUAYANES, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
NOV , 1982											
18...	.100	--	--	--	--	--	--	--	--	207	86
JAN , 1983											
27...	.070	1	100	6	<1	<1	.5	<1	2	--	--
MAR											
22...	.050	--	--	--	--	--	--	--	--	--	--
MAY											
18...	.190	--	--	--	--	--	--	--	--	--	--
AUG											
22...	.150	1	<100	1	<10	5	<.1	<1	<1	--	--
DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SED. SUSP. FALL DIAM. % FINER THAN 0.02 MM	SED. SUSP. FALL DIAM. % FINER THAN 0.04 MM	SED. SUSP. FALL DIAM. % FINER THAN 0.08 MM	SED. SUSP. FALL DIAM. % FINER THAN 0.16 MM	SED. SUSP. FALL DIAM. % FINER THAN 0.31 MM	SED. SUSP. FALL DIAM. % FINER THAN 0.62 MM	SED. SUSP. FALL DIAM. % FINER THAN 0.04 MM	BED MAT. FALL DIAM. % FINER THAN 0.04 MM	
JAN , 1983											
27...	1025	62	0	0	0	0	0	0	0	0	
DATE		BED MAT. FALL DIAM. % FINER THAN 0.062 MM	BED MAT. FALL DIAM. % FINER THAN 0.062 MM	BED MAT. FALL DIAM. % FINER THAN 0.125 MM	BED MAT. FALL DIAM. % FINER THAN 0.250 MM	BED MAT. FALL DIAM. % FINER THAN 0.500 MM	BED MAT. FALL DIAM. % FINER THAN 1.00 MM	BED MAT. FALL DIAM. % FINER THAN 2.00 MM	BED MAT. FALL DIAM. % FINER THAN 4.00 MM		
JAN											
27...		0	0	1	3	16	55	86	97		

LOCATION.--Lat 18°01'38", long 65°56'24", Hydrologic Unit 21010005, on right bank, off Highway 759 at Lizas, about 1.0 mi (1.6 km) below Quebrada Coroco, and about 3.0 mi (4.8 km) northwest of Maunabo.

DRAINAGE AREA.--5.38 sq mi (13.93 sq km).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Altitude of gage is 230 ft (70.1 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--12 years (1972-83) 18.7 cu ft/s (0.530 cu m/s), 47.20 in/yr (1,199 mm/yr), 13,550 acre-ft/yr (16.7 cu hm/yr); median of yearly mean discharges, 16 cu ft/s (0.45 cu m/s), 11,600 acre-ft/yr (14 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,280 cu ft/s (178 cu m/s) Aug. 31, 1979, gage height, 14.57 ft (4.441 m), from rating curve extended above 50 cu ft/s (1.42 cu m/s) on basis of step-backwater analysis; minimum daily, 2.2 cu ft/s (0.062 cu m/s) Jul. 16, Aug. 7, 13, 1974.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 600 cu ft/s (17.0 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)	Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
Nov. 18	2230	1,110 31.4	7.99 2.435	July 4	1845	*1,550 43.9	8.83 2.691
Nov. 30	0300	618 17.5	6.77 2.063	Aug. 16	2030	1,240 35.1	8.26 2.518

Minimum discharge, 2.5 cu ft/s (0.071 cu m/s) Apr. 16, 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	17	23	21	7.6	5.6	3.3	4.4	7.2	12	31	28
2	16	13	21	16	7.5	5.5	3.3	6.4	6.9	35	29	44
3	15	12	19	15	7.4	5.2	3.1	6.8	6.6	36	23	31
4	14	12	19	16	7.5	5.1	3.3	6.3	7.1	97	24	27
5	21	14	16	18	7.4	5.0	3.3	8.4	7.4	73	34	24
6	13	11	14	23	7.0	5.4	3.4	7.1	11	79	23	23
7	12	11	14	17	7.0	6.4	3.2	5.9	7.6	61	19	22
8	12	13	13	17	6.8	11	3.0	4.8	6.5	31	18	21
9	12	13	13	23	6.7	14	2.9	4.5	23	25	17	20
10	12	14	12	18	6.7	6.2	2.7	4.4	9.0	22	17	19
11	11	18	12	16	6.5	6.0	2.8	4.1	7.6	20	17	20
12	10	14	12	15	6.2	6.7	2.6	4.3	6.7	21	25	25
13	10	13	11	14	6.1	6.6	2.9	4.1	8.2	17	35	19
14	10	10	11	14	7.2	5.7	2.9	6.4	8.3	16	23	17
15	10	11	12	13	6.9	5.6	3.2	7.8	33	15	23	17
16	11	15	11	15	6.5	5.3	2.6	6.2	61	15	102	17
17	18	11	10	12	6.5	5.1	4.4	21	19	41	127	17
18	19	70	9.6	9.6	6.7	5.0	27	20	77	26	43	17
19	14	79	9.4	9.4	6.2	4.9	7.0	50	17	21	26	15
20	37	32	9.8	9.1	6.0	4.7	11	13	13	18	24	17
21	18	17	11	9.0	6.3	4.6	54	7.1	11	17	139	25
22	15	13	12	9.0	6.0	4.6	11	11	9.9	16	47	19
23	54	16	12	9.1	5.8	4.5	6.7	83	9.2	46	33	26
24	19	13	16	9.0	6.4	4.3	5.3	98	8.8	39	28	20
25	16	11	15	9.2	6.5	4.0	4.6	25	8.2	18	54	22
26	16	11	17	9.3	6.2	3.7	4.6	16	8.1	15	40	110
27	14	11	18	8.7	6.2	3.5	4.2	13	19	15	38	53
28	13	11	17	8.2	5.8	3.8	5.7	10	15	15	56	26
29	12	46	16	8.2	---	3.6	5.5	9.1	9.4	85	37	25
30	14	214	16	8.6	---	3.3	4.8	9.0	23	26	43	46
31	17	---	58	7.9	---	3.3	---	8.5	---	22	31	---
TOTAL	504	766	479.8	407.8	185.6	168.2	204.3	485.6	464.7	995	1226	812
MEAN	16.3	25.5	15.5	13.2	6.63	5.43	6.81	15.7	15.5	32.1	39.5	27.1
MAX	54	214	58	23	7.6	14	54	98	77	97	139	110
MIN	10	10	9.4	7.9	5.8	3.3	2.6	4.1	6.5	12	17	15
CFSM	3.03	4.74	2.88	2.45	1.23	1.01	1.27	2.92	2.88	5.97	7.34	5.04
IN.	3.48	5.30	3.32	2.82	1.28	1.16	1.41	3.36	3.21	6.88	8.48	5.61
AC-FT	1000	1520	952	809	368	334	405	963	922	1970	2430	1610

CAL YR 1982	TOTAL	6403.5	MEAN	17.5	MAX	214	MIN	6.1	CFSM	3.25	IN	44.27	AC-FT	12700
WTR YR 1983	TOTAL	6699.0	MEAN	18.4	MAX	214	MIN	2.6	CFSM	3.42	IN	46.31	AC-FT	13290

WATER-QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
OCT, 13	1250	11	156	28.5	APR, 20	1245	12	189	28.0
NOV, 08	1405	11	188	26.5	MAY, 12	1221	4.4	177	28.5
DEC, 22	1400	11	245	26.0	JUN, 22	1105	10	152	29.0
JAN, 18	1235	9.6	297	25.5	JUL, 13	1025	17	167	27.0
FEB, 11	1030	6.7	233	22.0	JUL, 28	1335	14	167	29.0
MAR, 01	1212	7.0	152	27.0	AUG, 02	1325	25	151	29.0
MAR, 02	1116	5.7	175	27.0					

RIO MAUNABO BASIN

50091000 RIO MAUNABO AT MAUNABO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°00'24", long 65°54'19", at bridge on Highway 3, 0.4 mi (0.6 km) southwest of Maunabo plaza, and 1.3 mi (2.1 km) upstream from mouth.

DRAINAGE AREA.--12.4 sq mi (32.1 sq km).

PERIOD OF RECORD.--Water years 1958-66, 1975 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, O.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)
NOV / 1982												
19...	1500	120	129	6.4	24.0	63	7.0	83	10	9200	14000	--
JAN / 1983												
27...	1425	15	241	7.6	27.0	2.5	8.5	107	<10	8000	K1400	72
MAR												
23...	1225	6.8	234	7.8	31.0	4.0	8.2	111	13	K200	K400	--
MAY												
19...	1210	15	198	7.6	29.5	11	7.9	104	<10	3700	2200	69
AUG												
23...	1100	69	194	7.4	27.0	2.0	8.2	102	58	4200	2800	58

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY FIELD (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)
NOV / 1982											
19...	--	--	--	--	--	--	27	--	--	--	--
JAN / 1983											
27...	0	17	7.2	20	1.1	1.0	84	10	16	.10	38
MAR											
23...	--	--	--	--	--	--	89	--	--	--	--
MAY											
19...	0	16	7.0	21	1.1	1.1	75	12	19	.20	37
AUG											
23...	0	14	5.5	17	1.0	1.1	61	10	15	<.10	35

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)
NOV / 1982											
19...	--	--	96	.57	.030	.60	.070	1.1	1.20	1.8	8.0
JAN / 1983											
27...	160	6.3	<1	--	<.010	.30	.040	--	<.10	--	--
MAR											
23...	--	--	16	--	.010	<.10	.010	.09	.10	--	--
MAY											
19...	158	6.4	6	--	<.010	.20	.070	.23	.30	.50	2.2
AUG											
23...	134	25.0	32	.38	.020	.40	.030	.17	.20	.60	2.7

K = non-ideal count

RIO MAUNABO BASIN

50091000 RIO MAUNABO AT MAUNABO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
NOV / 1982											
19...	.140	--	--	--	--	--	--	--	--	148	48
JAN / 1983											
27...	.040	2	100	4	<1	<1	.3	<1	2	--	--
MAR											
23...	.050	--	--	--	--	--	--	--	--	--	--
MAY											
19...	.070	--	--	--	--	--	--	--	--	--	--
AUG											
23...	.100	1	100	1	<10	5	<.1	<1	<1	--	--

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SED. SUSP. FALL DIAM. % FINER THAN 002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .004 MM
JAN / 1983									
27...	1425	15	0	0	0	0	0	0	0

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .125 MM	BED MAT. FALL DIAM. % FINER THAN .250 MM	BED MAT. FALL DIAM. % FINER THAN .500 MM	BED MAT. FALL DIAM. % FINER THAN 1.00 MM	BED MAT. FALL DIAM. % FINER THAN 2.00 MM	BED MAT. FALL DIAM. % FINER THAN 4.00 MM
JAN' 27...	0	0	1	3	24	62	71	91

RIO CHICO BASIN

50091800 RIO CHICO AT PROVIDENCIA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 17°59'16", long 66°00'18", at flat low bridge 200 ft (61 m) south of Highway 3, 0.5 mi (0.8 km) above mouth, and 1.5 mi (2.4 km) southeast of Patillas plaza.

DRAINAGE AREA.--4.9 sq mi (12.8 sq km).

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)
NOV / 1982												
19...	1215	68	177	6.8	24.0	65	7.4	88	14	56000	30000	--
19...	1500	--	--	--	--	--	--	--	--	--	--	--
JAN / 1983												
27...	1615	1.3	635	7.4	27.0	2.4	.0	0	71	2800000	430000	130
MAR												
23...	1025	.53	773	7.4	29.0	--	.0	0	140	K6700000	K220000	--
MAY												
19...	0930	.68	632	7.4	28.0	5.1	.0	0	100	K6300000	990000	130
AUG												
23...	1300	19	278	7.6	23.0	11	7.2	92	20	420000	52000	80

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY FIELD (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)
NOV / 1982											
19...	--	--	--	--	--	--	51	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
JAN / 1983											
27...	0	29	13	70	2.8	4.1	190	58	50	.80	33
MAR											
23...	--	--	--	--	--	--	220	--	--	--	--
MAY											
19...	0	32	12	78	3.1	6.5	210	69	87	.20	34
AUG											
23...	0	18	3.6	28	1.4	1.2	92	13	22	.10	33

DATE	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)
NOV / 1982											
19...	--	--	<1	.74	.060	.80	.310	1.3	1.60	2.4	11
19...	--	--	--	--	--	--	--	--	--	--	--
JAN / 1983											
27...	372	1.3	<1	--	.020	<.10	6.20	.10	6.30	--	--
MAR											
23...	--	--	12	--	.030	<.10	14.0	1.0	15.0	--	--
MAY											
19...	445	.82	12	--	.030	<.10	8.40	8.6	17.0	--	--
AUG											
23...	179	9.2	11	.36	.040	.40	.510	.59	1.10	1.5	6.6

DATE	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
NOV / 1982											
19...	.260	--	--	--	--	--	--	--	--	103	19
19...	--	--	--	--	--	--	--	--	--	148	--
JAN / 1983											
27...	2.20	2	100	4	<1	<1	.5	<1	4	--	--
MAR											
23...	3.30	--	--	--	--	--	--	--	--	--	--
MAY											
19...	2.70	--	--	--	--	--	--	--	--	--	--
AUG											
23...	.240	1	<100	1	<10	5	<.1	<1	<1	--	--

K = non-ideal count

RIO GRANDE DE PATILLAS BASIN

50092000 RIO GRANDE DE PATILLAS NEAR PATILLAS, PR

LOCATION.--Lat 18°02'04", long 66°01'58", Hydrologic Unit 21010004, on left bank, at foot bridge, off Highway 184, 1.2 mi (1.9 km) upstream from Lago Patillas Dam and 2.2 mi (3.5 km) northwest of Patillas.

DRAINAGE.--18.3 sq mi (47.4 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1959 to October 1965 (annual low-flow and occasional measurements only), January 1966 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 235 ft (71.6 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--17 years (1967-83), 60.9 cu ft/s (1.725 cu m/s), 45.19 in/yr (1,148 mm/yr), 44,120 acre-ft/yr (54.4 cu hm/yr); median of yearly mean discharges, 61 cu ft/s (1.728 cu m/s), 44,200 acre-ft/yr (54 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,800 cu ft/s (419 cu m/s) Sept. 16, 1975, gage height, 12.45 ft (3.795 m), from rating curve extended above 250 cu ft/s (7.08 cu m/s) on basis of slope-area measurement of peak flow; minimum, 4.6 cu ft/s (0.130 cu m/s) May 13-16, 1968, gage height, 3.55 ft (1.082 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 cu ft/s (70.8 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)	Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
June 16	0500	3,190 90.3	9.11 2.777	July 04	1945	*3,820 108	9.63 2.935

Minimum discharge, 10 cu ft/s (0.283 cu m/s) Apr. 16, 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	156	99	231	61	21	16	12	19	46	54	138	59
2	115	57	109	55	20	15	12	25	44	87	158	72
3	70	44	83	51	19	15	12	24	43	110	96	65
4	54	50	74	49	21	15	12	22	42	429	79	53
5	51	67	67	73	22	14	12	22	45	337	122	48
6	41	49	55	78	20	21	12	30	113	258	94	44
7	37	43	47	65	20	18	11	26	57	235	76	42
8	34	46	44	61	19	22	11	21	47	144	75	40
9	31	72	41	109	19	28	11	19	69	104	77	39
10	29	63	39	63	19	19	11	19	51	86	76	36
11	27	113	37	57	19	17	11	18	44	72	67	36
12	26	146	35	55	19	92	11	17	41	67	62	42
13	80	238	35	50	19	33	11	17	47	61	66	36
14	36	98	33	46	20	21	11	22	70	55	60	36
15	26	71	41	44	20	20	11	24	243	49	62	38
16	27	63	37	41	19	18	10	22	1030	49	143	43
17	54	56	32	39	17	17	13	25	253	53	305	41
18	50	148	31	38	17	17	60	79	384	60	161	34
19	48	317	31	37	17	15	22	107	160	57	99	31
20	125	355	36	35	17	15	52	94	110	56	77	40
21	97	188	32	32	19	15	241	57	88	45	352	227
22	59	101	32	31	17	15	52	56	74	39	165	79
23	229	95	29	30	17	14	33	141	66	207	105	79
24	74	74	29	30	17	14	26	332	60	221	85	74
25	46	59	30	30	17	14	23	141	55	78	92	80
26	37	50	30	37	17	14	21	85	51	57	90	113
27	32	49	30	29	16	13	20	66	74	48	73	79
28	43	54	30	27	16	13	22	57	58	95	124	58
29	35	76	30	25	---	13	20	50	50	322	81	50
30	50	332	36	24	---	13	18	55	55	131	73	70
31	95	---	144	23	---	13	---	49	---	103	64	---
TOTAL	1914	3273	1590	1430	520	599	804	1741	3570	3769	3397	1784
MEAN	61.7	109	51.3	46.1	18.6	19.3	26.8	56.2	119	122	110	59.5
MAX	229	355	231	109	22	92	241	332	1030	429	352	227
MIN	26	43	29	23	16	13	10	17	41	39	60	31
CFSM	3.37	5.96	2.80	2.52	1.02	1.06	1.46	3.07	6.50	6.67	6.01	3.25
IN	3.89	6.65	3.23	2.91	1.06	1.22	1.63	3.54	7.26	7.66	6.91	3.63
AC-FT	3800	6490	3150	2340	1030	1190	1590	3450	7080	7480	6740	3540
CAL YR 1982	TOTAL	22902	MEAN 62.7	MAX 839	MIN 15	CFSM 3.43	IN 46.55	AC-FT 45430				
WTR YR 1983	TOTAL	24391	MEAN 66.8	MAX 1030	MIN 10	CFSM 3.65	IN 49.58	AC-FT 48380				

RIO GRANDE DE PATILLAS BASIN

50092000 RIO GRANDE DE PATILLAS NEAR PATILLAS, PR--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)
OCT / 1982												
06...	1235	43	168	8.1	26.0	1.1	8.4	105	320	K190	44	0
FEB / 1983												
03...	1430	19	158	7.8	24.0	1.3	9.5	114	100	430	52	0
JUN												
09...	1255	140	114	7.8	26.0	33	8.0	99	K12000	9500	--	--
AUG												
02...	1315	131	113	7.5	26.0	11	8.6	106	220	340	33	0

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
OCT / 1982											
06...	9.8	4.8	13	.9	<.1	52	11	11	.10	26	112
FEB / 1983											
03...	12	5.3	15	.9	.4	52	11	9.6	.20	23	88
JUN											
09...	--	--	--	--	.6	36	8.6	9.6	.20	--	76
AUG											
02...	7.5	3.4	10	.8	.4	33	8.4	9.6	<.10	21	79

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, TOTAL (MG/L AS PO4)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHOPHOS- PHATE, DIS- SOLVED (MG/L AS PO4)
OCT / 1982										
06...	--	13.0	<.10	.020	.03	1.20	<.010	--	<.010	<.010
FEB / 1983										
03...	108	4.5	.10	.020	.03	.70	.030	.09	.020	.010
JUN										
09...	--	28.6	.10	.020	.03	.50	.050	.15	.030	.010
AUG										
02...	81	27.9	.19	.040	.05	.30	.030	.09	.080	.020

DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)
OCT / 1982											
06...	--	1	17	<1	<1	<1	<3	2	31	<1	<4
FEB / 1983											
03...	10	1	16	<1	<1	<1	<3	5	28	1	<4
JUN											
09...	10	1	--	--	--	<1	--	5	--	<1	--
AUG											
02...	300	1	15	<1	<1	<1	<3	9	100	4	<4

K = non-ideal count

RIO GRANDE DE PATILLAS BASIN

50092000 RIO GRANDE DE PATILLAS NEAR PATILLAS, PR--Continued

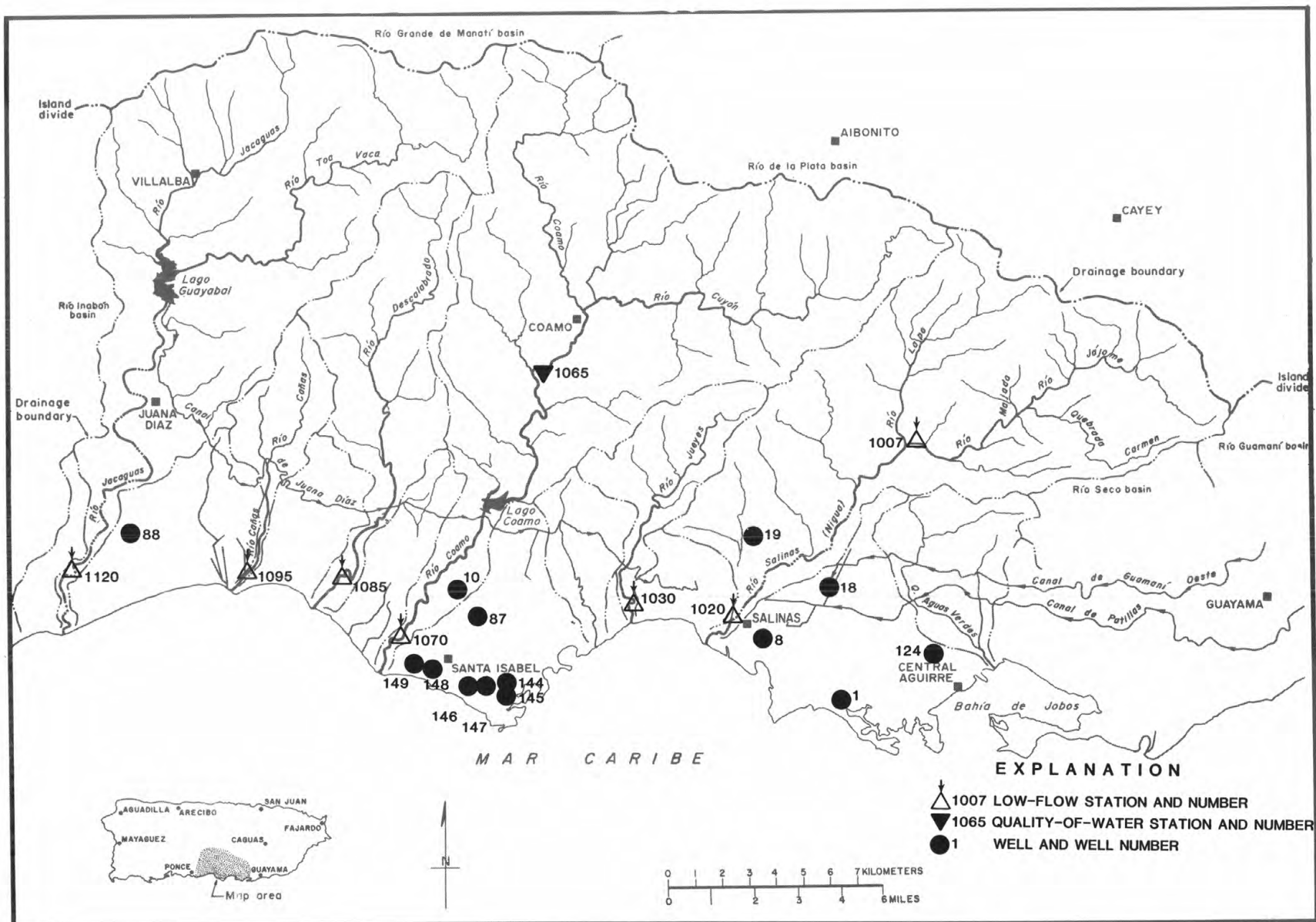
WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	MANGANESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT / 1982											
06...	10	<.1	<10	1	<1	<1	35	<6.0	<4	1	.12
FEB / 1983											
03...	8	.3	<10	3	<1	<1	36	<6.0	15	5	.26
JUN											
09...	--	<.1	--	<1	<1	<1	--	--	--	73	28
AUG											
02...	10	<.1	<10	3	<1	<1	27	<6.0	<3	12	4.2

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
NOV /	10 1510	54	135	27.5	MAY /	13 0722	17	164	25.5
DEC /	27 1025	31	214	21.5	JUL /	12 1220	67	152	28.0
MAR /	02 0814	16	173	23.5	JUL /	20 1540	58	142	29.5
APR /	05 1245	12	155	25.0	SEP /	13 1132	36	154	27.0

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDE (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT / 1982				
06...	1235	43	1	100
FEB / 1983				
03...	1430	19	5	80
JUN				
09...	1255	140	73	85
AUG				
02...	1315	131	12	92

Figure 21.--South coast rivers basin--Río Salinas to Río Jacaguas basins.



RIO COAMO BASIN

50106500 RIO COAMO NEAR COAMO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°03'52", long 66°22'10", on Highway 153 bridge, 0.4 mi (0.6 km) above Río de la Mina, and 1.75 mi (2.8 km) south of Coamo plaza.

DRAINAGE AREA.--46.0 sq mi (119.1 sq km).

PERIOD OF RECORD.--Water years 1978 to current year.

WATER-QUALITY RECORDS, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV / 1982											
01...	1040	6.7	595	7.8	27.0	2.0	4.2	54	24	K860	770
JAN / 1983											
25...	0910	5.5	678	7.7	23.5	<1.0	5.3	63	48	K65000	8200
MAR											
29...	1235	4.0	670	8.0	28.5	<1.0	8.6	112	10	430	400
MAY											
09...	1115	16	615	8.1	27.5	1.5	8.4	108	26	5700	430
AUG											
15...	1035	7.4	603	8.2	30.0	1.7	9.5	127	28	K830	260

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L CAC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV / 1982											
01...	--	--	--	--	--	--	--	220	--	--	--
JAN / 1983											
25...	260	0	66	22	42	1.2	3.2	260	33	45	.20
MAR											
29...	--	--	--	--	--	--	--	250	--	--	--
MAY											
09...	230	1	61	19	36	1.1	3.4	230	32	41	.20
AUG											
15...	250	21	66	21	37	1.1	3.0	231	32	44	.20

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982b											
01...	--	--	--	6	2.4	.180	2.6	.130	.57	.70	3.3
JAN / 1983											
25...	32	399	5.9	<1	1.4	.230	1.6	1.60	.10	1.70	3.3
MAR											
29...	--	--	--	2	2.4	.370	2.8	.470	.43	.90	3.7
MAY											
09...	31	362	15.6	<1	1.8	.290	2.1	.390	.31	.70	2.8
AUG											
15...	33	375	7.5	2	2.6	.150	2.7	.120	.48	.60	3.3

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982										
01...	15	.670	--	--	--	--	--	--	--	--
JAN / 1983										
25...	15	1.30	1	<100	1	<1	11	.2	<1	<1
MAR										
29...	16	.900	--	--	--	--	--	--	--	--
MAY										
09...	12	.580	--	--	--	--	--	--	--	--
AUG										
15...	15	.580	2	100	1	2	7	<.1	<1	<1

K = non-ideal count

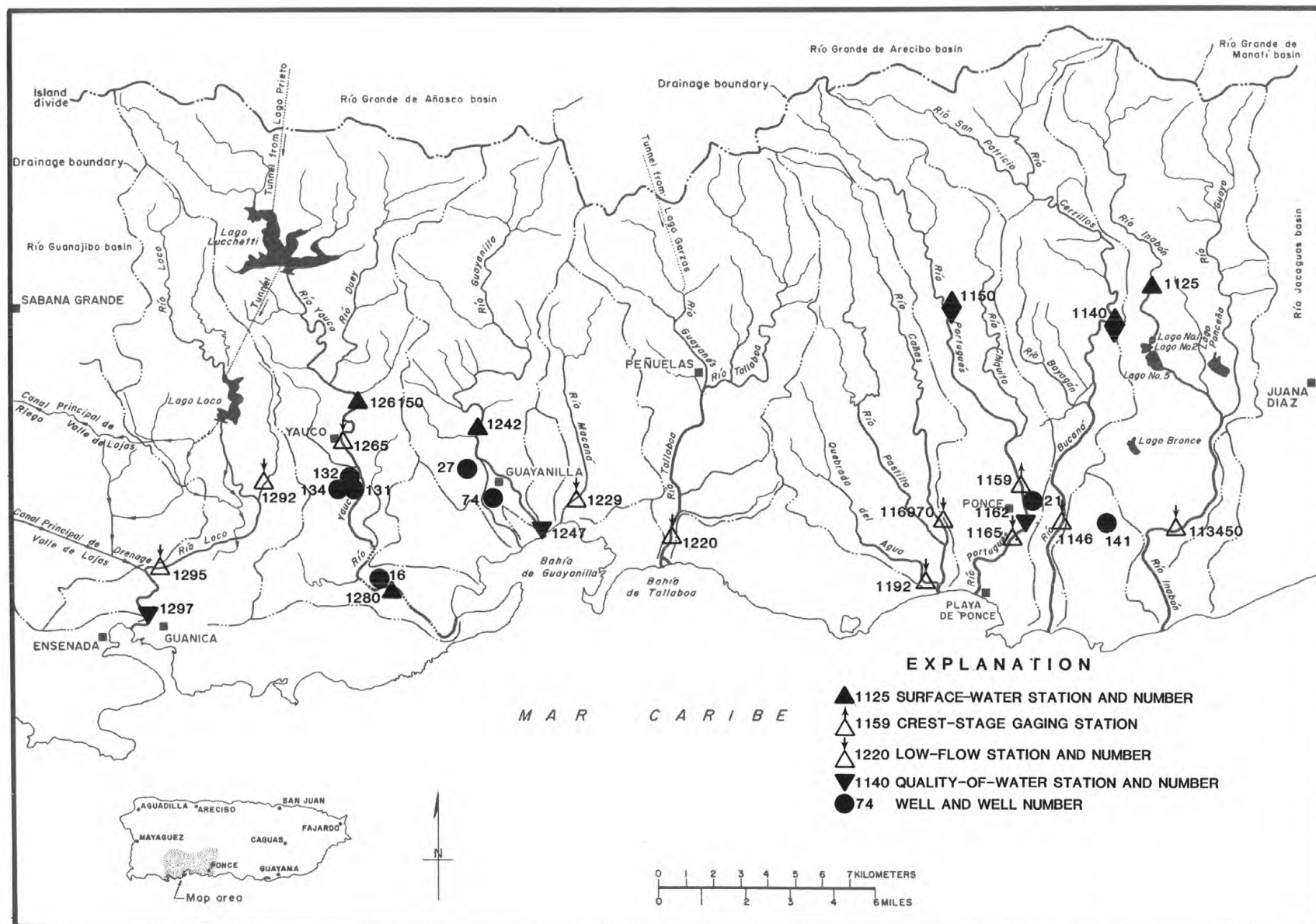


Figure 22.--South coast rivers basin--Río Inabón to Río Loco basins.

LOCATION.--Lat 18°05'10", long 66°33'46", Hydrologic Unit 21010004, at bridge on private road, off Highway 511 at Hacienda La Concordia, 0.4 mi (0.6 km) upstream from diversion canal, 0.5 mi (0.8 km) north of Real Abajo, and 6.1 mi (9.8 km) northeast of Plaza Degetau in Ponce.

DRAINAGE AREA.--9.70 sq mi (25.12 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1962-63 (annual low-flow measurements only), February to June 1964 (monthly measurements only), July 1964 to July 1970, April 1971 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 410 ft (125 m), from topographic map. Prior to April 1971 nonrecording gage and crest-stage gage at different datum.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--17 years (1965-69, 72-83), 18.6 cu ft/s (0.527 cu m/s), 26.04 in/yr (661 mm/yr), 13,480 acre-ft/yr (16.6 cu hm/yr); median of yearly mean discharges, 18 cu ft/s (0.51 cu m/s), 13,000 acre-ft/yr (16 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,000 cu ft/s (198 cu m/s) Sept. 16, 1975, gage height, 18.6 ft (5.669 m) from flood-mark, from rating curve extended above 30 cu ft/s (0.850 cu m/s) on basis of contracted opening and flow-over-road measurements of peak flow; minimum daily, 0.80 cu ft/s (0.023 cu m/s) July 23, 1977.

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

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Mar. 12	1400	*691	19.6	8.24	2.512	May 22	1600	675	19.1	8.10	2.469
May 18	1445	663	18.8	8.00	2.438						

Minimum daily discharge, 1.4 cu ft/s (0.040 cu m/s) Mar. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	13	14	7.6	5.0	2.4	2.1	8.4	11	9.1	6.2	9.9
2	22	11	12	7.2	5.0	2.0	2.1	9.1	10	9.1	7.8	10
3	14	10	11	6.9	4.6	1.8	2.1	10	16	8.8	6.7	9.4
4	12	9.0	11	7.4	4.3	1.8	2.5	12	15	13	5.7	9.1
5	11	8.2	10	7.5	4.0	1.8	2.8	9.2	11	13	5.3	9.2
6	10	11	10	3.6	3.7	1.6	3.5	8.2	12	12	5.5	8.1
7	11	8.9	10	3.1	4.0	1.4	2.5	8.1	11	12	5.1	8.0
8	11	20	9.7	3.0	3.8	2.0	2.2	7.8	9.9	13	7.8	7.7
9	10	35	9.2	9.2	3.7	5.0	2.1	7.4	9.8	11	9.1	6.7
10	9.1	31	8.9	7.9	3.9	4.2	2.0	6.6	10	11	9.3	5.9
11	7.8	21	8.7	7.8	3.2	2.5	2.2	6.0	10	12	6.4	5.7
12	8.0	41	8.7	3.1	2.8	92	2.6	5.1	9.3	11	5.0	10
13	18	46	9.9	3.3	2.8	25	2.8	6.4	10	10	5.0	5.8
14	18	27	10	9.0	3.4	12	3.1	10	9.9	10	4.7	4.8
15	17	29	10	9.3	3.8	8.0	14	10	17	9.6	4.5	7.1
16	44	28	11	8.2	3.1	6.1	13	13	107	9.7	4.0	6.8
17	26	21	8.8	7.3	3.3	4.8	9.3	10	91	11	17	9.3
18	16	21	8.2	7.1	3.4	4.1	22	61	88	11	12	18
19	14	19	7.9	6.8	2.9	3.5	7.6	53	49	9.3	5.8	14
20	10	17	8.1	6.6	3.1	3.3	35	30	33	7.7	4.3	6.2
21	11	15	7.8	5.8	3.2	3.1	126	34	26	8.5	16	5.2
22	11	28	7.5	5.7	2.3	2.6	40	81	22	7.9	14	14
23	15	47	7.0	5.8	2.1	2.5	22	44	21	8.1	7.2	13
24	13	25	6.9	5.7	2.3	2.4	18	22	19	10	5.5	7.5
25	10	20	7.0	5.7	3.3	3.4	13	22	18	8.4	4.5	9.0
26	8.1	17	7.3	6.3	3.6	2.9	10	22	17	8.4	10	13
27	7.8	15	9.9	5.8	2.6	2.0	16	17	16	6.5	18	6.0
28	20	14	7.6	5.7	2.5	2.0	20	14	13	6.6	21	3.8
29	24	13	11	5.4	---	1.8	12	13	11	6.8	15	3.3
30	18	19	13	5.7	---	2.5	8.0	13	9.7	7.0	12	3.0
31	15	---	8.5	5.2	---	2.4	---	12	---	6.2	12	---
TOTAL	477.8	640.1	290.6	219.7	95.7	212.9	420.5	585.3	712.6	297.7	272.4	249.5
MEAN	15.4	21.3	9.37	7.09	3.42	6.87	14.0	18.9	23.8	9.60	8.79	8.32
MAX	44	47	14	9.3	5.0	92	126	81	107	13	21	18
MIN	7.8	8.2	6.9	5.2	2.1	1.4	2.0	5.1	9.3	6.2	4.0	3.0
CFSM	1.59	2.20	.97	.73	.35	.71	1.44	1.95	2.45	.99	.91	.86
IN.	1.83	2.45	1.11	.84	.37	.82	1.61	2.24	2.73	1.14	1.04	.96
AC-FT	948	1270	576	436	190	422	834	1160	1410	590	540	495

CAL YR 1982	TOTAL	4735.1	MEAN 13.0	MAX 266	MIN 2.0	CFSM 1.34	IN 18.16	AC-FT 9390
WTR YR 1983	TOTAL	4474.8	MEAN 12.3	MAX 126	MIN 1.4	CFSM 1.27	IN 17.16	AC-FT 8880

WATER-QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
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RIO BUCANA BASIN

50114000 RIO CERRILLOS NEAR PONCE, PR

LOCATION.--Lat 18°04'15", long 66°34'51", Hydrologic Unit 21010004, on right bank off Highway 139, 2.3 mi (3.7 km) upstream from Quebrada Ausubo and 4.6 mi (7.4 km) northeast of Plaza Degetau in Ponce.

DRAINAGE AREA.--17.8 sq mi (46.1 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February to April 1964 (monthly measurements only), May 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is 253.10 ft (77.145 m) above mean sea level, datum of 1929. Prior to Mar 22, 1977, at site 0.15 mi (0.24 km) upstream and datum 9.90 ft (3.018 m) higher.

REMARKS.--Records fair. Some low-flow regulation by construction upstream.

AVERAGE DISCHARGE.--19 years (1965-83), 35.8 cu ft/s (1.014 cu m/s), 27.31 in/yr (694 mm/yr), 25,940 acre-ft/yr (32.0 cu hm/yr); median of yearly mean discharges, 33 cu ft/s (0.93 cu m/s), 23,900 acre-ft/yr (29 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,400 cu ft/s (634 cu m/s) Sept. 16, 1975, gage height, 11.2 ft (3.41 m), from flood-marks, from rating curve extended above 150 cu ft/s (4.25 cu m/s) on basis of slope-area measurement of peak flow; minimum, 2.2 cu ft/s (0.062 cu m/s) May 28, 1967.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,200 cu ft/s (34.0 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
Apr. 21	0445	*821 23.2	7.04 2.146

Minimum discharge, 5.6 cu ft/s (0.158 cu m/s) Mar. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	26	35	16	9.9	9.2	6.8	22	32	35	13	18
2	47	24	31	15	9.7	8.9	6.9	20	31	32	13	16
3	32	22	30	14	9.7	8.6	6.8	21	34	27	13	14
4	27	21	29	14	9.9	8.3	6.7	27	32	44	12	13
5	24	19	27	14	10	8.3	7.1	28	27	40	11	14
6	22	29	25	14	9.8	8.5	7.5	22	30	32	11	12
7	19	23	24	15	9.7	8.2	7.3	21	27	28	10	12
8	19	30	23	14	9.5	7.9	7.0	19	27	27	14	14
9	18	50	22	15	10	11	6.7	18	26	25	17	12
10	17	51	22	14	11	12	6.5	17	30	26	18	11
11	16	43	21	14	10	9.4	6.6	15	35	28	12	13
12	15	69	21	12	10	11.9	7.2	21	27	26	10	20
13	31	89	20	12	9.9	43	7.5	18	23	25	12	13
14	23	49	22	12	9.7	17	20	22	22	24	15	11
15	18	41	21	13	10	12	66	23	34	22	14	11
16	58	53	22	13	10	9.8	58	25	124	22	12	12
17	38	67	19	13	9.8	9.0	24	25	120	24	49	18
18	30	88	18	12	9.5	8.5	66	63	149	22	33	53
19	36	72	18	12	9.2	8.2	33	91	92	21	20	34
20	28	56	19	12	8.8	7.6	115	52	62	19	17	18
21	27	50	18	10	9.1	7.4	206	69	52	13	34	14
22	30	76	17	10	9.3	7.6	68	113	45	16	33	22
23	53	108	16	10	9.1	7.6	75	105	39	15	21	25
24	60	63	16	11	9.0	7.3	66	69	35	18	18	18
25	34	51	16	10	9.4	7.8	42	61	32	16	17	22
26	25	43	16	11	9.7	7.9	33	58	37	17	34	24
27	21	38	16	11	9.7	7.1	39	48	39	15	40	16
28	52	37	16	10	9.3	7.1	40	43	41	15	25	14
29	57	34	20	10	---	7.1	30	38	38	15	20	12
30	40	47	30	10	---	6.9	24	36	37	16	21	12
31	32	---	18	11	---	7.1	---	33	---	14	24	---
TOTAL	1003	1469	668	384	270.7	415.3	1095.6	1243	1379	724	613	518
MEAN	32.4	49.0	21.5	12.4	9.67	13.4	36.5	40.1	46.0	23.4	19.8	17.3
MAX	60	108	35	16	11	11.9	206	113	149	44	49	53
MIN	15	19	16	10	8.8	6.9	6.5	15	22	14	10	11
CFSM	1.82	2.75	1.21	.70	.54	.75	2.05	2.25	2.58	1.32	1.11	.97
IN.	2.10	3.07	1.40	.80	.57	.87	2.29	2.60	2.88	1.51	1.28	1.08
AC-FT	1990	2910	1320	762	537	824	2170	2470	2740	1440	1220	1030

CAL YR 1982	TOTAL	10788.9	MEAN	29.6	MAX	450	MIN	6.0	CFSM	1.66	IN	22.55	AC-FT	21400
WTR YR 1983	TOTAL	9782.6	MEAN	26.8	MAX	206	MIN	6.5	CFSM	1.51	IN	20.44	AC-FT	19400

RIO BUCANA BASIN

50114000 RIO CERRILLOS NEAR PONCE, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV / 1982											
02...	1230	24	285	8.1	27.0	1.1	7.5	96	11	K800	940
JAN / 1983											
11...	1120	13	306	--	23.0	70	9.0	106	--	460	1000
MAR											
29...	1600	6.9	285	8.4	29.5	7.0	7.4	98	<10	K150	530
MAY											
06...	0830	23	275	7.9	23.5	63	8.9	106	16	K790	3600
AUG											
15...	1420	14	264	8.4	30.0	3.3	8.0	107	16	290	270

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV / 1982											
02...	--	--	--	--	--	--	--	120	--	--	--
JAN / 1983											
11...	130	0	42	7.0	11	.4	1.4	--	18	7.8	.10
MAR											
29...	--	--	--	--	--	--	--	130	--	--	--
MAY											
06...	120	4	39	6.5	12	.5	1.1	120	17	7.8	<.10
AUG											
15...	120	6	38	6.5	11	.5	1.1	116	17	8.1	<.10

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982											
02...	--	--	--	4	--	<.010	.60	<.010	--	.40	1.0
JAN / 1983											
11...	22	205	7.2	109	.47	.030	.50	.080	.72	.80	1.3
MAR											
29...	--	--	--	4	--	.010	<.10	.010	--	<.10	--
MAY											
06...	22	177	11.0	96	.37	.030	.40	.040	.16	.20	.60
AUG											
15...	23	174	6.4	14	--	<.010	.20	<.010	--	.10	.30

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982										
02...	4.4	.050	--	--	--	--	--	--	--	--
JAN / 1983										
11...	5.8	.410	1	100	1	7	6	<.1	<1	<1
MAR										
29...	--	.050	--	--	--	--	--	--	--	--
MAY										
06...	2.7	.080	--	--	--	--	--	--	--	--
AUG										
15...	1.3	.080	2	100	1	2	3	<.1	<1	<1

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
OCT, 19	1040	32	246	32.0	JUN, 14	0950	22	260	27.0
DEC, 07	1225	25	280	24.5	JUL, 07	0820	28	282	26.0
FEB, 08	1145	9.6	284	26.0	SEP, 02	1320	16	257	30.0
APR, 13	1030	7.4	382	28.0					

K = non-ideal count

RIO PORTUGUES BASIN

50115000 RIO PORTUGUES NEAR PONCE, PR

LOCATION.--Lat 18°04'45", long 66°38'01", Hydrologic Unit 21010004, on right bank 30 ft upstream from bridge on Highway 504, 0.2 mi (0.3 km) upstream from small unnamed tributary, 4.4 mi (7.1 km) upstream from Rio Chiquito, and 4.7 mi (7.6 km) north of Plaza Degetau in Ponce.

DRAINAGE AREA.--8.82 sq mi (22.84 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February to June 1964 (monthly measurements only), July 1964 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 470 ft (143 m), from topographic map. Prior to Dec. 4, 1964, non-recording gage at same site and datum.

REMARKS.--Records fair. Some low-flow regulation due to unknown activity upstream.

AVERAGE DISCHARGE.--19 years (1965-83), 18.2 cu ft/s (0.515 cu m/s), 28.02 in/yr (712 mm/yr), 13,190 acre-ft/yr (16.3 cu hm/yr); median of yearly mean discharges, 18 cu ft/s (0.51 cu m/s), 13,000 acre-ft/yr (16 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,100 cu ft/s (371 cu m/s) Sept. 16, 1975, gage height, 10.1 ft (3.08 m), from flood-marks at downstream side of bridge, from rating curve extended above 150 cu ft/s (4.25 cu m/s) on basis of slope-area measurement of peak flow; minimum, 1.0 cu ft/s (0.028 cu m/s) May 29, 1973.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 800 cu ft/s (22.7 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)	Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
Nov. 17	1700	838 23.7	5.67 1.728	May 18	1530	*1,550 43.9	7.28 2.219
Apr. 21	0545	1,030 29.2	6.15 1.874	May 21	1515	1,160 32.8	6.44 1.963

Minimum discharge, 3.4 cu ft/s (0.096 cu m/s) Mar 3-6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	75	17	17	7.7	5.5	3.8	3.9	12	13	8.2	6.7	6.0		
2	40	16	15	7.9	5.2	3.8	3.8	12	23	14	6.7	7.4		
3	20	15	14	7.7	5.2	3.8	3.6	11	18	23	6.4	6.8		
4	15	14	14	7.5	4.8	3.5	3.6	13	13	33	5.3	9.3		
5	14	13	13	7.3	4.8	3.4	3.7	12	13	24	5.3	9.7		
6	12	13	13	8.0	4.6	3.6	4.5	11	17	19	5.4	7.4		
7	11	13	12	7.7	4.2	3.6	4.5	12	14	16	4.8	7.9		
8	11	12	12	7.8	4.0	3.7	4.5	10	12	14	8.4	12		
9	10	13	12	8.2	3.9	5.6	4.5	9.5	12	12	10	7.9		
10	9.7	20	12	7.7	3.9	5.7	4.1	9.2	12	12	6.9	7.5		
11	9.2	19	12	7.3	3.9	3.8	3.9	12	12	11	7.0	8.9		
12	8.7	41	12	7.4	3.9	152	3.9	16	13	11	5.5	11		
13	18	44	11	7.3	3.9	22	4.5	15	15	10	9.4	7.6		
14	12	20	11	6.8	4.0	8.8	29	21	12	9.2	9.1	7.2		
15	9.5	16	11	6.9	4.2	6.4	34	18	38	9.2	6.0	10		
16	37	20	12	6.7	4.3	5.7	28	16	118	9.9	6.8	8.4		
17	21	110	10	6.7	4.5	5.1	10	14	171	9.9	63	20		
18	41	127	10	6.4	4.3	4.8	40	180	267	8.8	25	27		
19	29	70	10	6.3	4.2	4.5	19	77	67	7.9	10	17		
20	19	33	10	6.2	4.0	4.2	73	38	32	7.7	8.1	9.1		
21	21	25	9.4	6.0	3.9	4.0	298	188	20	7.7	30	7.7		
22	21	52	9.3	5.9	3.9	3.9	57	103	15	7.4	19	21		
23	45	77	9.3	5.7	3.7	4.2	32	57	12	7.5	9.9	33		
24	42	34	8.9	5.5	3.6	4.2	34	35	9.5	9.1	7.7	20		
25	23	26	8.5	6.0	3.7	4.8	23	46	11	7.1	6.7	20		
26	19	22	8.5	6.7	3.9	4.5	18	37	12	6.6	15	15		
27	16	21	8.5	6.1	3.9	4.3	19	25	15	6.6	16	9.7		
28	36	20	8.2	5.9	3.9	4.1	19	21	12	7.1	10	7.8		
29	27	18	8.6	5.8	---	3.9	15	15	9.1	7.4	8.3	7.0		
30	23	21	11	6.0	---	3.9	13	15	8.5	7.7	6.7	6.2		
31	19	---	8.4	5.5	---	3.9	---	14	---	7.0	6.9	---		
TOTAL	714.1	962	341.6	210.6	117.8	303.5	814.0	1074.7	1016.1	351.0	352.0	355.5		
MEAN	23.0	32.1	11.0	6.79	4.21	9.79	27.1	34.7	33.9	11.3	11.4	11.9		
MAX	75	127	17	8.2	5.5	152	298	188	267	33	63	33		
MIN	8.7	12	8.2	5.5	3.6	3.4	3.6	9.2	8.5	6.6	4.8	6.0		
CFSM	2.61	3.64	1.25	.77	.48	1.11	3.07	3.93	3.84	1.28	1.29	1.35		
IN.	3.01	4.06	1.44	.89	.50	1.28	3.43	4.53	4.29	1.48	1.48	1.50		
AC-FT	1420	1910	678	418	234	602	1610	2130	2020	696	698	705		
CAL YR 1982	TOTAL	6738.7	MEAN	18.5	MAX	520	MIN	2.4	CFSM	2.10	IN	28.42	AC-FT	13370
WTR YR 1983	TOTAL	6612.9	MEAN	18.1	MAX	298	MIN	3.4	CFSM	2.05	IN	27.89	AC-FT	13120

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV / 1982											
01...	1410	16	282	8.3	26.0	1.5	7.8	99	28	K520	K560
JAN / 1983											
25...	1340	5.6	309	8.4	25.0	<1.0	8.9	109	51	K13	130
MAR											
16...	1210	5.7	276	8.2	25.0	<1.0	8.1	100	43	K150	510
MAY											
06...	1210	9.8	274	8.4	25.5	2.4	8.0	99	15	330	810
AUG											
16...	0925	5.2	158	8.3	25.0	1.1	8.8	108	11	110	390

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (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)
NOV / 1982											
01...	--	--	--	--	--	--	--	130	--	--	--
JAN / 1983											
25...	140	0	42	7.5	12	.5	1.0	140	8.0	8.7	.10
MAR											
16...	--	--	--	--	--	--	--	120	--	--	--
MAY											
06...	130	1	41	7.0	12	.5	1.3	130	8.1	8.7	.10
AUG											
16...	140	4	45	7.4	11	.4	1.1	139	8.1	9.0	<.10

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982										
01...	--	--	--	2	--	<.010	1.0	<.010	.90	1.9
JAN / 1983										
25...	22	185	2.8	1	.89	.010	.90	.030	<.10	--
MAR										
16...	--	--	--	<1	--	<.010	1.4	.030	<.10	--
MAY										
06...	22	178	4.7	6	--	<.010	.60	<.010	<.10	--
AUG										
16...	22	187	2.6	4	--	<.010	.70	<.010	.20	.90

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982										
01...	8.4	.070	--	--	--	--	--	--	--	--
JAN / 1983										
25...	--	.160	2	100	3	<1	9	.1	<1	<1
MAR										
16...	--	.050	--	--	--	--	--	--	--	--
MAY										
06...	--	.040	--	--	--	--	--	--	--	--
AUG										
16...	4.0	.070	2	100	1	1	2	<.1	<1	<1

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
OCT, 19	1330	23	213	24.0	JUN, 14	1235	10	267	27.0
DEC, 09	1345	12	260	23.0	JUL, 07	1040	14	275	26.0
FEB, 08	1410	4.0	295	25.5	SEP, 02	1000	6.3	286	30.0
APR, 13	1300	3.8	307	28.0					

K = non-ideal count

RIO PORTUGUES BASIN
50116200 RIO PORTUGUES AT PONCE, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°00'20", long 66°36'28", 1,300 ft (400 m) south of Las Americas Avenue Bridge, 1.2 mi (1.9 km) south of CSG 50115900, 0.8 mi (1.3 km) west of Highways 1 and 2 junction, and 0.7 mi (1.1 km) southeast of Ponce.

DRAINAGE AREA.--18.9 sq mi (49.0 sq km).

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV / 1982											
02...	0850	14	415	8.1	25.0	7.0	8.8	108	11	51000	K11000
JAN / 1983											
11...	1420	6.6	443	8.3	31.0	70	9.2	124	--	33000	3200
MAR											
16...	1435	4.7	490	8.4	32.0	1.3	7.9	109	<10	2300	K170
MAY											
19...	0805	107	249	7.8	22.5	55	3.9	103	11	29000	9500
JUN											
07...	1340	14	403	8.6	33.0	--	11.8	165	--	--	--
AUG											
16...	1220	5.4	458	8.0	33.0	48	6.0	83	45	52000	58000

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (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)
NOV / 1982											
02...	--	--	--	--	--	--	--	150	--	--	--
JAN / 1983											
11...	160	23	47	11	37	1.3	2.2	140	60	34	.30
MAR											
16...	--	--	--	--	--	--	--	130	--	--	--
MAY											
19...	100	10	30	6.1	13	.6	1.5	90	20	11	.20
JUN											
07...	--	--	--	--	--	--	--	130	--	--	--
AUG											
16...	160	77	44	11	35	1.3	2.6	78	53	31	.40

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982											
02...	--	--	--	18	.58	.020	.60	.090	.61	.70	1.3
JAN / 1983											
11...	20	295	5.3	100	.35	.050	.40	.230	.07	.30	.70
MAR											
16...	--	--	--	<1	.87	.030	.90	.120	.08	.20	1.1
MAY											
19...	20	156	45.2	46	2.2	.020	2.2	.060	.54	.60	2.8
JUN											
07...	--	--	--	--	--	--	--	--	--	--	--
AUG											
16...	17	241	3.5	69	.19	.110	.30	.870	1.3	2.20	2.5

K = non-ideal count

RIO PORTUGUES BASIN

50116200 RIO PORTUGUES AT PONCE, PR---Continued

WATER-QUALITY DATA, WATER YEARS OCTOBER 1982 TO SEPTEMBER 1983

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982										
02...	5.8	.090	--	--	--	--	--	--	--	--
JAN / 1983										
11...	3.1	.430	2	100	2	6	7	.2	<1	1
MAR										
16...	4.9	.100	--	--	--	--	--	--	--	--
MAY										
19...	12	.100	--	--	--	--	--	--	--	--
JUN										
07...	--	--	--	--	--	--	--	--	--	--
AUG										
16...	11	.360	2	200	1	2	3	<.1	<1	<1

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)
JUN / 1983								
07...	1340	<.10	<.01	<.10	<.01	<.01	<.01	.11

DATE	DI- ELDRIN TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA- THION, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL (UG/L)
JUN / 1983									
07...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01

DATE	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR, TOTAL (UG/L)	PER- THANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)
JUN / 1983								
07...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01

50124200 RIO GUAYANILLA NEAR GUAYANILLA, P.R.

LOCATION.--Lat 18°02'40", long 66°47'53", Hydrologic Unit 21010004, on left bank, 0.7 mi (1.1 km) north of junction of Highways 2 and 132, 0.6 mi (1.0 km) downstream from Quebrada Consejo, 1.8 mi (2.9 km) north-northwest from Plaza de Guayanilla.

DRAINAGE AREA.--18.9 sq mi (49.0 sq km).

WATER-DISCHARGE RECORDS

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

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

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,700 cu ft/s (416 cu m/s) Sept. 12, 1982, gage height, 20.4 ft (6.21 m) from floodmarks, from rating curve extended above 100 cu ft/s (2.83 cu m/s) on basis of step-backwater analysis and indirect measurement of peak flow; minimum, 1.8 cu ft/s (0.051 cu m/s) Apr. 17-19, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 800 cu ft/s (22.7 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)	Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
Apr. 21	0230	*2,010 56.9	11.55 3.520	Aug. 17	1645	970 27.5	9.69 2.954

Minimum discharge, 3.0 cu ft/s (0.085 cu m/s) Apr. 3-5, 9-13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	11	35	9.3	5.2	4.9	3.3	16	17	18	6.4	5.9
2	16	11	26	8.9	4.9	4.9	3.4	14	17	21	6.7	5.5
3	15	11	24	8.6	4.8	4.9	3.3	14	19	20	6.4	5.6
4	13	11	22	8.5	4.7	4.8	3.0	14	16	16	6.0	15
5	19	11	20	8.7	5.0	4.7	3.1	13	15	24	6.0	11
6	16	11	19	8.5	4.8	5.2	5.3	12	14	19	6.0	7.4
7	18	9.9	18	8.5	4.5	5.4	3.8	11	14	14	6.0	6.3
8	18	9.2	17	8.3	4.4	6.3	4.2	11	14	13	17	6.8
9	14	9.2	17	8.9	4.5	6.5	3.5	12	14	11	12	6.0
10	14	9.2	18	8.2	4.5	7.3	3.0	11	13	11	8.6	5.5
11	13	9.2	17	7.9	4.6	5.7	3.0	12	13	12	8.7	6.0
12	12	50	15	7.8	4.4	92	3.1	12	12	12	7.6	6.7
13	16	43	15	7.4	4.4	22	3.4	17	12	11	7.5	5.3
14	17	31	15	7.7	4.8	8.5	8.9	18	18	11	10	5.0
15	15	26	14	7.8	5.3	6.5	13	16	16	11	7.4	18
16	15	34	14	7.5	4.7	5.6	5.9	14	33	13	10	9.5
17	14	97	13	7.3	4.6	5.2	4.6	14	40	13	122	7.2
18	14	79	12	7.1	5.0	5.0	24	35	71	12	31	10
19	14	54	18	7.1	4.8	4.7	12	70	32	12	11	6.1
20	15	47	17	7.1	4.8	4.6	28	109	18	11	8.0	5.5
21	14	43	12	7.1	5.1	4.2	327	183	15	11	23	5.2
22	23	42	12	6.5	5.0	4.0	52	115	14	10	14	7.6
23	26	38	11	6.5	5.1	4.8	36	48	13	8.9	9.2	14
24	29	29	11	6.2	4.9	4.4	29	36	12	8.8	13	9.2
25	19	30	11	5.6	5.1	4.1	22	47	13	8.3	7.8	6.6
26	15	24	11	5.6	5.1	4.0	19	43	14	7.6	6.7	5.8
27	14	21	10	5.5	4.9	3.9	61	29	16	7.2	6.6	5.4
28	14	62	9.8	5.4	5.0	4.0	63	24	17	7.2	6.8	5.1
29	14	30	10	5.2	---	4.0	27	21	17	7.4	6.6	5.0
30	13	48	12	5.2	---	3.5	19	19	19	8.4	6.3	5.6
31	11	---	9.9	5.3	---	3.5	---	18	---	7.4	6.4	---
TOTAL	497	940.7	485.7	225.2	134.9	259.1	796.8	1028	568	377.2	410.7	223.8
MEAN	16.0	31.4	15.7	7.26	4.82	8.36	26.6	33.2	18.9	12.2	13.2	7.46
MAX	29	97	35	9.3	5.3	92	327	183	71	24	122	18
MIN	11	9.2	9.8	5.2	4.4	3.5	3.0	11	12	7.2	6.0	5.0
CFSM	.85	1.66	.83	.38	.26	.44	1.41	1.76	1.00	.65	.70	.40
IN	.98	1.85	.96	.44	.27	.51	1.57	2.02	1.12	.74	.81	.44
AC-FT	986	1870	963	447	268	514	1580	2040	1130	748	815	444
CAL YR 1982	TOTAL	5792.0	MEAN 15.9	MAX 500	MIN 3.7	CFSM .84	IN 11.40	AC-FT 11490				
WTR YR 1983	TOTAL	5947.1	MEAN 16.3	MAX 327	MIN 3.0	CFSM .86	IN 11.70	AC-FT 11800				

WATER-QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
OCT, 13	1020	14	418	28.0	APR, 12	1300	3.0	387	28.0
NOV, 12	1150	16	363	26.0	MAY, 09	1030	12	446	28.0
DEC, 09	1010	18	318	22.0	JUN, 14	1250	13	---	30.5
JAN, 17	1255	7.4	390	27.0	JUL, 06	0950	17	370	27.0
FEB, 02	1050	5.1	370	25.0	AUG, 03	1500	6.2	315	33.0
MAR, 16	1155	6.1	425	28.0	SEP, 15	1028	5.1	392	29.0

RIO GUAYANILLA BASIN

50124700 RIO GUAYANILLA AT CENTRAL RUFINA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°00'40", long 66°46'49", at dirt road bridge, 0.7 mi (1.1 km) from mouth, 0.9 mi (1.4 km) east of Central Rufina and 0.9 mi (1.4 km) southeast of Guayanilla.

DRAINAGE AREA.--22.8 sq mi (59.1 sq km).

PERIOD OF RECORD.--Water years 1960-65, 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV / 1982											
03...	0855	6.2	535	7.6	26.0	2.1	4.8	60	14	510000	93000
JAN / 1983											
12...	0940	3.0	685	7.3	25.0	2.0	1.0	12	--	2500000	70000
MAR											
31...	1100	1.2	960	7.6	27.0	6.5	1.6	20	66	2000000	190000
MAY											
19...	1145	29	390	7.9	27.5	14	7.7	98	<10	K700000	98000
JUN											
07...	1540	7.2	558	7.8	31.0	--	5.8	78	--	--	--
AUG											
17...	0825	2.1	638	7.7	27.0	1.4	.8	10	53	K1900000	800000

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV / 1982											
03...	--	--	--	--	--	--	--	190	--	--	--
JAN / 1983											
12...	240	11	65	19	37	1.1	3.9	230	73	37	.10
MAR											
31...	--	--	--	--	--	--	--	350	--	--	--
MAY											
19...	160	14	44	13	17	.6	1.9	150	36	17	.20
JUN											
07...	--	--	--	--	--	--	--	190	--	--	--
AUG											
17...	250	3	69	18	41	1.2	4.0	244	66	41	.10

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982											
03...	--	--	--	6	.31	.090	.40	3.20	.30	3.50	3.9
JAN / 1983											
12...	21	394	3.2	26	.06	.040	.10	6.30	8.7	15.0	15
MAR											
31...	--	--	--	<1	.03	.070	.10	14.0	15	29.0	29
MAY											
19...	18	237	18.6	14	.38	.020	.40	1.30	.80	2.10	2.5
JUN											
07...	--	--	--	--	--	--	--	--	--	--	--
AUG											
17...	21	406	2.3	8	.06	.040	.10	6.50	6.5	13.0	13

K = non-ideal count

RIO GUAYANILLA BASIN

50124700 RIO GUAYANILLA AT CENTRAL RUFINA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV , 1982										
03...	17	.770	--	--	--	--	--	--	--	--
JAN , 1983										
12...	67	1.80	3	100	1	8	2	.1	<1	<1
MAR										
31...	130	3.50	--	--	--	--	--	--	--	--
MAY										
19...	11	.210	--	--	--	--	--	--	--	--
JUN										
07...	--	--	--	--	--	--	--	--	--	--
AUG										
17...	58	1.50	2	200	1	9	5	.1	<1	<1

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)
JUN , 1983								
07...	1540	<.10	<.01	<.10	<.01	<.01	<.01	.04

DATE	DI- ELDRIN TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA- THION, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL (UG/L)
JUN , 1983									
07...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	.04	<.01

DATE	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	PER- THANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)
JUN , 1983								
07...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01

50126150 RIO YAUCO ABOVE DIVERSION MONSERRATE NEAR YAUCO, PR

LOCATION.--Lat 18°02'58", long 66°50'30", Hydrologic Unit 21010004, on right bank off Highway 375, about 300 ft (91 m) upstream from diversion Monserrate, 0.1 mi (0.2 km) downstream from Quebrada de las Quebradas, 0.9 mi (1.4 km) downstream from Río Duey, and 1.0 mi (1.6 km) northeast of Yauco Plaza.

DRAINAGE AREA.--27.2 sq mi (70.4 sq km).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Altitude of gage is 115 ft (35 m), from topographic map.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--6 years (1978-83), 22.7 cu ft/s (0.643 cu m/s), 11.33 in /yr (288 mm/yr), 16,450 acre-ft/yr (20.3 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,500 cu ft/s (297 cu m/s) Aug. 31, 1979, gage height, 9.83 ft (2.996 m) from flood-mark, from rating curve extended above 300 cu ft/s (8.50 cu m/s) on basis of step-backwater analysis; minimum daily discharge, 0.2 cu ft/s (0.006 cu m/s) June 30, 1978.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 cu ft/s (28.3 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Oct. 1	1630	1,010	28.6	4.11	1.253	Apr. 21	0230	*5,930	168	7.95	2.423

Minimum daily discharge, 1.5 cu ft/s (0.042 cu m/s) Feb. 8-10, 13, 14, 16, 17, 19, 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	174	8.0	135	6.6	1.6	1.8	3.4	10	11	15	3.5	5.4
2	152	8.0	70	7.3	1.6	1.8	3.8	9.1	10	18	3.4	5.2
3	40	8.0	40	5.4	1.6	1.8	2.8	10	11	17	3.3	5.0
4	46	8.0	32	5.9	1.6	1.7	2.7	8.1	9.0	15	3.4	11
5	24	8.0	28	5.5	1.8	1.7	3.3	7.2	8.5	20	3.5	8.0
6	13	7.5	17	5.2	1.7	1.8	4.5	7.0	8.5	10	3.4	6.0
7	11	7.5	12	5.0	1.6	1.8	5.6	7.0	8.5	9.0	3.3	5.5
8	14	7.5	9.0	5.0	1.5	1.9	6.6	7.0	8.0	7.5	10	5.0
9	9.2	7.0	9.7	4.7	1.5	2.5	4.3	12	8.0	7.5	6.0	4.8
10	7.5	6.8	9.6	4.5	1.5	4.0	2.9	24	7.8	7.0	4.0	4.5
11	7.5	9.3	9.7	4.2	1.6	3.0	2.7	10	7.6	7.5	4.0	4.0
12	6.8	47	10	4.0	1.6	100	2.7	17	7.6	7.5	3.5	5.3
13	7.0	51	9.0	3.7	1.5	20	3.1	36	7.5	7.0	3.5	4.4
14	8.0	32	9.4	3.6	1.5	8.0	12	32	10	7.0	5.0	4.1
15	7.0	24	9.3	3.4	1.7	5.0	26	30	9.0	7.0	3.3	11
16	7.0	28	12	3.4	1.5	3.5	8.1	14	35	7.5	5.0	9.3
17	6.5	81	10	3.2	1.5	3.1	6.0	10	45	7.0	143	6.3
18	6.5	49	9.5	3.0	1.6	3.1	40	63	79	6.5	40	8.4
19	6.5	59	14	2.8	1.5	3.0	15	127	33	6.0	10	6.0
20	7.0	38	19	2.7	1.5	3.0	23	180	20	6.0	7.0	5.5
21	6.5	55	12	2.5	1.6	2.9	735	232	16	5.5	20	5.2
22	19	30	10	2.3	1.6	2.6	86	190	14	5.5	11	10
23	23	25	9.0	2.2	1.6	2.7	28	47	12	5.0	8.0	37
24	25	30	8.5	2.1	1.6	2.8	15	20	11	5.0	10	19
25	15	22	8.0	2.0	1.6	4.5	10	61	12	5.0	7.0	10
26	12	18	7.5	2.0	1.7	5.2	8.7	75	13	4.5	6.0	6.6
27	11	16	7.2	1.9	1.7	4.4	121	23	13	4.0	5.8	6.4
28	10	53	6.8	1.8	1.7	3.9	140	17	14	4.0	5.6	5.2
29	10	15	6.7	1.8	---	3.5	43	15	14	3.8	5.6	5.3
30	9.5	87	28	1.7	---	2.8	14	13	16	4.0	5.6	5.9
31	8.0	---	7.6	1.7	---	3.1	---	12	---	3.7	5.5	---
TOTAL	709.5	845.6	535.5	111.1	44.6	210.9	1379.2	1330.4	479.0	244.0	358.2	235.3
MEAN	22.9	28.2	18.9	3.58	1.59	6.80	46.0	42.9	16.0	7.87	11.6	7.84
MAX	174	87	135	7.3	1.8	100	735	232	79	20	143	37
MIN	6.5	6.8	6.7	1.7	1.5	1.7	2.7	7.0	7.5	3.7	3.3	4.0
CFSM	.84	1.04	.70	.13	.06	.25	1.69	1.58	.59	.29	.43	.29
IN.	.97	1.16	.80	.15	.06	.29	1.89	1.82	.66	.33	.49	.32
AC-FT	1410	1680	1160	220	98	418	2740	2640	950	484	710	467

CAL YR 1982 TOTAL 6115.6 MEAN 16.8 MAX 784 MIN 1.8 CFSM .62 IN 8.36 AC-FT 12130
WTR YR 1983 TOTAL 6533.3 MEAN 17.9 MAX 735 MIN 1.5 CFSM .66 IN 8.93 AC-FT 12960

WATER-QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
OCT, 12	1100	6.3	414	28.0	APR, 11	1145	2.9	519	28.0
NOV, 10	1250	6.8	386	29.0	MAY, 05	1110	7.2	423	28.0
DEC, 10	1045	9.7	321	24.0	SEP, 15	1238	4.3	400	29.0
MAR, 14	1030	6.8	392	26.0					

50128000 RIO YAUCO NEAR YAUCO, PR

LOCATION.--Lat 17°59'19", long 66°49'55", Hydrologic Unit 21010004, on right bank at downstream side of bridge on Highway 335, 0.8 mi (1.3 km) northwest of Central San Francisco and 3.4 mi (5.5 km) southeast of junction of Highways 335 and 2 in Yauco.

DRAINAGE AREA.--45.5 sq mi (117.8 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1960 (discharge measurements only), May 1961 to December 1964, November 1976 to current year.

GAGE.--Water-stage recorder. Datum of gage is 15.14 ft (4.615 m) above mean sea level, datum of 1929. Prior to Oct. 1, 1978, at same site at datum 4.0 ft (1.219 m) higher.

REMARKS.--Records poor. Natural flow of stream is affected by transbasin diversions, storage reservoirs, power development, diversions for irrigation and municipal use, and return flow from irrigated areas.

AVERAGE DISCHARGE.--6 years (1978-83), 18.5 cu ft/s (0.524 cu m/s), 5.52 in/yr (140 mm/yr), 13,400 acre-ft/yr (16.5 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,300 cu ft/s (292 cu m/s) Sept. 13, 1982, gage height, 15.0 ft (4.57 m), from floodmarks, from rating curve extended above 2,000 cu ft/s (56.6 cu m/s) on basis of step-backwater analysis and indirect measurement of peak flow; no flow many days in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 cu ft/s (28.3 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Oct. 1	2015	1,320	37.4	10.93	3.331	Aug. 17	1900	1,550	43.9	11.42	3.481
Apr. 21	0730	*4,430	125	14.02	4.273						

Minimum discharge, 0.50 cu ft/s (0.014 cu m/s) Apr. 11, 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	231	47	120	2.8	1.5	1.5	1.1	9.2	7.3	2.2	1.0	1.4
2	118	22	32	2.8	1.4	1.5	.88	7.9	6.8	2.2	.99	2.0
3	14	116	20	2.8	1.4	1.4	.94	7.5	6.5	2.1	1.0	1.6
4	8.1	36	15	2.8	1.4	1.4	.79	6.7	6.3	2.0	.95	1.5
5	14	6.3	15	2.7	1.4	1.4	.81	5.7	5.8	9.3	1.0	1.4
6	6.3	4.3	10	2.8	1.4	1.3	.82	5.6	4.2	5.3	1.0	1.3
7	5.6	3.4	8.4	2.7	1.5	1.3	.76	5.5	4.8	2.7	.95	1.3
8	5.9	3.2	7.1	2.7	1.4	1.3	.76	4.9	4.4	2.1	.94	1.2
9	5.2	3.2	5.3	2.6	1.5	1.4	.64	4.7	4.0	1.8	.98	1.3
10	4.8	3.0	4.9	2.6	1.4	1.4	.59	4.4	3.9	1.6	1.0	1.2
11	4.5	3.4	4.6	2.4	1.4	1.4	.53	4.4	3.9	1.6	.98	1.2
12	4.5	31	4.3	2.4	1.4	154	.53	4.2	3.5	1.5	.98	1.3
13	7.4	76	4.1	2.3	1.4	34	.54	5.2	3.4	1.4	.94	1.2
14	11	13	4.0	2.2	1.4	3.9	.59	10	3.5	1.3	.87	1.2
15	6.8	21	3.9	2.2	1.5	2.7	.57	9.3	4.6	1.3	.81	1.2
16	4.8	7.5	3.6	2.2	1.5	2.4	.66	6.7	4.5	1.3	.81	1.2
17	3.8	267	3.5	2.2	1.7	2.1	.67	5.8	9.0	1.3	223	1.2
18	4.9	127	3.5	2.0	1.6	1.9	3.1	45	21	1.2	73	1.2
19	18	247	6.5	2.0	1.5	1.8	4.6	109	13	1.2	4.4	1.2
20	11	183	11	1.9	1.5	1.7	2.1	157	6.7	1.2	2.5	1.2
21	6.7	263	5.3	1.9	1.5	1.6	1430	172	3.4	1.2	20	1.2
22	6.6	174	4.2	1.8	1.5	1.5	165	210	3.4	1.3	9.5	1.2
23	6.6	73	3.9	1.8	1.5	1.5	65	41	3.2	1.3	2.7	12
24	11	66	3.9	1.7	1.5	1.5	33	22	3.0	1.3	1.9	6.8
25	6.3	17	3.4	1.7	1.6	1.4	20	26	2.7	1.1	2.0	2.3
26	4.5	12	3.5	1.7	1.6	1.3	15	56	2.6	1.2	1.7	1.6
27	5.3	20	3.3	1.6	1.4	1.2	88	21	2.5	1.2	1.7	1.6
28	3.5	73	3.2	1.6	1.4	1.1	112	15	2.5	1.2	1.6	1.6
29	3.3	36	2.9	1.6	---	1.1	43	11	2.4	1.2	1.6	1.6
30	3.3	61	3.3	1.6	---	1.1	13	9.3	2.4	1.2	1.5	1.7
31	75	---	3.2	1.5	---	1.1	---	8.5	---	1.0	1.5	---
TOTAL	621.7	2015.3	326.8	67.6	41.2	234.2	2005.98	1010.5	155.2	57.8	363.80	57.9
MEAN	20.1	67.2	10.5	2.18	1.47	7.55	66.9	32.6	5.17	1.86	11.7	1.93
MAX	231	267	120	2.8	1.7	154	1430	210	21	9.3	223	12
MIN	3.3	3.0	2.9	1.5	1.4	1.1	.53	4.2	2.4	1.0	.81	1.2
CFSM	.44	1.48	.23	.05	.03	.17	1.47	.72	.11	.04	.26	.04
IN.	.51	1.65	.27	.06	.03	.19	1.64	.83	.13	.05	.30	.05
AC-FT	1230	4000	648	134	82	465	3980	2000	308	115	722	115

CAL YR 1982	TOTAL	5051.77	MEAN	13.8	MAX	1000	MIN	.06	CFSM	.30	IN	4.13	AC-FT	10020
WTR YR 1983	TOTAL	6957.98	MEAN	19.1	MAX	1430	MIN	.53	CFSM	.42	IN	5.69	AC-FT	13800

WATER-QUALITY RECORDS

PERIOD OF RECORD.--WATER YEAR AUGUST 1981 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
OCT, 12	1330	4.4	964	28.0	APR, 11	1500	.53	1040	28.0
NOV, 09	1230	3.2	950	27.0	MAY, 05	1325	5.4	950	27.5
DEC, 10	1255	4.7	660	25.0	SEP, 14	1350	1.2	957	29.0
MAR, 14	1300	3.5	490	26.0					

CANAL PRINCIPAL DE RIEGO VALLE DE LAJAS BASIN

50128950 LAJAS IRRIGATION CANAL NEAR BOQUERON, PR

LOCATION.--Lat 18°02'14", long 67°08'22", Hydrologic Unit 21010004, on downstream side of wooden foot bridge near dirt levee road, 0.5 mi (0.8 km) north of intersection of Highways 101 and 103, 1.8 mi (2.9 km) northeast of Boquerón.

DRAINAGE AREA.--Indeterminate.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1980 to current year.

GAGE.--Water-stage recorder. Altitude of gage is about 82 ft (25 m), from topographic map.

REMARKS.--Records poor.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum discharge, 34 cu ft/s (0.963 cu m/s) June 11, 1981, gage height, 2.56 ft (0.780 m) from rating curve extended above 10 cu ft/s (0.283 cu m/s) on basis of step-backwater analysis; no flow many days each year.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum discharge, 23 cu ft/s (0.651 cu m/s) Apr. 21, gage height 1.80 ft (0.549 m); no flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	2.6	.00	.00	1.0	2.7	.06	.00	.00	2.4	A	2.1
2	.61	.27	.00	.00	1.4	.00	.30	.10	.00	.04	A	4.9
3	.13	2.4	.00	.00	.78	.24	.04	.82	.00	.02	A	.02
4	.06	3.3	.00	.00	.80	1.2	.02	.74	.00	.06	.04	.02
5	.02	.01	.00	.13	.00	.00	.00	.39	.00	2.0	2.8	.58
6	.00	.00	.00	.11	.00	.02	1.7	.74	.00	2.3	.00	3.6
7	.00	.02	.00	.34	.00	2.0	.22	.02	2.5	3.3	.00	6.1
8	.00	.38	.00	.00	2.3	5.7	1.8	.00	.39	A	.73	.45
9	.00	.88	.00	.00	.23	3.7	.00	.00	.02		4.6	.01
10	.00	.10	.00	1.3	.80	1.8	.00	.00	.00		3.2	.00
11	.07	3.4	.00	.00	.98	2.3	.00	.45	.00		4.1	.00
12	2.6	6.4	.00	.19	.00	2.9	1.4	1.2	.00		3.7	1.3
13	4.7	.50	.00	1.8	.00	.77	3.5	1.5	.00		.16	1.9
14	1.3	.21	1.0	4.3	1.2	1.4	1.6	5.7	.00		.01	1.8
15	1.2	3.2	1.8	.00	7.9	1.2	1.1	.22	.10		3.0	4.3
16	.00	2.0	1.4	.00	2.6	.02	.00	.22	2.0		6.0	6.6
17	.00	5.3	1.6	.12	.00	.02	.00	.00	2.8		2.1	.22
18	.94	.07	.48	1.6	.00	.00	1.6	4.9	1.4		4.4	.01
19	2.5	.00	1.8	1.0	.00	.00	.59	.40	1.1		.22	4.5
20	5.1	.50	.94	.00	.00	.00	2.0	.00	.52		.06	5.2
21	1.8	.20	.45	.33	.00	.00	11	1.1	2.1		5.0	5.4
22	.15	.00	.00	.00	.16	.00	.02	.37	2.6		.06	4.1
23	.45	.00	.14	.00	4.1	.00	.00	.00	1.8		3.0	1.9
24	.19	.00	.21	.56	1.3	.00	.00	.00	.02		6.7	.52
25	1.3	.01	.00	3.5	.00	.14	.00	.00	.00		1.6	.06
26	1.8	.01	.00	1.7	.00	.04	.00	.01	.00		1.8	5.2
27	1.1	.00	.00	1.1	.85	.00	.00	.00	.00		.30	7.1
28	1.2	.04	.14	3.6	3.1	.00	1.4	.00	1.2		.10	1.6
29	.38	.01	.09	.28	---	.16	1.9	.00	.39		1.6	1.4
30	.16	.00	.00	.34	---	.54	.04	.00	1.6		1.2	6.3
31	1.6	---	.00	1.4	---	.58	---	.00	---	A	1.1	---
TOTAL	29.36	31.81	10.05	23.70	29.50	27.43	30.29	18.88	20.54	---	---	77.19
MEAN	.95	1.06	.32	.76	1.05	.83	1.01	.61	.68	---	---	2.57
MAX	5.1	6.4	1.8	4.3	7.9	5.7	11	5.7	2.8	---	---	7.1
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	---	---	.00
AC-FT	58	63	20	47	59	54	60	37	41	---	---	153

A No gage-height record.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--JANUARY TO SEPTEMBER 1983

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
JAN, 13	0845	2.2	306	24.0	MAY, 13	0820	1.7	288	27.0
APR, 15	0910	1.8	287	25.5	SEP, 07	1630	4.6	249	31.0

RIO LOCO BASIN

50129300 LAJAS DRAINAGE CANAL NEAR ENSENADA, PR

LOCATION.--Lat 18°00'40", long 66°58'24", Hydrologic Unit 21010004, on upstream side of Cuesta Blanca Bridge on dirt road, 1.1 mi (1.8 km) north of Highway 116, 1.0 mi (1.6 km) below Quebrada Jicara, 3.9 mi (6.3 km) above Río Loco, and 4.0 mi (6.4 km) northwest of Ensenada.

DRAINAGE AREA.--Indeterminate.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1979 to current year.

GAGE.--Water-stage recorder. Altitude of gage is about 15.1 ft (4.602 m), from Hydrologic Atlas of Lajas Valley.

REMARKS.--Records poor.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum discharge, 1,720 cu ft/s (48.7 cu m/s) Sept. 1, 1979, gage height, 16.44 ft (5.011 m), from rating curve extended above 600 cu ft/s (17 cu m/s); minimum daily, 1.0 cu ft/s (0.028 cu m/s) July 16, 1979, May 9, 16, 1982.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum discharge, 448 cu ft/s (12.7 cu m/s) Apr. 21, gage height, 9.05 ft (2.758 m); minimum daily, 1.2 cu ft/s (0.034 cu m/s) Dec. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	9.3	A	3.1	A	2.6	2.5	3.5	4.6	3.3	B	B
2	3.9	9.7	A	2.9	A	3.1	2.4	4.0	6.8	3.2	B	B
3	3.3	13	A	2.5	A	3.4	2.1	3.6	2.7	2.6	B	B
4	2.9	8.8	A	2.0	A	3.6	2.1	2.9	2.5	2.2	B	B
5	3.3	11	A	2.0	A	3.7	2.3	3.1	2.2	2.6	B	B
6	3.6	4.1	A	1.8	A	2.4	2.5	2.9	4.5	4.6	B	B
7	3.8	2.4	A	2.2	A	3.0	2.6	2.9	3.6	5.3	B	B
8	3.1	3.4	A	2.1	A	2.9	3.2	2.7	3.0	6.9	B	B
9	3.0	A	A	2.5	A	3.4	3.2	2.9	8.4	3.1	B	B
10	2.9	A	A	2.8	3.6	4.1	2.5	3.0	4.4	2.5	B	B
11	2.8	A	A	2.4	3.9	4.0	2.4	3.1	7.1	2.9	B	B
12	3.3	A	A	2.7	3.2	3.6	2.7	8.6	5.3	B	B	B
13	2.4	A	A	A	2.1	87	2.8	17	13	B	B	B
14	5.0	A	1.6	A	1.9	14	3.1	244	16	B	B	B
15	17	A	1.3	A	2.7	5.6	3.8	77	43	B	B	B
16	8.4	A	1.5	A	2.8	4.3	4.8	25	48	B	B	B
17	4.6	A	1.5	A	3.4	3.6	4.2	20	40	B	B	B
18	4.2	A	1.2	A	3.3	2.7	4.6	77	6.4	B	B	B
19	38	A	15	A	3.6	2.2	4.8	226	3.3	B	B	B
20	35	A	112	A	2.9	2.1	5.3	57	9.5	B	B	B
21	103	A	31	A	2.3	5.6	301	98	4.5	B	B	B
22	21	A	9.2	A	2.4	3.8	127	136	2.0	B	B	B
23	43	A	8.3	A	2.9	5.4	19	48	1.9	B	B	B
24	46	A	25	A	3.4	4.2	7.3	38	1.8	B	B	B
25	41	A	6.2	A	4.4	3.0	4.9	36	2.6	B	B	B
26	16	A	4.3	A	4.5	2.3	4.2	42	5.1	B	B	B
27	2.9	A	3.5	A	3.4	2.0	3.7	42	4.3	B	B	B
28	2.9	A	3.0	A	2.7	2.3	5.9	59	6.5	B	B	B
29	3.6	A	3.2	A	---	2.5	9.4	19	6.4	B	B	B
30	3.6	A	3.2	A	---	2.5	4.4	3.6	4.0	B	B	B
31	5.2	A	3.3	A	---	2.7	---	3.6	---	B	B	B
TOTAL	441.7	---	---	---	---	230.0	550.7	1311.4	273.4	---	---	---
MEAN	14.2	---	---	---	---	7.42	18.4	42.3	9.11	---	---	---
MAX	103	---	---	---	---	87	301	244	48	---	---	---
MIN	2.4	---	---	---	---	2.0	2.1	2.7	1.8	---	---	---
AC-FT	876	---	---	---	---	456	1090	2600	542	---	---	---

A No gage-height record.

B Discharge not determined but less than 50 cu ft/s.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
OCT, 07	1300	5.0	927	30.0	APR, 15	1120	3.8	1190	27.5
NOV, 08	1105	2.2	783	30.5	MAY, 13	1057	5.7	1110	30.5
MAR, 18	1010	3.0	949	28.0					

RIO LOCO BASIN

50129700 RIO LOCO AT GUANICA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 17°58'33", long 66°54'52", 0.6 mi (1.0 km) northwest of Guánica and 1.2 mi (1.9 km) northeast of Ensenada.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--Water years 1975 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV / 1982											
03...	1140	E1.0	36600	7.9	26.0	4.4	7.6	108	23	4200	8300
JAN / 1983											
12...	1200	E1.0	36300	7.9	28.0	3.5	6.0	87	--	K47	460
MAR											
31...	0835	E.00	28400	7.6	29.5	2.2	3.4	49	600	K33	280
MAY											
18...	1400	E15	662	7.5	27.0	5.0	4.8	60	12	6000	2200
JUN											
09...	0815	E.00	13800	7.7	28.0	--	5.4	72	--	--	--
AUG											
17...	1020	E.00	12100	7.6	27.0	2.0	.6	8	240	2000	K1800

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV / 1982											
03...	--	--	--	--	--	--	--	130	--	--	--
JAN / 1983											
12...	4900	4660	130	1100	8400	53	290	200	2300	15000	.60
MAR											
31...	--	--	--	--	--	--	--	260	--	11000	--
MAY											
18...	220	16	37	30	51	1.5	3.2	200	41	57	.20
JUN											
09...	--	--	--	--	--	--	--	300	--	--	--
AUG											
17...	1500	1270	120	300	2100	24	78	262	590	3900	.40

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982											
03...	--	--	--	12	.39	.010	.40	.050	.45	.50	.90
JAN / 1983											
12...	7.1	27300	73.7	66	--	<.010	<.10	.150	.15	.30	--
MAR											
31...	--	--	--	22	--	.020	<.10	.120	--	<.10	--
MAY											
18...	26	365	--	6	.28	.020	.30	.060	.64	.70	1.0
JUN											
09...	--	--	--	--	--	--	--	--	--	--	--
AUG											
17...	27	7270	--	8	--	<.010	<.10	.040	.56	.60	--

E = estimate
K = non-ideal count

RIO LOCO BASIN

50129700 RIO LOCO AT GUANICA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982										
03...	4.0	.110	--	--	--	--	--	--	--	--
JAN / 1983										
12...	--	.130	1	100	2	20	3	<.1	<1	<1
MAR										
31...	--	.130	--	--	--	--	--	--	--	--
MAY										
18...	4.4	.520	--	--	--	--	--	--	--	--
JUN										
09...	--	--	--	--	--	--	--	--	--	--
AUG										
17...	--	.220	2	100	1	7	3	.3	<1	<1

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DOD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)
JUN / 1983								
09...	0815	<.10	<.01	<.10	<.01	<.01	<.01	<.01

DATE	DI- ELDRIN TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA- THION, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL (UG/L)
JUN / 1983									
09...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01

DATE	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	PER- THANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)
JUN / 1983								
09...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01

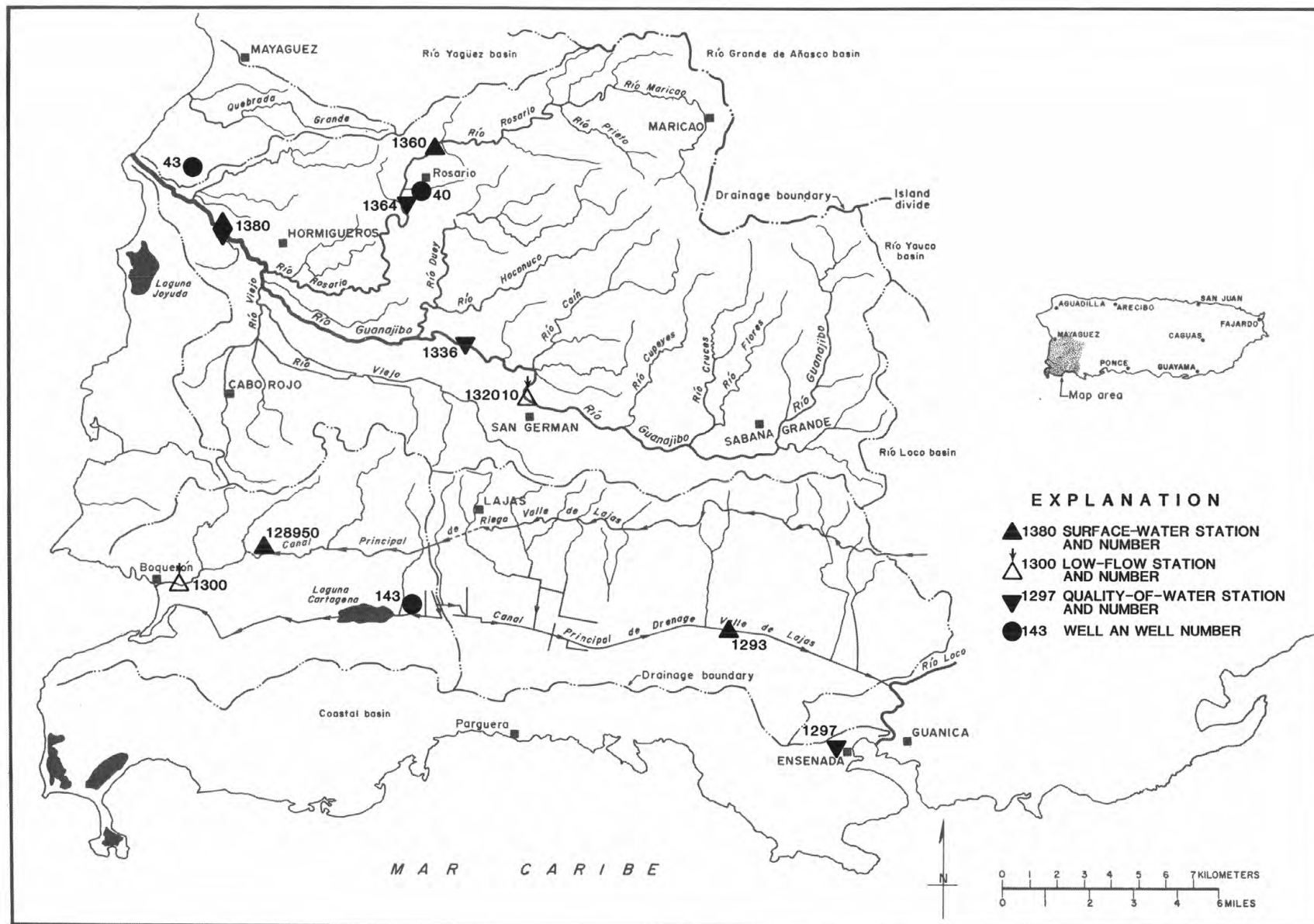


Figure 23.--Río Guanajibo basin.

RIO GUANAJIBO BASIN

50133600 RIO GUANAJIBO NEAR SAN GERMAN, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°07'18", long 67°03'56", at bridge on Highway 347, 2.2 mi (3.5 km) northwest of San Germán plaza.

DRAINAGE AREA.--45.5 sq mi (117.8 sq km).

PERIOD OF RECORD.--November 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV / 1982											
04...	1330	82	419	7.9	27.0	19	6.5	83	14	50000	5600
JAN / 1983											
13...	0905	18	582	7.8	24.0	1.4	3.4	41	--	K68000	48000
MAR											
30...	1215	7.4	686	7.8	26.0	1.0	.0	0	49	K1800000	50000
MAY											
04...	1345	21	543	7.6	27.0	6.2	5.8	73	24	57000	2000
AUG											
18...	0930	40	440	7.9	27.0	3.5	3.2	40	28	K93000	22000

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L CAC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV / 1982											
04...	--	--	--	--	--	--	--	180	--	--	--
JAN / 1983											
13...	260	11	27	47	23	.6	2.4	250	31	30	.40
MAR											
30...	--	--	--	--	--	--	--	290	--	--	--
MAY											
04...	260	20	28	46	22	.6	2.0	240	26	23	.30
AUG											
18...	210	0	23	36	14	.4	1.8	230	19	18	.20

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982											
04...	--	--	--	47	.47	.030	.50	.230	.57	.80	1.3
JAN / 1983											
13...	35	346	16.8	5	.16	.040	.20	1.20	.70	1.90	2.1
MAR											
30...	--	--	--	3	--	.020	<.10	2.90	1.8	4.70	--
MAY											
04...	34	325	18.4	6	.13	.070	.20	.940	.16	1.10	1.3
AUG											
18...	32	282	30.4	2	.17	.030	.20	.500	.80	1.30	1.5

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982										
04...	5.8	.230	--	--	--	--	--	--	--	--
JAN / 1983										
13...	9.3	.900	2	<100	2	5	2	<.1	<1	1
MAR										
30...	--	1.50	--	--	--	--	--	--	--	--
MAY										
04...	5.8	.420	--	--	--	--	--	--	--	--
AUG										
18...	6.6	.310	2	200	<1	5	5	<.1	<1	<1

K = non-ideal count

50136000 RIO ROSARIO AT ROSARIO, PR

LOCATION.--Lat 18°10'22", long 67°04'31", Hydrologic Unit 21010003, on left bank above low dam, 0.2 mi (0.3 km) below Quebrada Figueroa, 0.7 mi (1.1 km) northeast of Rosario, and 1.6 mi (8.6 km) below Quebrada Palma.

DRAINAGE AREA.--16.4 sq mi (42.5 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1960 to June 1966 (gage-height records only) in files of Puerto Rico Water Resources Authority. June 1975 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 230 ft (70 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--8 years (1976-83), 44.4 cu ft/s (1.257 cu m/s), 36.77 in/yr (934 mm/yr), 32,170 acre-ft/yr (39.7 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,800 cu ft/s (957 cu m/s) Sept. 16, 1975, gage height, 19.6 ft (5.97 m), from flood-marks, from rating curve extended above 60 cu ft/s (1.70 cu m/s) on basis of slope-area measurement of peak flow; minimum daily discharge, 2.4 cu ft/s (0.068 cu m/s) June 18, 21, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 cu ft/s (42.5 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (cu ft/s)	Discharge (cu m/s)	Gage height (ft)	Gage height (m)
Oct. 18	2115	2,340	66.3	6.60	2.012	May 7	1730	1,860	52.7	6.05	1.844
Nov. 16	1815	2,550	72.2	6.82	2.079	May 18	1515	*4,190	119	8.23	2.508

Minimum discharge, 7.8 cu ft/s (0.221 cu m/s) Apr. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	66	80	30	16	11	8.4	14	34	29	21	27
2	47	73	65	27	15	11	8.4	12	59	25	22	25
3	42	47	60	25	15	11	8.4	10	125	25	19	25
4	40	40	56	25	15	11	8.1	70	78	71	69	24
5	37	43	54	25	17	11	8.6	48	51	49	31	24
6	42	40	50	25	16	11	8.8	13	42	27	21	23
7	39	35	48	24	15	11	12	176	74	23	19	23
8	70	33	46	23	15	13	16	67	49	22	30	23
9	43	38	44	23	15	11	9.3	28	38	28	26	22
10	35	38	42	23	15	10	8.7	27	34	26	22	209
11	32	45	40	22	14	10	8.6	27	31	42	22	133
12	31	81	38	22	14	16	8.7	24	29	28	22	64
13	34	82	37	21	14	15	8.5	79	28	21	36	41
14	55	49	35	22	13	13	8.4	104	26	18	39	31
15	44	53	34	24	13	11	8.4	54	25	17	39	29
16	35	251	33	21	13	10	9.3	30	25	26	36	38
17	32	231	32	21	13	9.7	9.3	32	26	42	34	135
18	202	229	31	20	13	9.7	9.8	433	28	60	38	82
19	193	184	31	20	13	9.4	8.5	231	24	37	32	48
20	117	105	30	21	14	9.6	28	162	23	25	61	36
21	73	87	29	20	15	9.5	151	236	23	21	84	33
22	57	72	28	19	13	9.3	19	230	22	19	60	48
23	48	63	27	19	13	9.2	12	175	21	18	45	70
24	44	123	27	18	13	9.2	11	150	21	19	38	47
25	40	96	27	13	12	8.9	9.3	104	20	16	146	36
26	57	67	27	17	12	9.0	8.6	81	21	16	138	31
27	50	61	25	17	12	9.0	8.6	61	21	16	77	29
28	43	60	25	17	11	9.3	10	49	21	16	55	27
29	41	59	47	16	---	9.0	12	72	20	17	40	27
30	52	142	73	16	---	8.7	28	51	20	19	33	25
31	43	---	43	16	---	8.5	---	40	---	23	30	---
TOTAL	1770	2593	1264	657	389	324.0	473.7	2895	1059	841	1385	1435
MEAN	57.1	86.4	40.8	21.2	13.9	10.5	15.8	93.4	35.3	27.1	44.7	47.8
MAX	202	251	80	30	17	16	151	433	125	71	146	209
MIN	31	33	25	16	11	8.5	8.1	10	20	16	19	22
CFSM	3.48	5.27	2.49	1.29	.85	.64	.96	5.70	2.15	1.65	2.73	2.92
IN.	4.01	5.88	2.87	1.49	.88	.73	1.07	6.57	2.40	1.91	3.14	3.25
AC-FT	3510	5140	2510	1300	772	643	940	5740	2100	1670	2750	2850

CAL YR 1982	TOTAL	16881.0	MEAN	46.2	MAX	452	MIN	10	CFSM	2.32	IN	38.29	AC-FT	33480
WTR YR 1983	TOTAL	15085.7	MEAN	41.3	MAX	433	MIN	8.1	CFSM	2.52	IN	34.22	AC-FT	29920

WATER-QUALITY RECORDS

PERIOD OF RECORD.--OCTOBER 1982 TO SEPTEMBER 1983

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
OCT, 07	1015	37	235	22.5	APR, 14	1325	8.4	289	26.0
NOV, 10	1320	37	210	25.0	MAY, 12	1257	17	285	29.0
DEC, 22	1157	29	234	23.0	JUN, 09	0915	39	221	24.0
JAN, 12	1410	22	265	24.0	SEP, 08	0950	24	269	25.0
MAR, 17	1400	9.7	302	28.5					

RIO GUANAJIBO BASIN

50136400 RIO ROSARIO NEAR HORMIGUEROS, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°09'36", long 67°05'08", at bridge on Highway 348, 0.5 mi (0.8 km) southwest of Rosario plaza.

DRAINAGE AREA.--18.3 sq mi (47.4 sq km).

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV / 1982											
04...	1030	40	265	8.3	24.0	1.5	8.8	107	<10	K500	330
JAN / 1983											
13...	1155	30	273	8.4	23.0	<1.0	9.6	113	--	K530	240
APR											
04...	1545	7.9	296	8.0	25.5	--	8.1	100	<10	--	430
MAY											
05...	1400	42	204	8.2	26.5	18	8.1	101	17	4100	3500
AUG											
18...	1150	44	233	8.3	25.5	15	8.7	107	16	5100	3100

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY FIELD (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)
NOV / 1982											
04...	--	--	--	--	--	--	--	120	--	--	--
JAN / 1983											
13...	130	3	25	17	3.6	.3	1.2	130	7.0	8.3	<.10
APR											
04...	--	--	--	--	--	--	--	170	--	--	--
MAY											
05...	98	7	18	13	7.0	.3	1.1	92	8.7	7.3	<.10
AUG											
18...	110	1	21	13	6.5	.3	1.1	105	8.2	6.0	<.10

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982											
04...	--	--	--	4	--	<.010	.60	<.010	--	.30	.90
JAN / 1983											
13...	31	176	14.3	12	--	<.010	.70	.020	.78	.80	1.5
APR											
04...	--	--	--	--	--	<.010	.10	.010	.39	.40	.50
MAY											
05...	27	137	15.6	22	.79	.010	.80	.010	.19	.20	1.0
AUG											
18...	27	146	17.5	16	.59	.010	.60	<.010	--	.20	.80

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982										
04...	4.0	.050	--	--	--	--	--	--	--	--
JAN / 1983										
13...	6.6	.580	1	<100	2	24	2	<.1	<1	<1
APR										
04...	2.2	.050	--	--	--	--	--	--	--	--
MAY										
05...	4.4	.050	--	--	--	--	--	--	--	--
AUG										
18...	3.5	.040	2	200	<1	11	6	<.1	<1	1

K = non-ideal count

RIO GUANAJIBO BASIN

50138000 RIO GUANAJIBO NEAR HORMIGUEROS, PR

LOCATION.--Lat 18°08'36", long 67°08'57", Hydrologic Unit 21010003, at bridge on Highway 100, 1.4 mi (2.3 km) west of Hormigueros, and 2.0 mi (3.2 km) downstream from Río Rosario.

DRAINAGE AREA.--120 sq mi (311 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Annual low-flow measurements 1959, monthly measurements April 1959 to November 1967, January 1973 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level. Previous to Nov. 7, 1980, at site 0.3 mi (0.5 km) upstream at datum 7.36 ft (2.243 m) higher.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--10 years (1974-83), 220 cu ft/s (6.230 cu m/s), 24.90 in/yr (632 mm/yr), 159,400 acre-ft/yr (197 cu hm/yr); median of yearly mean discharges, 204 cu ft/s (5.78 cu m/s), 148,000 acre-ft/yr (182 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 128,000 cu ft/s (3,625 cu m/s) Sept. 16, 1975, gage height, 28.50 ft (8.687 m), site and datum then in use, from rating curve extended above 100 cu ft/s (2.83 cu m/s) on the basis of contracted-opening measurement of peak flow; minimum, 4.6 cu ft/s (0.130 cu m/s) June 22, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 cu ft/s (56.6 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)	Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
May 19	0215	2,160 61.2	18.86 5.748	May 23	0545	*2,360 66.8	19.38 5.907
May 19	2330	2,090 59.2	18.66 5.688				

Minimum discharge, 15 cu ft/s (0.425 cu m/s) Apr. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	162	419	437	73	39	23	17	82	172	54	41	76
2	206	504	230	70	38	23	16	75	162	86	49	71
3	144	377	192	65	36	22	16	62	209	80	37	66
4	126	288	170	63	35	22	16	67	207	150	102	70
5	122	385	158	61	36	24	16	141	145	208	74	78
6	112	290	143	58	35	28	17	68	126	111	41	70
7	112	180	131	57	35	30	17	201	156	77	35	66
8	112	200	123	55	33	30	33	225	192	64	33	62
9	115	400	159	53	32	25	44	98	138	57	54	57
10	90	600	129	51	32	23	25	74	122	64	53	209
11	85	300	115	48	31	21	20	70	109	71	67	311
12	80	250	106	47	30	83	19	61	99	90	43	160
13	79	300	102	46	29	99	18	166	90	60	144	109
14	99	200	98	47	29	65	18	692	83	51	158	93
15	112	166	92	61	29	42	16	248	79	48	106	86
16	88	420	92	50	29	32	17	153	77	48	64	105
17	72	1340	89	47	29	28	17	119	75	66	111	233
18	160	1520	85	45	29	25	20	540	82	85	153	199
19	983	990	97	44	29	23	19	1620	74	83	87	121
20	521	939	155	45	30	22	31	1480	68	59	221	100
21	314	620	98	42	35	22	1100	1180	65	51	380	92
22	220	422	92	42	30	21	219	2230	61	46	247	243
23	215	343	185	40	29	21	130	1310	59	43	158	351
24	174	358	143	39	28	21	143	783	56	42	168	226
25	148	540	113	38	28	20	95	687	54	38	423	173
26	460	353	105	37	27	20	78	578	52	34	381	150
27	570	276	97	36	25	19	66	354	53	33	206	134
28	222	286	89	36	24	19	146	281	51	34	152	123
29	186	246	92	37	---	19	148	240	50	36	120	113
30	187	674	125	38	---	18	96	246	50	37	100	104
31	174	---	106	42	---	17	---	196	---	41	86	---
TOTAL	6450	14186	4198	1518	871	907	2633	14327	3016	2047	4094	4051
MEAN	208	473	135	49.0	31.1	29.3	87.8	462	101	66.0	132	135
MAX	983	1520	487	78	39	99	1100	2230	209	208	423	351
MIN	72	166	85	36	24	17	16	61	50	33	33	57
CFSM	1.73	3.94	1.13	.41	.26	.24	.73	3.85	.84	.55	1.10	1.13
IN.	2.00	4.40	1.30	.47	.27	.28	.82	4.44	.93	.63	1.27	1.26
AC-FT	12790	28140	8330	3010	1730	1800	5220	28420	5980	4060	8120	8040
CAL YR 1982	TOTAL	66654	MEAN 183	MAX 6270	MIN 19	CFSM 1.53	IN 20.66	AC-FT 132200				
WTR YR 1983	TOTAL	58298	MEAN 160	MAX 2230	MIN 16	CFSM 1.33	IN 18.07	AC-FT 115600				

RIO GUANAJIBO BASIN

50138000 RIO GUANAJIBO NEAR HORMIGUEROS, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, O.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV , 1982											
05...	0915	207	394	7.5	24.0	16	5.5	66	14	27000	K12000
JAN , 1983											
14...	1000	46	490	8.0	23.0	6.5	7.0	82	--	38000	K4000
APR											
04...	1255	15	519	7.4	25.0	--	8.9	108	<10	--	K1700
MAY											
05...	1050	134	286	7.5	25.0	150	7.5	91	57	35000	53000
JUN											
08...	1540	172	355	7.6	26.0	--	5.6	70	--	--	--
AUG											
17...	1330	58	218	8.2	28.0	18	5.9	75	200	K85000	7400

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (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)
NOV , 1982											
05...	--	--	--	--	--	--	--	170	--	--	--
JAN , 1983											
14...	210	3	31	33	17	.5	2.0	210	22	20	.20
APR											
04...	--	--	--	--	--	--	--	220	--	--	--
MAY											
05...	130	15	21	20	12	.5	1.8	120	14	11	.10
JUN											
08...	--	--	--	--	--	--	--	150	--	--	--
AUG											
17...	180	1	29	26	16	.5	1.8	179	15	15	.20

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV , 1982											
05...	--	--	--	32	.37	.030	.40	.170	.23	.40	.80
JAN , 1983											
14...	32	283	35.2	22	.71	.090	.80	.350	.05	.40	1.2
APR											
04...	--	--	--	--	.47	.030	.50	.520	.28	.80	1.3
MAY											
05...	25	177	64.0	307	.78	.120	.90	.360	.54	.90	1.8
JUN											
08...	--	--	--	--	--	--	--	--	--	--	--
AUG											
17...	31	241	37.8	22	.76	.040	.80	.230	.57	.80	1.6

K = non-ideal count

RIO GUANAJIBO BASIN

50138000 RIO GUANAJIBO NEAR HORMIGUEROS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982										
05...	3.5	.290	--	--	--	--	--	--	--	--
JAN / 1983										
14...	5.3	.520	1	100	1	15	4	.1	<1	<1
APR										
04...	5.8	.570	--	--	--	--	--	--	--	--
MAY										
05...	8.0	.300	--	--	--	--	--	--	--	--
JUN										
08...	--	--	--	--	--	--	--	--	--	--
AUG										
17...	7.1	.440	2	100	1	10	4	<.1	<1	<1

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
OCT, 06	1355	113	428	27.5	FEB, 08	1450	32	452	25.0
DEC, 22	1530	92	495	25.0	SEP, 07	1510	66	422	28.0

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)
JUN / 1983								
08...	1540	<.10	<.01	<.10	<.01	<.01	<.01	.02

DATE	TIME	DI- ELDRIN TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR- EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA- THION, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL (UG/L)
JUN / 1983										
08...		<.01	<.01	<.01	<.01	<.01	<.01	<.01	.02	<.01

DATE	TIME	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	PER- THANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)
JUN / 1983									
08...		<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01

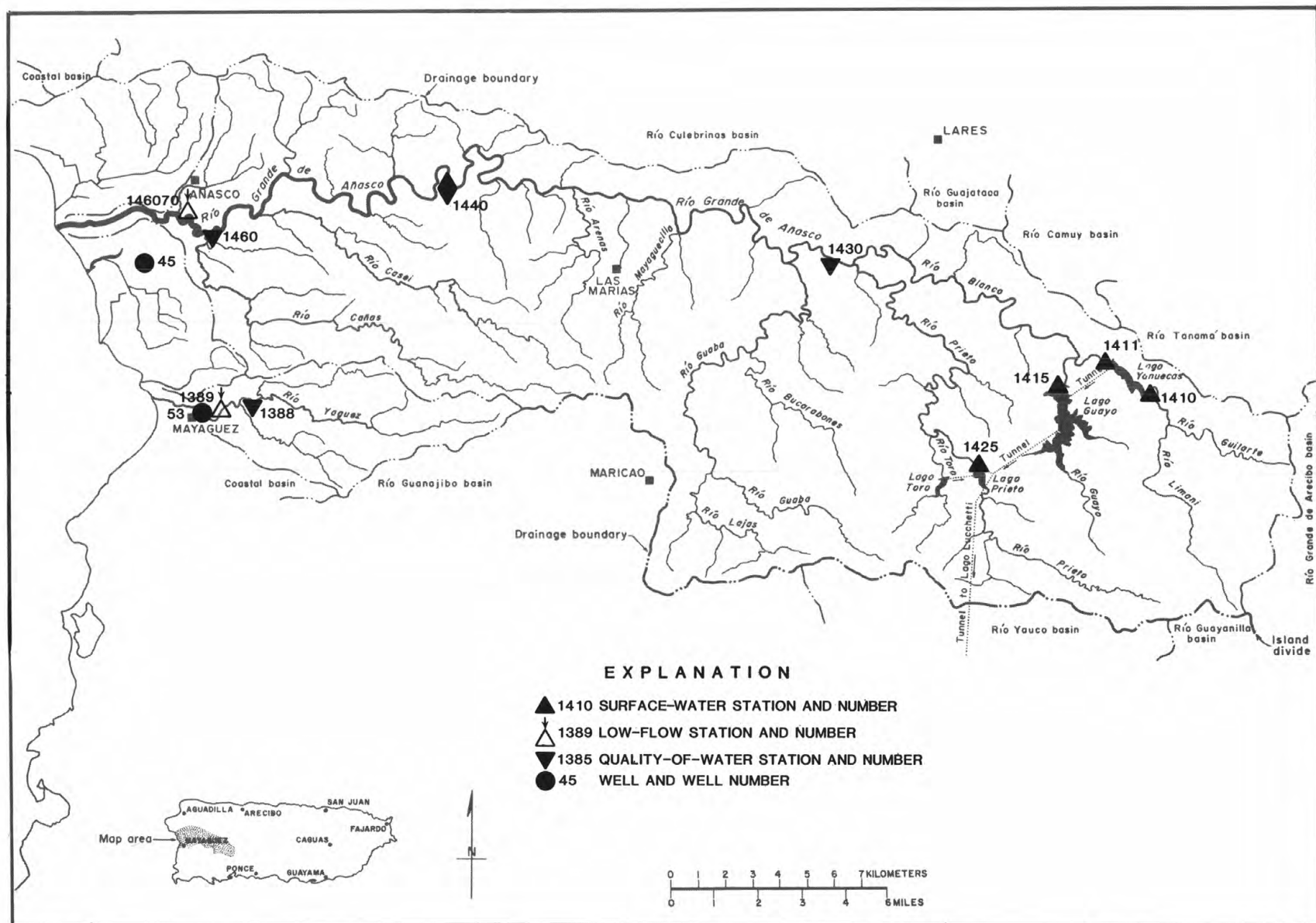


Figure 24.--Río Yagüez and Río Grande de Añasco basins.

RIO YAGUEZ BASIN
50138800 RIO YAGUEZ NEAR MAYAGUEZ, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°12'31", long 67°07'07", at steel-truss bridge on unnumbered paved road about 800 ft (244 m) south of Highway 106, 1.8 mi (2.9 km) west of Highways 106 and 352 junction, and 1.4 mi (2.3 km) east-northeast from Mayaguez plaza.

DRAINAGE AREA.--6.7 sq mi (17.3 sq km).

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV / 1982											
04...	0745	9.3	318	8.0	22.0	2.5	7.9	92	19	20000	3300
JAN / 1983											
13...	1445	6.0	311	8.3	23.5	<1.0	9.6	114	--	3500	520
MAR											
30...	1510	1.1	305	8.2	26.5	<1.0	10.2	127	<10	K130	750
MAY											
05...	0710	1.4	298	7.6	24.0	<1.0	7.4	88	16	530	10000
AUG											
18...	1430	9.3	268	8.0	27.0	18	7.1	89	11	2300	5200

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L CAC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV / 1982											
04...	--	--	--	--	--	--	--	140	--	--	--
JAN / 1983											
13...	130	0	35	10	12	.5	2.4	140	9.0	9.7	.10
MAR											
30...	--	--	--	--	--	--	--	140	--	--	--
MAY											
05...	140	0	37	11	15	.6	2.4	140	11	11	.10
AUG											
18...	110	0	30	8.7	9.4	.4	1.9	111	8.2	7.8	<.10

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982										
04...	--	--	--	6	<.010	.80	<.010	--	.40	1.2
JAN / 1983										
13...	31	193	3.1	10	<.010	.70	.010	--	<.10	--
MAR										
30...	--	--	--	<1	<.010	.10	.010	.09	.10	.20
MAY										
05...	27	198	.77	<1	<.010	.30	<.010	--	<.10	--
AUG										
18...	27	160	4.0	12	<.010	.60	<.010	--	.10	.70

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982										
04...	5.3	.050	--	--	--	--	--	--	--	--
JAN / 1983										
13...	--	.570	1	200	1	8	2	<.1	<1	<1
MAR										
30...	.89	.030	--	--	--	--	--	--	--	--
MAY										
05...	--	.030	--	--	--	--	--	--	--	--
AUG										
18...	3.1	.010	1	100	<1	6	5	<.1	<1	<1

K = non-ideal count

LOCATION.--Lat 18°12'19", long 66°48'01", Hydrologic Unit 21010003, on right bank near dirt road off Highway 129, 0.4 mi (0.6 km) north-northwest of Highways 129 and 135 junction, 2.5 mi (4 km) northeast of Castañer, 2.3 mi (3.7 km) east-southeast of Lago Guayo Dam, and 0.5 mi (0.8 km) upstream from Río Limani.

DRAINAGE AREA.--15.4 sq mi (40.1 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1946 to December 1966 in reports of the Puerto Rico Water Resources Authority as "Río Yahuecas near Adjuntas"; June 1980 to current year.

GAGE.--Water-stage recorder. Altitude of gage is about 1,530 ft (466 m) from USGS topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--23 years (1947-66, 81-83), 37.4 cu ft/s (1.059 cu m/s), 32.98 in/yr (838 mm/yr), 27,100 acre-ft/yr (33.4 cu hm/yr); median of yearly mean discharges, 37 cu ft/s (1.05 cu m/s), 26,800 acre-ft/yr (33 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,000 cu ft/s (481 cu m/s) Oct. 13, 1954, gage height unknown, minimum, 5.6 cu ft/s (0.158 cu m/s) Mar. 24, 1983.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,700 cu ft/s (48.1 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)	Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
Oct. 14	1745	2,000 56.6	10.52 3.206	Apr. 21	0245	*5,350 152	13.37 4.075
Oct. 18	1945	5,010 142	13.13 4.002				

Minimum discharge, 5.6 cu ft/s (0.158 cu m/s) Mar. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	23	29	18	11	8.7	6.8	16	16	13	8.9	11
2	25	22	26	13	11	8.3	6.7	15	15	12	9.0	11
3	20	22	24	17	11	8.3	6.6	15	16	12	14	11
4	19	21	24	17	11	8.4	6.2	16	15	14	30	9.9
5	19	20	23	18	11	8.4	6.8	15	14	20	12	10
6	19	21	21	17	11	8.4	9.8	15	13	15	9.1	29
7	96	23	21	17	11	8.2	7.4	14	51	12	8.1	20
8	29	21	21	16	10	8.6	6.8	14	21	12	16	15
9	21	20	20	16	10	8.4	6.8	14	16	15	16	39
10	19	20	21	16	10	8.5	6.7	22	15	13	21	21
11	19	23	21	15	9.9	7.9	6.7	16	15	14	13	45
12	18	61	19	15	9.6	64	6.9	21	14	12	11	24
13	30	46	19	15	9.5	20	7.4	39	13	11	11	17
14	179	25	19	15	9.5	12	15	26	13	10	12	14
15	55	24	25	16	9.6	10	20	21	13	10	14	14
16	30	45	22	15	9.3	8.7	12	16	18	12	9.9	13
17	26	107	19	14	9.6	8.1	9.1	15	38	19	46	45
18	348	53	19	14	9.4	8.1	22	71	64	14	24	50
19	112	55	24	14	9.1	7.9	13	33	25	11	13	34
20	65	39	37	14	9.4	7.7	48	21	19	10	41	18
21	45	34	24	14	11	7.5	576	43	17	9.9	37	16
22	38	36	21	13	9.9	7.2	34	57	16	9.6	25	35
23	30	31	19	13	9.4	7.2	23	35	14	9.8	16	55
24	26	48	19	13	9.1	7.3	20	41	14	10	14	55
25	25	30	19	12	9.0	7.3	18	54	13	8.8	31	28
26	24	31	25	12	9.1	7.5	16	42	13	8.5	18	20
27	25	40	25	12	9.1	7.4	16	26	13	8.5	14	21
28	26	31	20	12	9.0	7.6	15	22	13	8.5	13	20
29	27	27	23	12	---	7.2	29	20	12	9.0	12	32
30	30	39	20	12	---	7.2	18	19	12	11	11	20
31	24	---	19	11	---	7.0	---	17	---	9.5	11	---
TOTAL	1500	1043	688	453	277.5	319.0	995.7	816	561	364.1	541.0	752.9
MEAN	48.4	34.8	22.2	14.6	9.91	10.3	33.2	26.3	18.7	11.7	17.5	25.1
MAX	348	107	37	18	11	64	576	71	64	20	46	55
MIN	18	20	19	11	9.0	7.0	6.2	14	12	8.5	8.1	9.9
CFSM	3.14	2.26	1.44	.95	.64	.67	2.16	1.71	1.21	.76	1.14	1.63
IN.	3.62	2.52	1.66	1.09	.67	.77	2.41	1.97	1.36	.88	1.31	1.82
AC-FT	2980	2070	1360	899	550	633	1970	1620	1110	722	1070	1490

CAL YR 1982 TOTAL 11759.2 MEAN 32.2 MAX 1110 MIN 9.2 CFSM 2.09 IN 28.40 AC-FT 23320
WTR YR 1983 TOTAL 8311.2 MEAN 22.8 MAX 576 MIN 6.2 CFSM 1.48 IN 20.08 AC-FT 16490

WATER-QUALITY RECORDS

PERIOD OF RECORD.--MARCH 1946 TO DECEMBER 1966 IN REPORTS OF THE PUERTO RICO WATER RESOURCES AUTHORITY AS "RIO YAHUECAS NEAR ADJUNTAS"; JUNE 1980 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
OCT, 04	0855	19	239	22.0	APR, 13	0850	7.2	269	19.0
NOV, 09	1030	20	254	22.0	MAY, 11	0945	16	232	19.0
DEC, 20	1255	38	180	22.0	JUN, 08	1100	21	207	25.0
JAN, 11	0945	15	232	19.0	SEP, 06	1105	10	262	26.5
MAR, 16	1032	9.0	257	22.5					

RIO GRANDE DE AÑASCO BASIN

50141100 LAGO YAHUECAS NEAR CASTAÑER, PR

LOCATION.--Lat 18°13'20", long 66°49'15", Hydrologic Unit 21010003, at Yahuecas Dam on Río Blanco, 1.1 mi (1.8 km) northeast of Lago Guayo, 2.8 mi (4.5 km) northeast of Castañer, 3.8 mi (6.1 km) northeast of Lago Prieto, and about 4 mi (6 km) northwest of Adjuntas.

DRAINAGE AREA.--17.4 sq mi (45.1 sq km).

ELEVATION RECORDS

PERIOD OF RECORD.--April 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,400.00 ft (426.720 m) above mean sea level.

REMARKS.--Lago Yahuecas was completed in 1956. The dam is a unit of the southwestern Puerto Rico project and provides a maximum storage of 1,800 ac-ft (2.22 cu hm) for power and irrigation. The dam is a concrete gravity structure with a total length of 450 ft (137.2 m), a maximum structural height of 90 ft (27.4 m), and a maximum base width of 60 ft (18.3 m). The spillway is an ungated overflow type with a crest elevation of 71.00 ft (21.641 m) and a crest length of 200 ft (61.0 m); it was designed to pass a maximum flood of 38,000 cu ft/s (1,076 cu m/s) at a reservoir elevation of 84.00 ft (25.603 m). Timber flashboards, originally installed on the spillway crest, were subsequently removed and their use discontinued. Diversions are conveyed to Lago Guayo by an 11 ft (3.4 m) diameter, 6,470 ft (1,972 m) long tunnel, mostly unlined.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation, 76.61 ft (23.351 m) Sept. 13, 1982; minimum, 48.42 ft (14.758 m) Feb. 4, 1981.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 73.79 ft (22.491 m) Apr. 21; minimum, 51.36 ft (15.654 m) June 28.

Capacity table (elevation, in feet, and contents, in acre-feet)
(based on data from Puerto Rico Water Resources Authority)

30	0	65	1,000
49	393	71	1,308
60	778	75	1,540

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71.27	71.14	71.10	71.28	70.50	68.12	68.92	70.86	70.68	52.83	51.80	A
2	71.17	71.10	71.10	71.21	70.50	68.04	68.72	70.62	70.34	52.39	51.90	
3	71.12	71.06	71.11	71.23	70.50	67.92	68.49	70.35	70.29	52.54	55.52	
4	71.09	71.03	71.12	71.23	70.01	67.78	68.27	70.45	69.90	52.82	55.48	
5	71.06	71.01	71.13	71.28	70.09	67.63	68.02	70.33	69.45	53.56	53.26	A
6	71.10	71.00	71.13	71.36	70.01	67.60	67.94	70.23	69.01	53.61	53.37	56.14
7	71.33	71.02	71.14	71.18	69.77	67.48	67.74	70.01	70.45	52.61	53.38	53.60
8	71.13	71.00	71.15	71.20	69.66	67.40	67.53	69.74	70.32	52.50	54.75	53.68
9	71.14	71.07	71.16	71.18	69.56	67.32	67.31	69.54	69.98	54.11	52.88	53.60
10	71.12	71.01	71.20	71.25	69.42	A	67.18	70.58	69.29	53.67	56.74	58.79
11	71.12	71.06	71.21	70.90	69.27		67.98	70.72	68.24	53.07	53.15	54.52
12	71.11	71.58	71.16	71.04	69.12		66.81	71.13	67.27	53.23	53.00	54.60
13	71.29	71.10	71.05	71.01	69.01		66.72	71.26	61.26	52.78	53.19	54.38
14	71.47	71.00	71.20	71.03	68.89		66.69	71.22	53.55	52.78	54.69	54.17
15	71.20	71.08	71.28	71.10	68.79	A	66.69	71.14	57.31	52.78	53.21	54.22
16	71.24	71.34	71.19	71.10	68.68	70.45	67.44	71.01	55.23	53.10	52.96	55.50
17	71.24	71.39	71.16	70.98	68.60	70.50	67.18	70.93	55.44	54.22	56.94	60.80
18	71.89	71.18	71.18	70.97	68.49	70.51	67.57	71.37	55.54	53.17	A	54.38
19	71.43	71.24	71.31	70.92	68.41	70.57	67.64	71.19	55.60	53.35		54.22
20	71.38	71.16	71.37	70.92	68.12	70.58	69.54	71.13	55.48	53.51		54.35
21	71.31	71.07	71.31	70.78	68.25	70.58	71.37	71.45	55.01	52.84		54.30
22	71.31	71.10	71.33	70.70	68.23	70.49	71.23	71.36	54.64	52.50		61.06
23	71.29	71.03	71.31	70.84	68.21	70.40	71.17	71.22	54.32	52.24		56.72
24	71.27	71.17	71.30	70.69	68.20	70.25	71.12	71.29	53.75	52.24		54.25
25	71.26	71.12	71.34	70.82	68.24	70.10	71.01	71.49	51.69	52.36		54.09
26	71.34	71.19	71.35	70.87	68.20	69.96	70.84	71.23	51.87	51.87		54.01
27	71.24	71.17	71.21	70.86	68.25	69.82	70.62	71.18	51.62	51.93		54.02
28	71.18	71.13	71.23	70.83	68.18	69.65	70.41	71.13	51.74	52.20		54.03
29	71.37	71.11	71.40	70.71	---	69.47	71.07	71.14	51.81	51.79		54.23
30	71.18	71.19	71.33	70.71	---	69.27	71.08	71.13	51.88	52.14		54.16
31	71.17	---	71.29	70.66	---	69.09	---	70.96	---	52.17	A	---
TOTAL	2208.82	2133.85	2207.85	2200.84	1933.16	---	2064.30	2197.39	1817.96	1636.91	---	---
MEAN	71.25	71.13	71.22	70.99	69.94	---	68.81	70.88	60.60	52.80	---	---
MAX	71.89	71.58	71.40	71.36	70.50	---	71.37	71.49	70.68	54.22	---	---
MIN	71.06	71.00	71.05	70.66	68.12	---	66.69	69.54	51.62	51.79	---	---

A No gage-height record.

RIO GRANDE DE AÑASCO BASIN

50141500 LAGO GUAYO NEAR CASTAÑER, PR

LOCATION.--Lat 18°12'46", long 66°50'06", Hydrologic Unit 21010003, at Guayo Dam on Río Guayo, 1.1 mi (1.8 km) southwest of Lago Yahuecas, 2.6 mi (4.2 km) southwest of Lago Prieto, 2.1 mi (3.4 km) north of Castañer, and 6.0 mi (9.6 km) west of Adjuntas.

DRAINAGE AREA.--9.60 sq mi (24.9 sq km).

ELEVATION RECORDS

PERIOD OF RECORD.--April 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,400.00 ft (426.720 m) above mean sea level.

REMARKS.--Lago Guayo was completed in 1956. The dam is on Río Guayo and is the largest in the southwestern Puerto Rico project. The maximum storage is 17,400 ac-ft (21.5 cu hm) for power and irrigation. The dam is a concrete gravity structure with a total length of 555 ft (169.2 m), a maximum structural height of 190 ft (57.9 m), and a maximum width at the base of 145 ft (44.2 m). The ungated overflow spillway with a crest elevation of 60.00 ft (18.288 m) and a crest length of 220 ft (67.1 m) was designed to pass a maximum flood of 30,200 cu ft/s (855 cu m/s) at a reservoir elevation of 70.00 ft (21.336 ft). Timber flashboards that were added to increase storage capacity were subsequently removed and their use discontinued.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation, 62.43 ft (19.029 m) May 27, 1980; minimum, 35.13 ft (10.708 m) Jan. 20, 1981.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 61.04 ft (18.605 m) Apr. 21; minimum, 45.95 ft (14.001 m) Nov. 5.

Capacity table (elevation, in feet, and contents, in acre-feet)
(based on data from Puerto Rico Water Resources Authority)

30	6,530	60	13,550
49	10,660	65	15,000

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58.92	48.22	53.67	59.32	60.07	60.01	59.50	60.08	59.74	51.59	51.57	51.27
2	59.22	47.12	53.87	59.46	60.06	59.91	59.35	60.07	59.43	51.82	51.17	51.02
3	59.46	46.46	54.07	59.62	60.07	59.77	59.20	60.07	59.27	52.04	51.65	51.20
4	59.70	46.26	54.25	59.78	60.09	59.62	59.16	60.10	59.57	52.35	52.28	51.01
5	59.93	46.04	54.44	59.93	60.07	59.51	59.26	60.08	59.82	52.75	52.49	51.17
6	60.11	46.43	54.63	60.05	60.08	59.38	59.37	60.13	59.99	53.02	52.64	50.90
7	60.23	46.77	54.80	60.06	60.08	59.22	59.46	60.09	59.85	52.10	52.78	50.39
8	60.22	47.12	54.98	60.09	60.07	59.10	59.55	60.09	59.82	52.31	52.21	49.70
9	60.20	46.89	55.15	60.08	60.08	58.94	59.63	60.07	59.43	52.56	52.00	49.53
10	60.18	46.60	55.32	60.08	60.08	58.78	59.71	60.20	58.88	52.80	52.29	51.21
11	60.16	46.88	55.48	60.08	60.06	58.65	59.81	59.93	59.15	53.05	52.69	52.03
12	60.17	47.81	55.66	60.08	60.07	58.77	59.88	59.70	59.40	53.26	52.53	52.33
13	60.28	48.47	55.84	60.08	60.07	58.67	59.99	59.63	59.31	52.66	52.73	51.94
14	60.47	48.87	56.01	60.10	60.07	58.54	60.05	60.04	58.58	52.79	53.01	50.58
15	60.20	48.56	56.23	60.09	60.08	58.47	60.12	60.13	57.31	52.52	52.14	49.49
16	60.14	49.37	56.41	60.09	60.08	58.54	60.08	60.08	55.20	52.76	51.62	48.73
17	60.13	49.26	56.59	60.08	60.08	58.60	60.08	60.05	54.16	53.14	52.27	48.62
18	60.38	49.44	56.74	60.08	60.09	58.69	60.09	60.30	55.11	53.13	52.99	48.35
19	60.30	49.98	56.99	60.10	60.11	58.76	60.08	60.64	55.49	53.32	52.32	47.62
20	60.17	50.65	57.22	60.09	60.09	58.83	60.37	59.41	55.38	53.49	52.98	47.04
21	60.16	51.19	57.37	60.09	60.08	58.91	60.20	60.49	55.04	52.76	53.69	47.00
22	59.61	51.57	57.54	60.08	60.08	58.99	60.10	60.27	54.63	52.08	53.17	48.07
23	53.64	51.79	57.72	60.09	60.08	59.07	60.10	60.16	54.30	52.27	52.69	48.99
24	57.65	52.06	57.88	60.07	60.07	59.16	60.08	59.23	53.58	52.44	52.09	49.58
25	56.11	52.31	58.05	60.08	60.07	59.23	60.07	59.80	51.39	52.59	52.53	49.77
26	54.28	52.53	58.32	60.07	60.07	59.30	60.07	59.83	51.53	52.07	51.42	49.55
27	53.56	52.77	58.50	60.07	60.06	59.40	60.07	59.48	51.50	52.22	51.67	48.97
28	52.47	53.00	58.66	60.06	60.05	59.48	60.07	58.81	51.53	52.36	51.91	47.90
29	51.27	53.21	58.84	60.07	---	59.59	60.08	59.70	51.41	51.86	52.11	48.04
30	50.22	53.46	59.00	60.07	---	59.67	60.07	59.77	51.35	52.09	51.75	47.43
31	49.25	---	59.17	60.07	---	59.66	---	59.97	---	52.11	51.22	---
TOTAL	1804.29	1481.09	1749.40	1860.16	1682.11	1833.22	1795.65	1358.40	1691.15	1628.31	1620.61	1489.43
MEAN	58.20	49.37	56.43	60.01	60.08	59.14	59.86	59.95	56.37	52.53	52.28	49.65
MAX	60.88	53.46	59.17	60.10	60.11	60.01	60.37	60.64	59.99	53.49	53.69	52.33
MIN	49.25	46.04	53.67	59.32	60.05	58.47	59.16	58.81	51.35	51.59	51.17	47.00
CAL YR 1982	TOTAL	19010.20	MEAN	52.08	MAX	60.88	MIN	35.65				
WTR YR 1983	TOTAL	20493.82	MEAN	56.15	MAX	60.88	MIN	46.04				

RIO GRANDE DE AÑASCO BASIN

50142500 LAGO PRIETO NEAR CASTAÑER, PR

LOCATION.--Lat 18°11'08", long 66°51'48", Hydrologic Unit 21010004, at dam on Río Prieto, 2.0 mi (3.2 km) west of Castañer, 3.1 mi (5.0 km) southwest of Lago Guayo, 3.8 mi (6.1 km) southwest of Lago Yahuecas, and about 9 mi (14 km) west of Adjuntas.

DRAINAGE AREA.--9.60 sq mi (24.9 sq km).

ELEVATION RECORDS

PERIOD OF RECORD.--May 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,400.00 ft (476.720 m) above mean sea level.

REMARKS.--Lago Prieto was completed in 1955. It provides a maximum storage of approximately 700 ac-ft (0.863 cu hm) for power and irrigation. A power tunnel adit from the reservoir to the Lago Guayo tunnel allows for releases to Power Plant No. 1. Turbine releases are collected in Lago Antonio Lucchetti and are reused for power generation at Power Plant No. 2. The dam is a concrete gravity structure with a total length of 260 ft (79.2 m), a maximum structural height of 98 ft (29.9 m), and a maximum base width of 65 ft (19.8 m). The ungated overflow spillway, with a crest elevation of 85.00 ft (25.908 m), and a crest length of 170 ft (51.8 m) was designed to pass a maximum flood of 32,000 cu ft/s (906 cu m/s). Timber flashboards that were added after initial construction were subsequently removed, and their use discontinued.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation, 87.49 ft (26.667 m) Sept. 13, 1982; minimum, less than 55.05 ft (16.779 m) many days.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 83.10 ft (25.329 m) May 19; minimum, less than 52.60 ft (16.032 m) most days.

Capacity table (elevation, in feet, and contents, in acre-feet)
(based on data from Puerto Rico Water Resources Authority)

49	0	85	484
60	97	90	586
65	156		

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	59.38	B	B	B	B	B	B	A	62.96	B	C	C
2	59.36								60.99			
3	59.60								62.26			
4	59.78								60.75			
5	59.95								60.63		C	
6	60.03								60.28		53.58	
7	60.20								60.10		53.66	
8	60.18								59.86		53.23	
9	60.22								59.43		52.64	C
10	60.15							A	59.04		C	57.54
11	60.18							60.27	59.10		54.00	54.20
12	60.22							65.62	59.55		53.96	54.16
13	60.52							69.28	59.46		53.87	53.01
14	60.94							71.78	57.69		54.29	C
15	60.14	B						71.92	B	B	52.96	
16	60.15	55.17						71.85		C	52.61	
17	60.16	B						69.53			60.05	
18	71.09							68.77			54.04	
19	60.35							79.89			52.75	
20	60.11						B	63.91			55.38	
21	60.14						A	74.79			54.87	C
22	57.82							66.88			53.96	62.12
23	56.92							66.33			54.08	53.71
24	55.88							64.98		C	52.62	54.05
25	B							66.54		53.58	52.61	52.98
26								65.64		52.70	52.62	C
27								62.10		52.61	52.61	
28					B			62.42		C	52.61	
29					---			63.55			52.61	
30		B			---		A	63.00	B		52.61	C
31	B	---	B	B	---	B	---	63.32	---	C	C	---
TOTAL	---	---						---	---	---	---	---
MEAN	---	---						---	---	---	---	---
MAX	---	---						---	---	---	---	---
MIN	---	---						---	---	---	---	---

A No gage-height record.
B Stage below elevation 55.05 ft.
C Stage below elevation 52.60 ft.

RIO GRANDE DE AÑASCO BASIN

50143000 RIO GRANDE DE AÑASCO NEAR LARES, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°15'26", long 66°55'00", at bridge on Highway 124, 0.7 mi (1.1 km) downstream from confluence of Río Blanco and Río Prieto, and 3.7 mi (6.0 km) southwest of Lares plaza.

DRAINAGE AREA.--26.3 sq mi (68.1 sq km) this does not include 36.2 sq mi (93.8 sq km) which contributes only during high floods, and 3.5 sq mi (9.1 sq km) which contributes only part of its storm runoff.

PERIOD OF RECORD.--Water years 1959-68, 1970 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV / 1982											
10...	0845	63	223	7.8	22.0	85	7.9	92	26	22000	K15000
JAN / 1983											
31...	1720	44	282	7.9	24.0	2.3	8.2	99	16	K44	K88
MAR											
23...	0835	16	320	8.1	24.5	1.1	8.6	105	18	K94	580
MAY											
11...	1520	86	232	8.2	29.0	30	7.1	94	14	3300	2900
AUG											
24...	0915	22	298	6.3	26.0	4.5	12.3	154	78	220	230

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV / 1982											
10...	--	--	--	--	--	--	--	77	--	--	--
JAN / 1983											
31...	120	10	32	9.8	12	.5	1.7	110	13	9.4	<.10
MAR											
23...	--	--	--	--	--	--	--	130	--	--	--
MAY											
11...	96	3	26	7.5	9.4	.4	2.5	93	13	9.4	<.10
AUG											
24...	120	0	34	9.4	13	.5	1.5	140	23	9.8	<.10

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982											
10...	--	--	--	35	1.6	.040	1.6	.050	1.3	1.30	2.9
JAN / 1983											
31...	26	170	20.2	1	--	<.010	.50	.030	--	<.10	--
MAR											
23...	--	--	--	6	.39	.010	.40	.020	.18	.20	.60
MAY											
11...	21	145	33.6	24	.58	.020	.60	.050	.25	.30	.90
AUG											
24...	30	205	12.2	8	.58	.020	.60	.020	.48	.50	1.1

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982										
10...	13	.090	--	--	--	--	--	--	--	--
JAN / 1983										
31...	--	.040	1	100	1	3	3	.3	<1	<1
MAR										
23...	2.7	.030	--	--	--	--	--	--	--	--
MAY										
11...	4.0	.070	--	--	--	--	--	--	--	--
AUG										
24...	4.9	.040	2	100	1	<1	4	<.1	<1	<1

K = non-ideal count

RIO GRANDE DE AÑASCO BASIN

50144000 RIO GRANDE DE AÑASCO NEAR SAN SEBASTIAN, PR

LOCATION.--Lat 18°17'05", long 67°03'05", Hydrologic Unit 21010003, on left bank, 200 ft (61 m) downstream from bridge on Highway 108, 0.4 mi (0.6 km) downstream from Quebrada La Zumbadora, 4.4 mi (7.1 km) northwest of Las Marías, 5.4 mi (8.7 km) southwest of San Sebastián.

DRAINAGE AREA.--94.3 sq mi (244.2 sq km), does not include 36.2 sq mi (93.8 sq km) which contributes only during high floods, and 3.5 sq mi (9.1 sq km) which contributes only part of its storm runoff.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 103.72 ft (31.614 m) above mean sea level (Puerto Rico Department of Public Works bench mark). Previous to Oct. 30, 1975, a site 600 ft (180 m) upstream at same datum.

REMARKS.--Records fair. Transbasin diversion (except during floods) to Río Yauco basin for hydroelectric power and irrigation above Lago Guayo, Yahuecas, and Prieto, combined usable storage 17,300 acre-ft (21.3 cu hm). Limited storm runoff is contributed to basin by 3.5 sq mi (9.1 sq km) above Río Toro Diversion dam.

AVERAGE DISCHARGE.--20 years (1964-83), 304 cu ft/s (8.609 cu m/s), 43.78 in/yr (1,112 mm/yr), 220,200 acre-ft/yr (272 cu hm/yr); median of yearly mean discharges, 301 cu ft/s (8.52 cu m/s), 218,000 acre-ft/yr (269 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 140,000 cu ft/s (3,965 cu m/s) Sept. 16, 1975, gage height, 33.9 ft (10.33 m), from rating curve extended above 4,000 cu ft/s (113 cu m/s) on basis of slope-area measurement; minimum, 31 cu ft/s (0.878 cu m/s) Apr. 19-20, 1965, gage height, 0.88 ft (0.268 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 6,000 cu ft/s (170 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)	Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
Nov. 18	1715	6,340	180	7.46	2.274		
Apr. 21	0815	*8,000	227	8.36	2.548		
				May 18	0830	6,710	190
							7.67 2.338

Minimum discharge, 53 cu ft/s (1.501 cu m/s) Apr. 4, 9-11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	292	191	322	167	114	85	56	108	219	162	98	124
2	302	182	258	159	114	83	56	98	236	182	88	110
3	258	175	243	151	113	75	56	96	865	106	82	107
4	216	167	237	150	111	73	54	138	668	102	147	102
5	283	162	228	150	116	71	56	265	390	194	111	93
6	326	168	220	146	116	88	58	143	272	128	97	95
7	325	190	214	151	114	75	57	477	236	100	81	168
8	387	172	210	160	111	72	55	300	243	91	127	112
9	306	447	206	157	108	72	54	172	204	86	190	333
10	269	692	203	154	105	70	53	131	265	179	121	169
11	230	277	203	149	105	69	56	232	192	297	234	389
12	218	243	198	147	100	100	58	148	178	191	201	193
13	210	348	192	145	100	199	58	183	155	109	220	131
14	278	204	190	143	100	104	62	251	143	92	579	107
15	726	356	192	157	102	85	102	209	136	83	355	107
16	358	985	204	164	102	78	206	170	128	125	196	102
17	304	1570	185	168	102	73	115	248	121	350	422	380
18	315	1800	175	164	103	70	100	1530	131	202	374	432
19	1760	776	194	158	100	69	106	877	118	132	179	274
20	634	539	298	146	103	68	117	802	112	105	141	143
21	395	428	262	136	115	67	2620	1260	110	92	211	122
22	323	383	179	134	102	63	311	1600	104	87	202	289
23	242	365	168	132	96	63	153	723	98	127	140	472
24	215	556	164	132	96	64	129	594	96	109	166	482
25	206	581	157	127	97	64	108	624	92	90	127	228
26	198	348	162	123	92	64	93	668	93	87	223	161
27	203	325	174	123	91	62	36	359	108	82	226	172
28	212	319	167	118	89	59	31	255	95	82	190	159
29	223	282	233	115	---	59	121	344	103	144	143	273
30	245	295	359	116	---	58	132	491	174	116	128	163
31	215	---	202	119	---	57	---	270	---	98	126	---
TOTAL	10674	13526	6599	4461	2917	2359	5369	13771	6085	4130	5925	6192
MEAN	344	451	213	144	104	76.1	179	444	203	133	191	206
MAX	1760	1800	359	168	116	199	2620	1600	865	350	579	482
MIN	198	162	157	115	89	57	53	96	92	82	81	93
CFSM	3.65	4.78	2.26	1.53	1.10	.81	1.90	4.71	2.15	1.41	2.03	2.19
IN.	4.21	5.34	2.60	1.76	1.15	.93	2.12	5.43	2.40	1.63	2.34	2.44
AC-FT	21170	26830	13090	8850	5790	4680	10650	27310	12070	8190	11750	12280

CAL YR 1982	TOTAL	107145	MEAN 294	MAX 6630	MIN 79	CFSM 3.12	IN 42.27	AC-FT 212500
WTR YR 1983	TOTAL	82008	MEAN 225	MAX 2620	MIN 53	CFSM 2.39	IN 32.35	AC-FT 162700

RIO GRANDE DE AÑASCO BASIN

50144000 RIO GRANDE DE AÑASCO NEAR SAN SEBASTIAN, PR--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)
OCT / 1982												
07...	1225	280	156	7.8	25.0	100	8.1	99	11800	6400	74	0
FEB / 1983												
01...	0900	112	249	7.5	22.0	2.6	8.9	102	K100	330	110	1
JUN												
16...	1130	129	253	8.4	29.0	6.6	7.8	102	K190	82	100	4
AUG												
03...	1340	83	237	8.0	30.5	12	8.1	109	210	84	100	1

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
OCT / 1982											
07...	18	7.0	7.7	.4	1.1	30	10	6.1	<.10	23	130
FEB / 1983											
01...	28	10	12	.5	1.3	110	10	7.5	<.10	30	155
JUN											
16...	26	9.4	10	.4	1.8	100	10	7.6	.10	30	157
AUG											
03...	25	9.2	9.7	.4	1.7	100	11	7.2	.10	29	152

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS P04)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04)
OCT / 1982											
07...	121	98.3	.93	.030	.04	.70	.070	.21	.030	.030	.09
FEB / 1983											
01...	165	46.9	.60	.030	.04	<.10	.060	.18	.030	.030	.09
JUN											
16...	155	54.7	.39	.030	.04	.40	.020	.06	.020	.020	.06
AUG											
03...	153	34.1	.28	.050	.06	.30	.040	.12	.060	.030	.09

DATE	ALUM- INIUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)
OCT / 1982											
07...	<10	1	44	<1	<1	<1	<3	3	17	<1	<4
FEB / 1983											
01...	10	1	50	<1	<1	<1	<3	6	<3	3	<4
JUN											
16...	30	1	52	1	1	1	3	<1	3	<1	4
AUG											
03...	200	1	50	<1	<1	<1	<3	6	12	4	<4

K = non-ideal count

RIO GRANDE DE AÑASCO BASIN

50144000 RIO GRANDE DE AÑASCO NEAR SAN SEBASTIAN, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	MANGANESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT / 1982 07...	8	<.1	<10	2	<1	<1	99	<6.0	<4	154	116
FEB / 1983 01...	15	.1	<10	3	<1	<1	150	<6.0	16	9	2.7
JUN 16...	19	<.1	10	2	<1	<1	140	6.0	67	23	8.0
AUG 03...	26	<.1	<10	3	<1	<1	130	<6.0	<3	5	1.1

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
NOV, 05	1235	60	284	26.0	MAR, 10	1610	69	245	28.0
DEC, 21	1512	202	252	24.0	APR, 11	1300	53	250	27.0
JAN, 04	1100	148	283	23.0	MAY, 04	1120	87	312	27.0
FEB, 01	0845	112	248	22.0	SEP, 01	1150	117	331	28.0

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDE (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT / 1982 07...	1225	280	154	96
FEB / 1983 01...	0900	112	9	78
JUN 16...	1130	129	23	94
AUG 03...	1340	83	5	100

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM
AUG / 1983 03...	0955	E82	2

E = estimate

RIO GRANDE DE AÑASCO BASIN

50146000 RIO GRANDE DE AÑASCO NEAR AÑASCO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°16'00", long 67°08'05", at bridge on Highway 430, 0.2 mi (0.3 km) south of Highway 109 at a El Espino and 1.4 mi (2.3 km) east-southeast from Añasco plaza.

DRAINAGE AREA.--139 sq mi (360 sq km) this does not include 39.7 sq mi (102.8 sq km), flow is diverted to south coast.

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV , 1982											
05...	1250	217	255	8.0	27.0	15	9.0	115	<10	400	K30
JAN , 1983											
14...	1310	300	258	7.8	24.0	20	8.7	105	--	200	K88
MAR											
30...	0905	59	235	8.2	25.5	1.2	8.4	103	<10	K47	150
MAY											
12...	1140	179	240	7.6	25.5	38	7.8	96	13	2200	K700
JUN											
08...	1215	256	234	8.0	27.0	--	--	--	--	--	--
AUG											
19...	1000	600	225	7.4	26.0	50	7.6	93	24	K1500	3600

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV , 1982											
05...	--	--	--	--	--	--	--	100	--	--	--
JAN , 1983											
14...	100	0	26	9.4	9.7	.4	1.7	110	9.0	7.5	<.10
MAR											
30...	--	--	--	--	--	--	--	110	--	--	--
MAY											
12...	97	0	25	8.3	8.7	.4	2.2	97	13	8.0	<.10
JUN											
03...	--	--	--	--	--	--	--	98	--	--	--
AUG											
19...	90	1	23	7.8	8.0	.4	1.8	89	10	6.3	<.10

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV , 1982											
05...	--	--	--	30	--	<.010	.40	.060	.64	.70	1.1
JAN , 1983											
14...	29	158	128	34	.59	.010	.60	.040	.26	.30	.90
MAR											
30...	--	--	--	3	--	<.010	<.10	<.010	--	<.10	--
MAY											
12...	23	151	73.2	55	.68	.020	.70	.050	.25	.30	1.0
JUN											
08...	--	--	--	--	--	--	--	--	--	--	--
AUG											
19...	26	136	221	100	9.1	.450	9.5	.070	.33	.40	9.9

K = non-ideal count

RIO GRANDE DE AÑASCO BASIN

50146000 RIO GRANDE DE AÑASCO NEAR AÑASCO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982										
05...	4.9	.050	--	--	--	--	--	--	--	--
JAN / 1983										
14...	4.0	.600	1	100	2	17	6	.2	<1	<1
MAR										
30...	--	.020	--	--	--	--	--	--	--	--
MAY										
12...	4.4	.080	--	--	--	--	--	--	--	--
JUN										
08...	--	--	--	--	--	--	--	--	--	--
AUG										
19...	44	.040	2	100	1	6	3	<.1	<1	<1

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)
JUN / 1983								
08...	1215	<.10	<.01	<.10	<.01	<.01	<.01	<.01

DATE	DI- ELDRIN TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA- THION, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL (UG/L)
JUN / 1983									
08...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01

DATE	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR, TOTAL (UG/L)	PER- THANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)
JUN / 1983								
08...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01

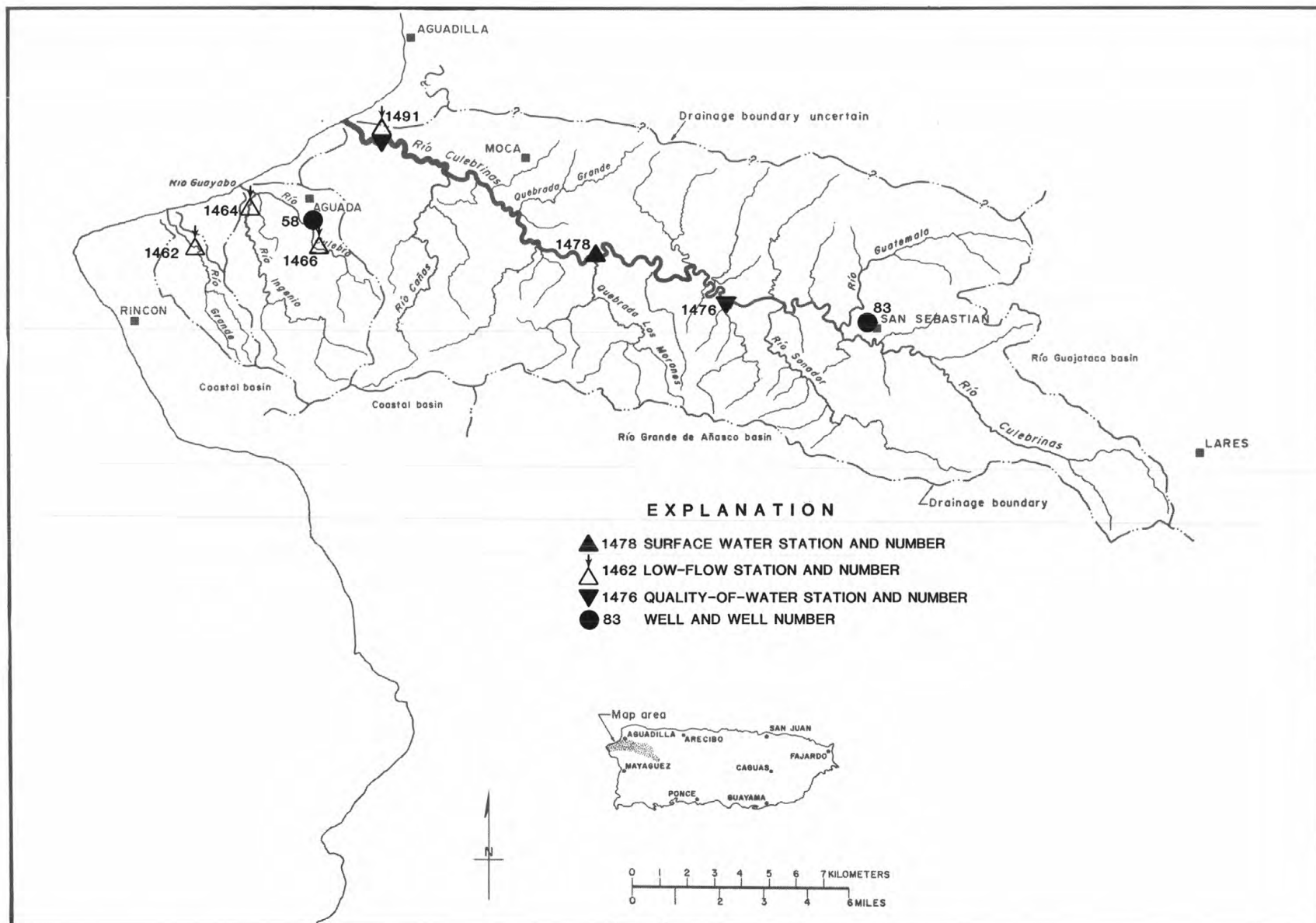


Figure 25.--Río Culebrinas basin.

RIO CULEBRINAS BASIN

50147600 RIO CULEBRINAS NEAR SAN SEBASTIAN, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°20'51", long 67°02'40", at bridge on Highway 423, 1.3 mi (2.1 km) south of Quebrada El Salto Bridge on Highway 111, and 2.1 mi (3.4 km) west of Central La Plata.

DRAINAGE AREA.--58.2 sq mi (150.7 sq km).

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV / 1982											
18...	0820	96	304	7.8	22.0	15	7.8	91	20	K19000	6700
JAN / 1983											
19...	0910	51	309	7.8	23.0	2.9	7.7	90	32	K6800	5800
MAR											
22...	1545	16	325	8.4	31.0	1.3	8.7	118	29	K170	K90
MAY											
12...	0720	68	314	7.5	26.0	28	7.4	92	16	47000	K170000
AUG											
25...	0905	82	291	8.0	26.0	8.0	7.5	93	11	K6000	3400

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV / 1982											
18...	--	--	--	--	--	--	--	120	--	--	--
JAN / 1983											
19...	120	5	40	6.0	19	.8	2.4	120	16	12	.10
MAR											
22...	--	--	--	--	--	--	--	130	--	--	--
MAY											
12...	120	4	40	5.7	14	.6	3.4	120	21	12	.10
AUG											
25...	120	5	39	5.1	13	.5	2.0	114	14	11	.10

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982											
18...	--	--	--	14	1.1	.040	1.1	.100	.70	.80	1.9
JAN / 1983											
19...	32	199	27.2	1	1.2	.110	1.3	.160	.44	.60	1.9
MAR											
22...	--	--	--	11	.28	.020	.30	.920	.88	1.80	2.1
MAY											
12...	32	200	36.7	34	.62	.080	.70	.160	.34	.50	1.2
AUG											
25...	30	183	40.5	12	1.1	.080	1.2	.060	.14	.20	1.4

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982										
18...	8.4	.080	--	--	--	--	--	--	--	--
JAN / 1983										
19...	8.4	.190	2	<100	1	1	14	.6	<1	<1
MAR										
22...	9.3	.500	--	--	--	--	--	--	--	--
MAY										
12...	5.3	.190	--	--	--	--	--	--	--	--
AUG										
25...	6.2	.100	2	100	1	<1	4	<.1	<1	<1

K = non-ideal count

RIO CULEBRINAS BASIN

50147800 RIO CULEBRINAS AT HIGHWAY 404 NEAR MOCA, PR

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LOCATION.--Lat 18°21'42", long 67°05'33", Hydrologic Unit 21010003, on right bank, at bridge on Highway 404, 0.3 mi (0.5 km) downstream from Quebrada Yagruma, and 2.8 mi (4.5 km) southeast of Moca.

DRAINAGE AREA.--71.2 sq mi (184.4 sq km).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Altitude of gage is 45 ft (13.7 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--16 years (1968-83), 299 cu ft/s (8.468 cu m/s), 57.03 in/yr (1,449 mm/yr), 216,600 acre-ft/yr (267 cu hm/yr); median of yearly mean discharges, 286 cu ft/s (8.10 cu m/s), 207,000 acre-ft/yr (255 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 69,000 cu ft/s (1,954 cu m/s) Sept. 16, 1975, gage height, 36.6 ft (11.16 m) from slope-area measurement, but may have been exceeded by flood of Oct. 23, 1974, from rating curve extended above 2,600 cu ft/s (73.6 cu m/s) on basis of slope-area and contracted-opening measurements of peak flow; minimum, 16 cu ft/s (0.453 cu m/s) Apr. 17-19, 1979.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 11,300 cu ft/s (320 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)	Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
Nov. 18	2030	15,800 447	24.42 7.443	Aug. 17	1845	*18,600 527	25.48 7.766
June 13	1830	13,800 390	23.59 7.190				

Minimum discharge, 18 cu ft/s (0.510 cu m/s) Apr. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	230	134	150	121	53	36	23	324	229	150	86	286
2	174	126	129	109	52	35	25	273	178	122	65	137
3	137	121	122	100	51	36	24	236	159	110	61	113
4	149	123	123	96	51	35	21	314	150	95	67	103
5	378	117	115	93	52	35	23	302	150	100	63	97
6	191	425	109	88	53	38	21	180	240	109	66	89
7	134	290	107	85	51	33	22	119	139	88	58	383
8	129	1060	104	82	47	35	21	158	180	83	78	512
9	150	398	100	81	46	36	23	80	324	76	178	1540
10	120	734	102	79	46	33	19	77	407	74	71	281
11	114	335	99	76	46	31	20	57	807	113	64	441
12	111	390	95	75	44	31	20	191	993	169	56	476
13	106	296	94	72	44	43	24	1090	2510	93	267	377
14	104	168	95	68	45	33	22	1180	1490	76	292	240
15	205	209	118	69	45	32	39	343	560	72	496	288
16	178	165	106	68	41	32	71	658	300	109	446	176
17	431	138	90	71	38	29	30	488	238	158	3880	228
18	413	3110	87	66	38	27	27	569	206	92	624	332
19	825	711	135	73	38	30	24	415	165	80	249	206
20	369	406	217	79	43	26	104	189	423	74	180	143
21	857	199	104	64	56	29	705	337	210	71	185	131
22	321	173	95	62	43	27	71	338	145	67	170	136
23	195	157	89	62	41	27	64	332	126	79	129	165
24	170	742	85	62	41	26	43	624	113	93	114	644
25	152	300	84	60	40	27	35	1150	106	63	105	1540
26	142	171	164	58	42	24	28	812	102	61	142	281
27	135	155	172	63	40	26	26	708	179	60	198	441
28	729	160	143	58	38	25	24	551	120	58	172	476
29	244	167	553	56	---	25	60	480	337	80	167	377
30	155	158	710	56	---	25	94	808	230	86	445	240
31	142	---	178	55	---	24	---	316	---	79	481	---
TOTAL	7890	11838	4674	2307	1265	956	1753	13699	11566	2845	9655	10879
MEAN	255	395	151	74.4	45.2	30.8	58.4	442	336	91.8	311	363
MAX	857	3110	710	121	56	43	705	1180	2510	169	3880	1540
MIN	104	117	84	55	38	24	19	57	102	58	56	89
CFSM	3.58	5.55	2.12	1.05	.64	.43	.82	6.21	5.42	1.29	4.37	5.10
IN.	4.12	6.18	2.44	1.21	.66	.50	.92	7.16	6.04	1.1	5.04	5.68
AC-FT	15650	23480	9270	4580	2510	1900	3480	27170	22940	5640	19150	21580

CAL YR 1982	TOTAL	111821	MEAN 306	MAX 5520	MIN 44	CFSM 4.30	IN 58.42	AC-FT 221800
WTR YR 1983	TOTAL	79327	MEAN 217	MAX 3880	MIN 19	CFSM 3.05	IN 41.45	AC-FT 157300

WATER-QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
OCT, 06	0900	175	172	23.0	MAR, 17	0930	25	287	25.5
NOV, 10	0900	206	177	23.0	APR, 14	0920	20	273	24.5
DEC, 23	1118	89	249	24.0	MAY, 12	0840	99	354	26.5
FEB, 08	1012	48	270	22.0	JUN, 06	1330	227	372	--
JAN, 12	1025	76	270	23.0	SEP, 07	1035	129	288	26.0
MAR, 17	0930	25	287	25.5					

RIO CULEBRINAS BASIN

50149100 RIO CULEBRINAS NEAR AGUADA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°24'03", long 67°09'40", at bridge on Highway 2, and 2.3 mi (3.7 km) northeast of Aguada plaza.

DRAINAGE AREA.--97.0 sq mi (251.2 sq km).

PERIOD OF RECORD.--Water years 1958, 1970 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, D.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV / 1982											
17...	1300	206	332	7.7	24.5	28	7.2	87	24	4200	5500
JAN / 1983											
19...	1230	98	234	7.9	25.0	4.1	7.8	94	25	K380	440
MAR											
22...	1315	32	480	7.3	34.0	<1.0	.0	0	--	26000	13000
MAY											
12...	0915	90	478	7.4	29.0	5.8	5.3	69	38	44000	K18000
JUN											
08...	0925	236	355	7.7	26.0	--	7.1	88	--	--	--
AUG											
25...	1300	153	338	7.8	28.5	19	6.9	89	66	980	600

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY FIELD (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)
NOV / 1982											
17...	--	--	--	--	--	--	--	130	--	--	--
JAN / 1983											
19...	130	0	41	6.1	15	.6	2.3	130	9.0	11	<.10
MAR											
22...	--	--	--	--	--	--	--	220	--	--	--
MAY											
12...	180	0	58	8.3	20	.7	8.9	190	24	21	.10
JUN											
08...	--	--	--	--	--	--	--	150	--	--	--
AUG											
25...	140	2	48	5.9	13	.5	2.1	142	12	13	.10

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
NOV / 1982											
17...	--	--	--	51	.77	.030	.80	.070	.63	.70	1.5
JAN / 1983											
19...	33	195	46.4	2	.68	.020	.70	.060	.44	.50	1.2
MAR											
22...	--	--	--	8	--	.010	<.10	.490	1.0	1.50	--
MAY											
12...	28	282	68.6	10	.45	.050	.50	.300	.40	.70	1.2
JUN											
08...	--	--	--	--	--	--	--	--	--	--	--
AUG											
25...	30	209	86.4	28	.78	.020	.80	.090	.51	.60	1.4

K = non-ideal count

RIO CULEBRINAS BASIN

50149100 RIO CULEBRINAS NEAR AGUADA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	NITRO- GEN, TOTAL (MG/L AS N03)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
NOV / 1982										
17...	6.6	.110	--	--	--	--	--	--	--	--
JAN / 1983										
19...	5.3	.060	1	<100	1	<1	13	.3	<1	<1
MAR										
22...	--	3.00	--	--	--	--	--	--	--	--
MAY										
12...	5.3	.760	--	--	--	--	--	--	--	--
JUN										
08...	--	--	--	--	--	--	--	--	--	--
AUG										
25...	6.2	.090	2	100	1	<1	10	<.1	<1	<1

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)
JUN / 1983								
08...	0925	<.10	<.01	<.10	<.01	<.01	<.01	.01

DATE	DI- ELDRIN TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)	ENGRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA- THION, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL (UG/L)
JUN / 1983									
08...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01

DATE	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR, TOTAL (UG/L)	PER- THANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)
JUN / 1983								
08...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01

DISCHARGE AT PARTIAL-RECORD STATIONS

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are useable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at partial-record stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations and the second is a table of annual maximum stage and discharge at crest-stage stations.

Low-flow partial-record stations

Measurements of streamflow in the areas covered by this report made at low-flow partial-record stations are given in the following table. These measurements were made during periods of base flow when streamflow is primarily from ground-water storage. These measurements, when correlated with the simultaneous discharge of nearby stream when continuous records are available, will give a picture of the low-flow potentiality of stream.

Discharge measurements made at low-flow partial-record stations during water year 1983

PUBLICATION RECORD								
STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA sq mi (sq km)	DATE	TIME	Q cu ft/s (cu m/s)	SP COND umhos	TEMPER- ATURE deg C
Quebrada de los Cedros basin								
50007000	Quebrada de los Cedros near Isabela, PR	Lat 18 30 46, long 67 05 47 Hydrologic unit 21010002. On dirt road, 4.7 mi (7.6 km) west of Isabela, and 0.5 mi (0.8 km) upstream from mouth.	6.91 (17.90)	2/28/83	1150	DRY	-	-
Rio Guajataca basin								
50011400	Rio Guajataca above mouth near Quebradillas, PR	Lat 18 28 31, long 66 57 46 Hydrologic unit 21010002. At ford, 1.7 mi (2.7 km) up- stream from bridge on Hwy 2, 2.1 mi (3.4 km) from the Atlantic Ocean, 6.6 mi (10.6 km) downstream from Lago Guajataca, and 1.6 mi (2.6 km) west of Quebradi- llas.	23.7 (61.4)	3/30/83	1000	11.3 (0.32)	-	25.0
Rio Camuy basin								
50015800	Rio Camuy at Capaez, PR	Lat 18 27 49, long 66 49 58 Hydrologic unit 21010002. At 1.1 mi (1.7 km) south of Purification Plant of Hati- llo, about 1.4 mi (2.2 km) south of Hwy 2, and 1.8 mi (2.9 km) upstream from mouth.	22.0 (57.0)	3/01/83	1520	45.9 (1.30)	345	25.0
Rio Cibuco basin								
50039000	Rio Indio near Vega Baja, PR	Lat 18 26 19, long 66 22 13 Hydrologic unit 21010002. At bridge on Hwy 160, 0.6 mi (1.0 km) upstream from Rio Cibuco, and 1.2 mi (1.9 km) southeast of Vega Baja.	26.7 (69.2)	3/04/83	0940	10.0 (0.28)	450	25.0
Rio de la Plata basin								
50045800	Rio Lajas at Toa Alta, PR	Lat 18 23 39, long 66 15 16 Hydrologic unit 21010005. At bridge on Hwy 165, 0.2 mi (0.3 km) upstream from Rio de la Plata, and 0.5 mi (0.8 km) northwest of Toa Alta.	8.60 (22.27)	3/04/83	1120	2.55 (0.07)	550	27.0
Rio Mondo basin								
50047502	Rio Mondo at Bayamon, PR	Lat 18 23 51, long 66 09 22 Hydrologic unit 21010005. At bridge on Hwy 2, 700 ft (213 m) east of Hwy 2 and Calle Parque intersection, and 0.7 mi (1.2 km) south of sewage treatment plant.	7.59 (19.66)	3/08/83	1330	22.2 (0.63)	550	27.5
50047504	Quebrada Santa Catalina at Bayamon, PR	Lat 18 24 05, long 66 09 43 Hydrologic unit 21010005. 700 ft (213 m) downstream from bridge on Hwy 2 and 0.2 mi (0.3 km) upstream from mouth.	2.50 (6.47)	3/08/83	1015	0.67 (0.02)	1060	25.5
50047508	Cano de Quebrada Catalina at Bayamon, PR	Lat 18 24 27, long 66 09 38 Hydrologic unit 21010005. At bridge on new Hwy 167, 0.7 mi (1.1 km) north of Hwy 2 and Calle Parque intersec- tion, and 0.2 mi (0.3 km) upstream from sewage treat- ment plant.	0.65 (1.68)	3/08/83	1038	0.09 (0.002)	430	25.0

DISCHARGE AT PARTIAL-RECORD STATIONS

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA sq mi (sq km)	DATE	TIME	Q cu ft/s (cu m/s)	SP COND umhos	TEMPER- ATURE deg C
Rio Hondo basin								
50047525	Rio Hondo II near Bayamon, PR	Lat 18 25 19, long 66 10 38 Hydrologic unit 21010005. At bridge on Hwy 872 and 0.7 mi (1.1 km) downstream from bridge on Hwy 22.	3.18 (8.24)	3/08/83	1120	1.37 (0.04)	540	25.5
Rio de Bayamon basin								
50048510	Rio de Bayamon at Flood Channel at Bayamon, PR	Lat 18 24 29, long 66 09 04 Hydrologic unit 21010005. At bridge on Hwy 890, 1.0 mi (1.6 km) downstream from bridge on Hwy 2, and 3.2 mi (5.1 km) upstream from mouth.	73.2 (189.6)	3/10/83	0905	28.4 (0.80)	460	25.0
Rio Puerto Nuevo basin								
50049000	Rio Piedras at Rio Piedras, PR	Lat 18 23 48, long 66 03 24 Hydrologic unit 21010005. On left bank, at bridge on Hwy 1, 0.3 mi (0.5 km) southwest of Rio Piedras Plaza, and 0.4 mi (0.6 km) downstream from diversion for water supply.	12.5 (32.4)	3/04/83	0815	2.59 (0.07)	345	26.0
50049310	Quebrada Josefina at Pinero Avenue, PR	Lat 18 24 33, long 66 04 36 Hydrologic unit 21010005. At bridge on Pinero Ave, and 0.4 mi (0.6 km) upstream from junction with Rio Pie- dras.	19.0 (49.2)	3/04/83	0900	10.6 (0.30)	404	26.0
50049600	Quebrada Margarita at Caparra Heights, PR	Lat 18 24 33, long 66 06 18 Hydrologic unit 21010005. At bridge on Franklin D. Roosevelt Ave, at San Pa- tricio Plaza and Fort Bu- channan interchange with Hwy 2, and 0.1 mi (0.2 km) south of Caparra Heights.	1.82 (4.71)	3/04/83	1028	2.65 (0.08)	490	28.5
Quebrada Blasina basin								
50050300	Quebrada Blasina near Carolina, PR	Lat 18 23 27, long 65 58 28 Hydrologic unit 21010005. At bridge on Hwy 3, 1.4 mi (2.3 km) south of Valle A- rriba Heights, and 1.2 mi (1.9 km) west-southwest of Carolina.	2.96 (7.67)	2/28/83	0805	5.17 (0.15)	613	26.5
Rio Grande de Loiza basin								
50051010	Rio Grande de Loiza below Rio Emajagua, PR	Lat 18 07 23, long 65 59 18 Hydrologic unit 21010005. 200 ft (61 m) below junc- tion with Rio Emajagua and 400 ft (122 m) north of Hwy 181 and Hwy 745 intersection.	12.2 (31.6)	2/28/83	0945	15.9 (0.45)	140	24.5
50051140	Rio Grande de Loiza at Jagual, PR	Lat 18 09 29, long 65 58 48 Hydrologic unit 21010005. 200 ft (61 m) east of Jagual School on Hwy 181 and 1.7 mi (2.8 km) above junction with Rio Cayaguas.	17.8 (46.1)	2/28/83	1050	21.3 (0.60)	175	25.0
50052300	Rio Grande de Loiza at San Lorenzo North, PR	Lat 18 11 39, long 65 57 46 Hydrologic unit 21010005. Above sewage treatment plant on north side of San Lorenzo, 0.2 mi (0.3 km) northwest of the plaza, and 1.6 mi (2.6 km) downstream from Rio Cayaguas.	46.0 (119.1)	2/28/83	1222	42.9 (1.21)	215	27.5
50052700	Rio Grande de Loiza at Hwy 183, PR	Lat 18 12 22, long 65 59 23 Hydrologic unit 21010005. 2.1 mi (3.4 km) northwest of Plaza de San Lorenzo and 1.8 mi (2.9 km) downstream from bridge on Hwy 181.	50.9 (131.8)	2/28/83	1350	47.9 (1.36)	250	29.0
50052900	Quebrada las Bambuas at mouth, PR	Lat 18 13 31, long 66 00 58 Hydrologic unit 21010005. 300 ft (91 m) upstream from bridge on Hwy 183 and 900 ft (275 m) above junction with Rio Grande de Loiza.	2.33 (6.03)	3/03/83	1340	0.67 (0.02)	580	27.5
				7/26/83	1338	0.85 (0.02)	576	30.0

DISCHARGE AT PARTIAL-RECORD STATIONS

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Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA sq mi (sq km)	DATE	TIME	Q cu ft/s (cu m/s)	SP COND umhos	TEMPER- ATURE deg C
Rio Grande de Loiza basin								
50053050	Rio Turabo at Borinquen, PR	Lat 18 10 11, long 66 02 37 Hydrologic unit 21010005. At bridge on Hwy 765 and 1.2 mi (1.9 km) north of Escuela Anon.	7.79 (20.18)	3/03/83	0900	8.17 (0.23)	165	23.0
				7/26/83	0848	18.0 (0.51)	148	25.5
50053300	Quebrada Beatriz above Rio Turabo, PR	Lat 18 11 15, long 66 03 04 Hydrologic unit 21010005. 1,400 ft (425 m) downstream from bridge on Hwy 765 and 400 ft (120 m) above junction with Rio Turabo.	5.65 (14.63)	3/03/83	1005	3.35 (0.09)	285	24.5
				7/26/83	1000	4.29 (0.12)	274	27.0
50053500	Rio Turabo below Quebrada Beatriz, PR	Lat 18 11 22, long 66 03 02 Hydrologic unit 21010005. 0.9 mi (1.4 km) downstream from bridge on Hwy 765 and 400 ft (120 m) below junction with Quebrada Beatriz.	17.3 (44.8)	3/03/83	1100	13.3 (0.38)	250	26.0
				7/26/83	1049	23.9 (0.68)	223	28.5
50054500	Rio Turabo at Caguas, PR	Lat 18 13 36, long 66 01 40 Hydrologic unit 21010005. At bridge on Hwy 183, 0.9 mi (1.5 km) southeast of the plaza in Caguas, and 1.3 mi (2.1 km) upstream from Rio Grande de Loiza.	29.3 (75.9)	3/03/83	1245	9.27 (0.26)	370	28.0
				7/26/83	1242	23.2 (0.66)	279	30.0
50055310	Rio Caguitas above mouth, PR	Lat 18 15 22, long 66 01 06 Hydrologic unit 21010005. 0.5 mi (0.7 km) downstream from bridge on Hwy 30 and 0.4 mi (0.7 km) above junc- tion with Rio Grande de Loiza.	18.0 (46.6)	3/02/83	1205	14.5 (0.41)	850	28.5
				7/28/83	1055	15.9 (0.45)	621	29.0
50055410	Rio Bairoa at mouth, PR	Lat 18 15 47, long 66 01 09 Hydrologic unit 21010005. 0.8 mi (1.2 km) downstream from bridge on Hwy 30 and 0.4 mi (0.6 km) above junc- tion with Rio Grande de Loiza.	7.51 (19.45)	3/02/83	1340	3.37 (0.10)	560	30.0
				7/28/83	1142	4.15 (0.12)	460	29.0
50055500	Quebrada Honda at Las Torres, PR	Lat 18 13 15, long 65 49 57 Hydrologic unit 21010005. At bridge on Hwy 31, 100 ft (30 m) east of Hwy 31 and Hwy 936 intersection, and 1.8 mi (2.9 km) above junc- tion with Rio Gurabo.	1.15 (2.98)	2/28/83		DRY	-	-
				7/25/83	1225	0.11 (0.003)	902	28.0
50055600	Rio Gurabo at Ceiba Norte, PR	Lat 18 13 29, long 65 51 34 Hydrologic unit 21010005. 0.4 mi (0.6 km) downstream from bridge on Hwy 31 and 0.2 mi (0.4 km) below junc- tion with Quebrada Honda.	12.0 (31.1)	2/28/83	0930	2.20 (0.06)	-	27.0
				7/25/83	1130	10.8 (0.31)	291	28.5
50055700	Rio Gurabo at El Mango, PR	Lat 18 13 56, long 65 52 52 Hydrologic unit 21010005. 1.2 mi (2.0 km) upstream from bridge on Hwy 31 and 0.2 mi (0.4 km) above junc- tion with Quebrada Grande.	16.5 (42.7)	3/01/83	1130	3.56 (0.10)	485	28.0
				7/27/83	1425	7.89 (0.22)	425	25.0
50056000	Rio Valenciano near Las Piedras, PR	Lat 18 10 37, long 65 54 21 Hydrologic unit 21010005. At bridge on Hwy 183 (km 17.3), and 3.2 mi (5.1 km) west of Las Piedras.	6.85 (17.74)	3/01/83	0935	6.74 (0.19)	200	24.0
				7/27/83	1040	17.3 (0.49)	323	27.5
50056550	Rio Valenciano at mouth, PR	Lat 18 14 13, long 65 55 13 Hydrologic unit 21010005. 0.6 mi (1.0 km) downstream from bridge on Hwy 31 and 1,000 ft (305 m) above junc- tion with Rio Gurabo.	19.0 (49.2)	3/01/83	1255	12.8 (0.36)	430	28.0
				7/27/83	1635	25.7 (0.73)	360	25.0
50056600	Rio Gurabo near Juncos, PR	Lat 18 14 38, long 65 55 25 Hydrologic unit 21010005. At bridge on Hwy 185 and 0.4 mi (0.6 km) below junc- tion with Rio Valenciano.	50.0 (129.5)	3/01/83	1400	18.0 (0.51)	440	28.5
				7/28/83	1312	37.1 (1.05)	432	30.0
50057015	Rio Gurabo below Hwy 943, PR	Lat 18 15 50, long 65 58 41 Hydrologic unit 21010005. 0.6 mi (0.9 km) northeast of Plaza de Gurabo and 0.7 mi (1.2 km) downstream from bridge on Hwy 181.	62.4 (161.6)	3/04/83	1140	17.9 (0.51)	440	28.0
				7/28/83	1425	44.0 (1.25)	478	29.5

DISCHARGE AT PARTIAL-RECORD STATIONS

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA sq mi (sq km)	DATE	TIME	Q cu ft/s (cu m/s)	SP COND umhos	TEMPER- ATURE deg C
Rio Grande de Loiza basin								
50058400	Rio Canas above Lago Loiza, PR	Lat 18 17 34, long 66 02 33 Hydrologic unit 21010005. At bridge about 2000 ft (610 m) off Hwy 1, 1.0 mi (1.6 km) upstream from Lago Loiza, 1.0 mi (1.6 km) north of La Barras, and 4.0 mi (6.4 km) north of Caguas.	7.63 (19.76)	3/02/83	1020	3.54 (0.10)	300	25.0
				7/28/83	0955	3.80 (0.11)	342	26.0
50059000	Lago Loiza at Dam Site, PR	Lat 18 19 49, long 66 01 00 Hydrologic unit 21010005. At pump house at dam site and 1.9 mi (3.1 km) south of Trujillo Alto Plaza.	208 (539)	3/02/83	0910	5.84 (0.17)	300	25.0
				7/28/83	0856	5.48 (0.16)	216	27.0
50059200	Quebrada Grande at La Gloria, PR	Lat 18 20 28, long 65 59 20 Hydrologic unit 21010005, 400 ft (122 m) downstream from bridge on Hwy 181, 200 ft (61 m) below junction with Quebrada Grande, and 1.5 mi (2.4 km) above junction with Rio Grande de Loiza.	12.0 (31.1)	2/28/83	1405	2.30 (0.07)	576	28.0
				7/29/83	1305	5.20 (0.15)	500	28.0
50060000	Rio Grande de Loiza above Carolina, PR	Lat 18 22 10, long 65 57 50 Hydrologic unit 21010005. 0.5 mi (0.8 km) west of Trujillo Bajo and 0.2 mi (0.3 km) northwest of intersection of Hwys 853 and 858.	230 (596)	2/28/83	1300	-	373	30.5
				7/29/83		-	Too	High
50060200	Quebrada Maracuta at Trujillo Bajo, PR	Lat 18 22 11, long 65 57 28 Hydrologic unit 21010005. At bridge on Hwy 853 and 0.3 mi (0.5 km) above junction with Rio Grande de Loiza.	10.2 (26.4)	2/28/83	1240	1.93 (0.05)	555	30.0
				7/29/83	1105	2.60 (0.07)	590	28.0
50061000	Rio Grande de Loiza at Carolina, PR	Lat 18 22 39, long 65 57 08 Hydrologic unit 21010005. At bridge on Hwy 3, 0.5 mi (0.8 km) southeast of Carolina Plaza, and 9.1 mi (14.6 km) upstream from mouth.	243 (629)	2/28/83	1245	-	400	30.5
				7/23/83	No	meas	Too	High
50061200	Rio Canovanillas at Carruzos, PR	Lat 18 19 03, long 65 54 16 Hydrologic unit 21010005. At bridge on road 500 ft (152 m) off Hwy 185, and 0.7 mi (1.1 km) east of Jesus T. Pinero School.	9.10 (23.57)	3/01/83	1255	2.58 (0.07)	556	29.5
				7/28/83	1245	2.18 (0.06)	510	30.0
50061500	Rio Canovanillas at Loiza, PR	Lat 18 22 44, long 65 55 00 Hydrologic unit 21010005. At bridge on Hwy 3, 0.9 mi (1.4 km) upstream from Rio Grande de Loiza, and 1.0 mi (1.6 km) west of Loiza.	16.5 (42.7)	3/01/83	1005	4.39 (0.12)	589	26.5
				7/28/83	0905	4.48 (0.13)	535	29.0
50061900	Rio Canovanillas at La Marina, PR	Lat 18 21 01, long 65 53 51 Hydrologic unit 21010005. 100 ft (30 m) east of Hwy 185 and 0.9 mi (1.5 km) downstream from bridge on Hwy 957.	14.6 (37.8)	3/01/83	1435	9.36 (0.27)	287	29.5
				7/28/83	1405	12.3 (0.35)	250	30.0
50062000	Rio Canovanillas at Loiza, PR	Lat 18 22 53, long 65 53 33 Hydrologic unit 21010005. At bridge on Hwy 958 and 0.3 mi (0.5 km) east of Loiza.	17.0 (44.0)	3/01/83	1115	2.26 (0.06)	298	27.0
				7/28/83	1035	6.19 (0.18)	246	29.0
Rio Herrera basin								
50062500	Rio Herrera near Colonia Dolores, PR	Lat 18 21 02, long 65 52 00 Hydrologic unit 21010005. On right bank, at bridge on Hwy 958, 2.0 mi (3.2 km) south of Colonia Dolores, and 3.2 mi (5.1 km) southwest of Rio Grande.	2.75 (7.12)	3/02/83	1235	2.58 (0.07)	225	25.0
				7/27/83	1445	3.77 (0.11)	217	28.0
50062800	Rio Herrera near Loiza, PR	Lat 18 22 48, long 65 51 33 Hydrologic unit 21010005. At bridge on Hwy 3, 1.9 mi (3.1 km) west of Rio Grande, and 2.8 mi (4.5 km) east of Loiza.	3.86 (10.00)	3/02/83	1120	2.88 (0.08)	270	26.5
				7/27/83	1125	3.99 (0.11)	257	29.0
50063000	Quebrada Cambalache near Loiza, PR	Lat 18 22 49, long 65 52 04 Hydrologic unit 21010005. At bridge on Hwy 3, 2.2 mi (3.5 km) east of Loiza, and 2.5 mi (4.0 km) west of Rio Grande.	1.32 (3.42)	3/02/83	1015	0.16 (0.004)	711	26.0
				7/27/83	1300	0.36 (0.01)	540	28.5

DISCHARGE AT PARTIAL RECORD STATIONS

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Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA sq mi (sq km)	DATE	TIME	Q cu ft/s (cu m/s)	SP COND umhos	TEMPER- ATURE deg C
Rio Espiritu Santo basin								
50063540	Rio Espiritu Santo at Camp Eliza Colberg, PR	Lat 18 20 22, long 65 49 42 Hydrologic unit 21010005. 3.1 mi (4.9 km) northwest of Pico El Yunque and 0.8 mi (1.3 km) below junction with Quebrada Sonadora.	5.27 (13.65)	3/03/83	1030	4.87 (0.14)	73	23.0
				7/26/83	No	Meas	Gate	Closed
50063850	Quebrada Jimenez near Rio Grande, PR	Lat 18 21 36, long 65 48 47 Hydrologic unit 21010005. 300 ft (91 m) upstream from Rio Espiritu Santo and 1.9 mi (3.1 km) southeast of Rio Grande.	3.63 (9.40)	3/04/83	1100	2.03 (0.06)	173	31.5
				7/26/83	0950	6.85 (0.19)	126	26.5
50064200	Rio Grande near El Verde, PR	Lat 18 20 43, long 65 50 30 Hydrologic unit 21010005. On left bank, 400 ft (120 m) upstream from bridge on Hwy 960, 500 ft (150 m) south- west of junction of Hwys 956 & 960, 1.1 mi (1.8 km) west of El Verde, and 2.7 mi (4.3 km) south of Rio Grande.	7.31 (18.93)	3/02/83	1500	5.57 (0.16)	-	28.5
				7/27/83	0905	12.7 (0.36)	131	26.0
50064500	Rio Grande at Rio Grande, PR	Lat 18 22 40, long 65 49 28 Hydrologic unit 21010005. At bridge on Hwy 3, 0.5 mi (0.8 km) southeast of Rio Grande, and 0.8 mi (1.3 km) upstream from Rio Espiritu Santo.	10.4 (26.9)	3/02/83	1355	2.53 (0.07)	-	27.5
				7/27/83	1010	5.72 (0.16)	185	28.0
50064900	Quebrada Juan Gonzalez near Rio Grande, PR	Lat 18 22 37, long 65 48 04 Hydrologic unit 21010005. At bridge on Hwy 955, 800 ft (244 m) upstream from bridge on Hwy 3, and 1.5 mi (2.4 km) above junction with Rio Es- piritu Santo.	2.17 (5.62)	3/03/83	1245	0.97 (0.03)	304	31.0
				7/26/83	1115	3.54 (0.10)	260	26.0
Rio Mameyes basin								
50065500	Rio Mameyes near Sabana, PR	Lat 18 19 46, long 65 45 04 Hydrologic unit 21010005. On left bank, at bridge on Hwy 988, 1.4 mi (2.3 km) west of Sabana, 2.0 mi (3.2 km) downstream from Rio de la Mina, and 3.2 mi (5.1 km) southwest of Mameyes.	6.88 (17.82)	3/03/83	1505	9.60 (0.27)	98	31.5
				7/26/83	1310	21.2 (0.60)	104	27.0
50066000	Rio Mameyes at Mameyes, PR	Lat 18 22 30, long 65 45 50 Hydrologic unit 21010005. At bridge on Hwy 3, 0.5 mi (0.8 km) downstream from Quebrada Anon, 0.5 mi (0.8 km) east of Mameyes (Palmer Post Office), and 3.1 mi (5.0 km) west of Luquillo.	13.5 (35.0)	3/03/83	1345	5.74 (0.16)	148	31.0
				7/26/83	1350	31.6 (0.89)	150	29.0
Quebrada Mata de Platano basin								
50066500	Quebrada Mata de Platano near Luquillo, PR	Lat 18 22 52, long 65 43 16 Hydrologic unit 21010005. At bridge on Hwy 3, 0.4 mi (0.6 km) northwest of Lu- quillo Plaza, and 0.3 mi (0.5 km) above mouth.	2.38 (6.16)	2/28/83	0945	0	30200	26.5
				7/25/83	1100	0	2720	29.5
Rio Sabana basin								
50068000	Rio Sabana at Luquillo, PR	Lat 18 22 15, long 65 42 51 Hydrologic unit 21010005. At Hwy 3 bridge and 0.4 mi (0.6 km) southwest of Luquillo.	7.05 (18.26)	2/28/83	1110	4.34 (0.12)	645	27.0
				7/25/83	1220	15.0 (0.42)	153	28.0
Rio Pitahaya basin								
50069000	Rio Pitahaya near Luquillo, PR	Lat 18 21 32, long 65 42 03 Hydrologic unit 21010005. At bridge on Hwy 3, 1.5 mi (2.6 km) southeast of Luquillo, and 1.7 mi (2.7 km) upstream from Rio Sabana.	4.51 (11.68)	2/28/83	1200	4.36 (0.12)	182	27.5
				7/25/83	1325	8.91 (0.25)	160	31.0
Rio Juan Martin basin								
50069300	Tributary to Rio Juan Martin at Hwy 3, PR	Lat 18 21 14, long 65 40 59 Hydrologic unit 21010005. At bridge on Hwy 3 and 200 ft (61 m) above junction with Rio Juan Martin.	0.53 (1.37)	2/28/83		DRY	-	-
				7/25/83		DRY	-	-
50069350	Rio Juan Martin above mouth, PR	Lat 18 21 44, long 65 40 35 Hydrologic unit 21010005. 0.8 mi (1.2 km) downstream from bridge on Hwy 3 and 0.4 mi (0.7 km) above mouth.	2.41 (6.24)	2/28/83	1430	0.60 (0.02)	460	30.0
				7/26/83	1022	1.14 (0.03)	352	30.0

DISCHARGE AT PARTIAL RECORD STATIONS

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA sq mi (sq km)	DATE	TIME	Q cu ft/s (cu m/s)	SP COND umhos	TEMPER- ATURE deg C
Rio Juan Martin basin								
50069400	Quebrada Fajardo at Hwy 194, PR	Lat 18 20 49, long 65 39 55 Hydrologic unit 21010005. At bridge on Hwy 194, 0.5 mi (0.8 km) east of Hwy 194 and Hwy 3 intersection, and 1.5 mi (2.4 km) above mouth.	1.16 (3.00)	3/01/83	0948	0.12 (0.003)	585	27.0
				7/26/83	1122	0.44 (0.01)	548	30.5
Rio Fajardo basin								
50071200	Rio Fajardo at Vapor below Confluence, PR	Lat 18 18 28, long 65 40 10 Hydrologic unit 21010005. 1.7 mi (2.8 km) southwest of Plaza de Fajardo and 1.4 mi (2.3 km) upstream from bridge on Hwy 3.	19.4 (50.2)	3/02/83	0805	7.65 (0.22)	152	25.5
				7/26/83	No Meas	Access Road Closed		
50072000	Rio Fajardo at Fajardo, PR	Lat 18 19 11, long 65 39 07 Hydrologic unit 21010005. At bridge on Hwy 3, 0.5 mi (0.8 km) south of Fajardo, and 2.5 mi (4.0 km) upstream from mouth.	21.6 (55.9)	3/01/83	1238	11.6 (0.33)	158	29.5
				7/26/83	1337	34.9 (0.99)	152	33.0
50072600	Quebrada Mata Redonda near Fajardo, PR	Lat 18 19 34, long 65 39 00 Hydrologic unit 21010005. At bridge on Hwy 3, 1.2 mi (2.0 km) south of Plaza de Fajardo, and 1.7 mi (2.7 km) above junction with Rio Fajardo.	1.34 (3.47)	3/02/83		DRY	-	-
				7/26/83	1015	0.10 (0.002)	460	31.5
Rio Demajagua basin								
50072700	Rio Demajagua at Demajagua, PR	Lat 18 17 10, long 65 38 21 Hydrologic unit 21010005. At bridge on Hwy 3, 200 ft (61 m) south of Hwy 3 and Hwy 982 intersection, and 0.3 mi (0.5 km) above mouth.	1.61 (4.17)	3/02/83	0912	0.39 (0.01)	323	25.0
				7/27/83	1055	0.55 (0.02)	305	27.0
Quebrada Ceiba basin								
50072800	Quebrada Ceiba at Ceiba, PR	Lat 18 16 25, long 65 38 25 Hydrologic unit 21010005. At bridge on Hwy 3, 0.8 mi (1.3 km) northeast of Plaza de Ceiba, and 0.8 mi (1.3 km) above mouth.	2.15 (5.57)	3/02/83	1347	1.01 (0.03)	520	32.0
				7/27/83	1135	1.69 (0.05)	548	33.0
Quebrada Aguas Claras basin								
50072900	Quebrada Aguas Claras near Ceiba, PR	Lat 18 16 03, long 65 38 20 Hydrologic unit 21010005. At bridge on Hwy 979 and 0.6 mi (0.9 km) above mouth.	0.83 (2.15)	3/02/83	0942	0.64 (0.02)	490	26.0
				7/27/83	1211	0.76 (0.02)	550	31.0
Rio Dagua basin								
50073200	Rio Dagua at Dagua, PR	Lat 18 13 42, long 65 40 39 Hydrologic unit 21010005. At railroad bridge, 0.1 mi (0.2 km) downstream from bridge on Hwy 3, 0.3 mi (0.5 km) east of Dagua, and 2.8 mi (4.5 km) upstream from mouth.	2.26 (5.85)	3/02/83	1125	0.59 (0.02)	355	29.0
				7/27/83	1342	1.67 (0.05)	413	30.5
50073300	Rio Dagua above mouth, PR	Lat 18 13 36, long 65 39 31 Hydrologic unit 21010005. At bridge 650 ft (200 m) downstream from bridge on Langley Drive and 0.9 mi (1.4 km) above mouth.	4.29 (11.11)	3/02/83		No Flow	540	28.0
				7/27/83		Ponded	-	-
Quebrada Palma basin								
50073400	Quebrada Palma at Dagua, PR	Lat 18 13 16, long 65 41 30 Hydrologic unit 21010005. At bridge on Hwy 3, 0.8 mi (1.3 km) southwest of Dagua, and 1.7 mi (2.7 km) upstream from mouth.	4.84 (12.54)	3/02/83	1230	1.47 (0.04)	350	28.0
				7/28/83	1302	3.08 (0.09)	285	28.5
Quebrada Botija basin								
50073500	Quebrada Botija at Hwy 31, PR	Lat 18 12 55, long 65 42 25 Hydrologic unit 21010005. At bridge on Hwy 31, 500 ft (152 m) upstream from bridge on Hwy 3, and 1.6 mi (2.6 km) above mouth.	1.10 (2.85)	3/02/83	1255	0.08 (0.002)	379	28.5
				7/28/83	1340	0.43 (0.01)	420	29.0

DISCHARGE AT PARTIAL-RECORD STATIONS

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Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA sq mi (sq km)	DATE	TIME	Q cu ft/s (cu m/s)	SP COND umhos	TEMPER- ATURE deg C
Rio Santiago basin								
50074000	Rio Santiago at Naguabo, PR	Lat 18 12 57, long 65 43 41 Hydrologic unit 21010005. At bridge on Hwy 31, 0.3 mi (0.5 km) northeast of Nagua- bo, 0.4 mi (0.6 km) downstream from Quebrada Grande, and 2.2 mi (3.5 km) upstream from mouth.	4.99 (12.92)	3/03/83	0915	1.72 (0.05)	215	26.5
				7/28/83	1431	4.56 (0.13)	165	31.0
50074010	Tributary to Rio Santiago at Hwy 192, PR	Lat 18 12 04, long 65 43 33 Hydrologic unit 21010005. At bridge on Hwy 192 and 0.7 mi (1.1 km) above junc- tion with Rio Santiago.	1.08 (2.80)	3/03/83	0930	No	396	26.0
				7/28/83	1520	Flow	412	29.5
Rio Blanco basin								
50077000	Rio Blanco at Rio Blanco, PR	Lat 18 13 09, long 65 46 57 Hydrologic unit 21010005. At bridge on Hwy 31 and 0.4 mi (0.6 km) east of Rio Blanco.	17.6 (45.6)	2/28/83	1050	2.75 (0.08)	-	28.5
				7/25/83	1335	35.0 (0.99)	121	29.0
50077500	Rio Blanco below La Fe, PR	Lat 18 12 17, long 65 45 31 Hydrologic unit 21010005. 1.9 mi (3.0 km) downstream from bridge on Hwy 31 and 0.7 mi (1.1 km) south of Hwy 31 and Hwy 970 intersec- tion.	20.8 (53.9)	2/28/83	1215	7.79 (0.22)	-	27.0
				7/26/83	1035	32.0 (0.91)	171	27.5
50077600	Quebrada Vaca below La Fe, PR	Lat 18 12 25, long 65 45 04 Hydrologic unit 21010005. 1.1 mi (1.8 km) downstream from bridge on Hwy 31 and 0.8 mi (1.4 km) southeast of Hwy 31 and Hwy 970 intersec- tion.	3.47 (8.99)	2/28/83	1315	0.85 (0.02)	-	29.0
				7/26/83	0945	3.48 (0.10)	273	29.5
50077700	Rio Blanco at mouth, PR	Lat 18 11 17, long 65 43 47 Hydrologic unit 21010005. At bridge on Hwy 3, at mouth, and 0.8 mi (1.2 km) south- west of Hwy 3 and Hwy 192 intersection.	27.2 (70.4)	2/28/83	0945	Too Deep	23000	28.0
				7/28/83	1421	69.6 (1.97)	2850	30.0
Rio Anton Ruiz basin								
50078510	Rio Anton Ruiz at Pasto Viejo, PR	Lat 18 10 26, long 65 47 05 Hydrologic unit 21010005. At bridge on unimproved road, 300 ft (91 m) north of Hwy 925, and 1.5 mi (2.4 km) north of Hwy 3 and Hwy 925 intersection.	5.75 (14.89)	2/28/83	1500	1.90 (0.05)	-	28.0
				7/26/83	1215	2.99 (0.08)	344	31.5
50078700	Rio Anton Ruiz at mouth, PR	Lat 18 10 35, long 65 44 23 Hydrologic unit 21010005. At bridge on Hwy 3, 1.8 mi (2.9 km) southwest of Hwy 3 and Hwy 192 intersection, and 200 ft (61 m) above mouth.	7.99 (20.69)	2/28/83	0945	Ponded	23400	28.0
				7/28/83	1645	Ponded	17500	30.0
Rio Humacao basin								
50081000	Rio Humacao at Las Piedras, PR	Lat 18 10 27, long 65 52 11 Hydrologic unit 21010005. On left bank about 60 ft (18.3 m) off bridge on Hwy 921 (km 1.1), 0.6 mi (1.0 km) south- east of junction with Hwy 30, 0.8 mi (1.3 km) down- stream from Quebrada Blanca, and 0.8 mi (1.3 km) south of Las Piedras.	6.65 (17.22)	3/01/83	1325	9.38 (0.27)	-	27.0
				7/26/83	1505	18.9 (0.54)	164	29.5
50081500	Rio Humacao near Humacao, PR	Lat 18 09 37, long 65 50 41 Hydrologic unit 21010005. At bridge on Hwy 914 and 1.3 mi (2.1 km) northwest of Humacao.	9.23 (23.91)	3/01/83	1230	7.23 (0.20)	-	25.0
				7/26/83	1420	15.3 (0.43)	197	31.0
50081900	Quebrada Mariana at Patagonia, PR	Lat 18 08 46, long 65 49 40 Hydrologic unit 21010005. At bridge on Hwy 908 and 450 ft (137 m) above junction with Rio Humacao.	5.76 (14.92)	3/01/83	1110	5.63 (0.16)	-	28.0
				7/26/83	1310	10.8 (0.31)	252	31.0
50082500	Rio Humacao Flood Channel near mouth, PR	Lat 18 07 28, long 65 47 23 Hydrologic unit 21010005. 3.1 mi (4.9 km) southeast of Plaza de Humacao and 0.6 mi (0.9 km) above mouth.	25.1 (65.0)	3/01/83	0950	23.7 (0.67)	353	27.5
				7/28/83	1220	37.0 (1.05)	375	32.0

DISCHARGE AT PARTIAL-RECORD STATIONS

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA sq mi (sq km)	DATE	TIME	Q cu ft/s (cu m/s)	SP COND umhos	TEMPER- ATURE deg C
Rio Candelero basin								
50082600	Rio Candelero at Hwy 906, PR	Lat 18 06 17, long 65 48 54 Hydrologic unit 21010005. At bridge on Hwy 906, 1.4 mi (2.2 km) downstream from bridge on Hwy 3, and 1.7 mi (2.7 km) above mouth.	3.65 (9.45)	3/02/83	0950	0.61 (0.02)	-	27.0
				7/28/83	1115	1.97 (0.06)	294	30.5
50082700	Rio Candelero at mouth, PR	Lat 18 06 09, long 65 47 43 Hydrologic unit 21010005. At bridge on unimproved road, 1.3 mi (2.1 km) downstream from bridge on Hwy 906, and 0.4 mi (0.7 km) above mouth.	4.77 (12.35)	3/02/83	1030	0.05 (0.001)	-	29.5
				7/28/83	1035	2.01 (0.06)	301	32.0
Rio Guayanes basin								
50082800	Rio Guayanes near Colonia Laura, PR	Lat 18 04 55, long 65 57 32 Hydrologic unit 21010005. On left bank, 1000 ft (305 m) south of Hwy 182, 4.5 mi (7.2 km) west of Colonia Laura, and 5.8 mi (9.3 km) north- northwest of Yabucoa.	4.69 (12.15)	3/02/83	0835	7.96 (0.23)	150	23.5
				7/28/83	1047	16.6 (0.47)	140	26.0
50082810	Rio Guayanes below Rio Arenas, PR	Lat 18 04 44, long 65 56 54 Hydrologic unit 21010005. 100 ft (30 m) below junction with Rio Arenas and 2.8 mi (4.6 km) above junction with Quebrada Guayabo.	7.44 (19.27)	3/01/83	0925	9.17 (0.26)	147	23.5
				7/28/83	No	Meas	Made	
50083400	Rio Guayanes at Calabazas, PR	Lat 18 03 33, long 65 54 03 Hydrologic unit 21010005. At bridge on Hwy 182 and 1.4 mi (2.2 km) above junction with Rio Limones.	17.2 (44.5)	3/01/83	1045	23.8 (0.67)	165	25.0
				7/28/83	1342	46.5 (1.32)	158	27.0
50084000	Rio Limones near Yabucoa, PR	Lat 18 04 35, long 65 53 42 Hydrologic unit 21010005. At bridge on Hwy 904, 1.2 mi (2.0 km) upstream from Rio Guayanes, and 2.0 mi (3.2 km) northwest of Yabucoa.	7.89 (12.70)	3/01/83	1505	11.2 (0.32)	169	27.0
				7/28/83	0932	21.0 (0.59)	166	26.0
50085000	Rio Guayanes at Yabucoa, PR	Lat 18 03 42, long 65 52 33 Hydrologic unit 21010005. At bridge on Hwy 3, 0.5 mi (0.8 km) downstream from Rio Li- mones, and 0.7 mi (1.1 km) north of Yabucoa.	26.5 (68.6)	3/01/83	1350	31.6 (0.89)	125	25.0
				7/28/83	1507	73.1 (2.07)	160	28.5
50085100	Rio Guayanes at Central Roig, PR	Lat 18 03 57, long 65 52 22 Hydrologic unit 21010005. At abandonend lake control structure, 0.2 mi (0.3 km) northeast of Central Roig, 1.0 mi (1.6 km) downstream from Rio Limones, and 1.0 mi (1.6 km) northeast of Yabucoa.	26.6 (68.9)	3/03/83	1030	28.2 (0.80)	-	23.0
				7/27/83	0950	70.7 (2.00)	165	26.5
50085700	Rio Guayanes near mouth near Playa de Guayanes, PR	Lat 18 04 16, long 65 50 14 Hydrologic unit 21010005. At dirt road crossing, south of Hwy 906, and 3.1 mi (5.0 km) northeast of Yabucoa.	27.6 (71.5)	3/02/83	1410	30.9 (0.87)	-	29.0
				7/27/83	1250	68.3 (1.93)	157	29.0
50086000	Rio del Ingenio near Yabucoa, PR	Lat 18 05 03, long 65 51 27 Hydrologic unit 21010005. At bridge on Hwy 3, 0.2 mi (0.3 km) upstream from Quebrada Cortadera and Aguacater, and 2.6 mi (4.2 km) northeast of Yabucoa.	2.46 (6.37)	3/03/83	1325	2.03 (0.06)	-	28.0
				7/27/83	1135	6.83 (0.19)	194	29.5
50086300	Rio del Ingenio near Playa de Guayanes, PR	Lat 18 04 20, long 65 50 02 Hydrologic unit 21010005. 1.8 mi (2.9 km) downstream from bridge on Hwy 3 and 0.6 mi (1.0 km) above junc- tion with Rio Guayanes.	11.5 (29.8)	3/02/83	1305	4.66 (0.13)	-	30.0
				7/28/83	0925	11.1 (0.31)	270	28.5
50086500	Rio Guayanes at Playa de Guayanes, PR	Lat 18 03 45, long 65 49 42 Hydrologic unit 21010005. At old railroad crossing, 0.2 mi (0.3 km) from mouth, 0.4 mi (0.6 km) west of Pla- ya de Guayanes, and 3.5 mi (5.6 km) northeast of Yabu- coa.	34.0 (88.1)	3/02/83	1210	36.4 (1.03)	166	28.5
				7/27/83	1350	88.2 (2.50)	155	30.0

DISCHARGE AT PARTIAL-RECORD STATIONS

Low-flow partial-record stations--Continued

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STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA sq mi (sq km)	DATE	TIME	Q cu ft/s (cu m/s)	SP COND umhos	TEMPER- ATURE deg C
Cano Santiago basin								
50087100	Cano Santiago at Hwy 3, PR	Lat 18 03 25, long 65 52 33 Hydrologic unit 21010005. At bridge on Hwy 3, 0.5 mi (0.8 km) north of Plaza de Yabucoa, and 0.3 mi (0.5 km) below junc- tion with Quebrada Aguas Largas.	3.81 (9.87)	3/01/83	1205	1.92 (0.05)	323	26.0
				7/28/83	1602	3.60 (0.10)	268	28.0
50087200	Cano Santiago near Central Roig, PR	Lat 18 03 18, long 65 50 59 Hydrologic unit 21010005. At service road and railroad bridge, 1.8 mi (2.9 km) east of Central Roig, and 2.0 mi (3.2 km) east of Yabucoa.	6.04 (15.64)	3/03/83	1205	4.27 (0.12)	-	27.5
				7/28/83	1045	7.19 (0.20)	360	29.0
Rio Maunabo basin								
50091000	Rio Maunabo at Maunabo, PR	Lat 18 00 24, long 65 54 19 Hydrologic unit 21010005. At bridge on Hwy 3, 0.4 mi (0.6 km) southwest of Mau- nabo, and 1.3 mi (2.1 km) upstream from mouth.	12.4 (32.1)	3/02/83	1000	8.14 (0.23)	250	26.5
				7/28/83	1732	19.8 (0.56)	218	28.5
Rio Jacaboa basin								
50091500	Rio Jacaboa at Hacienda San Isidro, PR	Lat 17 58 48, long 65 58 03 Hydrologic unit 21010004. At bridge on Hwy 3, 0.4 mi (0.6 km) upstream from mouth, 0.4 mi (0.6 km) east of Ha- cienda San Isidro, and 4.8 mi (7.7 km) southwest of Maunabo.	5.23 (13.5)	3/02/83	1115	0.39 (0.01)	330	28.5
				7/27/83	0915	3.79 (0.11)	263	27.0
Rio Chico basin								
50091800	Rio Chico at Providencia, PR	Lat 17 59 16, long 66 00 18 Hydrologic unit 21010004. At flat low bridge 200 ft (61 m) south of Hwy 3, 0.5 mi (0.8 km) above mouth, and 1.5 mi (2.4 km) south- east of Patillas.	4.93 (12.77)	3/02/83	1225	0.64 (0.02)	1200	30.5
				7/27/83	1010	0.34 (0.01)	660	27.0
Rio Grande de Patillas basin								
50091950	Rio Grande de Patillas below Quebrada Sonadora, PR	Lat 18 03 48, long 66 02 57 Hydrologic unit 21010004. 1,300 ft (395 m) downstream from bridge on Hwy 134 and 1,000 ft (305 m) below junc- tion with Quebrada Sonadora.	8.75 (22.66)	3/03/83	1340	9.47 (0.27)	140	26.0
				7/27/83	1415	28.8 (0.82)	138	27.0
50094200	Rio Grande de Patillas at Patillas, PR	Lat 18 00 15, long 66 01 27 Hydrologic unit 21010004. At bridge on Hwy 3, 0.7 mi (1.1 km) west of Patillas, and 1.9 mi (3.1 km) upstream from mouth.	27.9 (72.3)	3/02/83	1410	0.22 (0.01)	552	33.5
				7/27/83	1515	25.0 (0.71)	165	32.0
50094300	Rio Grande de Patillas at Providencia, PR	Lat 17 59 20, long 66 00 47 Hydrologic unit 21010004. At abandoned railroad bridge, 0.5 mi (0.8 km) above mouth, and 0.6 mi (1.0 km) west of Providencia.	29.0 (75.1)	3/03/83	0910	0.89 (0.03)	315	26.0
				7/27/83	1142	28.6 (0.81)	176	30.0
Rio Nigua basin								
50094500	Rio Nigua at Arroyo, PR	Lat 17 58 10, long 66 03 41 Hydrologic unit 21010004. At bridge on Hwy 178, 0.2 mi (0.3 km) north of Arroyo, and 3.7 mi (6.0 km) east of Guayama.	8.04 (20.82)	3/03/83	1015	0.10 (0.003)	900	28.0
				7/27/83	1620	0.80 (0.02)	610	31.5
Quebrada Salada basin								
50094510	Quebrada Salada near Arroyo, PR	Lat 18 58 50, long 66 04 23 Hydrologic unit 21010004. At bridge on Hwy 3 and 0.9 mi (1.4 km) upstream from mouth.	0.76 (1.97)	3/03/83	1105	0.03 (0.001)	220	27.5
				7/27/83	1700	0.09 (0.003)	2200	30.0
Quebrada Corazon basin								
50094520	Quebrada Corazon near Arroyo, PR	Lat 18 58 58, long 66 04 41 Hydrologic unit 21010004. At bridge on Hwy 3 and 1.0 mi (1.6 km) above mouth.	4.29 (11.11)	3/03/83	1155	0.08 (0.002)	850	27.0
				7/29/83	1332	3.08 (0.09)	590	27.0

DISCHARGE AT PARTIAL-RECORD STATIONS

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA sq mi (sq km)	DATE	TIME	Q cu ft/s (cu m/s)	SP COND umhos	TEMPER- ATURE deg C
Rio Guamani basin								
50095500	Rio Guamani near Guayama, PR	Lat 17 57 30, long 66 08 20 Hydrologic unit 21010004. At railroad bridge, 0.5 mi (0.8 km) downstream from Hwy 3, 1.2 mi (1.9 km) up- stream from mouth, and 2.5 mi (4.0 km) southwest of Guayama.	12.3 (31.9)	3/07/83	1150	1.67 (0.05)	395	28.0
Rio Melania basin								
50095900	Rio Melania near Jobos, PR	Lat 17 57 51, long 66 59 30 Hydrologic unit 21010004. 0.6 mi (1.0 km) upstream from bridge on Hwy 3.	3.51 (9.09)	3/07/83	1215	0.02 (0.001)	550	28.0
Rio Seco basin								
50097800	Rio Seco near Central Guamani, PR	Lat 17 58 06, long 66 10 52 Hydrologic unit 21010004. At bridge on Hwy 3, 0.2 mi (0.3 km) north of Central Guamani, and 1.2 mi (1.9 km) northwest of Jobos.	11.1 (28.7)	3/07/83	1300	1.11 (0.03)	490	30.0
Rio Salinas (Nigua) basin								
50100700	Rio Majada at Rabo del Buey, PR	Lat 18 02 17, long 66 14 27 Hydrologic unit 21010004. At bridge on Hwy 1, at Rabo del Buey, 200 ft (61 m) upstream from Rio Lapa, and 5.6 mi (9.0 km) northeast of Sali- nas.	22.2 (57.5)	3/07/83	1025	0.27 (0.01)	660	24.5
50102000	Rio Salinas at Salinas, PR	Lat 17 58 42, long 66 18 17 Hydrologic unit 21010004. At bridge on Hwy 1 and 0.4 mi (0.6 km) west of Salinas Plaza.	52.4 (135.7)	3/07/83		DRY	-	-
Rio Jueyes basin								
50103000	Rio Jueyes near Jauca, PR	Lat 17 58 45, long 66 20 20 Hydrologic unit 21010004. At bridge on Hwy 1, 1.8 mi (2.9 km) east of Jauca, and 2.7 mi (4.3 km) west of Salinas Plaza.	8.56 (22.17)	3/07/83		DRY	-	-
Rio Coamo basin								
50107000	Rio Coamo near Santa Isabel, PR	Lat 17 58 36, long 66 25 10 Hydrologic unit 21010004. At bridge on Hwy 1, at Valaz- quez, and 1.1 mi (1.8 km) northwest of Santa Isabel Plaza.	69.0 (178.7)	3/07/83		DRY	-	-
Rio Descalabrado basin								
50108500	Rio Descalabrado near Santa Isabel, PR	Lat 17 59 34, long 66 26 35 Hydrologic unit 21010004. At bridge on Hwy 1, 0.9 mi (1.4 km) upstream from mouth, and 3.1 mi (5.0 km) northwest of Santa Isabel.	18.1 (46.9)	3/07/83	1125	0.15 (0.004)	856	27.5
Rio Canas basin								
50109500	Rio Canas near Santa Isabel, PR	Lat 17 59 39, long 66 28 35 Hydrologic unit 21010004. At bridge on Hwy 1, 0.5 mi (0.8 km) from mouth, 0.6 mi (1.0 km) east of Pastillo, and 5.1 mi (8.2 km) northwest of Santa Isabel Plaza.	6.38 (16.52)	3/07/83		DRY	-	-
Rio Jacaguas basin								
50112000	Rio Jacaguas at Arus, PR	Lat 18 00 05, long 66 31 50 Hydrologic unit 21010004. At bridge on Hwy 1, at Arus, and 4.0 mi (6.4 km) south of Juana Diaz.	59.3 (153.6)	3/07/83		DRY	-	-
Rio Inabon basin								
50113450	Rio Inabon near Arus, PR	Lat 18 00 22, long 66 33 13 Hydrologic unit 21010004. At bridge on Hwy 1, 0.9 mi (1.4 km) east of Ponce Mu- nicipal Airport terminal, and 1.7 mi (2.7 km) west of Arus.	30.2 (78.2)	3/08/83	0945	0.06 (0.002)	1443	27.0

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA sq mi (sq km)	DATE	TIME	Q cu ft/s (cu m/s)	SP COND umhos	TEMPER- ATURE deg C
Rio Bucana basin								
50114600	Rio Bucana at Ponce, PR	Lat 18 00 28, long 66 35 36 Hydrologic unit 21010004. At bridge on Hwy 1, 0.2 mi (0.3 km) east of intersection of Hwys 1 and 2, 1.5 mi (2.4 km) east of Plaza Degatau in Ponce, and 3.1 mi (5.0 km) upstream from mouth.	27.3 (70.7)	3/08/83	1115	5.72 (0.16)	343	26.0
Rio Portugues basin								
50116500	Rio Portugues at Hwy 2 by-pass at Ponce, PR	Lat 17 59 52, long 66 36 52 Hydrologic unit 21010004. On pier at bridge on Hwy 2 by-pass, 1.1 mi (1.8 km) south of Plaza Degatau, and 2.0 mi (3.2 km) upstream from mouth.	20.5 (53.1)	3/08/83	1215	3.67 (0.10)	546	30.0
Rio Matilde basin								
50116970	Rio Canas below Las Americas Avenue, PR	Lat 18 00 37, long 66 38 23 Hydrologic unit 21010004. 0.5 mi (0.8 km) upstream from junction with Rio Pas- tillo.	8.39 (21.73)	3/03/83	0820	10.7 (0.30)	-	-
50119200	Quebrada del Agua at Playa de Ponce, PR	Lat 17 59 13, long 66 38 22 Hydrologic unit 21010004. 700 ft (213 m) upstream from junction with Rio Matilde.	6.45 (16.71)	3/03/83		DRY	-	-
Rio Tallaboa basin								
50122000	Rio Tallaboa at Tallaboa, PR	Lat 18 00 31, long 66 43 49 Hydrologic unit 21010004. At bridge at Hacienda Dolores, 700 ft (213 m) upstream from Hwy 2, 0.8 mi (1.3 km) north- west of Tallaboa, and 7.6 mi (12.2 km) west of Plaza De- gatau in Ponce.	31.50 (81.6)	3/03/83		DRY	-	-
Rio Macana basin								
50122900	Rio Macana at Magas Arriba, PR	Lat 18 01 00, long 66 45 57 Hydrologic unit 21010004. 1.8 mi (2.8 km) east of Pla- za de Guayanilla, 200 ft (60 m) upstream from bridge on Hwy 2, and 0.6 mi (1.0 km) upstream from mouth.	8.96 (23.21)	3/02/83		DRY	-	-
Rio Yauco basin								
50126500	Rio Yauco at Pueblo Sur at Yauco, PR	Lat 18 02 08, long 66 50 51 Hydrologic unit 21010004. At bridge on Hwy 2, 0.1 mi (0.2 km) east of Yauco, and 0.6 mi (1.0 km) upstream from Quebrada Berrenchin.	33.0 (85.5)	3/02/83		DRY	-	-
Rio Loco basin								
50129200	Quebrada Susua at Palomas, PR	Lat 18 01 19, long 66 52 28 Hydrologic unit 21010004. At bridge on Hwy 2, 0.5 mi (0.8 km) north of Palomas, and 1.9 mi (3.1 km) southwest of Yauco.	3.23 (8.37)	3/02/83		DRY	-	-
50129500	Rio Loco near Guanica, PR	Lat 17 59 38, long 66 54 59 Hydrologic unit 21010004. 90 ft (27 m) upstream from sheet piling drop structu- re, 900 ft (274 m) upstream from Lajas Drainage Canal, 7.2 mi (11.6 km) downstream from Lago Loco, and 1.5 mi (2.4 km) north of Guanica.	21.0 (54.4)	3/02/83		DRY	-	-
Quebrada Boqueron basin								
50130000	Quebrada Boqueron at Boqueron, PR	Lat 18 01 40, long 67 09 35 Hydrologic unit 21010004. At bridge on Hwy 101 and 0.9 mi (1.4 km) above mouth.	4.35 (11.27)	3/02/83		Ponded	-	-
Rio Guanajibo basin								
50132010	Rio Guanajibo below San German, PR	Lat 18 05 28, long 67 02 38 Hydrologic unit 21010003. 0.5 mi (0.8 km) north of Plaza de San German and 1,500 ft (457 m) downstream from bridge on Hwy 360.	36.1 (93.5)	3/02/83	1025	5.11 (0.14)	-	-

DISCHARGE AT PARTIAL-RECORD STATIONS

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA sq mi (sq km)	DATE	TIME	Q cu ft/s (cu m/s)	SP COND umhos	TEMPER- ATURE deg C
Rio Yaguez basin								
50138900	Rio Yaguez at Balboa, PR	Lat 18 12 13, long 67 07 55 Hydrologic unit 21010003. 1,200 ft (366 m) upstream from bridge on Balboa St. and 1.6 mi (2.6 km) up- stream from mouth.	12.2 (31.6)	3/01/83	0820	3.80 (0.11)	-	-
Rio Grande de Anasco basin								
50146070	Rio Grande de Anasco at Anasco Arriba, PR	Lat 18 16 21, long 66 08 33 Hydrologic unit 21010003. 0.8 mi (1.2 km) south of Anasco and 3.0 mi (4.8 km) upstream from mouth.	176 (456)	3/01/83	1425	75.3 (2.13)	-	-
Rio Grande basin								
50146200	Rio Grande near Rincon, PR	Lat 18 22 06, long 67 13 56 Hydrologic unit 21010003. At bridge on Hwy 115, 1.2 mi (1.9 km) upstream from mouth, and 2.2 mi (3.5 km) northeast of Rincon.	2.83 (7.33)	2/28/83	1450	0.25 (0.01)	-	-
Rio Ingenio basin								
50146400	Rio Ingenio near Aguada, PR	Lat 18 22 50, long 67 12 34 Hydrologic unit 21010003. At bridge on unimproved road, 0.3 mi (0.5 km) upstream from confluence with Rio Culebra, 0.7 mi (1.1 km) upstream from mouth of Rio Guayabo, and 1.4 mi (2.3 km) west of Aguada.	6.22 (16.11)	3/01/83	0935	2.37 (0.07)	470	23.0
Rio Culebra basin								
50146600	Rio Culebra near Aguada, PR	Lat 18 22 26, long 67 11 35 Hydrologic unit 21010003. At bridge on Hwy 411, 0.6 mi (1.0 km) south of Aguada, 1.5 mi (2.4 km) upstream from confluence with Rio Ingenio, and 1.9 mi (3.1 km) upstream from mouth of Rio Guayabo.	3.70 (9.58)	2/28/83	1331	1.87 (0.05)	-	-
Rio Culebrinas basin								
50149100	Rio Culebrinas near Aguada, PR	Lat 18 24 03, long 67 09 40 Hydrologic unit 21010003. At bridge on Hwy 2 and 2.3 mi (3.7 km) northeast of Aguada Plaza.	97.0 (251.2)	3/01/83	1210	15.6 (0.44)	310	28.0

a Drainage area does not include coastal undefined drainage.

DISCHARGE AT 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 record, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained, and discharge measurements may have been made for purposes of establishing the stage-discharge relation, but these are not published herein. The years given in the period of record represent years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations during water year 1983

Station number	Station name	Location	Drainage area sq mi (sq km)	Period of record	Date	Annual maximum Gage height ft (m)	Dis- charge cu ft/s (cu m/s)
Rio Portugues basin							
50115900	Rio Portugues at Highway 14 at Ponce, PR	Lat 18 01 09, long 66 36 26, on left downstream side of Highway 14 bridge, 1.7 mi (2.7 km) downstream from Rio Chiquito, and 0.6 mi (0.97 km) northeast of Degetau Plaza in Ponce.	18.6 (48.2)	1963-83		< 8.82 (<2.688)	< 1,700 (<48.1)

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

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, SATURATION (%)	COLIFORM, FECA (UM-MF (COLS./100 ML)	STREPTOCOCCI, FECA (COLS./100 ML)	ALKALINITY, FIELD (MG/L AS CAC03)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)
RIO GUAJATACA BASIN												
50010720 - LAGO DE GUAJATACA NO.3 NEAR MOUTH NEAR QUEBRADILLAS,PR (LAT 18°22'05" LONG 066°54'36")												
DEC / 1982												
09...	1510	1.00	260	8.2	26.0	7.8	99	K5	K5	130	5	--
FEB / 1983												
23...	1340	1.00	316	7.7	25.5	8.7	109	K1	K2	150	4	.19
JUN												
23...	1300	1.00	356	8.3	31.5	12.1	168	<1	K12	84	--	--

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, SATURATION (%)	COLIFORM, FECA (UM-MF (COLS./100 ML)	STREPTOCOCCI, FECA (COLS./100 ML)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	HARDNESS, AS CAC03 (MG/L)	HARDNESS, NONCARBONATE (MG/L AS CAC03)
50010790 - LAGO DE GUAJATACA NO.1 NEAR DAM NEAR QUEBRADILLAS,PR (LAT 18°23'56" LONG 066°55'23")												
DEC / 1982												
09...	1605	1.00	257	8.2	26.0	7.8	99	K91	K100	2	130	0
09...	1620	85.0	332	7.2	23.5	.0	0	--	--	--	140	5
FEB / 1983												
23...	1440	53.0	333	6.8	23.5	.0	0	--	--	--	140	1
23...	1445	1.00	295	7.9	25.5	9.2	115	K6	<1	<1	140	10
JUN												
23...	1220	1.00	261	7.9	30.5	8.2	112	K2	K12	4	120	0
23...	1225	82.0	383	6.7	24.5	.0	0	--	--	--	180	2

RIO GRANDE DE ARECIBO BASIN

50020050 - LAGO GARZAS NO.1 NEAR DAM NEAR ADJUNTAS,PR (LAT 18°08'21" LONG 066°44'35")												
DEC / 1982												
08...	1315	1.00	123	6.9	22.0	12.3	136	K6	<1	<1	50	0
08...	1325	74.0	164	6.8	21.0	.3	3	--	--	--	51	0
FEB / 1983												
22...	1335	1.00	144	7.6	21.5	7.6	94	K7	K5	<1	58	0
22...	1350	87.0	159	6.5	20.0	.0	0	--	--	--	58	0
JUN												
23...	0835	1.00	146	7.9	25.0	7.2	96	K12	K16	4	60	0
23...	0840	102	142	6.6	20.5	.0	0	--	--	--	60	0

K = non-ideal count

50010720 - LAGO DE GUAJATACA NO.3 NEAR MOUTH NEAR QUEBRADILLAS,PR (LAT 18°22'05" LONG 066°54'36")

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (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)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)
------	--	--	--	---	---	---	---	---	--	---	--	--

50010790 - LAGO DE GUAJATACA NO.1 NEAR DAM NEAR QUEBRADILLAS, PR (LAT 18°23'56" LONG 066°55'23")

RIO GRANDE DE ARECIBO BASIN--CONTINUED

50020050 - LAGO GARZAS NO.1 NEAR DAM NEAR ADJUNTAS,PR (LAT 18°08'21" LONG 066°44'35")

DATE	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS TOTAL (MG/L AS P)	PHYTC- PLANK- TON, TOTAL (CELLS PER ML)	BIOMASS CHLORO- PHYLL RATIO PLANK- TON (UNITS)	CHLOR-A PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)
------	--	--	--	--	--	---	---	--	--	--	---	---

RIO GUAJATACA BASIN--CONTINUED

50010790 - LAGO DE GUAJATACA NO.1 NEAR DAM NEAR QUEBRADILLAS,PR (LAT 18°23'56" LONG 066°55'23")

RIO GRANDE DE ARECIBO BASIN--CONTINUED

50020050 - LAGO GARZAS NO.1 NEAR DAM NEAR ADJUNTAS, PR (LAT 18°08'21" LONG 066°44'35")

[illegible]

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	
RIO GRANDE DE ARECIBO BASIN												
50021000		RIO PELLEJAS AT CENTRAL PELLEJAS, PR (LAT 18°12'07" LONG 066°42'16")										
OCT , 1982												
14...	1300	11	250	8.0	25.0	--	8.0	101	42	530	K130	
NOV												
16...	0825	15	240	7.6	21.0	--	8.1	96	<10	1100	5100	
DEC												
16...	0815	12	214	7.8	19.0	--	9.1	102	29	K6800	K9100	
FEB , 1983												
17...	0810	15	302	7.8	20.0	1.1	8.5	98	--	180	320	
DATE		HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
OCT , 1982												
14...	99	29	26	8.2	12	.5	1.3	70	40	7.3	.40	
NOV												
16...	88	32	23	7.4	10	.5	1.5	56	38	6.2	.10	
DEC												
16...	84	22	22	7.0	11	.5	1.6	62	33	7.6	.10	
FEB , 1983												
17...	120	45	34	8.9	12	.5	1.3	77	55	7.6	.10	
DATE		SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
OCT , 1982												
14...	35	--	172	5.3	--	--	.72	--	--	--	--	--
NOV												
16...	32	--	152	6.2	--	--	.83	--	--	--	--	--
DEC												
16...	31	--	151	5.0	--	--	.99	--	--	--	--	--
FEB , 1983												
17...	36	170	201	6.7	<.010	.60	--	.020	.48	.50	1.1	
DATE		NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS- PENDE TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)
OCT , 1982												
14...	--	--	.050	--	--	--	--	--	--	--	--	--
NOV												
16...	--	--	.070	--	--	--	--	--	--	--	--	--
DEC												
16...	--	--	.050	--	--	--	--	--	--	--	--	--
FEB , 1983												
17...	4.9	.050	--	1	0	1	<100	21	<1	1	10	
DATE		CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	CHRO- MIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, SUS- PENDE RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, SUS- PENDE RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, SUS- PENDE RECOV- ERABLE (UG/L AS FE)
OCT , 1982												
14...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
16...	<1	3	--	--	--	--	--	--	49	--	--	--
DEC												
16...	--	--	--	--	--	--	--	--	--	--	--	--
FEB , 1983												
17...	<10	--	1	0	1	15	8	7	--	340	310	
K = non-ideal count												

K = non-ideal count

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	CHRO- MIUM, RECOV- FM BOT- TOM MA- TERIAL (UG/G)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, SUS- PENDE RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, SUS- PENDE RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	COPPER, RECOV- FM BOT- TOM MA- TERIAL (UG/G AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, SUS- PENDE RECOV- ERABLE (UG/L AS FE)
RIO GRANDE DE ARECIBO BASIN--CONTINUED											
50021000 RIO PELLEJAS AT CENTRAL PELLEJAS, PR (LAT 18°12'07" LONG 066°42'16")											
OCT / 1982											
14...	--	--	--	--	--	--	--	--	--	--	--
NOV											
16...	<1	3	--	--	--	--	--	--	49	--	--
DEC											
16...	--	--	--	--	--	--	--	--	--	--	--
FEB / 1983											
17...	<10	--	1	0	1	15	8	7	--	340	310

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, SUS- PENDE RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, SUS- PENDE RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)
OCT / 1982											
14...	45	--	--	--	--	9	--	--	--	--	--
NOV											
16...	63	--	--	--	--	16	--	--	--	--	<1
DEC											
16...	48	--	--	--	--	10	--	--	--	--	--
FEB / 1983											
17...	30	<1	<1	10	4	6	.2	<.1	28	24	4

DATE	NICKEL, RECOV- FM BOT- TOM MA- TERIAL (UG/G AS NI)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	ZINC, RECOV- FM BOT- TOM MA- TERIAL (UG/G AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT / 1982										
14...	--	--	--	--	--	--	--	--	9	.27
NOV										
16...	<10	--	--	--	--	--	--	20	--	--
DEC										
16...	--	--	--	--	--	--	--	--	26	.87
FEB / 1983										
17...	--	<1	<1	<1	<1	30	<3	--	--	--

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

BENTHIC INVERTEBRATES

DATE	OCT 14, 82
TIME	1300
TOTAL COUNT	68
DIVERSITY: PHYLUM	0.0
..CLASS	0.0
...ORDER	0.1
....FAMILY	0.1
.....GENUS	0.7
.....GENUS-INSECTA	0.7

ORGANISM	COUNT
ARTHROPODA (ARTHROPODS)	
..INSECTA	
...DIPTERA	
....CHIRONOMIDAE	
.....CRICOTOPUS	56
.....THIENEMANNIELLA	11
...ODONATA	
....LIBELLULIDAE	
.....MACROTHEMIS	1

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SED. SUSP. FALL DIAM. % FINER THAN (MG/L)	SED. SUSP. FALL DIAM. % FINER THAN (MG/L)	SED. SUSP. FALL DIAM. % FINER THAN (MG/L)	SED. SUSP. FALL DIAM. % FINER THAN (MG/L)	SED. SUSP. FALL DIAM. % FINER THAN (MG/L)	SED. SUSP. FALL DIAM. % FINER THAN (MG/L)	SED. SUSP. FALL DIAM. % FINER THAN (MG/L)	BED MAT. FALL DIAM. % FINER THAN
RIO GRANDE DE ARECIBO BASIN--CONTINUED										
50021000 RIO PELLEJAS AT CENTRAL PELLEJAS, PR (LAT 18°12'07" LONG 066°42'16")										
OCT / 1982										
14...	1300			11		4		75		
DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .004 MM
DEC / 1982										
16...	0815	12	0	0	1	15	21	3	46	0
FEB / 1983										
17...	0810	15	1	1	1	1	2	4	4.2	1
DATE			BED MAT. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .125 MM	BED MAT. FALL DIAM. % FINER THAN .250 MM	BED MAT. FALL DIAM. % FINER THAN .500 MM	BED MAT. FALL DIAM. % FINER THAN 1.00 MM	BED MAT. FALL DIAM. % FINER THAN 2.00 MM	BED MAT. FALL DIAM. % FINER THAN 4.00 MM
DEC										
16...		3	3	5	9	16	30	50	71	
FEB										
17...		4	4	5	7	13	24	38	51	

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	
RIO GRANDE DE ARECIBO BASIN													
50023000 RIO VIVI NEAR CENTRAL PELLEJAS, PR (LAT 18°12'52" LONG 066°40'25")													
OCT / 1982													
20...	1245	15	216	7.6	23.0	--	7.9	96	30	3500	200	78	
NOV													
16...	1235	13	240	7.5	22.0	--	7.9	96	<10	700	1800	86	
DEC													
16...	1140	12	242	7.5	19.0	--	9.2	104	47	K80	K170	82	
FEB / 1983													
17...	1145	5.0	253	7.8	21.0	1.2	8.1	95	--	K26	100	95	
DATE		HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
OCT / 1982													
20...	34	20	6.8	9.0	.5	1.7	44	37	7.5	<.10	28	--	
NOV													
16...	42	22	7.5	11	.5	1.8	44	44	7.3	.10	32	--	
DEC													
16...	38	21	7.1	10	.5	1.8	44	36	8.0	.10	31	--	
FEB / 1983													
17...	34	25	7.3	11	.5	1.6	61	61	8.6	.10	31	146	
DATE		SOLIDS, SUM OF CONSTI- TUENTS DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)
OCT / 1982													
20...	137	5.7	--	--	.87	--	--	--	--	--	--	--	.020
NOV													
16...	152	5.3	--	--	1.0	--	--	--	--	--	--	--	.040
DEC													
16...	141	4.7	--	--	.90	--	--	--	--	--	--	--	.010
FEB / 1983													
17...	183	2.0	<.010	.60	--	.020	.48	.50	1.1	4.9	.030	--	
DATE		ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS- PENDE TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, SUS- PENDE TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	CHRO- MIUM, FM BOT- TOM MA- TERIAL (UG/G)	
OCT / 1982													
20...	--	--	--	--	--	--	--	--	--	--	--	--	
NOV													
16...	--	--	--	--	--	--	--	--	--	--	--	<1	3
DEC													
16...	--	--	--	--	--	--	--	--	--	--	--	--	
FEB / 1983													
17...	1	0	1	<100	24	<1	2	10	0	10	--	--	
DATE		COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, SUS- PENDE TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, SUS- PENDE TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	COPPER, FM BOT- TOM MA- TERIAL (UG/G AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, SUS- PENDE TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	
OCT / 1982													
20...	--	--	--	--	--	--	--	--	--	--	--	38	--
NOV													
16...	--	--	--	--	--	--	--	63	--	--	--	10	--
DEC													
16...	--	--	--	--	--	--	--	--	--	--	--	9	--
FEB / 1983													
17...	1	0	1	39	25	14	--	250	240	10	2	--	

K = non-ideal count

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, SUS- PENDE D RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, SUS- PENDE D RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	COPPER, FM BOT- TOM MA- TERIAL (UG/G AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, SUS- PENDE D RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)
RIO GRANDE DE ARECIBO BASIN--CONTINUED											
50023000 RIO VIVI NEAR CENTRAL PELLEJAS, PR (LAT 18°12'52" LONG 066°40'25")											
OCT / 1982											
20...	--	--	--	--	--	--	--	--	--	38	--
NOV											
16...	--	--	--	--	--	--	63	--	--	10	--
DEC											
16...	--	--	--	--	--	--	--	--	--	9	--
FEB / 1983											
17...	1	0	1	39	25	14	--	250	240	10	2
DATE	LEAD, SUS- PENDE D RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, SUS- PENDE D RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY SUS- PENDE D RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, SUS- PENDE D RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)
OCT / 1982											
20...	--	--	--	--	19	--	--	--	--	--	--
NOV											
16...	--	--	--	--	24	--	--	--	--	--	2
DEC											
16...	--	--	--	--	15	--	--	--	--	--	--
FEB / 1983											
17...	0	2	20	3	17	.2	.1	.1	16	11	5
DATE	NICKEL, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS NI)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, SUS- PENDE D RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	ZINC, FM BOT- TOM MA- TERIAL (UG/G AS ZN)	SEDI- MENT, SUS- PENDE D (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE D (T/DAY)
OCT / 1982											
20...	--	--	--	--	--	--	--	--	--	4	.16
NOV											
16...	<10	--	--	--	--	--	--	--	70	59	2.1
DEC											
16...	--	--	--	--	--	--	--	--	--	18	.58
FEB / 1983											
17...	--	<1	<1	<1	<1	30	30	5	--	--	--

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS
WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

		STREAM- FLOW, INSTAN- TANEOUS (CFS)		SEDI- MENT, SUS- PENDEO (MG/L)		SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM			
DATE		TIME		TIME		TIME		TIME	
RIO GRANDE DE ARECIBO BASIN--Continued									
50023000		RIO VIVI NEAR CENTRAL PELLEJAS, PR (LAT 18°12'52" LONG 066°40'25")							
OCT / 1982									
20...		1245	15	9	56				
NOV									
16...		1235	13	113	67				
DATE	TIME	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .004 MM
DEC / 1982									
16...	1140	12	0	0	0	0	3	97	0
FEB / 1983									
17...	1145	5.0	0	0	0	1	3	3.0	0
DATE	TIME	BED MAT. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .125 MM	BED MAT. FALL DIAM. % FINER THAN .250 MM	BED MAT. FALL DIAM. % FINER THAN .500 MM	BED MAT. FALL DIAM. % FINER THAN 1.00 MM	BED MAT. FALL DIAM. % FINER THAN 2.00 MM	BED MAT. FALL DIAM. % FINER THAN 4.00 MM
DEC									
16...		0	3	3	6	13	30	53	88
FEB									
17...		0	3	3	4	6	14	30	63

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1932 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER CAC03)	ALKA- LINEITY FIELD (MG/L AS CAC03)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)
RIO GRANDE DE ARECIBO BASIN												
50025110 - LAGO DOS BOCAS NO.3 AT WEST BRANCH NEAR UTUADO, PR (LAT 18°19'15" LONG 066°40'11")												
DEC / 1982												
09...	1045	1.00	203	8.5	25.5	13.6	168	K87	K2	77	<1	.18
FEB / 1983												
23...	0925	1.00	226	7.2	24.5	7.2	87	250	K11	79	10	.07
JUN												
22...	1345	1.00	200	8.4	30.5	10.2	138	K7	K5	74	--	.19
DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER CAC03)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE TOTAL (MG/L CAC03)
50027090 - LAGO DOS BOCAS NO.1 NEAR DAM NEAR UTUADO, PR (LAT 18°20'09" LONG 066°40'04")												
DEC / 1982												
09...	0945	1.00	186	7.9	25.0	10.2	125	K9	K7	<1	66	0
09...	1000	78.0	196	6.7	23.5	.0	0	--	--	--	70	0
FEB / 1983												
23...	1000	1.00	213	7.8	24.5	8.7	105	90	K6	<1	80	12
23...	1005	84.0	216	6.6	23.5	.0	0	--	--	--	76	1
JUN												
22...	1300	1.00	201	8.3	31.0	9.7	132	K12	K13	<1	78	4
22...	1310	84.0	203	6.5	25.0	.0	0	--	--	--	73	0
DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER CAC03)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE TOTAL (MG/L AS N)
RIO DE LA PLATA BASIN												
50039900 - LAGO CARITE NO.3 ON RIO DE LA PLATA NEAR CAYEY, PR (LAT 18°05'04" LONG 066°06'03")												
DEC / 1982												
14...	1205	1.00	95	7.3	23.5	8.3	104	K4	K4	31	17	--
FEB / 1983												
24...	1050	1.00	105	7.7	23.0	8.6	106	K3	K1	38	6	--
JUN												
27...	1215	1.00	99	7.6	27.5	8.3	112	K16	120	33	<1	--
DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER CAC03)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE TOTAL (MG/L CAC03)
50039950 - LAGO CARITE NO.1 NEAR DAM NEAR CAYEY, PR (LAT 18°04'39" LONG 066°06'19")												
DEC / 1982												
14...	1130	1.00	93	7.0	23.5	7.3	91	K2	K9	<1	28	0
14...	1140	68.0	169	6.5	21.5	.0	0	--	--	--	29	0
FEB / 1983												
24...	1035	59.0	122	6.3	21.5	.0	0	--	--	--	31	0
24...	1040	1.00	106	7.7	23.0	8.7	108	K3	<1	<1	31	0
JUN												
27...	1140	1.00	99	7.5	27.5	7.4	100	K9	44	2	26	0

K = non-ideal count

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)	BIOMASS CHLORO- PHYLL RATIO TON (UNITS)	CHLOR-A PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)
--	--	--	--	--	--	---	---	---	--	--	---	---

RIO GRANDE DE ARECIBO BASIN--CONTINUED

50025110 - LAGO DOS BOCAS NO.3 AT WEST BRANCH NEAR UTUADO,PR (LAT 18°19'15" LONG 066°40'11")

DEC / 1982												
09...	.020	.20	<.010	--	1.10	1.3	5.8	.090	86000	.00	53.0	<.100
FEB / 1983												
23...	.030	.10	<.010	--	.50	.60	2.7	.040	64000	.00	18.0	<.100
JUN												
22...	.010	.20	<.010	--	.30	.50	2.2	.020	26000	.00	4.50	<.100

	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)
--	--	--	--	---	---	---	---	---	--	---	---	--

50027090 - LAGO DOS BOCAS NO.1 NEAR DAM NEAR UTUADO,PR (LAT 18°20'09" LONG 066°40'04")

DEC / 1982												
09...	17	5.6	10	.6	1.8	71	8.0	7.5	<.10	17	109	--
09...	19	5.4	9.6	.5	2.0	71	8.0	8.9	<.10	22	117	--
FEB / 1983												
23...	21	6.8	12	.6	2.1	69	15	9.2	.10	18	126	--
23...	20	6.3	11	.6	2.1	75	15	9.2	.10	16	125	--
JUN												
22...	21	6.1	10	.5	1.8	74	13	10	.10	22	128	.18
22...	20	5.7	9.3	.5	2.0	75	10	10	.10	20	122	--

	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)	BIOMASS CHLORO- PHYLL RATIO TON (UNITS)	CHLOR-A PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)
--	--	--	--	--	--	---	---	---	--	--	---	---

RIO DE LA PLATA BASIN--CONTINUED

50039900 - LAGO CARITE NO.3 ON RIO DE LA PLATA NEAR CAYEY,PR (LAT 18°05'04" LONG 066°06'03")

DEC / 1982												
14...	<.10	.020	.68	.70	--	--	.030	33000	.00	6.10	1.20	
FEB / 1983												
24...	<.10	<.010	--	.30	--	--	.030	7800	.00	15.0	<.100	
JUN												
27...	<.10	<.010	--	.30	--	--	.020	59000	.00	3.40	<.100	

	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)
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50039950 - LAGO CARITE NO.1 NEAR DAM NEAR CAYEY,PR (LAT 18°04'39" LONG 066°06'19")

DEC / 1982												
14...	5.7	3.4	8.0	.7	.8	33	2.0	8.1	<.10	19	67	--
14...	6.0	3.3	7.9	.7	.9	48	3.0	8.4	<.10	19	77	--
FEB / 1983												
24...	6.4	3.7	8.1	.6	.8	39	3.2	9.0	<.10	20	75	--
24...	6.3	3.7	8.0	.6	.8	36	3.4	9.4	.10	19	72	--
JUN												
27...	5.0	3.2	7.3	.6	.8	39	4.1	9.4	<.10	18	71	--

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER CAC03)	ALKA- LINEITY FIELD (MG/L AS CAC03)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)
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RIO DE LA PLATA BASIN

50044400 - LAGO LA PLATA NO.5 NEAR MOUTH NEAR NARANJITO, PR (LAT 18°19'33" LONG 066°12'28")

DEC / 1982												
07...	1145	1.00	233	7.4	25.5	9.9	121	K50	916	84	8	.78
FEB / 1983												
18...	1100	1.00	402	7.1	25.0	4.5	55	K12	K2	149	13	.38
JUN												
21...	1145	1.00	314	7.2	28.5	5.5	71	250	K800	91	--	.57

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER CAC03)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)
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50044950 - LAGO LA PLATA NO.3 NEAR DAM NEAR NARANJITO, PR (LAT 18°20'18" LONG 066°14'01")

DEC / 1982												
07...	1045	1.00	255	7.2	24.5	7.5	90	31	16	--	93	3
07...	1100	74.0	433	7.2	23.5	.0	0	--	--	--	83	0
FEB / 1983												
18...	1220	1.00	321	6.7	26.0	3.8	47	K11	K16	8	120	4
18...	1230	67.0	282	6.6	22.5	.0	0	--	--	--	100	4
JUN												
21...	1040	1.00	266	6.9	29.0	5.1	67	56	140	16	89	0
21...	1050	70.0	261	6.5	23.5	.0	0	--	--	--	92	0

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER CAC03)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	HARD- NESS (MG/L AS CAC03)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)
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RIO GRANDE DE LOIZA BASIN

50057500 - LAGO LOIZA NO.4 NEAR MOUTH NEAR CAGUAS, PR (LAT 18°16'51" LONG 066°00'35")

DEC / 1982												
10...	1150	1.00	221	7.2	27.0	13.0	164	K790	<10	79	12	.61
FEB / 1983												
17...	1315	1.00	352	6.8	25.0	2.5	30	24000	K52	114	14	.39
JUN												
24...	1115	1.00	231	6.9	29.5	2.5	33	6600	530	72	--	.53

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER CAC03)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)
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50058800 - LAGO LOIZA NO.7 NEAR DAM NEAR TRUJILLO ALTO, PR (LAT 18°19'29" LONG 066°00'47")

DEC / 1982												
10...	1105	1.00	201	7.1	26.0	8.1	100	K23	K2	<1	59	0
10...	1110	25.5	237	6.6	24.0	.0	0	--	--	--	55	0
FEB / 1983												
17...	1200	29.0	314	6.4	25.0	.0	0	--	--	--	96	0
17...	1210	1.00	289	6.8	25.0	8.1	100	<2	<2	--	90	0
JUN												
24...	1045	1.00	187	6.9	29.5	4.1	54	230	740	20	53	0
24...	1050	37.0	147	6.4	26.5	.0	0	--	--	--	40	1

K = non-ideal count

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS
WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

[illegible]

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)	BIOMASS CHLORO- PHYLL RATIO PLANK- TON (UNITS)	CHLOR-A PHYTO- b PLANK- TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)
RIO DE LA PLATA BASIN--CONTINUED												
50044400 - LAGO LA PLATA NO.5 NEAR MOUTH NEAR NARANJITO, PR (LAT 18°19'33" LONG 066°12'28")												
DEC / 1982												
07...	.020	.80	.020	.38	.40	1.2	5.3	.220	1100	.00	1.20	<.100
FEB / 1983												
18...	.020	.40	.050	.65	.70	1.1	4.9	.160	7900	.00	6.90	<.100
JUN												
21...	.030	.60	.060	.34	.40	1.0	4.4	.140	3100	.00	.800	<.100

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)
50044950 - LAGO LA PLATA NO.3 NEAR DAM NEAR NARANJITO, PR (LAT 18°20'18" LONG 066°14'01")												
DEC / 1982												
07...	22	9.3	17	.8	2.3	90	11	16	.10	21	153	.29
07...	20	8.1	15	.7	2.5	84	11	14	.10	23	144	--
FEB / 1983												
18...	30	12	18	.7	1.4	120	15	21	.20	22	192	--
18...	25	9.6	14	.6	2.6	98	11	15	.10	23	159	--
JUN												
21...	21	8.8	16	.8	2.7	120	13	19	.20	21	174	.38
21...	22	9.1	14	.7	3.4	110	10	17	.20	21	163	--

DATE	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)	BIOMASS CHLORO- PHYLL RATIO PLANK- TON (UNITS)	CHLOR-A PHYTO- b PLANK- TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)
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RIO GRANDE DE LOIZA BASIN--CONTINUED

50057500 - LAGO LOIZA NO.4 NEAR MOUTH NEAR CAGUAS, PR (LAT 18°16'51" LONG 066°00'35")												
DEC / 1982												
10...	.090	.70	.340	.76	1.10	1.3	8.0	.270	16000	.00	15.0	<.100
FEB / 1983												
17...	.110	.50	1.40	1.0	2.40	2.9	13	.630	5500	.00	17.0	2.10
JUN												
24...	.070	.60	.710	.79	1.50	2.1	9.3	.350	2600	.00	2.50	<.100

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)
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50058300 - LAGO LOIZA NO.7 NEAR DAM NEAR TRUJILLO ALTO, PR (LAT 18°19'29" LONG 066°00'47")												
DEC / 1982												
10...	14	5.9	17	1.0	2.5	59	12	15	.10	23	125	.45
10...	13	5.5	15	.9	2.7	69	11	15	.10	23	127	--
FEB / 1983												
17...	23	9.3	25	1.1	2.0	100	14	21	.20	27	181	--
17...	21	9.2	26	1.2	1.8	96	14	20	.20	25	175	--
JUN												
24...	13	4.9	15	.9	2.6	53	13	14	.20	23	117	.40
24...	9.9	3.6	10	.7	2.5	39	10	10	.20	17	87	--

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)	DI- ELDRIN, TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)
RIO GUAJATACA BASIN										
50010790		- LAGO DE GUAJATACA NO.1 NEAR DAM NEAR QUEBRADILLAS, PR (LAT 18°23'56" LONG 066°55'23")								
JUN , 1983 23...	1220	<.10	<.01	<.10	<.01	<.01	<.01	<.01	<.01	<.01
RIO GRANDE DE ARECIBO BASIN										
50020050		- LAGO GARZAS NO.1 NEAR DAM NEAR ADJUNTAS, PR (LAT 18°08'21" LONG 066°44'35")								
JUN , 1983 23...	0835	<.10	<.01	<.10	<.01	<.01	<.01	<.01	<.01	<.01
50027090		- LAGO DOS BOCAS NO.1 NEAR DAM NEAR UTUADO, PR (LAT 18°20'09" LONG 066°40'04")								
JUN , 1983 22...	1300	<.10	<.01	<.10	<.01	<.01	<.01	<.01	<.01	<.01
RIO DE LA PLATA BASIN										
50039950		- LAGO CARITE NO.1 NEAR DAM NEAR CAYEY, PR (LAT 18°04'39" LONG 066°06'19")								
JUN , 1983 27...	1140	<.10	<.01	<.10	<.01	<.01	<.01	<.01	<.01	<.01
50044950		- LAGO LA PLATA NO.3 NEAR DAM NEAR NARANJITO, PR (LAT 18°20'18" LONG 066°14'01")								
JUN , 1983 21...	1040	<.10	<.01	<.10	<.01	<.01	<.01	<.01	<.01	<.01
RIO GRANDE DE LOIZA BASIN										
50058300		- LAGO LOIZA NO.7 NEAR DAM NEAR TRUJILLO ALTO, PR (LAT 18°19'29" LONG 066°00'47")								
JUN , 1983 24...	1045	<.10	<.01	<.10	<.01	<.01	<.01	0.03	<.01	<.01

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	PARA- THION, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	PER- THANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
RIO GUAJATACA BASIN--CONTINUED									
50010790	- LAGO DE GUAJATACA NO.1 NEAR DAM NEAR QUEBRADILLAS, PR (LAT 18°23'56" LONG 066°55'23")								
JUN / 1983 23...	<.01	<.10	<.10	<1	<.01	.05	<.01	<.01	<.01
RIO GRANDE DE ARECIBO BASIN--CONTINUED									
50020950	- LAGO GARZAS NO.1 NEAR DAM NEAR ADJUNTAS, PR (LAT 18°08'21" LONG 066°44'35")								
JUN / 1983 23...	<.01	<.10	<.10	<1	<.01	<.01	<.01	<.01	<.01
50027090	- LAGO DOS BOCAS NO.1 NEAR DAM NEAR UTUADO, PR (LAT 18°20'09" LONG 066°40'04")								
JUN / 1983 22...	<.01	<.10	<.10	<1	<.01	<.01	<.01	<.01	<.01
RIO DE LA PLATA BASIN--CONTINUED									
50039950	- LAGO CARITE NO.1 NEAR DAM NEAR CAYEY, PR (LAT 18°04'39" LONG 066°06'19")								
JUN / 1983 27...	<.01	<.10	<.10	<1	<.01	<.01	<.01	<.01	<.01
50044950	- LAGO LA PLATA NO.3 NEAR DAM NEAR NARANJITO, PR (LAT 18°20'18" LONG 066°14'01")								
JUN / 1983 21...	<.01	<.10	<.10	<1	<.01	.01	<.01	<.01	<.01
RIO GRANDE DE LOIZA BASIN--CONTINUED									
50058800	- LAGO LOIZA NO.7 NEAR DAM NEAR TRUJILLO ALTO, PR (LAT 18°19'29" LONG 066°00'47")								
JUN / 1983 24...	<.01	<.10	<.10	<1	<.01	.08	<.01	<.01	<.01

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS
 QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

PHYTOPLANKTON

RIO GUAJATACA BASIN

50010720 LAGO DE GUAJATACA NO. 3 NEAR MOUTH NEAR QUEBRADILLAS, PR (LAT 18°22'05" LONG 066°54' 36")

DATE TIME	DEC 9,82 1510	FEB 23,83 1340	JUN 23,83 1300			
TOTAL CELLS/ML	93000	6700	14000			
DIVERSITY: DIVISION	0.1	1.9	1.8			
...CLASS	0.1	1.9	1.8			
...ORDER	0.1	2.4	2.8			
...FAMILY	0.1	2.5	3.0			
...GENUS	0.1	2.6	3.2			
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)						
..BACILLARIOPHYCEAE						
...ACHNANTHALES						
....ACHNANTHACEAE						
.....ACHNANTHES	92000#	99	--	-	--	-
....EUPODISCALES						
....COSCINODISCAEAE						
....CYCLOTELLA	--	-	--	-	1400	10
....NAVICULALES						
....NAVICULACEAE						
....NAVICULA	--	-	--	-	170	1
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCOCCALES						
....CHLOROCOCCACEAE						
.....POLYEDRIOPSIS	--	-	49	1	--	-
....MICRACTINIACEAE						
.....MICRACTINIUM	--	-	--	-	87	1
....OOCYSTACEAE						
.....ANKISTRODESMUS	--	-	97	1	610	4
.....KIRCHNERIELLA	--	-	97	1	87	1
....SCENEDESMACEAE						
.....CRUCIGENIA	--	-	1100#	17	350	3
.....SCENEDESMUS	--	-	--	-	350	3
.....TETRASTRUM	--	-	--	-	350	3
....VOLVOCALES						
....CHLAMYDOMONADACEAE						
.....CHLAMYDOMONAS	--	-	1900#	28	520	4
....CHLOROGONIUM	--	-	--	-	610	4
CHRYSOPHYTA						
..CHRYSOPHYCEAE						
...CHROMULINALES						
....CHRYSOCOCCACEAE						
.....CHRYSOCOCCLUS	--	-	150	2	--	-
....OCHROMONADALES						
....SYNURACEAE						
....MALLONAS	--	-	49	1	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
..CRYPTOPHYCEAE						
...CRYPTOMONADALES						
....CRYPTOMONADACEAE						
.....CRYPTOMONAS	--	-	97	1	700	5
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHROOCOCCALES						
....CHROOCOCCACEAE						
.....ANACYSTIS	--	-	1800#	28	4500#	33
....NOSTOCALES						
....NOSTOCACEAE						
.....APHANIZOMENON	--	-	--	-	1700	13
....OSCILLATORIALES						
....OSCILLATORIACEAE						
.....OSCILLATORIA	--	-	--	-	1300	9
EUGLENOPHYTA (EUGLENOIDS)						
..EUGLENOPHYCEAE						
...EUGLENALES						
....EUGLENACEAE						
.....EUGLENA	--	-	340	5	--	-
....TRACHELONAS	780	1	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)						
..DINOPHYCEAE						
...DINOKONTAE						
....PERIDINIACEAE						
.....PERIDINIUM	--	-	920	14	1000	8

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

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

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS
QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

PHYTOPLANKTON

RIO GUAJATACA BASIN

50010790 LAGO DE GUAJATACA NO.1 NEAR DAM NEAR QUEBRADILLAS, PR (LAT 18°23'56" LONG 066°54'36")

DATE TIME	DEC 9, 82 1605	FEB 23, 83 1445	JUN 23, 83 1220
TOTAL CELLS/ML	80000	3100	14000
DIVERSITY: DIVISION	0.1	1.8	0.9
CLASS	0.1	1.8	0.9
ORDER	0.1	2.0	1.9
FAMILY	0.1	2.2	2.7
GENUS	0.1	2.3	3.0

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)						
BACILLARIOPHYCEAE						
ACHNANTHALES						
ACHNANTHACEAE						
ACHNANTHES	80000#	99	--	-	290	2
EUPODISCALES						
COSCINODISCACEAE						
CYCLOTELLA	--	-	21	1	830	6
NAVICULALES						
NAVICULACEAE						
NAVICULA	--	-	--	-	490	4
CHLOROPHYTA (GREEN ALGAE)						
CHLOROPHYCEAE						
CHLOROCOCCALES						
CHLOROCOCCACEAE						
TETRAEDRON	--	-	310	10	*	0
HYDRODICTYACEAE						
PEDIASTRUM	--	-	--	-	98	1
OOCYSTACEAE						
ANKISTRODESMUS	730	1	--	-	150	1
KIRCHNERIELLA	--	-	63	2	--	-
OOCYSTIS	--	-	190	6	--	-
PALMELLACEAE						
SPHAEROCYSTIS	--	-	--	-	4600#	34
SCENEDESMACEAE						
COELASTRUM	--	-	--	-	2700#	20
CRUCIGENIA	--	-	--	-	880	6
GLOEOACTINIUM	--	-	--	-	490	4
SCENEDESMUS	--	-	42	1	--	-
TETRASPORALES						
GLOEOCYSTACEAE						
GLOEOCYSTIS	--	-	--	-	1200	9
VOLVOCALES						
CHLAMYDOMONADACEAE						
CHLAMYDOMONAS	--	-	170	5	730	5
ZYGNEATALES						
DESMIDIACEAE						
COSMARIVUM	--	-	--	-	*	0
STAUSTRUM	--	-	--	-	*	0
CHRYSOPHYTA						
CHRYSOPHYCEAE						
CHROMULINALES						
CHRYSOCOCCACEAE						
CHRYSOCOCCUS	--	-	210	7	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
CRYPTOPHYCEAE						
CRYPTOMONADALES						
CRYPTOMONADACEAE						
CRYPTOMONAS	--	-	--	-	98	1
CYANOPHYTA (BLUE-GREEN ALGAE)						
CYANOPHYCEAE						
CHROOCOCCALES						
CHROOCOCCACEAE						
ANACYSTIS	--	-	1400#	46	880	6
PYRRHOPHYTA (FIRE ALGAE)						
DINOPHYCEAE						
DINOKONTAE						
PERIDINIACEAE						
PERIDINIUM	--	-	670#	21	*	0

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

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

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS
 QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

PHYTOPLANKTON

RIO GRANDE DE ARECIBO BASIN

50020050 LAGO GARZAS NO.1 NR DAM NR ADJUNTAS, PR (LAT 18°08'21" LONG 066°44'35")

DATE TIME	DEC 8, 82 1315	FEB 22, 83 1335	JUN 23, 83 0835
TOTAL CELLS/ML	15000	4800	14000
DIVERSITY: DIVISION	0.9	1.4	1.6
..CLASS	0.9	1.4	1.6
...ORDER	1.0	2.2	2.5
....FAMILY	1.2	2.6	2.8
.....GENUS	1.2	2.7	2.8

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)						
..BACILLARIOPHYCEAE						
...EUPODISCALES						
....COSCINODISCAEAE						
.....CYCLOTELLA	200	1	--	--	1100	8
.....MELOSIRA	--	--	58	1	--	--
...FRAGILARIALES						
....FRAGILARIAEAE						
.....SYNEDRA	--	--	--	--	440	3
...NAVICULALES						
....NAVICULACEAE						
.....NAVICULA	--	--	--	--	3000#	22
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHAETOPHORALES						
....CHAETOPHORACEAE						
.....ULVELLA	990	6	--	--	--	--
...CHLOROCOCCALES						
....CHLOROCOCCACEAE						
.....TETRAEDRON	--	--	29	1	--	--
...DICTYOSPHAERIAEAE						
....DICTYOSPHAERIUM	820	5	940#	19	440	3
...MICRACTINIACEAE						
....GOLENKINIA	--	--	58	1	--	--
...OOCYSTACEAE						
....ANKISTRODESMUS	150	1	58	1	2200#	16
...CLOSTERIOPSIS	*	0	--	--	--	--
...KIRCHNERIELLA	300	2	--	--	--	--
...OOCYSTIS	*	0	--	--	--	--
...SCENEDESMACEAE						
....SCENEDESMUS	240	2	230	5	890	6
...VOLVOCALES						
....CHLAMYDOMONADACEAE						
.....CHLAMYDOMONAS	*	0	560	12	780	6
...ZYGNEMATALES						
....DESMIDIACEAE						
.....COSMARIUM	--	--	640	13	780	6
....STAUSTRUM	--	--	120	2	--	--
CHRYSTOPHYTA						
..CHRYSTOPHYCEAE						
...CHROMULINALES						
....CHRYSOCOCCACEAE						
.....CHRYSOCOCCUS	--	--	120	2	--	--
...OCHROMONADALES						
....DINOBRYACEAE						
.....DINOBRYON	*	0	--	--	--	--
CRYPTOPHYTA (CRYPTOMONADS)						
..CRYPTOPHYCEAE						
...CRYPTOMONADALES						
....CRYPTOMONADACEAE						
.....CRYPTOMONAS	*	0	29	1	110	1
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHROOCOCCALES						
....CHROOCOCCACEAE						
.....ANACYSTIS	12000#	81	1800#	38	4000#	29
EUGLENOPHYTA (EUGLENOIDS)						
..EUGLENOPHYCEAE						
...EUGLENALES						
....EUGLENACEAE						
.....TRACHELOMONAS	93	1	29	1	--	--
PYRRHOPHYTA (FIRE ALGAE)						
..DINOPHYCEAE						
...DINOKONTAE						
....PERIDINIACEAE						
.....PERIDINIUM	*	0	120	2	--	--

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

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

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS
QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

PHYTOPLANKTON

RIO GRANDE DE ARECIBO BASIN

50025110 LAGO DOS BOCAS NO.3 AT WEST BRANCH NEAR UTUADO, PR (LAT 18°19'15" LONG 066°40'11")

DATE TIME	DEC 9,82 1045	FEB 23,83 0925	JUN 22,83 1345
TOTAL CELLS/ML	86000	64000	26000
DIVERSITY: DIVISION	0.5	1.1	1.5
..CLASS	0.5	1.1	1.5
..ORDER	1.0	1.2	2.2
...FAMILY	1.0	1.2	2.8
....GENUS	1.8	1.2	2.9

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)						
..BACILLARIOPHYCEAE						
...BACILLARIALES						
....NITZSCHIAEAE						
.....NITZSCHIA	*	0	--	-	--	-
....EUPODISCALES						
....COSCINODISCACEAE						
.....CYCLOTELLA	--	-	*	0	2600	10
...FRAGILARIALES						
....FRAGILARIAEAE						
.....FRAGILARIA	2100	2	--	-	--	-
....SYNEDRA	1100	1	--	-	150	1
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCOCCALES						
....CHLOROCOCCACEAE						
.....SCHROEDERIA	--	-	--	-	590	2
....DICTYOSPHAERIAEAE						
.....DICTYOSPHAERIUM	--	-	23000#	36	--	-
....HYDRODICTYACEAE						
.....PEDIASTRUM	2900	3	--	-	--	-
....MICRACTINIACEAE						
.....MICRACTINIUM	--	-	--	-	1800	7
....OOCYSTACEAE						
.....ANKISTRODESMUS	770	1	--	-	4800#	19
....FRANCEIA	--	-	--	-	150	1
....KIRCHNERIELLA	--	-	--	-	150	1
....TREUBARIA	--	-	--	-	150	1
....SCENEDESMACEAE						
.....SCENEDESMUS	--	-	--	-	2300	9
....VOLVOCALES						
....CHLAMYDOMONADACEAE						
.....CHLAMYDOMONAS	--	-	1000	2	1200	5
....ZYGNEMATALES						
....DESMIDIACEAE						
.....STAUSTRUM	*	0	--	-	--	-
CHRYSTOPHYTA						
..CHRYSTOPHYCEAE						
...OCHROMONADALES						
....OCHROMONADACEAE						
.....OCHROMONAS	--	-	*	0	--	-
....SYNURACEAE						
.....MALLOMONAS	*	0	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
..CRYPTOPHYCEAE						
...CRYPTOMONADALES						
....CRYPTOMONADACEAE						
.....CRYPTOMONAS	--	-	--	-	150	1
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHROOCOCCALES						
....CHROOCOCCACEAE						
.....ANACYSTIS	43000#	56	39000#	60	5600#	22
....GOMPHOSPHAERIA	22000#	26	--	-	--	-
....NOSTOCALES						
.....NOSTOCACEAE						
.....APHANIZOMENON	3000	9	--	-	--	-
....OSCILLATORIALES						
.....OSCILLATORIAEAE						
.....OSCILLATORIA	--	-	--	-	5900#	23
PYRRHOPHYTA (FIRE ALGAE)						
..DINOPHYCEAE						
...DINOKONTAE						
....PERIDINIACEAE						
.....PERIDINIUM	--	-	1400	2	150	1

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

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ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS
 QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

PHYTOPLANKTON

RIO GRANDE DE ARECIBO BASIN

50027090 LAGO DOS BOCAS NO.1 NEAR DAM NEAR UTUADO, PR (LAT 18°20'09" LONG 066°40'04")

DATE	DEC 9, 82	FEB 23, 83	JUN 22, 83
TIME	0945	1000	1300
TOTAL CELLS/ML	170000	180000	77000
DIVERSITY: DIVISION	0.2	1.0	1.0
..CLASS	0.2	1.0	1.0
...ORDER	0.5	1.1	1.3
...FAMILY	0.5	1.1	1.4
....GENUS	1.4	1.3	1.4

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)						
..BACILLARIOPHYCEAE						
...EUPODISCALES						
...COSCINODISCAEAE						
....CYCLOTELLA	--	-	*	0	3500	5
...FRAGILARIALES						
...FRAGILARIAEAE						
....FRAGILARIA	*	0	--	-	--	-
....SYNEDRA	3700	2	1100	1	*	0
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCOCCALES						
...CHLOROCOCCACEAE						
....SCHROEDERIA	*	0	--	-	*	0
...DICTYOSPHAERIACEAE						
....DICTYOSPHAERIUM	--	-	61000#	34	--	-
...MICRACTINIACEAE						
....MICRACTINIUM	--	-	--	-	1800	2
...DODGYSTACEAE						
....ANKISTRODESMUS	--	-	*	0	2200	3
...KIRCHNERIELLA	*	0	--	-	--	-
...TREUBARIA	--	-	--	-	*	0
...SCENEDESMACEAE						
....SCENEDESMUS	--	-	--	-	3500	5
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	--	-	*	0	1300	2
...ZYGNEMATALES						
...DESMIDIACEAE						
....COSMARIUM	*	0	--	-	--	-
....STAUSTRUM	*	0	--	-	--	-
CHRYSOPHYTA						
..CHRYSOPHYCEAE						
...OCHROMONADALES						
...OCHROMONADACEAE						
....OCHROMONAS	--	-	*	0	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
..CRYPTOPHYCEAE						
...CRYPTOMONADALES						
...CRYPTOMONADACEAE						
....CRYPTOMONAS	--	-	--	-	730	1
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHROOCOCCALES						
...CHROOCOCCACEAE						
....ANACYSTIS	97000#	56	100000#	59	60000#	78
...GOMPHOSPHAERIA	66000#	38	8800	5	--	-
...NOSTOCALES						
...NOSTOCACEAE						
...APHANIZOMENON	5500	3	--	-	--	-
...OSCILLATORIALES						
...OSCILLATORIAEAE						
....OSCILLATORIA	--	-	--	-	2200	3
EUGLENOPHYTA (EUGLENOIDS)						
..EUGLENOPHYCEAE						
...EUGLENALES						
...EUGLENACEAE						
....TRACHELOMONAS	--	-	--	-	*	0
PYRRHOPHYTA (FIRE ALGAE)						
..DINOPHYCEAE						
...DINOKONTAE						
...PERIDINIACEAE						
....PERIDINIUM	--	-	*	0	830	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
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ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS
 QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

PHYTOPLANKTON

RIO DE LA PLATA BASIN

50039900 LAGO CARITE NO.3 ON RIO DE LA PLATA NEAR CAVEY, PR (LAT 18°05'04" LONG 066°06'03")

DATE TIME	DEC 14, 82 1205	FEB 24, 83 1050	JUN 27, 83 1215
TOTAL CELLS/ML	33000	7800	59000
DIVERSITY: DIVISION	0.6	1.2	0.4
..CLASS	0.6	1.2	0.4
..ORDER	0.7	2.1	0.4
...FAMILY	1.0	2.4	0.4
....GENUS	1.0	2.4	0.4

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)						
..BACILLARIOPHYCEAE						
...EUPODISCALES						
...COSCINODISCACEAE						
....CYCLOTELLA	750	2	1100	15	--	-
...FRAGILARIALES						
...FRAGILARIACEAE						
....SYNEDRA	--	-	--	-	1000	2
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCOCCALES						
...DICTYOSPHAERIACEAE						
....DICTYOSPHAERIUM	2000	6	440	6	--	-
...OOCYSTACEAE						
....ANKISTRODESMUS	--	-	55	1	55000#	94
....NEPHROCYTIUM	28000#	84	--	-	--	-
...OOCYSTIS	--	-	3000#	38	--	-
...VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	--	-	220	3	--	-
...ZYGNEMATALES						
...DESMIDIACEAE						
....CLOSTERIUM	380	1	--	-	--	-
....COSMARIUM	--	-	2100#	27	--	-
....STAUSTRUM	--	-	55	1	--	-
CHRYSTOPHYTA						
..CHRYSTOPHYCEAE						
...CHROMULINALES						
...CHRYSOCOCCACEAE						
....CHRYSOCOCCUS	--	-	380	5	--	-
...OCHROMONADALES						
...DINOBRYACEAE						
....DINOBRYON	1500	5	--	-	--	-
...SYNURACEAE						
....MALLOMONAS	--	-	55	1	520	1
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHROOCOCCALES						
...CHROOCOCCACEAE						
....ANACYSTIS	--	-	--	-	2100	4
EUGLENOPHYTA (EUGLENOIDS)						
..EUGLENOPHYCEAE						
...EUGLENALES						
...EUGLENACEAE						
....TRACHELONAS	--	-	55	1	--	-
PYRRHOPHYTA (FIRE ALGAE)						
..DINOPHYCEAE						
...DINOKONTAE						
...PERIDINIACEAE						
....PERIDINIUM	680	2	380	5	--	-

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

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ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS
 QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

PHYTOPLANKTON

RIO DE LA PLATA BASIN

50039950 LAGO CARITE NO.1 NEAR DAM NEAR CAYEY, PR (LAT 18°04'39" LONG 066°06'19")

DATE	DEC 14, 82	FEB 24, 83	JUN 27, 83
TIME	1130	1040	1140
TOTAL CELLS/ML	26000	5700	48000
DIVERSITY: DIVISION	0.7	1.6	0.4
..CLASS	0.7	1.6	0.4
..ORDER	0.7	2.4	0.6
...FAMILY	1.6	2.6	0.6
....GENUS	1.7	2.7	0.6

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)						
..BACILLARIOPHYCEAE						
...ACHNANTHALES						
....ACHNANTHACEAE						
....COCCONEIS	--	-	33	1	--	-
...EUPODISCALES						
....COSCINODISCACEAE						
....CYCLOTELLA	200	1	550	10	--	-
..FRAGILARIALES						
...FRAGILARIACEAE						
....SYNEDRA	--	-	--	-	430	1
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCOCCALES						
....COCCOMYXACEAE						
....ELAKATOTHRIX	5300#	20	--	-	--	-
...DICTYOSPHAERIACEAE						
....DICTYOSPHAERIUM	480	2	290	5	--	-
...OOCYSTACEAE						
....ANKISTRODESMUS	--	-	--	-	44000#	90
....NEPHROCYTIUM	16000#	60	--	-	--	-
....OOCYSTIS	550	2	1100#	19	--	-
...SCENEDESMACEAE						
....GLOEOACTINIUM	270	1	--	-	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	--	-	490	9	860	2
..ZYGNEMATALES						
...DESMIDIACEAE						
....COSMARIIUM	140	1	1330#	24	--	-
....STAURASTRUM	--	-	98	2	--	-
CHRYSTOPHYTA						
..CHRYSTOPHYCEAE						
...OCHROMONADALES						
...DINOBRYACEAE						
....DINOBRYON	3100	12	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHROOCOCCALES						
....CHROOCOCCACEAE						
....ANACYSTIS	--	-	1500#	26	3500	7
EUGLENOPHYTA (EUGLENOIDS)						
..EUGLENOPHYCEAE						
...EUGLENALES						
....EUGLENACEAE						
....EUGLENA	--	-	33	1	--	-
....TRACHELOMONAS	--	-	33	1	--	-
PYRRHOPHYTA (FIRE ALGAE)						
..DINOPHYCEAE						
...DINOKONTAE						
....PERIDINIACEAE						
....PERIDINIUM	200	1	230	4	--	-

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

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

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS
 QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

PHYTOPLANKTON

RIO DE LA PLATA BASIN

50044400 LAGO LA PLATA NO.5 NEAR MOUTH NEAR NARANJITO, PR (LAT 18°19'33" LONG 066°12'28")

DATE	DEC 7, 82	FEB 18, 83	JUN 21, 83
TIME	1145	1100	1145
TOTAL CELLS/ML	1100	7900	3100
DIVERSITY: DIVISION	0.9	0.5	1.6
..CLASS	0.9	0.5	1.6
...ORDER	1.1	1.0	1.9
....FAMILY	1.1	1.0	1.9
.....GENUS	1.1	1.0	2.4

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)						
..BACILLARIOPHYCEAE						
...ACHNANTHALES						
....ACHNANTHACEAE						
.....COCCONEIS	--	-	--	-	29	1
...EUPODISCALES						
....COSCINODISCAEAE						
.....CYCLOTELLA	300#	27	6500#	82	620#	20
....MELOSIRA	--	-	--	-	29	1
..FRAGILARIALES						
....FRAGILARIACEAE						
.....SYNEDRA	--	-	530	7	59	2
..NAVICULALES						
....NAVICULACEAE						
.....NAVICULA	45	4	--	-	--	-
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCOCCALES						
....MICRACTINIACEAE						
.....GOLENKINIA	--	-	600	8	--	-
...OOCYSTACEAE						
....ANKISTRODESMUS	--	-	--	-	740#	24
....KIRCHNERIELLA	--	-	--	-	29	1
...VOLVOCALES						
....CHLAMYDOMONADACEAE						
.....CHLAMYDOMONAS	770#	69	300	4	150	5
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHROOCOCCALES						
....CHROOCOCCACEAE						
.....ANACYSTIS	--	-	--	-	1100#	35
....COCCOCHLORIS	--	-	--	-	320	11
EUGLENOPHYTA (EUGLENOIDS)						
..EUGLENOPHYCEAE						
...EUGLENALES						
....EUGLENACEAE						
.....EUGLENA	--	-	--	-	29	1

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

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

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS
 QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

PHYTOPLANKTON

RIO DE LA PLATA BASIN

50044950 LAGO LA PLATA NO.3 NEAR DAM NEAR NARANJITO, PR (LAT 18°20'18" LONG 066°14'01")

DATE TIME	DEC 7, 82 1045	FEB 18, 83 1220	JUN 21, 83 1040
TOTAL CELLS/ML	13000	9200	37000
DIVERSITY: DIVISION	0.5	0.6	1.5
..CLASS	0.5	0.6	1.5
...ORDER	0.5	1.2	1.6
....FAMILY	0.5	1.2	1.6
.....GENUS	0.5	1.4	1.6

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)						
..BACILLARIOPHYCEAE						
...EPITHEMIALES						
....EPITHEMIAEAE						
.....EPITHEMIA	--	-	600	7	--	-
...EUPODISCALES						
....COSCINODISCACEAE						
.....CYCLOTELLA	11000#	87	6800#	73	16000#	44
...FRAGILARIALES						
....FRAGILARIACEAE						
.....SYNEDRA	--	-	380	4	--	-
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCOCCALES						
....MICRACTINIACEAE						
.....GOLENKINIA	--	-	930	11	--	-
....MICRACTINIUM	--	-	530	6	--	-
...OOCYSTACEAE						
....ANKISTRODESMUS	--	-	--	-	910	2
...VOLVOCALES						
....CHLAMYDOMONADACEAE						
.....CHLAMYDOMONAS	1600	13	--	-	2400	7
CRYPTOPHYTA (CRYPTOMONADS)						
..CRYPTOPHYCEAE						
...CRYPTOMONADALES						
....CRYPTOMONADACEAE						
.....CRYPTOMONAS	--	-	--	-	1200	3
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHROOCOCCALES						
....CHROOCOCCACEAE						
.....ANACYSTIS	--	-	--	-	16000#	44

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

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

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS
 QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

PHYTOPLANKTON

RIO GRANDE DE LOIZA BASIN

50057500 LAGO LOIZA NO.4 NEAR MOUTH NEAR CAGUAS, PR (LAT 18°16'51" LONG 066°00'35")

DATE TIME	DEC 10,82 1150	FEB 17,83 1315	JUN 24,83 1115			
TOTAL CELLS/ML	16000	5500	2600			
DIVERSITY: DIVISION	0.9	1.1	1.6			
..CLASS	0.9	1.1	1.6			
...ORDER	1.0	1.1	2.0			
...FAMILY	1.1	1.1	2.1			
...GENUS	1.1	1.1	2.2			
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)						
..BACILLARIOPHYCEAE						
...EUPODISCALES						
...COSCINODISCACEAE						
...CYCLOTELLA	13000#	81	4200#	76	160	6
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCOCCALES						
...DICTYOSPHAERIACEAE						
...DICTYOSPHAERIUM	560	3	--	-	--	-
...MICRACTINIACEAE						
...MICRACTINIUM	--	-	360	7	--	-
...OOCYSTACEAE						
...ANKISTRODESMUS	--	-	--	-	73	3
...KIRCHNERIELLA	700	4	--	-	59	2
...OOCYSTIS	420	3	--	-	--	-
...SCENEDESMACEAE						
...SCENEDESMUS	--	-	--	-	180	7
...VOLVOCALES						
...CHLAMYDOMONADACEAE						
...CHLAMYDOMONAS	280	2	--	-	980#	38
CHRYSTOPHYTA						
..CHRYSTOPHYCEAE						
...OCHROMONADALES						
...OCHROMONADACEAE						
...OCHROMONAS	--	-	--	-	29	1
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHROOCOCCALES						
...CHROOCOCCACEAE						
...ANACYSTIS	1100	7	800	15	970#	38
EUGLENOPHYTA (EUGLENOIDS)						
..EUGLENOPHYCEAE						
...EUGLENALES						
...EUGLENA	--	-	--	-	73	3
...TRACHELOMONAS	--	-	--	-	44	2
PYRRHOPHYTA (FIRE ALGAE)						
..DINOPHYCEAE						
...DINOKONTAE						
...PERIDINIACEAE						
...PERIDINIUM	--	-	130	2	--	-

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

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

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS
 QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

PHYTOPLANKTON

RIO GRANDE DE LOIZA BASIN

50058800 LAGO LOIZA NO.7 NEAR DAM NEAR TRUJILLO ALTO, PR (LAT 18°20'18" LONG 066°00'47")

DATE TIME	DEC 10, 82 1105	FEB 17, 83 1210	JUN 24, 83 1045			
TOTAL CELLS/ML	47000	12000	26000			
DIVERSITY: DIVISION	1.3	0.0	1.1			
CLASS	1.3	0.0	1.1			
ORDER	1.7	0.0	1.2			
FAMILY	1.8	0.0	1.3			
GENUS	1.8	0.0	2.1			
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)						
BACILLARIOPHYCEAE						
EUPODISCALES						
COSCINODISCACEAE						
CYCLOTELLA	24000#	50	12000#	100	5100#	20
MELOSIRA	--	-	--	-	460	2
NAVICULALES						
NAVICULACEAE						
NAVICULA	290	1	--	-	--	-
CHLOROPHYTA (GREEN ALGAE)						
CHLOROPHYCEAE						
CHLOROCOCCALES						
CHLOROCOCCACEAE						
SCHROEDERIA	860	2	--	-	--	-
DICTYOSPHAERIACEAE						
DICTYOSPHAERIUM	--	-	--	-	910	4
OOCYSTACEAE						
ANKISTRODESMUS	570	1	--	-	*	0
KIRCHNERIELLA	--	-	--	-	460	2
VOLVOCALES						
CHLAMYDOMONADACEAE						
CHLAMYDOMONAS	--	-	--	-	690	3
CRYPTOPHYTA (CRYPTOMONADS)						
CRYPTOPHYCEAE						
CRYPTOMONADALES						
CRYPTOMONADACEAE						
CRYPTOMONAS	290	1	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
CYANOPHYCEAE						
CHROOCOCCALES						
CHROOCOCCACEAE						
AGMENELLUM	--	-	--	-	10000#	39
ANACYSTIS	13000#	27	--	-	8000#	31
OSCILLATORIALES						
OSCILLATORIAEAE						
LYNGBYA	8300#	18	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)						
EUGLENOPHYCEAE						
EUGLENALES						
EUGLENACEAE						
TRACHELOMONAS	290	1	--	-	--	-

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

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

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES

Samples are collected at sites other than gaging stations and partial-record stations to give better areal coverage in a river basin. Such sites are to be referred to as miscellaneous sites.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO
RIO GRANDE DE ARECIBO BASIN												
		50021500		-	RIO PELLEJAS NEAR UTUADO, PR (LAT 18°13'53" LONG 066°42'56")							
JAN , 1983												
17...	1545	--	--	--	--	5800	K1500	--	--	--	--	--
		50028400		-	RIO TANAMA AT CHARCO HONDO, PR (LAT 18°24'52" LONG 066°42'52")							
JUN , 1983												
23...	1120	39	287	7.8	25.5	--	--	140	51	3.7	6.6	.3
RIO GRANDE DE LOIZA BASIN												
		50051310		-	RIO CAYAGUAS AT CERRO GORDO, PR (LAT 18°09'27" LONG 065°57'29")							
APR , 1983												
21...	1600	E102	115	--	--	--	--	--	--	--	--	--
21...	1605	E102	--	--	--	--	--	--	--	--	--	--
RIO BLANCO BASIN												
		50076000		-	RIO BLANCO NEAR FLORIDA, PR (LAT 18°13'45" LONG 065°47'06")							
APR , 1983												
21...	1125	E269	68	--	23.5	--	--	--	--	--	--	--
21...	1320	E234	68	--	23.5	--	--	--	--	--	--	--
21...	1325	E233	68	--	23.5	--	--	--	--	--	--	--
21...	1430	203	68	--	23.5	--	--	16	4.2	1.4	6.2	.7
		50076600		-	RIO BLANCO AT RIO BLANCO PUMP HOUSE, PR (LAT 18°13'19" LONG 065°47'05")							
SEP , 1983												
21...	1315	--	139	7.8	27.0	--	--	41	10	3.8	9.9	.7
		50077500		-	RIO BLANCO AT NAGUABO, PR (LAT 18°12'16" LONG 065°45'31")							
SEP , 1983												
15...	1330	--	146	7.0	29.5	--	--	46	12	3.8	10	.7

E = estimate
K = non-ideal count

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES
WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY FIELD (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 DAY)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	SEDI- MENT, SUS- PENDEd (MG/L)
RIO GRANDE DE ARECIBO BASIN--CONTINUED											
	50021500	- RIO PELLEJAS NEAR UTUADO, PR (LAT 18°13'53" LONG 066°42'56")									
JAN , 1983 17...	--	--	--	--	--	--	--	--	--	--	--
	50028400	- RIO TANAMA AT CHARCO HONDO, PR (LAT 18°24'52" LONG 066°42'52")									
JUN , 1983 23...	1.0	110	7.8	8.8	.20	10	155	16.3	5	5	--
RIO GRANDE DE LOIZA BASIN--CONTINUED											
	50051310	- RIO CAYAGUAS AT CERRO GORDO, PR (LAT 18°09'27" LONG 065°57'29")									
APR , 1983 21...	--	--	--	--	--	--	--	--	--	--	260
21...	--	--	--	--	--	--	--	--	--	--	260
RIO BLANCO BASIN--CONTINUED											
	50076000	- RIO BLANCO NEAR FLORIDA, PR (LAT 18°13'45" LONG 065°47'06")									
APR , 1983 21...	--	--	--	--	--	--	--	--	--	--	97
21...	--	--	--	--	--	--	--	--	--	--	185
21...	--	--	--	--	--	--	--	--	--	--	97
21...	.7	--	9.6	8.3	<.10	13	52	28.4	--	--	--
	50076600	- RIO BLANCO AT RIO BLANCO PUMP HOUSE, PR (LAT 18°13'19" LONG 065°47'05")									
SEP , 1983 21...	1.0	43	4.4	16	.10	24	95	--	--	--	--
	50077500	- RIO BLANCO AT NAGUABO, PR (LAT 18°12'16" LONG 065°45'31")									
SEP , 1983 15...	1.2	49	5.4	12	<.10	24	98	--	--	--	--

**Ground-Water Records
for
Puerto Rico**

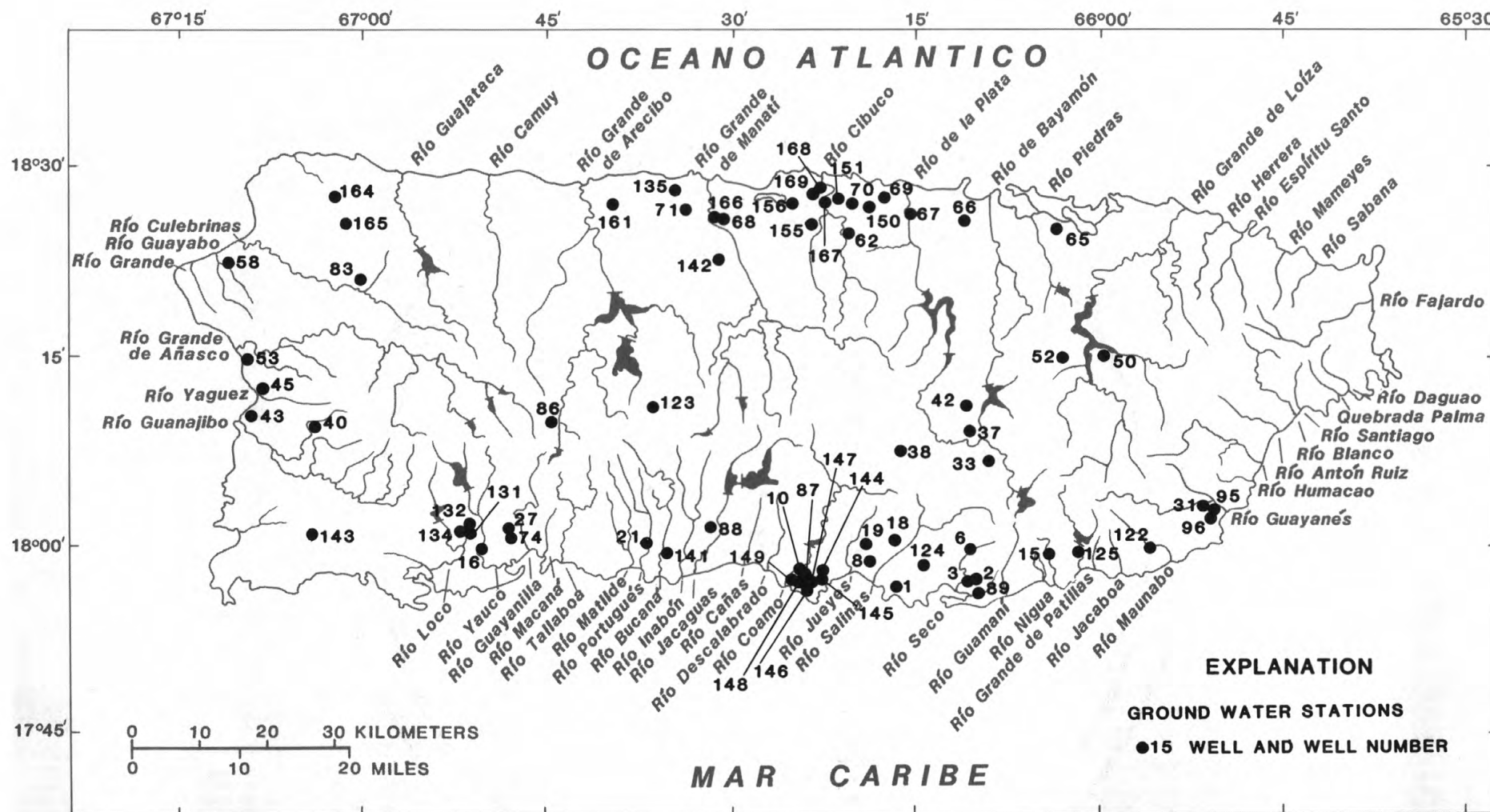


Figure 26.--Ground-water stations in Puerto Rico.

GROUND-WATER LEVELS

RIO GUAJATACA BASIN

182538067015900. Local number, 164.

LOCATION.--Lat 18°25'38", long 67°01'59".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Rocha Moca.

AQUIFER.--Aymamón Limestone.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 12 in (0.30 m), cased 0-100 ft (0-30.49 m), perforated 100-160 ft (30.49-48.78 m), diameter 10 in (0.25 m), cased 0-140 ft (0-42.68 m), perforated 140-200 ft (42.68-61.0 m), gravel packed 120-200 ft (36.58-61.0 m). Depth 200 ft (61.0 m).

DATUM.--Altitude of land-surface datum is 787.2 ft (240 m) above mean sea level. Measuring point: Upper edge of 1.5 in (0.04 m) pipe on pump base, 1.40 ft (0.43 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD.--January 18, 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 147.1 ft (44.85 m) below land-surface datum, May 24, 1982; lowest water level measured, 176.1 ft (53.69 m) below land-surface datum, Feb. 18, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 18, 1982	173.6	July 26, 1982	147.5	Dec. 16, 1982	148.5	May 18, 1983	159.1
Feb. 18	176.1	Aug. 18	147.8	Jan. 12, 1983	147.7	June 28	163.9
Mar. 18	147.2	Sept. 9	147.7	Feb. 2	148.6	July 18	155.3
Apr. 16	147.6	Oct. 8	147.7	Mar. 4	148.5	Aug. 22	147.8
May 24	147.1	Nov. 8	147.1	Apr. 6	163.0	Sept. 12	148.2
June 18	152.2						

182422067015100. Local number, 165.

LOCATION.--Lat 18°24'22", long 67°01'51".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Mateo Pérez - Bo. Saltos.

AQUIFER.--Cibao Formation, Guajataca member.

WELL CHARACTERISTICS.--Drilled production water-table well, diameter 16 in (0.40 m), cased 16 in (0.40 m) 0-40 ft (0-12.2 m), cased 12 in (0.30 m) 40-200 ft (12.2-61.0 m). Depth 200 ft (61.0 m).

DATUM: Altitude of land-surface datum is about 672.4 ft (205 m) above mean sea level. Measuring point: Hole on top of pump base, 1.00 ft (0.30 m) above land-surface datum.

REMARKS.--Pumping discontinued. Abandoned observation well.

PERIOD OF RECORD.--January 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 69.22 ft (21.1 m) below land-surface datum, Nov. 8, 1982; lowest water level measured, 70.60 ft (21.5 m) below land-surface datum, June 18, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 18, 1982	69.83	July 26, 1982	69.35	Dec. 16, 1982	69.84	May 18, 1983	69.55
Feb. 18	69.86	Aug. 18	69.82	Jan. 12, 1983	69.74	June 28	69.55
Mar. 18	69.97	Sept. 9	69.85	Feb.	69.90	July 18	69.60
Apr. 16	70.56	Oct. 8	69.47	Mar.	69.85	Aug. 22	69.60
May 24	69.65	Nov. 8	69.22	Apr.	70.10	Sept. 12	69.48
June 18	70.60						

a Pumping.

GROUND-WATER LEVELS

RIO GRANDE DE ARECIBO BASIN

181038066441201. Local number, 86.

LOCATION.--Lat 18°10'38", long 66°44'12".

Owner: Joaquín Mattei - U.S. Geological Survey.

Name: Adjuntas.

AQUIFER.--Alluvium of Quaternary Age and volcanic rock of Eocene Age.

WELL CHARACTERISTICS.--Drilled test well, diameter 6 in (15 cm). Depth 300 ft (91.4 m).

DATUM.--Altitude of land-surface datum is about 1,460 ft (445.0 m) above mean sea level. Measuring point: Bottom edge of hole in 6 in (15 cm) casing, 1.45 ft (0.44 m) above land-surface datum.

REMARKS.--Observation well.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.34 ft (1.32 m) below land-surface datum, Jan. 12, 1979; lowest measured, 12.53 ft (3.82 m) below land-surface datum, Apr. 12, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 4	10.86	Feb. 7	12.00	May 11	11.80	Aug. 22	11.35
Nov. 9	10.91	Mar. 16	11.92	June 22	10.84	Sept. 6	12.07
Jan. 24	11.80	Apr. 12	12.53	Aug. 2	11.80		

181307066355001. Local number, 123.

LOCATION.--Lat 18°13'07", long 66°35'50".

Owner: P.R. Aqueduct & Sewer Authority.

Name: Jayuya 3.

AQUIFER.--Recent alluvium.

WELL CHARACTERISTICS.--Drilled for public supply well, diameter 10 in (25 cm) 0-27 ft (0-8.2 m), 10 in (25 cm) 27-100 ft (8.2- 33.5 m) perforated and all gravel packed.

DATUM.--Altitude of land-surface datum is about 1,400 ft (427 m) above mean sea level. Measuring point: Lower edge 0.75 in (1.90 cm) pipe on concrete pump base, 1.40 ft (0.43 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD.--January 15, 1976 to July 21, 1977, discontinued. January 15, 1980 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.73 ft (3.27 m) below land-surface datum, May 30, 1980; lowest measured, 49.36 ft (15.04 m) below land-surface datum, Apr. 21, 1976.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 4	14.57	Jan. 24	15.05	Apr. 12	14.89	June 5	14.46
Nov. 9	14.21	Mar. 16	12.76	May 11	14.43	Aug. 22	14.87
						Sept. 6	15.25

182632066384800. Local number, 161.

LOCATION.--Lat 18°26'32", long 66°38'48".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Santana #2

AQUIFER.--Aymamón Limestone.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 12 in (0.30 m), cased 0-180 ft (0-54.88 m), diameter 10 in (0.25 m), perforated 175-220 ft (53.35-67.07 m). Depth 220 ft (67.07 m).

DATUM.--Altitude of land-surface datum is about 148 ft (45 m) above mean sea level. Measuring point: Airhole in pump base, 0.90 ft (0.27 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD.--January 8, 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 113.7 ft (34.66 m) below land-surface datum, Jan. 8, 1982; lowest water level measured, 152.2 ft (46.40 m) below land-surface datum, May 12, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 8, 1982	a113.7	June 17, 1982	a130.5	Nov. 5, 1982	a135.9	Apr. 6, 1984	117.4
Feb. 17	a130.1	July 26	a142.8	Dec. 15	a128.4	May 12	a152.2
Mar. 18	a122.7	Aug. 19	a136.8	Jan. 13	a129.6	July 18	a151.3
Apr. 15	a139.7	Sept. 10	a140.2	Feb. 2	a132.0	Aug. 19	139.8
May 21	a134.9	Oct. 8	a146.6	Mar. 7	a128.3	Sept. 12	a148.4

a Pumping.

GROUND-WATER LEVELS

RIO GRANDE DE MANATI BASIN

182548066300201. Local number, 68.

LOCATION.--Lat 18°25'48", long 66°30'02".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Manatí 2.

AQUIFER.--Unconsolidated deposits of Quaternary Age and limestone of Tertiary Age.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 20 to 12 in (51 to 30 cm), cased 20 in (51 cm) 8-168 ft (2.4-51.2 m) 12 in (30 cm) 153-206 ft (46.6-62.8 m); perforated 20 in (51 cm) 80-168 ft (24.4-51.2 m), 12 in (30 cm), 153-206 ft (46.6-62.8 m). Depth 212 ft (64.6 m).

DATUM.--Altitude of land-surface datum is 31.41 ft (9.574 m) above mean sea level. Measuring point: Bottom edge of hole in 20 in (51 cm) casing, 3.55 ft (1.08 m) above land-surface datum.

REMARKS.--Observation well. Lowest and highest water levels are pumping levels.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, a22.50 ft (a6.86 m) below land-surface datum, June 2, 1965; lowest measured, a37.19 ft (a11.34 m) below land-surface datum, Jan. 15, 1975.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 8	a28.92	Jan. 13	a28.68	Apr. 5	a29.80	July 18	a29.10
Nov. 5	a29.09	Feb. 2	a29.36	May 12	a26.40	Aug. 22	a29.30
Dec. 13	a29.19	Mar. 7	a29.38	June 27	a29.04	Sept. 12	a29.38

182603066333601. Local number, 71.

LOCATION.--Lat 18°26'03", long 66°33'36".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Florida Afuera, Barceloneta.

AQUIFER.--Limestone of Tertiary Age.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 12 in (30 cm), cased 0-150 ft (0-45.7 m). Depth 235 ft (71.6 m).

DATUM.--Altitude of land-surface datum is about 213 ft (64.9 m) above mean sea level. Measuring point: Lower edge of 0.75 in (1.9 cm) pipe in pump base, 3.0 ft (0.91 m) above land surface datum.

REMARKS.--Observation well.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, a17.60 ft (a5.36 m) below land-surface datum, June 28, 1983; lowest measured, 226.9 ft (69.2 m) below land-surface datum, Apr. 4, 1963.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 8	a25.58	Jan. 13	a21.77	Apr. 6	a23.52	July 18	a20.55
Nov. 5	a24.56	Feb. 3	a22.10	May 10	a22.00	Aug. 19	a19.20
Dec. 5	a22.88	Mar. 3	a24.70	June 28	a17.60	Sept. 12	a19.09

a Pumping.

GROUND-WATER LEVELS

RIO GRANDE DE MANATI BASIN

182621066343301. Local number, 135.

LOCATION.--Lat 18°26'21", long 66°34'33".

Owner: Puerto Rico Land Authority.

Name: Lederle.

AQUIFER.--Limestone of Tertiary Age.

WELL CHARACTERISTICS.--Drilled agricultural water-table well, diameter 24 in (61 cm), cased 0-30 ft (0-9.1 m), diameter 16 5/8 in (42 cm), cased to 0-450 ft (0-137.2 m). Depth 550 ft (167.6 m).

DATUM.--Altitude of land-surface datum is 287.00 ft (87.48 m) above mean sea level. Measuring point: Top of shelter floor, 2.8 ft (0.85 m) above land-surface datum.

REMARKS.--Recording observation well.

PERIOD OF RECORD.--November 1979 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 276.85 ft (84.38 m) below land-surface datum, Dec. 16, 1981; lowest, 283.7 ft (86.47 m) below land-surface datum, Nov. 1, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	283.10	283.22	283.23	283.43	283.37	283.42	283.42	283.17	283.36	283.37	283.38
2	---	283.10	283.30	283.24	283.42	283.38	283.39	283.46	283.21	283.35	283.38	283.38
3	---	283.10	283.30	283.24	283.42	283.42	283.39	283.46	283.23	283.35	283.40	283.39
4	---	283.09	283.28	283.24	283.43	283.43	283.45	283.46	283.25	283.34	283.41	283.39
5	---	283.12	283.30	283.24	283.46	283.47	283.46	283.46	283.31	283.32	283.42	283.38
6	---	283.13	283.26	283.27	283.46	283.47	283.46	283.46	283.29	283.31	283.46	283.35
7	---	283.13	283.23	283.27	283.46	283.47	283.46	---	283.31	283.30	283.46	283.26
8	---	283.13	283.22	283.27	283.47	283.48	283.46	---	283.34	283.22	283.46	283.25
9	---	283.12	283.21	283.27	283.47	283.48	283.46	---	283.34	283.22	283.43	283.25
10	---	283.09	283.18	283.27	283.47	283.47	283.45	---	283.35	283.23	283.41	283.27
11	---	283.07	283.17	283.28	283.47	283.47	283.44	283.37	283.35	283.30	283.41	283.28
12	---	283.03	248.99	283.30	283.47	283.46	283.41	283.36	283.35	283.30	283.41	283.35
13	282.99	283.01	283.19	283.31	283.47	283.45	283.37	283.35	283.35	283.31	283.41	283.38
14	282.99	283.00	283.20	283.31	283.48	283.45	283.34	283.33	283.35	283.34	283.41	283.39
15	282.99	283.00	283.23	283.32	283.47	283.46	283.34	283.31	283.35	283.34	283.41	283.39
16	282.99	283.03	283.28	283.32	283.47	283.43	283.36	283.30	283.35	283.31	283.40	283.39
17	282.99	283.03	283.30	283.32	283.46	283.35	283.33	283.23	283.34	283.22	283.40	283.38
18	283.01	283.03	283.30	283.34	283.43	283.32	283.31	283.20	283.32	283.21	283.41	283.37
19	283.02	283.04	283.30	283.37	283.42	283.31	283.31	283.17	283.31	283.21	283.40	283.35
20	283.03	283.04	283.33	283.40	283.36	283.32	283.32	283.15	283.30	283.24	283.42	283.33
21	283.04	283.03	283.33	283.42	283.35	283.34	283.31	283.15	283.28	283.34	283.43	283.34
22	283.05	283.04	283.33	283.42	283.42	283.36	283.28	283.17	283.23	283.36	283.40	283.25
23	283.08	283.10	283.33	283.41	283.45	283.37	283.25	283.17	283.23	283.36	283.40	283.22
24	283.11	283.01	283.34	283.39	283.44	283.41	283.22	283.17	283.31	283.35	283.39	283.20
25	283.11	283.11	283.35	283.45	283.43	283.41	283.22	283.18	283.34	283.35	283.38	283.19
26	283.13	283.11	283.33	283.46	283.37	283.41	283.22	283.16	283.36	283.35	283.38	283.18
27	283.12	283.12	283.27	283.47	283.35	283.42	283.23	283.14	283.37	283.35	283.37	283.18
28	283.12	283.16	283.22	283.47	283.35	283.42	283.27	283.14	283.37	283.35	283.35	283.18
29	283.11	283.16	283.17	283.47	---	283.46	283.30	283.15	283.36	283.36	283.33	283.18
30	283.08	283.21	283.13	283.46	---	283.46	283.38	283.16	283.36	283.36	283.28	283.20
31	283.09	---	283.17	283.44	---	283.44	---	283.17	---	283.36	283.36	---
LOW	---	283.21	283.35	283.47	283.48	283.48	283.46	---	283.37	283.36	283.46	283.39
HIGH	---	283.00	248.99	283.23	283.35	283.31	283.22	---	283.17	283.21	283.28	283.18

GROUND-WATER LEVELS
RIO GRANDE DE MANATI BASIN

182454066315300. Local number, 142.

LOCATION.--Lat 18°24'54", long 66°31'53".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Morán Simó.

AQUIFER.--Aymamón Limestone.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 20 in (0.51 m) 0-147 ft (0-44.8 m), cased 20 in (0.51 m) 0-100 ft (0-30.5 m), diameter 16 in (0.41 m) 147-211 ft (44.8-64.3 m), diameter 12 in (0.30 m) 211-320 ft (64.3-97.6 m), cased 12 in (0.30 m) 0-320 ft (0-97.6 m), perforated 248-320 ft (75.6-97.6 m), diameter 10 in (0.25 m) 320-517 ft (97.6-158 m), cased 8 in (0.20 m) 300-517 ft (91.5-158 m), perforated 480-517 ft (146-158 m). Depth 517 ft (158 m).

DATUM.--Altitude of land-surface datum is 492 ft (150 m) above mean sea level. Measuring point: top of 1.75 in (0.04 m) hole on top of 3 in (0.08 m) casing, 1.0 ft (0.30 m) above land surface datum.

REMARKS.--Observation well.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 226.5 ft (69.0 m) below land-surface datum, May 21, 1982; lowest water level measured, 228.8 ft (69.8 m) below land-surface datum, Dec. 16, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Aug. 25, 1981	228.0	June 17, 1982	227.8	Dec. 15, 1982	228.1	May 15, 1983	228.6
Dec. 16	228.8	July 26	228.0	Jan. 13, 1983	288.1	June 27	227.8
Feb. 17, 1982	227.4	Aug. 19	228.6	Feb. 3	228.2	July 18	228.3
Mar. 18	228.0	Sept. 10	228.2	Mar. 7	227.2	Aug. 19	228.5
Apr. 15	227.8	Oct. 8	228.0	Apr. 5	228.4	Sept. 12	228.6
May 21	226.5	Nov. 5	228.1				

182542066305100. Local number, 166.

LOCATION.--Lat 18°25'42", long 66°30'51".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Manatí (New well).

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 20 in (0.51 m), cased 0-100 ft (0-39.49 m), diameter 14 in (0.36 m), cased 0-140 ft (0-42.68 m), slotted 80-90 ft (24.39-27.44 m) and 130-140 ft (39.63-42.68 m). Depth 140 ft (42.68 m).

DATUM.--Altitude of land-surface datum is 29.52 ft (9.0 m) above mean-sea level. Measuring point: Top of 14 in (0.36 m) casing, 0.80 ft (0.24 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD.--January 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 22.90 ft (6.98 m) below land-surface datum, Mar. 3, 1983; lowest water level measured, 26.36 ft (8.04 m) below land-surface datum, Feb. 3, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 14, 1982	24.35	July 26, 1982	25.20	Dec. 15, 1982	25.05	May 12, 1983	24.85
Feb. 16	23.57	Aug. 19	25.37	Jan. 13, 1983	24.88	June 28	25.16
Mar. 17	24.96	Sept. 10	25.27	Feb. 3	26.36	July 15	25.20
Apr. 15	25.16	Oct. 8	24.99	Mar. 3	22.90	Aug. 19	25.55
May 21	24.53	Nov. 5	25.10	Apr. 6	25.45	Sept. 12	25.47
June 17	25.04						

GROUND-WATER LEVELS

RIO CIBUCO BASIN

182446066194801. Local number, 62.

LOCATION.--Lat 18°24'46", long 66°19'48".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Vega Alta 1.

AQUIFER.--Limestone of Tertiary Age.

WELL CHARACTERISTICS.--Drilled public supply artesian well, diameter 16 to 12 in (41 to 30 cm), cased 16 in (41 cm) 0-50 ft (0-15.2 m), 12 in (30 cm) 0-110 ft (0-33.5 m). Depth 210 ft (64.0 m).

DATUM.--Altitude of land-surface datum is about 102 ft (31.1 m) above mean sea level. Measuring point: Lower edge of 0.75 in (1.90 cm) pipe in pump base, 1.0 ft (0.30 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD.--January 1961 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, a80.8 ft (a24.6 m) below land-surface datum, Jan. 28, 1980; lowest measured, 137.9 ft (42.0 m) below land-surface datum, Mar. 3, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 8	a108.1	Jan. 13	a98.90	Apr. 5	a114.0	July 15	a100.3
Nov. 5	a116.3	Feb. 3	a113.0	May 13	a114.5	Aug. 19	a121.5
Dec. 15	a100.7	Mar. 3	a137.9	June 28	a 99.90	Sept. 20	a97.84

182647066201701. Local number, 70.

LOCATION.--Lat 18°26'47", long 66°20'17".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Sabana Hoyos.

AQUIFER.--Limestone of Tertiary Age.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 8 in (20 cm), cased 0-90 ft (0-27.4 m), perforated. Depth 90 ft (27.4 m).

DATUM.--Altitude of land-surface datum is about 49 ft (14.9 m) above mean sea level. Measuring point: Top of casing wooden cover, 1.30 ft (0.40 m) above land-surface datum.

REMARKS.--Recording observation well.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 21.33 ft (6.50 m) below land-surface datum, Oct. 26, 1976; lowest, 31.10 ft (9.48 m) below land-surface datum, July 31, 1975.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28.35	28.71	28.74	28.32	28.88	29.28	29.54	28.83	28.64	29.17	29.37	29.26
2	28.37	28.71	28.74	28.32	28.90	29.29	29.54	28.83	28.65	29.20	29.37	29.25
3	28.37	28.72	28.74	28.31	28.91	29.31	29.54	28.86	28.67	29.21	29.38	29.26
4	28.38	28.74	28.75	28.31	28.92	29.34	29.55	28.90	28.70	29.20	29.39	29.27
5	28.39	28.75	28.78	28.31	28.93	29.35	29.59	28.90	28.73	29.19	29.39	29.27
6	28.40	28.77	28.80	28.31	28.94	29.37	29.60	28.93	28.75	29.17	29.38	29.26
7	28.41	28.78	28.81	28.32	28.95	29.37	29.62	28.94	28.77	29.14	29.40	29.26
8	28.42	28.79	28.82	28.34	28.97	29.40	29.63	28.94	28.80	29.12	29.42	29.22
9	28.43	28.81	28.84	28.35	28.97	29.41	29.64	28.94	28.83	29.11	29.43	29.20
10	28.47	28.81	28.86	28.37	29.01	29.43	29.65	28.96	28.85	29.10	29.45	29.19
11	28.48	28.81	28.87	28.39	29.07	29.45	29.65	28.98	28.88	29.11	29.45	29.18
12	28.50	28.81	28.88	28.41	29.06	29.46	29.66	29.04	28.90	29.13	29.46	29.17
13	28.52	28.79	28.89	28.44	29.09	29.47	29.66	29.05	28.91	29.15	29.46	29.16
14	28.54	28.78	28.91	28.47	29.11	29.47	29.66	29.03	28.93	29.18	29.45	29.16
15	28.54	28.77	28.93	28.52	29.12	29.47	29.67	28.97	28.95	29.20	29.45	29.15
16	28.54	28.74	28.93	28.54	29.13	29.45	29.67	28.93	28.97	29.22	29.45	29.14
17	28.54	28.72	28.93	28.57	29.15	29.44	29.67	28.91	28.99	29.22	29.44	29.13
18	28.54	28.71	28.95	28.59	29.17	29.42	29.67	28.89	28.99	29.21	29.43	29.13
19	28.57	28.71	28.97	28.60	29.18	29.42	29.67	28.88	28.99	29.21	29.42	29.13
20	28.57	28.72	28.99	28.62	29.18	29.42	29.67	28.85	28.99	29.21	29.42	29.12
21	28.57	28.72	28.92	28.64	29.20	29.42	29.58	28.79	29.00	29.22	29.42	29.13
22	28.56	28.73	28.84	28.67	29.21	29.45	29.45	28.74	29.02	29.25	29.37	29.11
23	28.56	28.73	28.79	28.69	29.22	29.47	29.22	28.69	29.04	29.27	29.34	29.08
24	28.57	28.73	28.73	28.70	29.23	29.49	29.05	28.67	29.05	29.28	29.32	29.06
25	28.59	28.74	28.71	28.73	29.24	29.51	28.93	28.64	29.07	29.29	29.31	29.03
26	28.60	28.76	28.67	28.75	29.26	29.53	28.87	28.62	29.08	29.30	29.30	29.03
27	28.61	28.77	28.61	28.77	29.26	29.54	28.83	28.61	29.09	29.31	29.29	29.00
28	28.64	28.76	28.53	28.80	29.27	29.55	28.82	28.60	29.11	29.31	29.28	28.99
29	28.66	28.72	28.44	28.83	---	29.56	28.82	28.60	29.12	29.31	29.27	28.99
30	28.68	28.73	28.37	28.84	---	29.55	28.82	28.60	29.14	29.33	29.26	28.99
31	28.70	---	28.34	28.85	---	29.54	---	28.61	---	29.35	29.26	---
LOW	28.70	28.81	28.99	28.85	29.27	29.56	29.67	29.05	29.14	29.35	29.46	29.27
HIGH	28.35	28.71	28.34	28.31	28.88	29.28	28.82	28.60	28.64	29.10	29.26	28.99
CAL YR 1982	MEAN 27.69		LOW 28.99	HIGH 24.73								
WTR YR 1983	MEAN 29.00		LOW 29.67	HIGH 28.31								

GROUND-WATER LEVELS

RIO CIBUCO BASIN

182705066213500. Local number, 151.

LOCATION.--Lat 18°27'05", long 66°21'35".

Owner: AFDA - P.R. Department of Agriculture.

Name: Rice Program #3.

AQUIFER.--Aymamón Limestone.

WELL CHARACTERISTICS.--Drilled agricultural water-table well, diameter 18 in (0.46 m), cased 0-80 ft (0-24.39 m), diameter 16 in (0.41 m), open hole 80-160 ft (24.39-48.78 m). Depth 160 ft (48.78).

DATUM.--Altitude of land-surface datum is about 19.7 ft (6 m) above mean sea level. Measuring point: Hole on side of 18 in (0.46 m) casing, 2.4 ft (0.73 m) above land-surface datum.

REMARKS.--Observation well. Irrigation water supply.

PERIOD OF RECORD.--January 13, 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.72 ft (1.13 m) below land-surface datum, Jan. 13, 1982; lowest water level measured, 35.80 ft (10.91 m) below land-surface datum, Aug. 4, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 13, 1982	3.72	May 21, 1982	4.74	Nov. 5, 1982	6.40	May 12, 1983	6.60
Feb. 16	4.42	June 16	5.25	Dec. 15	a28.05	June 27	6.85
24	a16.80	July 26	5.80	Jan. 13, 1983	6.25	July 15	a34.50
25	4.70	Aug. 17	a41.78	Feb. 3	6.70	Aug. 4	a35.80
Mar. 17	4.76	Sept. 10	5.86	Mar. 3	6.91	19	7.00
Apr. 15	a25.70	Oct. 8	6.00	Apr. 5	a33.10	Sept. 29	6.25

182612066225400. Local number, 155.

LOCATION.--Lat 18°26'54", long 66°22'54".

Owner: P.R. Aqueduct and Sewer Authority.

Name: La Trocha.

AQUIFER.--Aymamón Limestone.

WELL CHARACTERISTICS.--Drilled unused table well, diameter 20 in (0.51 m), cased 0-70 ft (0-21.34 m), diameter 16 in (0.41 m), cased 0-100 ft (0-30.49), perforated 100-200 ft (30.49-61.0 m). Depth 200 ft (61.0 m).

DATUM.--Altitude of land-surface datum is about 49.20 ft (15.0 m) above mean sea level. Measuring point: Top of 20 in (0.51 m) casing, 2.1 ft (0.64 m) above land-surface datum.

REMARKS.--Observation well. Never used as water supply well due to high concentrations of chlorides.

PERIOD OF RECORD.--January 14, 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 32.23 ft (9.83 m) below land-surface datum, Jan. 14, 1982; lowest water level measured, 34.60 ft (10.55 m) below land-surface datum, Sept. 6, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 14, 1982	32.23	Apr. 15, 1982	33.56	Apr. 6, 1983	34.27	July 15, 1983	34.00
Feb. 16	34.02	May 21	33.26	May 12	33.95	Aug. 15	34.32
Mar. 17	34.38	June 16	33.48	June 27	34.08	Sept. 6	34.60

182652066241400. Local number, 156.

LOCATION.--Lat 18°26'52", long 66°24'14".

Owner: P.R. Aqueduct and Sewer Authority.

Name: El Criollo #1.

AQUIFER.--Aymamón Limestone.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 20 in (0.51 m), cased 0-98 ft (0-29.88 m), diameter 16 in (0.41 m), perforated 88-120 ft (26.83-36.58 m). Depth 120 ft (36.58 m).

DATUM.--Altitude of land-surface datum is about 49.20 ft (15 m) above mean sea level. Measuring point: Upper edge of 2 in (0.05 m) pipe on pump base, 1.8 ft (0.55 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD.--January 14, 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, a40.52 ft (12.35 m) below land-surface datum, Feb. 16, 1982; lowest water level measured, a47.30 ft (14.42 m) below land-surface datum, Apr. 5, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 14, 1982	a45.60	July 26, 1982	a42.34	Dec. 15, 1982	42.28	May 12, 1983	a43.10
Feb. 16	a40.52	Aug. 17	a43.00	Jan. 13, 1983	a42.90	June 28	a43.29
Mar. 17	a40.88	Sept. 10	a43.16	Feb. 3	a43.10	July 15	a42.50
Apr. 15	a46.87	Oct. 8	a42.98	Mar. 7	a43.40	Aug. 18	a43.23
May 21	a40.60	Nov. 5	a42.61	Apr. 5	a47.30	Sept. 20	a43.06
June 16	a45.52						

a Pumping.

GROUND-WATER LEVELS

RIO CIBUCO BASIN

182654066211600. Local number, 167.

LOCATION.--Lat 18°26'54", long 66°21'16".

Owner: P. R. Land Authority, AFDA.

Name: U.S.G.S. Observation Well #3.

AQUIFER.--Aymamón Limestone.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m) 0-228 ft (0-69.5 m), open hole

228-238 ft (69.5-72.6 m). Depth 238 ft (72.6 m).

DATUM.--Altitude of land-surface datum is 65.6 ft (20.0 m) above mean sea level. Measuring point: Top of 6 in (0.15 m) casing,

3.10 ft (0.94 m) above land-surface datum.

REMARKS.--Observation well. Water levels affected by nearby pumpage.

PERIOD OF RECORD.--January 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 13.07 ft (3.98 m) below land-surface datum, Jan. 13, 1982; lowest water level measured, c16.90 ft (5.15 m) below land-surface datum, Aug. 18, 1983.

WATER LEVELS IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 13, 1982	13.07	July 26, 1982	14.80	Dec. 15, 1982	c15.47	May 12, 1983	c15.55
Feb. 16	13.22	Aug. 17	14.50	Jan. 13, 1983	c15.12	June 27	c15.70
Mar. 17	14.40	Sept. 10	14.66	Feb. 3	c15.30	July 15	c15.50
Apr. 15	14.38	Oct. 8	c14.95	Mar. 3	c15.90	Aug. 18	c16.90
May 21	14.05	Nov. 5	c15.24	Apr. 5	c16.00	Sept. 29	c14.93
June 16	13.90						

182751066221600. Local number, 168.

LOCATION.--Lat 18°27'51", long 66°22'16".

Owner: AFDA. P.R. Department of Agriculture.

Name: Rice Program #4.

AQUIFER.--Aymamón Limestone.

WELL CHARACTERISTICS.--Drilled agricultural water-table well, diameter 16 in (0.41 m), cased 16 in (0.41 m) 0-156 ft (0-32.3 m),

slotted 56-106 ft (17.07-32.3 m), open hole 106-150 ft (32.3-45.7 m). Depth 150 ft (45.73 m).

DATUM.--Altitude of land-surface datum is about 9.84 ft (3 m) above mean sea level. Measuring point: Top of 16 in (0.41 m) casing,

0.8 ft (0.24 m) above land-surface datum.

REMARKS.--Observation well. Irrigation water supply well.

PERIOD OF RECORD.--March 17, 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.88 ft (1.49 m) below land-surface datum, Mar. 17, 1982; lowest water level measured, a53.85 ft (16.42 m) below land-surface datum, July 26, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 17, 1982	4.88	Aug. 17, 1982	a43.40	Feb. 3, 1983	a46.75	July 15, 1983	a44.60
Apr. 15	5.04	Oct. 8	a42.30	Mar. 3	a44.45	Aug. 4	a44.90
May 21	a26.25	Nov. 5	a44.50	May 12	5.40	Aug. 18	a41.26
June 16	a34.40	Dec. 15	a40.24	June 27	a38.30	Sept. 29	a43.20
July 26	a53.85	Jan. 13, 1983	a44.02				

182740066223100. Local number, 169.

LOCATION.--Lat 18°27'40", long 66°22'31".

Owner: AFDA. P.R. Department of Agriculture.

Name: Rice Program #5.

AQUIFER.--Aymamón Limestone.

WELL CHARACTERISTICS.--Drilled agricultural water-table well, diameter 16 in (0.41 m), cased 16 in (0.41 m) 0-80 ft (0-24.39 m), open hole 80-140 ft (24.39-42.68 m). Depth 140 ft (42.68 m).

Datum.--Altitude of land-surface datum is about 13.10 ft (4.0 m) above mean sea level. Measuring point: Top of 16 in (0.41 m) casing,

0.10 ft (0.03 m) above land-surface datum.

REMARKS.--Observation well. Irrigation water supply well.

PERIOD OF RECORD.--March 17, 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.15 ft (1.88 m) below land-surface datum, Mar. 17, 1982; lowest water level measured, a15.60 ft (4.76 m) below land-surface datum, July 26, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 17, 1982	6.15	Aug. 17, 1982	6.67	Jan. 13, 1983	a12.29	June 27, 1983	a13.00
Apr. 15	6.30	Sept. 10	6.55	Mar. 3	a13.60	July 15	a12.90
May 21	6.60	Oct. 8	6.50	Apr. 5	a12.67	Aug. 18	6.50
June 16	6.80	Nov. 5	a13.68	May 12	a12.10	Sept. 29	6.19
July 26	a15.60	Dec. 14	a13.45				

a Pumping.

c Pumping nearby well.

GROUND-WATER LEVELS
RIO DE LA PLATA BASIN

180707066084201. Local number, 33.

LOCATION.--Lat 18°07'07", long 66°08'42".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Cayey 10.

AQUIFER.--Volcanic rocks of Cretaceous Age.

WELL CHARACTERISTICS.--Drilled public supply artesian well, diameter 16 to 12 in (41 to 30 cm), cased 16 in (41 cm) 0-30 ft (0-9.1 m), 12 in (30 cm) 0-200 ft (0-61.0 m), perforated 30-200 ft (9.1-61.0 m), gravel packed 0-190 ft (0-57.9 m). Depth 220 ft (67.1 m).

DATUM.--Altitude of land-surface datum is about 1,280 ft (390.1 m) above mean sea level. Measuring point: Lower edge of 0.75 in (1.90 cm) pipe in pump base, 1.2 ft (0.37 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD.--September 1959 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.49 ft (0.45 m) below land-surface datum, Jan. 18, 1961; lowest measured, 169.2 ft (a51.6 m) below land-surface datum, Dec. 10, 1976.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 4	a98.70	Jan. 18	a35.87	Apr. 4	a104.3	July 11	a39.40
Nov. 10	a98.30	Feb. 7	a95.50	May 5	a 93.25	Aug. 18	a45.10
Dec. 14	a100.3	Mar. 17	a35.20	June 13	a 90.60	Sept. 14	a81.36

180853066095401. Local number, 37.

LOCATION.--Lat 18°08'53", long 66°09'54".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Barrio Rincón de Cidra.

AQUIFER.--Volcanic rocks of Cretaceous Age.

WELL CHARACTERISTICS.--Drilled water supply water-table well, diameter 16 to 8 in (41 to 20 cm), cased 16 in (41 cm) 0-30 ft (0-9.1 m), 12 in (30 cm) 0-43 ft (0-13.1 m), perforated 0-43 ft (0-13.1 m). Depth 200 ft (61.0 m).

DATUM.--Altitude of land-surface datum is about 1,180 ft (359.7 m) above mean sea level. Measuring point: Lower edge at 0.75 in (1.90 cm) pipe, 1.9 ft (0.58 m) above land-surface datum.

REMARKS.--Observation well.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 14.38 ft (4.38 m) below land-surface datum, July 20, 1979; lowest measured, 62.87 ft (19.16 m) below land-surface datum, Jul. 5, 1961.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 4	22.80	Feb. 7	21.36	May 5	22.40	Aug. 18	20.67
Dec. 14	22.52	Mar. 17	22.54	June 13	21.12	Sept. 14	21.63
Jan. 18	20.29	Apr. 4	23.20	July 11	18.86		

180823066154601. Local number, 38.

LOCATION.--Lat 18°08'23", long 66°15'46".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Barrio Robles.

AQUIFER.--Volcanic rocks of Cretaceous Age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 10 in (25 cm). Depth 82 ft (25.0 m).

DATUM.--Altitude of land-surface datum is about 1,980 ft (603.7 m) above mean sea level. Measuring point: Top of clean-out door sill, 1.80 ft (0.55 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD.--September 1959 to current year; changed to a partial site on Sept. 2, 1981.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 3.60 ft (1.10 m) above land-surface datum, Sept. 6, 1960; lowest, 51.47 ft (15.69 m) below land-surface datum, Sept. 30, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 4	18.29	Jan. 18	9.97	Apr. 4	12.33	July 11	8.25
Nov. 10	14.76	Feb. 7	10.98	May 5	9.02	Aug. 18	9.47
Dec. 14	11.96	Mar. 17	10.35	June 13	11.62	Sept. 14	9.47

a Pumping.

GROUND-WATER LEVELS

RIO DE LA PLATA BASIN

182518066144201. Local number, 67.

LOCATION.--Lat 18°25'18", long 66°14'42".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Campanilla.

AQUIFER.--Limestone of Tertiary Age.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 12 in (30 cm). Depth 300 ft (91.4 m).

DATUM.--Altitude of land-surface datum is about 390 ft (118.9 m) above mean sea level. Measuring point: Lower edge of 0.75 in (1.90 cm) pipe, 1.0 ft (0.30 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD.--March 1959 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 27.91 ft (8.51 m) below land-surface datum, Dec. 16, 1981; lowest measured, 49.90 ft (15.21 m) below land-surface datum, June 6, 1967.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 21	34.93	Feb. 3	34.10	July 12	33.22	Sept. 20	34.25
Dec. 9	33.38						

182636066164201. Local number, 69.

LOCATION.--Lat 18°26'36", long 66°16'42".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Higuillar.

AQUIFER.--Limestone of Tertiary Age.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 10 in (25 cm). Depth 200 ft (61.0 m).

DATUM.--Altitude of land-surface datum is about 60 ft (18.3 m) above mean sea level. Measuring point: Airline hole in pump base, 1.1 ft (0.34 m) above land-surface datum.

REMARKS.--Observation well.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 41.21 ft (12.56 m) below land-surface datum, July 3, 1958; lowest measured, 58.89 ft (17.95 m) below land-surface datum, Oct. 26, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 26	a53.20	Feb. 3	a53.63	May 31	a50.71	Aug. 25	a53.07
Nov. 17	a53.11	Mar. 8	a54.55	June 20	a52.08	Sept. 20	a53.17
Dec. 9	a53.55	Apr. 23	a54.42	July 13	a52.15		

182623066181400. Local number, 150.

LOCATION.--Lat 18°26'23", long 66°18'14".

Owner: Department of Agriculture, Land Authority; loaned to Puerto Rico Aqueduct and Sewer Authority.

Name: Monterey Forestal.

AQUIFER.--Aymamón Limestone.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 12 in (0.30 m), cased 12 in (0.30 m) 0-300 ft (0-91.5 m), open hole 300-400 ft (91.5-122 m). Depth 400 ft (122 m).

DATUM.--Altitude of land-surface datum is 131.2 ft (40 m) above mean sea level. Measuring point: Bottom edge of 1 in (2.54 cm) pipe on top of pump concrete base, 1.0 ft (0.30 m) above land-surface datum.

REMARKS.--Irrigation supply observation well.

PERIOD OF RECORD.--January 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 184.3 ft (56.2 m) below land-surface datum, Sept. 20, 1983; lowest water level measured, a210.9 ft (64.3 m) below land-surface datum, Apr. 15, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 13, 1982	190.3	July 26, 1982	195.2	Dec. 15, 1982	199.9	May 13, 1983	195.6
Feb. 16	191.3	Aug. 17	203.0	Jan. 13, 1983	208.1	June 28	197.8
Mar. 17	205.4	Sept. 10	207.9	Feb. 3	204.1	July 15	199.8
Apr. 15	a210.9	Oct. 8	a197.6	Mar. 3	207.7	Aug. 19	a206.8
May 21	197.0	Nov. 5	a199.7	Apr. 5	207.6	Sept. 20	184.3

a Pumping.

GROUND-WATER LEVELS

RIO DE BAYAMON AND RIO PIEDRAS BASINS

181047066091701. Local number, 42.

LOCATION.--Lat 18°10'47", long 66°09'17".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Cidra 2.

AQUIFER.--Volcanic rocks of Cretaceous Age.

WELL CHARACTERISTICS.--Drilled public supply artesian well, diameter 13 in (33 cm), cased 0-64 ft (0-19.5 m), perforated 16-64 ft (4.9-19.5 m). Depth 92 ft (28.0 m).

DATUM.--Altitude of land-surface datum is about 1,340 ft (408.4 m) above mean sea level. Measuring point: Airline hole in pump base, 1.4 ft (0.43 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD.--September 1959 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.30 ft (3.75 m) below land-surface datum, Dec. 27, 1979; lowest measured, 56.32 ft (17.17 m) below land-surface datum, Apr. 1, 1968.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 4	15.25	Jan. 18	17.95	Apr. 4	22.54	July 11	18.89
Nov. 10	16.37	Feb. 7	19.37	May 5	22.62	Aug. 18	19.50
Dec. 14	17.29	Mar. 17	20.78	June 13	19.20	Sept. 14	16.79

182506066030801. Local number, 65.

LOCATION.--Lat 18°25'06", long 66°03'08".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Hato Rey Central, McCracken well.

AQUIFER.--Limestone of Tertiary Age.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 15 in (38 cm), cased 0-205 ft (0-62.5 m), perforated 64-205 ft (19.5-62.5 m). Depth 205 ft (62.5 m).

DATUM.--Altitude of land-surface datum is about 33 ft (10.1 m) above mean sea level. Measuring point: Top of casing, 3.4 ft (1.04 m) above land-surface datum.

REMARKS.--Observation well.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 22.40 ft (6.83 m) below land-surface datum, Aug. 12, 1976; lowest measured, 42.40 ft (12.92 m), below land-surface datum, May 13, 1974.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 6	31.41	Jan. 19	31.30	Apr. 20	31.35	July 11	31.29
Nov. 9	31.28	Feb. 3	31.35	May 9	31.27	Aug. 8	31.54
Dec. 28	30.81	Mar. 15	31.44	June 23	31.52	Sept. 15	31.35

182547066110801. Local number, 66.

LOCATION.--18°25'47", long 66°11'08".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Sabana Seca.

AQUIFER.--Limestone of Tertiary Age.

WELL CHARACTERISTICS.--Drilled public supply water-table well. Depth 130 ft (39.6 m).

DATUM.--Altitude of land-surface datum is about 75 ft (22.9 m) above mean sea level. Measuring point: Lower edge of 0.75 in (1.90 cm) pipe in pump base, 1.2 ft (0.37 m) above land-surface datum.

REMARKS.--Observation well.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, a39.23 ft (all.96 m) below land-surface datum, Dec. 17, 1981; lowest measured, 57.75 ft (17.60 m), below land-surface datum, Aug. 13, 1976.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Nov. 17	a43.35	Mar. 10	a44.47	June 20	a42.97	Aug. 25	a43.54
Dec. 8	a43.48	May 31	a42.74	July 12	a43.20	Sept. 20	a43.60
Feb. 3	a43.88						

a Pumping.

GROUND-WATER LEVELS
RIO GRANDE DE LOIZA BASIN

181550065593201. Local number, 50.

LOCATION.--Lat 18°15'50", long 65°59'32".

Owner: Gurabo Agricultural Experimental Station.

Name: Gurabo.

AQUIFER.--Unconsolidated deposits of Quaternary Age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 13 in (33 cm). Depth 145 ft (44.2 m).

DATUM.--Altitude of land-surface datum is about 148 ft (45.1 m) above mean sea level. Measuring point: Top of 12 in (30 cm) casing, 0.8 ft (0.24 m) above land-surface datum.

REMARKS.--Observation well.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.65 ft (3.86 m) below land-surface datum, Sept. 9, 1975; lowest measured, 44.38 ft (13.53 m) below land-surface datum, June 18, 1975.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 8	29.05	Jan. 18	28.19	Apr. 6	28.25	July 20	28.81
Nov. 4	28.53	Feb. 8	28.14	May 5	26.18	Aug. 18	29.78
Dec. 28	25.93	Mar. 17	28.19	June 28	28.85	Sept. 12	29.57

181538066021301. Local number, 52.

LOCATION.--Lat 18°15'38", long 66°02'13".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Bairoa.

AQUIFER.--Unconsolidated deposits of Quaternary Age.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 16 to 10 in (41 to 25 cm) 0-69 ft (0-21.0 m), 79-100 ft (24.1-30.5 m), 110-116 ft (33.5-35.4 m), perforated 79-100 ft (24.1-30.5 m), screened 69-79 ft (21.0-24.1 m) and 100-110 ft (30.5-33.5 m), gravel packed to 113 ft (34.4 m). Depth 116 ft (35.4 m).

DATUM.--Altitude of land-surface datum is about 200 ft (61.0 m) above mean sea level. Measuring point: Airline hole in pump base, 1.4 ft (0.43 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD.--July 1959 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, +0.92 ft (+0.28 m) below land-surface datum, Nov. 15, 1979; lowest measured, 115.1 ft (a35.1 m) below land-surface datum, June 18, 1975.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 8	a80.28	Jan. 18	a74.78	Apr. 6	a75.96	July 20	a74.85
Nov. 8	a77.37	Feb. 8	a74.24	May 5	a75.05	Aug. 18	a74.78
Dec. 28	a72.89	Mar. 17	a74.64	June 28	a74.17	Sept. 20	a75.10

RIO HUMACAO TO RIO SECO BASINS

175735066095901. Local number, 2.

LOCATION.--Lat 17°57'35", long 66°09'59".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Puente Jobos.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 21 in (53 cm). Depth 148 ft (45.1 m).

DATUM.--Altitude of land-surface datum is about 26 ft (7.9 m) above mean sea level. Measuring point: Bottom edge of 0.88 in (2.24 cm) pipe, 1.7 ft (0.52 m) above land-surface datum.

REMARKS.--Observation well. Lowest water level is a pumping level.

PERIOD OF RECORD.--February 1961 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.85 ft (0.87 m) below land-surface datum, July 24, 1979; lowest measured, 61.78 ft (18.83 m) below land-surface datum, Aug. 6, 1964.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 18	6.01	Jan. 14	5.96	Apr. 8	6.60	Aug. 4	7.04
Nov. 16	5.51	Feb. 10	6.42	May 6	6.12	Sept. 13	6.99
Dec. 10	5.51	Mar. 11	6.17	July 15	7.07		

+ Above land-surface datum.

a Pumping.

GROUND-WATER LEVELS
RIO HUMACAO TO RIO SECO BASINS

175944066033601. Local number, 15.

LOCATION.--Lat 17°59'44", long 66°03'36".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Pitahaya 1.

AQUIFER.--Volcanic rocks of Cretaceous Age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 12 in (30 cm). Depth 181 ft (55.2 m).

DATUM.--Altitude of land-surface datum is about 130 ft (39.6 m) above mean sea level. Measuring point: Bottom of inspection door, 1.10 ft (0.34 m) above land-surface datum.

REMARKS.--Recording observation well. Water levels affected by pumping of nearby well.

PERIOD OF RECORD.--September 1959 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 3.00 ft (0.91 m) below land-surface datum, Oct. 7, 1970; lowest, 43.90 ft (13.38 m) below land-surface datum, May 20, 1968.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.20	10.52	9.88	12.74	17.87	20.94	24.80	11.63	8.87	9.63	9.66	9.84
2	8.38	10.53	10.02	12.58	18.11	21.20	25.13	12.07	9.29	9.86	9.76	10.04
3	8.57	10.61	10.20	12.86	18.25	21.38	25.29	12.55	9.71	9.41	9.83	10.15
4	8.75	10.81	10.38	13.16	18.41	21.59	25.35	13.16	10.12	9.13	9.93	10.32
5	8.92	11.02	10.56	13.63	19.22	21.95	25.59	13.57	10.58	8.30	10.06	10.48
6	9.14	11.20	10.74	13.91	18.81	22.22	25.79	14.09	11.02	7.69	10.04	10.61
7	9.33	11.42	10.90	14.07	19.00	22.54	26.07	14.73	11.45	7.63	10.04	10.73
8	9.49	11.62	11.06	14.36	18.98	22.31	26.52	15.35	11.92	7.60	10.13	10.82
9	9.63	10.55	11.20	14.57	19.06	21.96	27.38	16.10	12.48	7.73	10.25	10.92
10	9.80	10.25	11.33	14.66	19.70	21.51	27.38	17.07	13.21	7.90	10.38	11.04
11	10.02	10.50	11.47	14.81	19.38	20.90	27.38	17.81	13.87	8.08	10.52	11.15
12	10.09	8.76	11.62	14.74	19.74	20.51	27.38	18.36	14.92	8.31	10.69	11.20
13	10.25	8.20	11.75	15.01	19.84	20.25	27.28	18.83	16.21	8.52	10.82	11.22
14	10.45	8.26	11.90	15.42	19.93	19.91	27.38	19.37	17.34	8.71	10.75	11.36
15	10.61	8.49	12.05	15.69	19.89	19.75	27.38	19.48	17.82	8.93	10.92	11.47
16	10.82	8.77	12.12	15.86	19.72	19.92	27.38	18.85	11.21	9.13	11.08	11.52
17	10.94	9.05	12.25	15.84	19.70	20.21	27.38	18.33	8.75	9.24	10.90	11.62
18	10.85	9.33	12.40	16.13	19.85	20.50	27.38	18.01	8.26	9.30	9.73	11.70
19	10.90	8.46	12.55	16.29	20.03	20.95	20.79	16.99	7.97	9.44	9.31	11.78
20	10.60	8.23	12.64	16.44	20.24	21.44	13.85	13.54	7.91	9.50	9.40	11.86
21	10.39	8.54	12.81	16.57	20.33	21.94	10.70	12.27	7.93	9.70	9.29	11.00
22	10.32	8.88	12.96	16.84	20.52	22.50	9.16	12.04	8.01	9.91	8.34	10.36
23	9.85	9.14	13.08	16.91	20.63	22.81	8.81	11.32	8.10	10.14	8.54	10.57
24	9.15	9.32	13.28	16.90	20.84	22.82	8.79	9.05	8.26	9.74	8.87	10.75
25	9.11	9.53	13.46	17.06	20.96	23.08	9.04	8.25	8.52	9.37	9.19	10.92
26	9.31	9.71	13.62	17.06	20.93	23.40	9.46	8.06	8.85	9.42	9.43	10.91
27	9.71	9.89	13.84	16.99	20.67	23.63	9.93	8.07	9.13	9.63	9.69	10.89
28	9.99	10.03	14.10	17.14	20.74	23.83	10.35	8.12	8.76	9.82	9.54	11.03
29	10.08	10.13	14.42	17.40	---	23.20	10.77	8.25	8.91	9.86	9.24	11.22
30	10.38	9.98	14.75	17.54	---	24.29	11.20	8.43	9.26	9.56	9.40	11.38
31	10.52	---	14.39	17.67	---	24.60	---	8.54	---	9.55	9.62	---
LOW	10.94	11.62	14.75	17.67	20.96	24.60	27.38	19.48	17.82	10.14	11.08	11.86
HIGH	8.20	8.20	9.88	12.58	17.87	19.75	8.79	8.06	7.91	7.60	8.34	9.84
CAL YR 1982	MEAN 12.00		LOW 23.49		HIGH 7.41							
WTR YR 1983	MEAN 13.56		LOW 27.38		HIGH 7.60							

180338065523301. Local number, 31.

LOCATION.--Lat 18°03'38", long 65°52'33".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Central Roig.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 20 in (51 cm), 0-120 ft (0-36.6 cm), 12 in (30 cm) 120-125 ft (36.6-38.1 m), cased 0-125 ft (0-38.1 m), perforated 40-125 ft (12.2-38.1 m). Depth 125 ft (38.1 m).

DATUM.--Altitude of land-surface datum is about 41 ft (12.5 m) above mean sea level. Measuring point: Airline hole in pump base, 4.0 ft (1.22 m) above land-surface datum.

REMARKS.--Observation well. Drilled 5 ft (1.5 m) into rock. Affected by nearby pumping.

PERIOD OF RECORD.--July 1959 to August 1973; April 1975 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.86 ft (1.79 m) below land-surface datum, Sept. 20, 1960; lowest measured, 45.07 ft (15.41 m) below land-surface datum, July 7, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Nov. 8	a35.44	Feb. 11	a38.75	May 12	a44.25	Aug. 9	a38.46
Dec. 16	a33.25	Mar. 15	a43.20	June 27	a40.10	Sept. 13	a34.48
Jan. 19	a45.88	Apr. 15	a44.17	July 12	a38.70		

a Pumping.

GROUND-WATER LEVELS
RIO HUMACAO TO RIO SECO BASINS

175641066085101. Local number, 89.
 LOCATION.--Lat 17°56'41", long 66°08'51".
 Owner: Phillips Puerto Rico Core, Inc.
 Name: Phillips observation well 3.
 AQUIFER.--Alluvium of Quaternary Age.
 WELL CHARACTERISTICS.--Drilled test well, diameter 4 in (10 cm). Depth 114 ft (34.7 m).
 DATUM.--Altitude of land-surface datum is about 6 ft (1.8 m) above mean sea level. Measuring point: Top of casing, 2.25 ft (0.69 m) above land-surface datum.
 REMARKS.--Observation well.
 PERIOD OF RECORD.--October 1968 to current year; changed to a partial site on Oct. 1, 1981.
 EXTREMES FOR PERIOD OF RECORD.--Highest water level, +2.70 ft (+0.82 m) above land-surface datum, Jan. 9, 1973; lowest, 4.32 ft (1.32 m) below land-surface datum, June 5, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 18	1.13	Jan. 14	1.59	Apr. 8	2.13	July 15	1.16
Nov. 16	1.40	Feb. 10	1.70	May 6	1.92	Aug. 4	1.32
Dec. 10	1.28	Mar. 11	1.92	June 28	1.42	Sept. 13	1.00

180327065515301. Local number, 95.
 LOCATION.--Lat 18°03'27", long 65°51'53".
 Owner: P.R. Aqueduct and Sewer Authority.
 Name: USGS TW-5 or Yabucoa 10.
 AQUIFER.--Alluvium of Quaternary Age.
 WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 6 in (15 cm), cased 0-108 ft (0-32.9 m), slotted 50-108 ft (15.2-32.9 m). Depth 120 ft (36.6 m).
 DATUM.--Altitude of land-surface datum is about 26 ft (7.9 m) above mean sea level. Measuring point: Top of shelter floor, 3.0 ft (0.91 m) above land-surface datum.
 REMARKS.--Recording observation well.
 PERIOD OF RECORD.--April 25, 1978 to May 15, 1983 (discontinued).
 EXTREMES FOR PERIOD OF RECORD.--Highest water level, 4.68 ft (1.43 m) below land-surface datum, Aug. 31, 1979; lowest, 19.36 ft (5.90 m) below land-surface datum, Sept. 28, 1980.

LOWEST WATER LEVEL IN FEET BELOW LAND-SURFACE DATUM
ON 5TH, 10TH, 15TH, 20TH, 25TH AND LAST DAY OF MONTH.
WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	10.79	b11.80	b10.15	10.51	b11.10	b12.15	b12.65					
10	b11.00	11.97	b10.20	9.88	11.33	b12.35	b12.50					
15	b11.20	12.17	b10.30	10.09	b11.45	12.58	b12.35	11.48				
20	b11.30	11.27	10.68	10.67	b11.65	b12.65						
25	b11.50	b 9.75	10.04	10.73	b11.85	b12.70						
EOM	b11.70	b10.00	10.36	11.05	b11.95	b12.75						

+ Above land-surface datum.
 b Estimated.

GROUND-WATER LEVELS

RIO HUMACAO TO RIO SECO BASINS

180416065514101. Local number, 96.

LOCATION.--Lat 18°04'16", long 65°51'41".

Owner: P.R. Aqueduct and Sewer Authority.

Name: USGS TW-2 or Yabucoa 7.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 16 in (41 cm) cased 0-10 ft (0-3.0 m), diameter 6 in (15 cm), cased about 0-183 ft (0-55.8 m), perforated 56-81 ft (17.1-24.7 m), 102-123 ft (31.1-37.5 m), 144-181 ft (43.9-55.2 m). Depth 181 ft (55.2 m).

DATUM.--Altitude of land-surface datum is about 25 ft (7.6 m) above mean sea level. Measuring point: Top of shelter floor, 4.0 ft (1.22 m) above land-surface.

REMARKS.--Observation recording well.

PERIOD OF RECORD.--April 25, 1978 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 15.52 ft (4.73 m) below land-surface datum, Jan. 15, 1982; lowest, 28.29 ft (8.62 m) below land-surface datum, Sept. 20, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.73	19.56	19.39	18.29	19.80	19.47	22.99	21.95	20.68	22.17	19.51	18.77
2	17.77	19.68	19.28	18.36	19.80	19.66	23.04	21.59	20.75	22.19	19.51	18.88
3	17.79	19.87	19.16	18.40	19.84	19.92	23.00	21.38	20.85	22.20	19.82	19.24
4	17.88	20.07	19.05	18.46	19.92	20.19	22.94	21.72	21.00	21.81	19.90	19.22
5	17.99	20.29	18.94	18.58	20.02	20.40	22.89	22.07	21.06	21.45	19.90	19.22
6	18.12	20.50	18.83	18.61	20.13	20.53	22.85	22.37	21.11	21.20	20.16	18.71
7	18.20	20.69	18.76	18.55	20.23	20.62	22.91	22.19	21.19	20.58	20.10	18.63
8	18.29	20.83	18.73	18.42	20.31	20.66	22.99	22.29	21.34	20.36	20.28	18.66
9	18.48	20.92	18.72	18.28	20.28	20.70	23.03	22.46	21.44	20.23	20.46	18.76
10	18.70	21.00	18.71	18.12	20.19	20.74	23.07	22.77	21.52	20.48	20.23	19.32
11	18.92	21.05	18.70	17.99	20.08	20.84	23.01	23.02	21.51	20.36	20.24	18.80
12	19.14	21.06	18.70	17.87	20.01	21.01	22.95	23.21	21.46	20.40	20.35	18.60
13	19.33	21.08	18.71	17.77	19.96	21.19	22.90	23.35	21.40	19.97	20.29	19.28
14	19.53	21.08	18.72	17.84	19.87	21.34	22.81	23.44	21.39	19.83	20.03	19.61
15	19.73	21.09	18.67	18.05	19.76	22.64	22.62	23.41	21.40	19.81	19.82	19.86
16	19.92	21.04	18.57	18.24	19.70	21.53	21.86	23.17	21.50	19.80	20.39	20.07
17	20.06	20.99	18.45	18.44	19.73	21.63	20.99	22.59	21.69	19.75	20.37	19.41
18	20.05	20.95	18.36	18.65	19.84	21.72	21.07	22.48	21.37	20.02	20.74	19.05
19	19.92	20.88	18.28	18.87	19.90	21.79	21.12	22.76	21.40	19.98	20.90	18.85
20	19.88	20.81	18.18	19.10	19.86	21.86	21.00	22.71	20.60	20.21	20.85	18.78
21	19.82	20.70	18.08	19.31	19.74	21.96	19.52	22.58	20.30	20.35	20.66	18.93
22	19.74	20.56	18.00	19.47	19.62	22.08	19.76	22.34	20.53	20.59	20.53	19.50
23	19.69	20.41	17.93	19.60	19.59	22.20	20.24	22.05	20.75	20.85	19.77	19.74
24	19.64	20.29	17.88	19.69	19.52	22.32	20.43	21.62	21.02	20.69	19.45	19.90
25	19.57	20.17	17.84	19.75	19.45	22.43	20.45	21.57	21.21	20.23	19.18	19.32
26	19.51	20.06	17.83	19.77	19.42	22.52	20.61	21.56	21.40	20.13	18.86	19.11
27	19.50	19.94	17.86	19.79	19.40	22.60	20.85	21.66	21.48	20.18	18.89	19.04
28	19.55	19.83	17.91	19.81	19.37	22.66	21.40	21.58	21.72	19.83	18.57	19.00
29	19.63	19.68	17.99	19.86	---	22.75	21.88	21.16	21.75	19.79	18.42	18.99
30	19.61	19.53	18.08	19.88	---	22.84	22.20	20.94	21.96	19.77	18.45	18.99
31	19.58	---	18.19	19.85	---	22.92	---	20.74	---	19.64	18.54	---
LOW	20.06	21.09	19.39	19.88	20.31	22.92	23.07	23.44	21.96	22.20	20.90	20.07
HIGH	17.73	19.53	17.83	17.77	19.37	19.47	19.52	20.74	20.30	19.64	18.42	18.60
CAL YR 1982	MEAN 17.88		LOW 21.09		HIGH 15.53							
WTR YR 1983	MEAN 20.25		LOW 23.44		HIGH 17.73							

180026065544301. Local number, 122.

LOCATION.--Lat 18°00'26", long 65°54'43".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Maunabo Calzada.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled exploration well, diameter 4 in (10 cm). Depth 70 ft (21.3 m).

DATUM.--Altitude of land-surface datum is about 28.5 ft (8.7 m) above mean sea level. Measuring point: Top of shelter floor, 1.4 ft (0.43 m) above land-surface datum.

REMARKS.--Observation well.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.24 ft (0.68 m) below land-surface datum, July 8, 1976; lowest measured, 12.38 ft (3.77 m) below land surface datum, Aug. 12, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Nov. 8	c7.02	Feb. 11	c10.04	May 12	c11.12	Aug. 9	c8.72
Dec. 16	c9.17	Mar. 15	c10.90	June 27	c 7.94	Sept. 13	c8.32
Jan. 19	c9.09	Apr. 15	c11.55	July 12	c 8.19		

c Pumping nearby well.

GROUND-WATER LEVELS
RIO HUMACAO TO RIO SECO BASINS

180010066004501. Local number, 125.

LOCATION.--Lat 18°00'10", long 66°00'45".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Patillas STP.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 16 in (41 cm), cased 0-45 ft (0-13.7 m); cased 12 in (30 cm) 0-49 ft (0-14.9 m), perforated 49-81 ft (14.9 -24.7 m). Depth 90 ft (27.4 m).

DATUM.--Altitude of land-surface datum is about 48 ft (14.6 m) above mean sea level. Measuring point: Bottom edge of 0.75 in (1.90 cm) pipe in concrete pump base, 1.0 ft (0.30 m) above land-surface datum.

REMARKS.--Observation well. Water levels affected by pumping nearby well.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.83 ft (3.91 m) below land-surface datum, June 17, 1981; lowest measured, a52.98 ft (a16.15 m) below land-surface datum, May 24, 1979.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Nov. 10	a48.20	Mar. 15	a48.90	June 23	17.28	Aug. 4	a48.78
Dec. 16	a47.30	Apr. 5	a48.95	July 12	a47.35	Sept. 13	a48.37
Feb. 10	a48.87	May 13	a48.30				

RIO SALINAS TO RIO JACAGUAS BASINS

175658066155401. Local number, 1.

LOCATION.--Lat 17°56'58", long 66°15'54".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Mar Negro.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Bored unused artesian well, diameter 3 in (8 cm). Depth 23 ft (7.0 m).

DATUM.--Altitude of land-surface datum is about 3 ft (0.91 m) above mean sea level. Measuring point: Top of 1.5 in (3.8 cm) pipe fitting, 3.2 ft (0.98 m) above land-surface datum.

REMARKS.--Observation well. Water levels affected by pumpage of nearby well.

PERIOD OF RECORD.--September 1959 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, +1.83 ft (+0.56 m) above land-surface datum, Dec. 2, 1970; lowest measured, 3.60 ft (1.10 m) below land-surface datum, July 7, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 18	0.19	Jan. 14	0.69	Apr. 8	0.71	July 15	+0.22
Nov. 16	0.51	Feb. 10	0.80	May 6	0.00	Aug. 4	0.14
Dec. 10	0.33	Mar. 11	0.39	June 28	0.30	Sept. 13	+0.03

175851066174601. Local number, 8.

LOCATION.--Lat 17°58'51", long 66°17'46".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Salinas I.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 16 in (41 cm) to 13 in (33 cm); cased 16 in (41 cm) 0-32 ft (0-9.8 m), 13 in (33 cm) 25-120 ft (7.6-36.6 m); perforated 25-120 ft (7.6-36.6 m). Depth 125 ft (38.1 m).

DATUM.--Altitude of land-surface datum is about 29 ft (8.8 m) above mean sea level. Measuring point: Top of 1.0 in (2.54 cm) pipe in pump base, 1.2 ft (0.37 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD.--September 1959 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.95 ft (3.64 m) below land-surface datum, Dec. 14, 1960; lowest measured, 42.95 ft (13.09 m) below land-surface datum, Dec. 9, 1975.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 18	a27.92	Jan. 14	a28.03	Apr. 8	a28.92	July 15	a26.69
Nov. 16	a31.87	Feb. 10	a27.72	May 6	a25.45	Aug. 4	a24.50
Dec. 10	a32.68	Mar. 11	a28.52	June 28	a26.45	Sept. 13	a24.58

+ Above land-surface datum.

a Pumping.

GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS

175823066241801. Local number, 10.

LOCATION.--Lat 17°58'23", long 66°24'18".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Santa Isabel 1.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 13 in (0.33 m), cased 0-200 ft (0-61.0 m), perforated 128-200 ft (39.0-61.0 m). Depth 202 ft (61.6 m).

DATUM.--Altitude of land-surface datum is about 36 ft (11.0 m) above mean sea level. Measuring point: Airline hole in pump base, 1.4 ft (0.43 m) above land-surface datum.

REMARKS.--Observation well. Water levels affected by pumpage of nearby well.

PERIOD OF RECORD.--September 1958 to April 1972. February 1974 to September 1976. November 5, 1979 to August 9, 1982 (discontinued).

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.82 ft (1.77 m) below land-surface datum, Dec. 14, 1960; lowest measured, 55.34 ft (16.9 m) below land-surface datum, June 24, 1974.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1979 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Nov. 5, 1979	24.00	July 8, 1980	30.02	July 16, 1981	30.25	Mar. 30, 1980	26.98
Feb. 25, 1980	25.02	Aug. 7	36.20	Aug. 17	30.10	Apr. 20	26.64
Mar. 17	26.15	Feb. 10, 1981	40.98	Nov. 2	28.64	May 11	26.31
Apr. 9	31.80	Mar. 10	38.25	Dec. 23	23.18	June 1	25.41
29	27.66	Apr. 20	40.17	Jan. 20, 1982	25.45	July 13	28.87
May 9	29.90	June 10	30.50	Feb. 25	22.38	Aug. 9	26.63
June 10	37.16						

180044066153401. Local number, 18.

LOCATION.--Lat 18°00'44", long 66°15'34".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Cocos.

AQUIFER.--Alluvium of Quaternary Age and undifferentiated rocks of Cretaceous Age.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 16 to 12 in (41 to 30 cm), cased 16 in (41 cm) 0-40 ft (0-12.2 m), 12 in (30 cm) 0-53 ft (0-16.2 m), perforated 32-53 ft (9.8-16.2 m). Depth 125 ft (38.1 m).

DATUM.--Altitude of land-surface datum is about 140 ft (42.7 m) above mean sea level. Measuring point: Top of 1.0 in (2.54 cm) pipe in pump base, 1.25 ft (0.38 cm) above land-surface datum.

REMARKS.--Observation well. Water level affected by nearby pumpage.

PERIOD OF RECORD.--September 1959 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 14.67 ft (4.47 m) below land-surface datum, Sept. 20, 1960; lowest measured, 79.17 ft (24.13 m) below land-surface datum, June 19, 1968.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 18	22.06	Jan. 14	24.09	Apr. 8	30.49	July 15	19.76
Nov. 16	22.15	Feb. 10	28.10	May 6	23.11	Aug. 4	20.30
Dec. 10	20.80	Mar. 11	29.42	June 28	20.47	Sept. 13	22.29

180023066175301. Local number, 19.

LOCATION.--Lat 18°00'23", long 66°17'53".

Owner: U.S. Army.

Name: Theater 1.

AQUIFER.--Volcanic rocks of Cretaceous Age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 16 to 11 in (41 to 28 cm), cased 16 in (41 cm) 0-64 ft (0-19.5 m), 11 in (0-80 ft (0-24.4 m), perforated 16-64 ft (4.9-19.5 m). Depth 150 ft (45.7 m) reported, 86 ft (26.2 m) measured.

DATUM.--Altitude of land-surface datum is about 140 ft (42.7 m) above mean sea level. Measuring point: Top of 1.0 in (2.54 cm) casing liner, 0.85 ft (0.26 m) above land-surface datum. After Apr. 8, 1983, top of 4.0 in (10.1 cm) flat cap on new concrete slab, 3.6 ft (1.10 m) above land-surface datum.

REMARKS.--Observation well.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 39.38 ft (12.00 m) below land-surface datum, Oct. 15, 1979; lowest, measured, 79.15 ft (24.12 m) below land-surface datum, Oct. 10, 1973.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 18	53.54	Jan. 14	62.33	Apr. 8	57.41	July 15	53.89
Nov. 16	54.53	Feb. 10	56.30	May 6	53.23	Aug. 4	55.50
Dec. 10	54.78	Mar. 11	56.50	June 28	54.70	Sept. 13	46.83

GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS

175829066232201. Local number, 87.

LOCATION.--Lat 17°58'29", long 66°23'22".

Owner: Francisco Alomar.

Name: Alomar I.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 20 in (0.51 m), iron cased. Depth 112 ft (34.1 m).

DATUM.--Altitude of land-surface datum is about 35.32 ft (10.77 m) above mean sea level. Measuring point: Bottom of clean-out shelter door, 2.5 ft (0.76 m) above land-surface datum. Prior to August 1981, top of recorder shelter floor, 4.0 ft (1.22 m) above land-surface datum.

REMARKS.--Recording observation well.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 8.45 ft (2.58 m) below land-surface datum, Dec. 10, 1970; lowest 49.18 ft (14.99 m) below land-surface datum, July 27, 1974.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28.91	31.49	30.74	31.37	34.11	32.11	31.88	29.87	28.40	27.93	26.30	26.01
2	28.77	31.96	30.49	31.16	33.89	32.79	31.85	29.79	28.37	28.50	26.30	26.01
3	28.66	32.29	31.16	31.28	33.84	32.97	32.00	29.80	28.37	28.59	26.31	25.97
4	28.51	32.50	30.46	32.75	33.08	33.42	31.97	29.40	28.29	28.56	26.34	25.94
5	28.63	32.60	30.63	32.48	33.35	33.26	32.07	29.18	28.24	28.46	26.65	25.89
6	28.70	32.35	31.77	32.10	33.33	32.60	32.23	29.10	27.99	28.42	26.75	25.93
7	28.74	32.83	32.15	32.57	33.52	33.01	32.32	29.11	28.02	28.42	26.71	25.95
8	28.77	32.81	32.34	32.91	34.19	34.17	32.31	29.08	28.01	28.33	26.75	25.96
9	28.85	33.02	32.53	32.84	34.38	33.15	32.34	28.93	28.01	28.28	26.80	25.95
10	28.75	33.14	32.77	32.62	34.25	32.84	32.38	28.92	28.05	28.22	27.06	25.96
11	28.69	33.25	32.72	32.56	34.20	32.67	32.30	28.90	28.03	28.13	27.27	25.93
12	28.95	33.21	32.62	32.51	34.17	32.49	32.31	28.87	28.16	28.16	27.41	25.95
13	28.95	33.16	32.56	32.47	34.03	32.29	32.42	28.95	28.03	28.11	27.29	26.02
14	29.04	32.39	32.57	32.51	34.08	32.11	32.58	28.79	28.07	28.10	27.27	26.09
15	30.33	31.73	32.62	32.72	33.84	32.08	32.51	28.52	28.08	28.11	27.22	26.17
16	30.20	32.69	32.58	32.75	33.92	32.04	32.46	28.44	27.95	28.12	27.50	26.22
17	30.65	32.66	32.67	32.68	33.86	31.90	32.37	28.39	27.82	28.02	27.30	26.22
18	30.68	32.90	33.26	32.83	33.91	31.88	32.14	28.39	27.76	27.85	27.23	26.24
19	30.72	33.02	33.28	33.02	33.62	31.79	31.55	28.38	27.66	27.80	27.24	26.23
20	30.76	31.64	32.68	33.47	32.71	31.70	31.45	28.37	27.54	27.75	27.25	26.31
21	30.85	31.80	32.79	33.64	33.22	31.57	31.24	28.36	27.81	27.67	27.04	26.37
22	30.99	31.80	33.16	33.71	33.60	32.42	30.49	28.41	27.84	27.04	26.76	26.39
23	31.17	32.09	32.18	33.74	32.93	31.84	30.41	28.36	27.89	27.31	26.57	26.46
24	30.79	31.21	32.95	33.68	33.83	32.56	30.32	28.41	27.83	26.90	26.45	26.63
25	31.03	30.84	31.28	33.72	33.63	32.25	30.22	28.43	27.89	26.94	26.34	27.05
26	31.33	30.94	30.83	33.76	32.55	31.96	30.16	28.41	27.93	27.17	26.30	27.16
27	31.49	31.32	30.70	33.29	32.26	31.98	30.06	28.47	27.88	27.14	26.23	27.24
28	31.43	30.88	31.10	33.93	32.08	31.88	29.86	28.44	27.86	27.11	26.21	27.32
29	31.63	30.71	31.27	34.04	---	32.88	29.80	28.42	27.90	26.70	26.08	27.61
30	31.74	31.06	32.47	34.25	---	32.06	29.77	28.37	27.90	26.58	26.06	27.76
31	31.71	---	31.59	34.19	---	31.94	---	28.40	---	26.44	26.07	---
LOW	31.74	33.25	33.28	34.25	34.38	34.17	32.58	29.87	28.40	28.59	27.50	27.76
HIGH	28.51	30.71	30.46	31.16	32.08	31.57	29.77	28.36	27.54	26.44	26.06	25.89
CAL YR 1982	MEAN 27.84		LOW 33.28	HIGH 23.28								
WTR YR 1983	MEAN 30.17		LOW 34.38	HIGH 25.89								

180052066305001. Local number, 88.

LOCATION.--Lat 18°00'52", long 66°30'50".

Owner: Luce and Co.

Name: Hacienda Potala.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 19 in (48 cm). Depth 143 ft (43.6 m).

DATUM.--Altitude of land-surface datum is about 15 ft (4.6 m) above mean sea level. Measuring point: Top of shelter floor, 2.20 ft (0.67 m) above land-surface datum.

REMARKS.--Observation well. Water levels affected by pumpage of nearby well. Station discontinued, Jan. 1, 1973. Re-activated, Apr. 15, 1976.

PERIOD OF RECORD.--May 1968, January 1973; April 1976 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.50 ft (1.37 m) below land-surface datum; Feb. 26, 1971; lowest measured, 37.89 ft (11.55 m) below land-surface datum, July 16, 1968.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 12	16.51	Jan. 6	c27.00	Apr. 14	c28.14	July 8	14.28
Nov. 15	c28.24	Feb. 9	c28.37	May 3	17.30	Aug. 4	c21.25
Dec. 8	17.55	Mar. 9	20.62	June 28	14.17	Sept. 13	c22.72

c Pumping nearby well

GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS

175822066134801. Local number, 124.

LOCATION.--Lat 17°58'22", long 66°13'48".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Coquí 2.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 16 to 12 in (40 to 30 cm), cased 16 in (40 cm) 20-40 ft (6.1-12.2 m), 12 in (30 cm) 2-20 ft (0.61-6.1 m), perforated 20-118 ft (6.1-36.0 m). Depth 118 ft (36.0 m).

DATUM.--Altitude of land-surface datum is about 26 ft (7.9 m) above mean sea level. Measuring point: Airline hole in pump base, 2.2 ft (0.67 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD.--April 24, 1975 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, a9.25 ft (a2.82 m) below land-surface datum, Nov. 29, 1979; lowest measured, a54.70 ft (a16.67 m) below land-surface datum, July 7, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 18	a31.92	Jan. 14	a18.16	Apr. 8	a42.75	July 15	a17.68
Nov. 16	a31.88	Feb. 10	a19.63	May 6	a44.73	Aug. 4	a15.61
Dec. 10	a20.65	Mar. 11	a36.43	June 28	a29.29	Sept. 13	a14.49

175750066225800. Local number, 144.

LOCATION.--Lat 17°57'50", long 66°22'58".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Jauca south well, site 1.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in (20 cm), cased 0-50 ft (0-15.2 m), perforated 45-50 ft (13.7-15.2 m). Depth 50 ft (15.2 m).

DATUM.--Altitude of land-surface datum is about 15.98 ft (4.87 m) above mean sea level. Measuring point: Hole on side of 8 in (20 cm) casing, 3.2 ft (0.98 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD.--September 1980 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.48 ft (2.89 m) below land-surface datum, Jan. 20, 1982; lowest measured, 11.90 ft (3.63 m) below land-surface datum, Feb. 9, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1979 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Sept. 11, 1980	10.20	July 16, 1981	11.20	June 9, 1982	9.56	Feb. 9, 1983	11.90
30	10.47	Aug. 17	10.72	July 13	9.63	Mar. 9	11.80
Oct. 9	10.47	Sept. 10	10.47	Aug. 9	10.25	Apr. 14	11.88
Nov. 12	10.70	Dec. 23	9.90	Sept. 2	10.40	May 6	10.57
Dec. 10	10.92	Jan. 20, 1982	9.48	Oct. 14	10.30	June 28	10.60
Feb. 10, 1981	11.32	Feb. 25	10.10	Nov. 15	10.78	July 8	10.53
Mar. 10	11.40	Mar. 30	10.72	Dec. 8	10.78	Aug. 4	10.59
May 12	11.72	Apr. 20	10.35	Jan. 6, 1983	10.02	Sept. 13	10.20
June 10	11.50	May 11	9.86				

175750066225801. Local number, 145.

LOCATION.--Lat 17°57'50", long 66°22'58".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Jauca north well, site 1.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in (20 cm), cased 0-250 ft (0-76.2 m), perforated 245-250 ft (74.7-76.2 m). Depth 250 ft (76.2 m).

DATUM.--Altitude of land-surface datum is about 16.11 ft (4.91 m) above mean sea level. Measuring point: Hole on side of 8 in (20 cm) casing, 1.5 ft (0.46 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD.--September 1980 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.50 ft (2.90 m) below land-surface datum, Jan. 20, 1982; lowest measured, 13.23 ft (4.03 m) below land-surface datum, Jan. 6, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1979 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Sept. 30, 1980	11.10	Aug. 17, 1981	10.76	June 9, 1982	10.04	Feb. 9, 1983	12.03
Oct. 9	10.92	Sept. 10	10.72	July 13	10.07	Mar. 9	11.94
Nov. 12	11.42	Dec. 23	9.92	Aug. 9	10.69	Apr. 14	12.29
Dec. 10	11.84	Jan. 20, 1982	9.50	Sept. 2	10.72	May 6	11.14
Mar. 10, 1981	12.43	Feb. 25	10.22	Oct. 14	10.69	June 28	10.78
May 12	12.17	Mar. 30	10.84	Nov. 15	11.15	July 8	10.63
June 10	10.60	Apr. 29	10.83	Dec. 8	11.22	Aug. 4	10.71
July 16	10.80	May 11	10.37	Jan. 6, 1983	13.23	Sept. 13	10.70

a Pumping.

GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS

17573406623300. Local number, 146.

LOCATION.--Lat 17°57'34", long 66°23'33".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Hacienda Alomar west well, site 3.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in (20 cm), cased 0-70 ft (0-21.3 m), perforated 65-70 ft (19.8-21.3 m). Depth 70 ft (21.3 m).

DATUM.--Altitude of land-surface datum is about 18.74 ft (5.71 m) above mean sea level. Measuring point: Hole on side of 8 in (20 cm) casing, 2.5 ft (0.76 m) above land-surface datum.

REMARKS.--Observation well.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 8.32 ft (2.54 m) below land-surface datum, June 3, 1981; lowest measured, 12.49 ft (3.81 m) below land-surface datum, Aug. 17, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
June 3, 1981	8.32	Feb. 25, 1982	10.65	Sept. 2, 1982	10.37	Apr. 14, 1983	12.17
10	8.98	Mar. 30	11.59	Oct. 14	9.49	May 6	11.06
July 16	11.53	Apr. 20	10.69	Nov. 15	10.18	June 28	8.96
Aug. 17	12.49	May 11	9.93	Dec. 8	9.92	July 8	9.55
Sept. 10	11.35	June 9	10.27	Jan. 6, 1983	10.30	Aug. 4	10.38
Dec. 23	10.17	July 13	10.06	Feb. 9	9.78	Sept. 13	11.00
Jan. 20, 1982	9.09	Aug. 9	10.84	Mar. 9	10.64		

17573406623301. Local number, 147.

LOCATION.--Lat 17°57'34", long 66°23'33".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Hacienda Alomar east well, site 3.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in (20 cm), cased 0-250 ft (0-76.2 m), perforated 245-250 ft (74.7-76.2 m). Depth 250 ft (76.2 m).

DATUM.--Altitude of land-surface datum is about 18.80 ft (5.73 m) above mean sea level. Measuring point: Top of 8 in (20 cm) casing, 3.6 ft (1.10 m) above land-surface datum.

REMARKS.--Observation well.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 13.55 ft (4.13 m) below land-surface datum, July 13, 1982; lowest measured, 14.88 ft (4.54 m) below land-surface datum, April 14, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
June 3, 1981	14.69	Feb. 25, 1982	13.93	Sept. 2, 1982	13.93	Apr. 14, 1983	14.88
10	14.62	Mar. 30	14.62	Oct. 14	13.74	May 6	14.21
July 16	14.66	Apr. 20	14.26	Nov. 15	14.07	June 28	13.89
Aug. 17	14.38	May 11	13.79	Dec. 8	14.22	July 8	13.78
Sept. 10	14.35	June 9	13.62	Jan. 6, 1983	14.55	Aug. 4	13.99
Dec. 23	13.95	July 13	13.55	Feb. 9	14.69	Sept. 13	13.92
Jan. 20, 1982	13.66	Aug. 9	14.30	Mar. 9	14.54		

175756066244000. Local number, 148.

LOCATION.--Lat 17°57'56", long 66°24'40".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Playa Santa Isabel east well, site 2.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in (20 cm), cased 0-250 ft (0-76.2 m), diameter 2 in (5 cm), cased 0-200 ft (0-61.0 m), perforated 195-200 ft (59.4-61.0 m), concreted 200-250 ft (61.0-76.2 m). Depth 200 ft (61.0 m).

DATUM.--Altitude of land-surface datum is about 21.20 ft (6.46 m) above mean sea level. Measuring point: Hole side of 8 in (20 cm) casing, 2.8 ft (0.85 m) above land-surface datum.

REMARKS.--Observation well.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.82 ft (3.91 m) below land-surface datum, Dec. 23, 1981; lowest measured, 29.45 (8.98 m) below land-surface datum, Jan. 13, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 13, 1981	29.45	Dec. 23, 1981	12.82	Aug. 11, 1982	15.04	Mar. 9, 1983	18.60
Feb. 10	22.08	Jan. 20, 1982	13.09	Sept. 15	16.26	Apr. 14	17.43
Mar. 10	22.98	Feb. 25	13.91	Oct. 14	15.91	May 3	15.90
May 12	21.02	Mar. 30	15.16	Nov. 15	17.54	June 28	14.50
June 10	15.10	Apr. 20	15.60	Dec. 8	17.69	July 8	14.30
July 16	15.69	May 11	15.22	Jan. 6, 1983	17.69	Aug. 4	14.22
Aug. 17	15.14	June 9	13.34	Feb. 9	18.12	Sept. 13	13.96
Sept. 10	15.33	July 13	14.36				

GROUND-WATER LEVELS

RIO SALINAS TO JACAGUAS BASINS

175756066244001. Local number, 149.

LOCATION.--Lat 17°57'56", long 66°24'40".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Playa Santa Isabel west well, site 2.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in (20 cm), cased 0-250 ft (0-76.2 m), diameter 2 in (5 cm), cased 0-250 ft (0-76.2 m), perforated 245-250 ft (74.7-76.2 m), concreted 200-250 ft (61.0-76.2 m). Depth 250 ft (76.2 m).

DATUM.--Altitude of land-surface datum is about 21.20 ft (6.46 m) above mean sea level. Measuring point: Hole side of 8 in (20 cm) casing, 2.8 ft (0.85 m) above land-surface datum.

REMARKS.--Observation well.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.07 ft (3.68 m) below land-surface, Dec. 23, 1981; lowest measured, 26.92 ft (8.21 m) below land-surface datum, Jan. 13, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 13, 1981	26.92	Dec. 23, 1981	12.07	Aug. 11, 1982	14.48	Mar. 9, 1983	17.08
Feb. 10	21.84	Jan. 20, 1982	13.20	Sept. 15	14.03	Apr. 14	16.47
Mar. 10	21.57	Feb. 25	12.83	Oct. 14	15.70	May 3	13.89
May 12	18.60	Mar. 30	13.93	Nov. 15	15.70	June 28	13.28
June 10	14.58	Apr. 20	14.82	Dec. 8	17.48	July 8	12.81
July 16	15.73	May 11	12.90	Jan. 6, 1983	16.20	Aug. 4	12.92
Aug. 17	14.25	June 9	12.49	Feb. 9	18.60	Sept. 13	12.50
Sept. 10	14.28	July 13	14.44				

RIO INABON TO RIO LOCO BASINS

175922066495901. Local number, 16.

LOCATION.--Lat 17°59'22", long 66°49'59".

Owner: Sucesión Lluveras.

Name: Central San Francisco.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 20 in (51 cm). Depth 185 ft (56.4).

DATUM.--Altitude of land-surface datum is about 30 ft (9.1 m) above mean sea level. Measuring point: Top of shelter's wooden base, 4.06 ft (1.24 m) above land-surface datum.

REMARKS.--Recording observation well (Nov. 9, 1960 to Mar. 23, 1965). Water levels affected by pumpage of nearby wells.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.43 ft (0.44 m) below land-surface datum, Dec. 22, 1960; lowest measured, 35.76 ft (10.90 m) below land-surface datum, Mar. 7, 1975.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 12	5.14	Jan. 5	5.14	Apr. 12	5.58	Aug. 15	6.57
Nov. 9	5.28	Feb. 1	5.57	May 5	4.43	Sept. 14	6.56
Dec. 10	4.26	Mar. 14	5.37	July 8	5.64		

180057066361101. Local number, 21.

LOCATION.--Lat 18°00'57", long 66°36'11".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Alhambra.

AQUIFER.--Ponce Limestone of Tertiary Age.

WELL CHARACTERISTICS.--Drilled public supply artesian well, diameter 20 in (51 cm), cased 300 ft (91.4 m), perforated 80-300 ft (24.4-91.4 m). Depth 300 ft (91.4 m).

DATUM.--Altitude of land-surface datum is about 53 ft (16.2 m) above mean sea level. Measuring point: Bottom edge 1.5 in (3.8 cm) pipe in concrete pump base, 0.7 ft (0.21 m) below land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD.--November 1958 to August 10, 1972; January 17, 1975 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 17.43 ft (5.31 m) below land-surface datum, Dec. 14, 1960; lowest measured, 97.61 ft (29.75 m) below land-surface datum, Aug. 8, 1967.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 12	a72.74	Jan. 17	a80.57	Apr. 12	a77.60	Jul. 6	31.33
Nov. 15	a72.34	Feb. 2	a74.92	May 9	a65.36	Sept. 14	a75.20
Dec. 7	a74.00	Mar. 16	a77.40	June 3	a71.27		

a Pumping.

GROUND-WATER LEVELS

RIO INABON TO RIO LOCO BASINS

180150066474901. Local number, 27.

LOCATION.--Lat 18°01'50", long 66°47'49".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Quebradas.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 16 to 12 in (41 to 30 cm), cased 16 in (41 cm) 0-40 ft (0-12.2 m), 12 in (30 cm) 0-120 ft (0-36.6 m), perforated 40-120 ft (12.2-36.6 m). Depth 120 ft (36.6 m).

DATUM.--Altitude of land-surface datum is about 59 ft (18.0 m) above mean sea level. Measuring point: Top of 1.0 in (2.54 cm) pipe in pump base, 1.1 ft (0.34 m) above land-surface datum.

REMARKS.--Observation well.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 25.72 ft (7.84 m) below land-surface datum, Oct. 8, 1959; lowest measured, 75.1 ft (22.89 m) below land-surface datum, June 27, 1972.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 12	a35.83	Jan. 17	a32.01	Apr. 12	a37.59	July 6	a28.70
Nov. 12	a28.52	Feb. 2	a32.28	May 9	a32.54	Aug. 3	a29.90
Dec. 13	a30.48	Mar. 16	a37.10	June 7	a30.69	Sept. 14	a31.15

180110066473501. Local number, 74.

LOCATION.--Lat 18°01'10", long 66°47'35".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Guayanilla.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 16 in (41 cm), cased 0-103 ft (0-31.4 m), perforated 39-103 ft (11.9-31.4 m). Depth 102 ft (31.1 m).

DATUM.--Altitude of land-surface datum is about 34 ft (10.4 m) above mean sea level. Measuring point: Airline hole in pump base, 3.0 ft (0.91 m) above land-surface datum.

REMARKS.--Observation well. Drilled to 195 ft (59.44 m), plugged back to 102 ft (31.1 m).

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 8.56 ft (2.61 m) below land-surface datum, Oct. 21, 1960; lowest measured, 90.50 ft (27.58 m) below land-surface datum, Aug. 13, 1976.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 12	a15.30	Jan. 17	a15.37	Apr. 12	a16.00	July 6	a15.34
Nov. 12	a15.48	Feb. 2	a15.55	May 5	a15.44	Aug. 3	a15.35
Dec. 13	a15.25	Mar. 16	a15.40	June 7	a15.39	Sept. 14	a15.22

180058066502701. Local number, 131.

LOCATION.--Lat 18°00'58", long 66°50'27".

Owner: Union Carbide Corporation.

Name: Yauco 1 or UCC 2.

AQUIFER.--Alluvium of Quaternary Age and limestone of Tertiary Age.

WELL CHARACTERISTICS.--Drilled observation well, casing slotted 20-145 ft (6.1-44.2 m), open hole below 145 ft (44.2 m). Depth 156 ft (47.6 m).

DATUM.--Altitude of land-surface datum is about 66 ft (20.1 m) above mean sea level. Measuring point: Top of 3 in (0.08 m) pipe, 2.5 ft (0.76 m) above land-surface datum.

REMARKS.--Observation well.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.46 ft (0.14 m) below land-surface datum; June 14, 1979; lowest measured, 44.95 ft (13.70 m) below land-surface datum, May 20, 1974.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 12	7.52	Jan. 4	7.50	Apr. 12	10.99	July 8	7.72
Nov. 9	7.24	Feb. 1	8.19	May 5	5.35	Aug. 5	8.58
Dec. 10	6.92	Mar. 14	7.18	June 7	7.13	Sept. 14	9.22

a Pumping.

GROUND-WATER LEVELS

RIO INABON TO RIO LOCO BASINS

180133066503301. Local number, 132.

LOCATION.--Lat 18°01'33", long 66°50'33".

Owner: Pittsburgh Plate Glass 4.

Name: Yauco 2.

AQUIFER.--Limestone of Tertiary Age.

WELL CHARACTERISTICS.--Drilled observation well, cased 20 in (51 cm) 0-20 ft (0-6.1 m), 12 in (30 cm) perforated pipe 20-84 ft (6.1-25.6 m), 10 in (25 cm) perforated pipe 84-190 ft (25.6-57.9 m). Depth 190 ft (57.9 m).

Datum.--Altitude of land-surface datum is about 75 ft (22.9 m) above mean sea level. Measuring point: Top of shelter floor, 2.35 ft (0.72 m) above land-surface datum.

REMARKS.--Recording observation well.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level, +0.12 ft (+0.04 m) below land-surface datum, July 19, 1979; lowest, 36.91 ft (11.25 m) below land-surface datum, June 27, 1974.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.40	6.60	6.03	6.87	8.69	10.58	11.72	7.76	7.24	6.37	8.13	8.34
2	7.14	6.57	6.13	6.92	8.83	10.68	11.77	7.65	7.23	6.42	8.22	8.48
3	7.19	6.49	6.20	7.10	8.96	10.76	11.81	7.54	7.19	6.39	8.24	8.34
4	7.21	6.55	6.27	7.18	9.06	10.84	11.89	7.41	7.19	6.24	8.24	8.35
5	7.19	6.71	6.33	7.19	9.09	10.92	12.02	7.42	7.19	6.16	8.37	8.45
6	7.21	6.61	6.38	7.10	9.19	11.03	12.13	7.42	7.17	6.27	8.30	8.48
7	7.19	6.63	6.44	7.14	9.36	11.15	12.22	7.46	7.15	6.32	8.26	8.54
8	7.24	6.80	6.48	7.19	9.48	11.28	12.30	7.49	7.10	6.34	8.39	8.58
9	7.16	6.77	6.41	7.25	9.57	11.40	12.31	7.54	7.07	6.41	8.52	8.59
10	7.13	6.75	6.35	7.38	9.63	11.50	12.37	7.58	6.98	6.46	8.59	8.49
11	7.11	6.57	6.25	7.42	9.75	11.61	12.40	7.54	6.94	6.52	8.59	8.48
12	7.11	6.47	6.21	7.43	9.72	11.51	12.60	7.50	6.91	6.58	8.65	8.65
13	7.10	6.22	6.19	7.36	9.80	10.74	12.74	7.50	6.82	6.65	8.57	8.73
14	7.10	6.30	6.37	7.38	9.91	20.39	12.85	7.54	6.79	6.71	8.52	8.78
15	7.16	6.32	6.45	7.40	9.88	10.69	12.88	7.55	6.74	6.77	8.67	8.84
16	7.10	6.42	6.46	7.43	10.05	10.69	12.87	7.58	6.52	6.87	8.63	8.82
17	7.07	6.14	6.50	7.48	10.15	10.70	12.84	7.61	6.16	6.88	8.70	8.67
18	7.15	6.15	6.38	7.54	10.17	10.74	12.80	7.65	6.05	6.98	8.20	8.65
19	7.12	6.04	6.42	7.58	10.11	10.77	12.56	7.42	5.95	7.01	8.23	8.75
20	6.96	6.06	6.26	7.64	10.19	10.80	12.42	7.32	6.10	7.05	8.25	8.76
21	6.91	5.97	6.34	7.72	10.24	10.86	11.18	7.26	6.05	7.04	8.28	8.75
22	6.91	5.99	6.56	7.79	10.24	10.91	9.72	7.09	5.96	7.14	8.07	8.79
23	6.85	6.03	6.62	7.79	10.24	10.99	9.58	7.15	6.04	7.17	8.03	8.73
24	6.84	6.08	6.68	7.85	10.30	11.08	9.45	7.18	6.16	7.29	8.02	8.54
25	6.88	6.17	6.54	7.87	10.38	11.14	9.35	7.19	6.21	7.53	8.00	8.49
26	6.91	6.21	6.56	7.92	10.44	11.22	9.22	7.13	6.25	7.58	8.01	8.63
27	6.90	6.22	6.73	8.00	10.49	11.31	9.08	7.17	6.24	7.70	8.05	8.70
28	6.87	6.22	6.78	8.07	10.55	11.41	8.72	7.16	6.30	7.80	8.10	8.69
29	6.84	6.14	6.83	8.15	---	11.47	8.07	7.13	6.31	7.92	8.12	8.74
30	6.78	6.16	6.90	8.27	---	11.56	7.87	7.11	6.34	7.94	8.16	8.81
31	6.64	---	6.95	8.47	---	11.69	---	7.18	---	8.01	8.19	---
LOW	7.40	6.80	6.95	8.47	10.55	20.39	12.88	7.76	7.24	8.01	8.70	8.84
HIGH	6.64	5.97	6.03	6.87	8.69	10.58	7.87	7.09	5.95	6.16	8.00	8.34
CAL YR 1982	MEAN 9.58		LOW 13.72	HIGH 5.97								
WTR YR 1983	MEAN 8.13		LOW 20.39	HIGH 5.95								

180120066503201. Local number, 134.

LOCATION.--Lat 18°01'20", long 66°50'32".

Owner: Union Carbide Corporation.

Name: Yauco 4 or UCC 1.

AQUIFER.--Alluvium of Quaternary Age and limestone of Tertiary Age.

WELL CHARACTERISTICS.--Drilled observation well, casing slotted 20-140 ft (6.1-42.7 m) open hole 140-163 ft (42.7-49.7 m). Depth 163 ft (49.7 m).

DATUM.--Altitude of land-surface datum is about 87 ft (26.5 m) above mean sea level. Measuring point: Top of 3 in (0.08 m) pipe, 3.4 ft (1.04 m) above land-surface datum.

REMARKS.--Observation well.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 7.90 ft (2.41 m) below land-surface datum; June 14, 1979; lowest measured, 37.84 ft (11.53 m) below land-surface datum, June 27, 1974.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 12	11.35	Jan. 4	11.18	Apr. 12	14.87	July 8	10.77
Nov. 9	10.98	Feb. 1	12.12	May 5	10.92	Aug. 5	12.00
Dec. 10	10.78	Mar. 14	13.40	June 7	11.29	Sept. 14	11.05

+ Above land-surface datum.

GROUND-WATER LEVELS

RIO INABON TO RIO LOCO BASINS

17595006354201. Local number, 141.

LOCATION.--Lat 17°59'50", long 66°35'42".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Restaurada 8A.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled unused public supply well, diameter 16 to 10 in (41 to 25 cm), cased 16 in (41 cm) 2-20 ft (0.6-6.1 m), perforated 20-130 ft (6.1-39.6 m), 10 in (25 cm) 128-165 ft (39.0-50.3 m), perforated. Depth 165 ft (50.3 m).

DATUM.--Altitude of land-surface datum is about 24 ft (7.3 m) above mean sea level. Measuring Point: Bottom edge of hole on side of casing, 1.9 ft (0.58 m) above land-surface datum, 26.15 ft (7.97 m) above mean sea level.

REMARKS.--Recording observation well.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 15.65 ft (4.77 m) below land-surface datum, Aug. 30, 1983; lowest, 28.59 ft (8.714 m) below land-surface datum, July 9, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.29		---	18.75	19.92	24.22	23.67	20.92	19.06	19.18	18.01	16.36
2	22.27		---	18.66	20.16	24.41	23.58	20.70	19.53	19.16	18.01	16.32
3	22.19		---	18.65	20.24	24.62	23.49	20.54	19.28	19.01	18.03	16.28
4	22.20		---	18.77	20.38	24.72	23.44	20.40	19.18	18.92	18.04	16.09
5	22.31		---	18.28	20.33	24.68	23.58	20.32	19.17	18.75	18.06	15.97
6	22.53		---	18.30	20.23	24.52	23.70	20.80	19.15	18.27	18.04	15.83
7	22.45		20.81	17.89	20.18	24.38	23.35	21.01	19.65	18.11	17.98	15.89
8	22.80		20.89	18.15	20.25	24.46	23.26	20.51	20.30	18.50	17.92	15.92
9	22.77		20.91	18.25	20.00	24.58	23.29	20.34	20.53	18.60	17.86	15.93
10	22.62		20.97	18.31	20.27	24.13	23.31	20.43	20.58	18.13	17.90	15.95
11	22.55		20.81	18.46	20.48	23.70	23.26	20.58	20.36	18.40	17.88	15.91
12	22.62		20.56	18.12	20.56	23.85	23.46	20.69	20.10	18.10	17.55	15.87
13	---		20.43	18.30	20.53	23.24	23.63	20.63	19.96	18.06	17.64	15.91
14	---		21.12	18.40	20.37	22.94	24.17	20.37	20.02	18.20	17.63	15.95
15	---		21.04	18.37	20.64	23.41	24.44	20.12	19.87	18.41	17.57	16.08
16	---		21.50	18.25	23.19	23.09	24.50	19.91	19.28	18.45	17.51	16.64
17	---		21.59	18.22	23.59	23.15	24.48	19.83	19.03	18.46	17.42	16.58
18	---		21.67	18.39	23.84	23.48	23.57	19.81	18.93	18.46	17.20	16.87
19	---		21.65	18.45	23.83	23.77	23.38	19.84	19.20	18.45	17.12	17.02
20	---		21.40	18.65	23.72	23.70	23.11	19.80	18.82	18.50	17.07	17.13
21	---		21.58	18.88	23.65	23.63	20.49	19.65	19.18	18.51	16.89	17.14
22	---		21.70	18.97	23.66	23.84	21.54	19.68	19.45	18.51	16.09	---
23	---		21.80	18.83	23.98	23.30	21.40	19.55	19.56	18.51	15.94	17.49
24	---		19.17	18.83	24.14	23.76	21.22	19.62	19.58	18.39	15.89	17.66
25	---		19.11	19.44	24.27	23.94	21.03	19.66	18.93	18.24	15.81	17.68
26	---		18.94	19.89	24.26	23.82	21.08	19.48	18.58	18.13	16.29	17.59
27	---		18.84	20.15	24.06	23.68	21.18	19.25	18.97	18.11	16.49	17.42
28	---		19.02	20.33	23.98	23.71	21.25	19.07	19.11	18.06	16.07	16.88
29	---		19.09	20.25	---	23.59	21.33	19.04	19.17	18.05	15.88	16.75
30	---		18.99	19.90	---	23.67	21.12	18.93	19.21	18.06	15.98	16.71
31	---		18.87	19.87	---	23.75	---	19.32	---	18.02	16.47	---
LOW	---		---	20.33	24.27	24.72	24.50	21.01	20.58	19.18	18.06	---
HIGH	---		---	17.89	19.92	22.94	20.49	18.93	18.58	18.02	15.81	---

RIO GUANAJIBO BASIN

180933067050801. Local number 40.

LOCATION.--Lat 18°09'33", long 67°05'08".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Rosario.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled public supply artesian well, diameter 16 to 12 in (41 to 30 cm), cased 16 in (41 cm) 0-30 ft (0-9.1 m) 12 in (30 cm) 0-60 ft (0-18.3 m), perforated 12 in (30 cm) 10-60 ft (3.0-18.3 m). Depth 105 ft (32.0 m).

DATUM.--Altitude of land-surface datum is about 164 ft (50.0 m) above mean sea level. Measuring point: Lower edge of 0.75 in (1.90 cm) pipe at pump base, 2.7 ft (0.82 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD.--July 1960 to November 1971; May 1973; March 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.20 ft (0.06 m) below land-surface datum, Aug. 3, 1983; lowest measured, 37.30 ft (11.37 m) below land-surface datum, May 7, 1973.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 7	a13.54	Jan. 12	13.00	Apr. 14	a13.93	July 13	a13.16
Nov. 10	a12.62	Feb. 9	9.30	May 12	a14.75	Aug. 3	a 0.20
Dec. 27	a14.23	Mar. 17	a14.18	June 9	a12.55	Sept. 8	a14.12

a Pumping.

GROUND-WATER LEVELS

RIO GUANAJIBO BASIN

181018067091601. Local number, 43.

LOCATION.--Lat 18°10'18", long 67°09'16".

Owner: Mayaguez Sugar Co.

Name: Central Rochelaise.

AQUIFER.--Volcanic rocks of Cretaceous Age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 12 in (30 cm), cased 0-45 ft (0-13.7 m), perforated 0-45 ft (0-13.7 m). Depth 80 ft (24.4 m).

DATUM.--Altitude of land-surface datum is about 7 ft (2.1 m) above mean sea level. Measuring point: Top of 12 in (30 cm) casing, 1.9 ft (0.58 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD.--August 1959 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, +0.50 ft (+0.15 m) above land-surface datum, Nov. 20, 1979; lowest measured, 2.70 ft (0.82 m) below land-surface datum, Apr. 15, 1970.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 6	+0.48	Jan. 13	0.00	Apr. 14	0.08	July 12	0.00
Nov. 10	0.00	Feb. 8	0.00	May 12	+0.20	Aug. 3	0.00
Dec. 22	0.00	Mar. 17	+0.40	June 9	0.00	Sept. 8	0.00

180132067033801. Local number, 143.

LOCATION.--Lat 18°01'32", long 67°03'38".

Owner: Pedro P. Vivoni.

Name: Vivoni, Hacienda Amistad.

AQUIFER.--Limestone of unknown age.

WELL CHARACTERISTICS.--Drilled unused irrigation well, diameter 12 in (30 cm). Depth 200 ft (61.0 m).

DATUM.--Altitude of land-surface datum is about 52.5 ft (16.0 m) above mean sea level. Measuring point: Hole side of casing, 0.80 ft (0.24 m) above land-surface datum.

REMARKS.--Recording observation well.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 38.00 ft (11.58 m) below land-surface datum, Sept. 19-20, 1982; lowest, 39.34 ft (11.99 m) below land-surface datum, Apr. 10, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38.89	38.80	38.61	38.57	38.94	39.20	39.21	39.22	38.92	38.98	39.09	39.05
2	38.89	38.76	38.61	38.56	38.92	39.22	39.25	39.23	38.94	39.03	39.10	39.07
3	38.89	38.75	38.60	38.56	38.91	39.22	39.22	39.21	38.93	39.03	39.10	39.12
4	38.89	38.75	38.58	38.57	38.98	39.23	39.22	39.20	38.93	39.04	39.11	39.11
5	38.91	38.77	38.59	38.58	38.96	39.25	39.21	39.20	38.96	39.04	39.15	39.06
6	38.91	38.74	38.59	38.57	39.01	39.24	39.25	39.24	38.98	39.02	39.17	39.05
7	38.87	38.75	38.56	38.58	39.01	39.25	39.28	39.22	38.99	39.03	39.15	39.05
8	38.85	38.75	38.58	38.56	39.05	39.23	39.28	39.19	38.96	39.04	39.16	39.08
9	38.84	38.76	38.56	38.58	39.03	39.24	39.32	39.21	38.98	38.94	39.18	39.11
10	38.84	38.76	38.57	38.56	39.06	39.25	39.34	39.24	38.79	38.95	39.19	39.12
11	38.84	38.77	38.55	38.58	39.11	39.23	39.29	39.22	38.79	38.97	39.12	39.11
12	38.85	38.77	38.53	38.57	39.16	39.20	39.26	39.21	38.79	38.99	39.11	39.12
13	38.89	38.77	38.54	38.60	39.14	39.19	39.26	39.22	38.78	39.00	39.08	39.13
14	38.92	38.79	38.60	38.64	39.12	39.20	39.27	39.14	38.78	38.99	39.08	39.16
15	38.89	38.79	38.62	38.60	39.10	39.17	39.29	39.12	38.75	38.98	39.10	39.17
16	38.92	38.79	38.59	38.64	39.12	39.13	39.28	39.13	38.77	38.98	39.10	39.16
17	38.89	38.72	38.58	38.66	39.14	39.11	39.27	39.10	38.81	39.01	39.09	39.18
18	38.90	38.75	38.56	38.67	39.13	39.15	39.21	39.12	38.85	39.02	39.10	39.20
19	38.86	38.70	38.59	38.70	39.08	39.16	39.24	39.04	38.86	39.03	39.10	39.24
20	38.82	38.69	38.58	38.72	39.14	39.16	39.26	39.04	38.86	39.07	39.12	39.21
21	38.77	38.66	38.59	38.73	39.16	39.19	39.23	39.01	38.89	39.04	39.12	39.26
22	38.78	38.66	38.59	38.79	39.15	39.21	39.26	38.97	38.90	39.02	39.10	39.25
23	38.78	38.69	38.58	38.79	39.17	39.20	39.26	38.98	38.92	39.08	39.12	39.25
24	38.78	38.70	38.57	38.84	39.17	39.21	39.25	38.97	38.91	39.10	39.11	39.26
25	38.83	38.74	38.59	38.84	39.17	39.21	39.24	38.92	38.92	39.09	39.09	39.23
26	38.84	38.68	38.55	38.85	39.20	39.27	39.24	38.90	38.95	39.07	39.08	39.26
27	38.81	38.66	38.55	38.92	39.18	39.27	39.23	38.92	38.94	39.07	39.07	39.27
28	38.78	38.61	38.56	38.89	39.20	39.26	39.21	38.92	38.97	39.04	39.05	39.27
29	38.78	38.62	38.55	38.92	---	39.26	39.22	38.92	38.96	39.07	39.07	39.26
30	38.81	38.66	38.56	38.90	---	39.25	39.22	38.90	38.99	39.06	39.06	39.32
31	38.82	---	38.59	38.89	---	39.23	---	38.90	---	39.08	39.04	---
LOW	38.92	38.80	38.62	38.92	39.20	39.27	39.34	39.24	38.99	39.10	39.19	39.32
HIGH	38.77	38.61	38.53	38.56	38.91	39.11	39.21	38.90	38.75	38.94	39.04	39.05
CAL YR 1982	MEAN 38.90		LOW 39.26		HIGH 38.00							
WTR YR 1983	MEAN 38.97		LOW 39.34		HIGH 38.53							

+ Above land-surface datum.

GROUND-WATER LEVELS

RIO YAGUEZ AND RIO GRANDE DE AÑASCO BASINS

181233067083201. Local number, 45.

LOCATION.--Lat 18°12'33", long 67°08'32".

Owner: Cerveceria India, Inc.

Name: Well 1, Mayaguez.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 12 in (30 cm), cased 0-82 ft (0-25.0 m). Depth 82 ft (25.0 m).

DATUM.--Altitude of land-surface datum is about 23 ft (7.0 m) above mean sea level. Measuring point: Top of wood cover, 0.9 ft (0.27 m) above land-surface datum.

REMARKS.--Observation well. Affected by nearby pumping.

PERIOD OF RECORD.--1960 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.41 ft (2.87 m) below land-surface datum, Sept. 15, 1977; lowest measured, 29.97 ft (9.13 m) below land-surface datum, Jan. 20, 1966.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 6	12.14	Jan. 13	11.51	Apr. 14	11.85	July 12	14.88
Nov. 10	12.63	Feb. 8	12.00	May 12	12.46	Aug. 3	13.96
Dec. 21	12.86	Mar. 17	12.23	June 9	13.33	Sept. 7	12.87

181522067090901. Local number, 53.

LOCATION.--Lat 18°15'22", long 67°09'09".

Owner: P.R. Ports Authority.

Name: Mayaguez Airport.

AQUIFER.--Limestone of Tertiary Age.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 8 in (20 cm), cased 0-114 ft (0-34.8 m), perforated 82-114 ft (25.0-34.8 m), open hole 114-353 ft (34.8-107.6 m). Depth 353 ft (107.6 m).

DATUM.--Altitude of land-surface datum is about 20 ft (6.1 m) above mean sea level. Measuring point: Slot in pump base, 0.4 ft (0.12 m) above land-surface datum.

REMARKS.--Observation well.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.96 ft (0.29 m) below land-surface datum, Oct. 5, 1978; lowest measured, 8.70 ft (2.65 m) below land-surface datum, Feb. 14, 1979.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATION

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 5	5.58	Jan. 12	5.90	Apr. 14	5.85	July 12	4.63
Nov. 10	5.40	Feb. 8	5.10	May 12	5.42	Aug. 3	2.10
Dec. 21	5.05	Mar. 17	5.48	June 6	3.88	Sept. 7	2.00

GROUND-WATER LEVELS

RIO CULEBRINAS BASIN

182228067113301. Local number, 58.

LOCATION.--Lat 18°22'38", long 67°11'33".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Aguada.

AQUIFER.--Limestone of Tertiary Age.

WELL CHARACTERISTICS.--Drilled public supply artesian well, diameter 20 in (51 cm) to 12 in (30 cm), cased 20 in (51 cm) 0-40 ft (0-12.2 m), 12 in (30 cm) 0-60 ft (0-18.3 m), perforated 40-60 ft (12.2-18.3 m). Depth 160 ft (48.8 m).

DATUM.--Altitude of land-surface datum is about 30 ft (9.1 m) above mean sea level. Measuring point: Lower edge of 0.75 in (1.90 cm) pipe in pump base, 1.90 ft (0.58 m) above land-surface datum.

REMARKS.--Observation well. Piezometric head measured for highest water level.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, +0.81 ft (+0.25 m) above land-surface datum, Sept. 12, 1975; lowest measured, 83.53 ft (25.46 m) below land-surface datum, Aug. 7, 1974.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 6	0.40	Jan. 12	1.20	Apr. 14	3.83	July 12	1.35
Nov. 10	0.27	Feb. 8	2.20	May 12	1.80	Aug. 3	1.58
Dec. 21	1.34	Mar. 17	3.05	June 6	0.89	Sept. 7	0.58

182018066593201. Local number, 83.

LOCATION.--Lat 18°20'18", long 66°59'32".

Owner: P.R. Water Resources Authority.

Name: San Sebastián.

AQUIFER.--Volcanic rock of Eocene Age.

WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in (15 cm). Depth 300 ft (91.4 m).

DATUM.--Altitude of land-surface datum is about 230 ft (70.1 m) above mean sea level. Measuring point: Top of casing, 2.40 ft (0.73 m) above land-surface datum.

REMARKS.--Observation well.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 21.95 ft (6.69 m) below land-surface datum, Apr. 15, 1976; lowest measured, 40.20 ft (12.25 m) below land-surface datum, July 21, 1970.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 5	28.67	Jan. 11	29.04	Apr. 13	30.71	July 12	28.53
Nov. 5	28.74	Feb. 8	29.75	May 4	29.38	Aug. 3	30.55
Dec. 21	28.90	Mar. 16	30.22	June 6	26.88	Sept. 1	27.96

+ Above land-surface datum.



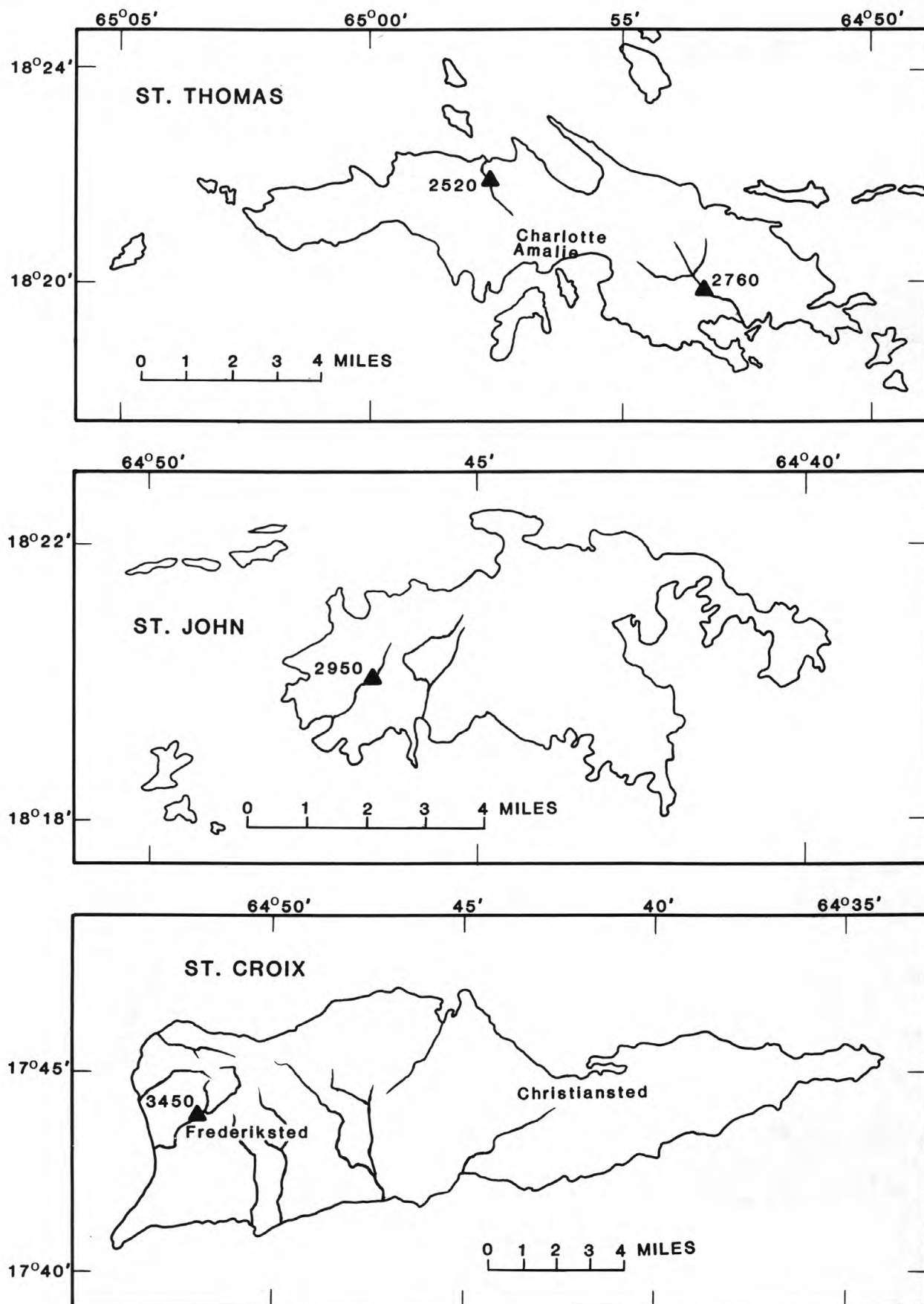


Figure 27.--Surface-water stations in the U.S. Virgin Islands.

ST. THOMAS, U.S. VIRGIN ISLANDS

50252000 BONNE RESOLUTION GUT AT BONNE RESOLUTION, ST. THOMAS, VI

LOCATION.--Lat 18°21'57", long 64°57'34", Hydrologic Unit 21020001, on right bank near Hull Bay Road, 0.5 mi (0.8 km) upstream from Atlantic Ocean, and 2.5 mi (4.02 km) northwest of Fort Christian, Charlotte Amalie.

DRAINAGE AREA.--0.49 sq mi (1.27 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1962 to February 1967, March 1979 to April 1981, May 1982 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 280 ft (85.3 m), from topographic map. December 1962 to February 1967 at site about 100 ft (30.5 m) downstream at different datum. March 1979 to April 1981 at site about 100 ft (30.5 m) upstream at different datum.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--5 years (1964-66, 1980, 1983), 0.24 cu ft/s (0.0068 cu m/s), 6.62 in/yr (168.1 mm/yr), 173 acre-ft/yr (0.213 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,650 cu ft/s (46.7 cu m/s) Apr. 18, 1983, gage height, 7.00 ft (2.134 m), from floodmarks, from rating curve extended above 1.0 cu ft/s (0.03 cu m/s) on basis of critical-depth analysis and slope-area measurement of peak flow; no flow at times in most years.

EXTREMES FOR WATER YEARS 1979, 80, 83.--Peak discharges above base of 50 cu ft/s (1.42 cu m/s) and maximums (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)	Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
May 30, 1979	1500	122	3.46	May 27, 1980	1830	86	2.44
Aug. 30	2400	121	3.43	May 28	1000	115	3.26
Sept. 4	0700	*218	6.17	Oct. 6	1430	92	2.60
Sept. 7	1900	110	3.12	Apr. 18, 1983	1315	*1,650	46.7
Nov. 23	1000	122	3.46	June 17	1945	281	7.96
Nov. 23	2400	*169	4.79	June 18	0100	600	17.0
							4.17
							1.271

No flow at times in each year.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						---	.02	.04	.12	.05	.03	.16
2						---	.02	.04	.07	.05	.02	.12
3						---	.02	.04	.06	.04	.02	.22
4						---	.02	.04	.05	.04	.02	50
5						---	.03	.04	.05	.03	.02	30
6						---	.03	.04	.05	.04	.02	2.0
7						---	.03	.04	.04	.04	.02	6.8
8						.02	.03	.04	.04	.03	.02	1.8
9						.02	.04	.04	.04	.02	.02	.25
10						.02	.02	.13	.04	.02	.02	.12
11						.04	.03	.11	.04	.02	.02	.08
12						.03	.02	.05	.04	.02	.01	.06
13						.03	.02	.04	.04	.02	.01	.05
14						.03	.03	.05	.04	.02	.02	.05
15						.03	.03	.07	.04	.02	.02	.04
16						.03	.03	.07	.04	.03	.01	.04
17						.03	.03	.09	.03	.03	.01	.04
18						.25	.04	.41	.03	1.2	.02	.04
19						.04	.04	.85	.03	.33	.02	.04
20						.03	.04	.09	.02	.04	.02	.04
21						.02	.04	.08	.02	.02	.01	.04
22						.02	.04	.05	.02	.02	.03	.04
23						.02	.04	.05	.02	.02	.03	.04
24						.02	.03	.05	.02	.02	.04	.03
25						.02	.05	.07	.03	.01	.02	.04
26						.02	.04	.07	.04	.01	.02	.04
27						.02	.04	.07	.02	.01	.02	.04
28						.02	.04	.07	.05	.02	.02	.04
29						.12	.04	.09	.08	.02	.02	.04
30						.05	.04	13	.07	.02	4.1	.05
31						.03	---	1.2	---	.02	5.3	---
TOTAL						---	.97	17.12	1.28	2.28	9.98	92.35
MEAN						---	.032	.55	.043	.074	.32	3.08
MAX						---	.05	13	.12	1.2	5.3	50
MIN						---	.02	.04	.02	.01	.01	.03
CFSM						---	.07	1.12	.09	.15	.65	6.29
IN.						---	.07	1.30	.10	.17	.76	7.00
AC-FT						---	1.9	34	2.5	4.5	20	183

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DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.04	.10	.05	.05	.05	.01	.01	.01	.01	.01	.00	.01
2	.05	.10	.06	.05	.05	.01	.01	.01	.01	.01	.00	.01
3	.02	.05	.05	.05	.05	.01	.01	.01	.01	.01	.00	.01
4	.04	.05	.05	.05	.04	.01	.01	.01	.01	.01	.01	.01
5	.02	.05	.05	.05	.04	.01	.01	.01	.01	.01	.01	.64
6	.02	.03	.05	.05	.06	.01	.01	.01	.01	.01	.01	.03
7	.02	.05	.05	.05	.04	.01	.01	.01	.01	.01	.01	.02
8	.02	.20	.05	.06	.04	.01	.01	.02	.01	.01	.01	.02
9	.02	.10	.05	.05	.03	.01	.02	.01	.01	.01	.01	1.3
10	.02	.08	.05	.05	.03	.01	.01	.01	.01	.01	.01	.06
11	.05	.07	.05	.05	.02	.01	.00	.01	.01	.01	.01	.04
12	.05	.06	.04	.05	.02	.01	.01	.02	.01	.01	.01	.04
13	.05	.05	.05	.05	.02	.01	.01	.02	.01	.01	.01	.06
14	.05	.05	.05	.04	.02	.01	.01	.01	.01	.01	.01	.04
15	.63	.05	.04	.04	.03	.01	.00	.01	.01	.01	.01	.04
16	.10	.05	.04	.04	.02	.01	.01	.00	.01	.01	.01	.04
17	.05	.07	.04	.04	.02	.01	.01	.00	.01	.01	.01	.03
18	.02	.07	.05	.04	.02	.01	.01	.00	.01	.01	.01	.03
19	.02	.07	.05	.04	.03	.01	.01	.00	.01	.01	.01	.03
20	.02	.07	.05	.04	.03	.01	.01	.00	.01	.01	.01	.03
21	.02	.07	.04	.04	.03	.01	.01	.01	.01	.01	.01	.04
22	.05	.10	.04	.04	.03	.01	.01	.01	.01	.01	.01	.04
23	.02	19	.05	.04	.02	.01	.02	.01	.01	.01	.01	.03
24	.04	7.9	.05	.04	.02	.01	.01	.01	.01	.01	.01	.02
25	.06	1.6	.05	.04	.02	.01	.01	.01	.01	.00	.01	.02
26	.04	.16	.04	.04	.02	.01	.01	.01	.01	.00	.02	.02
27	.02	.09	.04	.04	.02	.01	.01	2.9	.01	.00	.01	.03
28	.03	.08	.04	.04	.02	.01	.01	8.2	.01	.00	.01	.04
29	.03	.07	.04	.05	.02	.01	.01	.03	.01	.01	.01	.03
30	.02	.06	.05	.05	---	.01	.01	.02	.01	.00	.01	.14
31	.20	---	.05	.05	---	.01	---	.02	---	.00	.01	---
TOTAL	1.84	30.55	1.46	1.41	.86	.31	.30	11.41	.30	.25	.29	2.90
MEAN	.059	1.02	.047	.045	.030	.010	.010	.37	.010	.008	.009	.097
MAX	.63	.19	.06	.06	.06	.01	.02	8.2	.01	.01	.02	1.3
MIN	.02	.03	.04	.04	.02	.01	.00	.00	.01	.00	.00	.01
CFSM	.12	2.08	.10	.09	.06	.02	.02	.76	.02	.02	.02	.20
IN.	.14	2.31	.11	.11	.07	.02	.02	.86	.02	.02	.02	.22
AC-FT	3.6	61	2.9	2.8	1.7	.6	.6	23	.6	.5	.6	5.8

WTR YR 1980 TOTAL 51.88 MEAN .14 MAX 19 MIN .00 CFSM .29 IN 3.93 AC-FT 103

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.04	.02	.02	.02	.02	.02	.04					
2	.03	.02	.02	.02	.02	.02	.04					
3	.02	.02	.02	.01	.02	.02	.04					
4	.05	.02	.02	.01	.02	.29	.04					
5	.76	.02	.02	.03	.01	.13	.03					
6	4.8	.02	.03	.04	.02	.05	.04					
7	.21	.02	.04	.02	.02	.06	---					
8	.05	.02	.02	.02	.02	.05	---					
9	.04	.02	.02	.02	.02	.05	---					
10	.02	.02	.02	.02	.02	.04	---					
11	.02	.02	.02	.02	.02	.04	---					
12	.02	.02	.03	.02	.02	.04	---					
13	.02	.02	.02	.02	.02	.04	---					
14	.02	.02	.03	.02	.02	.04	---					
15	.02	.02	.03	.02	.02	.04	---					
16	.02	.02	.02	.02	.02	.04	---					
17	.02	.02	.02	.02	.02	.04	---					
18	.02	.02	.02	.02	.02	.04	---					
19	.02	.02	.02	.02	.02	.04	---					
20	.45	.02	.01	.02	.02	.05	---					
21	.02	.02	.01	.02	.03	.05	---					
22	.02	.02	.02	.02	.02	.05	---					
23	.02	.02	.02	.02	.02	.04	---					
24	.02	.02	.02	.03	.02	.03	---					
25	.02	.02	.02	.03	.02	.03	---					
26	.02	.02	.02	.02	.02	.31	---					
27	.02	.02	.01	.85	.02	.05	---					
28	.02	.02	.01	.05	.02	.05	---					
29	.02	.02	.01	.29	---	.04	---					
30	.03	.02	.01	.04	---	.04	---					
31	.02	---	.02	.03	---	.03	---					
TOTAL	6.88	.60	.62	1.81	.56	1.86	---					
MEAN	.22	.020	.020	.058	.020	.060	---					
MAX	4.8	.02	.04	.85	.03	.31	---					
MIN	.02	.02	.01	.01	.01	.02	---					
CFSM	.45	.04	.04	.12	.04	.12	---					
IN.	.52	.05	.05	.14	.04	.14	---					
AC-FT	14	1.2	1.2	3.6	1.1	3.7	---					

CAL YR 1980 TOTAL 26.13 MEAN .071 MAX 8.2 MIN .00 CFSM .15 IN 1.98 AC-FT 52

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1								---	.01	.02	.06	.03
2								---	.01	.02	.09	.03
3								---	.03	.03	.06	.03
4								---	.01	.03	.09	.03
5								---	.01	.03	.09	.03
6								---	.02	.02	.09	.03
7								---	.03	.02	.09	.04
8								---	.03	.02	.09	.03
9								---	.03	.02	.06	.01
10								---	.03	.02	.06	.01
11								---	.04	.02	.06	.02
12								---	.04	.01	.04	.11
13								---	.04	.02	.04	1.2
14								---	.04	.02	.06	.08
15								---	.03	.03	.06	.04
16								---	.03	.01	.06	.03
17								---	.03	.01	.04	.03
18								---	.02	.01	.03	.03
19								---	.03	.03	.03	.03
20								---	.02	.02	.03	.04
21								---	.02	.02	.03	.05
22								---	.02	.09	.04	.04
23								---	.02	.04	.04	.04
24								---	.02	.04	.04	.03
25								---	.02	.06	.04	.03
26								.02	.02	.06	.04	.04
27								.02	.01	.06	.03	.05
28								.01	.02	.06	.03	.06
29								.01	.02	.09	.03	.04
30								.01	.02	.09	.04	.05
31								.01	---	.09	.04	---
TOTAL								---	.72	1.11	1.63	2.31
MEAN								---	.024	.036	.053	.077
MAX								---	.04	.09	.09	1.2
MIN								---	.01	.01	.03	.01
CFSM								---	.05	.07	.11	.16
IN.								---	.05	.08	.12	.18
AC-FT								---	1.4	2.2	3.2	4.6

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.08	.04	.01	.14	.04	.03	.02	.07	.06	.05	.13	.07
2	.08	.04	.02	.07	.04	.02	.03	.06	.04	.06	.15	.07
3	.02	.06	.01	.03	.04	.02	.03	.06	.04	.05	.08	.10
4	.01	.07	.01	.02	.04	.03	.04	.06	.05	.06	.07	.09
5	.02	.05	.02	.02	.04	.03	.05	.06	.05	.13	.07	.09
6	.02	.04	.02	.02	.04	.03	.04	.10	.06	.13	.06	.07
7	.03	.04	.02	.02	.04	.05	.05	.14	.05	1.2	.06	.07
8	.03	.04	.02	.01	.05	.04	.02	.06	.03	.15	.06	.06
9	.02	.07	.02	.02	.06	.03	.03	.11	.03	.10	.05	.05
10	.00	.09	.02	.01	.06	.04	.04	.10	.05	.07	.04	.06
11	.02	.09	.02	.02	.04	.03	.04	.09	.04	.06	.04	.07
12	.02	.08	.02	.02	.03	.13	.05	.07	.03	.06	.03	.10
13	.02	.03	.07	.03	.03	.03	.04	.10	.05	.06	.04	.10
14	.02	.05	.06	.03	.02	.02	.03	.09	.05	.07	.04	.06
15	.02	.06	.15	.04	.02	.02	.03	.09	.05	.08	.05	.08
16	.01	.06	.10	.03	.02	.02	.03	.08	.06	.08	.04	.07
17	.01	.06	.05	.03	.03	.03	.08	.09	13	.06	.05	.08
18	.11	.06	.03	.03	.03	.03	169	.25	24	.07	.07	.09
19	.24	.07	.03	.03	.03	.02	1.9	.26	.33	.08	.06	.05
20	.11	.06	2.3	.02	.02	.02	.72	.42	.22	.05	.06	.06
21	.04	.04	.21	.01	.27	.02	.46	.14	.14	.09	1.1	.07
22	.05	.04	.10	.02	.02	.02	.29	.11	.10	.09	.09	.08
23	.03	2.9	.06	.02	.02	.03	.20	.11	.08	.08	.06	.08
24	.02	.10	.06	.03	.02	.04	.15	.12	.07	.31	.06	.08
25	.02	.05	.06	.04	.02	.04	.13	.09	.06	.08	.05	.08
26	.02	.03	.17	.06	.02	.04	.11	.07	.05	.06	.04	.02
27	.02	.02	1.9	.04	.02	.04	.07	.07	.11	.06	.03	.03
28	.02	.01	5.3	.03	.03	.04	.07	.07	.06	.06	.60	.03
29	.03	.02	.25	.04	---	.05	.06	.08	.05	.07	.10	.02
30	.03	.02	.13	.04	---	.05	.06	.06	.05	.07	.08	.02
31	.03	---	.24	.04	---	.01	---	.07	---	.16	.07	---
TOTAL	1.20	4.39	11.48	1.01	1.14	1.05	173.87	3.35	39.06	3.90	3.58	2.00
MEAN	.039	.15	.37	.033	.041	.034	5.80	.11	1.30	.13	.12	.067
MAX	.24	2.9	5.3	.14	.27	.13	169	.42	24	1.2	1.1	.10
MIN	.00	.01	.01	.01	.02	.01	.02	.06	.03	.05	.03	.02
CFSM	.08	.31	.76	.07	.08	.07	11.8	.22	2.65	.27	.25	.14
IN.	.09	.33	.87	.08	.09	.08	13.17	.25	2.96	.30	.27	.15
AC-FT	2.4	8.7	23	2.0	2.3	2.1	345	6.6	77	7.7	7.1	4.0

WTR YR 1983 TOTAL 246.03 MEAN .67 MAX 169 MIN .00 CFSM 1.37 IN 12.64 AC-FT 488

ST. THOMAS, U.S. VIRGIN ISLANDS

50252000 BONNE RESOLUTION GUT AT BONNE RESOLUTION, ST. THOMAS, VI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--MARCH TO SEPTEMBER 1983

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
MAR, 22	1200	.02	2424	24.5	SEP, 28	1044	.04	1881	25.5
JUL, 20	1055	.05	1843	26.5					

ST. THOMAS, U.S. VIRGIN ISLANDS

50276000 TURPENTINE RUN AT MARIENDAL, ST. THOMAS, VI

LOCATION.--Lat 18°19'48", long 64°52'58", Hydrologic Unit 21020001, on left bank, at Mariendal, 1.0 mi (1.6 km) upstream from mouth, and 3.3 mi (5.3 km) southeast of Fort Christian, Charlotte Amalie.

DRAINAGE AREA.--2.97 sq mi (7.69 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1963 to April 1969, October 1978 to September 1980, June 1982 to current year.

GAGE.--Water-stage recorder and V-notch weir in concrete control. Altitude of gage is 40 ft (12.2 m), from topographic map.

REMARKS.--Records poor. Since about 1975, low flow augmented by discharges from sewage plant.

AVERAGE DISCHARGES.--6 years (1964-68, 1979), 0.53 cu ft/s (0.015 cu m/s), 2.43 in/yr (61.7 mm/yr) 385 acre-ft/yr (0.47 cu hm/yr).

--7 years (1964-68, 1979-80), 0.63 cu ft/s (0.018 cu m/s), 2.88 in/yr (73.2 mm/yr), 456 acre-ft/yr (0.56 cu hm/yr).

--8 years (1964-68, 1979-80, 1983), 1.07 cu ft/s (0.030 cu m/s), 4.89 in/yr (124 mm/yr), 775 acre-ft/yr (0.96 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,710 cu ft/s (275 cu m/s) Apr. 18, 1983, gage height, 11.09 ft (3.380 m), from floodmark, from rating curve extended above 500 cu ft/s (14.2 cu m/s) on basis of slope area measurement and step-backwater analysis; no flow many days from 1963 to 1969.

EXTREMES FOR WATER YEARS 1979-80, 1982-83.--Peak discharges above base of 100 cu ft/s (2.83 cu m/s) and maximums (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)	Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
Oct. 26, 1978	1030	373	10.6	Sept. 13, 1982	0145	178	5.04
May 18, 1979	2100	122	3.46	Nov. 11	0415	254	7.19
May 30	0700	207	5.86	Feb. 21, 1983	0345	141	3.99
Aug. 30	2230	250	7.08	Apr. 18	Unknown	*9,710	275
Sept. 4	2000	*2,500	70.8	May 13	0700	647	18.3
Oct. 15	0930	110	3.12	May 20	0345	504	14.3
Nov. 23	2400	*546	15.5	June 18	0130	276	7.82
Aug. 7, 1980	2030	134	3.79				

Minimum discharges, .03 cu ft/s (.0008 cu m/s) Apr. 7, 1979; .02 cu ft/s (.0006 cu m/s) July 5, 25, 1980; .01 cu ft/s (.0003 cu m/s) Apr. 2, 1983.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.41	2.0	.30	.16	.13	.15	.17	.06	3.8	1.1	.30	2.4
2	.28	1.0	.87	.17	.13	.16	.15	.06	2.1	.35	.70	1.1
3	.30	.73	.57	.17	.15	.14	.14	.13	2.1	.31	.25	2.0
4	.20	.65	.57	.15	.13	.14	.16	.17	1.1	.23	.30	290
5	.23	.65	.33	.14	.13	.19	.15	.20	.80	.26	.25	200
6	.24	.60	.28	.21	.14	.14	.11	.21	.69	1.7	.22	23
7	.18	.57	.24	.21	.13	.14	.13	.14	.60	.70	.19	23
8	.21	.36	.24	.19	.16	.12	.15	.11	.52	.40	.18	16
9	2.2	.31	.28	.24	.15	.11	.57	.58	1.1	2.0	.17	10
10	2.2	.45	.35	.12	.16	.14	.13	.43	.69	.60	.16	8.0
11	.33	.38	.26	.09	.20	.15	.11	3.3	.52	.40	.16	7.1
12	.22	1.8	.26	.15	.16	.13	.17	.31	.41	.35	.15	5.5
13	.21	.62	.23	.16	.09	.10	.24	.24	.41	3.0	.15	5.6
14	6.0	1.9	.19	.17	.11	.09	.15	.26	.35	.80	.14	4.4
15	1.9	1.5	.20	.16	.13	.10	.17	.52	.36	.50	.14	3.8
16	.34	.54	.24	.15	.14	.09	.16	2.6	.35	.32	.14	3.7
17	.33	.38	.28	.15	.16	.14	.16	3.4	.33	.28	.14	3.3
18	.19	5.0	.20	.15	.15	1.2	.10	10	.31	.50	.20	3.0
19	.21	1.4	.17	.15	.14	.21	.13	9.1	.29	.35	.40	2.8
20	.21	.84	.20	.15	.14	.15	.16	1.5	.14	.70	.20	2.6
21	.17	1.0	.28	.16	.20	.13	.17	.84	.19	.30	.50	2.6
22	1.0	.47	.24	.14	.15	.13	.19	.57	.21	.33	3.5	2.4
23	1.0	.43	.26	.17	.14	.14	.20	.49	.21	.25	1.2	2.4
24	.58	.38	.30	.15	.16	.17	.17	.46	.17	.22	1.0	2.4
25	.43	.36	.23	.11	.15	.16	.19	.49	.11	.21	.90	2.1
26	66	.38	.24	.07	.13	.13	.19	.43	.20	.20	.80	2.0
27	31	.35	.21	.15	.14	.10	.19	.46	.16	.19	.70	1.9
28	2.9	.36	.21	.16	.15	.11	.16	2.5	.81	.19	.65	1.8
29	2.7	.30	.21	.13	---	1.4	.17	2.0	4.1	.18	.60	1.8
30	1.7	.30	.24	.14	---	.26	.09	57	.95	.18	23	1.9
31	1.7	---	.21	.13	---	.20	---	14	---	.20	18	---
TOTAL	126.07	26.01	8.89	4.75	4.05	6.72	5.13	112.56	24.08	17.30	55.39	638.6
MEAN	4.07	.87	.29	.15	.14	.22	.17	3.63	.80	.56	1.79	21.3
MAX	66	5.0	.87	.24	.20	1.4	.57	57	4.1	3.0	23	290
MIN	.17	.30	.17	.07	.09	.09	.09	.06	.11	.18	.14	1.1
CFSM	1.37	.29	.10	.05	.05	.07	.06	1.22	.27	.19	.60	7.17
IN.	1.58	.33	.11	.06	.05	.08	.06	1.41	.30	.22	.69	8.00
AC-FT	250	52	18	9.4	8.0	13	10	223	48	34	110	1270

WTR YR 1979 TOTAL 1029.55 MEAN 2.82 MAX 290 MIN .06 CFSM .95 IN 12.89 AC-FT 2040

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DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	6.2	2.0	.90	.35	.13	.10	.11	.23	.09	.09	.15
2	1.5	1.4	1.7	.80	.35	.13	.10	.13	.17	.09	.09	4.5
3	1.3	1.0	1.4	.80	.30	.13	.10	.15	.16	.09	.09	.33
4	1.4	.80	1.3	.70	.30	.20	.09	.16	.16	.13	.89	.21
5	2.0	.84	1.2	.70	.29	.40	.09	.14	.15	.14	.44	2.5
6	1.3	3.3	1.1	.70	.27	.70	.09	.14	.15	.16	.16	.31
7	1.3	1.7	1.1	.60	.26	.30	.09	.13	.17	.25	8.8	.11
8	1.1	2.6	1.0	.60	.24	.50	.09	.11	.17	.10	.54	.10
9	.95	7.8	1.0	.60	.23	.25	.09	.15	.16	.13	.24	.97
10	.84	5.5	1.0	.60	.22	.20	.09	.15	.14	.14	.20	.21
11	.73	2.0	1.0	.60	.21	.17	.10	.14	.14	.08	.16	.19
12	.73	1.3	1.0	.60	.20	.16	.12	.13	.13	.08	.16	3.7
13	.73	1.3	1.0	.50	.20	.14	.14	.24	.17	.16	.14	.65
14	.73	.88	1.0	.50	.19	.13	.11	1.6	.17	.14	.15	.33
15	17	.76	1.0	.50	.18	.12	.09	.23	.15	.14	.14	.24
16	1.8	3.2	1.0	.50	.18	.12	.08	.20	.14	.11	.15	.20
17	1.0	2.6	1.0	.50	.17	.12	.09	.21	.14	.16	.14	.20
18	.88	1.5	1.4	.50	.17	.11	.08	.19	.14	.23	.13	.17
19	.80	1.2	1.2	.50	.16	.11	.08	.16	.13	.13	.19	.15
20	.80	1.0	1.0	.50	.16	.11	.08	.15	.14	.14	.15	.20
21	.92	1.8	1.3	.50	.16	.11	.08	.15	.14	.13	.13	.21
22	.76	8.3	2.0	.50	.15	.11	.09	.14	.15	.08	.13	.16
23	.65	110	4.0	.50	.15	.10	.60	.15	.11	.08	.14	.15
24	.62	76	1.5	.40	.15	.10	.25	.16	.13	.08	.13	.14
25	1.9	17	1.0	.40	.15	.10	.18	.16	.13	.08	.16	.14
26	.69	3.0	2.0	.40	.14	.10	.14	.15	.13	.09	.14	.13
27	.65	1.7	1.3	.40	.14	.10	.11	.19	.11	.09	.15	.13
28	.76	1.3	1.1	.40	.14	.10	.14	4.1	.09	.11	.14	.12
29	.65	1.1	1.0	.40	.13	.10	.14	.52	.11	.08	.13	.12
30	.57	1.0	1.0	.40	---	.10	.09	.24	.09	.08	.17	.12
31	.76	---	.90	.35	---	.10	---	.21	---	.09	.15	---
TOTAL	47.92	268.08	40.50	16.85	5.94	5.35	3.72	10.79	4.30	3.68	14.62	16.84
MEAN	1.55	8.94	1.31	.54	.20	.17	.12	.35	.14	.12	.47	.56
MAX	17	110	4.0	.90	.35	.70	.60	4.1	.23	.25	8.8	4.5
MIN	.57	.76	.90	.35	.13	.10	.08	.11	.09	.08	.09	.10
CFSM	.52	3.01	.44	.18	.07	.06	.04	.12	.05	.04	.16	.19
IN.	.60	3.36	.51	.21	.07	.07	.05	.14	.05	.05	.18	.21
AC-FT	95	532	80	33	12	11	7.4	21	8.5	7.3	29	33
CAL YR 1979	TOTAL	1225.08	MEAN 3.36	MAX 290	MIN .06	CFSM 1.13	IN 15.34	AC-FT 2430				
WTR YR 1980	TOTAL	438.59	MEAN 1.20	MAX 110	MIN .08	CFSM .40	IN 5.49	AC-FT 870				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1									---	.26	.25	.15
2									---	.26	.15	.14
3									---	.28	.14	.14
4									---	.25	.15	.15
5									---	.13	.14	.15
6									---	.13	.16	.14
7									---	.13	.17	.12
8									---	.15	.46	.12
9									---	.16	.19	.15
10									---	.17	.20	.12
11									---	.15	.15	.18
12									---	.14	.16	5.0
13									---	.14	.35	20
14									---	.11	.18	2.0
15									---	.13	.17	.50
16									---	.14	.15	.15
17									---	.18	.13	.17
18									---	1.1	.15	.15
19									---	.20	.14	.14
20									---	.16	.13	.13
21									---	.15	.15	.13
22									.20	1.2	.16	.13
23									.16	.20	.15	.15
24									.15	.20	.14	.14
25									.14	.18	2.0	.13
26									.17	.17	4.5	.15
27									.15	.16	1.0	.14
28									.21	.16	.30	.20
29									.25	.31	.20	.17
30									.26	.19	.15	.20
31									---	.17	.17	---
TOTAL									---	7.46	12.64	31.34
MEAN									---	.24	.41	1.04
MAX									---	1.2	4.5	20
MIN									---	.11	.13	.12
CFSM									---	.08	.14	.35
IN.									---	.09	.16	.39
AC-FT									---	15	25	62

ST. THOMAS, U.S. VIRGIN ISLANDS

50276000 TURPENTINE RUN AT MARIENDAL, ST. THOMAS, VI--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.15	.13	.05	.36	.10	.07	.06	.18	.39	.57	6.6	.45
2	.14	.08	.07	.16	.10	.11	.06	.17	.55	.53	6.3	.43
3	.13	.05	.05	.13	.11	.06	.06	.17	.51	.55	2.5	.44
4	.30	.08	.05	.11	.11	.09	.07	.18	.57	.65	2.2	.50
5	.17	.11	.05	.15	.14	.13	.05	.15	.44	2.7	2.3	.44
6	.15	.15	.05	.13	.13	.09	.05	.16	.37	5.1	1.8	.45
7	.12	.11	.05	.12	.08	.07	.04	.17	.32	5.0	1.0	.97
8	.20	.07	.10	.14	.07	.06	.06	.19	.38	1.3	.80	.67
9	.12	.08	.08	.14	.07	.08	.07	.19	.33	.92	.90	.46
10	.11	.06	.13	.11	.11	.07	.05	.40	.31	.86	.70	.43
11	.20	20	.15	.12	.09	.10	.05	.72	.34	.78	.60	.44
12	.11	1.0	.14	.12	.11	.11	.04	.79	.30	.65	1.0	.43
13	.08	2.0	.10	.11	.10	.12	.06	55	.28	.64	.60	.44
14	.11	.50	.10	.11	.09	.07	.04	4.6	.85	.53	.50	.43
15	.13	.20	.11	.14	.07	.06	.05	4.5	1.4	2.5	.45	.49
16	.15	.12	.10	.14	.08	.09	.09	4.0	.59	5.3	.50	.44
17	.15	.13	.12	.14	.09	.06	.11	2.0	13	2.4	.56	.46
18	1.1	.11	.13	.11	.11	.07	1000	1.0	45	.79	.80	.49
19	1.8	.09	.13	.12	.12	.11	100	1.0	2.5	.76	.45	.49
20	1.5	.08	2.5	.11	.08	.12	10	37	1.2	.74	.40	.49
21	.22	.07	.47	.11	13	.08	5.0	5.3	.77	.60	1.2	.46
22	.15	.15	.17	.15	.34	.05	2.0	2.7	.66	.53	.60	.54
23	.17	.50	.44	.14	.11	.07	1.0	2.1	.58	.65	.45	.55
24	.14	.10	.20	.11	.08	.06	.80	1.7	.56	11	.39	.57
25	.11	.07	.15	.10	.12	.06	.50	.99	.52	3.3	.41	.66
26	.10	.06	.64	.13	.12	.09	.40	.69	.51	2.8	.43	.56
27	.10	.15	.41	.09	.13	.08	.30	.51	2.6	2.9	.61	.57
28	.11	.08	.23	.11	.07	.04	.22	.49	.74	3.0	.71	.57
29	.11	.07	.18	.14	---	.06	.19	.51	.60	3.7	.62	.53
30	.15	.06	.93	.13	---	.05	.17	.49	.53	2.3	.46	.56
31	.12	---	.52	.10	---	.07	---	.43	---	2.9	.46	---
TOTAL	8.40	26.46	8.60	4.08	15.93	2.45	1121.59	128.48	77.70	66.95	37.30	15.41
MEAN	.27	.88	.28	.13	.57	.079	37.4	4.14	2.59	2.16	1.20	.51
MAX	1.8	20	2.5	.36	.13	.13	1000	.55	.45	.11	6.6	.97
MIN	.08	.05	.05	.09	.07	.04	.04	.15	.28	.53	.39	.43
CFSM	.09	.30	.09	.04	.19	.03	12.6	1.39	.87	.73	.40	.17
IN.	.11	.33	.11	.05	.20	.03	14.04	1.61	.97	.84	.47	.19
AC-FT	17	52	17	9.1	32	4.9	2220	255	154	133	74	31

WTR YR 1983 TOTAL 1513.35 MEAN 4.15 MAX 1000 MIN .04 CFSM 1.40 IN 18.95 AC-FT 3000

WATER-QUALITY RECORDS

PERIOD OF RECORD.--MARCH TO SEPTEMBER 1983

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
MAR, 22	1442	.18	2350	28.0	SEP, 28	1310	.71	1980	31.0
JUL, 20	1433	.73	1932	29.0					

ST. JOHN, U.S. VIRGIN ISLANDS

50295000 GUINEA GUT AT BETHANY, ST. JOHN, VI

LOCATION.--Lat. 18°19'55", long 64°46'50", Hydrologic Unit 21020001, 600 ft (183 m) southeast of Bethany Church, and 1.0 mi (1.6 km) east of Government House at Cruz Bay.

DRAINAGE AREA.--0.37 sq mi (0.96 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1963 to October 1967, September 1982 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 260 ft (79.2 m), from topographic map. Prior to September 1982, at datum 1.00 ft (0.305 m) higher.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--5 years(1964-67, 1983), 0.076 cu ft/s (.002 cu m/s), 2.789 in/yr (70.8 mm/yr), 55.06 acre-ft/yr (0.068 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 946 cu ft/s (26.8 cu m/s) Apr. 18, 1983, gage height, 5.33 ft (1.625 m), from floodmark, from rating curve extended above 1.0 cu ft/s (0.028 cu m/s) on basis of stepback-water analysis and slope-area measurement of peak flow; no flow many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 10 cu ft/s (0.283 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
Apr. 18	Unknown	946 30.3	5.33 1.624

No flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.02	.04	.02	.01	.00	.03	.04	.00	.01	.03	.01
2	.01	.02	.04	.02	.01	.00	.03	.04	.00	.00	.04	.02
3	.00	.03	.03	.01	.01	.01	.02	.04	.00	.00	.05	.02
4	.00	.01	.03	.01	.01	.02	.01	.04	.00	.00	.06	.00
5	.01	.01	.02	.01	.01	.00	.02	.04	.01	.02	.02	.00
6	.02	.03	.02	.01	.01	.00	.01	.04	.00	.03	.01	.00
7	.03	.03	.02	.01	.01	.01	.01	.04	.00	.02	.01	.00
8	.03	.03	.01	.01	.01	.01	.00	.04	.01	.04	.02	.00
9	.05	.03	.01	.00	.01	.00	.00	.02	.01	.02	.03	.00
10	.05	.04	.01	.00	.02	.00	.00	.02	.00	.02	.01	.00
11	.04	.06	.01	.00	.02	.00	.00	.02	.00	.02	.01	.00
12	.01	.04	.01	.00	.02	.00	.00	.03	.00	.02	.04	.02
13	.02	.03	.02	.00	.01	.00	.00	.03	.00	.02	.03	.01
14	.02	.03	.01	.00	.00	.00	.00	.05	.02	.02	.03	.01
15	.04	.03	.02	.00	.00	.00	.01	.04	.01	.02	.04	.02
16	.05	.06	.02	.00	.00	.01	.01	.03	.01	.03	.04	.01
17	.06	.06	.01	.00	.00	.02	.02	.03	.00	.03	.07	.01
18	.02	.07	.01	.00	.00	.01	110	.02	.02	.03	.07	.01
19	.01	.08	.01	.00	.00	.01	10	.01	.01	.03	.08	.01
20	.03	.07	.02	.00	.00	.01	.10	.01	.00	.02	.08	.02
21	.03	.07	.02	.00	.00	.01	.15	.01	.00	.01	.37	.02
22	.03	.07	.01	.00	.00	.00	.06	.03	.00	.00	.03	.03
23	.03	.90	.02	.00	.00	.00	.05	.02	.00	.00	.01	.04
24	.04	.12	.01	.01	.00	.00	.05	.04	.00	.02	.00	.05
25	.03	.05	.01	.00	.00	.00	.05	.02	.00	.01	.00	.03
26	.02	.06	.03	.00	.00	.01	.07	.00	.00	.00	.00	.01
27	.02	.09	.01	.00	.00	.01	.06	.00	.03	.01	.00	.01
28	.02	.02	.02	.00	.00	.02	.04	.00	.05	.01	1.2	.01
29	.02	.04	.02	.01	---	.02	.04	.00	.02	.01	.08	.00
30	.02	.05	.01	.01	---	.01	.04	.00	.01	.01	.04	.00
31	.03	---	.01	.00	---	.01	---	.00	---	.02	.03	---
TOTAL	.80	2.25	.54	.13	.16	.20	120.88	.75	.21	.50	2.53	.37
MEAN	.026	.075	.017	.004	.006	.006	4.03	.024	.007	.016	.082	.012
MAX	.06	.90	.04	.02	.02	.02	110	.05	.05	.04	1.2	.05
MIN	.00	.01	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00
CFSM	.07	.20	.05	.01	.02	.02	10.9	.07	.02	.04	.22	.03
IN.	.08	.23	.05	.01	.02	.02	12.12	.08	.02	.05	.25	.04
AC-FT	1.6	4.5	1.1	.3	.3	.4	240	1.5	.4	1.0	5.0	.7

WTR YR 1983 TOTAL 129.32 MEAN .35 MAX 110 MIN .00 CFSM .95 IN 12.97 AC-FT 257

WATER-QUALITY RECORDS

PERIOD OF RECORD.--MARCH TO SEPTEMBER 1983

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
MAR, 23	1025	.01	2272	24.5	JUL, 21	0850	.01	2352	26.0
JUN, 30	1014	.01	2352	26.0	SEP, 29	0858	.01	2254	26.0

ST. CROIX, U.S. VIRGIN ISLANDS

50345000 JOLLY HILL GUT AT JOLLY HILL, ST. CROIX, VI

LOCATION.--Lat 17°44'00", long 64°51'47", Hydrologic Unit 21020002, on Mahogany Road at Jolly Hill, 1.8 mi (2.9 km) northeast of Frederiksted.

DRAINAGE AREA.--2.10 sq mi (5.44 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1963 to December 1968. Monthly measurements, 1962, 69. October 1982 to September 1983.

GAGE.--Water-stage recorder and V-notch concrete control. Altitude of gage is 140 ft (42.7 m) from topographic map.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--6 years (1964-68, 1983), 0.024 cu ft/s (0.001 cu m/s), 0.16 in/yr (4.1 mm/yr), 17.4 acre-ft/yr (0.02 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 223 cu ft/s (6.315 cu m/s) Dec. 12, 1965, gage height, 3.15 ft (0.96 m); no flow many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 25 cu ft/s (0.71 cu m/s) and maximum (*):

Date	Time	Discharge (cu ft/s) (cu m/s)	Gage height (ft) (m)
July 23	2400	*27 0.76	2.00 0.610

No flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.02	.04	.05	.04	.05	.01	.02	.20	.29	.23	.09
2	.01	.01	.04	.05	.04	.02	.00	.01	.20	.29	.22	.14
3	.01	.01	.05	.05	.04	.02	.00	.01	.20	.31	.21	.11
4	.01	.01	.04	.06	.04	.02	.00	.01	.20	.31	.21	.09
5	.01	.02	.03	.06	.04	.02	.00	.01	.24	.31	.19	.09
6	.00	.01	.02	.05	.03	.02	.00	.00	.26	.32	.20	.09
7	.00	.00	.02	.05	.03	.02	.00	.00	.27	.31	.18	.08
8	.00	.00	.02	.05	.03	.04	.00	.00	.25	.31	.15	.08
9	.00	.01	.03	.07	.03	.03	.00	.00	.26	.30	.16	.08
10	.00	.00	.03	.06	.04	.02	.00	.01	.26	.28	.15	.09
11	.03	.04	.03	.06	.03	.02	.00	.00	.26	.24	.15	.09
12	.00	.02	.02	.06	.03	.05	.00	.00	.26	.24	.15	.10
13	.00	.01	.02	.05	.03	.07	.00	.01	.26	.24	.16	.08
14	.30	.01	.02	.05	.03	.05	.00	.02	.26	.24	.15	.08
15	.11	.02	.03	.05	.03	.02	.00	.03	.26	.24	.16	.08
16	.06	.03	.04	.05	.03	.02	.00	.02	.26	.31	.15	.07
17	.05	.03	.03	.05	.02	.01	.00	.10	.28	.30	.14	.07
18	.10	.01	.04	.05	.02	.01	.06	.09	.29	.31	.12	.07
19	.07	.10	.04	.05	.02	.01	.10	.10	.27	.22	.11	.07
20	.05	.04	.03	.05	.02	.01	.08	.10	.28	.14	.14	.10
21	.05	.04	.03	.04	.04	.01	.05	.10	.26	.14	.13	.09
22	.04	.06	.06	.06	.05	.01	.05	.42	.26	.13	.11	.09
23	.05	.07	.04	.05	.05	.02	.05	.27	.26	.31	.10	.09
24	.03	.18	.05	.05	.04	.02	.04	.28	.29	.58	.10	.09
25	.02	.09	.04	.04	.03	.02	.03	.24	.28	.17	.10	.12
26	.02	.07	.04	.04	.02	.01	.03	.22	.26	.18	.10	.11
27	.02	.05	.05	.04	.03	.01	.03	.22	.33	.19	.10	.10
28	.02	.04	.08	.04	.04	.02	.03	.22	.32	.20	.10	.09
29	.02	.04	.08	.04	---	.03	.02	.21	.29	.21	.11	.09
30	.03	.04	.05	.04	---	.02	.01	.20	.29	.18	.11	.09
31	.03	---	.06	.03	---	.01	---	.20	---	.19	.10	---
TOTAL	1.15	1.08	1.20	1.54	.92	.71	.59	3.12	7.86	7.99	4.49	2.71
MEAN	.037	.036	.039	.050	.033	.023	.020	.10	.26	.26	.14	.090
MAX	.30	.18	.08	.07	.05	.07	.10	.42	.33	.58	.23	.14
MIN	.00	.00	.02	.03	.02	.01	.00	.00	.20	.13	.10	.07
CFSM	.02	.02	.02	.02	.02	.01	.01	.05	.12	.12	.07	.04
IN.	.02	.02	.02	.03	.02	.01	.01	.06	.14	.14	.08	.05
AC-FT	2.3	2.1	2.4	3.1	1.8	1.4	1.2	6.2	16	16	8.9	5.4

WTR YR 1983 TOTAL 33.36 MEAN .091 MAX .58 MIN .00 CFSM .04 IN .59 AC-FT 66

WATER-QUALITY RECORDS

PERIOD OF RECORD.--MARCH TO SEPTEMBER 1983

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CON- DUCTANCE (UMHOS)	TEMPERA- TURE (DEG C)
MAR, 24	1020	.02	1132	24.0	SEP, 27	1108	.11	1067	26.5
JUL, 19	1044	.16	1142	27.0					

Ground-Water Records
for
U.S. Virgin Islands

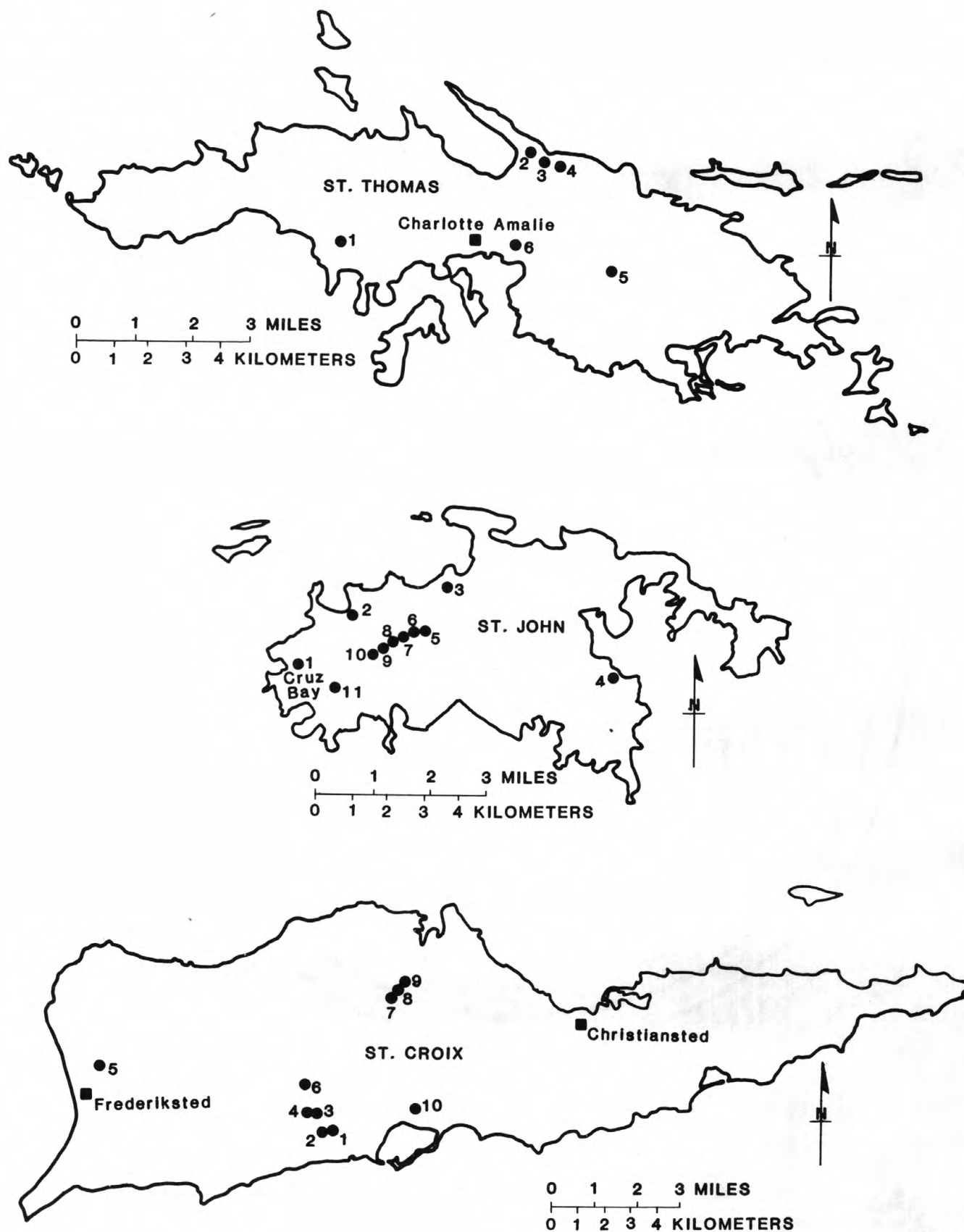


Figure 28.--Ground-water stations in the U.S. Virgin Islands.

GROUND-WATER LEVELS
ST. CROIX, U.S. VIRGIN ISLANDS

174225064471900. Local number, 1.
LOCATION.--Lat 17°42'25", long 64°47'19".
Owner: Virgin Islands Government.
Name: Fairplains 6 (FP6).
AQUIFER.--Alluvium and marl.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m).
DATUM.--Altitude of land-surface datum is about 20 ft (6.10 m) above mean sea level. Measuring point: Top of pump concrete base, 2.20 ft (0.67 m) above land-surface datum.
REMARKS.--Observation well. Water levels affected by pumping.
PERIOD OF RECORD.--
Water level: March 1982 to current year.
Chemical analyses: June 20, 1983 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.64 ft (4.77 m) below land-surface datum, Mar. 25, 1982; lowest water level measured, a58.57 ft (17.9 m) below land-surface datum, June 20, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 15, 1982	15.64	Sept. 8, 1982	a56.04	Feb. 24, 1983	a56.45	July 19, 1983	a55.94
May 24	18.68	Oct. 25	a56.55	Mar. 24	16.31	Aug. 23	17.83
June 30	55.90	Dec. 8,	a56.59	May 18	17.56	Sept. 27	a56.50
July 22	a56.34	Jan. 21, 1983	17.36	June 20	a58.57		

174225064472000. Local number, 2.
LOCATION.--Lat 17°42'25", long 64°47'20".
Owner: U.S. Government, Virgin Islands Government.
Name: USGS-10, Fairplains 2 (FP2).
AQUIFER: Alluvium and marl.
WELL CHARACTERISTICS: Drilled unused water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m).
DATUM: Altitude of land-surface datum is about 20 ft (6.10 m) above mean sea level. Measuring point: Top of 0.5 in (0.01 m) hole at concrete base wall, 3.00 ft (0.91 m) above land-surface datum.
REMARKS.--Observation recording well. Nearby pumping well.
PERIOD OF RECORD.--June 1983 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 21.90 ft (6.68 m) below land-surface datum, Sept. 6, 1983; lowest water level measured, 23.18 ft (7.07 m) below land-surface datum, July 19, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1									---	22.73	22.29	22.11
2									---	22.82	22.30	21.99
3									---	22.86	22.28	22.08
4									---	22.89	22.17	22.03
5									---	22.85	22.22	22.00
6									---	22.90	22.24	21.91
7									---	22.87	22.23	21.93
8									---	22.98	22.21	21.92
9									---	22.90	22.15	21.95
10									---	22.92	22.19	22.00
11									---	22.94	22.21	21.95
12									---	23.01	22.19	21.98
13									---	22.76	22.19	21.98
14									---	23.01	22.15	22.04
15									---	22.97	22.15	22.07
16									---	23.07	22.20	22.02
17									---	23.10	22.16	22.03
18									---	23.03	22.15	22.03
19									---	23.17	22.15	22.12
20									---	22.95	22.15	22.09
21									---	22.76	22.10	22.38
22									---	22.70	22.10	22.49
23									22.53	22.67	22.10	22.55
24									22.54	22.61	22.11	22.48
25									22.60	22.53	22.08	22.48
26									22.62	22.49	21.99	22.49
27									22.66	22.44	22.03	22.51
28									22.73	22.39	22.07	22.52
29									22.74	22.39	22.03	22.54
30									22.77	22.37	22.08	22.63
31									---	22.33	22.04	---
LOW									---	23.17	22.30	22.63
HIGH									---	22.33	21.99	21.91

a Pumping.

GROUND-WATER LEVELS
ST. CROIX, U.S. VIRGIN ISLANDS

174243064475100. Local number, 3.

LOCATION.--Lat 17°42'43", Long 64°47'51".

Owner: U.S. Government, Virgin Islands Government.

Name: Golden Grove-6 (PW6).

AQUIFER.--Alluvium and marl.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in (0.20 m), cased 8 in (0.20 m).

DATUM.--Altitude of land-surface datum is about 40 ft (12.2 m) above mean sea level. Measuring point: Upper edge of hole at 8 in (0.20 m) casing, 4.20 ft (1.28 m) above land-surface datum.

REMARKS.--Observation well. Automatic Digital Recorder (ADR) installed on June 22, 1983.

PERIOD OF RECORD.--March 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 14.76 ft (4.50 m) below land-surface datum, March 25, 1982; lowest water level measured, 24.98 ft (7.62 m) below land-surface datum, Sept. 30, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 25, 1982	14.76	Sept. 8, 1982	19.32	Jan. 21, 1983	22.36	May 18, 1983	20.37
May 23	15.95	Oct. 25	20.45	Feb. 24	22.75	June 20	22.43
June 30	17.16	Dec. 8	21.61	Mar. 24	23.05	June 22	22.47

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1									---	23.07	23.85	24.44
2									---	23.12	23.87	24.46
3									---	23.17	23.89	24.48
4									---	23.22	23.91	24.49
5									---	23.27	23.93	24.51
6									---	23.32	23.95	24.52
7									---	23.37	23.97	24.53
8									---	23.41	23.99	24.55
9									---	23.45	24.01	24.57
10									---	23.49	24.04	24.57
11									---	23.53	24.05	24.59
12									---	23.56	24.07	24.61
13									---	23.60	24.09	24.62
14									---	23.64	24.11	24.64
15									---	23.67	24.13	24.66
16									---	23.71	24.16	24.68
17									---	23.74	24.17	24.69
18									---	23.77	24.19	24.71
19									---	23.80	24.21	24.73
20									---	23.83	24.23	24.75
21									---	23.85	24.25	24.77
22									---	23.79	24.27	24.79
23									---	23.77	24.27	24.81
24									22.64	23.79	24.29	24.83
25									22.71	23.81	24.31	24.85
26									22.78	23.83	24.33	24.87
27									22.84	23.76	24.35	24.90
28									22.89	23.69	24.37	24.92
29									22.95	23.72	24.39	24.95
30									23.01	23.77	24.41	24.97
31									---	23.81	24.42	---
LOW									---	23.85	24.42	24.97
HIGH									---	23.07	23.85	24.44

174245064475800. Local number, 4.

LOCATION.--Lat 17°42'45", long 64°47'58".

Owner: Virgin Islands Government.

Name: Golden Grove - 1 (PW1).

AQUIFER.--Alluvium and marl.

WELL CHARACTERISTICS.--Drilled production water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m) 0-104 ft (0-31.7 m), perforated 64-104 ft (19.5-31.7 m). Depth 104 ft (31.7).

DATUM.--Altitude of land-surface datum is about 40 ft (12.2 m) above mean sea level. Measuring point: lower edge of 1 in. (0.02 m) pipe at pump base, 3.40 ft (1.04 m) above land-surface datum.

REMARKS.--Observation well. Lowest water level affected by pumping.

PERIOD OF RECORD.--

Water level: January 1983 to current year.

Chemical analyses: June 20, 1983 to current year.

EXTREMES FOR PERIOD OF RECORD: Highest water level measured, 23.09 ft (7.04 m) below land-surface datum, May 18, 1983; lowest water level measured, a54.18 ft (16.5 m) below land-surface datum, September 27, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 21, 1983	23.48	Mar. 24, 1983	24.71	June 20, 1983	25.26	Aug. 23, 1983	26.03
Feb. 24	23.83	May 18	23.09	July 19	a51.32	Sept. 27	a54.18

a Pumping.

GROUND-WATER LEVELS

ST. CROIX, U.S. VIRGIN ISLANDS

174336064523200. Local number, 5.

LOCATION.--Lat 17°43'36", long 64°52'32".

Owner: Virgin Islands Government.

Name: Mahogany Road 3.

AQUIFER.--Alluvium of Quaternary age and volcanic rocks of Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m) 0-104 ft (0-31.7 m), perforated 64-104 ft (19.5-31.7). Depth 104 ft (31.7 m).

DATUM.--Altitude of land-surface datum is 70 ft (21.3 m) above mean sea level. Measuring point: lower edge of 2 in. (0.05 m) pipe at pump base, 3.70 ft (1.13 m) above land-surface datum. Prior to December 1969, top of instrument platform, 2.57 ft (0.78 m) above land-surface datum.

REMARKS.--Observation well. Affected by nearby pumpage.

PERIOD OF RECORD.--May 1964 to December 1969, discontinued. March 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 26.24 ft (8.00 m) below land-surface datum, Dec. 16, 1969; lowest water level measured, 74.31 ft (22.6 m) below land-surface datum, Mar. 29, 1965.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 25, 1982	51.40	Sept. 8, 1982	64.48	Feb. 24, 1983	64.03	July 19, 1983	64.89
May 24	57.43	Oct. 25	66.28	Mar. 24	64.24	Aug. 23	60.56
June 30	60.47	Dec. 8	68.62	May 18	66.35	Sept. 27	57.97
July 22	61.24	Jan. 21, 1983	65.14	June 20	67.15		

174308064484400. Local number, 6.

LOCATION.--Lat 17°43'03", long 64°48'44".

Owner: U.S. Government, Virgin Islands Government.

Name: Adventure 28.

AQUIFER.--Alluvium of Pleistocene age and marl of Oligocene age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m).

DATUM.--Altitude of land-surface datum is about 80 ft (24.4 m) above mean sea level. Measuring point: Upper edge of hole at 4 in (0.10 m) casing, 2.00 ft (0.61 m) above land-surface datum. Prior June 20, 1983, top of 4 in (0.10 m) casing, 0.90 ft (0.27 m) above land-surface datum.

REMARKS.--Observation well. Automatic Digital Recorder (ADR) installed on June 20, 1983.

PERIOD OF RECORD.--August 1973 to March 1974, discontinued. March 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 24.90 ft (7.59 m) below land-surface datum, Mar. 25, 1982; lowest water level measured, 35.12 ft (10.7 m) below land-surface datum, Jul. 21, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 25, 1982	24.90	July 22, 1982	28.59	Dec. 8, 1982	34.10	Mar. 24, 1983	32.70
May 24	26.38	Sept. 8	30.68	Jan. 21, 1983	32.76	May 18	31.63
June 30	28.06	Oct. 25	32.77	Feb. 24	31.10	June 20	32.63

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1									---	34.30	33.90	34.66
2									---	34.35	33.85	34.63
3									---	34.42	33.82	34.61
4									---	34.44	33.80	34.57
5									---	34.49	33.78	34.54
6									---	34.55	33.76	34.50
7									---	34.60	33.75	34.46
8									---	34.63	33.74	34.43
9									---	34.68	33.74	34.40
10									---	34.72	33.75	34.38
11									---	34.76	33.75	34.36
12									---	34.76	33.75	34.38
13									---	34.76	33.75	34.34
14									---	34.78	33.75	34.32
15									---	34.86	33.75	34.32
16									---	34.89	33.75	34.30
17									---	34.94	33.76	34.28
18									---	34.97	33.76	34.26
19									---	34.97	33.76	34.27
20									---	35.04	33.77	34.24
21									---	35.01	33.78	---
22									33.62	34.70	33.78	---
23									33.72	34.50	33.79	---
24									33.80	34.25	34.78	---
25									33.88	34.27	34.77	---
26									33.99	34.20	34.74	---
27									34.05	34.12	34.73	---
28									34.13	34.08	34.71	34.47
29									34.17	31.32	34.70	34.44
30									34.24	33.93	34.67	34.43
31									---	33.93	34.65	---
LOW									---	35.04	34.78	---
HIGH									---	31.32	33.74	---

GROUND-WATER LEVELS

ST. CROIX, U.S. VIRGIN ISLANDS

174525064460600. Local number, 7.

LOCATION.--Lat 17°45'25", long 64°46'06".

Owner: Virgin Islands Government.

Name: Concordia 14.

AQUIFER.--Sand and gravel.

WELL CHARACTERISTICS.--Drilled production water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Depth 85 ft (25.9 m).

DATUM.--Altitude of land-surface datum is about 40 ft (12.2 m) above mean sea level. Measuring point: Top of 0.50 in (0.01 m) pipe on top of pump concrete base, 2.30 ft (0.70 m) above land-surface datum.

REMARKS.--Observation well. Water level affected by pumpage.

PERIOD OF RECORD.--March 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 26.45 ft (8.06 m) below land-surface datum, Aug. 23, 1983; lowest water level measured, a41.75 ft (12.7 m) below land-surface datum, Feb. 24, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 25, 1982	a27.36	Sept. 8, 1982	a36.23	Feb. 24, 1983	a41.75	July 19, 1983	a38.00
May 24	a28.27	Oct. 25	a38.46	Mar. 24	31.30	Aug. 23	26.45
June 30	a30.82	Dec. 8	a39.28	May 18	28.04	Sept. 27	a36.84
July 22	a34.92	Jan. 21, 1983	30.33	June 20	a35.10		

174527064460100. Local number, 8.

LOCATION.--Lat 17°45'27", long 64°46'01".

Owner: Virgin Islands Government.

Name: Concordia 1 (Main pump house).

AQUIFER.--Limestone of Tertiary Age.

WELL CHARACTERISTICS.--Drilled production water-table well, diameter 6 in (0.15 m), cased. Depth 82 ft (25.0 m).

DATUM.--Altitude of land-surface datum is about 40 ft (12.2 m) above mean sea level. Measuring point: Top of 6 in (0.15 m) casing, 2.20 ft (0.67 m) above land-surface datum.

REMARKS.--Observation well. Affected by pumpage.

PERIOD OF RECORD.--March 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 19.97 ft (6.09 m) below land-surface datum, Mar. 25, 1982; lowest water level measured, a28.39 ft (8.66 m) below land-surface datum, Dec. 8, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 25, 1982	a19.97	Sept. 8, 1982	a25.70	Feb. 24, 1983	27.92	July 19, 1983	26.25
May 24	22.43	Oct. 25	a26.88	Mar. 24	27.18	Aug. 23	a26.22
June 30	a23.40	Dec. 8	a28.39	May 18	25.82	Sept. 27	25.63
July 22	23.63	Jan. 21, 1983	a28.34	June 21	a24.70		

a Pumping.

GROUND-WATER LEVELS

ST. CROIX, U.S. VIRGIN ISLANDS

174532064460300. Local number, 9.

LOCATION.--Lat 17°45'32", long 64°46'03".

Owner: Virgin Islands Government.

Name: Concordia 7.

AQUIFER.--Limestone of Tertiary Age.

WELL CHARACTERISTICS.--Drilled production water-table well, diameter 6 in (0.15 m), cased 0-81 ft (0-24.7 m). Depth 81 ft (24.7 m).

DATUM.--Altitude of land-surface datum is 35 ft (10.7 m) above mean sea level. Measuring point: Hole in pump base, 2.20 ft (0.67 m) above land-surface datum. Previous to Mar. 25, 1982, hole in pump base 2.50 ft (0.76 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD:

Water levels: June 1962 to October 1968, discontinued. March 1982 to current year.

Chemical analysis: October 1964 to October 1967, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.75 ft (0.53 m) below land-surface datum, May 11, 1966; lowest water level measured, 57.40 ft (17.5 m) below land-surface datum, Mar. 5, 1964.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 25, 1982	a12.83	Sept. 8, 1982	a14.69	Feb. 24, 1983	a34.62	July 19, 1983	a31.17
May 24	a12.84	Oct. 25	a13.60	Mar. 24	12.03	Aug. 23	10.24
June 30	a13.58	Dec. 8	11.53	May 18	10.66	Sept. 27	a42.07
July 22	a13.20	Jan. 21, 1983	9.35	June 20	a29.30		

174329064454700. Local number, 10.

LOCATION.--Lat 17°43'29", long 64°45'47".

Owner: Virgin Islands Government.

Name: Barren Spot 5 (PWD-5).

AQUIFER.--Alluvium and marl.

WELL CHARACTERISTICS.--Drilled production water-table well, diameter 6 in (0.15 m), cased 0-130 ft (0-39.6 m), perforated 71-130 ft (21.6-39.6 m). Depth 130 ft (39.6 m).

DATUM.--Altitude of land-surface datum is 75 ft (22.9 m) above mean sea level. Measuring point: Hole on top of pump base, 2.00 ft (0.61 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD:

Water level: March 1982 to current year.

Chemical analyses: June 22, 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 61.86 ft (18.9 m) below land-surface datum, Mar. 26, 1982; lowest water level measured, a75.52 ft (23.0 m) below land-surface datum, Sept. 8, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 26, 1982	61.86	Sept. 8, 1982	a75.52	Feb. 24, 1983	a70.55	July 19, 1983	a70.48
May 25	a69.50	Oct. 25	a70.05	Mar. 24	a69.83	Aug. 23	64.29
June 30	a69.48	Dec. 8	a70.25	May 18	63.22	Sept. 27	a69.58
July 22	a69.21	Jan. 21, 1983	65.41	June 22	a70.38		

a Pumping.

GROUND-WATER LEVELS

ST. THOMAS, U.S. VIRGIN ISLANDS

182050064580400. Local number, 1.

LOCATION.--Lat 18°20'50", long 64°58'04".

Owner: U.S. Government, Virgin Islands Government.

Name: USGS-8 (Family well - Thatch Farm).

AQUIFER.--Volcanic rocks of Cretaceous age.

WELL CHARACTERISTICS.--Drilled water-table production well, diameter 6 in (0.15 m), cased 6 in (0.15 m) 0-25 ft (0-7.62 m), openhole 25-80 ft (7.62-24.4 m). Depth 80 ft (24.4 m).

DATUM.--Altitude of land-surface datum is 80 ft (24.4 m) above mean sea level. Measuring point: Top of 6 in (0.15 m) casing, 2.50 ft (0.76 m) above land-surface datum. Prior to Mar. 23, 1982, top of 6 in (0.15 m) casing, 1.30 ft (0.40 m) above land-surface datum.

REMARKS.--Public water supply and observation well.

PERIOD OF RECORD:

Water levels: October 1963 to August 1969, discontinued. March 1982 to current year.

Chemical analyses: December 1963, discontinued. June 30, 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.29 ft (1.61 m) below land-surface datum, May 6, 1983; lowest water level measured, a44.49 ft (13.6 m) below land-surface datum, Mar. 22, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 23, 1982	27.37	Sept. 10, 1982	33.84	Feb. 22, 1983	a37.89	June 30, 1983	7.63
May 28	30.26	Oct. 27	34.53	Mar. 22	a44.49	July 20	8.65
June 23	30.88	Dec. 10	33.35	May 6	5.29	Aug. 25	a15.77
July 21	32.19	Jan. 19, 1983	29.52	19	7.08	Sept. 27	23.15

182138064543100. Local number, 2.

LOCATION.--Lat 18°21'38", long 64°54'31".

Owner: Mahogany Run Resort.

Name: Mahogany 15.

AQUIFER.--Fractured rocks.

WELL CHARACTERISTICS.--Drilled water-table production well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Depth 145 ft (44.2 m).

DATUM.--Altitude of land-surface datum is 120 ft (36.6 m) above mean sea level. Measuring point: Top of 6 in (0.15 m) casing, 1.20 ft (0.36 m) below land-surface datum.

REMARKS.--Potable water supply. Observation well. Water level affected by nearby pumping well.

PERIOD OF RECORD.--March 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 18.58 ft (5.66 m) below land-surface datum, July 20, 1983; lowest water level measured, 48.38 ft (14.8 m) below land-surface datum, Mar. 22, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 22, 1982	30.58	Sept. 10, 1982	43.35	Feb. 22, 1983	46.20	July 20, 1983	18.58
May 28	a39.58	Oct. 27	43.73	Mar. 22	48.38	Aug. 25	19.61
June 23	38.04	Dec. 16	40.10	May 19	29.17	Sept. 28	24.70
July 21	40.97	Jan. 19, 1983	42.14	July 1	21.76		

182138064542500. Local number, 3.

LOCATION.--Lat 18°21'38", long 64°54'25".

Owner: Mahogany Run Resort.

Name: Mahogany 16.

AQUIFER.--Fractured rocks.

WELL CHARACTERISTICS.--Drilled water-table production well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Depth 145 ft (44.2 m).

DATUM.--Altitude of land-surface datum is 130 ft (39.6 m) above mean sea level. Measuring point: Top of 6 in (0.15 m) casing, 1.30 ft (0.40 m) below land-surface datum.

REMARKS.--Potable water supply. Water level affected by nearby pumping.

PERIOD OF RECORD.--March 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 24.96 ft (7.61 m) below land-surface datum, Aug. 25, 1983; lowest water level measured, a68.20 ft (20.8 m) below land-surface datum, July 21, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 22, 1982	61.10	Sept. 10, 1982	48.34	Feb. 22, 1983	a54.37	July 20, 1983	25.28
May 28	41.44	Oct. 27	47.47	Mar. 22	50.68	Aug. 25	24.96
June 23	a67.50	Dec. 16	45.50	May 19	34.39	Sept. 28	30.07
July 21	a68.20	Jan. 19, 1983	47.09	July 1	25.53		

a Pumping.

GROUND-WATER LEVELS

ST. THOMAS, U.S. VIRGIN ISLANDS

182136064541900. Local number, 4.

LOCATION.--lat 18°21'36", long 64°54'19".

Owner: Mahogany Run Resort

Name: Mahogany 17.

AQUIFER.--Fractured rock.

WELL CHARACTERISTICS.--Drilled water-table production well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Depth 145 ft (44.2 m).

DATUM.--Altitude of land-surface datum is 140 ft (42.7 m) above mean sea level. Measuring point: Top of 6 in (0.15 m) casing at land-surface datum.

REMARKS.--Potable water supply. Water level affected by nearby pumping.

PERIOD OF RECORD.--March 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 25.60 ft (7.80 m) below land-surface datum, July 20, 1983; lowest water level measured, a60.40 ft (18.4 m) below land-surface datum, Sept. 10, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 22, 1982	a53.77	Sept. 10, 1982	a60.40	Feb. 22, 1983	44.84	July 20, 1983	25.60
May 28	39.55	Oct. 27	42.44	Mar. 22	a52.64	Aug. 25	26.01
June 23	41.46	Dec. 16	46.60	May 19	33.61	Sept. 28	31.47
July 21	42.88	Jan. 19, 1983	46.36	July 1	26.98		

182029064535200. Local number, 5.

LOCATION.--Lat 18°20'29", long 64°53'52".

Owner: Virgin Islands Government, V.I. Housing Authority.

Name: Donoe 3.

AQUIFER.--Volcanic rock undifferentiated. Fracture at 165 ft (50.3 m), from drilling log.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (0.15 m), cased 0-20 ft (0-6.10 m), openhole 20-400 ft (6.10-122 m). Dept 400 ft (122 m).

DATUM.--Altitude of land-surface datum is about 235 ft (71.6 m) above mean sea level. Measuring point: Top of 6 in (0.15 m) casing, 2.30 ft (0.70 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD:

Water levels: March 1982 to current year.

Chemical analyses: July 1, 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 71.44 ft (21.8 m) below land-surface datum, July 1, 1983; lowest water level measured, 88.37 ft (26.9 m) below land-surface datum, July 21, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 23, 1982	87.03	Sept. 10, 1982	86.20	Feb. 22, 1983	86.82	July 20, 1983	75.50
May 28	84.97	Oct. 27	83.95	Mar. 22	85.99	Aug. 25	75.79
June 23	85.72	Dec. 10	83.10	May 19	73.89	Sept. 28	78.05
July 21	88.37	Jan. 19, 1983	84.15	July 1	71.44		

a Pumping.

GROUND-WATER LEVELS

ST. THOMAS, U.S. VIRGIN ISLANDS

182038064550300. Local number, 6.

LOCATION.--Lat 18°20'38", long 64°55'03".

Owner: U.S. Government, Virgin Islands Government.

Name: Grade School 3.

AQUIFER.--Volcanic breccia.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Depth 70 ft (21.3 m).

DATUM.--Altitude of land-surface datum is 60 ft (18.3 m) above mean sea level. Measuring point: Top of 0.5 in (0.01 m) hole at 6 in (0.15 m) casing, 1.30 ft (0.40 m) above land-surface datum. Prior to June 27, 1983, top of 6 in (0.15 m) casing, 2.90 ft (0.88 m) above land-surface datum.

REMARKS.--Observation well. Automatic Digital Recorder (ADR) was installed on June 27, 1983.

PERIOD OF RECORD.--March 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.56 ft (3.22 m) below land-surface datum, July 9, 1983; lowest water level measured, 35.38 ft (10.8 m) below land-surface datum, July 21, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 22, 1982	32.01	July 21, 1982	35.38	Dec. 10, 1982	27.64	Mar. 22, 1983	27.42
May 28	31.12	Sept. 10	32.18	Jan. 19, 1983	23.50	May 19	13.40
June 23	34.21	Oct. 26	28.73	Feb. 22	29.47		

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1									---	11.91	14.49	16.74
2									---	12.05	14.54	16.86
3									---	12.16	14.21	16.97
4									---	12.26	14.14	17.08
5									---	12.35	14.34	17.19
6									---	12.28	14.55	17.31
7									---	11.70	14.76	17.45
8									---	10.96	14.97	17.57
9									---	10.62	15.18	17.77
10									---	10.71	15.40	17.90
11									---	11.03	15.60	18.00
12									---	11.29	15.78	18.10
13									---	11.52	15.93	18.22
14									---	11.73	16.05	18.37
15									---	11.95	16.18	18.56
16									---	12.17	16.31	19.21
17									---	12.37	16.43	19.75
18									---	12.58	16.53	20.21
19									---	12.76	16.62	20.55
20									---	12.95	16.70	20.84
21									---	13.14	16.74	21.04
22									---	13.34	16.22	21.23
23									---	13.55	15.87	21.37
24									---	13.69	15.95	21.47
25									---	13.46	16.09	21.54
26									---	13.57	16.26	21.62
27									---	13.74	16.46	21.70
28									11.66	13.91	16.62	21.82
29									11.67	14.10	16.64	21.89
30									11.77	14.24	16.62	21.98
31									---	14.37	16.67	---
LOW									---	14.37	16.74	21.98
HIGH									---	10.62	14.14	16.74

GROUND-WATER LEVELS

ST. JOHN, U.S. VIRGIN ISLANDS

182010064472600. Local number, 1.

LOCATION.--Lat 18°20'10", long 64°47'26".

Owner: U.S. Government, National Park Services.

Name: NPS-2 (Cruz Bay).

AQUIFER: Volcanic rocks of Cretaceous Age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (0.15 m), 4 in (0.10 m), cased 0-20 ft (0-6.10 m), open hole 20-99 ft (6.10-30.2 m). Depth 99 ft (30.2 m).

DATUM: Altitude of land-surface datum is 60 ft (18.3 m) above mean sea level. Measuring point: Top of 4 in (0.10 m) casing, 4.10 ft (1.25 m) above old land-surface datum after 1.4 ft (0.43 m) land fill and 2.7 ft (0.82 m) casing extension occurred. Prior to June 29, 1983, top of 4 in (0.10 m) casing, 1.4 ft (0.43 m) above land-surface datum.

REMARKS.--Observation well. Lowest water level affected by pumping nearby well.

PERIOD OF RECORD:

Water levels: May 1964, discontinued. June 30, 1983 to current year.

Chemical analyses: May 1964, discontinued. June 30, 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.39 ft (1.64 m) below land-surface datum, Aug. 24, 1983; lowest water level measured, 42.56 ft (12.98 m) below land-surface datum, Aug. 30, 1967.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 24, 1982	26.28	Oct. 26, 1982	13.23	Mar. 23, 1983	32.10	July 21, 1983	21.00
May 25	17.36	Dec. 9	16.80	June 29	20.56	Aug. 24	5.39
June 21	22.82	Jan. 20, 1983	25.04	June 30	20.20	Sept. 29	27.59
Sept. 9	28.55	Feb. 23	29.87				

182109064460300. Local number, 2.

LOCATION.--Lat 18°21'09", long 64°46'03".

Owner: U.S. Government, National Park Service.

Name: NPS-5 (Trunk Bay).

AQUIFER.--Volcanic rocks of Cretaceous Age.

WELL CHARACTERISTICS.--Drilled water-table production well, diameter 6 in (0.15 m), cased 0-12 ft (0-3.66 m), open hole 12-60 ft (3.66-18.3 m). Depth 60 ft (18.3 m).

DATUM.--Altitude of land-surface datum is 60 ft (18.3 m) above mean sea level. Measuring point: Top of 6 in (0.15 m) casing, 0.70 ft (0.21 m) above land-surface datum. Prior to Mar. 24, 1982 top of 6 in (0.15 m) casing, 1.00 ft (0.30 m) above land-surface datum.

REMARKS.--Active water supply well for recreation facilities at Trunk Bay.

PERIOD OF RECORD:

Water levels: August 1964 to December 1969, discontinued. March 1982 to current year.

Chemical analyses: July 1964 to June 1969, discontinued. June 30, 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 16.76 ft (5.11 m) below land-surface datum, June 3, 1969; lowest water level measured, a57.29 ft (17.5 m) below land-surface datum, Nov. 27, 1968.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 24, 1982	15.13	Sept. 9, 1982	25.02	Feb. 23, 1983	31.57	July 21, 1983	26.12
May 25	22.37	Oct. 26	26.34	Mar. 23	35.46	Aug. 24	28.84
June 21	a38.90	Dec. 9	a45.67	May 19	a40.09	Sept. 29	a40.97
July 20	22.30	Jan. 20, 1983	a29.23	June 30	23.02		

a Pumping.

GROUND-WATER LEVELS

ST. JOHN, U.S. VIRGIN ISLANDS

182116064451000. Local number, 3.

LOCATION.--Lat 18°21'16", long 64°45'10".

Owner: U.S. Government, National Park Service.

Name: NPS-6 (Cinnamon Bay).

AQUIFER.--Volcanic rocks of Cretaceous Age.

WELL CHARACTERISTICS.--Drilled water-table production well, diameter 6-in (0.15 m), cased 0-51 ft (0-15.6 m), open hole 51-70 ft (15.6-21.3 m). Depth 70 ft (21.3 m).

DATUM.--Altitude of land-surface datum is 60 ft (18.3 m) above mean sea level. Measuring point: Hole on 6 in (0.15 m) casing, 2.0 ft (0.61 m) above land-surface datum. Prior to June 29, 1983, top of 6 in (0.15 m) casing at land-surface datum.

REMARKS.--Abandoned as production well. Automatic Digital Recorder (ADR) installed on June 29, 1983.

PERIOD OF RECORD:

Water levels: August 1964 to December 1969, discontinued. March 1982 to current year.

Chemical analyses: August 1964 to June 1969, discontinued. June 29, 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 41.12 ft (12.5 m) below land-surface datum, Aug. 15, 1969; lowest water level measured, 63.15 ft (19.2 m) below land-surface datum, July 1, 1968.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 24, 1982	52.75	July 20, 1982	56.60	Dec. 9, 1982	56.34	Mar. 23, 1983	58.00
May 25	55.48	Sept. 9	56.42	Jan. 20, 1983	56.90	Apr. 27	57.28
June 21	54.64	Oct. 26	59.10	Feb. 23	57.00	May 19	57.16

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1									---	56.44	56.76	56.02
2									---	56.47	56.76	56.05
3									---	56.51	56.76	56.08
4									---	56.54	56.76	56.12
5									---	56.57	56.77	56.15
6									---	56.57	56.80	56.16
7									---	56.54	56.82	56.17
8									---	56.52	56.83	56.17
9									---	56.52	56.85	56.18
10									---	56.52	56.85	56.21
11									---	56.52	56.85	56.25
12									---	56.53	56.87	56.33
13									---	56.55	56.86	56.41
14									---	56.59	56.82	56.47
15									---	56.61	56.79	56.52
16									---	56.64	56.78	56.54
17									---	56.64	56.78	56.56
18									---	56.64	56.77	56.58
19									---	56.64	56.76	56.58
20									---	56.64	56.75	56.58
21									---	56.67	56.74	56.58
22									---	56.69	56.62	56.59
23									---	56.72	56.48	56.61
24									---	56.76	56.34	56.63
25									---	56.77	56.22	56.63
26									---	56.78	56.14	56.62
27									---	56.77	56.07	56.58
28									---	56.75	56.05	56.54
29									---	56.75	56.04	56.49
30									56.40	56.75	56.03	56.48
31									---	56.76	56.02	---
LOW									---	56.78	56.87	56.63
HIGH									---	56.44	56.02	56.02

181951064422100. Local number, 4.

LOCATION.--Lat 18°19'51", long 64°42'21".

Owner: U.S. Government, Virgin Islands Government.

Name: USGS-15 (Calabash Boom).

AQUIFER.--Volcanic rocks of Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused water-table well diameter 6 in (0.15 m), cased 0-61 ft (0-18.6 m), slotted 40-61 (12.2-18.6 m). Depth 62 ft (18.9 m).

DATUM: Altitude of land-surface datum is 50 ft (15.2 m) above mean sea level. Measuring point: Top of 6 in (0.15 m) casing, 1.10 ft (0.34 m) above land-surface datum. Previous to March 1982, top of 6 in (0.15 m) casing, 1.40 ft (0.43 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD:

Water levels: September 1964 to December 1967, discontinued. March 1982 to current year.

Chemical analyses: September 22, 1964, discontinued. June 30, 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured 39.55 ft (12.1 m) below land-surface datum, May 25, 1982; lowest water level measured, 44.55 ft (13.6 m) below land-surface datum, Mar. 22, 1965.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 24, 1982	41.37	June 21, 1982	40.51	Sept. 9, 1982	42.00	Dec. 9, 1982	42.26
May 25	39.55	July 20	41.18	Oct. 26	42.20	June 30, 1983	40.79

ST. JOHN, U.S. VIRGIN ISLANDS

182042064454500. Local number, 5.

LOCATION.--Lat 18°20'42", long 64°45'45".

Owner: Virgin Islands Government.

Name: DPW-6.

AQUIFER.--Louisenhoj Formation.

WELL CHARACTERISTICS.--Drilled water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Sounded depth 70 ft (21.3 m).

DATUM.--Altitude of land-surface datum is about 640 ft (195 m) above mean sea level. Measuring point: Top of 6 in (0.15 m) casing, 1.60 ft (0.49 m) above land-surface datum. Prior to June 28, 1983, top of 6 in (0.15 m) casing, 1.30 ft (0.40 m) above land-surface datum.

REMARKS.--Observation well. Automatic Digital Recorder (ADR) installed on June 28, 1983.

PERIOD OF RECORD.--September 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.34 ft (3.46 m) below land-surface datum, Apr. 27, 1983; lowest water level measured, 17.72 ft (5.40 m) below land-surface datum, Mar. 23, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Sept. 9, 1982	12.49	Dec. 9, 1982	12.49	Feb. 23, 1983	16.62	Apr. 27, 1983	11.34
Oct. 26	14.25	Jan. 20, 1983	14.66	Mar. 23	17.72	May 29	12.29

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1									---	15.52	17.02	13.89
2									---	15.61	17.03	14.06
3									---	15.67	17.02	14.22
4									---	15.73	17.02	14.36
5									---	15.76	17.02	14.47
6									---	15.79	17.06	14.61
7									---	15.79	17.09	14.77
8									---	15.81	17.14	14.90
9									---	15.86	17.19	15.00
10									---	15.92	17.22	15.11
11									---	15.99	17.27	15.25
12									---	16.05	17.28	15.35
13									---	16.13	17.28	15.45
14									---	16.19	17.28	15.57
15									---	16.24	17.27	15.81
16									---	16.31	17.27	15.94
17									---	16.35	17.26	16.02
18									---	16.40	17.15	16.09
19									---	16.43	17.07	16.14
20									---	16.47	17.04	16.16
21									---	16.64	15.77	16.16
22									---	16.64	15.37	16.16
23									---	16.63	15.22	16.16
24									---	16.67	15.05	16.16
25									---	16.70	14.90	16.16
26									---	16.73	14.77	16.16
27									---	16.76	14.67	16.16
28									---	16.84	13.97	16.16
29									15.42	16.88	13.12	16.95
30									15.49	16.91	13.32	16.96
31									---	16.95	13.64	---
LOW									---	16.95	17.28	16.96
HIGH									---	15.52	13.12	13.89

182044064454600. Local number, 6.

LOCATION.--Lat 18°20'44", long 64°45'46".

Owner: Virgin Islands Government.

Name: DPW-5.

AQUIFER.--Louisenhoj Formation.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Sounded depth 145 ft (44.2 m).

DATUM.--Altitude of land-surface datum is about 640 ft (195 m) above mean sea level. Measuring point: Top of 6 in (0.15 m) casing, 1.40 ft (0.43 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD:

Water levels: September 1982 to current year.

Chemical analyses: June 30, 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 36.71 ft (11.2 m) below land-surface datum, Sept. 9, 1983; lowest water level measured, a104.96 ft (32.0 m) below land-surface datum, May 19, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Sept. 9, 1982	36.71	Jan. 20, 1983	48.91	May 19, 1983	a104.96	Aug. 24, 1983	a71.90
Oct. 26	a83.85	Feb. 23	47.60	June 30	44.17	Sept. 29	46.89
Dec. 9	a102.14	Mar. 23	53.76	July 21	57.58		

a Pumping.

GROUND-WATER LEVELS

ST. JOHN, U.S. VIRGIN ISLANDS

182044064454800. Local number, 7.
 LOCATION.--Lat 18°20'44", long 64°45'48".
 Owner: Virgin Islands Government.
 Name: DPW-4

AQUIFER.--Louisenhoj Formation.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Sounded depth 60 ft (18.3 m).

DATUM: Altitude of land-surface datum is about 640 ft (195 m) above mean sea level. Measuring point: Top of 6 in (0.15 m) casing, 0.60 ft (0.18 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD.--September 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 25.36 ft (7.73 m) below land-surface datum, Sept. 9, 1982; lowest water level measured, 49.10 ft (15.0 m) below land-surface datum, Oct. 26, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
 INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Sept. 9, 1982	25.36	Jan. 20, 1983	37.49	May 19, 1983	47.75	Aug. 24, 1983	46.45
Oct. 26	49.10	Feb. 23	37.24	June 30	34.34	Sept. 29	36.54
Dec. 9	33.42	Mar. 23	48.05	July 21	39.82		

182044064454900. Local number, 8.
 LOCATION.--Lat 18°20'44", long 64°45'49".
 Owner: Virgin Islands Government.
 Name: DPW-3.

AQUIFER.--Louisenhoj Formation.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Sounded depth 110 ft (33.5 m).

DATUM: Altitude of land-surface datum is about 640 ft (195 m) above mean sea level. Measuring point: Top of 6 in (0.15 m) casing, 1.80 ft (0.55 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD.--September 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 20.93 ft (6.38 m) below land-surface datum, Sept. 9, 1982; lowest water level measured, 69.08 ft (21.1 m) below land-surface datum, Dec. 9, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
 INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Sept. 9, 1982	20.93	Jan. 20, 1983	32.55	May 19, 1983	68.99	Aug. 24, 1983	68.10
Oct. 26	66.20	Feb. 23	32.46	June 30	29.87	Sept. 29	31.87
Dec. 9	69.08	Mar. 23	54.48	July 21	34.39		

182044064455000. Local number, 9.
 LOCATION.--Lat 18°20'44", long 64°45'50".
 Owner: Virgin Islands Government.
 Name: DPW-2.

AQUIFER.--Louisenhoj Formation.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Sounded depth 65 ft (19.8 m).

DATUM: Altitude of land-surface datum is about 640 ft (195 m) above mean sea level. Measuring point: Top of 6 in (0.15 m) casing, 2.00 ft (0.61 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD.--September 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 32.84 ft (10.0 m) below land-surface datum, Sept. 9, 1982; lowest water level measured, 52.44 ft (16.0 m) below land-surface datum, May 19, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
 INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Sept. 9, 1982	32.84	Jan. 20, 1983	41.54	May 19, 1983	52.44	Aug. 24, 1983	51.62
Oct. 26	51.05	Feb. 23	41.43	June 30	38.21	Sept. 29	40.19
Dec. 9	51.43	Mar. 23	45.79	July 21	40.85		

a Pumping.

182044064455200. Local number, 10.
LOCATION.--Lat 18°20'44", long 64°45'52".
Owner: Virgin Islands Government.
Name: DPW-1.

AQUIFER.--Louisenhoj Formation.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Sounded depth 60 ft (18.3 m).

DATUM.--Altitude of land-surface datum is about 640 ft (195 m) above mean sea level. Measuring point: Top of 6 in (0.15 m) casing, 2.00 ft (0.61 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD.--September 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 32.03 ft (9.76 m) below land-surface datum, Sept. 9, 1983; lowest water level measured, 37.60 ft (11.5 m) below land-surface datum, Dec. 9, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Sept. 9, 1982	32.03	Jan. 20, 1983	36.79	May 19, 1983	34.23	Aug. 24, 1983	35.88
Oct. 26	36.05	Feb. 23	37.21	June 30	33.31	Sept. 29	36.58
Dec. 9	37.60	Mar. 23	37.44	July 21	35.89		

181956064464500. Local number, 11.
LOCATION.--Lat 18°19'56", long 64°46'45".
Owner: Virgin Islands Government.
Name: Guinea Gut Well.

AQUIFER.--Louisenhoj Formation.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Depth 85 ft (25.9 m).

DATUM.--Altitude of land-surface datum is about 280 ft (85.4 m) above mean sea level. Measuring point: Bottom of 0.5 in (0.01 m) hole at 6 in (0.15 m) casing, 1.50 ft (0.46 m) above land-surface datum. Prior to June 28, 1983, top of 6 in (0.15 m) casing, 1.80 ft (0.55 m) above land-surface datum.

REMARKS.--Observation well. Automatic Digital Recorder (ADR) installed on June 28, 1983.

PERIOD OF RECORD:

Water levels: March 1982 to current year.

Chemical analyses: June 30, 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.34 ft (1.02 m) below land-surface datum, May 25, 1982; lowest water level measured, 13.55 ft (4.13 m) below land-surface datum, Mar. 23, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1981 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 24, 1982	3.60	July 20, 1982	6.42	Dec. 9, 1982	5.20	Mar. 23, 1983	13.55
May 25	3.34	Sept. 9	9.18	Jan. 20, 1983	6.93	Apr. 27	5.57
June 21	5.04	Oct. 26	8.60	Feb. 23	10.39	May 19	4.77

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1									---	7.70	8.58	4.58
2									---	7.79	8.23	4.68
3									---	7.89	8.12	4.75
4									---	7.97	8.18	4.82
5									---	7.98	8.29	4.91
6									---	7.58	8.37	4.99
7									---	7.01	8.45	5.11
8									---	6.80	8.57	5.23
9									---	6.90	8.68	5.39
10									---	7.00	8.73	5.59
11									---	7.12	8.80	5.78
12									---	7.26	8.87	5.99
13									---	7.42	8.35	6.22
14									---	7.56	8.35	6.47
15									---	7.69	8.42	6.63
16									---	7.81	8.48	6.68
17									---	7.92	8.53	6.82
18									---	8.01	7.91	6.96
19									---	8.16	7.92	7.12
20									---	8.28	8.04	7.31
21									---	8.40	6.23	7.45
22									---	8.52	5.32	7.60
23									---	8.65	5.34	7.73
24									---	8.52	5.50	7.81
25									---	8.40	5.68	7.85
26									---	8.41	5.83	7.77
27									---	8.45	5.99	7.82
28									7.57	8.56	4.35	7.92
29									7.54	8.64	4.19	8.07
30									7.61	8.57	4.33	8.20
31									---	8.65	4.45	---
LOW									---	8.65	8.87	8.20
HIGH									---	6.80	4.19	4.58

a Pumping.

QUALITY OF GROUND WATER
WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

STATION NUMBER	TOTAL DEPTH OF WELL (FT)	DATE OF SAMPLE	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	ALKA- LINITY, TOTAL AS CaCO ₃ (MG/L)	CHLO- RIDE, TOTAL (MG/L)
SAINT CROIX, U.S. VIRGIN ISLANDS							
174225064471900	---	06-20-83	4750	7.4	27.5	517	1100
174245064475800	104	06-20-83	2300	7.2	27.0	610	275
174329064454700	130	06-22-83	2900	8.0	27.0	587	420
SAINT THOMAS, U.S. VIRGIN ISLANDS							
182050064580400	80	06-30-83	900	7.2	30.0	212	94
182029064535200	400	07-01-83	1800	7.6	28.0	576	145
SAINT JOHN, U.S. VIRGIN ISLANDS							
182010064472600	99	06-30-83	800	6.7	28.0	276	36
182109064460300	60	06-30-83	1620	7.0	26.5	464	220
182116064451000	70	06-29-83	1800	7.6	29.0	456	265
181951064422100	62	06-30-83	750	7.1	28.5	167	84
182044064454600	145	06-30-83	1650	7.2	28.0	512	185
181956064464500	85	06-30-83	2400	7.7	26.0	569	390

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

Thirty-seven manuals by the U.S. Geological Survey have been published to date in the series on techniques describing procedures for planning and executing specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) is on surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises. The reports listed below are for sale by the U.S. Geological Survey, Branch of Distribution, 604 South Pickett St., Alexandria, VA 22304 (authorized agent of the Superintendent of Documents, Government Printing Office).

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

- 1-D1. *Water temperature--influential factors, field measurement, and data presentation*, by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.
- 1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.
- 2-D1. *Application of surface geophysics to ground-water investigations*, by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.
- 2-E1. *Application of borehole geophysics to water-resources investigations*, by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.
- 3-A1. *General field and office procedures for indirect discharge measurements*, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.
- 3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.
- 3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.
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MARGIN INDEX
*To use, bend book and follow
margin index label to page
with black edge marker.*

FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI). This report contains both the inch-pound and SI unit equivalents in the station manuscript descriptions.

Multiply inch-pound units	By	To obtain SI units
<i>Length</i>		
inches (in)	2.54×10^1	millimeters (mm)
	2.54×10^{-2}	meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^0	kilometers (km)
<i>Area</i>		
acres	4.047×10^3	square meters (m ²)
	4.047×10^{-1}	square hectometers (hm ²)
	4.047×10^{-3}	square kilometers (km ²)
square miles (mi ²)	2.590×10^0	square kilometers (km ²)
<i>Volume</i>		
gallons (gal)	3.785×10^0	liters (L)
	3.785×10^0	cubic decimeters (dm ³)
	3.785×10^{-3}	cubic meters (m ³)
million gallons	3.785×10^3	cubic meters (m ³)
	3.785×10^{-3}	cubic hectometers (hm ³)
cubic feet (ft ³)	2.832×10^1	cubic decimeters (dm ³)
	2.832×10^{-2}	cubic meters (m ³)
cfs-days	2.447×10^3	cubic meters (m ³)
	2.447×10^{-3}	cubic hectometers (hm ³)
acre-feet (acre-ft)	1.233×10^3	cubic meters (m ³)
	1.233×10^{-3}	cubic hectometers (hm ³)
	1.233×10^{-6}	cubic kilometers (km ³)
<i>Flow</i>		
cubic feet per second (ft ³ /s)	2.832×10^1	liters per second (L/s)
	2.832×10^1	cubic decimeters per second (dm ³ /s)
	2.832×10^{-2}	cubic meters per second (m ³ /s)
gallons per minute (gal/min)	6.309×10^{-2}	liters per second (L/s)
	6.309×10^{-2}	cubic decimeters per second (dm ³ /s)
	6.309×10^{-5}	cubic meters per second (m ³ /s)
million gallons per day	4.381×10^1	cubic decimeters per second (dm ³ /s)
	4.381×10^{-2}	cubic meters per second (m ³ /s)
<i>Mass</i>		
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons

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