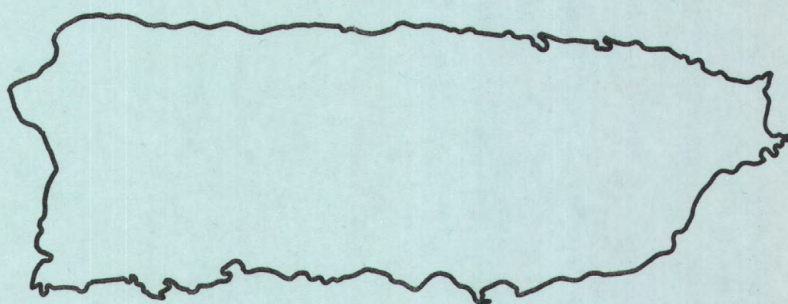
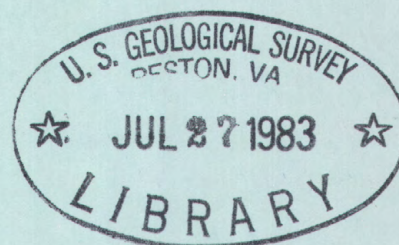


Water Resources Data Puerto Rico Water Years 1981-82



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT PR-81-82-1
Prepared in cooperation with the Commonwealth of Puerto Rico
and with other agencies

CALENDAR FOR WATER YEAR 1981

1980

S	M	T	W	T	F	S
			1	2	3	4
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1981

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CALENDAR FOR WATER YEAR 1982

1981

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1982

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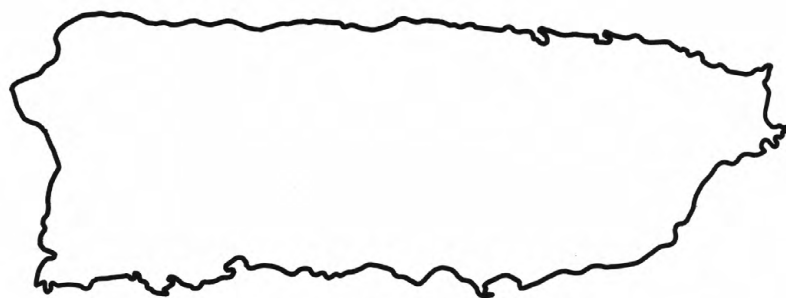
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Water Resources Data Puerto Rico Water Years 1981-82

by Russell E. Curtis, Patrick W. McKinley,
and Héctor M. Colón-Ramos



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT PR-81-82-1
Prepared in cooperation with the Commonwealth of Puerto Rico
and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

JAMES G. WATT, Secretary

GEOLOGICAL SURVEY

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PREFACE

This annual hydrologic data report of Puerto Rico 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.

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

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Carmen A. García typed the text of the report.
José Alicea-Ortiz prepared the illustrations.

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

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16. Abstracts Water-resources data for surface-water, quality-of-water, and ground-water records for 1981-82 water years for Puerto Rico consist of records of discharge, water quality of streams, and water levels of wells. This report contains discharge and water-quality records for 40 gaging stations, 109 water-quality stations, stage records for 3 lakes, and water levels for 61 observation wells. Also included are data for 17 crest-stage partial-record stations. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and the Commonwealth of Puerto Rico.			
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INTRODUCTION

Water resources data for water years 1981-82, including records of streamflow at gaging stations and partial-record stations are given in this report, and their locations are shown in figures 1 to 19. The records were collected and computed by the Water Resources Division of the U.S. Geological Survey under the direction of Ferdinand Quiñones, District Chief. These data represent that portion of the National Water Data System collected by the U.S. Geological Survey and cooperating Commonwealth and Federal agencies in Puerto Rico.

Prior to the 1968 calendar year, water resources data for Puerto Rico have been released in a series of reports entitled "Water Records of Puerto Rico," and covered the period 1958-67. Included were records for streamflow stations, ground-water wells, and the chemical and physical characteristics of surface and ground water.

Beginning with the 1968 calendar year, surface-water records were released separately on an annual basis. Ground-water records, and data on chemical and physical characteristics of 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 for 1975-76, 1977, 1978 and 1979-80 water years consist of one volume each containing surface-water, water-quality, and ground-water records.

COOPERATION

The U.S. Geological Survey and organizations of the Commonwealth of Puerto Rico have had cooperative agreements for the systematic collection of surface-water records since 1958. Organizations that supplied data are acknowledged in station descriptions. Organizations that assisted in collecting data through cooperative agreement with the Survey are:

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

Assistance in the form of funds was also given by the Corps of Engineers, U.S. Army, in collecting records for 6 gaging stations published in this report.

SUMMARY OF HYDROLOGIC CONDITIONS

Streamflow

The 1981 water year was generally uneventful in Puerto Rico. On an annual basis, rainfall, and consequently streamflow, were very near normal in all parts of the Island. In the northern and eastern parts, streamflow was relatively low during the first half of the year and above normal during the second half (figures 1, 2). Streamflow in the southern and western parts followed the normal pattern of high flow in October decreasing to low flow during the February-March period and returning to average flow the remainder of the year (figures 3, 4). No significantly high or low flows were observed.

During the 1982 water year, rainfall averaged about 4 inches above the normal 69 inches. Streamflow was also generally above normal averaging about 20 percent above normal in the west and north parts of the Island, about 10 percent above normal in the east and 10 percent below normal in the south (figures 1-4).

Two significant flood events occurred during the year along the north coast (December) and on the southwest coast (September). The December floods were caused by a cold front stalling north of Puerto Rico which produced 4-days rainfall totals of 20-30 inches over a wide area (figure 5). A peak discharge of 30,300 cubic feet per second was observed on Río Cibuco at Vega Baja and was estimated to be a 30-year recurrence-interval event. The September floods were caused by a tropical storm moving across the Island and producing 12-hours totals of up to 12 inches near Guayanilla in the southwest part of the Island (figure 6). The main section of the city of Guayanilla was flooded by 4 feet of water as a 25-year recurrence interval flood (18,000 cubic feet per second) occurred on Río Guayanilla.

Ground Water

Ground-water levels in Puerto Rico during the first half of the 1981 water year declined seasonally as a result of diminished rainfall and increased ground-water withdrawals for irrigation, domestic water supply, and industry. Water levels during the second half of the 1981 water year rose islandwide in response to higher than average rainfall. The heavy rains of December 12-14, 1981 resulted in an increase in ground-water levels along the north coastal aquifers between 6 to 10 feet. Water levels during January to April 1982 continued to decline seasonally, but 10 inches of rainfall early in May 1982 increased levels islandwide between 2 to 4 feet. Conditions remained practically unchanged June thru August 1982 along the north coast. Seasonal water level declines were observed along the south coast alluvial aquifers possibly in direct response to irrigation withdrawals. Rainfall from a tropical wave during September 12-13, 1982 resulted in increases in water levels of about 6 ft in the Yauco area while maintaining above average levels elsewhere.

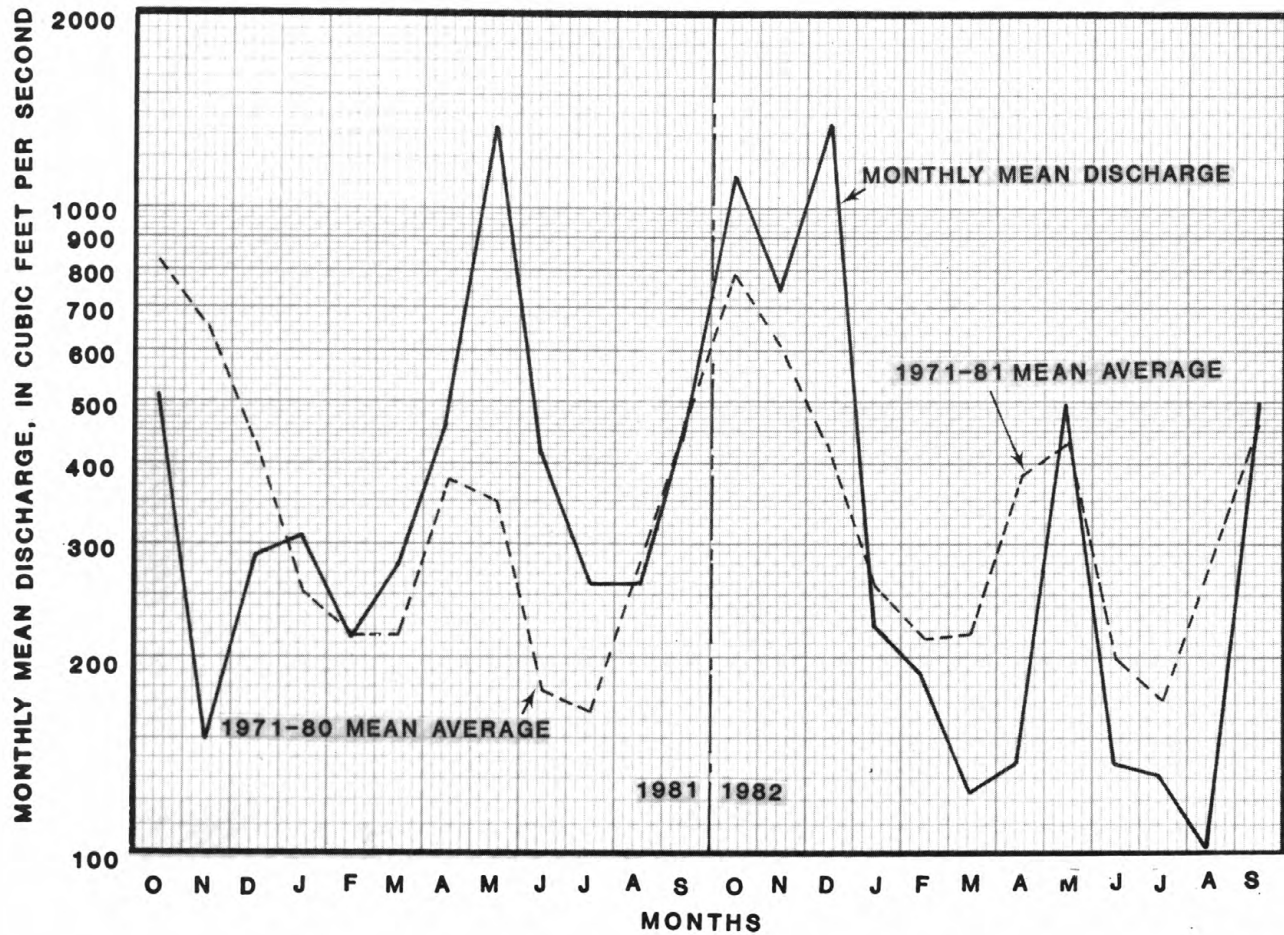


Figure 1.-- Comparison of average discharges for 1981 and 1982 water years with average discharge for period of record at Río Grande de Manatí at Highway 2 near Manatí, PR (50038100).

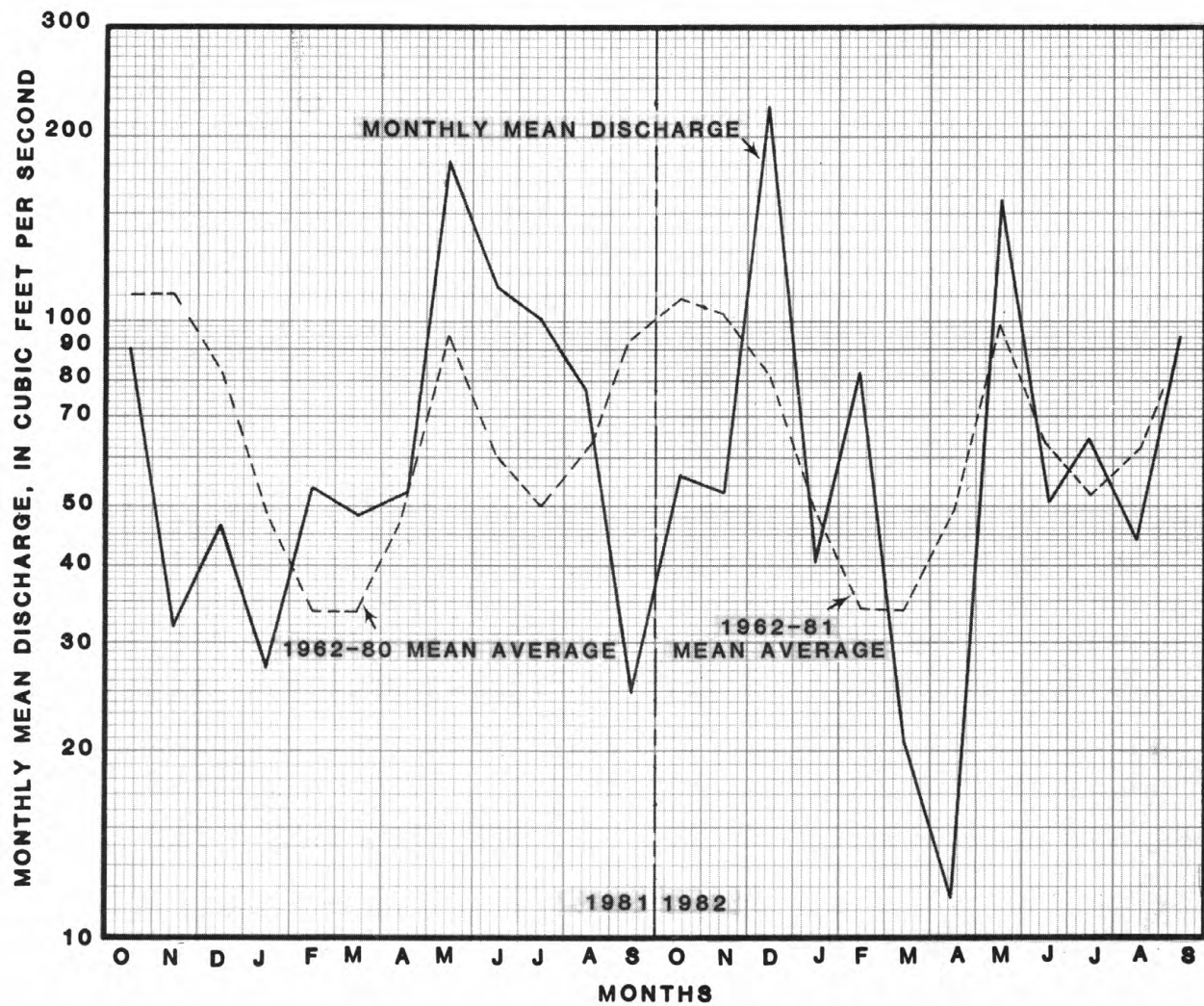


Figure 2.-- Comparison of average discharges for 1981 and 1982 water years with average discharge for period of record at Río Fajardo near Fajardo, PR (50071000).

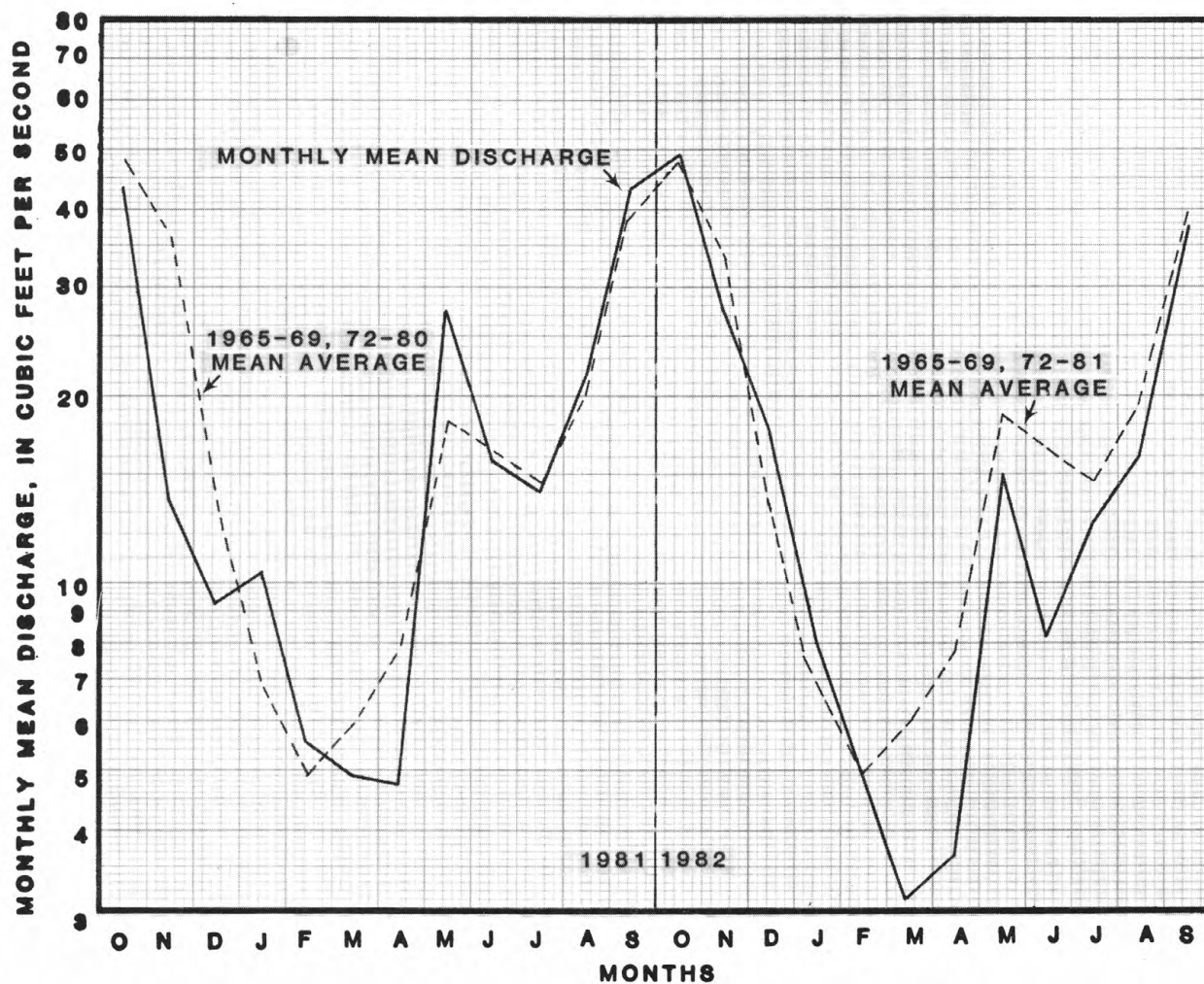


Figure 3.-- Comparison of average discharges for 1981 and 1982 water years with average discharge for period of record at Río Inabón at Real Abajo, PR (50112500).

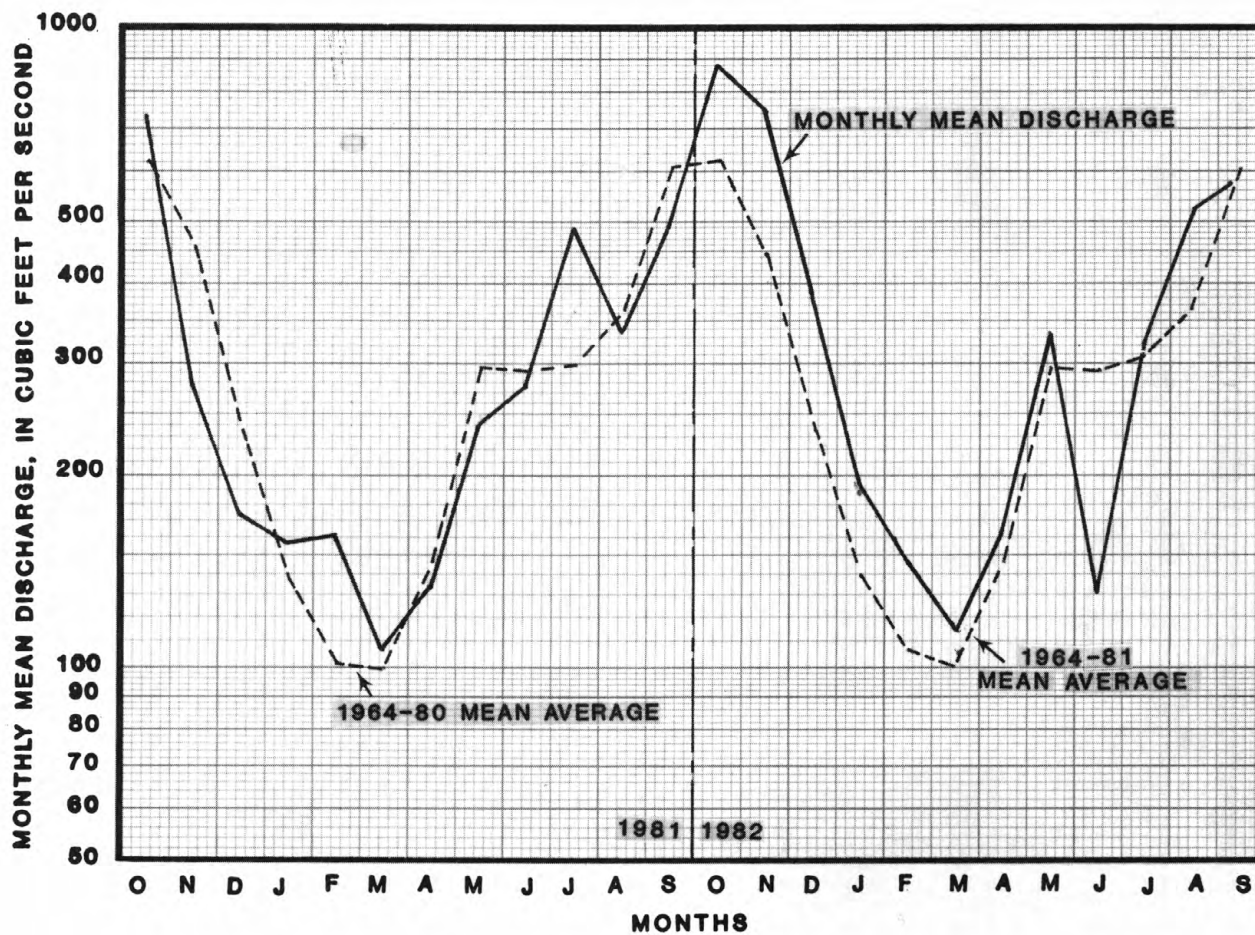


Figure 4.-- Comparison of average discharges for 1981 to 1982 water years with average discharge for period of record at Río Grande de Añasco near San Sebastián, PR (50144000).

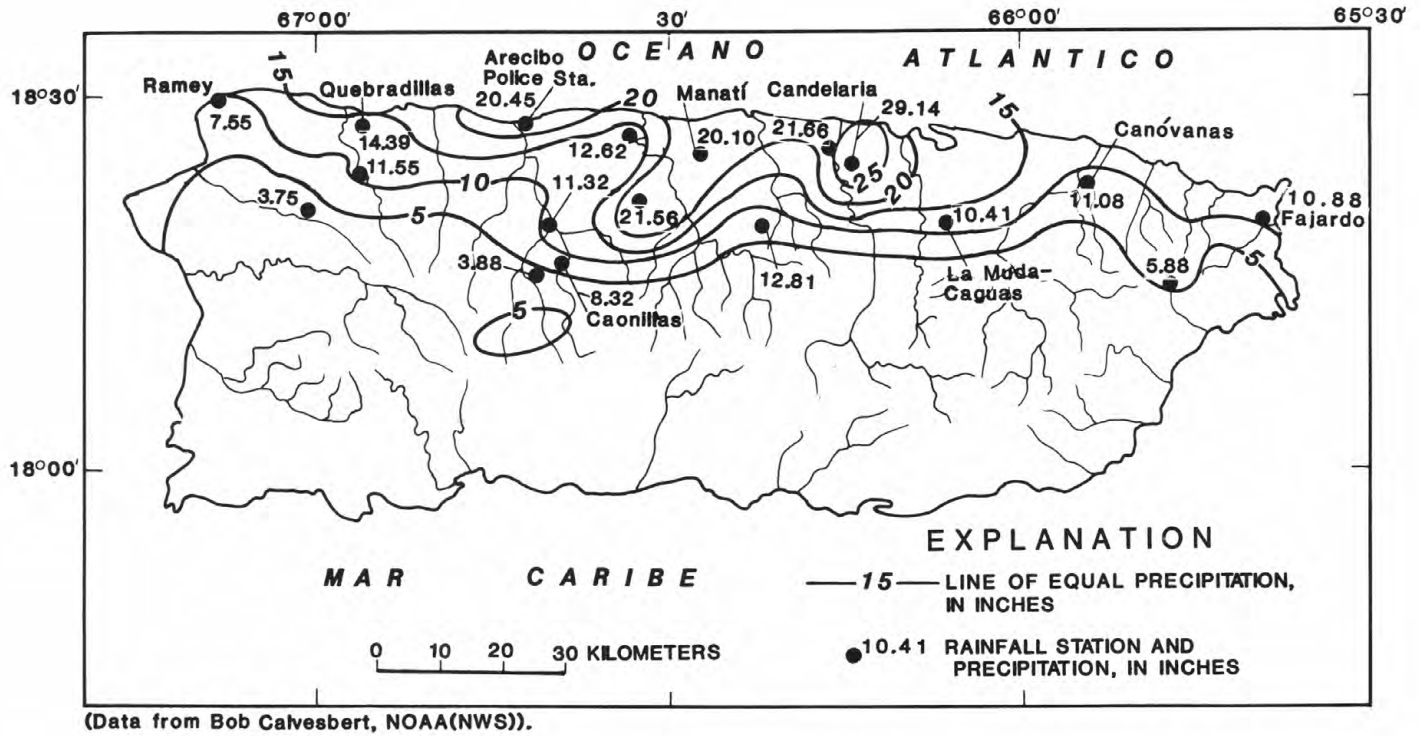


Figure 5.--Rainfall distribution during December 12-15, 1981.

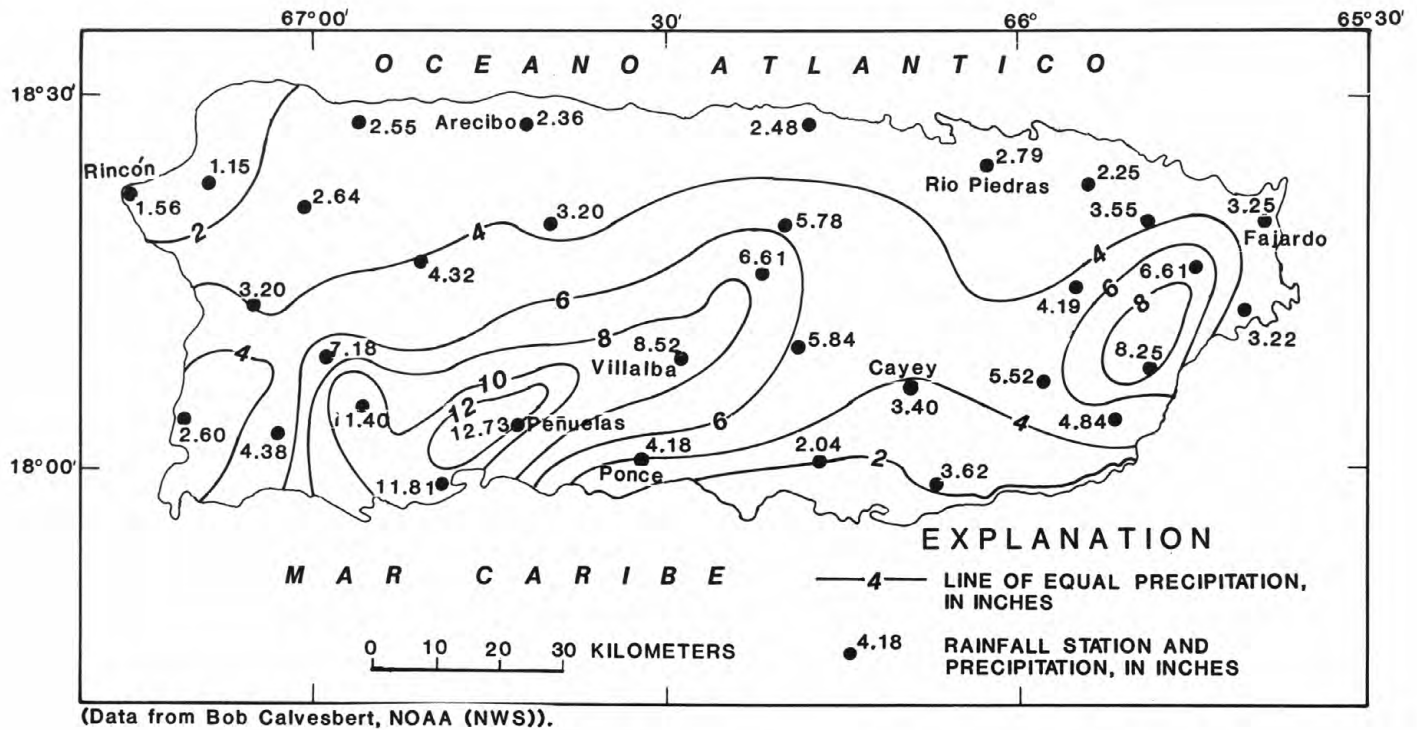


Figure 6. Rainfall distribution during September 12-13, 1982.

Water-Quality

The chemical and bacteriological quality of surface waters in Puerto Rico did not change significantly during water years 1981-1982. Untreated or partially treated sewage disposal continues to be the island's most detrimental water resource problem. Coliform bacteria, an indicator of human and animal wastes, is found in concentrations above 10,000 colonies per 100 ml at many of the sampling sites.

Rivers that are associated with population centers show higher bacteria concentrations than streams in rural areas. Quebrada Blasina near Carolina (50050300) and Río Caguitas at Highway 30 at Caguas (50055250) show the highest concentrations of fecal-coliform bacteria. Other sites that show high fecal-coliform concentrations are Río Hondo below Río Hondo at Bayamón (50048510) and Río Guayanilla at Central Rufina (50124700). All four sites have recorded coliform concentrations higher than one (1) million colonies per 100 ml.

Industrial pollution often reveals itself as exotic inorganic or organic contamination. The inorganics which are normally absent or nearly so in the natural environment are arsenic, cadmium, chromium, lead, mercury, selenium and silver. This is not an exhaustive list of inorganic contaminants but are those inorganics that have been designated as having a detrimental effect on human health. The maximum contamination level for these inorganics as noted in the National Interim Primary Drinking Water Regulations (EPA, 1976) are as follows:

<u>Element</u>	<u>ug/L</u>
Arsenic	50
Cadmium	10
Chromium	50
Lead	50
Mercury	2
Selenium	10
Silver	50

Water samples for analyses of these elements were collected once each water year at most of the monitoring sites. Analyses of both the dissolved and solid phase is referred to as a total recoverable sample. At the NASQAN stations, a federal funded water quality program, (see page 19), both total recoverable and dissolved inorganics were analyzed three times a year. Total recoverable and dissolved concentration sampled at these sites are listed in table 1.

Table 1.--Concentrations on inorganics at selected streams.

	Chromium			Lead		Mercury		
	total	dissolved		total	dissolved	total	dissolved	
	*	*	*	Micrograms per liter		*	*	*
Río Grande de Manatí	80		10	21	1	3.9		2.2
Río de la Plata	30		10	46	1	2.0		1.4
Río Fajardo	40		10	65	1	.8		.8
Río Grande de Patillas	10		10	5	1	4.0		1.5
Río Grande de Añasco	40		10	14	1	.8		.2

Other organic contaminants of interest in water quality appraisals include organic pesticides which are used in large quantities by agriculture. Samples for the most common pesticides were collected once at most sites. DDT, DDD, DDE, aldrin, dieldrin, endrin, chlordane and diazinon were found in over 20 percent of the sites sampled, but the concentrations were near the detection limits of the analytical techniques.

In the proposed copper-mining area, sampling was resumed in 1982 at Río Viví (50023000) and Río Pellejas (50021000). The water quality has not significantly changed since the sampling done before 1975. Copper, chromium and nickel concentrations of 30 ug/L, 90 ug/L, and 110 ug/L, respectively, were found from samples collected on April 20, 1983 at Río Pellejas. Similar concentration were detected at Río Viví on April 21, 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 at 35°C . In the laboratory these bacteria are defined as the organisms which produce colonies within 24 hours when incubated at $35^{\circ}\text{C} + 1.0^{\circ}\text{C}$ on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

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.

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 (CaCO_3).

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

Micrograms per liter ($\mu\text{g/L}$, 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 1.

TABLE 2.--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.

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.

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 50115000 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.

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.

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.

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. 7, below).

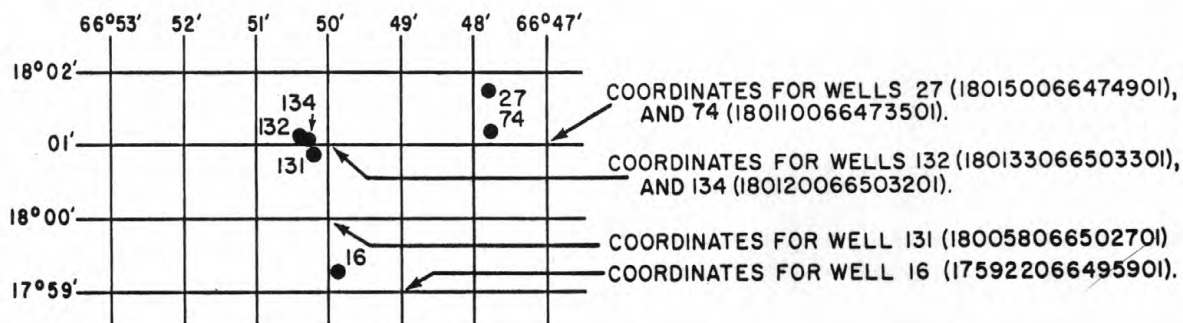


Figure 7.--System for numbering wells and miscellaneous sites (latitude and longitude).

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 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 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 contents. The location of the gaging station and the drainage area are obtained from the most accurate maps available. River mileage, given under "LOCATION" for some stations, is that determined and used by the Corps of Engineers or other agencies. Periods for which there are published records for the present station or for stations generally equivalent to the present one are given under "PERIOD OF RECORD."

Previously published streamflow records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISED RECORDS" has been added to the

description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1965 stands for the water year October 1, 1964, to September 30, 1965. If no daily, monthly, or annual figures of discharge are affected by the revision, the fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

The type of gage currently in use, the datum of the present gage above mean sea level, and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." In references to datum of gage, the phrase "mean sea level" denotes "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.

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.

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.

EXPLANATION OF WATER-QUALITY RECORDS

Collection and examination of data

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

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

Water analysis

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

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.

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

Water temperature

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

Table 3.--Degrees Celsius (°C) to degrees Fahrenheit (°F)*
(Temperature reported to nearest 0.5°C)

°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		

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

Sediment

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

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

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

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

EXPLANATION OF GROUND-WATER LEVEL RECORDS

Collection 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 1.

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

Water-level measurements in this report are given in feet with reference 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 fifth day and the end of each month (eom).

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

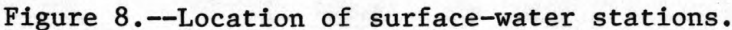


Figure 8.--Location of surface-water stations.

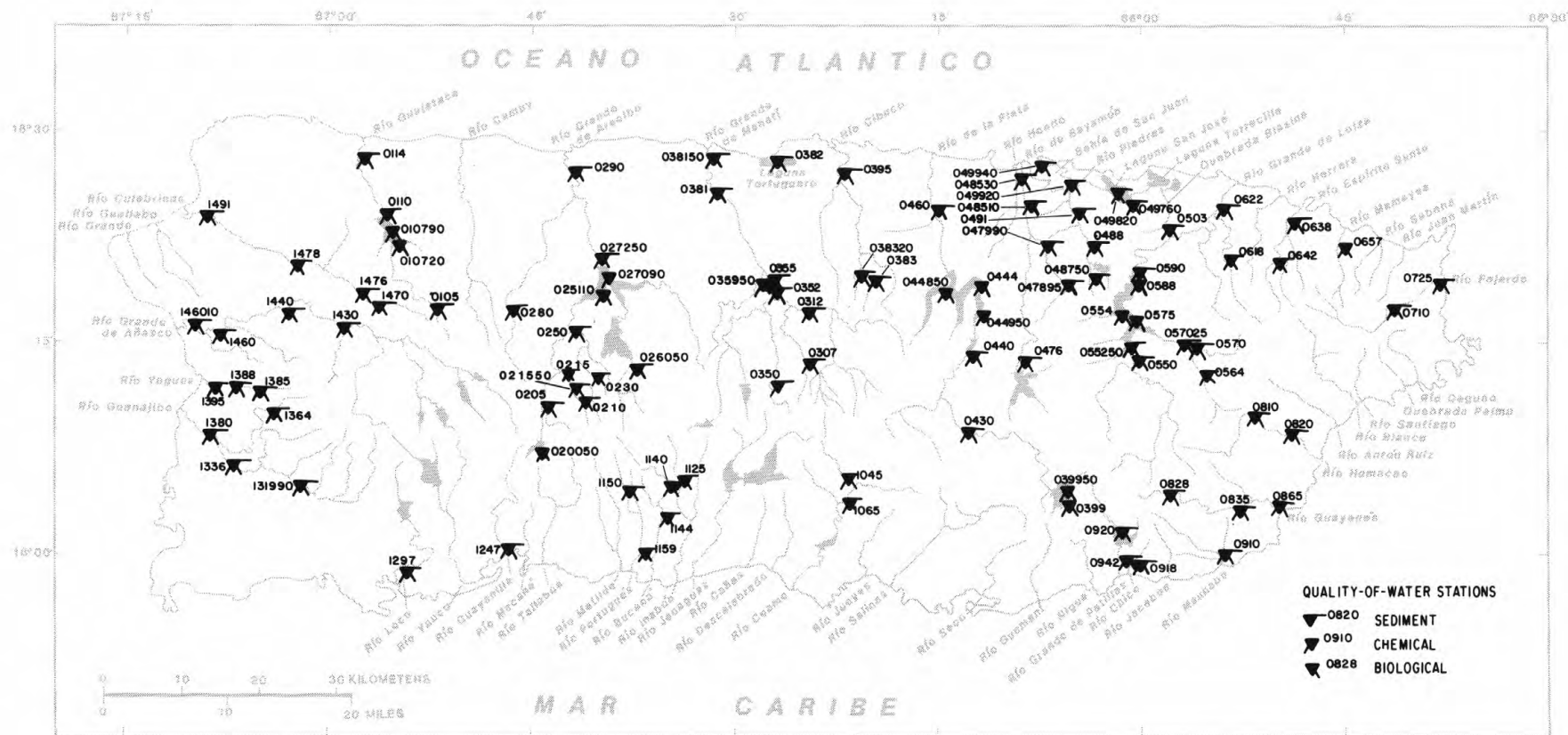
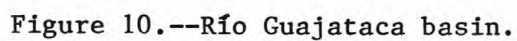


Figure 9.--Location of water-quality stations.



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.

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 CACO3)
NOV , 1980												
13...	1225	4.7	228	7.8	24.0	--	8.4	--	--	K67000	6400	74
JAN , 1981												
20...	1155	E40	233	8.0	22.0	1.4	9.9	--	<10	2200	K1100	--
MAR												
05...	0740	E.50	301	7.6	21.5	4.6	6.4	--	12	K18000	210	130
MAY												
20...	0740	6.3	250	7.6	22.0	21	7.6	88	<10	K8500	6900	--
AUG												
04...	1010	3.4	230	7.2	24.0	.70	10.0	120	<10	K7500	370	88
SEP												
16...	0850	4.4	276	7.9	22.5	2.5	7.6	92	<10	K1200	2400	100
NOV												
24...	1025	13	194	7.9	21.5	15	7.7	92	<10	K11000	7400	--
FEB , 1982												
04...	1105	2.8	232	7.6	21.0	2.4	8.5	94	36	K1300	940	87
MAR												
30...	1315	1.5	245	8.5	28.0	.70	8.6	116	<10	K1800	K1100	--
MAY												
12...	1135	4.9	265	8.0	23.0	6.1	8.0	96	--	4300	5700	--
JUL												
29...	0715	1.0	275	7.7	23.0	--	7.0	85	71	3200	9700	--
SEP												
28...	1015	5.1	229	7.8	22.0	1.5	8.6	102	13	K1700	2700	85

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- 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 , 1980											
13...	0	21	5.2	11	.6	1.7	85	2.4	10	.2	31
JAN , 1981											
20...	--	--	--	--	--	--	94	--	--	--	--
MAR											
05...	10	38	7.4	17	.7	2.4	120	11	14	.2	24
MAY											
20...	--	--	--	--	--	--	92	--	--	--	--
AUG											
04...	0	25	6.2	15	.7	2.2	98	4.7	9.1	.2	31
SEP											
16...	0	30	6.9	12	.5	2.5	110	8.7	11	<.1	24
NOV											
24...	--	--	--	--	--	--	72	--	--	--	--
FEB , 1982											
04...	5	25	6.0	13	.6	2.5	82	8.4	8.9	.2	30
MAR											
30...	--	--	--	--	--	--	97	--	--	--	--
MAY											
12...	--	--	--	--	--	--	98	--	--	--	--
JUL											
29...	--	--	--	--	--	--	110	--	--	--	--
SEP											
28...	0	25	5.5	11	.6	2.5	130	5.0	10	.5	30

E Estimated.
K = non-ideal count.

50010500 RIO GUAJATACA AT LARES, PR--Continued

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

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 , 1980											
13...	134	1.7	--	1.7	.020	1.7	.170	.60	.77	2.5	11
JAN , 1981											
20...	--	--	5	1.3	.020	1.3	.020	.32	.34	1.6	7.3
MAR											
05...	186	.25	11	.86	.050	.91	.080	.15	.23	1.1	5.0
MAY											
20...	--	--	32	1.4	.020	1.4	.040	.22	.26	1.7	7.3
AUG											
04...	153	1.4	10	1.1	.010	1.1	.050	.50	.55	1.7	7.3
SEP											
16...	161	1.9	10	--	<.010	1.1	<.010	--	.29	1.4	6.2
NOV											
24...	--	--	6	2.0	.010	2.0	.060	.27	.33	2.3	10
FEB , 1982											
04...	145	1.1	4	1.6	.020	1.6	.080	.50	.58	2.2	9.7
MAR											
30...	--	--	4	.73	.040	.77	.030	.39	.42	1.2	5.3
MAY											
12...	--	--	10	1.3	.030	1.3	.070	.37	.44	1.7	7.7
JUL											
29...	--	--	11	.99	.010	1.0	.040	--	<.10	--	--
SEP											
28...	143	2.0	1	1.4	.020	1.4	.040	.36	.40	1.8	8.0
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 , 1980											
13...	.120	--	--	--	--	--	--	--	--	90	1.1
JAN , 1981											
20...	.090	--	--	--	--	--	--	--	--	8	.01
MAR											
05...	.040	<1	100	<1	1	6	<.1	<1	<1	9	--
MAY											
20...	.090	--	--	--	--	--	--	--	--	24	.41
AUG											
04...	.070	--	--	--	--	--	--	--	--	2	.02
SEP											
16...	.060	--	100	1	20	5	.3	<1	<1	5	.06
NOV											
24...	.080	--	--	--	--	--	--	--	--	10	.36
FEB , 1982											
04...	.130	1	100	<1	13	5	.1	<1	<1	1	.01
MAR											
30...	.090	--	--	--	--	--	--	--	--	--	--
MAY											
12...	.100	--	--	--	--	--	--	--	--	--	--
JUL											
29...	.110	--	--	--	--	--	--	--	--	--	--
SEP											
28...	.080	1	<100	1	<1	3	.2	<1	<1	--	--

RIO GUAJATACA BASIN

50011000 CANAL PRINCIPAL DE DIVERSIONES AT LAGO 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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHCS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 , 1980												
21...	1030	55	275	7.2	26.5	.10	6.2	--	11	K3	K1	130
JAN , 1981												
23...	1125	E35	262	7.6	25.5	.80	8.0	--	11	K4	<1	--
MAR												
06...	1000	70	270	7.6	26.0	.60	8.4	--	17	K6	31	140
MAY												
21...	1515	50	302	7.8	25.5	1.0	2.5	31	11	48	K4	--
AUG												
05...	1115	E50	300	7.2	27.0	1.0	8.0	100	<10	50	38	140
SEP												
16...	1330	50	286	7.3	27.0	1.0	6.2	80	<10	20	K14	130
NOV												
11...	1115	50	268	7.3	24.5	3.0	3.6	45	21	K88	25	--
FEB , 1982												
03...	1330	35	286	7.5	24.0	1.8	8.4	100	14	K2	K2	130
MAR												
30...	1450	50	278	8.5	26.0	2.6	6.7	86	10	K2	K105	--
MAY												
14...	1025	50	275	8.0	26.0	2.5	5.6	72	--	K160	K15	120
JUL												
23...	0845	--	334	7.3	26.0	<1.0	2.0	--	10	0	K17	--

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- 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 , 1980											
21...	2	47	3.0	4.4	.2	1.6	128	7.8	6.1	.1	6.3
JAN , 1981											
23...	--	--	--	--	--	--	122	--	--	--	--
MAR											
06...	21	52	3.5	5.4	.2	1.5	119	6.6	8.2	.1	6.7
MAY											
21...	--	--	--	--	--	--	134	--	--	--	--
AUG											
05...	5	49	3.6	6.9	.3	1.6	135	8.5	7.5	.1	7.0
SEP											
16...	0	44	3.9	8.2	.3	1.4	130	8.3	8.2	.1	6.7
NOV											
11...	--	--	--	--	--	--	126	--	--	--	--
FEB , 1982											
03...	0	48	3.2	4.9	.2	1.6	131	7.9	6.3	.1	6.1
MAR											
30...	--	--	--	--	--	--	140	--	--	--	--
MAY											
14...	2	43	3.6	5.3	.2	1.6	120	9.0	8.0	<.1	6.0
JUL											
23...	--	--	--	--	--	--	153	--	--	--	--

E Estimated.

K = non-ideal count.

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

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 21... 1980	153	22.7	5	.22	.000	.22	.030	.00	.03	.25	1.1
JAN 23... 1981	--	--	6	.01	<.010	.02	.040	.28	.32	.34	1.5
MAR 06... 1981	155	29.3	6	.01	<.010	.01	.080	.18	.26	.27	1.2
MAY 21... 1981	--	--	9	.11	.020	.13	.110	.01	.12	.25	1.1
AUG 05... 1981	165	22.3	10	.05	<.010	.06	.040	.29	.33	.39	1.7
SEP 16... 1981	159	21.5	10	--	<.010	.02	.160	.50	.66	.68	3.0
NOV 11... 1981	--	--	23	--	<.010	.45	<.010	--	.27	.72	3.2
FEB 03... 1982	156	14.7	4	.03	.020	.05	.110	.33	.44	.49	2.2
MAR 30... 1982	--	--	4	--	<.010	<.01	.040	.15	.19	--	--
MAY 14... 1982	149	20.1	7	--	<.010	<.10	.130	.26	.39	--	--
JUL 23... 1982	--	--	4	--	<.010	<.10	.040	.86	.90	--	--

[illegible]

RIO GUAJATACA BASIN

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 Guajataka, and 1.6 mi (2.6 km) west of Quebradillas.

DRAINAGE AREA.--Indeterminate.

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

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

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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-EF (COLS./ 100 ML)	STREP- TOCOCCI KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)
NOV , 1980												
21...	0910	20	430	7.2	25.0	.10	6.8	--	5	140	520	180
JAN , 1981												
23...	0930	6.6	389	7.5	23.0	1.0	7.8	--	12	70	82	--
MAR												
06...	0755	17	398	7.4	24.0	.50	5.7	--	<10	33	65	200
MAY												
21...	1315	E420	309	8.4	26.0	4.1	8.5	104	12	240	300	--
AUG												
05...	0915	19	405	7.5	25.0	.40	6.6	79	<10	<10	<10	180
SEP												
16...	1525	22	396	8.0	26.5	.60	10.4	127	<10	K80	K110	160
NOV												
11...	0900	E300	283	8.1	24.5	15	8.0	98	14	K180	270	--
FEB , 1982												
03...	1135	27	393	7.5	23.5	1.5	8.2	95	<10	98	120	180
MAR												
31...	0745	15	473	7.5	24.0	.60	6.8	81	17	K30	480	--
MAY												
14...	0815	62	400	7.8	24.0	6.9	7.8	93	11	K1100	K1100	180
JUL												
29...	1010	15	480	7.5	25.0	--	6.0	72	--	K60	290	--

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- 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 SI02)
NOV , 1980											
21...	8	61	5.5	10	.3	1.2	172	7.9	18	.1	5.8
JAN , 1981											
23...	--	--	--	--	--	--	182	--	--	--	--
MAR											
06...	30	72	6.0	12	.4	1.1	170	6.1	20	<.1	6.3
MAY											
21...	--	--	--	--	--	--	143	--	--	--	--
AUG											
05...	7	61	5.9	13	.4	1.1	173	7.4	17	<.1	6.3
SEP											
16...	5	62	1.7	11	.4	1.2	155	7.3	22	<.1	6.2
NOV											
11...	--	--	--	--	--	--	135	--	--	--	--
FEB , 1982											
03...	16	62	5.9	12	.4	1.1	164	8.8	17	.1	6.0
MAR											
31...	--	--	--	--	--	--	190	--	--	--	--
MAY											
14...	10	65	4.2	7.6	.3	1.6	170	14	13	<.1	6.4
JUL											
29...	--	--	--	--	--	--	200	--	--	--	--

E Estimated.

K = non-ideal count.

50011400 RIO GUAJATACA ABOVE MOUTH NEAR QUEBRADILLAS, PR--Continued

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

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 , 1980											
21...	213	11.5	2	1.2	.010	1.2	.030	.27	.30	1.5	6.6
JAN , 1981											
23...	--	--	16	1.2	<.010	1.2	<.010	.14	.15	1.4	6.0
MAR											
06...	225	10.3	6	1.2	<.010	1.2	.020	.09	.11	1.3	5.8
MAY											
21...	--	--	20	.31	.010	.32	.050	.29	.34	.66	2.9
AUG											
05...	216	11.1	12	--	<.010	.98	.050	.22	.27	1.3	5.5
SEP											
16...	214	12.7	8	--	<.010	1.1	.010	.24	.25	1.4	6.0
NOV											
11...	--	--	44	--	<.010	.51	<.010	--	.28	.79	3.5
FEB , 1982											
03...	215	15.8	4	1.2	.010	1.2	.010	.13	.14	1.3	5.9
MAR											
31...	--	--	6	1.6	.010	1.6	.040	.26	.30	1.9	8.4
MAY											
14...	214	35.9	15	.96	.010	.97	.050	.28	.33	1.3	5.8
JUL											
29...	--	--	2	1.6	.010	1.6	.050	.15	.20	1.8	8.0

DATE	PHOS- PHORUS, TOTAL (HG/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 (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 , 1980											
21...	.020	--	--	--	--	--	--	--	--	20	1.1
JAN , 1981											
23...	<.010	--	--	--	--	--	--	--	--	14	.25
MAR											
06...	<.010	<1	<50	<1	3	5	3.2	<1	<1	1	.05
MAY											
21...	.030	--	--	--	--	--	--	--	--	21	24
AUG											
05...	<.010	--	--	--	--	--	--	--	--	7	.36
SEP											
16...	<.010	--	100	1	10	4	.2	<1	<1	6	.36
NOV											
11...	.020	--	--	--	--	--	--	--	--	18	--
FEB , 1982											
03...	.010	1	100	<1	12	2	<.1	<1	<1	3	.22
MAR											
31...	<.010	--	--	--	--	--	--	--	--	--	--
MAY											
14...	.020	--	--	--	--	--	--	--	--	--	--
JUL											
29...	<.010	--	--	--	--	--	--	--	--	--	--

PESTICIDE ANALYSES, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982

		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)
DATE	TIME							
AUG , 1981								
05...	0915	<.10	<.01	<.10	<.01	<.01	<.01	<.01
JUL , 1982								
29...	1010	<.10	<.01	<.10	<.01	<.01	<.01	.05

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)
AUG , 1981									
05...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
JUL , 1982									
29...	<.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)
AUG , 1981								
05...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01
JUL , 1982								
29...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01

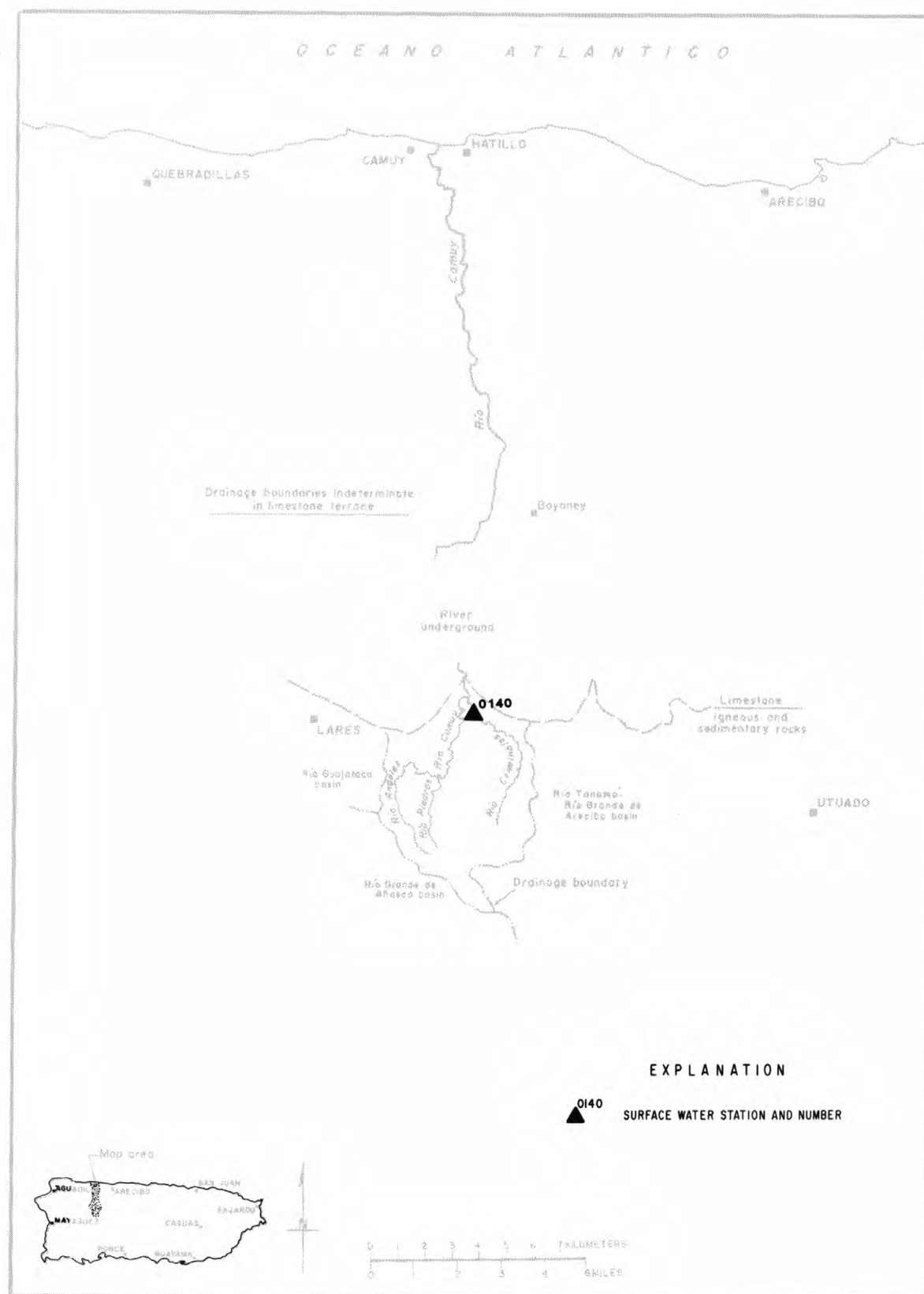


Figure 11.--Río Camuy basin.

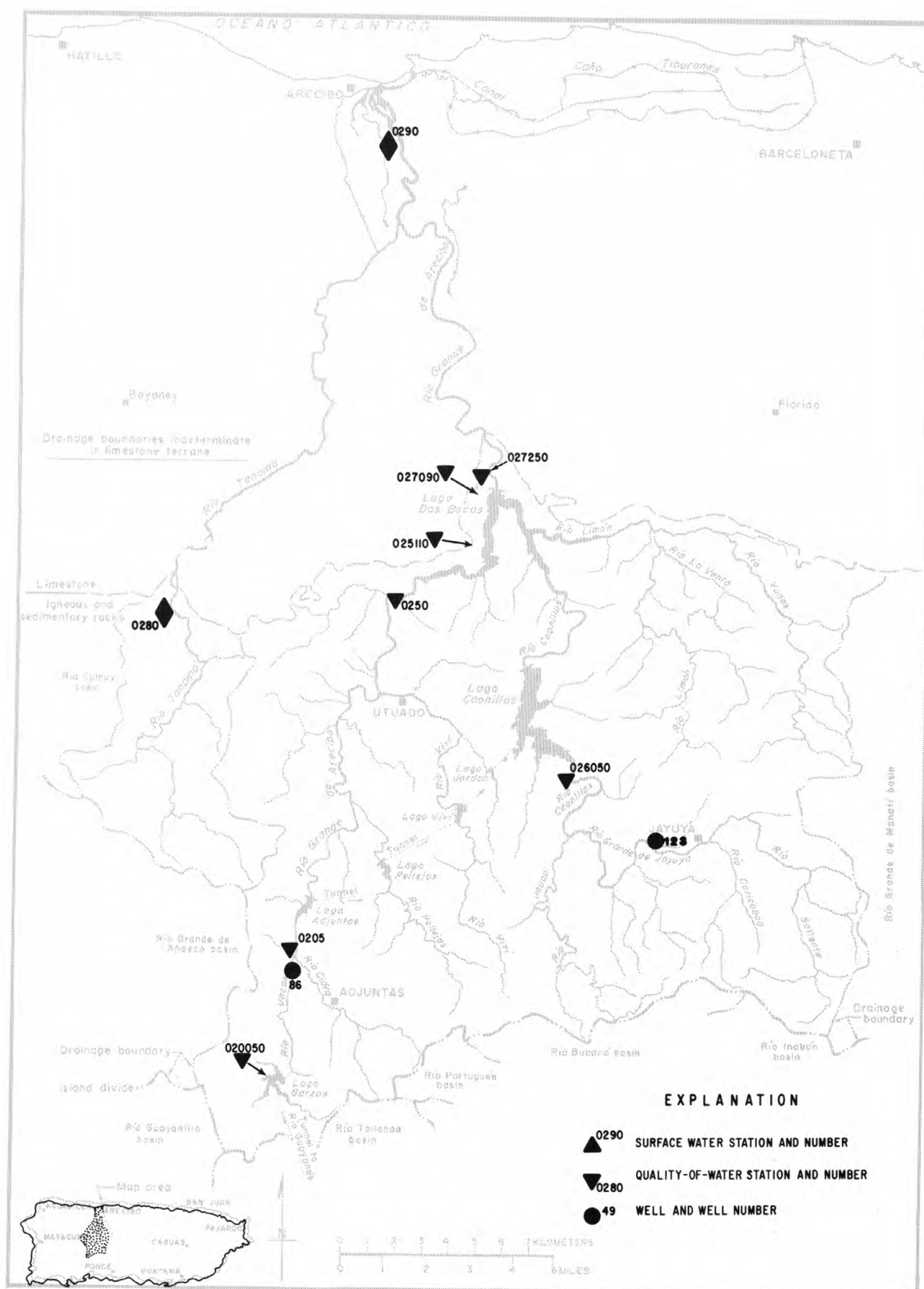


Figure 12.--Río Grande de Arecibo basin.

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 , 1980												
25...	1345	21	402	7.6	26.0	.30	7.2	--	23	2400	780	100
JAN , 1981												
23...	0825	15	305	7.6	17.5	.50	7.8	--	<10	430	K130	--
MAR												
04...	0820	9.8	306	7.4	20.0	1.7	8.2	--	13	4600	3900	120
MAY												
19...	0815	34	292	7.4	21.0	4.9	8.2	94	18	34000	5100	--
AUG												
12...	1335	25	340	7.6	26.5	12	7.4	98	<10	28000	2100	99
SEP												
15...	0725	36	259	7.9	21.0	4.4	8.1	96	27	4500	2600	85
NOV												
17...	1000	30	242	7.8	21.0	2.5	8.4	102	<10	K19000	K1600	--
JAN , 1982												
29...	0910	30	--	7.5	17.5	3.5	8.6	93	22	K15000	K1200	87
MAR												
17...	1330	13	330	8.0	25.0	3.4	7.4	96	18	3900	K1400	--
MAY												
19...	1330	16	378	8.3	27.0	2.0	8.4	112	<10	K1500	2200	110
JUL												
14...	1340	9.7	350	8.1	29.0	7.5	7.9	110	--	3700	3500	--
SEP												
24...	0900	30	329	7.7	23.0	1.5	8.2	101	14	K12000	8000	97

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 SiO2)
NOV , 1980											
25...	0	27	8.0	34	1.5	3.1	102	7.2	61	.1	34
JAN , 1981											
23...	--	--	--	--	--	--	108	--	--	--	--
MAR											
04...	10	33	9.9	18	.7	1.7	110	6.8	25	<.1	33
MAY											
19...	--	--	--	--	--	--	71	--	--	--	--
AUG											
12...	3	25	8.8	33	1.4	2.3	96	6.8	39	<.1	32
SEP											
15...	0	22	7.4	13	.6	1.6	96	7.0	13	<.1	25
NOV											
17...	--	--	--	--	--	--	98	--	--	--	--
JAN , 1982											
29...	5	22	7.8	28	1.4	2.0	82	8.5	43	.1	24
MAR											
17...	--	--	--	--	--	--	110	--	--	--	--
MAY											
19...	6	27	9.4	29	1.3	2.0	100	9.0	50	<.1	28
JUL											
14...	--	--	--	--	--	--	110	--	--	--	--
SEP											
24...	0	25	8.4	27	1.3	2.0	97	8.0	35	.1	29

K = non-ideal count.

RIO GRANDE DE ARECIBO BASIN

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50020500 RIO GRANDE DE ARECIBO NEAR ADJUNTAS, PR

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

DATE	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SCLIDS, 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 , 1980											
25...	235	13.6	6	1.0	.100	1.1	.110	.46	.57	1.7	7.4
JAN , 1981											
23...	--	--	10	.96	.140	1.1	.110	.22	.33	1.4	6.3
MAR											
04...	193	5.1	6	1.1	.110	1.2	.050	.13	.18	1.4	6.1
MAY											
19...	--	--	18	1.3	.030	1.3	.130	.01	.14	1.4	6.4
AUG											
12...	205	13.8	28	1.0	.080	1.1	.240	.43	.67	1.8	7.8
SEP											
15...	147	14.3	20	1.2	.020	1.2	.090	.25	.34	1.5	6.8
NOV											
17...	--	--	60	1.2	.060	1.3	.150	.22	.37	1.7	7.4
JAN , 1982											
29...	184	15.1	1	1.1	.030	1.1	.130	.35	.48	1.6	7.0
MAR											
17...	--	--	9	1.2	.090	1.3	.300	.30	.60	1.9	8.4
MAY											
19...	216	9.2	6	.70	.100	.80	.160	.29	.45	1.3	5.5
JUL											
14...	--	--	8	.78	.220	1.0	.410	.19	.60	1.6	7.1
SEP											
24...	183	14.9	4	.96	.040	1.0	.070	.13	.20	1.2	5.3

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 , 1980											
25...	.220	--	--	--	--	--	--	--	--	7	.40
JAN , 1981											
23...	.140	--	--	--	--	--	--	--	--	1	.04
MAR											
04...	.160	<1	100	<1	9	4	<.1	<1	<1	6	.16
MAY											
19...	.100	--	--	--	--	--	--	--	--	12	1.1
AUG											
12...	.200	--	--	--	--	--	--	--	--	26	1.8
SEP											
15...	.090	--	100	2	20	2	.6	<1	<1	11	1.1
NOV											
17...	.130	--	--	--	--	--	--	--	--	6	.49
JAN , 1982											
29...	.110	1	<100	<1	4	7	.1	<1	<1	18	1.5
MAR											
17...	.200	--	--	--	--	--	--	--	--	--	--
MAY											
19...	.260	--	--	--	--	--	--	--	--	--	--
JUL											
14...	.250	--	--	--	--	--	--	--	--	--	--
SEP											
24...	.110	1	<100	<1	<1	3	.1	<1	<1	--	--

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 foot 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.

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 , 1980												
17...	1450	61	237	7.9	32.0	--	7.8	--	55	20000	4800	87
JAN , 1981												
27...	1325	41	252	8.2	28.0	.80	8.8	--	13	2400	200	--
MAR												
03...	1630	33	248	8.2	30.0	.50	9.2	--	<10	K1500	240	110
MAY												
18...	1345	46	268	8.2	28.5	12	8.0	103	<10	K8900	K1200	--
JUL												
28...	1555	105	250	--	31.0	46	7.2	99	<10	K15000	2600	90
SEP												
14...	1455	65	246	8.1	30.0	9.0	7.0	95	12	K13000	K5	91
NOV												
18...	1030	189	246	8.0	23.0	30	8.4	99	26	40000	3400	--
JAN , 1982												
28...	1325	155	172	7.5	26.0	230	7.8	96	--	50000	9900	64
MAR												
18...	0925	37	--	7.9	20.0	140	8.7	97	16	30000	7500	--
MAY												
20...	1210	46	265	8.0	30.0	52	5.8	78	17	22000	2200	93
JUL												
15...	0955	37	256	7.8	24.0	35	8.4	100	--	25000	K12000	--
SEP												
27...	1320	78	258	8.2	28.0	5.4	8.4	109	33	K18000	1100	94

DATE	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SCDIUM, 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 SiO2)
NOV , 1980											
17...	2	22	7.7	16	.7	2.3	85	18	14	.2	32
JAN , 1981											
27...	--	--	--	--	--	--	86	--	--	--	--
MAR											
03...	27	30	7.6	16	.7	2.1	83	21	14	.1	31
MAY											
18...	--	--	--	--	--	--	89	--	--	--	--
JUL											
28...	7	24	7.2	14	.6	2.3	83	19	12	.1	28
SEP											
14...	8	25	7.0	12	.5	2.2	83	19	9.5	.1	25
NOV											
18...	--	--	--	--	--	--	82	--	--	--	--
JAN , 1982											
28...	16	17	5.2	9.6	.6	2.6	48	18	11	.1	18
MAR											
18...	--	--	--	--	--	--	89	--	--	--	--
MAY											
20...	8	25	7.4	12	.6	2.1	85	21	11	.1	27
JUL											
15...	--	--	--	--	--	--	85	--	--	--	--
SEP											
27...	14	25	7.6	14	.7	2.4	80	22	12	.1	28

K = non-ideal count.

50025000 RIO GRANDE DE ARECIBO NEAR UTUADO, PR--Continued

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

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TCNS PER DAY)	SLIDS, 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 , 1980											
17...	163	26.8	--	1.4	.070	1.5	.000	.46	.46	2.0	8.7
JAN , 1981											
27...	--	--	18	1.2	.150	1.3	.120	.36	.48	1.8	7.9
MAR											
03...	172	15.3	9	1.1	.140	1.2	.020	.12	.14	1.3	5.9
MAY											
18...	--	--	28	1.1	.070	1.2	.100	.42	.52	1.7	7.6
JUL											
28...	156	44.2	76	1.2	.030	1.2	.060	.44	.50	1.7	7.5
SEP											
14...	150	26.3	26	1.3	.080	1.4	.100	.21	.31	1.7	7.6
NOV											
18...	--	--	69	1.3	.020	1.3	.090	.09	.18	1.5	6.6
JAN , 1982											
28...	110	46.0	356	1.7	.080	1.8	.110	.66	.77	2.6	11
MAR											
18...	--	--	180	1.4	.050	1.4	.100	.18	.28	1.7	7.4
MAY											
20...	159	19.7	196	1.3	.070	1.4	.080	.28	.36	1.8	7.8
JUL											
15...	--	--	48	.93	.030	.96	.030	1.1	1.10	2.1	9.1
SEP											
27...	159	33.6	16	.75	.050	.80	.060	.64	.70	1.5	6.6

DATE	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)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAT)
NOV , 1980											
17...	.270	--	--	--	--	--	--	--	--	132	22
JAN , 1981											
27...	.220	--	--	--	--	--	--	--	--	24	2.7
MAR											
03...	.170	<1	100	<1	1	5	<.1	<1	<1	4	.36
MAY											
18...	.180	--	--	--	--	--	--	--	--	17	2.1
JUL											
28...	.170	--	--	--	--	--	--	--	--	105	30
SEP											
14...	.140	--	100	--	20	--	.6	<1	--	184	32
NOV											
18...	.150	--	--	--	--	--	--	--	--	134	68
JAN , 1982											
28...	.160	1	200	<1	5	18	.1	<1	<1	630	264
MAR											
18...	.180	--	--	--	--	--	--	--	--	--	--
MAY											
20...	.190	--	--	--	--	--	--	--	--	--	--
JUL											
15...	.150	--	--	--	--	--	--	--	--	71	7.1
SEP											
27...	.130	1	100	1	<1	3	.1	<1	<1	23	4.9

PESTICIDE ANALYSES, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982

		PCB, TOTAL (UG/L)	ALERIN, TCTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)	
DATE	TIME								
JUL , 1981									
28...	1555	<.10	<.01	<.10	<.01	<.01	<.01	.01	
JUL , 1982									
15...	0955	<.10	<.01	<.10	<.01	<.01	<.01	.04	
DATE	DI- ELDRIN TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TCTAL (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)
JUL , 1981									
28...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
JUL , 1982									
15...	<.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)	FARA- 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)	
JUL , 1981									
28...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01	
JUL , 1982									
15...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01	

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.

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

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

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

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 UB-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CaCO3)
NOV , 1980												
25...	1040	42	200	8.3	26.0	.50	9.6	--	8	K5000	200	78
JAN , 1981												
28...	0910	38	195	8.0	22.0	2.0	9.3	--	<10	5400	390	--
MAR												
04...	1200	35	216	7.9	26.0	12	8.0	--	<10	K900	K140	74
MAY												
19...	1135	150	145	8.3	22.5	16	8.6	100	<10	3100	2800	--
AUG												
13...	1100	162	135	7.2	24.5	17	8.1	100	25	4600	2400	46
SEP												
15...	1045	100	179	8.2	23.5	3.6	8.4	102	20	290	390	62
NOV												
17...	1455	108	184	8.0	25.0	2.5	7.8	99	20	450	K20	--
JAN , 1982												
29...	1300	41	199	8.3	22.0	16	9.4	109	19	2500	K120	69
MAR												
17...	0935	25	265	8.3	21.0	5.5	9.0	106	<10	K100	K100	--
MAY												
19...	0945	85	162	7.8	23.0	3.5	8.4	101	<10	K1900	930	63
JUL												
14...	0940	26	215	8.1	25.0	1.7	8.2	104	--	200	240	--
SEP												
24...	1230	70	190	8.4	27.0	5.5	8.2	108	56	500	K20	65

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 , 1980											
25...	3	21	6.2	9.7	.5	1.8	75	15	12	.1	19
JAN , 1981											
28...	--	--	--	--	--	--	69	--	--	--	--
MAR											
04...	4	20	5.8	12	.6	1.3	70	15	13	<.1	23
MAY											
19...	--	--	--	--	--	--	43	--	--	--	--
AUG											
13...	0	12	3.8	6.5	.4	1.2	52	5.7	6.9	<.1	19
SEP											
15...	1	16	5.4	8.7	.5	1.2	61	12	8.4	<.1	21
NOV											
17...	--	--	--	--	--	--	66	--	--	--	--
JAN , 1982											
29...	2	18	5.9	9.4	.5	1.5	67	15	10	.1	18
MAR											
17...	--	--	--	--	--	--	85	--	--	--	--
MAY											
19...	6	16	5.6	8.7	.5	1.2	57	13	9.1	<.1	22
JUL											
14...	--	--	--	--	--	--	72	--	--	--	--
SEP											
24...	0	17	5.5	11	.6	1.4	66	12	9.1	.1	24

K = non-ideal count.

RIO GRANDE DE ARECIBO BASIN

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50026050 RIO CAONILLAS ABOVE LAGO CAONILLAS NEAR JAYUYA, PR--Continued

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

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 , 1980											
25...	130	14.7	13	.45	.010	.46	.020	.27	.29	.75	3.3
JAN , 1981											
28...	--	--	2	.40	<.010	.41	<.010	.11	.12	.53	2.3
MAR											
04...	132	12.5	44	.46	.020	.48	.040	.25	.29	.77	3.4
MAY											
19...	--	--	40	.01	.000	.01	7.30	12	19.0	19	84
AUG											
13...	87	38.1	51	--	<.010	.39	.020	.20	.22	.61	2.7
SEP											
15...	109	29.4	14	--	<.010	.74	.030	.18	.21	.95	4.2
NOV											
17...	--	--	59	--	<.010	.90	.010	--	<.10	--	--
JAN , 1982											
29...	119	13.2	2	.68	.010	.69	.020	.30	.32	1.0	4.5
MAR											
17...	--	--	9	.21	.010	.22	.040	.22	.26	.48	2.1
MAY											
19...	112	25.7	14	.79	.010	.80	.020	.26	.28	1.1	4.8
JUL											
14...	--	--	2	--	<.010	.16	.020	.48	.50	.66	2.9
SEP											
24...	110	20.8	8	.29	.010	.30	.030	.17	.20	.50	2.2

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 , 1980											
25...	.100	--	--	--	--	--	--	--	--	14	1.6
JAN , 1981											
28...	.050	--	--	--	--	--	--	--	--	10	1.0
MAR											
04...	.090	<1	100	<1	11	8	1.0	<1	<1	48	4.5
MAY											
19...	4.10	--	--	--	--	--	--	--	--	63	26
AUG											
13...	.090	--	--	--	--	--	--	--	--	65	28
SEP											
15...	.050	--	100	1	10	3	.2	<1	<1	8	2.2
NOV											
17...	.050	--	--	--	--	--	--	--	--	9	2.6
JAN , 1982											
29...	.090	1	100	<1	5	3	<.1	<1	1	12	1.3
MAR											
17...	.060	--	--	--	--	--	--	--	--	--	--
MAY											
19...	.170	--	--	--	--	--	--	--	--	--	--
JUL											
14...	.050	--	--	--	--	--	--	--	--	--	--
SEP											
24...	.060	1	<100	<1	<1	2	<.1	<1	<1	--	--

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) north of 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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 , 1980												
17...	1225	E400	182	7.1	26.0	--	4.4	--	4	42	K28	61
JAN , 1981												
27...	1130	E400	194	7.1	25.0	.50	2.6	--	46	K20	<10	--
MAR												
03...	1300	E500	209	7.0	25.0	2.8	4.6	--	11	K36	50	80
MAY												
18...	1040	E500	189	6.9	26.0	16	4.1	50	<10	K160	K50	--
JUL												
28...	1100	79	185	7.2	27.0	30	4.9	64	<10	340	190	67
SEP												
14...	1240	E300	173	7.2	27.0	20	2.6	33	11	K170	2200	58
NOV												
18...	1300	E350	150	7.0	24.0	130	7.0	84	39	340	330	--
JAN , 1982												
28...	1040	62	194	7.2	24.0	70	7.6	89	<10	K6600	2600	73
MAR												
18...	1130	38	195	7.4	20.0	1.0	7.0	78	<10	K10	K73	--
MAY												
20...	0955	35	176	7.2	27.0	34	3.2	42	<10	260	230	63
JUL												
15...	1150	150	210	7.2	27.0	5.1	4.1	52	--	K120	K330	--
SEP												
27...	1045	200	160	6.9	27.0	51	4.0	51	19	420	400	57

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- 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 SiO2)
NOV , 1980											
17...	0	15	5.8	11	.6	2.0	62	9.7	9.9	.1	23
JAN , 1981											
27...	--	--	--	--	--	--	67	--	--	--	--
MAR											
03...	14	22	6.1	10	.5	1.9	66	12	10	.1	23
MAY											
18...	--	--	--	--	--	--	63	--	--	--	--
JUL											
28...	4	18	5.4	11	.6	2.0	63	12	9.5	<.1	18
SEP											
14...	0	16	4.5	8.4	.5	1.9	61	11	9.1	<.1	15
NOV											
18...	--	--	--	--	--	--	49	--	--	--	--
JAN , 1982											
28...	6	20	5.6	8.0	.4	1.8	67	14	9.8	.1	19
MAR											
18...	--	--	--	--	--	--	74	--	--	--	--
MAY											
20...	6	17	5.0	8.7	.5	1.7	57	11	9.1	<.1	17
JUL											
15...	--	--	--	--	--	--	79	--	--	--	--
SEP											
27...	6	15	4.7	8.3	.5	2.1	51	10	8.3	<.1	17

E Estimated.

K = non-ideal count.

RIO GRANDE DE ARECIBO BASIN

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

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

DATE	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SCLIDS, RESIDUE AT 105 DEG. C, SUS- PENDEED (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 , 1980											
17...	114	18.9	--	.82	.010	.83	.000	.14	.14	.97	4.3
JAN , 1981											
27...	--	--	4	.52	<.010	.53	.080	.39	.47	1.0	4.4
MAR											
03...	125	169	10	.48	<.010	.49	.030	.07	.10	.59	2.6
MAY											
18...	--	--	19	.49	.010	.50	.060	.06	.12	.62	2.7
JUL											
28...	114	24.3	24	.48	.010	.49	.020	.47	.49	.98	4.3
SEP											
14...	102	82.6	12	.42	.010	.43	.060	.27	.33	.76	3.4
NOV											
18...	--	--	6	1.1	.040	1.1	.060	.09	.15	1.3	5.5
JAN , 1982											
28...	120	20.2	41	.75	.040	.79	.060	.49	.55	1.3	5.9
MAR											
18...	--	--	4	--	<.010	.28	.050	.36	.41	.69	3.1
MAY											
20...	107	10.1	19	.61	.090	.70	.040	.28	.32	1.0	4.5
JUL											
15...	--	--	5	--	<.010	<.10	.170	.33	.50	--	--
SEP											
27...	97	52.4	30	.47	.030	.50	.080	.42	.50	1.0	4.4

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- PENDEED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDEED (T/DAY)
NOV , 1980											
17...	.040	--	--	--	--	--	--	--	--	15	2.5
JAN , 1981											
27...	.050	--	--	--	--	--	--	--	--	2	2.2
MAR											
03...	.020	<1	100	<1	3	17	<.1	<1	<1	14	--
MAY											
18...	.050	--	--	--	--	--	--	--	--	16	18
JUL											
28...	.050	--	--	--	--	--	--	--	--	44	9.4
SEP											
14...	.050	--	100	1	10	3	.6	<1	<1	21	17
NOV											
18...	.130	--	--	--	--	--	--	--	--	126	119
JAN , 1982											
28...	.070	1	100	<1	4	6	.2	<1	<1	107	18
MAR											
18...	.030	--	--	--	--	--	--	--	--	--	--
MAY											
20...	.050	--	--	--	--	--	--	--	--	--	--
JUL											
15...	.030	--	--	--	--	--	--	--	--	--	--
SEP											
27...	.070	1	<100	1	2	5	.4	<1	<1	--	--

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 DISCHARGES.--21 years (1961-81), 49.5 cu ft/s (1.402 cu m/s), 36.53 in/yr (928 mm/yr), 35,860 acre-ft/yr (44.2 cu hm/yr); median of yearly mean discharges, 48 cu ft/s (1.36 cu m/s), 34,800 acre-ft/yr (43 cu hm/yr).
--22 years (1961-82), 49.2 cu ft/s (1.393 cu m/s), 36.31 in/yr (922 mm/yr), 35,650 acre-ft/yr (44.0 cu hm/yr); median of yearly mean discharges, 48 cu ft/s (1.36 cu m/s), 34,800 acre-ft/yr (43 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 WATER YEARS 1981-82.--Peak discharges above base of 3,000 cu ft/s (85.0 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. 22, 1980	1700	4,060 115	13.04 3.974	Nov. 9, 1981	1045	4,500 127	13.56 4.133
July 8, 1981	1630	*4,490 127	13.54 4.127	Dec. 13, 1981	Unknown	*4,910 139	14.00 4.267
Aug. 14, 1981	1715	3,070 86.9	11.77 3.587	Sept. 13, 1982	Unknown	4,840 137	13.93 4.246
Sept. 29, 1981	1615	4,420 125	13.47 4.106				

Minimum discharges, 18 cu ft/s (0.510 cu m/s) Mar. 20-21, 1981; 13 cu ft/s (0.368 cu m/s) May 3, 1982.

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	93	48	29	55	24	20	23	29	88	45	37	45
2	128	47	31	46	27	21	21	26	66	40	34	100
3	91	48	32	31	23	20	58	41	48	37	33	57
4	74	50	28	29	22	20	36	32	40	38	34	44
5	72	46	67	28	22	21	35	52	38	36	38	41
6	87	43	52	33	21	20	37	35	36	34	121	89
7	66	43	100	34	21	21	43	28	32	34	55	97
8	59	40	47	35	21	21	51	26	30	267	94	58
9	55	39	35	38	30	21	62	24	30	87	81	94
10	52	39	32	30	22	21	63	26	30	67	70	52
11	50	38	31	86	20	21	37	33	64	78	58	45
12	48	37	30	47	20	21	30	28	123	69	57	43
13	47	37	29	38	20	20	28	23	58	80	59	43
14	45	35	46	33	53	20	26	21	39	69	305	41
15	83	35	33	31	93	26	25	20	33	49	90	54
16	99	34	29	38	59	21	27	22	70	74	86	49
17	59	34	28	34	35	20	33	23	41	63	70	76
18	49	36	28	33	28	20	36	51	36	49	72	50
19	45	39	27	40	24	20	27	34	39	112	57	58
20	45	36	28	31	23	19	24	25	35	126	50	48
21	76	33	27	29	42	18	23	22	61	71	54	40
22	217	34	27	29	35	19	23	28	57	51	50	38
23	96	36	31	28	24	19	24	78	61	46	52	44
24	161	31	82	27	23	19	23	39	37	55	47	95
25	85	32	53	27	21	37	23	93	42	53	44	49
26	66	31	31	25	21	24	23	75	33	70	42	43
27	62	31	31	24	20	20	25	45	173	57	41	42
28	57	30	27	25	20	57	23	33	116	45	43	62
29	53	29	26	24	---	96	23	41	61	39	42	312
30	52	29	33	25	---	34	21	124	48	52	40	146
31	51	---	29	31	---	25	---	95	---	44	51	---
TOTAL	2323	1120	1159	1064	814	782	953	1272	1665	2037	2007	2055
MEAN	74.9	37.3	37.4	34.3	29.1	25.2	31.8	41.0	55.5	65.7	64.7	68.5
MAX	217	50	100	86	93	96	63	124	173	267	305	312
MIN	45	29	26	24	20	18	21	20	30	34	33	38
CFSM	4.07	2.03	2.03	1.86	1.58	1.37	1.73	2.23	3.02	3.57	3.52	3.72
IN	4.70	2.26	2.34	2.15	1.65	1.58	1.93	2.57	3.37	4.12	4.06	4.15
AC-FT	4610	2220	2300	2110	1610	1550	1890	2520	3300	4040	3980	4080

CAL YR 1980 TOTAL 18426 MEAN 50.3 MAX 787 MIN 17 CFSM 2.73 IN 37.25 AC-FT 36550
WTR YR 1981 TOTAL 17251 MEAN 47.3 MAX 312 MIN 18 CFSM 2.57 IN 34.88 AC-FT 34220

RIO GRANDE DE ARECIBO BASIN

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50028000 RIO TANAMA NEAR UTUADO, PR--Continued

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	74	48	51	38	27	22	16	17	21	15	18	62
2	59	49	50	37	32	21	16	17	20	15	20	43
3	49	105	49	36	37	23	16	15	20	15	17	31
4	56	48	48	37	28	21	37	42	20	18	56	29
5	85	158	46	38	51	20	41	44	19	19	40	26
6	56	65	46	38	33	20	19	95	18	19	22	59
7	41	59	45	38	27	19	17	34	18	18	27	41
8	38	270	45	36	27	18	18	24	17	16	48	32
9	39	728	44	36	27	18	16	36	16	45	38	35
10	48	146	42	35	25	18	27	27	16	25	80	33
11	116	115	300	35	25	18	20	46	16	17	49	43
12	83	113	100	34	25	18	16	56	15	16	38	40
13	46	103	300	34	24	18	15	149	15	17	39	431
14	37	93	150	33	23	18	15	135	16	35	33	73
15	35	86	82	33	22	18	41	77	17	19	27	51
16	46	79	60	32	23	18	35	43	17	22	27	42
17	73	74	53	32	23	18	27	35	17	20	25	60
18	47	71	50	31	22	17	20	31	18	30	28	76
19	39	107	47	31	21	17	19	27	20	28	24	62
20	84	67	45	30	21	17	17	44	22	65	23	54
21	48	63	46	30	21	16	16	31	21	28	22	44
22	59	60	46	30	22	16	15	32	20	25	34	39
23	81	74	44	30	24	16	15	28	19	24	26	35
24	77	58	42	29	23	16	17	34	19	22	36	33
25	199	59	42	28	21	15	14	27	20	25	41	30
26	98	96	41	29	21	16	15	24	20	32	31	28
27	73	90	40	70	22	15	15	23	18	21	25	28
28	59	57	40	44	22	15	15	26	16	18	41	27
29	78	55	39	29	---	15	16	25	17	17	53	37
30	74	52	39	28	---	19	16	22	16	18	32	32
31	51	---	39	27	---	20	---	21	---	16	27	---
TOTAL	2048	3248	2111	1068	719	556	602	1287	544	720	1047	1656
MEAN	66.1	108	68.1	34.5	25.7	17.9	20.1	41.5	18.1	23.2	33.8	55.2
MAX	199	728	300	70	51	23	41	149	22	65	80	431
MIN	35	48	39	27	21	15	14	15	15	15	17	26
CFSM	3.59	5.87	3.70	1.88	1.40	.97	1.09	2.26	.98	1.26	1.84	3.00
IN.	4.14	6.57	4.27	2.16	1.45	1.12	1.22	2.60	1.10	1.46	2.12	3.35
AC-FT	4060	6440	4190	2120	1430	1100	1190	2550	1080	1430	2080	3280
CAL YR 1981	TOTAL	20056	MEAN 54.9	MAX 728	MIN 18	CFSM 2.98	IN 40.55	AC-FT	39780			
WTR YR 1982	TOTAL	15606	MEAN 42.8	MAX 728	MIN 14	CFSM 2.33	IN 31.55	AC-FT	30950			

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SUSPENDED SEDIMENT DISCHARGE: January 1968 to current year.

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, 2,150 mg/L July 8, 1981 and 3,430 mg/L November 9, 1981; minimum daily mean, 0.0 mg/L several days during 1980 and 1981.

SEDIMENT LOADS: Maximum daily, 6,360 tons (5,770 tonnes) July 8, 1981 and 12,000 tons (10,900 tonnes) November 9, 1981; minimum daily, 0.0 ton (0.0 tonne) several days during 1980 and 1981.

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

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED 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 , 1980												
18...	1225	33	155	7.7	23.5	.30	9.2	--	3	130	156	56
JAN , 1981												
14...	1400	33	150	7.6	22.0	11	8.8	--	10	K1100	157	--
MAR												
12...	1325	20	154	8.2	19.0	4.3	9.2	--	29	44	150	68
MAY												
14...	1445	22	176	8.3	26.0	10	8.4	109	--	260	250	66
JUL												
21...	1215	68	135	7.3	21.0	32	9.2	108	--	K1500	3900	--
SEP												
15...	1420	39	157	8.2	25.0	2.6	8.2	104	18	270	170	58
NOV												
25...	1205	56	163	7.8	22.5	5.0	7.8	86	<10	K1100	540	--
FEB , 1982												
04...	1340	28	158	7.8	23.0	13	8.8	105	<10	610	330	53
MAR												
18...	1450	18	170	8.3	24.0	1.5	8.1	101	<10	K50	K170	--
MAY												
24...	1255	26	173	8.3	25.0	2.6	8.3	105	<10	210	400	67
JUL												
28...	1205	18	170	8.3	26.0	--	7.4	97	49	200	K160	--
SEP												
17...	1230	39	136	7.7	25.0	--	8.1	101	30	270	K1300	58

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- 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 SiO2)
NOV , 1980											
18...	5	13	5.8	8.1	.5	1.7	51	12	7.8	.1	27
JAN , 1981											
14...	--	--	--	--	--	--	49	--	--	--	--
MAR											
12...	9	17	6.1	8.5	.5	1.5	59	13	7.8	<.1	29
MAY											
14...	7	17	5.6	9.4	.5	2.0	59	13	7.9	.1	27
JUL											
21...	--	--	--	--	--	--	38	--	--	--	--
SEP											
15...	4	14	5.7	7.3	.4	1.7	54	14	7.3	<.1	22
NOV											
25...	--	--	--	--	--	--	57	--	--	--	--
FEB , 1982											
04...	5	13	5.1	7.4	.5	1.7	48	12	7.4	.1	23
MAR											
18...	--	--	--	--	--	--	57	--	--	--	--
MAY											
24...	10	18	5.4	8.0	.5	1.5	57	14	7.8	<.1	23
JUL											
28...	--	--	--	--	--	--	59	--	--	--	--
SEP											
17...	6	15	4.9	7.1	.4	1.9	52	12	7.8	.1	24

K = non-ideal count.

50028000 RIO TANAMA NEAR UTUADO, PR--Continued

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

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 , 1980											
18...	106	9.4	2	.66	.000	.66	.000	.05	.05	.71	3.1
JAN , 1981											
14...	--	--	28	.92	<.010	.93	.030	--	--	--	--
MAR											
12...	118	6.4	8	.46	<.010	.47	.020	--	--	--	--
MAY											
14...	117	7.0	14	.51	<.010	.52	.030	.82	.85	1.4	6.1
JUL											
21...	--	--	--	1.1	.010	1.1	.030	.24	.27	1.4	6.1
SEP											
15...	105	11.1	17	--	<.010	.73	.030	.15	.18	.91	4.0
NOV											
25...	--	--	5	--	<.010	.91	.030	.25	.28	1.2	5.3
FEB , 1982											
04...	98	7.3	12	--	<.010	.96	.020	.17	.19	1.2	5.1
MAR											
18...	--	--	4	.53	.010	.54	.040	.15	.19	.73	3.2
MAY											
24...	116	8.0	3	.48	.020	.50	<.010	--	.20	.70	3.1
JUL											
28...	--	--	2	--	<.010	.56	.040	--	<.10	--	--
SEP											
17...	104	11.0	8	--	<.010	.80	.020	.68	.70	1.5	6.6

DATE	PHOS- PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TCTAL 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 , 1980											
18...	.040	--	--	--	--	--	--	--	--	3	.27
JAN , 1981											
14...	.050	--	--	--	--	--	--	--	--	30	2.7
MAR											
12...	.010	<1	100	1	7	4	.4	<1	<1	8	.43
MAY											
14...	.070	--	--	--	--	--	--	--	--	19	1.1
JUL											
21...	.040	--	--	--	--	--	--	--	--	71	13
SEP											
15...	.030	--	100	1	10	3	.2	<1	<1	14	1.5
NOV											
25...	.060	--	--	--	--	--	--	--	--	24	3.6
FEB , 1982											
04...	.040	1	100	<1	14	1	.1	<1	<1	7	.52
MAR											
18...	.050	--	--	--	--	--	--	--	--	--	--
MAY											
24...	.030	--	--	--	--	--	--	--	--	--	--
JUL											
28...	.010	--	--	--	--	--	--	--	--	--	--
SEP											
17...	<.010	1	100	1	4	4	.2	<1	<1	--	--

RIO GRANDE DE ARECIBO BASIN

50028000 RIO TANAMA NEAR UTUADO, PR--Continued

PESTICIDE ANALYSES, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982

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)
JUL , 1981								
21...	1215	<.10	<.01	<.10	<.01	<.01	<.01	<.01
JUL , 1982								
28...	1205	<.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)
JUL , 1981									
21...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
JUL , 1982									
28...	<.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)
JUL , 1981								
21...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01
JUL , 1982								
28...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01

50028000 RIO TANAMA NEAR UTUADO, PR--Continued

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

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDED (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
OCT , 1980							
02...	1730	530	5750	3	4	7	14
22...	1700	4060	10400	7	13	19	28
22...	1715	3670	7060	8	17	27	39
22...	1730	2240	7310	12	21	32	41
JUN , 1981							
12...	1705	731	7760	6	11	18	29
12...	1720	573	7780	6	13	21	31
12...	1735	447	7220	7	13	23	36
JUL							
08...	1705	3140	12000	9	16	23	32
08...	1720	1620	8940	10	18	25	35
08...	1750	778	7640	10	17	26	36
AUG							
06...	1625	1090	8270	3	5	8	13
06...	1640	1110	5250	5	9	16	29
06...	1655	1020	9960	5	8	11	18
06...	1710	793	6260	8	10	20	32
14...	1700	1560	5910	5	12	18	31
14...	1715	3070	3630	14	21	34	49
14...	1740	1970	12300	3	6	11	18

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
OCT , 1980						
02...	24	45	60	87	97	99
22...	37	67	83	96	99	100
22...	55	89	95	99	100	100
22...	55	86	95	99	100	100
JUN , 1981						
12...	43	73	91	98	100	100
12...	45	79	91	98	100	100
12...	55	88	94	99	99	100
JUL						
08...	46	79	90	97	99	100
08...	47	84	93	98	100	100
08...	49	80	89	94	95	100
AUG						
06...	22	39	59	81	90	94
06...	44	74	91	98	100	100
06...	31	59	78	94	98	99
06...	47	75	88	96	99	99
14...	47	76	90	98	99	100
14...	69	88	95	99	100	100
14...	28	61	84	96	99	100

RIO GRANDE DE ARECIBO BASIN

50028000 RIO TANAMA NEAR UTUADO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS PER DAY), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
OCTOBER			NOVEMBER			DECEMBER			
1	93	250	63	48	12	1.6	29	4	.31
2	128	627	493	47	12	1.5	31	4	.33
3	91	507	169	48	5	.65	32	2	.17
4	74	200	40	50	10	1.4	28	4	.30
5	72	187	46	46	7	.87	67	661	420
6	87	690	267	43	5	.58	52	620	131
7	66	150	27	43	12	1.4	100	724	259
8	59	40	6.4	40	9	.97	47	121	18
9	55	14	2.1	39	5	.53	35	53	5.0
10	52	11	1.5	39	14	1.5	32	44	3.8
11	50	8	1.1	38	13	1.3	31	30	2.5
12	48	7	.91	37	5	.50	30	13	1.1
13	47	10	1.3	37	4	.40	29	10	.78
14	45	8	.97	35	4	.38	46	226	48
15	83	912	432	35	6	.57	33	225	20
16	99	763	431	34	3	.28	29	50	3.9
17	59	308	60	34	3	.28	28	11	.83
18	49	121	18	36	69	7.7	28	12	.91
19	45	25	3.0	39	114	17	27	7	.51
20	45	50	6.1	36	138	13	28	35	2.6
21	76	737	395	33	15	1.3	27	20	1.5
22	217	1680	3770	34	7	.64	27	4	.29
23	96	907	297	36	8	.78	31	23	1.9
24	161	1180	1890	31	13	1.1	82	605	575
25	85	400	92	32	4	.35	53	355	86
26	66	138	26	31	16	1.3	31	15	1.3
27	62	96	18	31	5	.42	31	35	3.5
28	57	87	13	30	5	.41	27	23	1.7
29	53	20	2.9	29	3	.23	26	15	1.1
30	52	11	1.5	29	3	.23	33	66	7.5
31	51	11	1.5	---	---	---	29	40	3.1
TOTAL	2323	---	8576.28	1120	---	59.17	1159	---	1601.93
DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
JANUARY			FEBRUARY			MARCH			
1	55	924	157	24	200	13	20	11	.59
2	46	161	26	27	225	16	21	8	.45
3	31	73	6.1	23	20	1.2	20	28	1.5
4	29	23	1.8	22	7	.42	20	20	1.1
5	28	50	3.8	22	4	.24	21	12	.68
6	33	84	9.5	21	3	.17	20	6	.32
7	34	108	10	21	5	.28	21	9	.51
8	35	94	14	21	5	.28	21	8	.45
9	38	117	13	30	103	16	21	22	1.2
10	30	66	5.3	22	100	5.9	21	14	.79
11	86	653	575	20	22	1.2	21	1	.06
12	47	348	61	20	11	.59	21	4	.23
13	38	92	11	20	12	.65	20	13	.70
14	33	62	5.5	53	417	174	20	3	.16
15	31	12	1.0	93	840	391	26	28	2.0
16	38	126	26	59	328	81	21	10	.57
17	34	81	7.4	35	75	7.1	20	10	.54
18	33	55	4.9	28	75	5.7	20	4	.22
19	40	96	12	24	65	4.2	20	10	.54
20	31	29	2.4	23	40	2.5	19	3	.15
21	29	12	.94	42	250	54	18	14	.68
22	29	13	1.0	35	109	13	19	4	.21
23	28	14	1.1	24	22	1.4	19	10	.51
24	27	8	.58	23	16	.99	19	6	.31
25	27	4	.29	21	23	1.3	37	213	52
26	25	5	.34	21	14	.79	24	88	6.4
27	24	5	.32	20	14	.76	20	13	.70
28	25	2	.14	20	17	.92	57	472	247
29	24	2	.13	---	---	---	96	697	204
30	25	4	.27	---	---	---	34	175	16
31	31	173	35	---	---	---	25	35	2.4
TOTAL	1064	---	992.81	814	---	794.59	782	---	542.97

RIO GRANDE DE ARECIBO BASIN

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50028000 RIO TANAMA NEAR UTUADO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS PER DAY), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

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	23	15	.93	29	329	37	88	733	271
2	21	12	.68	26	129	11	66	194	38
3	58	404	252	41	282	68	48	40	5.2
4	36	231	31	32	149	19	40	27	2.9
5	35	186	34	52	363	91	38	28	2.9
6	37	104	15	35	118	12	36	20	1.9
7	43	299	44	28	65	4.9	32	17	1.5
8	51	116	19	26	10	.70	30	14	1.1
9	62	295	131	24	37	2.4	30	10	.81
10	63	229	49	26	75	6.9	30	10	.81
11	37	50	5.0	33	191	30	64	633	530
12	30	30	2.4	28	175	18	123	1330	1640
13	28	5	.38	23	46	2.9	58	373	77
14	26	4	.28	21	22	1.2	39	100	11
15	25	3	.20	20	17	.92	33	30	2.7
16	27	3	.22	22	46	2.7	70	758	418
17	33	3	.27	23	70	4.3	41	231	33
18	36	5	.49	51	494	177	36	94	10
19	27	3	.22	34	427	46	39	93	12
20	24	2	.13	25	125	8.4	35	65	6.1
21	23	1	.06	22	100	5.9	61	529	163
22	23	1	.06	28	154	17	57	258	61
23	24	2	.13	78	1080	514	61	453	185
24	23	3	.19	39	291	44	37	50	5.0
25	23	1	.06	93	870	729	42	168	31
26	23	2	.12	75	729	272	33	120	11
27	25	2	.14	45	225	34	173	1240	2290
28	23	0	.00	33	50	4.5	116	885	835
29	23	0	.00	41	222	58	61	140	26
30	21	0	.00	124	1370	1610	48	19	2.5
31	---	---	---	95	780	287	---	---	---
TOTAL	953	---	586.96	1272	---	4119.72	1665	---	6675.42
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	45	26	3.2	37	15	1.5	45	194	28
2	40	11	1.2	34	13	1.2	100	788	820
3	37	13	1.3	33	8	.71	57	344	73
4	38	21	2.2	34	9	.83	44	37	4.4
5	36	16	1.6	38	98	16	41	19	2.1
6	34	9	.83	121	1090	1460	89	749	501
7	34	32	2.9	55	263	49	97	699	320
8	267	2150	6360	94	821	599	58	362	67
9	87	751	216	81	517	159	94	340	109
10	67	247	64	70	368	120	52	50	7.0
11	78	328	319	58	100	16	45	11	1.3
12	69	366	115	57	175	27	43	8	.93
13	80	458	226	59	75	12	43	2	.23
14	69	400	95	305	1800	5660	41	6	.66
15	49	35	4.6	90	584	169	54	274	98
16	74	338	175	86	432	146	49	320	64
17	63	326	63	70	820	227	76	752	312
18	49	85	11	72	349	102	50	443	64
19	112	816	671	57	150	23	58	163	23
20	126	909	611	50	45	6.1	48	163	23
21	71	215	46	54	140	25	40	40	4.3
22	51	45	6.2	50	100	13	38	9	.92
23	46	10	1.2	52	223	36	44	198	42
24	55	143	33	47	50	6.3	95	1010	617
25	53	152	30	44	12	1.4	49	274	44
26	70	452	220	42	9	1.0	43	22	2.6
27	57	303	59	41	5	.55	42	7	.79
28	45	40	4.9	43	10	1.2	62	464	118
29	39	15	1.6	42	6	.68	312	1620	5550
30	52	179	44	40	10	1.1	146	1470	1490
31	44	135	16	51	198	53	---	---	---
TOTAL	2037	---	9405.73	2007	---	8934.57	2055	---	10388.23
YEAR	17251		52678.38						

RIO GRANDE DE ARECIBO BASIN

50028000 RIO TANAMA NEAR UTUADO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS PER DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

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	74	300	60	48	15	1.9	51	2	.28
2	59	50	8.0	49	119	18	50	2	.27
3	49	40	5.3	105	753	693	49	9	1.2
4	56	153	40	48	181	26	48	15	1.9
5	85	1260	884	158	1120	1400	46	8	.99
6	56	609	110	65	731	159	46	13	1.6
7	41	196	24	59	686	159	45	42	5.1
8	38	300	31	270	2190	4530	45	1	.12
9	39	129	18	728	3430	12000	44	4	.48
10	48	222	46	146	232	112	42	46	5.2
11	116	771	776	115	110	34	300	334	271
12	83	602	221	113	25	7.6	100	14	3.8
13	46	165	20	103	16	4.4	300	314	254
14	37	60	6.0	93	17	4.3	150	410	166
15	35	80	7.6	86	8	1.9	82	37	8.2
16	46	303	85	79	15	3.2	60	46	7.5
17	73	610	248	74	9	1.8	53	28	4.0
18	47	265	40	71	150	29	50	53	7.2
19	39	50	5.3	107	501	430	47	53	6.7
20	84	576	338	67	100	18	45	48	5.8
21	48	363	56	63	25	4.3	46	40	5.0
22	59	580	169	60	75	12	46	13	1.6
23	81	697	296	74	241	120	44	43	5.1
24	77	562	193	58	60	9.4	42	38	4.3
25	199	1450	2430	59	40	6.4	42	30	3.4
26	98	662	229	96	592	264	41	30	3.3
27	73	249	58	90	381	167	40	36	3.9
28	59	123	20	57	15	2.3	40	18	1.9
29	78	432	157	55	16	2.4	39	25	2.6
30	74	371	124	52	3	.42	39	17	1.8
31	51	85	12	---	---	---	39	12	1.3
TOTAL	2048	---	6717.2	3248	---	20221.32	2111	---	785.54
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	38	35	3.6	27	20	1.5	22	13	.77
2	37	24	2.4	32	72	13	21	10	.57
3	36	25	2.4	37	130	13	23	1	.06
4	37	53	5.3	28	25	1.9	21	2	.11
5	38	27	2.8	51	223	95	20	4	.22
6	38	25	2.6	33	100	8.9	20	5	.27
7	38	15	1.5	27	20	1.5	19	3	.15
8	36	43	4.2	27	18	1.3	18	3	.15
9	36	63	6.1	27	22	1.6	18	5	.24
10	35	38	3.6	25	22	1.5	18	3	.15
11	35	42	4.0	25	12	.81	18	1	.05
12	34	25	2.3	25	6	.41	18	1	.05
13	34	19	1.7	24	7	.45	18	2	.10
14	33	12	1.1	23	16	.99	18	6	.29
15	33	35	3.1	22	17	1.0	18	4	.19
16	32	30	2.6	23	11	.68	18	0	.00
17	32	22	1.9	23	7	.43	18	1	.05
18	31	33	2.8	22	11	.65	17	2	.09
19	31	33	2.8	21	1	.06	17	2	.09
20	30	18	1.5	21	10	.57	17	2	.09
21	30	30	2.4	21	12	.68	16	4	.17
22	30	13	1.1	22	19	1.1	16	1	.04
23	30	25	2.0	24	20	1.3	16	1	.04
24	29	19	1.5	23	20	1.2	16	1	.04
25	28	17	1.3	21	18	1.0	15	1	.04
26	29	17	1.3	21	12	.68	16	0	.00
27	70	368	240	22	17	1.0	15	1	.04
28	44	320	38	22	10	.59	15	1	.04
29	29	75	5.9	---	---	---	15	0	.00
30	28	17	1.3	---	---	---	19	28	1.4
31	27	18	1.3	---	---	---	20	25	1.4
TOTAL	1068	---	354.4	719	---	152.80	556	---	6.90

50028000 RIO TANAMA NEAR UTUADO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS PER DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

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	16	45	1.9	17	23	1.4	21	2	.11
2	16	20	.86	17	37	1.7	20	5	.27
3	16	25	1.1	15	18	.73	20	18	.97
4	37	216	60	42	228	75	20	12	.65
5	41	118	26	44	300	40	19	12	.62
6	19	10	.51	95	1020	731	18	12	.58
7	17	10	.46	34	100	9.2	18	29	1.4
8	18	5	.24	24	20	1.3	17	23	1.1
9	16	3	.13	36	184	51	16	20	.86
10	27	85	13	27	55	4.0	16	27	1.2
11	20	27	1.5	46	238	57	16	13	.56
12	16	9	.39	56	256	56	15	14	.57
13	15	20	.81	149	1050	1390	15	6	.24
14	15	20	.81	135	804	535	16	6	.26
15	41	277	122	77	136	43	17	2	.09
16	35	393	57	43	10	1.2	17	7	.32
17	27	125	9.1	35	40	3.8	17	9	.41
18	29	72	3.9	31	25	2.1	18	20	.97
19	19	35	1.8	27	60	4.4	20	28	1.5
20	17	39	1.4	44	230	81	22	10	.59
21	16	33	1.4	31	169	15	21	15	.85
22	15	31	1.3	32	155	26	20	15	.81
23	15	22	.89	28	30	2.3	19	13	.67
24	17	17	.78	34	141	23	19	14	.72
25	14	8	.30	27	95	6.9	20	8	.43
26	15	13	.53	24	45	2.9	20	2	.11
27	15	10	.41	23	10	.62	18	7	.34
28	15	4	.16	26	10	.70	16	3	.13
29	16	8	.35	25	23	1.6	17	4	.18
30	16	17	.73	22	13	.77	16	1	.04
31	---	---	---	21	20	1.1	---	---	---
TOTAL	602	---	309.76	1287	---	3169.72	544	---	17.55
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	15	4	.16	18	5	.24	62	418	158
2	15	4	.16	20	10	.54	43	165	19
3	15	2	.08	17	12	.55	31	110	9.2
4	18	2	.10	56	383	260	29	41	3.2
5	19	0	.00	40	324	57	26	25	1.8
6	19	6	.31	22	30	1.8	59	436	201
7	18	2	.10	27	72	7.0	41	356	58
8	16	3	.13	48	346	85	32	32	2.8
9	45	405	184	38	197	27	35	71	6.7
10	25	140	9.5	80	445	248	33	62	5.5
11	17	25	1.1	49	140	19	43	142	24
12	16	21	.91	38	71	7.3	40	214	72
13	17	12	.55	39	124	13	431	1340	7080
14	35	327	100	33	71	6.3	73	20	3.9
15	19	135	6.9	27	22	1.6	51	20	2.8
16	22	93	5.5	27	25	1.8	42	10	1.1
17	29	65	3.5	25	32	2.2	60	420	178
18	39	154	31	28	14	1.1	76	653	246
19	28	75	5.7	24	16	1.0	62	315	76
20	65	416	207	23	22	1.4	54	276	55
21	28	100	7.6	22	30	1.8	44	218	26
22	25	25	1.7	34	228	68	39	42	4.4
23	24	22	1.4	26	350	25	35	8	.76
24	22	20	1.2	36	302	66	33	8	.71
25	25	77	17	41	289	67	39	12	.97
26	32	356	44	31	210	18	28	3	.23
27	21	70	4.0	25	60	4.1	28	8	.60
28	18	90	4.4	41	229	69	27	11	.80
29	17	20	.92	53	334	65	37	112	19
30	18	5	.24	32	150	13	32	76	6.6
31	16	4	.17	27	30	2.2	---	---	---
TOTAL	729	---	639.33	1047	---	1140.93	1656	---	8264.07
YEAR	15696		41779.52						

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, 8.3 mi (13.4 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 current year.

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

REMARKS.--Records poor. Flow regulated by Lago Dos Bocas dam, 8.3 mi (13.4 km) upstream.

AVERAGE DISCHARGES.--12 years (1970-81), 502 cu ft/s (14.22 cu m/s), 363,700 acre-ft/yr (448 cu hm/yr); median of yearly mean discharges, 499 cu ft/s (14.13 cu m/s), 362,000 acre-ft/yr (446 cu hm/yr).

--13 years (1970-82), 512 cu ft/s (14.50 cu m/s), 370,900 acre-ft/yr (457 cu hm/yr); median of yearly mean discharges, 527 cu ft/s (14.92 cu m/s), 382,000 acre-ft/yr (471 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 WATER YEARS 1981-82.--Peak discharges above base of 4,350 cu ft/s (123 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. 1, 1980	0415	*8,070 228	11.49 3.502	Dec. 13, 1981	Unknown	14,000 396	Unknown
Nov. 9, 1981	1800	*15,800 447	12.85 3.917	Sept. 13, 1982	10.45	9,280 263	11.82 3.603

Minimum daily discharges, 89 cu ft/s (2.520 cu m/s) Mar. 13, 1981; 60 cu ft/s (1.699 cu m/s) Aug. 4, 1982.

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	6010	503	108	171	412	313	484	200	864	420	941	701
2	2080	547	99	451	373	490	341	500	792	532	284	371
3	1880	698	271	332	202	614	695	330	404	930	197	1780
4	1170	463	588	314	227	394	531	270	641	877	911	759
5	1280	736	371	291	214	471	445	600	704	641	1630	296
6	1230	569	703	265	203	358	584	350	408	690	1430	165
7	1340	538	765	508	167	381	944	900	208	708	1320	1010
8	1080	547	327	421	214	627	899	620	679	469	842	779
9	1130	268	205	551	466	281	844	402	514	599	1160	1100
10	1120	269	432	821	504	213	772	403	351	1140	693	674
11	1770	156	361	568	234	217	271	542	565	749	700	607
12	789	126	167	513	225	201	167	994	372	381	1210	822
13	775	127	186	606	455	89	526	877	236	486	1070	723
14	823	286	1010	677	524	243	466	631	176	383	773	869
15	980	156	395	716	540	122	195	612	249	529	735	693
16	845	124	277	311	292	336	131	312	190	565	820	595
17	1390	552	174	396	367	284	293	178	607	611	776	313
18	794	446	166	304	512	319	277	604	275	907	892	135
19	355	396	150	340	281	523	150	944	407	723	750	257
20	460	369	171	639	351	689	247	837	315	1520	736	185
21	808	419	294	504	280	467	151	470	446	1640	436	118
22	596	161	550	384	197	176	240	466	632	1390	195	203
23	914	127	449	294	284	257	190	1440	632	763	196	785
24	1050	240	198	262	338	545	270	1000	694	458	647	1000
25	1150	190	231	656	426	699	400	825	906	796	437	531
26	594	161	479	456	558	555	280	1360	707	1530	514	562
27	890	180	181	512	252	294	200	1230	1070	1050	311	172
28	299	126	228	271	316	397	300	634	1500	859	269	1100
29	402	279	295	387	---	1000	250	837	1170	306	425	2340
30	625	220	175	289	---	731	210	623	634	472	332	2140
31	740	---	155	129	---	561	---	1300	---	684	329	---
TOTAL	35369	9979	10161	13339	9414	12847	11753	21291	17348	23808	21961	21785
MEAN	1141	333	328	430	336	414	392	687	578	768	708	726
MAX	6010	736	1010	821	558	1000	944	1440	1500	1640	1630	2340
MIN	299	124	99	129	167	89	131	178	176	306	195	118
AC-FT	70150	19790	20150	26460	18670	25480	23310	42230	34410	47220	43560	43210

CAL YR 1980	TOTAL	222855	MEAN 609	MAX 7490	MIN 99	AC-FT 442000
WTR YR 1981	TOTAL	209055	MEAN 573	MAX 6010	MIN 89	AC-FT 414700

RIO GRANDE DE ARECIBO BASIN

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50029000 RIO GRANDE DE ARECIBO AT CENTRAL CAMBALACHE, PR--Continued

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	1780	1350	300	604	595	330	176	561	710	377	88	603
2	1660	1910	400	657	759	379	113	300	804	364	85	993
3	636	2120	500	447	626	328	333	547	353	159	69	262
4	421	1470	600	427	607	300	508	517	713	61	60	157
5	1370	1660	400	416	718	403	613	292	514	62	134	169
6	551	1630	700	319	329	284	312	298	489	617	308	122
7	176	1030	500	192	470	310	433	297	937	1220	325	962
8	288	1300	600	531	436	345	169	327	844	524	153	517
9	732	8420	800	238	268	156	387	113	620	280	602	768
10	351	3860	600	704	125	185	375	849	705	232	331	666
11	621	1950	800	604	235	106	221	815	566	248	1220	746
12	666	1690	1000	796	535	289	157	1260	197	147	335	360
13	1070	1640	2000	639	401	427	123	804	140	72	386	3200
14	976	520	10000	650	207	184	140	1820	127	119	390	2000
15	1070	334	3920	383	151	244	154	1140	113	334	256	1200
16	965	592	2740	410	472	228	196	377	175	220	317	1180
17	395	438	1750	192	294	501	206	398	128	264	506	1750
18	167	780	1060	419	212	423	304	264	98	168	293	1490
19	786	1230	1270	386	374	315	328	310	94	271	410	1360
20	955	1510	1310	605	287	363	148	477	158	588	470	733
21	1730	1030	1180	550	190	309	72	670	244	747	150	872
22	1230	448	888	322	250	152	420	362	158	363	90	563
23	1020	356	567	248	437	184	129	369	104	166	334	204
24	1420	514	520	494	589	171	127	830	100	253	382	170
25	1610	811	1030	503	179	190	141	474	131	191	180	269
26	1300	328	1100	254	510	291	624	450	123	195	367	182
27	1880	1040	1080	338	410	196	450	292	150	604	407	227
28	1370	617	1040	359	263	292	120	681	148	589	307	348
29	1310	528	932	385	---	320	172	715	211	595	586	712
30	1540	400	1030	314	---	99	355	317	619	330	417	278
31	1270	---	511	153	---	322	---	472	---	145	454	---
TOTAL	31316	41506	41128	13539	10929	8626	8006	17398	10473	10505	10412	23063
MEAN	1010	1384	1327	437	390	278	267	561	349	339	336	769
MAX	1880	8420	10000	796	759	501	624	1820	937	1220	1220	3200
MIN	167	328	300	153	125	99	72	113	94	61	60	122
AC-FT	62120	82330	81580	26850	21680	17110	15880	34510	20770	20840	20650	45750
CAL YR 1981	TOTAL	267496	MEAN	733	MAX	10000	MIN	89	AC-FT	530600		
WTR YR 1982	TOTAL	226901	MEAN	622	MAX	10000	MIN	60	AC-FT	450100		

RIO GRANDE DE ARECIBO BASIN

50029000 RIO GRANDE DE ARECIBO AT CENTRAL CAMBALACHE, PR--Continued

WATER-QUALITY RECORDS

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

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

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 , 1980												
11...	1210	146	249	7.9	26.0	--	8.6	--	1	340	K70	110
JAN , 1981												
09...	1215	187	240	7.7	25.0	2.9	8.6	--	16	K1100	350	--
MAR												
23...	1115	163	252	8.0	26.5	1.6	9.4	--	31	K160	86	120
MAY												
26...	1250	532	235	7.6	25.0	95	7.6	93	<10	K7100	6200	--
JUL												
21...	1405	1490	190	7.6	27.0	120	7.3	95	17	2700	4000	76
SEP												
09...	1400	1610	185	7.8	26.0	70	7.4	97	27	2000	860	78
NOV												
12...	1310	1820	147	7.2	24.5	240	8.0	99	67	400	K1500	--
JAN , 1982												
12...	1215	229	250	8.1	24.0	22	8.3	98	29	370	500	110
MAR												
16...	1210	125	287	7.9	25.0	9.3	10.7	129	12	200	K27	--
MAY												
11...	1130	286	286	7.4	25.0	48	7.7	93	--	5000	9000	120
JUL												
07...	1420	1220	240	7.4	27.0	17	8.6	106	11	K910	K1900	--
SEP												
15...	1150	128	256	7.7	25.0	170	6.9	83	34	2800	5300	100

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 , 1980											
11...	3	37	5.3	9.1	.4	1.4	107	11	8.9	.1	18
JAN , 1981											
09...	--	--	--	--	--	--	97	--	--	--	--
MAR											
23...	20	39	6.0	9.3	.4	1.2	100	12	10	.1	18
MAY											
26...	--	--	--	--	--	--	108	--	--	--	--
JUL											
21...	5	22	5.1	9.5	.5	2.0	71	18	6.9	.1	16
SEP											
09...	14	21	6.2	8.3	.4	1.8	64	10	9.8	<.1	15
NOV											
12...	--	--	--	--	--	--	51	--	--	--	--
JAN , 1982											
12...	3	34	5.2	9.7	.4	1.3	107	8.7	8.8	<.1	18
MAR											
16...	--	--	--	--	--	--	110	--	--	--	--
MAY											
11...	8	40	4.3	7.4	.3	1.8	110	12	9.6	<.1	12
JUL											
07...	--	--	--	--	--	--	84	--	--	--	--
SEP											
15...	6	34	4.4	6.8	.3	1.8	97	11	8.6	.1	14

K = non-ideal count.

50029000 RIO GRANDE DE ARECIBO AT CENTRAL CAMBALACHE, PR--Continued

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

DATE	SOLIDS, SUM OF CCNSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SCLIDS, 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 TCTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TCTAL (MG/L AS N)	NITRO- GEN, TCTAL (MG/L AS N)	NITRO- GEN, TCTAL (MG/L AS NO3)
NOV , 1980											
11...	155	61.1	12	.78	.000	.78	.000	.01	.01	.79	3.5
JAN , 1981											
09...	--	--	20	.76	.000	.76	.000	.13	.13	.89	3.9
MAR											
23...	156	68.7	4	.45	.010	.46	.010	.65	.66	1.1	5.0
MAY											
26...	--	--	142	.68	.030	.71	.170	.46	.63	1.3	5.9
JUL											
21...	122	491	--	.52	.030	.55	.090	.37	.46	1.0	4.5
SEP											
09...	110	478	119	.66	.030	.69	.070	.38	.45	1.1	5.0
NOV											
12...	--	--	342	.93	.070	1.0	.090	.27	.36	1.4	6.0
JAN , 1982											
12...	150	92.7	40	.85	.020	.87	<.010	--	.15	1.0	4.5
MAR											
16...	--	--	4	--	<.010	.43	<.010	--	.10	.53	2.3
MAY											
11...	159	123	70	.73	.040	.77	.200	.34	.54	1.3	5.8
JUL											
07...	--	--	37	.14	.010	.15	.110	.89	1.00	1.2	5.1
SEP											
15...	140	48.4	198	.70	.100	.80	.240	.86	1.10	1.9	8.4
DATE	PHOS- PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TCTAL RECOV- ERABLE (UG/L AS EA)	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 , 1980											
11...	.040	--	--	--	--	--	--	--	--	16	6.3
JAN , 1981											
09...	.030	--	--	--	--	--	--	--	--	12	6.1
MAR											
23...	.020	<1	100	<1	<1	5	.1	<1	<1	4	1.8
MAY											
26...	.100	--	--	--	--	--	--	--	--	219	315
JUL											
21...	.110	--	--	--	--	--	--	--	--	209	841
SEP											
09...	.110	--	100	1	40	30	.4	<1	<1	161	700
NOV											
12...	.290	--	--	--	--	--	--	--	--	413	2030
JAN , 1982											
12...	.040	1	100	1	5	6	.5	<1	<1	65	40
MAR											
16...	.040	--	--	--	--	--	--	--	--	--	--
MAY											
11...	.140	--	--	--	--	--	--	--	--	274	212
JUL											
07...	.080	--	--	--	--	--	--	--	--	61	202
SEP											
15...	.150	1	100	1	5	8	<.1	<1	<1	268	93

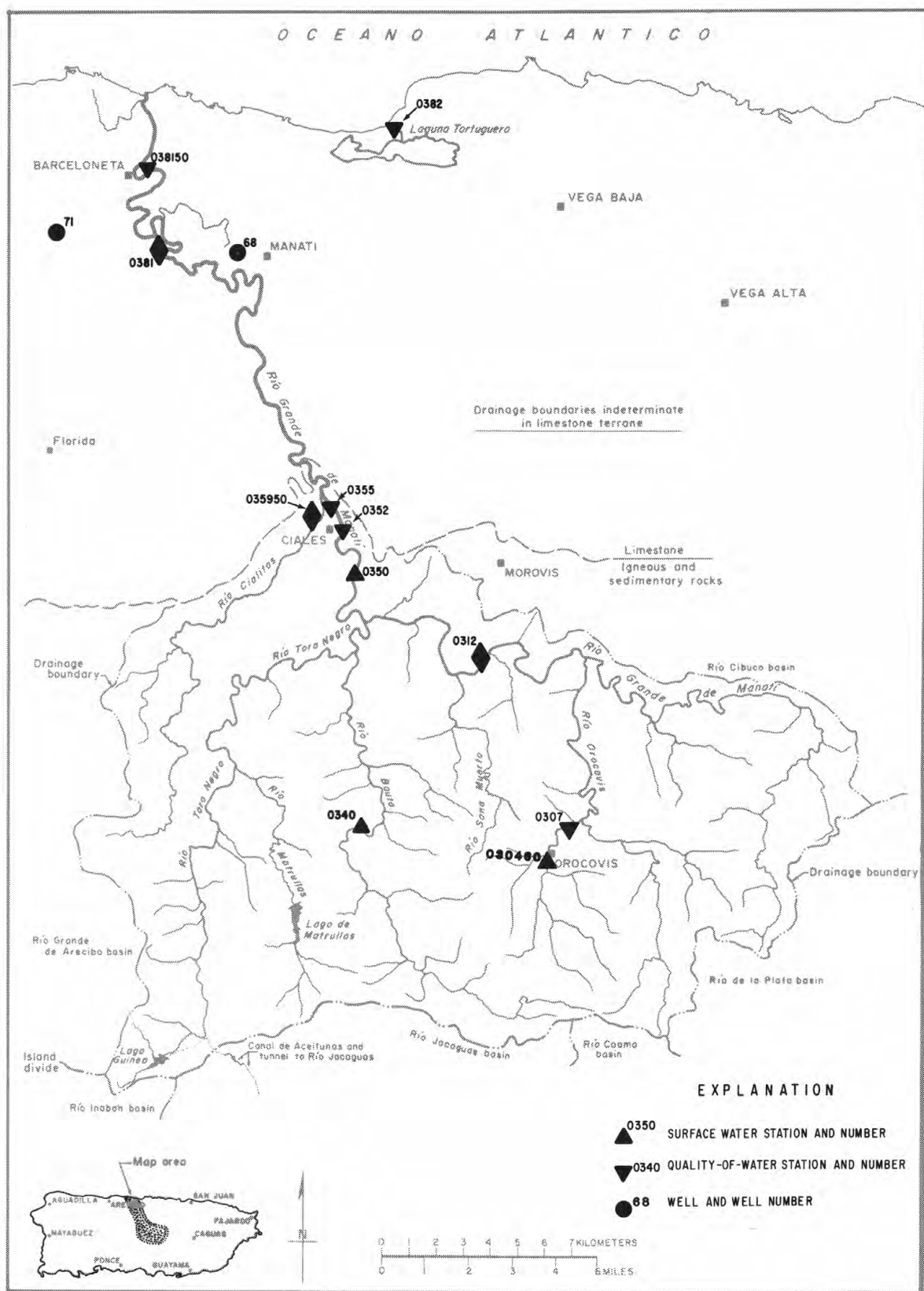


Figure 13.--Río Grande de Manatí basin.

RIO GRANDE DE MANATI BASIN

50030460 RIO OROCOVIS AT OROCOVIS, PR

LOCATION.--Lat 18°13'25", long 66°23'34", Hydrologic Unit 21010001, on right bank, 0.4 mi (0.6 km) south of junction of Highways 155 and 156 in Orocovis, 600 ft (183 m) upstream from Río Batijas, and 250 ft (76 m) upstream from bridge on Highway 599.

DRAINAGE AREA.--5.03 sq mi (13.03 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1981 to September 1982 (discontinued).

GAGE.--Water-stage recorder. Altitude of the gage is 500 ft (152 m) from topographic map.

REMARKS.--Records fair. Low flow affected by diversions for water supply.

EXTREMES FOR WATER YEARS 1981-82.--Peak discharges above base of 500 cu ft/s (14.2 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 5, 1981	1715	1,640 46.4	10.54 3.213	Oct. 4, 1981	1545	*734 20.8	8.68 2.646
May 23, 1981	0430	1,300 36.8	9.92 3.024	Dec. 13, 1981	0700	647 18.3	8.45 2.576
May 26, 1981	1600	*2,290 64.8	11.52 3.511	Sept. 12, 1982	2100	677 19.2	8.53 2.600
Sept. 9, 1981	0200	765 21.7	8.76 2.670				

Minimum daily discharges, .84 cu ft/s (0.024 cu m/s) Apr. 4, 1981; 0.74 cu ft/s (0.021) cu m/s Sept. 4, 1982.

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							.90	2.5	11	8.0	3.6	1.5
2							.90	8.7	12	7.1	2.2	2.2
3							.92	36	10	6.4	3.0	2.0
4							.84	34	11	6.1	2.8	1.9
5							6.8	138	13	5.8	2.4	1.4
6							4.0	42	10	5.7	2.3	11
7							12	23	9.4	5.7	2.2	3.6
8							19	11	8.7	5.2	2.1	48
9							18	35	8.3	5.3	1.7	149
10							19	17	7.9	5.1	3.6	11
11							8.6	11	7.5	4.4	2.7	5.7
12							4.2	13	6.9	4.4	3.2	4.3
13							2.9	7.8	6.7	4.8	4.2	3.5
14							3.7	6.5	6.2	5.2	2.4	4.5
15							2.9	5.5	5.8	4.9	2.8	3.3
16							5.9	4.8	5.3	4.9	2.1	2.9
17							26	23	5.2	7.5	2.6	2.9
18							31	20	4.9	5.8	2.1	2.9
19							15	17	4.5	5.4	2.2	4.2
20							8.2	28	4.4	4.9	6.6	3.1
21							6.0	27	4.6	4.2	2.9	2.8
22							9.3	18	6.5	4.1	2.2	2.5
23							6.0	154	5.2	5.4	2.5	2.5
24							4.4	25	67	25	3.8	2.8
25							3.8	23	19	6.9	3.2	2.3
26							3.1	149	9.5	3.8	2.1	2.6
27							2.9	43	11	3.4	1.6	2.4
28							2.5	24	12	2.7	2.1	2.2
29							2.0	16	10	2.3	1.8	2.7
30							2.5	13	9.3	2.9	2.3	3.1
31							---	11	---	2.9	2.0	---
TOTAL							233.26	986.8	312.8	176.2	83.3	294.8
MEAN							7.78	31.8	10.4	5.68	2.69	9.83
MAX							31	154	67	25	6.6	149
MIN							.84	2.5	4.4	2.3	1.6	1.4
CFSM							1.55	6.32	2.07	1.13	.54	1.95
IN.							1.72	7.30	2.31	1.30	.62	2.18
AC-FT							463	1960	620	349	165	585

50030460 RIO OROCOVIS AT OROCOVIS, PR--Continued

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	1.9	11	4.6	5.2	3.8	2.5	1.4	.80	.84	1.5	1.2	.90
2	1.9	12	5.0	5.1	4.1	2.2	2.5	.80	1.0	1.5	1.2	.86
3	1.7	13	6.2	5.1	3.6	2.1	3.0	.80	1.4	1.2	1.0	.81
4	36	11	5.1	5.3	3.3	2.2	1.6	5.4	1.2	2.1	1.0	.74
5	47	9.4	4.4	4.8	5.3	2.2	1.9	5.6	1.2	1.6	.99	.77
6	16	8.4	4.4	4.5	3.2	2.3	1.5	12	1.2	1.1	1.0	1.9
7	6.5	7.7	4.8	4.9	2.8	2.3	1.5	6.5	1.7	1.6	1.1	1.5
8	4.5	8.5	4.7	4.4	2.8	2.2	1.5	1.9	1.1	2.4	1.2	1.0
9	3.8	66	4.3	4.2	2.4	2.1	1.6	1.0	1.1	2.0	1.2	1.3
10	3.4	15	4.1	4.3	2.9	1.6	1.4	22	1.1	1.4	1.3	1.1
11	19	10	56	4.7	2.6	1.4	1.2	42	1.1	1.1	1.7	1.3
12	6.6	8.2	16	4.5	2.8	1.3	1.2	15	1.0	1.1	1.0	83
13	3.7	6.8	172	4.5	2.4	1.2	1.2	6.9	1.1	1.2	.99	145
14	2.8	6.2	56	4.0	2.4	1.2	1.2	29	1.1	1.3	1.1	13
15	3.4	5.9	19	4.5	2.8	1.1	1.5	10	1.1	1.4	.90	4.4
16	7.8	5.8	12	3.9	2.7	1.0	1.7	3.6	1.0	1.3	.89	2.3
17	63	5.8	10	4.1	2.8	1.0	1.6	2.3	1.0	.86	.82	2.0
18	39	8.6	9.6	4.0	2.4	1.0	1.3	1.6	1.0	.77	.84	1.6
19	15	6.0	8.3	3.6	2.5	1.0	.99	1.0	1.2	.93	1.0	1.5
20	11	5.5	7.2	3.5	2.7	.98	.95	1.0	1.2	2.0	1.0	1.3
21	8.8	4.8	6.8	3.6	2.5	.94	.93	1.0	1.2	1.5	.97	1.4
22	7.6	5.0	6.3	3.6	2.4	.97	1.0	.95	1.1	3.8	.94	1.4
23	66	4.8	5.8	3.5	4.6	1.0	1.1	.93	1.2	2.1	.96	1.4
24	64	5.2	5.6	3.3	2.5	1.1	.91	.89	1.2	1.2	1.0	1.3
25	46	4.9	5.6	3.6	2.3	1.2	.80	.87	1.2	1.2	.91	1.4
26	35	8.0	5.5	3.2	2.3	1.3	.80	.84	1.1	1.0	.85	1.3
27	18	8.2	16	3.2	2.3	1.2	.80	.89	1.2	.94	.96	1.2
28	11	5.6	7.5	3.1	2.5	1.2	.80	2.1	1.1	1.0	1.0	1.1
29	10	5.2	6.5	2.8	---	1.2	.80	1.3	1.3	1.1	.97	16
30	11	4.7	6.3	2.9	---	1.2	.80	1.0	1.5	1.6	.96	12
31	13	---	5.5	4.0	---	1.3	---	.88	---	1.1	.99	---
TOTAL	584.4	287.2	491.1	125.9	81.7	45.49	39.48	180.85	34.74	44.90	31.94	304.78
MEAN	18.9	9.57	15.8	4.06	2.92	1.47	1.32	5.83	1.16	1.45	1.03	10.2
MAX	66	66	172	5.3	5.3	2.5	3.0	42	1.7	3.8	1.7	145
MIN	1.7	4.7	4.1	2.8	2.3	.94	.80	.80	.84	.77	.82	.74
CFSH	3.76	1.90	3.14	.81	.58	.29	.26	1.16	.23	.29	.21	2.03
IN.	4.32	2.12	3.63	.93	.60	.34	.29	1.34	.26	.33	.24	2.25
AC-FT	1160	570	974	250	162	90	78	359	69	89	63	605

WTR YR 1982 TOTAL 2252.48 MEAN 6.17 MAX 172 MIN .74 CFSH 1.23 IN 16.66 AC-FT 4470

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO SEPTEMBER 1982

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPEC- IFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)
AUG, 1981				
12...	1320	3.9	250	25.0
SEP				
16...	1400	2.9	259	25.5
NOV				
19...	1235	6.4	218	23.0
DEC				
9...	1240	4.2	250	23.5
FEB, 1982				
17...	1345	2.6		23.0
MAR				
12...	1345	1.3	316	24.0
APR				
13...	1125	1.2	332	24.0
MAY				
12...	1600	10.0	187	23.0
JUN				
16...	1250	1.0	313	27.0
JUL				
12...	1415	1.0	289	26.0
AUG				
16...	1230	1.0	270	26.0
SEP				
16...	1110	2.5	245	24.0

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.

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

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

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

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 1980												
13...	0900	9.3	284	7.9	22.0	2.6	8.7	--	16	2100	K190	120
JAN , 1981												
15...	1035	10	274	7.5	19.0	3.7	8.6	--	<10	2400	330	--
MAR												
13...	0900	6.3	297	7.8	21.0	2.3	7.8	--	14	2100	390	130
MAY												
27...	0850	59	167	6.9	21.0	28	8.0	90	<10	K9200	K1400	--
JUL												
30...	1500	9.8	265	8.6	28.5	14	7.2	99	44	K14000	790	110
SEP												
23...	1240	11	288	8.8	26.0	2.6	8.5	113	11	2300	K120	120
DEC												
01...	1300	12	270	8.3	22.0	4.5	8.6	102	32	4900	570	--
JAN , 1982												
14...	1350	11	268	8.4	22.5	2.0	9.3	112	27	400	160	110
APR												
01...	1225	6.2	335	8.5	21.0	2.2	9.2	112	39	350	K140	--
MAY												
31...	1345	19	295	8.3	25.0	54	6.8	87	33	K10000	K1000	120
AUG												
03...	1340	4.6	335	8.3	28.0	--	7.8	107	35	2500	800	--
SEP												
16...	1330	7.0	304	8.0	26.0	--	6.0	80	--	K17000	800	110

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 , 1980											
13...	0	28	12	15	.6	1.7	125	5.9	14	.2	35
JAN , 1981											
15...	--	--	--	--	--	--	108	--	--	--	--
MAR											
13...	8	33	11	13	.5	1.8	122	5.4	14	.2	37
MAY											
27...	--	--	--	--	--	--	66	--	--	--	--
JUL											
30...	0	27	10	13	.5	2.0	112	8.2	13	.1	32
SEP											
23...	2	30	11	12	.5	1.9	118	7.6	16	.2	29
DEC											
01...	--	--	--	--	--	--	107	--	--	--	--
JAN , 1982											
14...	16	27	11	14	.6	2.5	94	11	14	.1	36
APR											
01...	--	--	--	--	--	--	130	--	--	--	--
MAY											
31...	3	31	11	13	.6	2.0	120	11	13	.1	32
AUG											
03...	--	--	--	--	--	--	130	--	--	--	--
SEP											
16...	11	28	10	13	.6	2.5	100	13	15	.2	31

K = non-ideal count.

50030700 RIO OROCOVIS NEAR OROCOVIS, PR--Continued

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

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (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, NC2+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 , 1980											
13...	187	4.7	3	.93	.000	.93	.000	.11	.11	1.0	4.6
JAN , 1981											
15...	--	--	19	.82	<.010	.83	.030	.25	.28	1.1	4.9
MAR											
13...	189	3.2	9	.82	<.010	.83	.070	.13	.20	1.0	4.6
MAY											
27...	--	--	1	1.1	<.010	1.1	.020	.48	.50	1.6	7.1
JUL											
30...	172	4.6	22	.92	<.010	.93	.020	.38	.40	1.3	5.9
SEP											
23...	179	5.3	16	--	<.010	.76	.010	.44	.45	1.2	5.4
DEC											
01...	--	--	11	--	<.010	1.3	.030	.23	.26	1.6	6.9
JAN , 1982											
14...	172	5.2	6	.95	.050	1.0	.080	.32	.40	1.4	6.2
APR											
01...	--	--	19	.91	.020	.93	.050	.47	.52	1.5	6.4
MAY											
31...	186	9.5	71	1.3	.040	1.3	.010	.59	.60	1.9	8.4
AUG											
03...	--	--	42	1.5	.030	1.5	.050	.55	.60	2.1	9.3
SEP											
16...	172	3.3	12	2.2	.030	2.2	.100	1.3	1.40	3.6	16

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 , 1980											
13...	.220	--	--	--	--	--	--	--	--	7	.18
JAN , 1981											
15...	.190	--	--	--	--	--	--	--	--	10	.27
MAR											
13...	.260	<1	100	<1	6	6	<.1	<1	1	2	.03
MAY											
27...	.090	--	--	--	--	--	--	--	--	29	4.6
JUL											
30...	.180	--	--	--	--	--	--	--	--	20	.53
SEP											
23...	.170	--	100	<1	20	4	.2	<1	<1	10	.30
DEC											
01...	.260	--	--	--	--	--	--	--	--	--	--
JAN , 1982											
14...	.270	1	100	1	<1	<1	<.1	<1	1	9	.27
APR											
01...	.280	--	--	--	--	--	--	--	--	--	--
MAY											
31...	.210	--	--	--	--	--	--	--	--	102	5.2
AUG											
03...	.330	--	--	--	--	--	--	--	--	--	--
SEP											
16...	.020	2	100	1	5	4	<.1	<1	<1	--	--

PESTICIDE ANALYSES, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982

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)
JUL , 1981								
30...	1500	<.10	<.01	<.10	<.01	<.01	<.01	<.01
AUG , 1982								
03...	1340	<.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)
JUL , 1981									
30...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
AUG , 1982									
03...	<.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)
JUL , 1981								
30...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01
AUG , 1982								
03...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01

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 DISCHARGES.--16 years (1966-81), 108 cu ft/s (3.059 cu m/s), 26.57 in/yr (675 mm/yr), 78,250 acre-ft/yr (96.5 cu hm/yr); median of yearly mean discharges 96 cu ft/s (2.72 cu m/s), 69,600 acre-ft/yr (86 cu hm/yr).

--17 years (1966-82), 108 cu ft/s (3.059 cu m/s), 26.57 in/yr (675 mm/yr), 78,250 acre-ft/yr (96.5 cu hm/yr); median of yearly mean discharges 107 cu ft/s (3.03 cu m/s), 77,500 acre-ft/yr (96 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 WATER YEARS 1981-82.--Peak discharges above base of 3,500 cu ft/s (99.1 cu m/s) and maximums (*):

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)
May 5, 1981	1845	*7,290	206	7.17	2.185	Nov. 9, 1981	Unknown	3,800	108	5.3	1.62
May 18, 1981	1815	3,710	105	5.21	1.588	Dec. 13, 1981	0900	6,990	198	7.03	2.143
May 26, 1981	1800	5,250	149	6.14	1.871	May 14, 1982	1230	*9,480	268	8.12	2.475
Oct. 17, 1981	1615	3,520	100	5.08	1.548	Sept. 12, 1982	2215	5,900	167	6.49	1.978

Minimum discharges, 29 cu ft/s (0.821 cu m/s) Mar. 15-17, 1981; 14 cu ft/s (0.396 cu m/s) Sept. 5-6, 1982.

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	392	57	34	54	45	34	74	71	141	195	57	43
2	324	51	36	50	43	33	65	73	176	104	51	44
3	199	49	39	43	42	32	60	263	159	93	53	62
4	134	48	34	42	42	133	63	348	150	86	61	40
5	97	55	64	39	41	386	221	1290	259	84	55	37
6	220	47	152	50	41	88	243	538	181	74	55	41
7	265	45	368	74	41	58	200	229	143	74	58	69
8	159	45	194	237	39	49	435	156	127	71	47	80
9	107	43	90	161	40	45	350	426	118	105	46	545
10	87	43	66	73	40	39	427	373	112	123	77	115
11	74	41	53	141	46	36	249	378	105	75	80	71
12	66	40	49	136	43	34	146	336	102	69	70	68
13	63	40	49	85	42	37	106	224	100	69	69	99
14	60	40	70	77	41	32	104	155	99	68	57	68
15	118	39	71	60	49	31	86	138	96	67	60	57
16	115	39	49	55	42	29	123	121	94	63	49	50
17	107	39	43	52	53	83	467	250	90	64	50	45
18	95	38	41	55	112	109	433	890	89	76	46	40
19	71	36	40	111	76	47	222	450	93	75	44	45
20	77	35	39	92	52	36	139	350	85	81	70	50
21	64	37	38	65	44	40	106	320	84	63	122	45
22	60	40	38	56	41	44	106	250	90	58	57	40
23	69	45	51	52	38	36	142	630	108	58	61	45
24	82	41	118	49	37	31	89	260	169	89	61	56
25	63	38	260	53	36	30	77	210	144	116	53	38
26	56	38	149	50	36	200	80	930	90	65	44	39
27	55	41	78	70	38	212	76	360	111	56	40	51
28	51	39	57	64	35	84	70	225	129	54	41	47
29	51	36	48	50	---	259	66	174	109	51	41	242
30	68	35	44	51	---	148	69	146	167	64	40	160
31	62	---	55	54	---	84	---	142	---	65	38	---
TOTAL	3511	1260	2517	2301	1275	2539	5094	10706	3720	2455	1753	2432
MEAN	113	42.0	81.2	74.2	45.5	81.9	170	345	124	79.2	56.5	81.1
MAX	392	57	368	237	112	386	467	1290	259	195	122	545
MIN	51	35	34	39	35	29	60	71	84	51	38	37
CFSM	2.05	.76	1.47	1.34	.82	1.48	3.08	6.25	2.25	1.44	1.02	1.47
IN.	2.37	.85	1.70	1.55	.86	1.71	3.43	7.21	2.51	1.65	1.18	1.64
AC-FT	6900	2500	4990	4560	2530	5040	10100	21240	7380	4870	3480	4820

CAL YR 1980 TOTAL 32667 MEAN 89.3 MAX 1070 MIN 26 CFSM 1.62 IN 22.01 AC-FT 64790
WTR YR 1981 TOTAL 39563 MEAN 108 MAX 1290 MIN 29 CFSM 1.96 IN 26.66 AC-FT 78470

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

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	28	250	75	110	72	48	32	37	48	34	37	18
2	25	180	78	102	80	47	47	37	48	31	38	17
3	47	300	93	110	67	46	76	36	47	30	30	20
4	106	200	91	118	76	41	56	73	44	32	27	18
5	114	300	77	101	92	42	109	107	43	46	27	16
6	103	200	72	92	82	42	57	201	42	35	24	92
7	58	140	70	95	84	42	241	198	42	36	24	95
8	55	200	69	86	73	41	110	92	41	34	23	29
9	45	1000	66	84	63	40	50	58	39	47	29	25
10	50	280	68	82	60	42	41	209	38	35	23	25
11	452	200	406	80	57	42	38	666	38	34	30	126
12	229	160	199	79	56	42	37	324	36	33	24	649
13	131	130	2300	78	56	41	36	304	35	32	24	1290
14	97	110	500	78	54	38	35	1270	36	30	23	215
15	59	100	300	75	65	39	33	314	37	31	21	89
16	322	100	210	73	64	38	33	155	37	32	21	56
17	537	110	165	71	64	36	35	110	35	33	21	103
18	289	120	144	70	55	36	37	88	34	32	19	159
19	123	250	133	68	53	35	33	73	37	31	19	201
20	394	150	119	67	55	34	32	66	42	35	19	76
21	214	110	114	66	54	34	31	62	37	53	20	51
22	466	90	108	66	52	33	31	57	37	41	19	46
23	356	85	102	64	57	33	33	54	38	56	22	50
24	633	80	97	63	51	32	48	54	35	37	25	39
25	695	85	104	63	48	35	37	51	34	45	19	38
26	542	100	95	61	45	36	37	47	32	34	19	35
27	471	200	367	60	47	34	37	49	33	37	19	33
28	267	100	198	60	49	32	38	71	33	32	18	34
29	200	80	129	59	---	32	37	81	34	40	18	80
30	300	75	115	59	---	32	37	62	33	102	19	104
31	350	---	134	66	---	31	---	51	---	43	18	---
TOTAL	7838	5485	6798	2406	1731	1176	1534	5057	1145	1203	719	3829
MEAN	253	183	219	77.6	61.8	37.9	51.1	163	38.2	38.8	23.2	128
MAX	695	1000	2300	118	92	48	241	1270	48	102	38	1290
MIN	45	75	66	59	45	31	31	36	32	30	18	16
CFSM	4.58	3.32	3.97	1.41	1.12	.69	.93	2.95	.69	.70	42	2.32
IN.	5.28	3.70	4.58	1.62	1.17	.79	1.03	3.41	.77	.81	48	2.58
AC-FT	15550	10880	13480	4770	3430	2330	3040	10030	2270	2390	1430	7590
CAL YR 1981	TOTAL	52396	MEAN 144	MAX 2300	MIN 29	CFSM 2.61	IN 35.31	AC-FT 103900				
WTR YR 1982	TOTAL	38921	MEAN 107	MAX 2300	MIN 16	CFSM 1.94	IN 26.23	AC-FT 77200				

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 (CCLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)
DEC , 1980												
02...	1145	35	260	8.3	24.0	.80	9.3	--	4	110	128	100
JAN , 1981												
27...	1245	46	247	8.2	24.5	2.3	8.5	--	<10	330	220	--
MAR												
18...	1210	92	165	7.7	24.5	200	7.0	--	<10	48000	84000	59
MAY												
27...	1330	328	174	7.2	24.5	95	8.7	105	<10	K7000	3300	--
JUL												
30...	1110	66	255	8.7	28.0	14	6.4	83	<10	440	K27	100
SEP												
23...	0900	42	262	8.2	25.5	.60	8.1	102	<5	340	K130	110
OCT												
20...	1430	107	207	--	26.0	--	--	--	--	--	--	--
NOV												
30...	1415	74	250	8.5	24.0	3.4	7.4	91	<10	300	K50	--
DEC												
10...	1250	62	255	--	24.0	--	--	--	--	--	--	--
JAN , 1982												
14...	1145	77	242	8.0	22.0	2.1	9.2	106	--	K91	K60	96
APR												
01...	1025	32	313	8.2	24.0	2.4	8.8	109	10	K73	K50	--
MAY												
31...	1125	52	233	8.2	25.0	24	8.2	99	13	2100	360	92
AUG												
03...	1110	30	--	8.2	28.0	--	7.9	102	49	K50	K50	--
SEP												
16...	1130	57	242	7.8	26.0	--	7.9	101	<10	K1100	200	84

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- 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)
DEC , 1980											
02...	0	25	10	13	.6	1.7	105	6.8	15	.1	31
JAN , 1981											
27...	--	--	--	--	--	--	104	--	--	--	--
MAR											
18...	0	13	6.5	8.6	.5	2.2	61	8.4	10	.1	18
MAY											
27...	--	--	--	--	--	--	59	--	--	--	--
JUL											
30...	0	24	9.8	12	.5	1.9	101	6.6	13	.1	28
SEP											
23...	9	24	11	12	.5	1.7	101	7.0	15	.2	26
OCT											
20...	--	--	--	--	--	--	--	--	--	--	--
NOV											
30...	--	--	--	--	--	--	102	--	--	--	--
DEC											
10...	--	--	--	--	--	--	--	--	--	--	--
JAN , 1982											
14...	0	22	10	13	.6	1.9	98	7.7	13	.1	27
APR											
01...	--	--	--	--	--	--	110	--	--	--	--
MAY											
31...	0	22	8.9	9.9	.5	2.0	92	8.0	13	.1	25
AUG											
03...	--	--	--	--	--	--	100	--	--	--	--
SEP											
16...	9	19	8.8	11	.6	2.6	75	13	13	.2	26

K = non-ideal count.

RIO GRANDE DE MANATI BASIN

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

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

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)
DEC , 1980											
02...	166	15.7	4	.57	.010	.58	.040	.16	.20	.78	3.5
JAN , 1981											
27...	--	--	6	.65	<.010	.66	<.010	.09	<.10	.76	--
MAR											
18...	193	25.6	369	.83	.110	.94	.170	.73	.90	1.8	8.1
MAY											
27...	--	--	124	1.3	.020	1.3	.100	.77	.87	2.2	9.6
JUL											
30...	156	27.8	20	--	<.010	.52	.030	.38	.41	.93	4.1
SEP											
23...	157	17.8	16	.50	.020	.52	.040	.64	.68	1.2	5.3
OCT											
20...	--	--	--	--	--	--	--	--	--	--	--
NOV											
30...	--	--	<1	--	<.010	.90	.050	.33	.38	1.3	5.7
DEC											
10...	--	--	--	--	--	--	--	--	--	--	--
JAN , 1982											
14...	154	32.1	4	--	<.010	.85	<.010	--	.22	1.1	4.7
APR											
01...	--	--	7	.49	.010	.50	.060	--	<.10	--	--
MAY											
31...	142	19.8	17	.58	.020	.60	.060	--	<.10	--	--
AUG											
03...	--	--	7	.33	.010	.34	.030	.57	.60	.94	4.2
SEP											
16...	139	21.2	12	1.1	.020	1.1	.060	1.8	1.90	3.0	13

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 (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)
DEC , 1980											
02...	.080	--	--	--	--	--	--	--	--	6	.57
JAN , 1981											
27...	.070	--	--	--	--	--	--	--	--	13	1.6
MAR											
18...	.390	<1	100	<1	36	9	<.1	1	<1	380	94
MAY											
27...	.170	--	--	--	--	--	--	--	--	163	144
JUL											
30...	.050	--	--	--	--	--	--	--	--	15	2.7
SEP											
23...	.070	--	100	<1	10	3	.1	<1	<1	9	1.0
OCT											
20...	--	--	--	--	--	--	--	--	--	--	--
NOV											
30...	.070	--	--	--	--	--	--	--	--	6	1.2
DEC											
10...	--	--	--	--	--	--	--	--	--	--	--
JAN , 1982											
14...	.040	1	100	1	<1	2	.1	<1	<1	1	.21
APR											
01...	.080	--	--	--	--	--	--	--	--	--	--
MAY											
31...	.070	--	--	--	--	--	--	--	--	--	--
AUG											
03...	.080	--	--	--	--	--	--	--	--	--	--
SEP											
16...	.070	1	100	1	6	4	<.1	<1	<1	--	--

RIO GRANDE DE MANATI BASIN

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

PESTICIDE ANALYSES, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TCTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)
JUL , 1981								
30...	1110	<.10	<.01	<.10	<.01	<.01	<.01	<.01
AUG , 1982								
03...	1110	<.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)
JUL , 1981									
30...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
AUG , 1982									
03...	<.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)
JUL , 1981								
30...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01
AUG , 1982								
03...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01

50034000 RIO BAUTA NEAR OROCOVIS, PR

LOCATION.--Lat 18°14'10", long 66°27'18", Hydrologic Unit 21010001, on left bank, at bridge on Highway 157 (km 12.1), and 4.2 mi (6.8 km) west of Orocovis.

DRAINAGE AREA.--16.7 sq mi (43.3 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1959 to April 1966 (annual low-flow measurements only), February to September 1969 (occasional measurements only), October 1969 to September 1982 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 772.82 ft (235.556 m) above mean sea level.

REMARKS.--Records fair.

AVERAGE DISCHARGES.--11 years (1971-81), 37.8 cu ft/s (1.070 cu m/s), 30.74 in/yr (781 mm/yr), 27,390 acre-ft/yr (33.8 cu hm/yr). median of yearly mean discharges, 27 cu ft/s (0.76 cu m/s), 19,600 acre-ft/yr (24 cu hm/yr).

--12 years (1971-82), 38.0 cu ft/s (1.076 cu m/s), 30.90 in/yr (785 mm/yr), 27,530 acre-ft/yr (33.9 cu hm/yr); median of yearly mean discharges, 34 cu ft/s (0.96 cu m/s), 24,600 acre-ft/yr (30 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,800 cu ft/s (504 cu m/s) Oct. 9, 1970, gage height, 21.9 ft (6.68 m), from floodmark, from rating curve extended above 100 cu ft/s (2.83 cu m/s) on basis of step-backwater analysis by U.S. Bureau of Reclamation; minimum, 2.8 cu ft/s (0.079 cu m/s) July 23, 1977, gage height, 6.31 ft (1.923 m).

EXTREMES FOR WATER YEARS 1981-82.--Peak discharges above base of 1,500 cu ft/s (42.5 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. 6, 1980	1715	*6,410 182	15.12 4.609	Oct. 5, 1981	1700	1,730 49.0	11.56 3.523
May 2, 1981	2300	1,770 50.1	11.60 3.536	Oct. 17, 1981	1530	3,880 110	13.36 4.072
May 5, 1981	1845	3,080 87.2	12.78 3.895	Oct. 24, 1981	1515	3,350 100	12.99 3.959
May 9, 1981	1530	2,030 57.5	11.86 3.615	Oct. 25, 1981	1615	*4,230 120	13.59 4.142
May 26, 1981	1730	3,060 86.7	12.77 3.892	Nov. 9, 1981	0945	3,500 99.1	13.10 3.993
Sept. 6, 1981	1715	1,740 49.3	11.57 3.527	Dec. 13, 1981	0145	3,660 104	13.21 4.026
Sept. 8, 1981	2030	1,900 53.8	11.73 3.575	Sept. 12, 1982	2400	3,750 106	13.27 4.045
Sept. 9, 1981	0230	4,800 136	14.01 4.270				

Minimum discharges, 10 cu ft/s (0.283 cu m/s) Dec. 21-22, 1980, Mar. 25-28, 1981; 5.0 cu ft/s (0.142 cu m/s) Sept. 11, 1982.

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	162	22	11	28	16	14	11	162	47	48	16	16
2	68	21	11	29	15	14	11	246	47	28	16	66
3	53	20	13	21	15	14	11	379	44	24	18	51
4	46	19	11	18	15	28	11	245	42	22	17	27
5	41	19	107	16	14	30	19	549	45	21	16	19
6	517	19	24	17	14	17	19	221	40	20	16	152
7	189	19	48	21	14	17	59	120	34	18	15	47
8	71	18	28	18	14	17	149	72	31	18	15	251
9	55	18	17	28	14	15	69	330	29	18	15	952
10	49	17	14	20	14	13	78	172	27	18	15	71
11	42	17	13	37	14	13	40	239	25	17	16	38
12	36	17	13	39	13	13	28	129	24	17	16	33
13	34	16	12	33	13	12	24	69	24	17	22	38
14	32	16	13	27	208	12	22	58	22	17	37	34
15	49	16	14	21	125	12	21	51	21	17	36	29
16	184	16	12	18	30	12	24	56	20	17	138	27
17	103	15	11	17	27	13	64	344	20	84	54	25
18	43	15	11	16	44	14	92	284	19	35	24	25
19	36	15	11	39	28	12	46	131	19	22	20	29
20	32	14	11	27	22	11	30	144	20	20	25	27
21	30	14	10	21	20	11	26	92	35	18	23	24
22	29	14	10	18	21	11	24	97	68	18	19	24
23	29	14	12	18	18	11	22	373	40	18	19	23
24	29	14	13	18	17	11	21	115	100	19	19	22
25	26	13	18	20	16	10	20	67	49	19	19	22
26	25	13	45	20	15	10	20	388	27	17	17	22
27	25	13	30	20	15	10	18	170	79	16	16	97
28	24	12	22	20	15	14	18	85	89	15	16	51
29	23	12	19	19	---	21	17	67	68	16	20	31
30	24	11	18	10	---	16	17	56	60	17	23	26
31	23	---	18	17	---	12	---	52	---	16	17	---
TOTAL	2129	479	620	699	806	440	1031	5563	1215	687	755	2299
MEAN	68.7	16.0	20.0	22.5	28.8	14.2	34.4	179	40.5	22.2	24.4	76.6
MAX	517	22	107	39	208	30	149	549	100	84	138	952
MIN	23	11	10	16	13	10	11	51	19	15	15	16
CFSM	4.11	.96	1.20	1.35	1.73	.85	2.06	10.7	2.43	1.33	1.46	4.59
IN.	4.74	1.07	1.38	1.56	1.80	.98	2.30	12.39	2.71	1.53	1.68	5.12
AC-FT	4220	950	1230	1390	1600	873	2040	11030	2410	1360	1500	4560

CAL YR 1980 TOTAL 14491.5 MEAN 39.6 MAX 1130 MIN 8.3 CFSM 2.37 IN 32.28 AC-FT 28740
WTR YR 1981 TOTAL 16723.0 MEAN 45.8 MAX 952 MIN 10 CFSM 2.74 IN 37.25 AC-FT 33170

RIO GRANDE DE MANATI BASIN

50034000 RIO BAUTA NEAR OROCOVIS, PR--Continued

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	24	73	27	22	13	9.8	8.0	7.6	13	8.3	6.8	6.0
2	23	65	26	22	13	9.6	11	7.6	12	8.0	6.6	5.8
3	22	108	27	21	13	9.5	11	7.4	12	8.0	6.5	5.7
4	51	110	26	21	13	9.2	11	17	12	9.8	6.2	5.6
5	262	125	25	20	22	9.2	12	25	12	12	6.0	5.4
6	106	87	25	19	13	9.2	9.1	65	11	11	6.0	41
7	32	58	24	19	13	9.0	8.6	50	11	16	5.8	15
8	25	134	23	19	13	8.9	8.5	16	11	9.1	6.5	6.6
9	24	625	23	18	13	9.0	9.4	14	11	11	6.9	6.1
10	40	151	27	18	13	8.7	8.4	78	10	8.3	7.5	5.4
11	53	81	286	18	13	9.0	8.1	235	9.8	8.0	9.0	5.6
12	36	65	75	18	13	8.7	8.0	138	9.7	7.7	6.8	269
13	26	57	1110	17	12	8.6	8.0	64	9.5	7.7	8.8	990
14	24	53	297	17	12	8.5	8.0	124	9.3	7.6	6.6	92
15	22	48	105	17	12	8.5	8.0	62	9.2	7.9	7.3	27
16	107	65	56	16	12	8.6	8.1	31	8.6	8.2	6.7	21
17	471	48	41	16	12	8.5	8.0	23	8.5	8.2	6.0	19
18	304	83	35	16	12	8.5	8.0	21	8.3	11	5.8	17
19	118	60	32	17	12	8.5	8.0	18	8.4	11	5.8	16
20	154	46	30	17	11	8.4	7.8	18	8.7	14	5.8	16
21	116	39	28	16	13	8.1	7.8	21	8.5	16	5.7	15
22	85	35	27	16	12	8.0	7.8	18	8.5	27	5.6	15
23	185	32	26	16	11	7.8	7.6	17	8.5	23	6.1	16
24	530	31	25	15	11	8.0	8.3	16	8.5	13	6.0	15
25	663	30	24	15	11	8.0	7.9	15	8.3	10	7.8	14
26	295	45	24	14	10	8.0	7.8	14	8.3	8.2	6.6	14
27	161	54	38	14	10	8.1	7.6	14	8.0	7.5	5.9	14
28	91	33	27	16	11	8.0	7.7	16	7.9	7.1	6.2	13
29	261	30	25	14	---	8.0	7.6	15	8.1	6.9	11	83
30	117	28	23	13	---	7.8	7.6	15	8.3	9.9	11	27
31	91	---	22	13	---	7.8	---	13	---	7.4	6.6	---
TOTAL	4519	2499	2609	530	349	265.5	254.7	1195.6	287.9	328.8	211.8	1801.2
MEAN	146	83.3	84.2	17.1	12.5	8.56	8.49	38.6	9.60	10.6	6.83	60.0
MAX	663	625	1110	22	22	9.8	12	235	13	27	11	990
MIN	22	28	22	13	10	7.8	7.6	7.4	7.9	6.9	5.6	5.4
CFSM	8.74	4.99	5.04	1.02	.75	.51	.51	2.31	.58	.64	.41	3.59
IN.	10.07	5.57	5.81	1.18	.78	.59	.57	2.66	.64	.73	.47	4.01
AC-FT	8960	4960	5170	1050	692	527	505	2370	571	652	420	3570

CAL YR 1981 TOTAL 23122.0 MEAN 63.3 MAX 1110 MIN 10 CFSM 3.79 IN 51.50 AC-FT 45860
 WTR YR 1982 TOTAL 14851.5 MEAN 40.7 MAX 1110 MIN 5.4 CFSM 2.44 IN 33.08 AC-FT 29460

WATER QUALITY RECORDS

PERIOD OF RECORD--WATER YEARS AUGUST 1981 TO SEPTEMBER 1982

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPEC- IFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)
AUG, 1981				
12...	1040	16.0	202	26.0
SEP				
16...	1100	28.0	176	25.0
NOV				
19...	1010	58.3	146	23.0
DEC				
9...	1030	22.0	198	23.0
FEB, 1982				
17...	1110	12.0	218	23.0
MAR				
12...	1105	8.9	213	23.0
APR				
13...	1110	8.0	235	24.0
MAY				
13...	1140	40.0	164	22.0
JUN				
16...	1030	8.4	235	26.0
JUL				
12...	1135	7.5	231	27.0
AUG				
16...	1045	7.0	186	26.0
SEP				
16...	1300	21.0	162	26.5

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 DISCHARGES.--21 years (1961-81), 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, 232 cu ft/s (6.57 cu m/s), 168,000 acre-ft/yr (207 cu hm/yr).
--22 years (1961-82), 262 cu ft/s (7.420 cu m/s), 27.80 in/yr (706 mm/yr), 189,800 acre-ft/yr (234 cu hm/yr); median of yearly mean discharges, 250 cu ft/s (7.08 cu m/s), 181,000 acre-ft/yr (223 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 WATER YEARS 1981-82.--Peak discharges above base of 7,000 cu ft/s (198 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 5, 1981	2015	*11,600	328	Nov. 9, 1981	1100	9,800	278
May 18, 1981	1900	7,220	204	Dec. 13, 1981	0230	*26,300	745
May 26, 1981	1900	7,290	206	Dec. 14, 1981	0030	7,990	226
Oct. 17, 1981	1815	8,940	253	May 14, 1982	1700	8,990	255
Oct. 20, 1981	1630	9,770	277	Sept. 13, 1982	0045	24,100	682
Oct. 25, 1981	1615	10,600	300				

Minimum discharges, 79 cu ft/s (2.237 cu m/s) Mar. 2-3, 26, 1981; 46 cu ft/s (1.303 cu m/s) May 2-4, 1982.

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	1600	144	86	232	131	83	160	260	321	509	127	292
2	1340	130	95	338	109	83	154	313	330	241	120	178
3	682	122	97	153	104	79	136	1110	295	205	120	241
4	412	119	91	129	103	292	130	1170	284	195	141	168
5	318	121	538	112	100	847	275	3320	401	177	124	129
6	1240	117	510	112	98	190	485	1600	311	168	131	338
7	1050	114	903	156	95	135	407	582	254	162	136	369
8	450	112	548	511	89	129	1030	369	227	155	118	388
9	300	110	215	481	88	115	729	988	214	181	116	2440
10	270	110	155	227	111	104	946	896	205	236	131	410
11	230	108	136	276	100	97	545	954	198	155	170	225
12	200	107	115	377	90	93	322	679	192	150	135	190
13	150	106	113	236	90	95	232	433	189	151	146	356
14	150	103	163	262	398	92	217	296	187	143	145	294
15	385	102	238	177	500	89	188	249	182	151	241	191
16	720	102	132	144	206	81	218	222	202	138	529	155
17	553	99	111	132	162	114	869	1110	188	225	365	132
18	305	97	98	129	240	201	1030	1550	177	265	172	124
19	231	95	95	282	195	105	559	744	200	176	148	135
20	158	97	94	271	138	90	332	946	210	177	207	170
21	176	97	92	180	136	90	250	622	443	142	314	155
22	168	97	92	153	142	103	215	578	309	135	162	125
23	177	95	103	134	113	91	286	1970	286	131	264	187
24	193	102	136	123	101	86	208	726	349	183	200	146
25	174	97	372	123	94	84	191	656	364	226	162	143
26	150	97	351	123	88	244	178	1740	205	147	134	219
27	147	92	272	187	88	332	177	1070	503	134	125	267
28	144	92	147	150	86	221	160	526	481	127	123	290
29	128	92	123	136	---	725	152	401	443	122	124	616
30	144	86	109	126	---	329	145	332	327	138	133	390
31	157	---	112	134	---	184	---	341	---	136	117	---
TOTAL	12612	3162	6442	6306	3995	5603	10926	26753	8477	5581	5380	9463
MEAN	407	105	208	203	143	181	364	863	283	180	174	315
MAX	1600	144	903	511	500	847	1030	3320	503	509	529	2440
MIN	128	86	86	112	86	79	130	222	177	122	116	124
CFSM	3.18	.82	1.63	1.59	1.12	1.41	2.84	6.74	2.21	1.41	1.36	2.46
IN	3.67	.92	1.87	1.83	1.16	1.63	3.18	7.78	2.46	1.62	1.56	2.75
AC-FT	25020	6270	12780	12510	7920	11110	21670	53060	16810	11070	10670	18770

CAL YR 1980 TOTAL 90870 MEAN 248 MAX 4290 MIN 68 CFSM 1.94 IN 26.41 AC-FT 180200
WTR YR 1981 TOTAL 104700 MEAN 287 MAX 3320 MIN 79 CFSM 2.24 IN 30.43 AC-FT 207700

RIO GRANDE DE MANATI BASIN

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

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	167	633	175	210	141	90	60	50	96	67	70	55
2	164	470	173	197	178	90	68	49	97	64	72	77
3	133	836	182	193	135	87	145	48	97	62	62	60
4	371	554	185	218	140	84	94	73	118	63	55	59
5	632	759	159	190	188	82	278	249	105	82	54	52
6	448	506	154	177	156	79	106	403	92	70	52	408
7	195	344	151	182	146	79	344	403	86	93	50	234
8	167	518	146	170	147	79	221	194	88	71	49	81
9	145	3140	143	163	128	78	102	309	83	76	119	72
10	168	972	147	166	118	76	81	452	79	69	64	62
11	1040	461	1590	168	113	78	70	1440	78	65	91	184
12	756	337	595	190	110	78	67	1160	79	62	63	1000
13	330	281	7950	160	110	77	63	1100	78	62	64	5520
14	266	266	3510	156	105	76	61	2090	77	60	60	806
15	192	244	1150	146	118	75	59	866	78	64	56	305
16	628	240	600	145	126	74	60	339	77	64	53	170
17	1930	271	433	144	122	73	64	216	75	65	51	162
18	1210	267	355	142	109	71	69	176	74	109	50	232
19	559	543	318	141	104	70	59	140	73	168	50	324
20	2100	356	278	139	104	69	57	129	85	163	49	137
21	939	243	261	135	106	69	56	157	81	109	49	101
22	1100	221	249	134	101	67	54	129	75	86	49	100
23	913	199	226	130	121	64	56	115	77	118	53	96
24	1820	191	216	129	116	62	74	112	75	82	63	78
25	2700	194	234	129	93	62	58	106	73	87	51	75
26	1720	245	215	126	91	67	54	98	71	75	79	71
27	1580	476	571	121	88	65	53	96	68	68	56	71
28	756	233	398	140	89	62	54	109	67	65	51	70
29	1190	199	253	130	---	60	53	141	67	66	76	120
30	822	187	226	122	---	60	50	149	69	119	81	238
31	973	---	239	129	---	61	---	108	---	75	62	---
TOTAL	26114	14386	21482	4822	3403	2264	2690	11206	2438	2549	1904	11020
MEAN	842	480	693	156	122	73.0	89.7	361	81.3	82.2	61.4	367
MAX	2700	3140	7950	218	188	90	344	2090	118	168	119	5520
MIN	133	187	143	121	88	60	50	48	67	60	49	52
CFSM	6.58	3.75	5.41	1.22	.95	.57	.70	2.82	.64	.64	.48	2.87
IN.	7.59	4.18	6.24	1.40	.99	.66	.78	3.26	.71	.74	.55	3.20
AC-FT	51800	28530	42610	9560	6750	4490	5340	22230	4840	5060	3780	21860
CAL YR 1981	TOTAL	144466	MEAN	396	MAX	7950	MIN	79	CFSM	3.09	IN	41.99
WTR YR 1982	TOTAL	104278	MEAN	286	MAX	7950	MIN	48	CFSM	2.23	IN	30.31
									AC-FT	286500		
									AC-FT	206800		

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO SEPTEMBER 1982

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPEC- IFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)
AUG, 1981				
13...	1010	145.0	227	29.0
SEP				
17...	935	137.0	223	27.0
NOV				
20...	1055	337.0	170	25.0
DEC				
10...	920	141.0	224	24.0
FEB, 1982				
12...	1025	109.0	245	23.5
MAR				
8...	1505	79.0	231	28.0
APR				
15...	950	60.0	255	26.0
MAY				
11...	1145	421.0	168	24.0
JUN				
14...	1115	77.0	237	29.5
JUL				
13...	1010	60.0	231	28.0
AUG				
17...	1025	50.0	198	28.0
SEP				
15...	1335	300.0	178	27.0

RIO GRANDE DE MANATI BASIN

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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.

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CCN- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 , 1980												
26...	0915	106	230	7.7	23.5	.20	7.9	--	1	K130	K90	90
JAN , 1981												
28...	1400	166	209	8.1	24.0	24	8.5	--	13	K9400	3100	--
MAR												
16...	1230	84	239	7.9	27.5	33	7.7	--	<10	K150	K140	90
MAY												
26...	1310	E400	182	6.4	25.0	40	8.0	100	<10	K10000	2900	--
JUL												
29...	1300	104	250	7.9	29.0	30	8.1	106	<10	K180	K140	91
SEP												
22...	0835	127	213	8.0	27.0	3.5	7.5	95	<5	390	K82	84
DEC												
02...	1125	180	220	7.9	23.5	9.6	8.7	101	13	350	K140	--
JAN , 1982												
20...	1010	126	231	7.8	23.0	3.9	8.9	102	50	K100	K2200	92
MAR												
31...	1125	65	271	8.4	26.0	2.4	8.4	105	14	K70	<10	--
MAY												
28...	0945	103	237	8.1	26.0	3.0	7.8	96	<10	K640	200	92
AUG												
02...	1040	76	230	8.0	28.0	--	7.0	90	79	2200	7500	--
SEP												
15...	1410	443	172	7.5	28.0	--	7.6	99	14	2000	590	63

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- 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, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
NOV , 1980												
26...	0	23	7.9	10	.5	1.8	93	8.3	13	.1	27	147
JAN , 1981												
28...	--	--	--	--	--	--	77	--	--	--	--	--
MAR												
16...	0	26	6.0	12	.6	1.6	92	5.3	11	.1	28	146
MAY												
26...	--	--	--	--	--	--	65	--	--	--	--	--
JUL												
29...	0	22	8.8	12	.5	1.7	91	8.2	12	.1	29	148
SEP												
22...	2	21	7.7	10	.5	1.5	82	7.3	11	.1	23	131
DEC												
02...	--	--	--	--	--	--	90	--	--	--	--	--
JAN , 1982												
20...	2	23	8.3	11	.5	1.7	90	8.7	11	.1	20	138
MAR												
31...	--	--	--	--	--	--	100	--	--	--	--	--
MAY												
28...	0	23	8.5	11	.5	1.9	92	10	12	.1	26	150
AUG												
02...	--	--	--	--	--	--	85	--	--	--	--	--
SEP												
15...	7	16	5.7	8.5	.5	1.9	56	11	9.6	.1	24	111

E Estimated.

K = non-ideal count.

RIO GRANDE DE MANATI BASIN

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

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

DATE	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, 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)
NOV , 1980											
26...	42.1	3	.45	.000	.45	--	.000	.19	.19	.64	2.8
JAN , 1981											
28...	--	9	.76	.020	.78	--	.010	.22	.23	1.0	4.5
MAR											
16...	33.1	58	.12	<.010	.13	.13	.040	.64	.68	.81	3.6
MAY											
26...	--	42	.89	<.010	.90	--	.030	.38	.41	1.3	5.8
JUL											
29...	41.6	54	.42	<.010	.43	--	.040	.29	.33	.76	3.4
SEP											
22...	44.9	14	--	<.010	.30	--	.040	.45	.49	.79	3.5
DEC											
02...	--	15	--	<.010	.76	--	.040	.12	.16	.92	4.1
JAN , 1982											
20...	46.9	10	.57	.010	.58	--	.040	.31	.35	.93	4.1
MAR											
31...	--	7	--	<.010	.27	--	.060	.56	.62	.89	3.9
MAY											
28...	41.7	6	--	<.010	.20	--	.050	.65	.70	.90	4.0
AUG											
02...	--	20	.32	.020	.34	--	.050	.65	.70	1.0	4.6
SEP											
15...	133	37	.98	.020	1.0	--	.100	.50	.60	1.6	7.1
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 , 1980											
26...	.160	--	--	--	--	--	--	--	--	3	.86
JAN , 1981											
28...	.160	--	--	--	--	--	--	--	--	89	40
MAR											
16...	.130	--	--	--	--	--	--	--	--	59	13
MAY											
26...	.100	--	--	--	--	--	--	--	--	79	85
JUL											
29...	.120	--	--	--	--	--	--	--	--	75	21
SEP											
22...	.070	--	100	<1	20	3	.2	<1	<1	0	.00
DEC											
02...	.070	--	--	--	--	--	--	--	--	15	7.3
JAN , 1982											
20...	.050	1	100	<1	8	4	<.1	<1	<1	2	.68
MAR											
31...	.070	--	--	--	--	--	--	--	--	--	--
MAY											
28...	.060	--	--	--	--	--	--	--	--	--	--
AUG											
02...	.100	--	--	--	--	--	--	--	--	--	--
SEP											
15...	.110	1	100	1	3	7	.1	<1	<1	--	--

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.

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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-MP (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CaCO3)
NOV , 1980												
26...	1110	15	231	8.2	22.5	.10	9.5	--	0	440	K60	90
JAN , 1981												
19...	1430	49	225	8.0	22.0	14	8.7	--	23	K14000	8300	--
MAR												
16...	1515	15	243	8.1	25.5	.80	7.4	--	26	4500	K2100	82
MAY												
26...	1430	840	196	6.6	22.0	30	7.0	80	<10	K94000	30000	--
AUG												
13...	1520	26	230	8.2	29.5	6.4	8.2	108	29	K900	K550	90
SEP												
22...	1035	27	237	8.4	25.0	1.2	8.0	98	<5	K820	K190	92
DEC												
02...	1355	35	226	8.2	23.5	5.0	8.8	102	17	340	640	--
JAN , 1982												
15...	1320	25	226	8.1	22.5	1.5	9.3	107	--	K740	K160	88
MAR												
31...	1035	12	266	8.4	23.0	.70	9.0	106	12	440	490	--
MAY												
28...	1140	16	270	8.5	25.0	20	8.4	102	11	540	1000	100
AUG												
02...	1235	15	255	8.2	26.0	--	7.9	100	57	26000	5300	--
SEP												
15...	1110	31	204	7.8	25.0	--	8.0	98	30	5300	K1200	72

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- 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 , 1980											
26...	0	26	6.0	9.4	.4	1.6	97	5.0	12	.1	31
JAN , 1981											
19...	--	--	--	--	--	--	82	--	--	--	--
MAR											
16...	0	19	8.3	14	.7	2.0	93	9.5	12	.1	25
MAY											
26...	--	--	--	--	--	--	76	--	--	--	--
AUG											
13...	0	27	5.6	9.8	.4	1.8	98	4.0	11	.1	28
SEP											
22...	0	27	5.9	10	.5	1.5	98	4.8	11	.1	25
DEC											
02...	--	--	--	--	--	--	90	--	--	--	--
JAN , 1982											
15...	0	25	6.1	11	.5	1.4	90	4.9	11	.1	30
MAR											
31...	--	--	--	--	--	--	100	--	--	--	--
MAY											
28...	1	30	6.4	10	.5	1.5	100	11	11	.1	27
AUG											
02...	--	--	--	--	--	--	97	--	--	--	--
SEP											
15...	2	21	4.7	8.7	.5	2.0	71	9.0	9.9	.2	24

E Estimated.

K = non-ideal count.

RIO GRANDE DE MANATI BASIN

50035950 RIO CIALITOS AT HIGHWAY 649 AT CIALES, PR--Continued

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

DATE	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SCLIDS, 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 , 1980											
26...	149	6.0	6	.73	.000	.73	.020	.24	.26	.99	4.4
JAN , 1981											
19...	--	--	28	.98	.020	1.0	.090	.42	.51	1.5	6.7
MAR											
16...	146	5.9	12	.73	<.010	.74	.010	.31	.32	1.1	4.7
MAY											
26...	--	--	50	1.2	<.010	1.2	.070	.78	.85	2.1	9.1
AUG											
13...	146	10.2	17	.79	<.010	.80	.020	.22	.24	1.0	4.6
SEP											
22...	144	10.6	10	--	<.010	.83	.020	.27	.29	1.1	5.0
DEC											
02...	--	--	8	--	<.010	.07	.040	.25	.29	.36	1.6
JAN , 1982											
15...	144	9.8	4	--	<.010	1.1	<.010	--	.24	1.3	5.9
MAR											
31...	--	--	6	--	<.010	.74	.040	.22	.26	1.0	4.4
MAY											
28...	159	6.7	28	--	<.010	.60	.040	.56	.60	1.2	5.3
AUG											
02...	--	--	60	.64	.040	.68	.080	.72	.80	1.5	6.6
SEP											
15...	122	10.2	9	1.2	.020	1.2	.040	7.4	7.40	8.6	38

DATE	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 (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 , 1980											
26...	.120	--	--	--	--	--	--	--	--	3	.12
JAN , 1981											
19...	.260	--	--	--	--	--	--	--	--	175	23
MAR											
16...	.080	<1	100	<1	11	21	<.1	<1	<1	1	.04
MAY											
26...	.140	--	--	--	--	--	--	--	--	--	--
AUG											
13...	.090	--	--	--	--	--	--	--	--	--	--
SEP											
22...	.060	--	100	1	10	4	.2	<1	<1	--	--
DEC											
02...	.020	--	--	--	--	--	--	--	--	8	.76
JAN , 1982											
15...	.080	1	100	1	<1	<1	.1	<1	<1	1	.07
MAR											
31...	.090	--	--	--	--	--	--	--	--	--	--
MAY											
28...	.120	--	--	--	--	--	--	--	--	--	--
AUG											
02...	.140	--	--	--	--	--	--	--	--	--	--
SEP											
15...	.070	1	100	1	13	5	.1	<1	2	--	--

PESTICIDE ANALYSES, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982

		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)
DATE	TIME							
AUG , 1981								
13...	1520	<.10	<.01	<.10	<.01	<.01	<.01	<.01
AUG , 1982								
02...	1235	<.10	<.01	<.10	<.01	<.01	<.01	.01

		DI- ELDRIN TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TCTAL (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)
DATE										
AUG , 1981										
13...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
AUG , 1982										
02...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01

		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)	TOI- APRENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)
DATE									
AUG , 1981									
13...	<.01	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01
AUG , 1982									
02...	<.01	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01

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 Manati.

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 fair.

AVERAGE DISCHARGES.--11 years (1971-81), 373 cu ft/s (10.56 cu m/s), 25.71 in/yr (653 mm/yr), 270,200 acre-ft/yr (333 cu hm/yr); median of yearly mean discharges, 290 cu ft/s (8.21 cu m/s), 210,000 acre-ft/yr (259 cu hm/yr).

--12 years (1971-82), 378 cu ft/s (10.70 cu m/s), 26.06 in/yr (662 mm/yr), 273,900 acre-ft/yr (338 cu hm/yr); median of yearly mean discharges, 352 cu ft/s (9.97 cu m/s), 255,000 acre-ft/yr (314 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 WATER YEARS 1981-82.--Peak discharges above base of 9,000 cu ft/s (255 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 6, 1981	0030	*11,100 314	27.85 8.489	Dec. 13, 1981	0600	*41,000 1,161	30.91 9.421
Oct. 20, 1981	2245	10,500 297	27.61 8.416	Sept. 13, 1982	0430	25,900 733	29.96 9.132
Nov. 9, 1981	1615	11,600 329	28.01 8.537				

Minimum discharges, 120 cu ft/s (3.398 cu m/s) Dec. 1, 2, 1980; 76 cu ft/s (2.152 cu m/s) Aug. 21, 1982.

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	1920	201	121	216	229	147	259	303	549	676	186	486
2	1120	182	127	589	171	142	264	673	505	387	174	576
3	1070	177	139	274	161	138	212	895	462	314	164	580
4	640	174	135	213	156	139	209	1620	433	295	191	288
5	544	175	181	186	149	1230	286	3520	526	273	168	204
6	732	170	700	220	146	364	666	4570	479	250	184	269
7	1600	159	1130	235	147	241	421	1020	410	238	180	620
8	660	153	915	249	141	211	1320	566	362	225	168	433
9	453	149	364	957	138	192	838	506	336	268	171	3220
10	386	148	250	540	159	176	1390	1810	318	394	210	716
11	332	144	208	312	156	166	826	1170	304	244	246	395
12	288	141	184	600	151	149	498	1120	295	221	197	320
13	258	140	173	398	149	134	354	773	288	206	208	407
14	250	136	173	415	150	135	294	496	288	212	202	536
15	337	136	322	279	903	133	271	416	277	213	321	334
16	599	143	228	234	355	128	232	350	271	197	286	253
17	1070	140	181	210	265	127	683	833	317	203	866	223
18	464	136	167	193	298	276	1340	1320	259	418	329	208
19	336	135	159	357	331	183	772	3530	263	252	222	209
20	304	136	157	441	238	145	423	1410	317	258	246	256
21	270	137	153	295	213	143	332	914	307	216	463	248
22	252	146	148	249	276	163	271	847	616	200	264	194
23	251	155	153	228	199	153	323	2310	411	187	385	247
24	277	152	202	200	177	143	243	1260	361	217	501	210
25	250	144	448	185	162	155	227	1240	561	351	272	243
26	227	141	415	186	155	169	187	2280	318	234	209	263
27	215	141	396	191	154	558	203	2570	649	198	182	265
28	195	141	248	320	151	272	179	957	795	181	190	429
29	197	130	193	214	---	1330	154	701	753	172	204	474
30	204	122	171	183	---	628	144	570	434	184	302	870
31	222	---	173	187	---	347	---	559	---	199	190	---
TOTAL	15923	4484	8714	9556	6080	8617	13821	41109	12464	8083	8081	13976
MEAN	514	149	281	308	217	278	461	1326	415	261	261	466
MAX	1920	201	1130	957	903	1330	1390	4570	795	676	866	3220
MIN	195	122	121	183	138	127	144	303	259	172	164	194
CFSM	2.61	.76	1.43	1.56	1.10	1.41	2.34	6.73	2.11	1.33	1.33	2.37
IN	3.01	.85	1.65	1.80	1.15	1.63	2.61	7.76	2.35	1.53	1.53	2.64
AC-FT	31580	8890	17280	18950	12060	17090	27410	81540	24720	16030	16030	27720
CAL YR 1980	TOTAL	126063	MEAN	344	MAX	7170	MIN	110	CFSM	1.75	IN	23.80
WTR YR 1981	TOTAL	150908	MEAN	413	MAX	4570	MIN	121	CFSM	2.10	IN	28.50
									AC-FT	250000		
									AC-FT	299300		

RIO GRANDE DE MANATI BASIN

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

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	322	1140	249	296	208	156	106	95	186	110	118	93
2	255	818	243	273	254	154	105	93	176	105	148	106
3	212	1270	242	265	230	148	167	95	167	101	119	101
4	245	1130	262	284	235	144	139	100	244	99	105	100
5	640	898	231	265	233	140	381	334	284	113	99	87
6	818	949	225	258	247	142	206	392	194	118	96	183
7	321	580	217	256	221	143	277	525	169	123	92	576
8	259	575	220	251	219	140	429	348	156	119	89	166
9	228	5140	207	237	210	137	197	287	147	111	150	121
10	235	2480	211	237	195	136	162	801	138	116	116	101
11	700	1000	1600	231	188	135	133	970	135	104	136	99
12	1800	634	1110	257	181	137	124	2210	128	100	120	391
13	900	506	14200	234	178	137	120	1210	125	97	106	7300
14	417	460	9260	222	174	134	117	2030	127	95	105	1350
15	272	408	3500	216	180	131	114	1620	121	100	99	575
16	334	392	1710	218	199	129	112	612	120	100	93	383
17	1110	408	1170	217	190	126	112	431	121	102	88	297
18	2120	335	857	212	183	123	121	354	107	102	88	351
19	882	500	731	211	175	123	114	289	101	195	82	459
20	1500	526	631	207	172	120	108	252	114	253	80	284
21	2550	336	530	208	170	119	106	296	118	274	83	226
22	853	297	479	206	169	117	104	252	108	158	82	202
23	1410	278	428	202	167	115	103	224	107	179	85	198
24	2130	266	380	199	187	114	115	206	106	144	115	175
25	3210	254	367	197	161	113	115	209	104	142	94	160
26	3000	275	368	196	154	114	104	189	105	132	114	154
27	2480	582	471	195	153	114	102	189	107	120	104	144
28	1500	334	588	204	154	110	101	221	96	114	91	147
29	1220	280	358	207	---	107	99	241	98	114	106	142
30	1420	258	316	200	---	105	98	251	105	167	167	326
31	1110	---	310	199	---	113	---	201	---	152	119	---
TOTAL	34453	23309	41671	7060	5387	3976	4391	15527	4114	4059	3289	14997
MEAN	1111	777	1344	228	192	128	146	501	137	131	106	500
MAX	3210	5140	14200	296	254	156	429	2210	284	274	167	7300
MIN	212	254	207	195	153	105	98	93	96	95	80	87
CFSM	5.64	3.94	6.82	1.16	.98	.65	.74	2.54	.70	.67	.54	2.54
IN.	6.51	4.40	7.97	1.33	1.02	.75	.93	2.93	.78	.77	.62	2.83
AC-FT	68340	46230	82650	14000	10690	7890	8710	30800	8160	8050	6520	29750
CAL YR 1981	TOTAL	221220	MEAN 606	MAX 14200	MIN 127	CFSM 3.08	IN 41.77	AC-FT 438800				
WTR YR 1982	TOTAL	162233	MEAN 444	MAX 14200	MIN 80	CFSM 2.25	IN 30.63	AC-FT 321800				

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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-MP (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT , 1980											
03...	1005	917	172	7.5	25.0	62	8.2	--	--	42000	K14000
NOV											
10...	1315	148	286	7.8	28.0	.35	8.4	--	5	K16000	6400
DEC											
10...	1115	235	272	7.7	25.0	6.6	6.6	--	4	K16000	300
JAN , 1981											
12...	1325	616	198	7.4	25.5	42	8.0	--	--	25000	9300
FEB											
13...	1055	150	285	7.6	25.0	.70	8.7	--	--	3900	K1400
MAR											
13...	1120	139	301	7.6	23.5	1.1	8.2	--	--	58000	K18000
APR											
10...	1025	1490	189	7.7	22.5	38	8.1	--	--	24000	K1700
MAY											
12...	1400	844	197	7.4	25.5	140	7.9	95	150	K12000	6800
JUN											
19...	1255	244	253	7.4	29.0	7.9	7.9	101	--	K9000	K500
JUL											
14...	1320	208	273	7.6	30.0	18	7.6	101	170	K9000	490
AUG											
07...	1255	172	300	7.7	29.5	8.3	8.2	106	--	K2000	K10
SEP											
04...	1100	309	260	7.6	26.5	36	7.2	91	<10	3600	410
OCT											
15...	1030	280	288	7.5	26.5	40	7.3	91	--	K7000	K11000
DEC											
09...	1220	215	291	7.8	25.0	5.3	8.4	102	--	K13000	3300
14...											
14...	1800	6070	180	7.2	23.5	200	9.4	111	150	K9000	K12000
FEB , 1982											
03...	1200	214	289	8.2	22.5	30	8.4	98	0	24000	3400
APR											
03...	1115	186	335	7.7	27.0	33	7.5	95	<10	K1600	570
JUN											
02...	0935	177	319	8.3	26.5	16	7.0	88	<10	K3000	270
AUG											
04...	1145	104	332	7.5	28.5	5.6	7.2	93	78	380	K64

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)
OCT 1980											
03...	78	16	22	5.7	8.6	.4	1.8	62	9.8	9.2	.1
NOV											
10...	120	0	37	7.7	12	.5	2.0	122	8.3	12	.1
DEC											
10...	97	5	28	6.6	9.8	.4	17	92	12	12	.1
JAN , 1981											
12...	79	4	23	5.3	8.0	.4	2.1	75	7.4	9.2	.1
FEB											
13...	120	0	35	7.2	10	.4	1.5	120	7.7	13	.1
MAR											
13...	130	10	40	7.8	12	.5	2.1	120	7.0	13	.1
APR											
10...	71	5	20	5.2	8.8	.5	1.9	66	8.9	10	.1
MAY											
12...	79	8	24	4.7	8.2	.4	1.9	71	8.7	8.8	.1
JUN											
19...	120	12	37	7.4	9.9	.4	1.9	108	7.0	12	<.1
JUL											
14...	120	8	36	8.0	16	.6	2.0	112	6.3	12	.1
AUG											
07...	130	12	38	8.0	13	.5	1.7	118	7.4	11	.1
SEP											
04...	110	0	34	5.7	7.8	.3	1.6	110	4.1	10	<.1
OCT											
15...	100	0	30	6.5	11	.5	2.6	103	6.8	11	.1
DEC											
09...	120	0	38	7.0	9.7	.4	1.9	123	9.7	12	.1
14...											
14...	74	0	24	3.4	6.6	.3	1.8	74	9.7	7.0	<.1
FEB , 1982											
03...	130	0	38	7.3	10	.4	2.2	150	7.3	11	.1
APR											
03...	140	3	45	7.4	10	.4	1.4	140	9.8	13	.1
JUN											
02...	130	4	42	7.1	10	.4	1.9	130	10	11	.1
AUG											
04...	140	0	44	6.8	10	.4	1.3	140	8.0	12	.1

K = non-ideal count.

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

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

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM CP 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 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)
OCT , 1980											
03...	22	117	121	290	--	.91	.91	.070	.040	.69	.69
NOV											
10...	23	190	179	75.9	21	.67	.66	.120	.120	.08	.00
DEC											
10...	23	158	170	100	--	1.3	1.3	.060	.060	.25	.14
JAN , 1981											
12...	19	128	124	213	--	.99	.99	.060	.050	.44	.26
FEB											
13...	21	179	167	72.5	--	--	--	--	--	--	--
MAR											
13...	24	183	182	68.7	--	.82	.82	.070	.070	.43	.31
APR											
10...	22	121	120	487	--	1.9	.88	.120	.050	.51	.29
MAY											
12...	18	127	121	289	--	.90	.89	.130	.050	1.1	.61
JUN											
19...	23	177	166	117	--	.65	.65	.020	.020	.43	.30
JUL											
14...	10	167	161	93.8	36	.65	.65	.030	.020	.43	.38
AUG											
07...	23	180	174	83.6	--	.63	.63	.030	.030	.28	.28
SEP											
04...	15	160	146	133	71	.92	.33	.060	.040	.57	.57
OCT											
15...	21	156	147	118	--	--	1.1	--	.380	--	--
DEC											
09...	18	187	169	109	18	--	.86	--	.090	--	--
14...	11	144	109	2360	755	--	.87	--	.070	--	--
FEB , 1982											
03...	16	174	164	101	--	--	.95	--	.070	--	--
APR											
03...	19	184	190	92.4	102	--	.59	--	.060	--	--
JUN											
02...	19	187	181	89.4	29	--	.77	--	.050	--	--
AUG											
04...	18	184	182	51.7	11	--	.67	--	<.010	--	--
DATE	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN DIS- SOLVED (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)
OCT , 1980											
03...	.76	.73	1.7	1.7	7.4	.270	.050	--	1	<1	100
NOV											
10...	.20	.08	.87	.75	3.9	.160	.120	--	--	--	--
DEC											
10...	.31	.20	1.6	1.5	7.1	.160	.100	--	--	--	--
JAN , 1981											
12...	.50	.31	1.5	1.3	6.6	.300	.100	--	1	1	100
FEB											
13...	--	--	--	--	--	--	--	--	--	--	--
MAR											
13...	.50	.38	1.3	1.2	5.8	.170	.110	--	--	--	--
APR											
10...	.63	.34	2.5	1.2	11	.330	.090	--	1	1	200
MAY											
12...	1.20	.66	2.1	1.6	9.3	.380	.080	--	--	--	--
JUN											
19...	.45	.32	1.1	.97	4.9	.120	.060	--	--	--	--
JUL											
14...	.46	.40	1.1	1.1	4.9	.070	.050	--	3	1	100
AUG											
07...	.31	.31	.94	.94	4.2	.140	.080	--	--	--	--
SEP											
04...	.63	.61	1.6	.94	6.9	.120	.060	--	2	1	100
OCT											
15...	.89	--	--	--	--	.310	.180	.180	2	2	100
DEC											
09...	.20	--	--	--	--	.130	.090	.110	--	--	--
14...	1.20	--	--	--	--	.640	.080	.070	--	--	--
FEB , 1982											
03...	.26	--	--	--	--	.060	.140	.150	1	<1	100
APR											
03...	3.20	--	--	--	--	.220	.100	.090	--	--	--
JUN											
02...	.70	--	--	--	--	.180	.120	.110	1	1	100
AUG											
04...	.30	--	--	--	--	.110	.070	.090	1	1	100

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

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

DATE	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)
OCT , 1980											
03...	<10	3	<1	80	<10	22	<1	57	4	25000	40
NOV											
10...	--	--	--	--	--	--	--	--	--	--	--
DEC											
10...	--	--	--	--	--	--	--	--	--	--	--
JAN , 1981											
12...	40	3	3	10	<10	6	<1	50	1	9900	100
FEB											
13...	--	--	--	--	--	--	--	--	--	--	--
MAR											
13...	--	--	--	--	--	--	--	--	--	--	--
APR											
10...	30	1	<1	20	<10	8	<1	34	8	7600	110
MAY											
12...	--	--	--	--	--	--	--	--	--	--	--
JUN											
19...	--	--	--	--	--	--	--	--	--	--	--
JUL											
14...	50	2	1	20	20	3	<1	12	5	2000	620
AUG											
07...	--	--	--	--	--	--	--	--	--	--	--
SEP											
04...	100	<1	<1	10	<10	5	<1	26	8	4400	20
OCT											
15...	50	<1	3	20	<10	3	<1	27	5	3900	67
DEC											
09...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
FEB , 1982											
03...	44	<1	1	20	10	4	<1	13	8	1900	<3
APR											
03...	--	--	--	--	--	--	--	--	--	--	--
JUN											
02...	56	1	<1	20	10	1	1	6	2	1300	9
AUG											
04...	49	2	<1	20	10	2	3	11	4	690	<3

DATE	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)
OCT , 1980										
03...	21	<1	790	<1	.1	.1	33	2	1	<1
NOV										
10...	--	--	--	--	--	--	--	--	--	--
DEC										
10...	--	--	--	--	--	--	--	--	--	--
JAN , 1981										
12...	5	3	420	6	.2	.2	12	<1	<1	<1
FEB										
13...	--	--	--	--	--	--	--	--	--	--
MAR										
13...	--	--	--	--	--	--	--	--	--	--
APR										
10...	16	<1	390	3	3.9	2.2	18	<1	<1	<1
MAY										
12...	--	--	--	--	--	--	--	--	--	--
JUN										
19...	--	--	--	--	--	--	--	--	--	--
JUL										
14...	5	1	160	160	1.0	.2	4	4	<1	<1
AUG										
07...	--	--	--	--	--	--	--	--	--	--
SEP										
04...	3	3	140	10	.1	<.1	2	2	<1	<1
OCT										
15...	14	3	130	23	.2	.1	13	3	<1	<1
DEC										
09...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
FEB , 1982										
03...	1	<1	120	37	.2	.2	<1	<1	<1	<1
APR										
03...	--	--	--	--	--	--	--	--	--	--
JUN										
02...	1	1	90	30	.1	<.1	1	1	<1	<1
AUG										
04...	7	5	60	23	<.1	<.1	4	3	<1	<1

RIO GRANDE DE MANATI BASIN

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

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

DATE	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)	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT , 1980										
03...	<1	<1	50	10	190	--	21	--	--	--
NOV										
10...	--	--	--	--	860	3.7	--	--	36	14
DEC										
10...	--	--	--	--	140	8.8	--	--	73	46
JAN , 1981										
12...	1	1	30	<4	530	--	4.8	1.6	341	567
FEB										
13...	--	--	--	--	490	--	--	--	16	6.5
MAR										
13...	--	--	--	--	2400	2.9	--	--	42	16
APR										
10...	<1	<1	60	10	950	--	9.4	6.0	95	382
MAY										
12...	--	--	--	--	260	12	--	--	333	759
JUN										
19...	--	--	--	--	1900	1.8	--	--	33	22
JUL										
14...	<1	<1	30	20	1600	--	7.0	--	98	55
AUG										
07...	--	--	--	--	140	2.6	--	--	27	13
SEP										
04...	<1	<1	30	<10	390	--	3.8	.7	119	99
OCT										
15...	<1	<1	40	13	--	--	--	--	86	65
DEC										
09...	--	--	--	--	--	--	--	--	63	37
14...	--	--	--	--	--	--	--	--	6200	102000
FEB , 1982										
03...	<1	<1	40	<4	--	--	--	--	92	53
APR										
03...	--	--	--	--	--	--	--	--	305	153
JUN										
02...	<1	<1	10	6	--	--	--	--	139	66
AUG										
04...	<1	<1	40	7	--	--	--	--	10	2.8

5003E100 RIO GRANDE DE MANATI AT HIGHWAY 2 NEAR MANATI, PR--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	CHLOR- DANE, TOTAL (UG/L)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDT, TOTAL (UG/L)
OCT , 1981												
15...	1030	--	1	--	<.1	--	<1.0	--	<.1	--	<.1	--
FEB , 1982												
03...	1200	<.10	--	<.01	--	<.10	--	<.01	--	<.01	--	.1
APR												
03...	1115	<.10	<1	<.01	<.1	<.10	<1.0	<.01	<.1	<.01	<.1	<.01

DATE	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- AZINON, TOTAL (UG/L)	DI- ELDRIN, TOTAL (UG/L)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)
OCT , 1981											
15...	<.1	--	--	<.1	--	--	<.1	--	--	<.1	--
FEB , 1982											
03...	--	.05	<.01	--	<.01	<.01	--	<.01	<.01	--	<.01
APR											
03...	<.1	<.01	<.01	<.1	<.01	<.01	<.1	<.01	<.01	<.1	<.01

DATE	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	MALA- THION, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	MIREX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	PARA- THION, TOTAL (UG/L)
OCT , 1981											
15...	<.1	--	<.1	--	--	<.1	--	--	--	<.1	--
FEB , 1982											
03...	--	.01	--	<.01	<.01	--	<.01	<.01	<.01	--	<.01
APR											
03...	<.1	<.01	<.1	<.01	<.01	<.1	<.01	<.01	<.01	<.1	<.01

DATE	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	PCN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	PER- THANE TOTAL (UG/L)	PEF- THANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TOX- APHENE, TOTAL (UG/L)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	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)
OCT , 1981											
15...	--	<1.0	--	<.10	--	<1.0	--	--	--	--	--
FEB , 1982											
03...	<.10	--	<.10	--	<1	--	<.01	<.01	<.01	<.01	<.01
APR											
03...	<.10	<1.0	<.10	<1.00	<1	<10	<.01	<.01	<.01	<.01	<.01

RIO GRANDE DE MANATI BASIN

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

PHYTOPLANKTON ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE TIME	OCT 3,80 1005	NOV 10,80 1315	DEC 10,80 1115	JAN 12,81 1325	FEB 13,81 1055	MAR 13,81 1120				
TOTAL CELLS/ML	190	860	140	530	490	2400				
DIVERSITY: DIVISION	0.9	1.0	1.0	1.1	1.3	0.3				
...CLASS	0.9	1.0	1.0	1.1	1.3	0.3				
...ORDER	2.2	1.4	1.7	2.4	2.3	1.0				
...FAMILY	2.2	1.5	2.0	2.4	2.5	1.0				
...GENUS	2.2	1.5	2.0	2.7	2.5	1.0				
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)										
.BACILLARIOPHYCEAE										
...ACHNANTHALES										
...ACHNANTHACEAE										
...ACHNANTHES	--	-	--	-	14	10	29	6	--	-
...COCCONEIS	14	7	--	-	--	-	--	-	--	-
...RHOICOSPHEMIA			--	-	15	3	--	-	--	-
..BACILLARIALES										
...NITZSCHIAEAE										
...NITZSCHIA	--	-	--	-	15	3	--	-	--	-
...NITZSCHIA	55#	29	64	7	14	10	120#	22	44	9
...EPITHEMIALES										
...EPITHEMIAEAE										
...DENTICULA	--	-	--	-	--	-	--	-	--	-
...EUPODISCALES										
...COSCINODISCAEAE										
...CYCLOTELLA	--	-	--	-	15	3	--	-	15	3
...MELOSIRA	27	14	--	-	44	8	--	-	--	-
..FRAGILARIALES										
...FRAGILARIAEAE										
...DIATOMA	--	-	--	-	--	-	--	-	--	-
...SYNEDRA	--	-	13	1	29	6	--	-	--	-
..NAVICULALES										
...CYMBELLACEAE										
...CYMBELLA	--	-	--	-	--	-	--	-	15	3
...GOMPHONEMACEAE										
...GOMPHONEMA	--	-	26	3	27#	20	15	3	29	6
...NAVICULACEAE										
...NAVICULA	41#	21	26	3	14	10	29	6	29	6
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
...CHLOROCOCCALES										
...OOCYSTACEAE										
...ANKISTRODESMUS	--	-	--	-	--	-	--	-	--	-
...KIRCHNERIELLA	--	-	--	-	--	-	--	-	--	-
...OOCYSTIS	--	-	13	1	--	-	--	-	--	-
...SCENEDESMACEAE										
...SCENEDESMUS	--	-	51	6	--	-	--	-	--	-
...VOLVOCALES										
...CHLAMYDOMONADACEAE										
...CHLAMYDOMONAS	--	-	13	1	--	-	15	3	29	6
CHRYSOPHYTA										
.CHRYSOPHYCEAE										
...OCHROMONADALES										
...OCHROMONADACEAE										
...OCHROMONAS	--	-	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
...CHROOCOCCALES										
...CHROOCOCCACEAE										
...ANACYSTIS	--	-	13	1	--	-	--	-	170#	35
...NOSTOCALES										
...HAMMATOIDEACEAE										
...RAPHIDIOPSIS	55#	29	--	-	--	-	200#	39	--	-
...NOSTOCACEAE										
...MODULARIA	--	-	--	-	--	-	--	-	--	-
...SCYTONEMACEAE										
...PLECTONEMA	--	-	--	-	--	-	--	-	--	-
...OSCILLATORIALES										
...OSCILLATORIAEAE										
...OSCILLATORIA	--	-	440#	75	69#	50	--	-	150#	29
EUGLENOPHYTA (EUGLENIDS)										
.EUGLENOPHYCEAE										
...EUGLENALES										
...EUGLENACEAE										
...TRACHELONONAS	--	-	--	-	--	-	--	-	15	3
PYRRHOPHYTA (FIRE ALGAE)										
.DESMOKONTAE										
...DESMOMONADALES										
...PROROCENTRACEAE										
...PROROCENTRUM	--	-	--	-	--	-	--	-	--	-

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

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

PHYTOPLANKTON ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE TIME	APR 10, 81 1025	MAY 12, 81 1400	JUN 19, 81 1255	JUL 14, 81 1320	AUG 7, 81 1255	SEP 4, 81 1100				
TOTAL CELLS/ML	950	260	1900	1600	140	390				
DIVERSITY: DIVISION	1.1	0.9	0.7	0.7	0.0	1.1				
..CLASS	1.1	0.9	0.7	0.7	0.0	1.1				
...ORDER	1.8	1.4	0.9	0.8	1.4	1.1				
...FAMILY	2.5	2.0	1.0	0.8	1.4	1.1				
...GENUS	2.5	2.0	1.0	0.9	1.4	1.1				
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)										
..BACILLARIOPHYCEAE										
...ACHNANTHACEAE										
...ACHNANTHES	--	-	--	-	44	2	--	-	--	-
...COCCONEIS	--	-	--	-	--	-	--	-	--	-
...RHODICOSPHEMIA	--	-	--	-	--	-	--	-	--	-
...BACILLARIALES										
...NITZSCHIALES										
...NITZSCHIA	--	-	--	-	--	-	--	-	--	-
...NITZSCHIA	55	6	--	-	120	6	55	4	29*	20
...EPITHEMIALES										
...EPITHEMIALES										
...DENTICULA	14	1	--	-	--	-	--	-	--	-
...EUPODISCALES										
...COSCINODISCALES										
...CYCLOTELLA	--	-	15	6	59	3	--	-	87*	60
...MELOSIRA	--	-	--	-	--	-	14	1	--	-
...FRAGILARIALES										
...FRAGILARIALES										
...DIATOMA	--	-	29	11	--	-	--	-	--	-
...SYNEDRA	14	1	--	-	--	-	--	-	--	-
...NAVICULALES										
...CYMBELLACEAE										
...CYMBELLA	--	-	--	-	--	-	--	-	--	-
...GOMPHONEMACEAE										
...GOMPHONEMA	41	4	--	-	15	1	14	1	--	-
...NAVICULACEAE										
...NAVICULA	14	1	44*	17	15	1	41	3	29*	20
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
...CHLOROCOCCALES										
...OOCYSTACEAE										
...ANKISTRODES MUS	--	-	--	-	15	1	14	1	--	-
...KIRCHNERIELLA	--	-	--	-	--	-	14	1	--	-
...OOCYSTIS	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE										
...SCENEDESMUS	--	-	--	-	--	-	--	-	73*	19
...VOLVOCALES										
...CHLAMYDOMONADACEAE										
...CHLAMYDOMONAS	14	1	--	-	--	-	41	3	--	-
CHRYSOPHYTA										
..CHRYSOPHYCEAE										
...OCHROMONADALES										
...OCHROMONADACEAE										
...OCHROMONAS	--	-	--	-	--	-	--	-	--	-
CYNANOPHYTA (BLUE-GREEN ALGAE)										
..CYNANOPHYCEAE										
...CHROOCOCCALES										
...CHROOCOCCACEAE										
...ANACYSTIS	--	-	--	-	--	-	--	-	--	-
...NOSTOCALES										
...HAMMATOIDEACEAE										
...RAPHIDIOPSIS	360*	38	58*	22	--	-	--	-	--	-
...NOSTOCACEAE										
...NODULARIA	--	-	120*	44	--	-	--	-	--	-
...SCYTONEMATACEAE										
...PLECTONEMA	270*	29	--	-	--	-	--	-	--	-
...OSCILLATORIALES										
...OSCILLATORIALES										
...OSCILLATORIA	110	12	--	-	1600*	95	1400*	88	--	-
EUGLENOPHYTA (EUGLENIDS)										
..EUGLENOPHYCEAE										
...EUGLENALES										
...EUGLENACEAE	14	1	--	-	15	1	--	-	--	-
...TRACHELOMONAS	--	-	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)										
..DESMOKONTAE										
...DESMOMONADALES										
...PROROCENTRACEAE	41	4	--	-	--	-	--	-	--	-
...PROROCENTRUM	--	-	--	-	--	-	--	-	--	-

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

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

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

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

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN 062 MM
JUN , 1981				
19...	1255	244	33	12
JUL				
14...	1320	208	98	68
AUG				
07...	1255	172	27	9
SEP				
04...	1100	309	119	80
OCT				
15...	1030	280	86	93
DEC				
09...	1220	215	63	75
14...	1415	6850	1860	79
14...	1420	6560	1680	87
14...	1425	6560	1840	83
14...	1800	6280	2120	72
14...	1810	6560	2140	75
14...	1820	6560	1950	80
FEB , 1982				
03...	1200	214	92	66
APR				
03...	1115	186	305	68
JUN				
02...	0935	177	139	78
AUG				
04...	1145	104	10	100

LAGUNA TORTUGUERO BASIN

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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.

DRAINAGE AREA.--Indeterminate.

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

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

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHCS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 , 1980												
12...	1100	15	2250	8.1	30.0	--	8.8	--	--	K8	K11	380
JAN , 1981												
08...	1020	220	2540	7.9	28.0	.50	7.8	--	36	K17	K7	--
MAR												
20...	1000	8.8	3590	8.0	29.0	1.3	8.4	--	86	K4	K7	480
MAY												
27...	0950	60	1620	7.8	28.0	1.8	7.6	97	--	K90	K110	--
JUL												
20...	1335	25	1564	8.0	29.0	1.0	7.8	101	85	26	45	290
SEP												
22...	1450	24	1960	8.0	30.0	.90	10.0	128	39	41	34	310
NOV												
09...	1415	41	1507	7.6	28.5	--	7.2	92	99	3000	2900	--
JAN , 1982												
12...	1510	75	1060	7.8	27.0	--	6.6	8	33	K6	K190	--
MAR												
17...	1400	20	1310	7.8	28.0	1.4	8.5	108	29	<1	K5	--
MAY												
18...	1425	29	1400	7.8	29.5	--	9.2	129	55	K2	K2	--
JUL												
08...	1500	11	--	7.8	30.0	--	8.2	108	41	K4	70	--
SEP												
09...	1145	15	1730	7.9	30.5	--	7.0	117	120	K2	<2	--

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)	FLUC- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
NOV , 1980											
12...	260	86	40	320	7.2	8.9	122	73	610	.1	9.9
JAN , 1981											
08...	--	--	--	--	--	--	141	--	--	--	--
MAR											
20...	370	85	65	600	12	18	112	130	1100	<.1	9.6
MAY											
27...	--	--	--	--	--	--	114	--	--	--	--
JUL											
20...	169	69	28	220	5.6	6.7	133	57	410	<.1	5.6
SEP											
22...	200	69	34	270	6.7	7.0	112	64	470	<.1	7.5
NOV											
09...	--	--	--	--	--	--	144	--	--	--	--
JAN , 1982											
12...	--	--	--	--	--	--	156	--	--	--	--
MAR											
17...	--	--	--	--	--	--	150	--	--	--	--
MAY											
18...	--	--	--	--	--	--	120	--	--	--	--
JUL											
08...	--	--	--	--	--	--	120	--	--	--	--
SEP											
09...	--	--	--	--	--	--	130	--	--	--	--

E Estimated.

K = non-ideal count.

LAGUNA TORTUGUERO BASIN

50038200 LAGUNA TORTUGUERO OUTLET NEAR VEGA BAJA, PR--Continued

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

DATE	SOLIDS, SUN OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TCNS PER LAW)	SCLIDS, 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 , 1980											
12...	1220	49.4	--	.67	.010	.68	.330	.62	.95	1.6	7.2
JAN , 1981											
08...	--	--	12	.88	.010	.89	.620	.48	1.10	2.0	8.8
MAR											
20...	2080	49.4	16	.49	.010	.50	.210	.79	1.00	1.5	6.6
MAY											
27...	--	--	--	.76	.020	.78	.210	.76	.97	1.8	7.7
JUL											
20...	876	59.1	8	.65	.020	.67	.140	.96	1.10	1.8	7.8
SEP											
22...	988	63.2	14	.33	.020	.35	.200	1.0	1.20	1.6	6.9
NOV											
09...	--	--	15	1.2	.010	1.2	.210	.59	.80	2.0	8.9
JAN , 1982											
12...	--	--	3	1.4	.030	1.4	.150	.50	.65	2.1	9.1
MAR											
17...	--	--	6	.72	.020	.74	.280	.43	.71	1.5	6.4
MAY											
18...	--	--	10	.58	.020	.60	.110	.65	.76	1.4	6.0
JUL											
08...	--	--	1	.59	.020	.61	.210	1.4	1.60	2.2	9.8
SEP											
09...	--	--	7	.58	.020	.60	.290	1.2	1.50	2.1	9.3

[illegible]

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 Río 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 DISCHARGES.--12 years (1970-81), 29.0 cu ft/s (0.821 cu m/s), 26.08 in/yr (662 mm/yr), 21,010 acre-ft/yr (25.9 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).
--13 years (1970-82), 29.6 cu ft/s (0.838 cu m/s), 26.62 in/yr (676 mm/yr), 21,450 acre-ft/yr (26.4 cu hm/yr); median of yearly mean discharges, 32 cu ft/s (0.91 cu m/s), 23,200 acre-ft/yr (29 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 WATER YEARS 1981-82.--Peak discharges above base of 2,500 cu ft/s (70.8 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)	
Mar. 4, 1981	2000	2,800	81.6	11.31	3.447	Dec. 13, 1981	2300	6,960	197	15.64	4.767
Mar. 26, 1981	1645	*12,400	351	19.60	5.974	May 10, 1982	1500	3,070	86.9	11.57	3.526
May 19, 1981	Unknown	3,020	85.5	11.5	3.505	May 11, 1982	1715	*7,650	217	16.22	4.944
Dec. 13, 1981	0215	4,430	125	13.20	4.023	May 13, 1982	1445	5,130	145	13.93	4.246
Dec. 13, 1981	0530	3,620	102	12.27	3.740	May 14, 1982	1600	5,740	163	14.53	4.429

Minimum discharges, 8.1 cu ft/s (0.229 cu m/s) Nov. 28, 1980; 4.4 cu ft/s (0.125 cu m/s) Aug. 17, 19, 1982.

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	44	14	10	18	16	12	30	45	85	20	16	43
2	36	13	12	15	14	12	30	30	35	18	14	19
3	35	14	10	14	15	12	55	60	32	20	58	15
4	40	14	9.9	14	14	309	55	290	120	24	21	13
5	36	13	24	14	13	89	100	270	64	21	20	13
6	44	13	79	15	14	27	45	85	35	18	21	14
7	49	13	340	15	14	20	65	40	30	17	54	36
8	20	12	65	21	12	15	85	30	30	18	19	72
9	20	13	32	19	13	15	75	45	30	28	98	51
10	15	14	25	13	13	15	50	280	25	23	103	21
11	15	14	25	40	13	10	40	200	25	16	37	19
12	15	12	20	23	13	10	35	80	25	15	58	27
13	15	13	20	19	15	10	30	60	25	19	34	49
14	15	13	54	17	15	10	30	50	25	16	24	29
15	86	13	33	15	27	10	30	45	25	16	20	20
16	35	14	20	13	15	10	60	40	25	15	18	19
17	22	13	15	13	14	10	115	40	25	15	17	18
18	20	14	15	14	29	13	55	240	40	15	16	17
19	18	16	13	30	15	12	30	370	25	34	15	20
20	17	12	13	19	13	12	30	100	25	19	16	18
21	15	14	13	16	26	16	30	50	25	16	21	16
22	17	14	14	15	16	15	30	30	25	15	49	15
23	16	14	24	15	14	14	30	120	35	16	28	15
24	17	12	38	14	13	23	25	35	25	17	18	15
25	15	13	26	14	12	35	25	25	20	16	16	13
26	14	11	18	14	13	704	45	230	20	14	14	14
27	14	10	23	21	13	187	30	65	20	15	14	14
28	14	9.6	17	19	12	65	25	40	19	15	16	54
29	15	9.4	15	15	---	246	25	30	18	13	14	63
30	25	9.6	15	24	---	50	25	31	20	21	13	30
31	15	---	25	18	---	30	---	46	---	16	13	---
TOTAL	774	383.6	1062.9	546	426	2018	1335	3102	978	561	895	782
MEAN	25.0	12.8	34.3	17.6	15.2	65.1	44.5	100	32.6	18.1	28.9	26.1
MAX	86	16	340	40	29	704	115	370	120	34	103	72
MIN	14	9.4	9.9	13	12	10	25	25	18	13	13	13
CFSM	1.66	.85	2.27	1.17	1.01	4.31	2.95	6.62	2.16	1.20	1.91	1.73
IN	1.91	.94	2.62	1.35	1.05	4.97	3.29	7.64	2.41	1.38	2.20	1.93
AC-FT	1540	761	2110	1080	845	4000	2650	6150	1940	1110	1780	1550

CAL YR 1980 TOTAL 9191.9 MEAN 25.1 MAX 759 MIN 6.6 CFSM 1.66 IN 22.64 AC-FT 18230
WTR YR 1981 TOTAL 12863.5 MEAN 35.2 MAX 704 MIN 9.4 CFSM 2.33 IN 31.69 AC-FT 25510

RIO CIBUCO BASIN

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50038320 RIO CIBUCO BELOW COROZAL, PR--Continued

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	19	129	23	29	27	17	9.2	9.0	20	15	20	7.6		
2	17	120	24	28	35	16	20	8.1	20	13	16	7.7		
3	15	95	24	34	47	16	21	8.2	18	12	11	7.7		
4	15	64	23	28	27	15	14	25	18	14	9.6	9.0		
5	18	94	22	25	43	14	16	21	17	15	9.6	7.4		
6	18	54	22	25	26	14	88	40	16	13	9.4	11		
7	26	56	23	27	24	14	81	27	16	14	9.1	13		
8	19	47	21	24	26	14	28	17	16	15	10	8.8		
9	17	210	19	23	23	13	15	17	15	18	10	8.0		
10	20	63	20	23	21	14	12	236	15	15	8.8	8.4		
11	73	44	117	22	20	14	11	531	13	14	10	72		
12	136	39	137	22	20	14	11	130	13	13	9.0	115		
13	35	36	1470	22	20	14	11	337	12	13	6.4	135		
14	19	34	658	21	25	12	11	525	14	12	6.4	23		
15	16	32	150	21	39	13	12	153	12	13	6.5	15		
16	58	31	90	21	36	13	11	81	12	12	6.7	13		
17	52	30	57	21	31	12	12	33	11	13	11	28		
18	104	29	48	21	22	12	11	28	15	14	7.3	21		
19	39	28	42	22	20	11	9.4	27	18	12	6.1	15		
20	120	28	38	21	19	11	9.0	28	18	13	6.4	12		
21	100	27	36	21	18	11	9.2	26	16	15	8.7	14		
22	55	26	34	21	19	12	9.0	24	16	17	8.9	11		
23	60	26	32	20	17	10	9.6	24	15	15	10	11		
24	130	25	31	20	17	9.5	18	23	15	16	12	10		
25	70	28	36	20	18	11	8.8	22	13	14	7.6	9.9		
26	150	30	32	20	17	10	9.1	21	14	14	7.3	9.7		
27	80	32	77	19	18	9.7	9.1	21	14	13	7.4	9.6		
28	60	25	36	19	18	8.9	8.3	30	14	11	11	18		
29	68	24	30	19	---	9.1	8.3	26	13	20	8.6	14		
30	159	23	29	18	---	9.1	8.5	23	15	27	8.1	12		
31	166	---	36	23	---	9.1	---	21	---	13	10	---		
TOTAL	1934	1529	3437	700	693	382.4	510.5	2542.3	454	448	288.9	656.8		
MEAN	62.4	51.0	111	22.6	24.8	12.3	17.0	82.0	15.1	14.5	9.32	21.9		
MAX	166	210	1470	34	47	17	88	531	20	27	20	135		
MIN	15	23	19	18	17	8.9	8.3	8.1	11	11	6.1	7.4		
CFSM	4.13	3.38	7.35	1.50	1.64	.82	1.13	5.43	1.00	.96	.62	1.45		
IN.	4.76	3.77	8.47	1.72	1.71	.94	1.26	6.26	1.12	1.10	.71	1.62		
AC-FT	3840	3030	6820	1390	1370	758	1010	5040	901	889	573	1300		
CAL YR 1981	TOTAL	17543.0	MEAN	48.1	MAX	1470	MIN	10	CFSM	3.19	IN	43.22	AC-FT	34800
WTR YR 1982	TOTAL	13575.9	MEAN	37.2	MAX	1470	MIN	6.1	CFSM	2.46	IN	33.44	AC-FT	26930

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969-76, 1979 to current year.

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

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 CACO3)
NOV , 1980												
20...	1215	12	319	7.8	25.0	.40	7.8	--	18	580	K70	110
JAN , 1981												
20...	1110	21	302	7.8	22.5	17	8.5	--	20	2400	2000	--
MAR												
17...	1130	12	354	7.7	25.5	1.8	7.2	--	26	500	K100	120
MAY												
28...	0950	40	310	7.1	25.0	5.5	8.7	105	<10	5400	260	--
AUG												
03...	1530	24	290	7.2	29.5	85	6.9	91	13	53000	19000	110
SEP												
22...	1405	18	352	8.0	29.0	4.0	6.9	91	<20	K1500	K250	120
NOV												
20...	1335	29	335	7.9	26.0	6.0	7.7	96	12	2500	K1000	--
JAN , 1982												
15...	0935	23	313	7.6	21.0	1.7	8.8	98	28	2400	340	120
MAR												
29...	1130	9.5	365	7.9	26.0	1.0	7.4	92	<10	530	420	--
MAY												
21...	0935	27	340	8.0	25.0	1.1	7.4	90	<10	2600	470	130
JUL												
30...	1120	25	305	7.7	26.0	--	7.3	89	61	K88000	30000	--
SEP												
02...	1110	8.0	400	7.8	27.0	--	5.6	72	69	K800	500	140

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)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)
NOV , 1980												
20...	0	27	11	19	.8	3.5	110	15	22	.2	31	195
JAN , 1981												
20...	--	--	--	--	--	--	102	--	--	--	--	--
MAR												
17...	0	29	11	20	.8	3.5	126	15	23	.2	30	208
MAY												
28...	--	--	--	--	--	--	107	--	--	--	--	--
AUG												
03...	0	27	9.6	16	.7	3.2	116	13	21	.2	26	186
SEP												
22...	0	31	11	18	.7	2.9	125	14	25	.2	29	206
NOV												
20...	--	--	--	--	--	--	123	--	--	--	--	--
JAN , 1982												
15...	5	28	11	17	.8	2.5	115	15	21	.2	30	194
MAR												
29...	--	--	--	--	--	--	160	--	--	--	--	--
MAY												
21...	12	33	12	14	.6	2.9	120	17	21	.1	28	200
JUL												
30...	--	--	--	--	--	--	98	--	--	--	--	--
SEP												
02...	0	36	12	21	.8	2.9	140	11	25	.2	33	217

K = non-ideal count.

50038320 RIO CIBUCO BELOW COROZAL, PR--Continued

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

DATE	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, NITRATE 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)	PHOS- PHORUS, ORTHO, TOTAL (MG/L AS P)
NOV , 1980												
20...	6.3	14	1.3	.160	1.5	.190	.30	.49	2.0	8.8	.560	--
JAN , 1981												
20...	--	57	1.3	.100	1.4	.290	.42	.71	2.1	9.3	.340	--
MAR												
17...	6.7	11	1.1	.370	1.5	.560	.44	1.00	2.5	11	.680	--
MAY												
28...	--	6	1.6	<.010	1.6	.020	.34	.36	2.0	8.7	.200	--
AUG												
03...	12.1	204	.78	.090	.87	.330	1.6	1.90	2.8	12	.890	--
SEP												
22...	10.0	22	1.0	.270	1.3	.730	.67	1.40	2.7	12	.450	--
NOV												
20...	--	70	1.4	.140	1.5	.600	1.0	1.60	3.1	14	.380	--
JAN , 1982												
15...	12.0	6	1.3	.110	1.4	.740	.96	1.70	3.1	14	.310	--
MAR												
29...	--	7	.56	.130	.69	2.10	1.7	3.80	4.5	20	.560	--
MAY												
21...	14.6	4	1.1	.080	1.2	.550	.23	.78	2.0	8.8	.220	--
JUL												
30...	--	30	.63	.120	.75	1.70	1.2	2.90	3.7	16	.470	--
SEP												
02...	4.7	6	.37	.120	.49	2.10	1.2	3.30	3.8	17	.700	--

DATE	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 CF)	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)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
NOV , 1980											
20...	--	--	--	--	--	--	--	--	--	12	.39
JAN , 1981											
20...	--	--	--	--	--	--	--	--	--	22	1.2
MAR											
17...	<1	100	<1	7	6	.1	<1	<1	--	3	.10
MAY											
28...	--	--	--	--	--	--	--	--	--	6	.65
AUG											
03...	--	--	--	--	--	--	--	--	--	251	16
SEP											
22...	--	100	<1	10	3	.3	<1	<1	--	11	.53
NOV											
20...	--	--	--	--	--	--	--	--	--	15	1.2
JAN , 1982											
15...	1	100	1	<1	2	.1	<1	<1	--	1	.06
MAR											
29...	--	--	--	--	--	--	--	--	--	--	--
MAY											
21...	--	--	--	--	--	--	--	--	--	--	--
JUL											
30...	--	--	--	--	--	--	--	--	--	70	4.6
SEP											
02...	2	<100	<1	1	4	<.1	<1	<1	--	--	--

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), revised, of which 25.4 sq mi (65.8 sq km), revised, 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 DISCHARGES.--8 years (1974-81), 114 cu ft/s (3.228 cu m/s), 15.62 in/yr (397 mm/yr), 82,590 acre-ft/yr (102 cu hm/yr).
--9 years (1974-82), 127 cu ft/s (3.597 cu m/s), 17.40 in/yr (442 mm/yr), 92,010 acre-ft/yr (113 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 WATER YEARS 1981-82.--Peak discharges above base of 3,200 cu ft/s (90.6 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)
Mar. 29, 1981	1030	10,500 297	17.27 5.264	May 19, 1981	0515	3,440 97.4	15.95 4.862
May 4, 1981	2200	*12,100 343	17.45 5.319	Nov. 3, 1981	2030	21,400 606	18.22 5.553
May 5, 1981	0015	7,840 222	16.91 5.154	Dec. 13, 1981	0645	*30,300 858	18.84 5.742
May 10, 1981	1845	7,470 212	16.85 5.136				

Minimum daily discharges, 35 cu ft/s (0.991 cu m/s) Nov. 30, 1980; 30 cu ft/s (0.850 cu m/s) Sept. 11, 1982.

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	315	66	36	206	79	51	253	205	313	111	63	89
2	136	58	41	98	87	52	276	228	217	88	53	111
3	102	55	45	82	70	44	223	262	204	84	65	74
4	108	54	38	76	67	92	337	1690	248	92	131	67
5	110	52	54	68	60	999	427	2770	365	102	86	65
6	115	50	163	75	58	174	357	1140	225	81	84	60
7	344	47	1320	89	57	110	300	339	186	86	147	85
8	180	44	553	76	53	102	382	247	170	94	81	99
9	105	42	178	123	51	91	344	268	160	82	228	207
10	85	41	126	86	51	81	418	1360	148	105	506	78
11	70	42	101	86	52	72	298	989	145	75	247	61
12	65	42	90	173	55	70	238	523	140	68	197	67
13	57	41	87	108	57	72	188	274	135	70	167	111
14	56	39	82	106	53	72	183	228	130	98	112	118
15	204	37	178	80	74	69	155	200	125	78	93	75
16	251	44	93	65	97	64	142	183	120	68	81	58
17	120	37	76	59	65	62	291	173	120	71	86	72
18	98	36	67	59	127	80	280	297	120	67	81	75
19	103	36	63	141	91	65	182	1900	115	144	84	75
20	115	39	60	109	65	48	147	476	115	137	76	73
21	82	45	58	78	125	82	132	282	110	77	115	64
22	74	61	58	72	150	94	136	236	110	67	131	77
23	73	59	73	68	84	62	151	533	200	65	158	62
24	77	53	129	64	77	58	119	334	130	74	102	81
25	72	45	229	61	67	164	112	236	110	83	95	52
26	64	45	184	59	65	700	140	704	98	62	82	51
27	60	44	102	74	68	1300	218	511	96	65	75	63
28	58	41	93	132	62	631	115	276	106	56	78	80
29	57	37	76	79	---	2910	103	235	107	56	93	123
30	110	35	78	79	---	482	105	214	112	137	75	143
31	105	---	120	127	---	295	---	224	---	116	73	---
TOTAL	3571	1367	4651	2858	2067	9248	6752	17537	4680	2659	3745	2516
MEAN	115	45.6	150	92.2	73.8	298	225	566	156	85.8	121	83.9
MAX	344	66	1320	206	150	2910	427	2770	365	144	506	207
MIN	56	35	36	59	51	44	103	173	96	56	53	51
CFSM	1.16	.46	1.51	.93	.75	3.01	2.27	5.71	1.57	.87	1.22	.85
IN	1.34	.51	1.75	1.07	.78	3.47	2.53	6.58	1.76	1.00	1.41	.94
AC-FT	7090	2710	9230	5670	4100	18340	13390	34780	9280	5270	7430	4990
CAL YR 1980 TOTAL	34104			MEAN 93.2	MAX 1320	MIN 27	CFSM .94	IN 12.80	AC-FT 67650			
WTR YR 1981 TOTAL	61651			MEAN 169	MAX 2910	MIN 35	CFSM 1.71	IN 23.14	AC-FT 122300			

50039500 RIO CIBUCO AT VEGA BAJA, PR--Continued

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	65	547	98	163	97	84	37	46	92	56	67	48
2	57	663	99	147	138	80	35	48	131	50	204	40
3	57	3900	104	154	121	76	80	46	86	42	75	37
4	60	1940	105	164	222	72	42	51	80	37	50	41
5	60	519	93	138	152	70	67	111	79	45	45	40
6	59	359	90	130	159	67	60	114	78	50	40	36
7	73	265	94	136	145	67	216	123	72	49	36	66
8	129	249	96	125	150	67	152	89	71	41	38	38
9	65	885	88	118	136	64	80	76	71	53	51	32
10	63	319	87	115	115	64	74	364	70	70	45	30
11	119	213	375	112	110	64	61	634	68	56	51	55
12	216	182	989	109	108	64	59	1180	69	54	49	150
13	144	165	14600	110	108	65	59	715	73	58	50	710
14	71	151	14600	106	106	59	57	903	77	54	51	158
15	61	145	5020	100	144	54	59	713	66	55	47	93
16	94	132	795	96	141	55	80	240	62	59	50	74
17	119	125	459	98	150	48	71	182	61	55	45	59
18	164	121	353	96	118	48	67	163	64	68	57	100
19	128	118	297	97	108	46	56	137	70	62	41	72
20	520	118	255	94	103	45	54	124	81	56	41	57
21	518	111	231	95	100	45	51	117	74	63	45	51
22	255	108	213	94	100	45	51	108	69	67	55	52
23	333	107	193	91	94	42	49	105	67	88	65	57
24	577	104	180	91	89	40	71	99	66	67	73	60
25	353	121	183	89	87	40	55	96	65	84	55	59
26	930	117	174	88	84	42	51	91	62	75	45	59
27	452	162	239	87	84	41	51	88	64	78	42	55
28	283	109	196	93	89	37	49	100	64	71	39	56
29	240	102	164	86	---	36	47	138	61	63	52	94
30	372	98	152	85	---	37	45	102	55	198	39	75
31	499	---	181	93	---	38	---	89	---	78	61	---
TOTAL	7156	12255	40803	3400	3356	1702	1986	7192	2168	2002	1704	2554
MEAN	231	409	1316	110	120	54.9	66.2	232	72.3	64.6	55.0	85.1
MAX	930	3900	14600	164	222	84	216	1180	131	198	204	710
MIN	57	98	87	85	84	36	35	46	55	37	36	30
CFSM	2.33	4.13	13.3	1.11	1.21	.55	.67	2.34	.73	.65	.56	.86
IN.	2.69	4.60	15.32	1.28	1.26	.64	.75	2.70	.81	.75	.64	.96
AC-FT	14190	24310	80930	6740	6660	3380	3940	14270	4300	3970	3380	5070
CAL YR 1981	TOTAL	112276	MEAN 308	MAX 14600	MIN 44	CFSM 3.11	IN 42.15	AC-FT 222700				
WTR YR 1982	TOTAL	86280	MEAN 236	MAX 14600	MIN 30	CFSM 2.38	IN 32.39	AC-FT 171100				

RIO CIBUCO BASIN

50039500 RIO CIBUCO AT VEGA BAJA, PR--Continued

WATER-QUALITY RECORDS

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

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

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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)	STEEP- TCCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)
DEC , 1980												
01...	1300	38	411	7.8	25.5	1.1	5.3	--	14	2100	210	160
JAN , 1981												
26...	1345	58	424	7.8	24.5	1.0	6.5	--	<10	5100	250	--
MAR												
20...	1330	48	398	7.8	27.0	8.6	6.4	--	13	2800	220	190
MAY												
27...	1335	E310	333	7.6	26.0	120	7.2	91	<10	36000	K11000	--
AUG												
04...	1215	114	301	7.6	26.5	99	6.6	83	<10	60000	3000	130
SEP												
22...	1130	56	419	7.6	26.5	7.8	5.7	72	--	K7500	340	190
NOV												
24...	1335	104	--	7.6	25.0	12	7.8	94	<10	2900	530	--
JAN , 1982												
20...	1400	94	398	7.7	24.0	6.5	8.0	94	10	K810	K1500	190
MAR												
17...	1120	48	455	7.4	24.0	5.2	6.0	71	<10	4700	480	--
MAY												
18...	1130	158	460	7.4	24.0	20	7.2	85	<10	2100	3300	180
JUL												
08...	1145	42	440	7.6	27.5	5.5	4.4	55	13	2900	900	--
SEP												
08...	1120	37	366	7.7	28.5	3.5	4.0	51	32	K1800	210	150

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)	FLUC- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
DEC , 1980											
01...	1	50	8.6	16	.6	2.7	159	12	23	.1	21
JAN , 1981											
26...	--	--	--	--	--	--	169	--	--	--	--
MAR											
20...	37	62	8.7	12	.4	2.8	153	11	20	.2	22
MAY											
27...	--	--	--	--	--	--	143	--	--	--	--
AUG											
04...	14	41	5.8	11	.4	3.0	116	13	16	.2	15
SEP											
22...	24	61	9.6	14	.4	2.5	166	13	22	.1	18
NOV											
24...	--	--	--	--	--	--	172	--	--	--	--
JAN , 1982											
20...	18	63	8.4	15	.5	2.2	172	13	21	.1	19
MAR											
17...	--	--	--	--	--	--	160	--	--	--	--
MAY											
18...	5	61	7.9	12	.4	2.8	180	2.0	17	.1	17
JUL											
08...	--	--	--	--	--	--	170	--	--	--	--
SEP											
08...	2	48	7.9	14	.5	2.5	151	11	20	.2	20

E Estimated.
K = non-ideal count.

50039500 RIO CIBUCO AT VEGA BAJA, PR--Continued

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

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TCNS 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, NO ₂ +NO ₃ TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO ₃)
DEC , 1980											
01...	229	23.5	15	1.2	.040	1.2	.120	.11	.23	1.4	6.3
JAN , 1981											
26...	--	--	14	1.4	.040	1.4	.040	1.1	1.10	2.5	11
MAR											
20...	230	29.8	26	1.4	.060	1.5	.080	.58	.66	2.2	9.6
MAY											
27...	--	--	216	.76	.050	.81	.240	.86	1.10	1.9	8.5
AUG											
04...	175	53.9	--	.86	.040	.90	.090	.33	.42	1.3	5.8
SEP											
22...	240	36.3	21	1.2	.050	1.2	.100	.53	.63	1.8	8.1
NOV											
24...	--	--	9	1.5	.030	1.5	.060	.45	.51	2.0	8.9
JAN , 1982											
20...	244	61.7	23	1.5	.040	1.5	.070	13	13.0	15	64
MAR											
17...	--	--	12	1.3	.060	1.4	.150	.38	.53	1.9	8.5
MAY											
18...	228	97.3	46	1.2	.030	1.2	.100	.34	.44	1.6	7.3
JUL											
08...	--	--	11	1.1	.070	1.2	.110	1.1	1.20	2.4	11
SEP											
08...	208	20.7	9	1.1	.060	1.2	.080	.42	.50	1.7	7.5

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)
DEC , 1980											
01...	.310	--	--	--	--	--	--	--	--	132	14
JAN , 1981											
26...	.260	--	--	--	--	--	--	--	--	23	3.6
MAR											
20...	.220	<1	100	<1	8	16	.8	<1	<1	20	2.6
MAY											
27...	.130	--	--	--	--	--	--	--	--	275	230
AUG											
04...	.230	--	--	--	--	--	--	--	--	178	55
SEP											
22...	.240	--	100	<1	10	4	.2	<1	<1	23	3.5
NOV											
24...	.120	--	--	--	--	--	--	--	--	16	4.5
JAN , 1982											
20...	.170	1	100	1	5	<1	.1	<1	3	8	2.0
MAR											
17...	.240	--	--	--	--	--	--	--	--	--	--
MAY											
18...	.140	--	--	--	--	--	--	--	--	261	111
JUL											
08...	.270	--	--	--	--	--	--	--	--	--	--
SEP											
08...	.290	2	100	1	<1	4	<.1	<1	<1	--	--

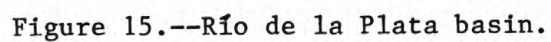


Figure 15.--Río de la Plata basin.

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 Guamaní.

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 poor. 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 DISCHARGES.--21 years (1961-81), 117 cu ft/s (3.313 cu m/s), 28.99 in/yr (736 mm/yr), 84,770 acre-ft/yr (105 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).

--22 years (1961-82), 115 cu ft/s (3.257 cu m/s), 28.50 in/yr (724 mm/yr), 83,320 acre-ft/yr (103 cu hm/yr); median of yearly mean discharges 84 cu ft/s, (2.38 cu m/s), 60,900 acre-ft/yr (75 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 WATER YEARS 1981-82.--Peak discharges above base of 4,000 cu ft/s (113 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 22, 1981	2030	*27,600 782	21.51 6.556	May 14, 1982	1430	5,500 156	10.95 3.338
May 23, 1981	0630	7,820 221	12.36 3.767	July 30, 1982	0300	5,560 157	10.98 3.347
June 4, 1981	2230	6,800 193	11.73 3.575	Sept. 12, 1982	2245	9,020 255	13.06 3.981
Dec. 27, 1981	1415	*9,580 271	13.38 4.078	Sept. 13, 1982	1400	5,040 143	10.72 3.267

Minimum daily discharges, 3.8 cu ft/s (0.108 cu m/s) Apr. 2, 1981; 5.7 cu ft/s (0.161 cu m/s) Apr. 22, 1982.

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	18	23	11	23	9.3	29	4.2	109	1030	378	113	9.2
2	14	17	13	13	8.4	30	3.8	459	965	121	66	36
3	12	17	16	12	7.3	29	5.2	62	778	57	53	55
4	10	16	15	12	10	36	4.4	50	1160	46	51	24
5	15	134	13	13	7.0	52	6.2	37	2420	40	49	27
6	21	44	32	13	7.8	11	22	38	769	38	51	10
7	36	28	162	55	8.3	7.9	13	106	217	35	43	8.9
8	34	20	68	20	7.7	8.4	11	61	128	31	44	219
9	52	15	33	13	7.5	20	18	32	97	30	56	455
10	135	13	20	15	7.4	10	21	25	83	47	57	63
11	49	11	15	435	9.1	7.1	14	41	72	32	64	34
12	26	10	14	211	8.7	6.8	6.8	24	64	28	54	30
13	19	10	13	35	11	6.9	4.6	15	85	28	94	37
14	15	10	82	20	7.9	7.2	6.0	18	76	40	131	86
15	19	10	38	15	30	7.3	5.4	65	56	79	54	31
16	58	12	18	11	74	7.3	33	37	49	43	39	23
17	29	14	18	16	168	8.5	380	125	45	33	31	20
18	19	14	14	13	40	18	204	131	49	126	27	19
19	17	12	14	8.8	34	9.8	119	44	48	158	34	35
20	19	10	13	21	11	6.4	64	47	44	278	32	50
21	15	9.7	14	11	6.9	5.9	34	246	35	195	78	35
22	13	19	14	7.6	6.9	7.6	93	2250	27	156	30	22
23	11	24	18	9.0	5.4	10	168	2960	21	181	34	17
24	28	27	14	9.4	4.8	9.8	74	327	17	524	25	16
25	23	15	17	19	5.2	7.3	37	103	17	326	21	14
26	15	12	64	119	17	5.9	25	90	16	167	17	22
27	13	12	64	41	23	5.2	19	58	17	110	14	22
28	12	9.8	21	35	31	4.6	20	49	21	84	11	20
29	11	9.1	15	20	---	7.6	21	40	24	67	13	40
30	64	9.8	14	17	---	15	68	34	101	61	14	16
31	67	---	12	10	---	7.2	---	255	---	63	13	---
TOTAL	889	587.4	889	1272.8	574.6	404.7	1504.6	7938	8531	3602	1413	1496.1
MEAN	28.7	19.6	28.7	41.1	20.5	13.1	50.2	256	284	116	45.6	49.9
MAX	135	134	162	435	168	52	380	2960	2420	524	131	455
MIN	10	9.1	11	7.6	4.8	4.6	3.8	15	16	28	11	8.9
CFSM	.52	.36	.52	.75	.37	.24	.92	4.67	5.18	2.12	.83	.91
IN.	.60	.40	.60	.86	.39	.27	1.02	5.39	5.79	2.45	.96	1.02
AC-FT	1760	1170	1760	2520	1140	803	2980	15750	16920	7140	2800	2970

CAL YR 1980 TOTAL 11093.2 MEAN 30.3 MAX 1180 MIN 9.1 CFSM .55 IN 7.53 AC-FT 22000
WTR YR 1981 TOTAL 29102.2 MEAN 79.7 MAX 2960 MIN 3.8 CFSM 1.45 IN 19.76 AC-FT 57720

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

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	16	16	7.5	129	21	48	8.5	6.5	33	19	91	40		
2	23	16	7.5	135	21	58	9.3	6.8	31	19	90	38		
3	13	14	27	93	36	38	19	6.3	37	21	73	35		
4	11	13	31	125	106	32	21	6.2	35	16	56	33		
5	8.1	14	12	98	496	31	16	10	41	17	46	31		
6	21	14	9.5	77	338	30	18	30	35	18	40	18		
7	11	17	8.4	74	187	38	11	100	37	27	37	100		
8	6.7	16	8.8	60	128	43	32	50	72	19	35	39		
9	6.2	19	9.1	56	153	42	17	30	51	19	35	33		
10	6.0	19	9.8	51	155	41	8.4	88	38	18	34	33		
11	6.8	11	276	44	110	37	7.9	215	34	34	51	36		
12	6.9	8.8	271	38	91	38	6.5	145	30	19	35	1170		
13	7.3	8.7	427	34	83	32	7.5	82	27	15	33	3000		
14	6.9	8.5	227	29	76	28	6.5	369	58	13	36	469		
15	11	8.2	235	29	76	27	6.0	339	42	12	38	178		
16	30	8.2	152	26	67	25	6.2	65	29	11	62	118		
17	51	9.1	118	27	58	19	6.7	49	25	12	36	88		
18	44	7.7	108	24	49	13	7.2	44	22	14	31	79		
19	87	7.5	199	19	50	12	7.4	35	22	14	30	62		
20	39	9.1	127	19	44	17	6.5	35	68	20	29	54		
21	34	9.3	99	17	90	16	5.8	32	43	22	28	44		
22	16	7.7	117	19	47	15	5.7	34	29	256	31	100		
23	10	7.4	95	19	56	16	7.9	29	25	149	106	86		
24	9.8	7.4	75	21	55	11	9.1	29	25	66	91	49		
25	15	7.9	73	20	35	14	7.7	26	28	49	67	97		
26	166	10	142	19	31	21	7.7	24	22	42	58	130		
27	120	33	3560	18	29	24	8.2	23	21	80	56	109		
28	45	17	535	23	31	20	7.9	175	19	49	49	105		
29	44	9.3	355	18	---	16	7.9	121	19	44	48	83		
30	28	8.2	220	15	---	10	7.4	53	19	849	55	161		
31	21	---	144	18	---	9.7	---	38	---	142	50	---		
TOTAL	920.7	362.0	7685.6	1394	2721	821.7	303.9	2295.8	1017	2105	1557	6781		
MEAN	29.7	12.1	248	45.0	97.2	26.5	10.1	74.1	33.9	67.9	50.2	226		
MAX	166	33	3560	135	498	58	32	369	72	849	106	3000		
MIN	6.0	7.4	7.5	15	21	9.7	5.7	6.2	19	11	28	31		
CFSM	.54	.22	4.53	.82	1.77	.48	.18	1.35	.62	1.24	.92	4.12		
IN.	.62	.25	5.22	.95	1.85	.56	.21	1.56	.69	1.43	1.06	4.60		
AC-FT	1830	718	15240	2760	5400	1630	603	4550	2020	4180	3090	13450		
CAL YR 1981	TOTAL	35705.1	MEAN	97.8	MAX	3560	MIN	3.8	CFSM	1.79	IN	24.24	AC-FT	70820
WTR YR 1982	TOTAL	27964.7	MEAN	76.6	MAX	3560	MIN	5.7	CFSM	1.40	IN	18.98	AC-FT	55470

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 , 1980												
12...	1355	11	421	8.3	28.0	5.5	9.6	--	8	210	108	140
JAN , 1981												
14...	1020	20	335	7.2	22.0	19	7.9	--	33	K1400	620	--
MAR												
19...	1225	9.2	536	8.3	28.0	.80	10.6	--	18	K170	K150	210
MAY												
21...	1220	32	309	8.0	27.5	8.3	8.2	108	17	K800	300	--
JUL												
23...	1040	88	225	7.9	26.0	24	8.0	99	<10	K1400	730	78
SEP												
18...	1235	18	364	8.1	29.5	4.8	8.6	115	24	120	120	120
NOV												
10...	1245	21	432	7.9	26.5	11	10.9	140	18	5700	K64	--
JAN , 1982												
26...	1135	22	416	8.2	24.0	1.5	9.8	120	25	72	46	150
MAR												
05...	1150	33	338	7.9	24.0	2.5	9.3	113	14	K82	K82	--
MAY												
10...	1215	27	314	7.3	25.0	5.8	7.8	96	--	210	660	110
JUL												
12...	1130	18	384	7.8	27.5	6.1	7.7	100	37	120	K1100	--
SEP												
21...	1120	43	296	7.8	28.0	--	9.4	122	26	300	2700	100

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 , 1980											
12...	0	34	13	32	1.2	2.2	151	16	29	.3	23
JAN , 1981											
14...	--	--	--	--	--	--	103	--	--	--	--
MAR											
19...	33	56	17	38	1.1	3.6	177	19	43	.3	25
MAY											
21...	--	--	--	--	--	--	110	--	--	--	--
JUL											
23...	1	19	7.5	17	.8	2.0	77	8.5	15	.1	23
SEP											
18...	0	30	11	26	1.0	2.5	125	17	27	.3	21
NOV											
10...	--	--	--	--	--	--	149	--	--	--	--
JAN , 1982											
26...	0	37	14	30	1.2	2.3	156	17	28	.2	19
MAR											
05...	--	--	--	--	--	--	120	--	--	--	--
MAY											
10...	6	26	9.9	21	1.0	2.2	100	19	23	.1	20
JUL											
12...	--	--	--	--	--	--	140	--	--	--	--
SEP											
21...	5	26	9.7	19	.9	1.9	100	12	21	.2	24

K = non-ideal count.

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

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

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TCNS 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, NO ₂ +NO ₃ TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO ₃)
NOV , 1980											
12...	240	7.1	1	1.9	.020	1.9	.000	.25	.25	2.2	9.5
JAN , 1981											
14...	--	--	19	1.9	.040	1.9	.050	.58	.63	2.5	11
MAR											
19...	308	7.7	12	2.7	.200	2.9	.240	.68	.92	3.8	17
MAY											
21...	--	--	16	1.4	.030	1.4	.040	.47	.51	1.9	8.5
JUL											
23...	138	32.8	--	.61	.070	.68	.060	.51	.57	1.3	5.5
SEP											
18...	210	10.2	18	1.3	.020	1.3	.020	.56	.58	1.9	8.3
NOV											
10...	--	--	27	--	<.010	2.1	.030	.32	.35	2.5	11
JAN , 1982											
26...	244	14.4	6	1.5	.030	1.5	.030	.44	.47	2.0	8.7
MAR											
05...	--	--	7	1.4	.050	1.4	.060	.86	.92	2.3	10
MAY											
10...	181	13.1	10	1.5	.070	1.6	.160	.37	.53	2.1	9.4
JUL											
12...	--	--	4	1.2	.040	1.2	.090	.41	.50	1.7	7.5
SEP											
21...	179	20.7	6	.58	.020	.60	.020	.68	.70	1.3	5.8

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 , 1980											
12...	.770	--	--	--	--	--	--	--	--	21	.62
JAN , 1981											
14...	.380	--	--	--	--	--	--	--	--	21	1.1
MAR											
19...	1.10	1	100	<1	3	14	<.1	<1	<1	3	.07
MAY											
21...	.540	--	--	--	--	--	--	--	--	8	.69
JUL											
23...	.300	--	--	--	--	--	--	--	--	53	13
SEP											
18...	.420	--	100	1	20	7	.2	<1	<1	5	.24
NOV											
10...	.810	--	--	--	--	--	--	--	--	11	.63
JAN , 1982											
26...	.520	4	<100	24	<1	7	.2	<1	<1	1	.06
MAR											
05...	.390	--	--	--	--	--	--	--	--	--	--
MAY											
10...	.430	--	--	--	--	--	--	--	--	--	--
JUL											
12...	.540	--	--	--	--	--	--	--	--	--	--
SEP											
21...	.310	1	<100	<1	<1	3	<.1	<1	<1	--	--

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.

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

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

WATER-QUALITY DATA WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 CACO3)
NOV , 1980												
24...	1135	58	423	8.0	24.5	.30	9.3	--	12	5500	K150	150
JAN , 1981												
20...	1100	41	396	7.8	21.0	1.4	8.6	--	20	24000	860	--
MAR												
18...	1210	71	328	8.1	26.0	32	8.3	--	<10	5600	2300	120
MAY												
13...	1440	69	324	8.0	29.0	20	7.5	100	18	K1500	340	--
AUG												
05...	0930	98	296	8.0	27.0	4.0	8.6	106	86	2100	90	110
SEP												
23...	1100	55	349	7.9	26.5	6.8	8.4	108	<5	3800	210	130
NOV												
05...	1010	65	352	7.5	25.5	4.8	8.4	101	62	K6700	K1800	--
JAN , 1982												
27...	1030	61	390	8.2	22.0	13	10.2	117	18	4300	54	150
MAR												
12...	1025	66	387	8.0	23.0	2.3	9.4	111	41	4000	500	--
MAY												
07...	0950	E350	197	7.3	21.5	110	8.6	98	--	25000	23000	61
JUL												
21...	1015	76	396	7.7	26.0	2.6	9.2	114	20	3800	340	--
SEP												
20...	1030	85	312	7.8	26.5	--	8.3	104	31	4200	420	110

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 , 1980											
24...	0	38	14	23	.8	2.6	162	18	29	.2	27
JAN , 1981											
20...	--	--	--	--	--	--	144	--	--	--	--
MAR											
18...	5	30	12	21	.8	2.7	120	16	22	.2	22
MAY											
13...	--	--	--	--	--	--	120	--	--	--	--
AUG											
05...	0	25	11	19	.8	2.1	112	12	20	.2	25
SEP											
23...	12	29	13	22	.9	2.4	118	17	25	.2	24
NOV											
05...	--	--	--	--	--	--	120	--	--	--	--
JAN , 1982											
27...	2	36	15	23	.9	2.6	148	18	26	.2	19
MAR											
12...	--	--	--	--	--	--	140	--	--	--	--
MAY											
07...	7	15	5.6	13	.8	2.3	54	16	13	.1	15
JUL											
21...	--	--	--	--	--	--	150	--	--	--	--
SEP											
20...	0	27	10	17	.8	2.6	110	15	21	.1	25

E Estimated.

K = non-ideal count.

RIO DE LA PLATA BASIN

50044000 RIO DE LA PLATA NEAR COMERIO, PR--Continued

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

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 , 1980											
24...	249	39.0	11	1.1	.020	1.1	.020	.35	.37	1.5	6.5
JAN , 1981											
20...	--	--	8	1.2	.040	1.2	.090	.23	.32	1.5	6.7
MAR											
18...	198	38.0	31	.24	<.010	.25	.110	.99	1.10	1.4	6.0
MAY											
13...	--	--	3	.86	.030	.89	.080	2.2	2.30	3.2	14
AUG											
05...	181	47.9	--	.49	.020	.51	.010	.50	.51	1.0	4.5
SEP											
23...	204	30.3	18	1.2	.040	1.2	.060	.56	.62	1.8	8.1
NOV											
05...	--	--	24	1.2	.030	1.2	.050	.44	.49	1.7	7.5
JAN , 1982											
27...	236	38.9	5	.97	.030	1.0	.040	.37	.41	1.4	6.2
MAR											
12...	--	--	6	.70	.020	.72	.060	.19	.25	.97	4.3
MAY											
07...	114	108	101	1.0	.070	1.1	.210	.89	1.10	2.2	9.7
JUL											
21...	--	--	5	.35	.020	.37	.050	.75	.80	1.2	5.2
SEP											
20...	184	42.4	8	.67	.030	.70	.060	1.0	1.10	1.8	8.0

DATE	PHOS- PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECCV- ERABLE (UG/L AS BA)	CADMIUM TOTAL RECCV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECCV- ERABLE (UG/L AS CR)	LEAD, TOTAL RECCV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECCV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL RECCV- ERABLE (UG/L AS SE)	SILVER, TOTAL RECCV- ERABLE (UG/L AS AG)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
NOV , 1980											
24...	.460	--	--	--	--	--	--	--	--	19	3.0
JAN , 1981											
20...	.340	--	--	--	--	--	--	--	--	6	.66
MAR											
18...	.410	1	100	<1	14	7	.2	<1	<1	27	5.2
MAY											
13...	.270	--	--	--	--	--	--	--	--	58	11
AUG											
05...	.290	--	--	--	--	--	--	--	--	8	2.1
SEP											
23...	.330	--	100	<1	20	3	.3	<1	<1	9	1.3
NOV											
05...	.250	--	--	--	--	--	--	--	--	69	12
JAN , 1982											
27...	.280	1	100	<1	5	2	.2	<1	1	1	.16
MAR											
12...	.420	--	--	--	--	--	--	--	--	--	--
MAY											
07...	.270	--	--	--	--	--	--	--	--	393	371
JUL											
21...	.410	--	--	--	--	--	--	--	--	--	--
SEP											
20...	.270	2	<100	<1	<1	3	<.1	<1	<1	--	--

PESTICIDE ANALYSES, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982

		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)	
DATE	TIME								
AUG , 1981									
05...	0930	<.10	<.01	<.10	<.01	<.01	<.01	.02	
JUL , 1982									
21...	1015	<.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)
AUG , 1981									
05...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
JUL , 1982									
21...	<.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)	
AUG , 1981									
05...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01	
JUL , 1982									
21...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01	

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.

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

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

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

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (FTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (CCLS./100 ML)	STREPTOCOCCI, FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CaCO3)
NOV , 1980												
13...	1230	6.7	317	8.2	27.0	5.5	8.7	--	3	K8500	390	120
JAN , 1981												
15...	1350	8.5	328	7.8	25.0	1.3	8.6	--	12	K1600	K130	--
MAR												
18...	1450	8.5	271	8.3	27.0	32	7.8	--	22	K11000	4700	95
MAY												
13...	1025	17	309	8.0	26.0	4.5	8.6	106	10	31000	3200	--
AUG												
05...	1230	8.1	287	8.3	29.0	1.0	8.4	109	55	5700	146	110
SEP												
23...	1335	6.8	298	8.3	30.5	.80	8.4	111	<5	K1500	260	120
NOV												
05...	1315	12	314	7.6	28.0	1.7	8.1	103	98	21000	K1500	--
JAN , 1982												
27...	1315	8.6	302	8.4	23.0	17	9.1	106	63	2300	120	--
MAR												
12...	1230	21	348	8.1	25.0	2.2	10.2	123	<10	2100	850	--
MAY												
07...	1250	20	285	7.5	23.0	29	9.2	107	--	36000	4100	110
JUL												
21...	1230	4.5	332	7.9	27.5	2.0	9.1	114	10	K620	K180	--
SEP												
20...	1305	9.3	325	7.5	28.0	--	7.8	99	32	3200	440	120

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 ADSORPTION 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)	SILICA, DIS-SOLVED (MG/L AS SiO2)
NOV , 1980											
13...	8	27	13	17	.7	2.0	112	11	20	.2	28
JAN , 1981											
15...	--	--	--	--	--	--	107	--	--	--	--
MAR											
18...	3	20	11	13	.6	2.4	92	14	17	.2	23
MAY											
13...	--	--	--	--	--	--	102	--	--	--	--
AUG											
05...	5	26	12	15	.6	2.3	105	13	21	.2	27
SEP											
23...	17	26	13	15	.6	1.9	103	14	21	.2	23
NOV											
05...	--	--	--	--	--	--	98	--	--	--	--
JAN , 1982											
27...	--	--	--	--	--	--	102	15	18	.2	--
MAR											
12...	--	--	--	--	--	--	110	--	--	--	--
MAY											
07...	16	24	12	14	.6	2.3	93	15	17	.1	24
JUL											
21...	--	--	--	--	--	--	120	--	--	--	--
SEP											
20...	13	28	13	14	.6	2.4	110	18	22	.2	27

K = non-ideal count.

50044850 RIO GUADIANA NEAR NARANJITO, PR--Continued

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

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 , 1980											
13...	186	3.4	9	2.0	.010	2.0	.000	.12	.12	2.1	9.4
JAN , 1981											
15...	--	--	24	2.1	.010	2.1	.050	.22	.27	2.4	11
MAR											
18...	156	3.6	26	1.5	.020	1.5	.010	.38	.39	1.9	8.4
MAY											
13...	--	--	6	1.7	<.010	1.7	.140	.61	.75	2.5	11
AUG											
05...	180	3.9	--	1.4	.010	1.4	<.010	.50	.51	1.9	8.5
SEP											
23...	176	3.2	8	1.3	.010	1.3	.030	.52	.55	1.9	8.2
NOV											
05...	--	--	21	--	<.010	1.8	<.010	--	.34	2.1	9.5
JAN , 1982											
27...	--	--	8	2.0	.020	2.0	.040	.32	.36	2.4	10
MAR											
12...	--	--	9	1.6	.010	1.6	.050	.32	.37	2.0	8.7
MAY											
07...	164	8.6	40	1.4	.020	1.4	.030	.54	.57	2.0	8.7
JUL											
21...	--	--	6	.99	.010	1.0	.030	.47	.50	1.5	6.6
SEP											
20...	191	4.8	7	--	<.010	1.4	.030	.47	.50	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)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
NOV , 1980											
13...	.320	--	--	--	--	--	--	--	--	9	.16
JAN , 1981											
15...	.310	--	--	--	--	--	--	--	--	21	.48
MAR											
18...	.190	<1	100	<1	18	7	<.1	<1	<1	34	.78
MAY											
13...	.180	--	--	--	--	--	--	--	--	10	.46
AUG											
05...	.360	--	--	--	--	--	--	--	--	3	.07
SEP											
23...	.280	--	100	<1	10	3	.2	<1	<1	687	13
NOV											
05...	.250	--	--	--	--	--	--	--	--	8	.25
JAN , 1982											
27...	.300	2	100	<1	9	3	.2	<1	<1	2	.05
MAR											
12...	.350	--	--	--	--	--	--	--	--	--	--
MAY											
07...	.360	--	--	--	--	--	--	--	--	63	3.3
JUL											
21...	.370	--	--	--	--	--	--	--	--	--	--
SEP											
20...	.270	2	<100	<1	<1	7	<.1	<1	<1	--	--

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

		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)	
DATE	TIME								
JUL , 1982									
21...	1230	<.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)
JUL , 1982									
21...	<.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)	
JUL , 1982									
21...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01	

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.

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 DISCHARGES.--21 years (1961-81), 281 cu ft/s (7.958 cu m/s), 19.08 in/yr (485 mm/yr), 203,600 acre-ft/yr (251 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).

--22 years (1961-82), 279 cu ft/s (7.901 cu m/s), 18.94 in/yr (481 mm/yr), 202,100 acre-ft/yr (249 cu hm/yr); median of yearly mean discharges 228 cu ft/s (6.46 cu m/s), 165,000 acre-ft/yr (203 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 95,500 cu ft/s (2,704 cu m/sp) 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 WATER YEARS 1981-82.--Peak discharges above base of 6,000 cu ft/s (170 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 5, 1981	1845	9,640	273	18.70	5.700	Dec. 27, 1981	2000	9,600	272	18.68	5.694
May 23, 1981	0330	*21,600	612	23.92	7.291	May 11, 1982	1915	11,000	312	19.44	5.925
Dec. 13, 1981	0200	*19,000	538	22.98	7.004	Sept. 13, 1982	0830	8,760	248	18.19	5.544
Dec. 14, 1981	1830	10,800	306	19.34	5.895						

Minimum daily discharges, 13 cu ft/s (0.368 cu m/s) Mar. 20, 1981; 12 cu ft/s (0.340 cu m/s) Aug. 19, Sept. 8, 1982.

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	727	55	22	43	40	25	137	60	564	207	144	32
2	202	50	28	29	35	25	112	73	1240	372	128	32
3	157	45	27	27	30	23	128	81	1200	320	133	28
4	165	40	23	24	30	31	398	1250	951	258	151	25
5	123	40	30	22	30	627	690	3670	3060	211	142	27
6	113	40	70	27	28	258	399	1580	1970	167	242	27
7	342	35	150	43	25	121	454	588	770	198	384	29
8	308	35	700	33	24	65	828	383	498	180	142	80
9	190	35	200	29	23	37	691	296	336	189	140	868
10	135	32	120	29	22	30	868	461	254	158	703	553
11	116	30	90	30	22	25	529	271	211	139	546	221
12	90	29	68	474	21	22	288	207	407	108	395	113
13	68	26	62	267	21	21	179	150	165	136	237	121
14	60	25	56	135	20	19	142	129	155	227	174	228
15	200	24	49	56	35	17	108	105	144	130	164	122
16	220	22	49	53	45	15	103	87	120	150	142	82
17	110	20	48	39	35	15	184	83	106	136	121	116
18	90	21	44	30	60	14	563	90	98	91	101	79
19	80	23	38	150	45	14	510	489	112	242	91	60
20	140	24	35	90	40	13	348	363	91	302	72	179
21	90	47	31	50	80	47	187	250	82	254	89	200
22	80	35	39	40	45	37	133	328	154	211	94	100
23	70	32	79	35	37	22	126	9240	131	211	117	67
24	65	26	69	30	35	18	122	1520	219	244	94	51
25	60	25	128	30	33	253	120	682	155	174	77	44
26	55	24	199	30	31	72	125	850	121	247	64	39
27	50	24	71	40	28	298	99	1420	98	244	52	34
28	45	23	63	100	26	288	69	544	116	177	45	45
29	100	22	57	50	---	1100	56	293	133	146	39	67
30	90	22	54	40	---	253	48	217	126	193	37	64
31	60	---	43	50	---	142	---	232	---	204	33	---
TOTAL	4401	931	2732	2125	946	3947	8744	25992	13787	6226	5093	3733
MEAN	142	31.0	88.1	68.5	33.8	127	291	838	460	201	164	124
MAX	727	55	700	474	80	1100	868	9240	3060	372	703	868
MIN	45	20	22	22	20	13	48	60	82	91	33	25
CFSM	71	16	44	34	17	64	1.46	4.19	2.30	1.01	.82	.62
IN.	.82	.17	.51	.40	.18	.73	1.63	4.83	2.56	1.16	.95	.69
AC-FT	8730	1850	5420	4210	1680	7830	17340	51560	27350	12350	10100	74000
CAL YR 1980	TOTAL	38094	MEAN 104	MAX 1540	MIN 11	CFSM .52	IN 7.09	AC-FT	75560			
WTR YR 1981	TOTAL	78657	MEAN 215	MAX 9240	MIN 13	CFSM 1.08	IN 14.63	AC-FT	156000			

RIO DE LA PLATA BASIN

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

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	55	589	68	353	83	65	13	15	86	20	519	25
2	47	614	63	291	122	60	14	17	65	15	268	20
3	38	958	67	309	95	53	18	16	60	15	121	17
4	33	824	71	297	125	52	15	20	55	15	151	17
5	30	399	77	226	280	50	30	31	50	15	68	15
6	28	211	70	204	535	47	22	52	45	30	35	14
7	26	205	123	195	503	45	23	141	45	32	26	13
8	27	172	79	175	396	44	18	285	40	17	22	12
9	26	796	58	151	287	42	18	308	40	20	18	15
10	25	935	54	140	220	39	22	545	40	22	18	16
11	24	358	269	128	207	39	24	2270	35	17	17	19
12	25	204	2780	123	172	43	25	2000	35	31	35	164
13	24	155	10800	120	145	41	24	1060	35	23	35	5390
14	33	124	6640	110	126	39	22	1110	30	17	17	2090
15	30	105	1780	102	142	39	155	1610	30	19	16	736
16	29	94	670	98	99	39	71	595	30	19	14	344
17	28	84	446	97	112	35	33	394	25	19	13	190
18	167	77	282	94	110	32	25	261	25	18	14	171
19	222	82	238	92	107	30	23	172	25	19	12	116
20	205	75	218	89	102	28	22	97	35	63	14	76
21	210	62	182	84	97	25	22	83	25	39	17	37
22	124	55	163	81	103	23	21	82	25	40	18	25
23	493	50	167	78	101	22	21	66	25	29	20	22
24	474	48	142	77	94	21	20	59	30	20	40	20
25	566	52	145	77	83	20	20	54	25	22	16	21
26	996	55	151	84	78	20	19	44	25	26	15	22
27	1950	81	3500	87	74	18	23	40	20	22	16	26
28	1130	92	2020	81	71	16	17	74	20	18	28	34
29	433	91	817	62	---	15	15	61	20	258	27	77
30	329	77	585	60	---	15	15	95	20	581	21	155
31	439	---	468	74	---	14	---	102	---	766	40	---
TOTAL	8266	7724	33193	4239	4669	1071	810	11759	1066	2267	1691	9899
MEAN	267	257	1071	137	167	34.5	27.0	379	35.5	73.1	54.5	330
MAX	1950	958	10800	353	535	65	155	2270	86	766	519	5390
MIN	24	48	54	60	71	14	13	15	20	15	12	12
CFSM	1.34	1.29	5.36	.69	.84	.17	.14	1.90	.18	.37	.27	1.65
IN.	1.54	1.44	6.17	.79	.87	.20	.15	2.19	.20	.42	.31	1.84
AC-FT	16400	15320	65840	8410	9260	2120	1610	23320	2110	4500	3350	19630
CAL YR 1981	TOTAL	119776	MEAN 328	MAX 10800	MIN 13	CFSM 1.64	IN 22.28	AC-FT 237600				
WTR YR 1982	TOTAL	86654	MEAN 237	MAX 10800	MIN 12	CFSM 1.19	IN 16.12	AC-FT 171900				

RIO DE LA PLATA BASIN

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

WATER-QUALITY RECORDS

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

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

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CCN- DUCT- ANCE (UMHCS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION	COLI- FORM, FECAL, 0.7 UM-MP (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)
NOV , 1980											
10...	1210	33	451	7.4	27.0	.31	4.0	--	21000	K100	180
DEC											
11...	1120	95	382	7.5	26.0	1.8	5.3	--	2800	K10	150
JAN , 1981											
13...	1000	226	330	7.1	24.5	.80	6.0	--	3000	1000	120
FEB											
05...	1020	30	495	7.1	23.5	.40	4.1	--	44	28	190
MAR											
16...	1330	16	500	7.3	23.0	3.0	7.4	--	K30	84	230
APR											
06...	1300	365	326	7.3	24.0	56	5.2	--	K6400	370	120
MAY											
04...	1445	131	389	7.2	28.0	1.4	3.0	37	K9600	960	150
JUN											
17...	1455	106	315	7.6	30.0	15	6.5	85	K13000	K90	130
JUL											
17...	1430	90	327	7.5	29.0	40	4.4	56	10000	K1300	140
AUG											
11...	1210	499	319	8.0	27.5	30	6.2	78	K9000	K110	110
SEP											
08...	1545	36	520	7.6	30.0	1.5	6.8	89	400	<10	210
OCT											
15...	1545	30	484	7.6	31.0	2.1	8.0	109	K70	K50	190
DEC											
09...	1530	56	374	7.2	27.0	13	3.0	38	2400	520	150
14...	1325	5810	180	7.2	25.0	130	8.1	96	33000	40000	75
FEB , 1982											
05...	1000	168	337	8.0	24.0	23	6.5	78	K12000	980	130
MAR											
31...	1215	15	500	8.4	28.0	5.0	7.4	94	K180	K18	210
JUN											
02...	1615	63	415	8.1	30.0	3.6	6.9	92	K11000	K40	160
AUG											
04...	1725	150	412	7.3	30.0	18	5.0	67	20000	2100	160

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- 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 , 1980											
10...	12	49	13	28	.9	2.9	168	17	35	.2	22
DEC											
11...	2	41	11	18	.6	2.9	148	16	27	.1	21
JAN , 1981											
13...	0	30	11	18	.7	2.6	123	12	23	.2	22
FEB											
05...	12	55	12	25	.8	2.6	178	15	39	.2	21
MAR											
16...	45	67	14	25	.7	.9	185	15	37	.2	21
APR											
06...	4	36	7.9	15	.6	3.2	116	15	22	.2	17
MAY											
04...	15	40	11	20	.7	2.2	130	15	29	.2	21
JUN											
17...	6	36	8.8	15	.6	2.3	120	11	21	.1	22
JUL											
17...	16	41	9.2	19	.7	3.8	125	40	25	.1	16
AUG											
11...	3	28	9.1	15	.6	3.9	107	10	18	.2	18
SEP											
08...	21	64	13	22	.7	2.7	189	14	37	.2	18
OCT											
15...	10	56	12	24	.8	2.7	180	13	35	.2	22
DEC											
09...	11	44	8.8	17	.6	4.1	139	18	26	.1	15
14...	0	22	4.8	8.9	.5	2.6	75	12	21	.1	10
FEB , 1982											
05...	0	35	9.4	17	.7	2.7	150	17	22	.1	17
MAR											
31...	18	62	13	26	.8	2.0	190	16	35	.2	14
JUN											
02...	12	45	12	20	.7	2.3	150	17	30	.2	20
AUG											
04...	4	46	12	21	.8	3.5	160	13	27	.2	22

K = non-ideal count.

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

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

DATE	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, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)
NOV , 1980											
10...	285	270	25.4	.48	.48	.210	.190	.29	.23	.50	.42
DEC											
11...	238	228	61.0	.44	.44	.230	.230	.06	.06	.29	.29
JAN , 1981											
13...	194	193	118	.13	.13	.110	.110	.21	.14	.32	.25
FEB											
05...	295	277	23.9	--	--	--	--	--	--	--	--
MAR											
16...	295	291	12.7	--	--	--	--	--	--	--	--
APR											
06...	195	188	192	.46	.46	.080	.070	.26	.26	.34	.33
MAY											
04...	237	215	83.8	.34	.31	.190	.180	.48	.47	.67	.65
JUN											
17...	193	184	55.2	.24	.24	.050	.050	.61	.28	.66	.33
JUL											
17...	201	231	48.8	.41	.24	.290	.240	1.5	.45	1.80	.69
AUG											
11...	181	168	244	.23	.23	.130	.110	3.2	.43	3.30	.54
SEP											
08...	288	287	28.0	.49	.49	.330	.310	.49	.47	.82	.78
OCT											
15...	283	273	22.5	--	.61	--	.220	--	--	.53	--
DEC											
09...	231	217	34.9	--	.69	--	.400	--	--	.76	--
14...	166	127	2600	--	.44	--	.150	--	--	.50	--
FEB , 1982											
05...	211	192	95.7	--	.38	--	.170	--	--	.97	--
MAR											
31...	281	282	11.4	--	.46	--	.070	--	--	<.10	--
JUN											
02...	249	238	42.4	--	.42	--	.160	--	--	.60	--
AUG											
04...	241	235	97.6	--	.33	--	.090	--	--	.50	--

DATE	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, DIS- SOLVED (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)
NOV , 1980										
10...	.98	.91	4.3	.210	--	--	--	--	--	--
DEC										
11...	.73	.73	3.2	.120	.090	--	--	--	--	--
JAN , 1981										
13...	.45	.38	2.0	.090	.070	--	2	2	100	40
FEB										
05...	--	--	--	--	--	--	--	--	--	--
MAR										
16...	--	--	--	--	--	--	--	--	--	--
APR										
06...	.80	.79	3.5	.160	.090	--	<1	<1	100	60
MAY										
04...	1.0	.96	4.5	.160	.140	--	--	--	--	--
JUN										
17...	.90	.57	4.0	.120	.060	--	--	--	--	--
JUL										
17...	2.2	1.1	9.8	.180	.120	--	2	2	100	50
AUG										
11...	3.5	.77	16	.180	.100	--	--	--	--	--
SEP										
08...	1.3	1.3	5.8	.280	.020	--	3	3	100	100
OCT										
15...	--	--	--	.310	.280	.280	3	4	<50	60
DEC										
09...	--	--	--	.190	.180	.190	--	--	--	--
14...	--	--	--	.240	.090	.070	2	1	100	38
FEB , 1982										
05...	--	--	--	.190	.100	.100	1	0	100	54
MAR										
31...	--	--	--	.380	.260	.270	--	--	--	--
JUN										
02...	--	--	--	.170	.120	.120	2	1	100	66
AUG										
04...	--	--	--	.190	.120	.130	3	3	100	59

RIO DE LA PLATA BASIN

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

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

DATE	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)
NOV , 1980										
10...	--	--	--	--	--	--	--	--	--	--
DEC										
11...	--	--	--	--	--	--	--	--	--	--
JAN , 1981										
13...	<1	<1	10	<10	<1	<1	3	<1	310	<10
FEB										
05...	--	--	--	--	--	--	--	--	--	--
MAR										
16...	--	--	--	--	--	--	--	--	--	--
APR										
06...	2	2	<12	<12	<1	<1	11	4	2600	50
MAY										
04...	--	--	--	--	--	--	--	--	--	--
JUN										
17...	--	--	--	--	--	--	--	--	--	--
JUL										
17...	1	1	10	10	4	2	6	3	750	10
AUG										
11...	--	--	--	--	--	--	--	--	--	--
SEP										
08...	<1	<1	10	10	1	<1	4	2	250	10
OCT										
15...	<1	3	20	<10	1	<1	2	2	180	12
DEC										
09...	--	--	--	--	--	--	--	--	--	--
14...	1	2	20	10	5	<1	13	3	7200	57
FEB , 1982										
05...	<1	<1	30	<10	1	<1	16	9	910	23
MAR										
31...	--	--	--	--	--	--	--	--	--	--
JUN										
02...	1	<1	10	<10	<1	2	2	1	600	5
AUG										
04...	2	<1	10	<10	<1	<1	38	3	690	6

DATE	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)
NOV , 1980										
10...	--	--	--	--	--	--	--	--	--	--
DEC										
11...	--	--	--	--	--	--	--	--	--	--
JAN , 1981										
13...	4	4	70	40	.5	.4	5	1	<1	<1
FEB										
05...	--	--	--	--	--	--	--	--	--	--
MAR										
16...	--	--	--	--	--	--	--	--	--	--
APR										
06...	17	<1	90	50	2.0	1.4	6	<1	<1	1
MAY										
04...	--	--	--	--	--	--	--	--	--	--
JUN										
17...	--	--	--	--	--	--	--	--	--	--
JUL										
17...	2	1	200	80	2.0	1.0	7	4	<1	<1
AUG										
11...	--	--	--	--	--	--	--	--	--	--
SEP										
08...	1	1	440	430	1.0	.5	1	1	<1	<1
OCT										
15...	3	2	170	150	.2	.2	5	4	<1	<1
DEC										
09...	--	--	--	--	--	--	--	--	--	--
14...	46	<1	260	40	.1	<.1	9	2	<1	<1
FEB , 1982										
05...	3	1	220	51	.3	.3	5	2	<1	<1
MAR										
31...	--	--	--	--	--	--	--	--	--	--
JUN										
02...	3	1	280	230	.1	.1	3	2	<1	<1
AUG										
04...	5	1	250	130	.2	.1	3	2	<1	<1

RIO DE LA PLATA BASIN

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

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

DATE	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)	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
NOV , 1980										
10...	--	--	--	--	1400	6.0	--	--	16	1.4
DEC										
11...	--	--	--	--	490	4.1	--	--	11	2.8
JAN , 1981										
13...	1	1	10	<4	2600	--	12	--	9	5.5
FEB										
05...	--	--	--	--	660	--	--	--	66	5.3
MAR										
16...	--	--	--	--	560	--	--	--	11	.48
APR										
06...	<1	<1	60	<4	170	--	4.8	--	102	101
MAY										
04...	--	--	--	--	64	6.4	--	--	16	5.7
JUN										
17...	--	--	--	--	9100	4.4	--	--	24	6.9
JUL										
17...	<1	<1	10	10	5000	--	7.1	--	--	--
AUG										
11...	--	--	--	--	2000	6.5	--	--	38	51
SEP										
08...	<1	<1	30	<10	13000	--	3.7	.9	4	.39
OCT										
15...	<1	<1	20	10	--	--	--	--	2	.16
DEC										
09...	--	--	--	--	--	--	--	--	55	8.3
14...	<1	<1	70	15	--	--	--	--	231	3620
FEB , 1982										
05...	<1	<1	30	<4	--	--	--	--	94	43
MAR										
31...	--	--	--	--	--	--	--	--	20	.81
JUN										
02...	<1	<1	10	5	--	--	--	--	67	11
AUG										
04...	<1	<1	60	9	--	--	--	--	24	9.7

RIO DE LA PLATA BASIN

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

PHYTOPLANKTON ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE TIME	NOV 10,80 1210	DEC 11,80 1120	JAN 13,81 1000	FEB 5,81 1020	MAR 16,81 1330	APR 6,81 1300				
TOTAL CELLS/ML	1400	490	2600	660	560	170				
DIVERSITY: DIVISION	0.9	1.4	1.3	1.5	1.3	1.1				
...CLASS	0.9	1.4	1.3	1.5	1.3	1.1				
...ORDER	1.6	2.1	1.6	2.2	2.5	1.4				
...FAMILY	1.6	2.1	1.8	2.2	2.6	1.7				
...GENUS	1.7	2.2	2.5	2.3	2.6	1.7				
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)										
BACILLARIOPHYCEAE										
...ACHNANTHALES										
...ACHNANTHACEAE										
...ACHNANTHES	--	--	--	--	--	--	13	8	--	--
...COCCONEIS	--	--	--	--	16	2	--	--	--	--
...BACILLARIALES										
...NITZSCHIAEAE										
...NITZSCHIA	--	--	27	6	18	1	29	5	--	--
...EUPODISCALES										
...COSCINODISCAEAE										
...CYCLOTELLA	52	4	150*	31	1100*	43	250*	38	130*	24
...MELOSIRA	26	2	--	--	290	11	--	--	--	--
...STEPHANODISCUS	--	--	--	--	130	5	--	--	--	--
...FRAGILARIALES										
...FRAGILARIAEAE										
...SYNEDRA	--	--	--	--	--	--	29	5	--	--
...NAVICULES										
...GOMPHONEMACEAE	--	--	--	--	31	5	15	3	--	--
...GOMPHONEMA	--	--	--	--	--	--	--	--	--	--
...NAVICULACEAE	--	--	--	--	--	--	59	11	--	--
...NAVICULA	--	--	--	--	18	1	--	--	--	--
CHLOROPHYTA (GREEN ALGAE)										
CHLOROPHYCEAE										
...CHLOROCOCCALES										
...DICTYOSPHAERIACEAE										
...DICTYOSPHAERIUM	--	--	--	--	--	--	--	--	--	--
...MICRACTINIACEAE	--	--	--	--	440*	17	--	--	--	--
...MICRACTINIUM	--	--	--	--	--	--	--	--	--	--
...OOCYSTACEAE										
...ANKISTRODESCHUS	--	--	27	6	180	7	63	10	15	3
...CHODATELLA	--	--	14	3	18	1	16	2	--	--
...KIRCHNERIELLA	--	--	--	--	--	--	--	--	--	--
...SELENASTRUM	--	--	--	--	--	--	--	--	--	--
...PALMELLACEAE	--	--	--	--	--	--	--	--	--	--
...SPHAEROCYSTIS	--	--	--	--	--	--	--	--	--	--
...SCENEDESMACEAE	--	--	--	--	--	--	--	--	--	--
...ACTINASTRUM	--	--	--	--	--	--	--	--	100*	62
...CRUCIGENIA	--	--	--	--	--	--	--	--	--	--
...SCENEDESMUS	320*	23	--	--	--	--	--	--	--	--
...TETRASTRUM	--	--	--	--	--	--	--	--	--	--
...VOLVOCALES										
...CHLAMYDOMONADACEAE										
...CHLAMYDOMONAS	800*	57	14	3	73	3	140*	21	--	--
...PHACOTACEAE	--	--	--	--	--	--	--	--	--	--
...PTEROMONAS	--	--	--	--	--	--	--	--	--	--
CRYPTOPHYTA (CRYPTOMONADS)										
CRYPTOPHYCEAE										
...CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
...CHROMONAS	13	1	--	--	--	--	--	--	--	--
...CRYPTOMONADACEAE	--	--	--	--	--	--	--	--	--	--
...CRYPTOMONAS	--	--	--	--	--	--	--	--	--	--
CYANOPHYTA (BLUE-GREEN ALGAE)										
CYANOPHYCEAE										
...CHROOCOCCALES										
...CHROOCOCCACEAE										
...ANACYSTIS	180	13	55	11	310	12	140*	21	74	13
...OSCILLATORIALES										
...OSCILLATORIAEAE										
...LYNGBYA	--	--	--	--	--	--	--	--	--	--
...OSCILLATORIA	--	--	210*	42	--	--	190*	34	--	--
EUGLENOPHYTA (EUGLENOIDS)										
EUGLENOPHYCEAE										
...EUGLENALES										
...EUGLENACEAE										
...EUGLENA	--	--	--	--	--	--	15	3	13	8
...PHACUS	--	--	--	--	--	--	--	--	--	--
...TRACHELOMONAS	--	--	--	--	--	--	--	--	--	--
PYRRHOPHYTA (FIRE ALGAE)										
DINOPHYCEAE										
...DINOKONTAE										
...PERIDINIACEAE										
...PERIDINIUM	--	--	--	--	--	--	--	--	--	--

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

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

RIO DE LA PLATA BASIN

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

PHYTOPLANKTON ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE TIME	MAY 4,81 1445	JUN 17,81 1455	JUL 17,81 1430	AUG 11,81 1210	SEP 8,81 1545					
TOTAL CELLS/ML	64	9100	5000	2000	13000					
DIVERSITY: DIVISION	1.4	1.7	1.3	1.6	0.2					
...CLASS	1.4	1.7	1.3	1.6	0.2					
...ORDER	1.4	1.9	1.4	2.4	0.8					
...FAMILY	1.4	2.2	1.9	2.8	0.9					
...GENUS	1.4	2.4	2.3	3.3	1.0					
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)										
..BACILLARIOPHYCEAE										
...ACHNANTHALES										
...ACHNANTHACEAE	--	-	--	-	--	-	--	-	--	-
...ACHNANTHES	--	-	--	-	--	-	--	-	--	-
...COCconeIS										
..BACILLARIALES										
...NITZSCHIAEAE										
...NITZSCHIA	--	-	150	2	--	-	28	1	--	-
...EUPODISCALES										
...COSCINODISCACEAE										
...CYCLOTELLA	13#	20	3500#	36	2600#	52	210	10	330	3
...HELOSIRA	--	-	290	3	170	3	--	-	--	-
...STEPHANODISCUS										
..FRAGILARIALES										
...FRAGILARIACEAE										
...SYNEDRA	--	-	--	-	--	-	--	-	--	-
..NAVICULALES										
...GOMPHONEMACEAE										
...GOMPHONEMA	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE										
...NAVICULA	--	-	--	-	--	-	--	-	--	-
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
...CHLOROCOCCALES										
...DICTYOSPHAERIACEAE										
...DICTYOSPHAERIUM	--	-	290	3	--	-	140	7	--	-
...MICRACTINIACEAE										
...MICRACTINIUM	--	-	--	-	870#	17	41	2	--	-
...ODCYSTACEAE										
...ANKISTRODESMUS	--	-	880	10	130	3	220	11	--	-
...CHODATELLA	--	-	--	-	--	-	--	-	--	-
...KIRCHNERIELLA	--	-	--	-	200	4	83	4	--	-
...SELENASTRUM	--	-	--	-	200	4	--	-	--	-
...PALMELLACEAE										
...SPHAEROCYSTIS	--	-	--	-	--	-	--	-	880	7
...SCENEDESMACEAE										
...ACTINASTRUM	--	-	--	-	--	-	--	-	--	-
...CRUCIGENIA	--	-	--	-	--	-	--	-	440	3
...SCENEDESMUS	--	-	290	3	270	5	83	4	--	-
...TETRASTRUM	--	-	--	-	130	3	--	-	440	3
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
...CHLAMYDOMONAS	--	-	440	5	34	1	14	1	11000#	83
...PHACOTACEAE										
...PTEROMONAS	--	-	--	-	--	-	69	3	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
..CRYPTOPHYCEAE										
...CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
...CHROOMONAS	--	-	220	2	--	-	--	-	110	1
...CRYPTOMONADACEAE										
...CRYPTOMONAS	13#	20	74	1	34	1	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
..CYANOPHYCEAE										
...CHROOCOCCALES										
...CHROOCOCCACEAE										
...ANACYSTIS	39#	60	3000#	33	340	7	470#	23	--	-
...OSCILLATORIALES										
...OSCILLATORIAEAE										
...LYNGBYA	--	-	--	-	--	-	210	10	--	-
...OSCILLATORIA	--	-	--	-	--	-	390#	19	--	-
EUGLENOPHYTA (EUGLENOIDS)										
..EUGLENOPHYCEAE										
...EUGLENALES										
...EUGLENACEAE										
...EUGLENA	--	-	--	-	--	-	55	3	--	-
...PHACUS	--	-	--	-	--	-	14	1	--	-
...TRACHELOMONAS	--	-	--	-	--	-	14	1	--	-
PYRRHOPHYTA (FIRE ALGAE)										
..DINOPHYCEAE										
...DINOFONTAE										
...PERIDINIAEAE										
...PERIDINIUM	--	-	--	-	--	-	14	1	--	-

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

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

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

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDE (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN 062 MM
JUN 1981				
17...	1455	106	24	5
SEP				
08...	1545	36	4	4
OCT				
15...	1545	30	2	100
DEC				
09...	1530	56	55	96
14...	1130	5180	320	85
14...	1305	5160	225	92
14...	1315	5160	239	92
14...	1325	5810	231	94
14...	1330	5090	234	93
14...	1345	5080	236	94
14...	1400	5030	231	94
FEB , 1982				
05...	1000	168	94	90
MAR				
31...	1215	15	20	95
JUN				
02...	1615	63	67	79
AUG				
04...	1725	150	24	92

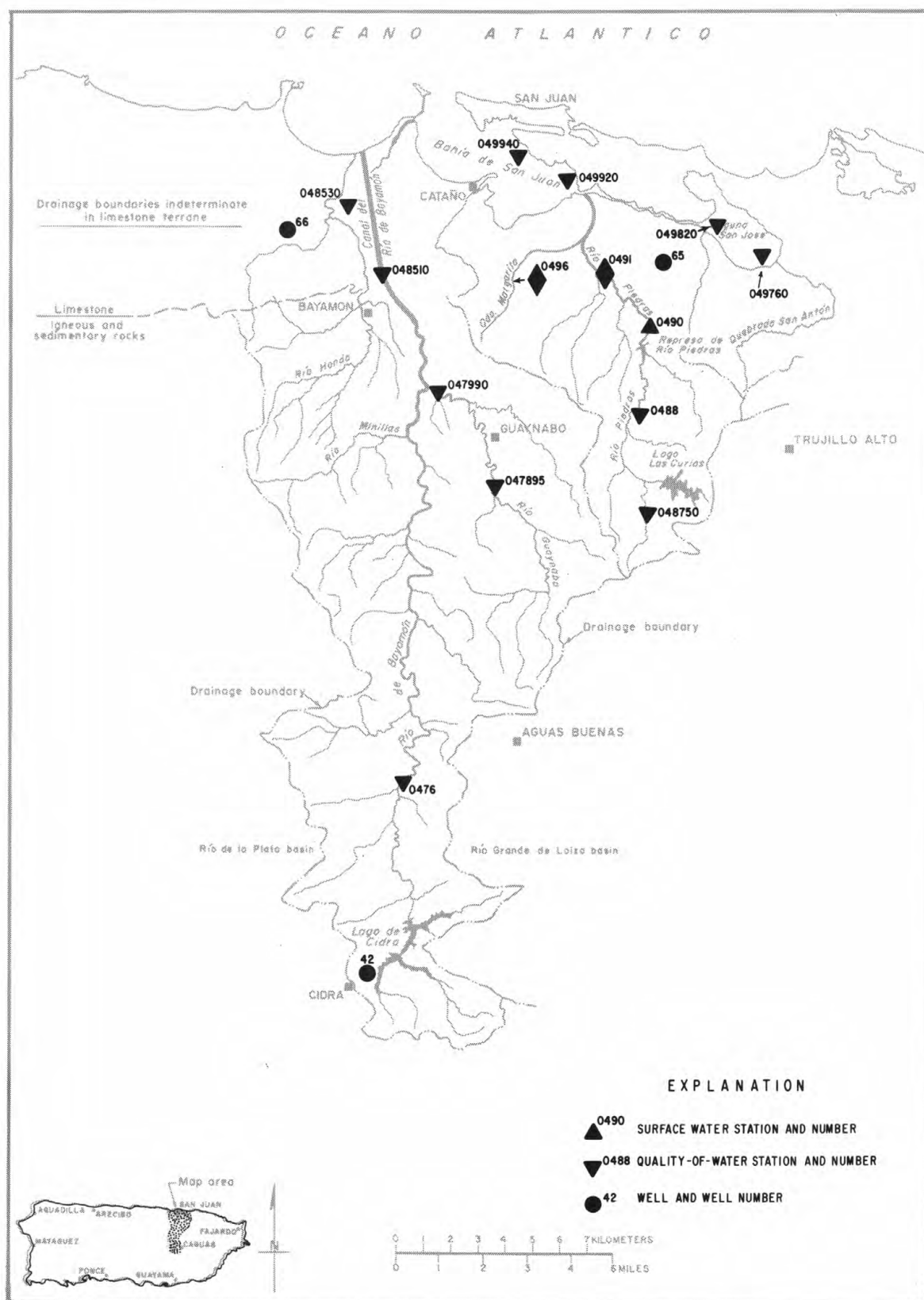


Figure 16.--Río de Bayamón and Río Piedras basins.

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.

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 , 1980												
24...	1410	19	253	8.1	24.5	.40	9.2	--	15	K1400	240	92
JAN , 1981												
20...	0840	31	275	7.4	20.0	2.8	8.3	--	14	K1400	K1100	--
MAR												
19...	1500	17	258	8.6	26.5	--	9.6	--	12	K60	K170	100
MAY												
22...	0935	30	214	7.6	24.5	28	8.0	100	12	59000	27000	--
JUL												
23...	1340	19	243	8.1	25.5	21	8.4	104	<10	K17000	8000	100
SEP												
18...	1600	21	245	8.2	26.0	5.3	9.3	119	<10	K1800	4200	85
NOV												
11...	1035	13	277	7.4	23.0	9.8	8.4	100	24	2100	560	--
JAN , 1982												
26...	1420	27	227	8.0	23.5	7.5	8.7	105	23	K170	K150	83
MAR												
05...	1425	24	243	7.9	23.0	2.1	8.8	105	<10	K82	600	--
MAY												
10...	1455	53	266	7.6	23.0	32	8.4	100	--	K6500	37000	86
JUL												
12...	1420	16	294	7.8	27.0	16	8.3	106	14	510	830	--
SEP												
21...	1445	11	298	7.9	26.0	--	8.3	100	10	400	700	110

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- 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 , 1980											
24...	0	21	9.5	15	.7	2.9	95	7.6	18	.1	26
JAN , 1981											
20...	--	--	--	--	--	--	100	--	--	--	--
MAR											
19...	5	24	10	16	.7	3.0	95	7.2	20	.1	26
MAY											
22...	--	--	--	--	--	--	66	--	--	--	--
JUL											
23...	6	22	11	14	.6	2.5	94	7.8	15	.1	28
SEP											
18...	0	19	9.2	14	.7	2.7	87	6.3	16	.1	21
NOV											
11...	--	--	--	--	--	--	94	--	--	--	--
JAN , 1982											
26...	1	18	9.2	14	.7	2.8	82	7.6	13	<.1	22
MAR											
05...	--	--	--	--	--	--	83	--	--	--	--
MAY											
10...	0	19	9.3	15	.8	2.7	89	6.0	14	<.1	23
JUL											
12...	--	--	--	--	--	--	100	--	--	--	--
SEP											
21...	3	27	11	12	.5	2.6	110	11	16	.1	29

K = non-ideal count.

RIO DE BAYAMON BASIN

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50047600 RIO DE BAYAMON NEAR AGUAS BUENAS, PR--Continued

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

DATE	SCLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SCLIDS, 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 , 1980											
24...	157	8.1	2	.68	.010	.69	.000	.20	.20	.89	3.9
JAN , 1981											
20...	--	--	2	.98	.020	1.0	.030	.17	.20	1.2	5.3
MAR											
19...	164	7.5	12	.49	<.010	.50	<.010	--	.38	.88	3.9
MAY											
22...	--	--	54	1.0	.060	1.1	.410	.69	1.10	2.2	9.7
JUL											
23...	157	8.1	--	.48	.030	.51	.100	.42	.52	1.0	4.6
SEP											
18...	141	8.0	16	.75	.020	.77	.020	.52	.54	1.3	5.8
NOV											
11...	--	--	30	--	<.010	1.4	.040	.31	.35	1.8	7.7
JAN , 1982											
26...	135	9.9	6	.62	.010	.63	.040	.39	.43	1.1	4.7
MAR											
05...	--	--	4	--	<.010	.46	.030	.35	.38	.84	3.7
MAY											
10...	144	20.6	50	.53	.030	.56	.220	.88	1.10	1.7	7.3
JUL											
12...	--	--	6	.80	.020	.82	.050	.35	.40	1.2	5.4
SEP											
21...	176	5.0	7	.69	.010	.70	.030	.77	.80	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 (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 , 1980											
24...	.070	--	--	--	--	--	--	--	--	5	.26
JAN , 1981											
20...	.060	--	--	--	--	--	--	--	--	2	.17
MAR											
19...	.050	<1	100	<1	6	14	.1	1	1	1	.05
MAY											
22...	.190	--	--	--	--	--	--	--	--	141	11
JUL											
23...	.120	--	--	--	--	--	--	--	--	53	2.7
SEP											
18...	.070	--	100	1	20	6	.1	<1	<1	2	.11
NOV											
11...	.130	--	--	--	--	--	--	--	--	43	1.5
JAN , 1982											
26...	.080	1	<100	22	4	11	.1	<1	1	6	.44
MAR											
05...	.050	--	--	--	--	--	--	--	--	--	--
MAY											
10...	.180	--	--	--	--	--	--	--	--	72	10
JUL											
12...	.100	--	--	--	--	--	--	--	--	--	--
SEP											
21...	.050	1	<100	1	<1	3	.2	<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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 , 1980												
11...	1250	24	468	7.3	27.0	--	5.5	--	20	K61000	K190	160
JAN , 1981												
08...	1320	22	453	7.1	25.5	1.0	4.5	--	18	K14000	K1200	--
MAR												
17...	1115	20	510	7.5	26.0	1.5	3.8	--	15	2100	390	160
MAY												
12...	0940	27	434	7.3	28.0	.75	5.4	69	23	K1500	300	--
JUL												
17...	1110	29	398	7.4	27.0	--	4.9	62	--	K7500	K1500	140
SEP												
15...	0930	30	392	7.1	26.0	8.0	2.4	29	36	K140000	6800	130
NOV												
04...	1015	83	322	7.0	24.0	46	5.6	64	54	K1700	K600	--
JAN , 1982												
08...	1015	34	443	7.2	22.5	2.7	4.5	53	35	4500	K2100	140
MAR												
10...	0945	28	507	7.2	23.0	3.0	1.2	14	47	220000	7300	--
MAY												
06...	1020	110	286	7.6	24.0	96	4.6	54	180	350000	K110000	85
JUL												
20...	1050	16	384	7.0	25.5	22	3.6	44	210	20000	3200	--
SEP												
07...	1145	13	523	7.4	28.5	2.5	3.6	52	49	K19000	K300	150

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 SiO2)
NOV , 1980											
11...	0	42	13	36	1.2	4.4	169	17	42	.4	32
JAN , 1981											
08...	--	--	--	--	--	--	166	--	--	--	--
MAR											
17...	0	42	14	37	1.3	5.0	169	17	45	.3	26
MAY											
12...	--	--	--	--	--	--	151	--	--	--	--
JUL											
17...	10	39	11	30	1.1	4.2	130	20	35	.3	30
SEP											
15...	0	34	11	25	1.0	3.7	131	15	33	.3	24
NOV											
04...	--	--	--	--	--	--	94	--	--	--	--
JAN , 1982											
08...	0	37	12	27	1.1	3.7	148	16	32	.2	30
MAR											
10...	--	--	--	--	--	--	160	--	--	--	--
MAY											
06...	0	24	6.2	20	1.0	3.1	90	24	16	.2	14
JUL											
20...	--	--	--	--	--	--	120	--	--	--	--
SEP											
07...	0	41	12	31	1.2	3.7	160	18	39	.2	29

K = non-ideal count.

RIO DE BAYAMON BASIN

50047990 RIO GUAYNABO NEAR BAYAMON, PR--Continued

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

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 , 1980											
11...	288	18.7	24	.29	.050	.34	1.60	.40	2.00	2.3	10
JAN , 1981											
08...	--	--	12	.24	.040	.28	1.90	.10	2.00	2.3	10
MAR											
17...	288	15.6	13	.06	.010	.07	3.30	.00	3.30	3.4	15
MAY											
12...	--	--	4	.30	.020	.32	1.60	.80	2.40	2.7	12
JUL											
17...	247	19.3	--	.32	.080	.40	1.30	.90	2.20	2.6	12
SEP											
15...	225	18.2	21	.32	.030	.35	1.40	.50	1.90	2.3	10
NOV											
04...	--	--	82	1.2	.040	1.2	.460	.64	1.10	2.3	10
JAN , 1982											
08...	247	22.5	6	.37	.060	.43	1.80	.90	2.70	3.1	14
MAR											
10...	--	--	12	.03	.010	.04	2.50	.50	3.00	3.0	13
MAY											
06...	152	45.1	215	.34	.050	.39	1.70	1.4	3.10	3.5	15
JUL											
20...	--	--	37	.31	.040	.35	1.20	1.4	2.60	3.0	13
SEP											
07...	263	9.2	8	.24	.060	.30	1.60	.50	2.10	2.4	11
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 , 1980											
11...	.940	--	--	--	--	--	--	--	--	17	1.1
JAN , 1981											
08...	.870	--	--	--	--	--	--	--	--	6	.36
MAR											
17...	1.50	2	100	<1	10	7	.1	<1	<1	6	.32
MAY											
12...	.810	--	--	--	--	--	--	--	--	57	4.2
JUL											
17...	.590	--	--	--	--	--	--	--	--	84	6.6
SEP											
15...	.730	--	100	<1	20	4	.1	<1	<1	10	.81
NOV											
04...	.180	--	--	--	--	--	--	--	--	121	27
JAN , 1982											
08...	.630	1	100	<1	19	1	.3	<1	<1	49	4.5
MAR											
10...	.980	--	--	--	--	--	--	--	--	--	--
MAY											
06...	.820	--	--	--	--	--	--	--	--	--	--
JUL											
20...	.390	--	--	--	--	--	--	--	--	--	--
SEP											
07...	.700	2	100	1	<1	6	<.1	<1	<1	--	--

PESTICIDE ANALYSES, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982

		PCB, TOTAL	ALDRIN, TOTAL	CHLOR- DANE, TOTAL	DDD, TOTAL	DDE, TOTAL	DDT, TOTAL	DI- AZINOW, TOTAL
DATE	TIME	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)
JUL , 1981								
17...	1110	<.10	<.01	<.10	<.01	<.01	<.01	<.01
JUL , 1982								
20...	1050	<.10	<.01	<.10	<.01	<.01	<.01	.30

DATE	DI- ELDRIN TOTAL	ENDO- SULFAN, TOTAL	ENDRIN, TCTAL	ETHION, TOTAL	HEPTA- CHLOR, TOTAL	HEPTA- CHLOR- EPOXIDE TOTAL	LINDANE TOTAL	MALA- THION, TOTAL	METH- OXY- CHLOR, TOTAL
	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)
JUL , 1981									
17...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
JUL , 1982									
20...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01

DATE	METHYL PARA- THION, TOTAL	METHYL TRI- THION, TOTAL	MIREX, TOTAL	PARA- THION, TOTAL	NAPH- THA- LENES, POLY- CHLOR. TOTAL	PER- THANE TOTAL	TOX- APHENE TOTAL	TOTAL TRI- THION
	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)
JUL , 1981								
17...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01
JUL , 1982								
20...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01

RIO DE BAYAMON BASIN

50048510 RIO DE BAYAMON AT FLOOD CHANNEL AT BAYAMON, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°25'01", long 66°09'26", 0.8 mi (1.3 km) north of Highway 167, and 1.1 mi (1.8 km) north of Bayamón Plaza.

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

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

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

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 , 1980												
11...	0815	14	444	7.2	23.5	--	4.7	--	10	250000	3000	170
JAN , 1981												
08...	1015	26	440	6.5	25.0	.90	2.7	--	28	550000	68000	--
MAR												
17...	1500	17	458	7.7	31.0	3.4	9.8	--	18	K86000	4000	160
MAY												
12...	1335	36	468	7.3	30.0	3.0	3.6	47	21	480000	K1000	--
JUL												
17...	1440	123	290	7.3	29.0	--	5.4	70	--	580000	K18000	110
SEP												
15...	1300	54	379	8.1	29.0	26	5.0	64	25	K78000	K2200	140
NOV												
04...	1330	112	307	6.9	24.5	42	6.5	78	70	27000	K1700	--
JAN , 1982												
08...	1305	53	424	7.1	24.0	4.2	5.4	66	31	56000	48000	150
MAR												
10...	1315	31	477	7.6	26.0	4.9	6.0	73	--	260000	K730	--
MAY												
06...	1320	167	307	7.1	24.0	98	6.2	73	--	K100000	86000	100
JUL												
21...	1440	63	367	6.9	28.0	34	5.2	65	30	58000	3400	--
SEP												
07...	0900	40	441	7.5	26.5	8.3	4.6	57	52	60000	2500	150

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- 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 , 1980											
11...	2	43	15	30	1.0	3.3	168	20	30	.3	29
JAN , 1981											
08...	--	--	--	--	--	--	167	--	--	--	--
MAR											
17...	0	43	13	32	1.1	3.9	167	19	37	.3	25
MAY											
12...	--	--	--	--	--	--	154	--	--	--	--
JUL											
17...	3	29	8.9	21	.9	2.8	107	13	21	.2	21
SEP											
15...	5	36	12	22	.8	3.1	135	15	27	.2	23
NOV											
04...	--	--	--	--	--	--	92	--	--	--	--
JAN , 1982											
08...	2	38	13	25	1.0	3.0	148	20	27	.2	29
MAR											
10...	--	--	--	--	--	--	160	--	--	--	--
MAY											
06...	7	28	8.4	21	1.0	3.3	98	20	20	.2	18
JUL											
21...	--	--	--	--	--	--	130	--	--	--	--
SEP											
07...	0	40	13	27	1.0	3.8	190	18	30	.3	27

K = non-ideal count.

RIO DE BAYAMON BASIN

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

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

DATE	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SCLIDS, 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 , 1980											
11...	272	10.3	16	.72	.200	.92	.250	.18	.43	1.4	6.0
JAN , 1981											
08...	--	--	18	.07	.140	.21	.690	.51	1.20	1.4	6.2
MAR											
17...	274	12.6	15	.26	.190	.45	1.50	.70	2.20	2.7	12
MAY											
12...	--	--	14	.32	.120	.44	.890	1.0	1.90	2.3	10
JUL											
17...	181	60.1	--	.09	.500	.59	.150	1.3	1.40	2.0	8.8
SEP											
15...	219	31.9	54	.56	.150	.71	.800	.60	1.40	2.1	9.3
NOV											
04...	--	--	175	1.1	.080	1.2	.290	.51	.80	2.0	8.9
JAN , 1982											
08...	239	33.9	11	.73	.210	.94	.980	1.1	2.10	3.0	13
MAR											
10...	--	--	12	.33	.150	.48	2.10	.50	2.60	3.1	14
MAY											
06...	178	80.3	124	.44	.110	.55	1.00	.80	1.80	2.4	10
JUL											
21...	--	--	31	.69	.090	.78	.550	1.2	1.70	2.5	11
SEP											
07...	252	26.9	20	.33	.170	.50	1.10	.40	1.50	2.0	8.9
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 , 1980											
11...	.300	--	--	--	--	--	--	--	--	13	.49
JAN , 1981											
08...	.530	--	--	--	--	--	--	--	--	16	1.1
MAR											
17...	.720	2	100	<1	9	6	.2	<1	<1	63	2.9
MAY											
12...	.680	--	--	--	--	--	--	--	--	80	7.8
JUL											
17...	.460	--	--	--	--	--	--	--	--	265	88
SEP											
15...	.510	--	100	<1	20	10	.4	<1	<1	92	13
NOV											
04...	.110	--	--	--	--	--	--	--	--	218	66
JAN , 1982											
08...	.430	1	100	<1	20	2	.3	<1	<1	48	6.8
MAR											
10...	.910	--	--	--	--	--	--	--	--	--	--
MAY											
06...	.740	--	--	--	--	--	--	--	--	441	199
JUL											
21...	.210	--	--	--	--	--	--	--	--	99	17
SEP											
07...	.520	2	100	2	<1	7	.1	<1	<1	--	--

RIO DE BAYAMON BASIN

50048530 RIO HONDO BELOW RIO HONDO NR BAYAMON, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°26'13", long 66°09'50", at Río Hondo Channel, 200 ft (61.0 m) downstream from Río Hondo's confluence, 1.2 mi (1.9 km) upstream from mouth, and 2.5 mi (4.0 km) north of Bayamón, P.R.

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

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

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

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	SALIN- ITY (PPT)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	TRANS- PAR- ENCY (SECCHI DISK) (IN)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
DEC , 1980												
01...	1100	1.00	12200	7.7	--	28.0	3.0	--	.6	--	280	K1700000
JAN , 1981												
30...	1120	1.00	4000	7.4	--	28.0	7.1	--	1.0	--	210	K29000000
MAR												
30...	1130	1.00	375	7.6	--	25.0	230	24.0	6.0	--	44	60000
30...	1150	3.00	40200	7.8	--	26.0	130	19.0	4.9	--	260	33000
MAY												
29...	1505	1.00	28900	8.4	--	30.5	3.7	--	14.6	192	650	K4000
29...	1515	5.00	>50000	8.1	--	28.0	6.7	--	3.1	40	400	6100
JUL												
09...	1330	1.00	9140	8.3	--	31.5	3.7	--	7.5	101	260	K710000
09...	1340	5.00	--	7.7	--	29.5	1.9	--	.8	11	--	K160000
OCT												
01...	1430	1.00	42100	8.2	25.0	32.5	2.4	--	13.8	189	1500	K1000
01...	1435	5.00	>50000	7.8	27.0	29.0	4.5	--	2.1	29	1600	<1000
NOV												
27...	1015	1.00	43300	7.6	--	27.5	11	20.0	2.3	34	150	K8200
27...	1025	6.00	--	7.5	--	27.0	16	--	2.0	28	1700	2000
FEB , 1982												
09...	0910	1.00	4500	7.3	--	24.5	13	--	1.8	21	<10	270000
09...	0920	6.00	44000	7.5	--	25.5	7.6	--	.0	0	1000	K9200
MAR												
25...	0850	1.00	21400	7.6	20.0	24.0	5.4	--	.0	0	350	450000
25...	0920	6.00	44700	7.8	35.0	26.0	3.4	--	1.0	13	52000	K900
JUN												
03...	0845	1.00	11800	7.7	7.0	27.0	5.0	--	1.8	22	170	K1800000
03...	0850	5.00	48300	8.0	29.0	27.0	3.9	--	5.6	70	660	4000
AUG												
02...	1240	1.00	2100	7.4	--	31.0	--	6.0	8.8	117	390	51000
02...	1245	5.00	39500	8.0	--	29.0	--	--	.0	0	1300	K1000
SEP												
29...	0935	1.00	16300	8.2	--	29.5	14	--	5.6	73	430	K1100000
29...	0940	6.00	48400	7.7	--	29.0	2.7	--	.0	0	4300	3300

DATE	STREP- TOCOCCEI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NCNCAE- BCNATE (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)
DEC , 1980											
01...	K13000	2100	1900	150	420	2800	27	110	200	680	5100
JAN , 1981											
30...	630000	--	--	--	--	--	--	--	179	--	--
MAR											
30...	K13000	100	34	28	8.2	52	2.2	4.8	66	19	70
30...	K4000	--	--	--	--	--	--	--	105	--	14000
MAY											
29...	<1000	--	--	--	--	--	--	--	144	--	18000
29...	K200	--	--	--	--	--	--	--	136	--	13000
JUL											
09...	K2730	1100	960	110	200	2300	30	71	143	330	2900
09...	K2000	5400	5300	350	1100	9400	56	370	146	1900	15500
OCT											
01...	<1000	5300	5200	320	1100	9000	54	1.3	149	2400	16000
01...	<1000	5800	5700	360	1200	10000	57	1.3	136	2600	17000
NOV											
27...	K1400	--	--	--	--	--	--	--	139	--	20000
27...	K100000	--	--	--	--	--	--	--	131	--	16000
FEB , 1982											
09...	K550	470	310	54	82	750	15	28	160	190	1200
09...	<100	5400	5200	350	1100	9100	54	320	160	2700	18000
MAR											
25...	5500	--	--	--	--	--	--	--	210	--	7800
25...	K100	--	--	--	--	--	--	--	140	--	1900
JUN											
03...	K1200	1800	1600	260	280	2200	23	89	200	560	4200
03...	<100	6400	6300	580	1200	16000	87	370	130	2700	20000
AUG											
02...	K400	--	--	--	--	--	--	--	100	--	910
02...	340	--	--	--	--	--	--	--	140	--	20000
SEP											
29...	88000	--	--	--	--	--	--	--	160	--	5600
29...	K900	--	--	--	--	--	--	--	130	--	19000

K = non-ideal count.

50048530 RIO HONDO BELOW RIO HONDO NR BAYAMON, PR--Continued

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

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SCLIDS, SUM OF CCNSII- TUENTS, DIS- SOLVED (MG/L)	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)
DEC , 1980											
01...	.6	15	9400	35	.00	.040	.04	<.010	43	43.0	43
JAN , 1981											
30...	--	--	--	27	.03	.010	.04	8.60	8.4	17.0	17
MAR											
30...	.1	7.8	229	217	--	<.010	.30	.160	1.9	2.10	2.4
30...	--	--	--	10	.14	.020	.16	.580	.82	1.40	1.6
MAY											
29...	--	--	--	4	--	<.010	.10	2.10	1.4	3.50	3.6
29...	--	--	--	10	.02	.040	.06	1.00	.30	1.30	1.4
JUL											
09...	.4	9.2	6010	--	.05	.080	.13	<.010	--	3.50	3.6
09...	.7	2.8	28700	--	.01	.030	.04	1.60	.90	2.50	2.5
OCT											
01...	.7	.7	28900	17	.09	.040	.13	1.60	.50	2.10	2.2
01...	.8	.2	31200	17	.04	.020	.06	1.10	.00	1.10	1.2
NOV											
27...	--	--	--	162	--	<.010	.05	2.00	.00	2.00	2.0
27...	--	--	--	41	--	<.010	.05	1.00	.00	1.00	1.1
FEB , 1982											
09...	.2	9.8	2370	14	.07	.040	.11	3.20	1.5	4.70	4.8
09...	.7	2.4	31700	20	.03	.020	.05	1.10	--	1.10	1.1
MAR											
25...	--	--	--	18	--	.020	<.01	5.70	5.3	11.0	--
25...	--	--	--	65	--	<.010	<.01	1.00	1.1	2.10	--
JUN											
03...	.3	14	7700	32	--	.030	<.10	4.90	.00	4.90	--
03...	.6	1.3	40900	14	--	<.010	<.10	.570	--	--	--
AUG											
02...	--	--	--	42	.20	.110	.31	1.20	.50	1.70	2.0
02...	--	--	--	24	--	.010	<.10	.480	.22	.70	--
SEP											
29...	--	--	--	8	.12	.080	.20	4.60	--	--	--
29...	--	--	--	16	--	.010	<.10	1.10	.90	2.00	--

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- PENDED (MG/L)
DEC , 1980											
01...	190	3.70	--	--	--	--	--	--	--	--	6
JAN , 1981											
30...	75	3.40	--	--	--	--	--	--	--	--	20
MAR											
30...	11	.350	<1	100	<1	7	19	.1	<1	<1	349
30...	6.9	.190	--	--	--	--	--	--	--	--	25
MAY											
29...	16	1.00	--	--	--	--	--	--	--	--	8
29...	6.0	.390	--	--	--	--	--	--	--	--	5
JUL											
09...	16	2.70	--	--	--	--	--	--	--	--	18
09...	11	.900	--	--	--	--	--	--	--	--	--
OCT											
01...	9.9	.770	--	<50	1	50	3	.5	<1	1	--
01...	5.1	.470	--	<50	1	30	5	.9	<1	<1	--
NOV											
27...	9.1	.660	--	--	--	--	--	--	--	--	13
27...	4.6	.360	--	--	--	--	--	--	--	--	--
FEB , 1982											
09...	21	1.00	2	100	<1	12	4	.2	<1	<1	8
09...	5.1	.350	1	<100	<1	13	3	.7	<1	1	--
MAR											
25...	--	3.00	--	--	--	--	--	--	--	--	--
25...	--	.390	--	--	--	--	--	--	--	--	--
JUN											
03...	--	2.30	--	--	--	--	--	--	--	--	--
03...	--	.170	--	--	--	--	--	--	--	--	--
AUG											
02...	8.9	.470	--	--	--	--	--	--	--	--	236
02...	--	.150	--	--	--	--	--	--	--	--	--
SEP											
29...	--	1.90	4	<100	<1	<1	6	.1	<1	<1	--
29...	--	.460	1	<100	<1	<1	6	2.8	<1	<1	--

RIO PIEDRAS BASIN

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 Río Piedras.

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

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

WATER QUALITY DATA, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 , 1980												
21...	1015	70	233	9.1	22.0	.10	7.9	--	54	K1100000	200000	93
JAN , 1981												
12...	1340	9.6	327	6.9	23.5	5.0	6.8	--	23	240000	38000	--
MAR												
10...	1015	6.4	380	7.5	25.0	3.5	8.2	--	<10	41000	6200	140
MAY												
04...	1100	9.6	305	7.7	28.0	6.1	8.0	101	10	K11000	4800	--
JUL												
15...	1120	6.9	322	7.8	26.5	3.4	8.6	106	11	K8000	K1700	120
SEP												
10...	1035	7.6	310	7.7	26.5	3.0	7.4	94	27	37000	2800	120
NOV												
02...	1120	12	287	7.4	24.5	6.9	8.0	95	24	K14000	7000	--
JAN , 1982												
04...	1355	20	342	7.3	25.5	30	8.0	97	24	240000	K120000	100
MAR												
03...	1105	7.3	443	7.6	24.0	2.0	7.6	89	77	K150000	63000	--
MAY												
03...	1125	4.7	379	7.5	28.0	12	8.3	105	--	K17000	3500	140
JUL												
14...	0930	5.0	360	7.2	25.5	3.0	8.4	102	20	K8900	K1300	--
SEP												
01...	0940	12	346	7.8	25.5	--	8.0	98	130	50000	2800	110
DATE	HARD- NESS, MNCAR- 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)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
NOV , 1980												
21...	0	28	5.5	15	.7	3.3	101	10	14	.2	25	161
JAN , 1981												
12...	--	--	--	--	--	--	113	--	--	--	--	--
MAR												
10...	0	36	11	20	.7	2.9	141	15	27	.2	35	232
MAY												
04...	--	--	--	--	--	--	103	--	--	--	--	--
JUL												
15...	2	31	10	21	.8	2.3	116	11	24	.2	38	207
SEP												
10...	13	29	12	21	.8	2.6	107	16	26	.2	26	199
NOV												
02...	--	--	--	--	--	--	87	--	--	--	--	--
JAN , 1982												
04...	2	27	9.1	18	.8	2.4	98	17	20	.1	29	182
MAR												
03...	--	--	--	--	--	--	140	--	--	--	--	--
MAY												
03...	0	36	11	24	1.0	2.1	140	13	27	.2	33	230
JUL												
14...	--	--	--	--	--	--	130	--	--	--	--	--
SEP												
01...	0	28	9.2	19	.9	2.1	110	14	21	.2	30	188

K = non-ideal count.

RIO PIEDRAS BASIN

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50048800 RIO PIEDRAS NEAR RIO PIEDRAS, PR--Continued

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

DATE	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 NC3)	PHOS- PHORUS, TOTAL (MG/L AS P)
NOV , 1980											
21...	30.4	644	.98	.020	1.0	.020	.31	.33	1.3	5.9	.190
JAN , 1981											
12...	--	21	1.2	.050	1.2	.880	.32	1.20	2.4	11	.510
MAR											
10...	4.0	11	.84	.140	.98	1.20	.10	1.30	2.3	10	.370
MAY											
04...	--	14	.63	.010	.64	.050	.45	.50	1.1	5.0	.100
JUL											
15...	3.9	--	--	<.010	.67	.030	.45	.48	1.2	5.1	.060
SEP											
10...	4.1	18	.85	.020	.87	.140	.51	.65	1.5	6.7	.090
NOV											
02...	--	35	--	<.010	.90	.040	.45	.49	1.4	6.2	.120
JAN , 1982											
04...	9.6	70	.80	.150	.95	.420	.98	1.40	2.4	10	.520
MAR											
03...	--	9	.65	.200	.85	2.40	1.1	3.50	4.4	19	.530
MAY											
03...	2.9	17	.52	.060	.58	.130	.50	.63	1.2	5.4	.230
JUL											
14...	--	7	.51	.020	.53	.110	.29	.40	.93	4.1	.100
SEP											
01...	5.8	6	.62	.020	.64	.120	.78	.90	1.5	6.8	.110

DATE	PHOS- PHORUS, ORTHO, 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 , 1980											
21...	--	--	--	--	--	--	--	--	--	695	131
JAN , 1981											
12...	--	--	--	--	--	--	--	--	--	22	.57
MAR											
10...	--	1	200	<1	6	3	.3	<1	<1	5	.09
MAY											
04...	--	--	--	--	--	--	--	--	--	19	.49
JUL											
15...	--	--	--	--	--	--	--	--	--	19	.35
SEP											
10...	--	--	100	1	10	2	.1	<1	<1	5	.10
NOV											
02...	--	--	--	--	--	--	--	--	--	68	2.1
JAN , 1982											
04...	--	1	100	<1	5	6	.3	<1	<1	114	6.0
MAR											
03...	.490	--	--	--	--	--	--	--	--	--	--
MAY											
03...	--	--	--	--	--	--	--	--	--	--	--
JUL											
14...	--	--	--	--	--	--	--	--	--	--	--
SEP											
01...	--	2	<100	1	3	5	.1	<1	<1	--	--

50049000 RIO PIEDRAS AT RIO PIEDRAS, PR

LOCATION.--Lat 18°23'48", long 66°03'24", Hydrologic Unit 21010005, on left bank, at bridge on Highway 1, 0.3 mi (0.5 km) southwest of the plaza in Río Piedras, and 0.4 mi (0.6 km) downstream from diversion for water supply.

DRAINAGE AREA.--12.5 sq mi (32.4 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1958 (maximum discharge measurement only), 1959-64 (annual low-flow measurements only), July 1971 to September 1982 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 50 ft (15.2 m), from topographic map.

REMARKS.--Records fair. Low flows affected by diversions for water supply.

AVERAGE DISCHARGES.--10 years (1972-81), 26.6 cu ft/s (0.753 cu m/s), 28.90 in/yr (734 mm/yr), 19,270 acre-ft/yr (23.8 cu hm/yr); median of yearly mean discharges, 24 cu ft/s (0.68 cu m/s), 17,400 acre-ft/yr (21 cu hm/yr).

--11 years (1972-82), 26.9 cu ft/s (0.762 cu m/s), 29.22 in/yr (742 mm/yr), 19,490 acre-ft/yr (24.0 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 10,000 cu ft/s (283 cu m/s), Dec. 11, 1975, gage height, 21.02 ft (6.407 m), from rating curve extended above 3,000 cu ft/s (85.0 cu m/s) on basis of slope-area measurement; minimum daily, 0.26 cu ft/s (0.007 cu m/s) May 19, 1977.

EXTREMES FOR WATER YEARS 1981-82.--Peak discharges above base of 2,800 cu ft/s (79.3 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)
May 4, 1981	1800	*2,410 68.2	11.39 3.472	Nov. 3, 1981	1730	3,490 98.8	13.37 4.075
				Dec. 12, 1981	1630	*5,010 142	15.67 4.776

Minimum discharges, 6.5 cu ft/s (0.184 cu m/s) Sept. 2-5, 1981; 6.5 cu ft/s (0.184 cu m/s) Oct. 16, 1982.

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	26	16	15	14	12	8.2	53	76	33	10	9.6	7.3
2	21	22	11	10	12	8.5	22	27	23	7.9	8.4	6.9
3	30	17	10	9.5	15	8.2	39	67	34	8.9	8.0	6.5
4	25	16	10	9.3	11	10.9	50	284	37	14	8.0	7.1
5	20	12	35	9.1	11	34	44	137	45	12	11	6.9
6	40	10	43	9.1	11	12	25	48	23	8.7	8.4	13
7	25	10	238	9.1	10	11	33	37	19	8.7	45	22
8	20	10	29	9.0	12	10	17	28	16	9.6	38	149
9	25	10	17	9.6	9.5	9.6	22	24	15	19	17	25
10	24	10	14	9.5	9.8	9.5	17	23	14	9.9	104	12
11	23	10	13	31	10	9.0	11	22	14	8.0	34	11
12	23	10	36	13	9.9	9.6	9.8	27	14	8.0	73	25
13	23	10	16	54	11	10	9.4	22	17	21	87	14
14	23	10	20	30	11	8.9	17	21	13	14	24	12
15	100	10	13	14	22	8.7	10	20	13	10	20	12
16	41	9.9	12	12	11	8.9	12	20	13	20	20	11
17	26	9.8	12	10	11	9.0	17	22	12	51	48	11
18	21	10	11	11	29	15	11	58	12	13	13	12
19	20	13	10	69	10	10	9.7	55	13	19	28	16
20	20	11	10	17	9.5	7.8	9.8	24	12	28	17	12
21	23	49	10	13	12	7.9	10	31	12	12	28	11
22	25	19	11	13	8.7	15	36	28	12	9.9	35	10
23	35	17	44	13	8.9	12	13	6.9	11	9.4	48	10
24	29	13	16	14	8.8	9.1	12	33	12	42	15	22
25	27	13	12	15	9.6	52	9.5	46	11	28	11	11
26	37	18	10	13	13	12	9.3	110	9.8	13	9.7	9.8
27	24	14	10	32	8.4	108	9.3	33	42	14	9.5	9.7
28	23	11	9.9	18	8.2	25	9.2	20	12	8.7	10	9.4
29	23	11	10	11	---	161	10	17	9.0	7.4	9.2	9.6
30	102	11	10	41	---	20	17	20	11	27	7.3	9.4
31	23	---	40	22	---	12	---	102	---	18	9.6	---
TOTAL	947	412.7	757.9	564.2	325.3	822.0	574.0	1551	533.8	490.1	813.7	503.6
MEAN	30.5	13.8	24.4	18.2	11.6	26.5	19.1	50.0	17.8	15.8	26.2	16.8
MAX	102	49	238	69	29	161	53	284	45	51	104	149
MIN	20	9.8	9.9	9.0	8.2	7.8	9.2	17	9.0	7.4	7.3	6.5
CFSM	2.44	1.10	1.95	1.46	.93	2.12	1.53	4.00	1.42	1.26	2.10	1.34
IN.	2.82	1.23	2.26	1.69	.97	2.45	1.71	4.62	1.59	1.46	2.42	1.50
AC-FT	1880	819	1500	1120	645	1630	1140	3080	1060	972	1610	999

CAL YR 1980 TOTAL 8382.5 MEAN 22.9 MAX 520 MIN 1.2 CFSM 1.83 IN 24.94 AC-FT 16630
WTR YR 1981 TOTAL 8295.3 MEAN 22.7 MAX 284 MIN 6.5 CFSM 1.82 IN 24.68 AC-FT 16450

50049000 RIO PIEDRAS AT RIO PIEDRAS, PR--Continued

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	9.6	54	9.7	25	36	16	13	9.6	19	13	18	28
2	9.8	123	16	21	85	13	17	10	20	13	17	19
3	9.0	407	13	32	56	12	15	11	21	12	15	18
4	8.8	158	10	25	22	12	12	41	41	16	15	17
5	10	38	9.6	19	48	13	39	28	16	19	16	14
6	11	25	10	18	26	12	28	34	14	31	19	13
7	8.3	21	24	20	29	12	13	17	13	14	15	14
8	8.9	24	12	18	27	13	11	12	13	12	20	15
9	8.2	51	11	16	24	13	12	419	13	14	19	13
10	13	16	10	16	16	11	12	165	12	13	94	12
11	9.0	15	30	16	19	13	11	272	13	13	20	16
12	7.0	12	830	16	20	14	9.2	274	13	13	193	180
13	7.5	12	271	16	16	11	9.3	38	13	13	54	110
14	7.0	11	369	16	21	10	9.3	46	16	19	24	22
15	6.9	11	91	15	25	10	9.8	27	13	12	28	14
16	6.7	15	34	15	20	12	12	20	13	25	20	12
17	8.6	11	26	15	37	9.8	11	18	13	13	18	11
18	7.7	21	25	16	18	9.6	9.7	16	14	122	17	11
19	12	15	21	16	14	9.9	9.3	15	14	107	17	11
20	8.3	12	17	16	14	10	9.7	20	14	134	18	12
21	13	11	45	14	15	11	10	21	12	54	17	11
22	14	11	19	15	14	11	9.8	28	12	100	17	18
23	8.3	11	16	14	12	11	9.7	17	19	30	36	13
24	12	11	16	15	12	11	10	18	12	23	53	12
25	47	46	24	14	12	12	9.9	17	12	29	17	15
26	43	23	23	14	12	12	21	16	12	38	17	11
27	16	13	127	56	15	12	17	16	12	22	40	11
28	8.6	11	38	17	21	12	9.4	208	12	18	49	15
29	18	10	28	14	---	12	9.1	35	13	124	28	12
30	11	9.5	28	16	---	12	8.9	23	16	50	21	10
31	60	---	25	43	---	12	---	19	---	19	55	---
TOTAL	429.8	1208.5	2228.3	599	686	364.3	387.1	1910.6	450	1135	1007	690
MEAN	13.9	40.3	71.9	19.3	24.5	11.8	12.9	61.6	15.0	36.6	32.5	23.0
MAX	60	407	830	56	85	16	39	419	41	134	193	180
MIN	6.7	9.5	9.6	14	12	9.6	8.9	9.6	12	12	15	10
CFSH	1.11	3.22	5.75	1.94	1.96	.94	1.03	4.93	1.20	2.93	2.60	1.84
IN	1.28	3.60	6.63	1.78	2.04	1.08	1.15	5.69	1.34	3.38	3.00	2.05
AC-FT	853	2400	4420	1190	1360	723	768	3790	893	2250	2000	1370
CAL YR 1981	TOTAL	10044.3	MEAN 27.5	MAX 830	MIN 6.5	CFSH 2.20	IN 29.89	AC-FT 19920				
UTR YR 1982	TOTAL	11095.6	MEAN 30.4	MAX 830	MIN 6.7	CFSH 2.43	IN 33.02	AC-FT 22010				

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO SEPTEMBER 1982

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPEC- IFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)
AUG, 1981				
21...	810	18.0	344	26.0
SEP				
29...	921	8.9	427	26.0
OCT				
23...	910	8.8	382	25.0
NOV				
30...	935	8.9	433	23.5
FEB, 1982				
10...	920	15.0	416	23.0
MAR				
11...	940	13.0	426	23.0
APR				
12...	1105	9.3	451	26.0
MAY				
10...	1145	54.0	295	25.0
JUN				
7...	1015	13.0	438	27.0
JUL				
7...	1035	15.0	275	25.0
AUG				
13...	915	32.0	215	25.0
SEP				
10...	1030	12.0	334	26.0

RIO PIEDRAS 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 Las Américas Expressway, 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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 , 1980													
17...	1115	14	412	8.1	26.5	.20	11.2	--	27	37000	3400	140	
JAN , 1981													
12...	1130	21	316	6.9	24.0	19	7.8	--	15	230000	31000	--	
MAR													
10...	1315	12	440	8.0	29.0	.80	10.0	--	<10	K8400	K400	160	
MAY													
04...	1330	24	347	7.9	30.0	9.4	6.7	88	20	47000	4700	--	
JUL													
15...	1420	14	364	7.8	30.0	18	6.7	88	15	K99000	K4300	130	
SEP													
10...	1435	21	387	7.7	30.0	1.1	5.6	75	38	510000	22000	100	
NOV													
02...	1445	20	327	7.3	26.0	17	7.0	85	91	430000	48000	--	
JAN , 1982													
05...	1335	22	407	7.5	26.0	5.0	7.6	93	16	35000	42000	140	
MAR													
03...	1415	15	443	7.6	29.0	2.5	9.1	118	16	430000	31000	--	
MAY													
03...	1420	12	--	7.6	30.0	200	6.3	83	--	K160000	25000	130	
JUL													
14...	1215	11	416	7.5	29.0	26	8.2	105	40	K80000	3300	--	
SEP													
01...	1220	20	368	7.6	29.0	--	7.0	91	33	33000	2600	130	
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)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
NOV , 1980													
17...	0	37	11	31	1.2	3.5	153	15	32	.3	32	253	
JAN , 1981													
12...	--	--	--	--	--	--	108	--	--	--	--	--	--
MAR													
10...	0	46	11	29	1.0	3.6	162	10	32	.2	32	261	
MAY													
04...	--	--	--	--	--	--	127	--	--	--	--	--	--
JUL													
15...	0	33	11	36	1.4	3.1	136	14	28	.2	34	241	
SEP													
10...	0	22	11	21	.9	2.7	138	16	22	.2	23	201	
NOV													
02...	--	--	--	--	--	--	105	--	--	--	--	--	--
JAN , 1982													
05...	1	39	10	25	1.0	2.9	139	18	26	.2	29	234	
MAR													
03...	--	--	--	--	--	--	160	--	--	--	--	--	--
MAY													
03...	0	38	9.0	28	1.1	3.0	140	18	32	.3	25	237	
JUL													
14...	--	--	--	--	--	--	140	--	--	--	--	--	--
SEP													
01...	1	37	9.3	22	.9	2.6	130	12	21	.2	27	209	

K = non-ideal count.

RIO PIEDRAS BASIN

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50049100 RIO PIEDRAS AT HATO REY, PR--Continued

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

DATE	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)	PHOS- PHORUS, TOTAL (MG/L AS P)
NOV , 1980											
17...	9.6	7	1.1	.090	1.2	.080	.42	.50	1.7	7.5	.380
JAN , 1981											
12...	--	70	1.0	.070	1.1	.300	.36	.66	1.8	7.8	.280
MAR											
10...	8.2	12	.97	.130	1.1	.160	.31	.47	1.6	7.0	.430
MAY											
04...	--	54	.58	.040	.62	.160	.58	.74	1.4	6.0	.210
JUL											
15...	9.1	--	.65	.030	.68	.120	.86	.98	1.7	7.3	.160
SEP											
10...	11.4	14	.72	.040	.76	.490	.71	1.20	2.0	8.7	.410
NOV											
02...	--	46	.89	.030	.92	.240	.66	.90	1.8	8.1	.120
JAN , 1982											
05...	14.0	16	1.0	.170	1.2	.400	.52	.92	2.1	9.4	.310
MAR											
03...	--	10	.96	.140	1.1	.760	.74	1.50	2.6	12	.430
MAY											
03...	7.6	1050	.54	.120	.66	.500	.29	.79	1.5	6.4	.630
JUL											
14...	--	23	.64	.070	.71	.170	.43	.60	1.3	5.8	.260
SEP											
01...	11.5	12	.69	.050	.74	.140	.56	.70	1.4	6.4	.180

DATE	PHOS- PHORUS, ORTHO, 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 , 1980											
17...	--	--	--	--	--	--	--	--	--	16	.60
JAN , 1981											
12...	--	--	--	--	--	--	--	--	--	89	5.0
MAR											
10...	--	1	--	--	--	--	.1	<1	--	5	.16
MAY											
04...	--	--	--	--	--	--	--	--	--	86	5.6
JUL											
15...	--	--	--	--	--	--	--	--	--	86	3.3
SEP											
10...	--	--	200	1	10	10	<.1	<1	1	19	1.1
NOV											
02...	--	--	--	--	--	--	--	--	--	69	3.6
JAN , 1982											
05...	--	1	100	<1	2	1	.4	<1	1	11	.66
MAR											
03...	.390	--	--	--	--	--	--	--	--	--	--
MAY											
03...	--	--	--	--	--	--	--	--	--	--	--
JUL											
14...	--	--	--	--	--	--	--	--	--	--	--
SEP											
01...	--	2	100	<1	2	5	<.1	<1	<1	--	--

RIO PIEDRAS BASIN

50049820 SAN JOSE LAGOON 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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	SALIN- ITY (PPT)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	TRANS- PAR- ENCY (SECCHI DISK) (IN)	OXYGEN, DIS- SOLVED (MG/L)
NOV , 1980									
26...	1505	1.00	20600	8.7	--	27.0	--	--	6.6
JAN , 1981									
30...	0900	1.00	22700	8.3	15.0	26.5	--	--	5.2
MAR									
27...	1200	1.00	22500	8.7	12.5	29.0	--	--	5.0
MAY									
29...	1230	1.00	13700	8.8	--	30.0	8.4	--	10.0
JUL									
09...	1115	1.00	18100	8.2	10.8	31.5	--	--	7.4
OCT									
01...	1145	1.00	19800	8.7	13.5	30.0	--	14.8	5.4
NOV									
25...	1240	1.00	14400	8.8	9.0	30.0	--	19.7	9.2
FEB , 1982									
08...	1235	1.00	12900	7.7	7.0	25.0	--	12.0	2.0
MAR									
24...	0930	1.00	20000	8.1	13.0	27.0	--	8.5	3.4
JUN									
02...	1125	1.00	10600	9.4	6.0	28.0	--	15.0	15.8
AUG									
03...	1220	1.00	19100	9.3	11.0	30.0	--	14.0	.0
SEP									
28...	1100	1.00	23000	8.9	14.0	30.0	--	4.2	9.6

DATE	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)	ALKA- LITY FIELD (MG/L AS CACO3)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	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)
NOV , 1980									
26...	--	1300	K170000	K12000	151	6900	75	.03	.010
JAN , 1981									
30...	--	--	49000	2300	164	--	11	.01	<.010
MAR									
27...	--	260	20000	5300	145	8200	48	.01	.020
MAY									
29...	131	<10	32000	K100	92	4800	18	.01	<.010
JUL									
09...	100	--	K3000	<1000	128	--	22	--	<.010
OCT									
01...	71	1600	K24000	<1000	115	6700	23	.05	.020
NOV									
25...	128	--	42000	3000	125	--	10	--	<.010
FEB , 1982									
08...	24	--	K90000	3000	150	--	36	.06	.030
MAR									
24...	43	--	490000	K13000	150	--	14	.02	.030
JUN									
02...	200	--	5700	<100	100	--	30	--	.020
AUG									
03...	0	--	4300	<0	140	--	55	--	.020
SEP									
28...	126	--	K10000	<1000	134	--	14	--	.010

K = non-ideal count.

50049820 SAN JOSE LAGOON NO. 2 AT SAN JUAN, PR--Continued

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

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, 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)	SEDI- MENT, SUS- PENDED (MG/L)
NOV , 1980									
26...	.04	.680	.62	1.30	1.3	5.9	.900	24	14
JAN , 1981									
30...	.01	.990	.81	1.80	1.8	8.0	.900	13	8
MAR									
27...	.03	.180	2.8	3.00	3.0	13	.770	11	39
MAY									
29...	.02	.110	1.9	2.00	2.0	8.9	.520	--	22
JUL									
09...	.01	.150	1.4	1.50	1.5	6.7	.460	15	10
OCT									
01...	.07	.450	2.3	2.70	2.8	12	.590	11	--
NOV									
25...	.06	.490	1.8	2.30	2.4	10	.600	19	6
FEB , 1982									
08...	.09	.910	.99	1.90	2.0	8.8	.520	12	27
MAR									
24...	.05	.980	3.7	4.60	4.7	21	.870	20	--
JUN									
02...	<.10	.040	2.0	2.00	--	--	.420	29	--
AUG									
03...	<.10	.080	2.4	2.50	--	--	.580	20	--
SEP									
28...	<.10	.080	2.7	2.80	--	--	.660	14	--

RIO PIEDRAS BASIN

50049920 SAN JUAN BAY 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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (UNITS)	SALINITY (PPT)	TEMPERATURE (DEG C)	TURBIDITY (FTU)	TRANSPAR-ENCY (SECCHI DISK) (IN)	OXYGEN, DIS-SOLVED (MG/L)
NOV , 1980									
26...	1330	1.00	>50000	8.1	--	28.5	--	--	7.2
JAN , 1981									
29...	1005	1.00	40300	8.0	25.0	27.0	--	--	.6
MAR									
27...	1030	1.00	40400	7.6	24.0	27.5	--	--	.0
MAY									
29...	0950	1.00	41400	7.7	--	28.0	6.2	--	1.5
JUL									
09...	0915	1.00	39600	7.5	33.0	29.0	--	--	.7
OCT									
01...	0945	1.00	>50000	7.8	32.0	29.5	--	43.4	2.1
NOV									
25...	1045	1.00	42100	7.9	28.0	29.0	--	40.5	4.7
FEB , 1982									
08...	1005	1.00	36800	7.6	19.0	26.0	--	22.2	3.6
MAR									
24...	1130	1.00	30500	7.8	18.0	28.0	--	18.0	2.8
JUN									
02...	0855	1.00	12400	7.5	8.0	26.5	--	19.0	1.8
AUG									
03...	0935	1.00	42200	7.5	26.0	28.0	--	20.0	.6
SEP									
28...	1355	1.00	42400	8.2	27.0	29.5	--	25.0	7.4

DATE	OXYGEN, DIS-SOLVED (PER-CENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (CCLS./100 ML)	STREPTOCOCCI, FECAL, KP AGAR (COLS. PER 100 ML)	ALKALINITY FIELD (MG/L AS CaCO3)	CHLORIDE, DIS-SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)
NOV , 1980									
26...	--	1100	5600	K600	130	16000	164	.06	.020
JAN , 1981									
29...	--	--	630000	20000	143	--	14	.02	.020
MAR									
27...	--	370	330000	30000	131	17000	4	.01	.030
MAY									
29...	19	<10	280000	6700	138	14000	40	.04	.030
JUL									
09...	9	--	K700000	K16000	141	--	16	.04	.010
OCT									
01...	28	1700	3500	<100	121	18000	5	--	<.010
NOV									
25...	70	--	K9900	K1000	123	--	27	.05	.010
FEB , 1982									
08...	43	--	20000	3900	150	--	74	.04	.050
MAR									
24...	35	--	330000	8500	150	--	54	.04	.030
JUN									
02...	22	--	K640000	9600	130	--	20	.07	.030
AUG									
03...	8	--	K100000	54000	150	--	2	--	.040
SEP									
28...	96	--	K15000	K1700	130	--	12	--	.030

K = non-ideal count.

RIO PIEDRAS BASIN

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50049920 SAN JUAN BAY NO. 5 AT SAN JUAN, PR--Continued

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

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, 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)	SEDI- MENT, SUS- PENDEDED (MG/L)
NOV , 1980									
26...	.08	.470	.38	.85	.89	4.1	.190	5.5	16
JAN , 1981									
29...	.04	.850	--	--	--	--	.380	7.0	4
MAR									
27...	.04	1.10	1.8	2.90	2.9	13	.540	10	7
MAY									
29...	.07	.800	.40	1.20	1.3	5.6	.360	--	10
JUL									
09...	.05	.770	.93	1.70	1.8	7.7	.430	11	8
OCT									
01...	.04	.400	.54	.94	.98	4.3	.310	3.5	--
NOV									
25...	.06	.680	.04	.72	.78	3.5	.260	6.6	4
FEB , 1982									
08...	.09	.990	.61	1.60	1.7	7.5	.280	4.6	81
MAR									
24...	.07	1.20	.80	2.00	2.1	9.2	.430	20	--
JUN									
02...	.10	1.60	.90	2.50	2.6	12	.490	6.1	--
AUG									
03...	<.10	1.20	1.2	2.40	--	--	.490	12	--
SEP									
28...	<.10	.600	.30	.90	--	--	.300	6.6	--

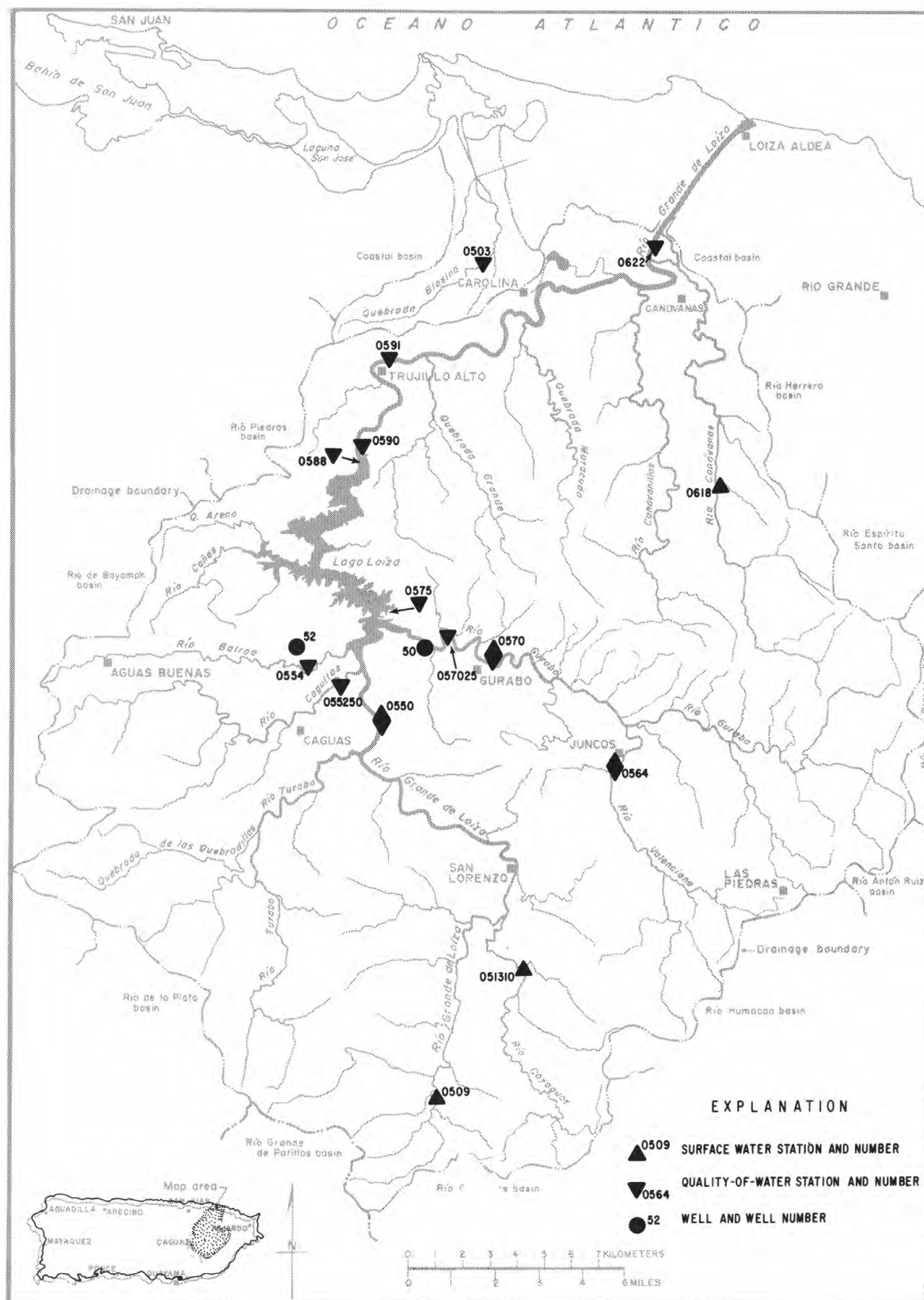


Figure 17.--Río Grande de Loíza basin.

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, and 1.2 mi (1.9 km) west-southwest of Carolina.

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

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

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

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 , 1980												
19...	0930	5.8	550	6.7	25.0	5.4	1.3	--	190	30000000	6000000	160
JAN , 1981												
16...	0840	7.7	530	6.5	24.0	5.0	1.7	--	100	5100000	260000	--
MAR												
16...	1525	5.4	626	7.2	29.0	2.9	3.8	--	<10	K8200000	370000	170
MAY												
07...	1430	7.5	549	7.2	30.0	4.2	.6	8	56K1000000	K1900000	--	--
JUL												
24...	0840	8.5	402	7.4	26.0	6.0	3.8	46	21	K8800000	K70000	140
SEP												
17...	1350	8.4	660	7.0	31.0	14	.7	0	140	54000000	540000	160
NOV												
16...	1500	8.0	757	6.8	26.5	100	.7	9	60	5700000	K250000	--
JAN , 1982												
19...	0900	6.4	666	7.2	20.0	15	1.1	8	160	3500000	250000	170
MAR												
11...	1410	6.6	668	7.0	29.0	15	1.2	16	78	3100000	550000	--
MAY												
05...	1405	8.1	498	6.8	26.0	10	1.6	20	290	4900000	760000	140
JUL												
15...	1450	7.9	731	6.7	32.0	14	.0	0	110	44000000	480000	--
SEP												
17...	0925	5.2	855	7.0	27.5	--	.3	4	140	2800000	850000	180

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 , 1980											
19...	0	50	8.3	39	1.3	6.9	172	13	43	.4	27
JAN , 1981											
16...	--	--	--	--	--	--	168	--	--	--	--
MAR											
16...	0	51	10	50	1.7	6.4	202	15	52	.4	23
MAY											
07...	--	--	--	--	--	--	188	--	--	--	--
JUL											
24...	0	45	7.4	29	1.1	4.7	144	32	31	.3	23
SEP											
17...	0	50	9.1	55	1.9	5.9	163	29	73	.5	22
NOV											
16...	--	--	--	--	--	--	174	--	--	--	--
JAN , 1982											
19...	0	53	8.3	44	1.5	5.8	197	26	44	.4	23
MAR											
11...	--	--	--	--	--	--	200	--	--	--	--
MAY											
05...	12	43	8.4	42	1.6	4.9	130	34	36	.2	20
JUL											
15...	--	--	--	--	--	--	160	--	--	--	--
SEP											
17...	12	60	7.9	72	2.4	5.6	170	26	130	.2	22

K = non-ideal count.

50050300 QUEBRADA BLASINA NEAR CAROLINA, PR--Continued

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

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 , 1980											
19...	291	4.6	15	.00	.010	.01	6.00	9.0	15.0	15	66
JAN , 1981											
16...	--	--	23	.02	<.010	.03	3.50	.90	4.40	4.4	20
MAR											
16...	329	4.8	16	.01	<.010	.01	8.80	5.2	14.0	14	62
MAY											
07...	--	--	4	.01	<.010	.01	4.10	4.4	8.50	8.5	38
JUL											
24...	259	5.9	8	.31	.090	.40	2.90	1.4	4.30	4.7	21
SEP											
17...	359	8.1	46	.02	.010	.03	5.80	8.2	14.0	14	62
NOV											
16...	--	--	40	.04	.030	.07	5.60	3.1	8.70	8.8	39
JAN , 1982											
19...	325	5.6	34	.10	.090	.19	8.90	6.1	15.0	15	67
MAR											
11...	--	--	19	.08	.040	.12	8.00	3.0	11.0	11	49
MAY											
05...	267	5.9	20	.34	.120	.46	3.30	5.4	8.70	9.2	41
JUL											
15...	--	--	20	--	.020	<.10	8.90	7.1	16.0	--	--
SEP											
17...	432	6.0	12	--	.020	<.10	4.80	2.6	7.40	--	--
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 , 1980											
19...	2.60	--	--	--	--	--	--	--	--	34	.53
JAN , 1981											
16...	1.30	--	--	--	--	--	--	--	--	13	.27
MAR											
16...	3.10	1	100	<1	7	10	.4	<1	<1	30	.44
MAY											
07...	2.40	--	--	--	--	--	--	--	--	80	1.6
JUL											
24...	1.10	--	--	--	--	--	--	--	--	47	1.1
SEP											
17...	2.90	--	100	1	20	13	.3	<1	1	90	2.0
NOV											
16...	2.80	--	--	--	--	--	--	--	--	101	2.2
JAN , 1982											
19...	<.010	1	100	<1	4	8	.4	<1	<1	--	--
MAR											
11...	5.30	--	--	--	--	--	--	--	--	--	--
MAY											
05...	1.80	--	--	--	--	--	--	--	--	--	--
JUL											
15...	3.00	--	--	--	--	--	--	--	--	--	--
SEP											
17...	1.40	2	100	1	4	5	.4	<1	<1	--	--

RIO GRANDE DE LOIZA BASIN

50050900 RIO GRANDE DE LOIZA AT QUEBRADA ARENAS, PR

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.--5 years (1978-82), 32.0 cu ft/s (0.906 cu m/s), 72.43 in/yr (1,840 mm/yr), 23,180 acre-ft/yr (28.6 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 5-6, 1979.

EXTREMES FOR WATER YEARS 1981-82.--Peak discharges above base of 2,000 cu ft/s (56.6 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 22, 1981	1815	2,200	62.3	8.43	2,569	Dec. 27, 1981	1115	2,320	65.7	8.57	2.612
June 1, 1981	1000	*2,320	65.6	8.56	2,609	May 29, 1982	1100	*4,030	114	10.16	3.097
Dec. 26, 1981	2230	2,280	64.6	8.52	2,597	Sept. 13, 1982	0645	2,510	71.1	8.77	2.673
Dec. 27, 1981	0100	3,500	99.1	9.71	2,960						

Minimum discharges, 4.7 cu ft/s (0.133 cu m/s) Apr. 19-20; 5.4 cu ft/s (0.153 cu m/s) Apr. 25, May 1-4, 1982.

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	9.8	24	14	19	10	7.6	5.6	28	249	.84	21	13
2	9.0	31	16	13	10	7.6	6.3	32	109	25	19	12
3	8.9	22	14	12	14	7.6	11	39	82	18	19	12
4	10	125	12	12	10	7.6	6.9	25	145	16	27	11
5	19	45	12	12	9.2	7.6	12	30	176	31	23	11
6	35	26	30	12	9.6	7.4	6.8	21	79	42	19	10
7	48	23	20	14	9.6	7.0	6.7	30	52	29	19	15
8	20	20	15	12	9.3	11	7.3	18	42	21	17	26
9	72	18	13	11	10	9.7	6.1	18	36	21	50	19
10	23	17	12	10	11	7.5	5.9	51	31	20	42	14
11	17	16	12	60	12	7.0	5.1	20	29	16	24	12
12	14	16	11	15	10	6.7	4.9	17	28	14	32	12
13	12	15	11	12	8.9	6.7	4.9	26	28	15	66	13
14	12	14	39	11	8.8	6.7	4.9	95	25	26	38	11
15	38	16	30	12	63	6.4	4.9	55	22	49	23	10
16	24	22	31	12	30	6.4	5.2	36	20	22	20	10
17	16	16	21	10	18	7.5	5.7	25	20	87	20	11
18	19	14	18	9.6	15	7.5	5.2	38	20	33	21	11
19	18	14	17	9.6	12	6.4	4.9	32	19	36	24	11
20	14	16	16	9.6	11	9.5	4.7	25	18	75	20	10
21	13	29	24	9.2	11	5.4	16	78	18	44	22	15
22	15	19	17	9.2	10	5.4	273	317	17	36	30	11
23	38	22	14	8.5	9.8	8.9	40	175	16	51	25	9.7
24	22	16	14	8.6	9.2	6.1	17	57	15	161	24	9.2
25	23	14	14	49	8.7	5.6	15	50	19	76	20	8.7
26	19	14	15	14	8.2	5.5	29	71	18	38	17	12
27	16	14	13	28	8.2	5.2	36	39	15	31	16	9.5
28	15	13	12	14	8.1	6.2	16	32	19	27	15	8.6
29	15	12	12	12	---	9.4	31	28	18	24	15	8.4
30	63	17	12	11	---	5.8	63	30	53	23	13	8.1
31	23	---	31	11	---	5.3	---	178	---	25	13	---
TOTAL	700.7	680	542	462.3	364.6	220.2	661.0	1716	1438	1216	754	354.2
MEAN	22.6	22.7	17.5	14.9	13.0	7.10	22.0	55.4	47.9	39.2	24.3	11.8
MAX	72	125	39	60	63	11	273	317	249	161	66	26
MIN	8.9	12	11	8.5	8.1	5.2	4.7	17	15	14	13	8.1
CFSM	3.77	3.78	2.92	2.48	2.17	1.18	3.67	9.23	7.98	6.53	4.05	1.97
IN	4.34	4.22	3.36	2.87	2.26	1.37	4.10	10.64	8.91	7.54	4.67	2.20
AC-FT	1390	1350	1080	917	723	437	1310	3400	2850	2410	1500	703

CAL YR 1980	TOTAL	6700.6	MEAN 18.3	MAX 400	MIN 4.9	CFSM 3.05	IN 41.54	AC-FT	13290
WTR YR 1981	TOTAL	9109.0	MEAN 25.0	MAX 317	MIN 4.7	CFSM 4.17	IN 56.47	AC-FT	18070

50050900 RIO GRANDE DE LOIZA AT QUEBRADA ARENAS, PR--Continued

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	8.6	9.7	6.6	46	15	60	8.9	6.0	103	15	36	14
2	17	8.9	58	35	23	20	11	5.8	77	13	31	14
3	12	8.7	23	40	33	17	11	5.6	38	12	25	13
4	9.4	13	12	30	25	16	9.1	16	42	17	21	12
5	10	9.2	8.7	25	304	15	11	25	51	14	20	10
6	28	8.3	7.9	23	78	22	8.9	151	32	20	19	9.9
7	10	8.0	14	21	47	16	9.3	30	113	15	17	9.5
8	9.2	7.8	9.4	21	41	16	9.3	12	42	13	17	8.9
9	8.9	18	7.9	19	65	15	7.8	9.9	30	12	16	11
10	8.4	8.6	7.9	19	36	21	7.8	24	27	24	39	9.2
11	8.0	7.5	24	18	26	18	7.5	17	24	14	21	9.3
12	8.0	7.0	12	18	22	16	8.1	22	22	12	17	145
13	7.5	9.3	11	20	21	14	7.4	14	21	13	22	275
14	7.1	8.4	9.0	19	25	13	7.4	20	47	11	18	34
15	8.0	7.9	16	19	21	13	7.2	12	21	11	26	22
16	9.6	7.2	11	18	21	12	7.8	9.7	20	12	18	18
17	14	6.8	11	16	20	11	12	14	18	17	15	16
18	13	7.6	28	16	34	12	8.4	10	17	36	16	15
19	27	9.1	16	15	20	12	7.2	8.1	23	29	14	14
20	12	8.7	11	14	38	11	6.8	7.4	30	29	13	14
21	11	6.8	18	13	22	11	6.7	71	19	48	13	13
22	9.0	6.1	12	13	17	11	6.6	16	17	82	36	44
23	9.3	5.9	9.4	12	23	11	6.3	33	18	28	55	18
24	8.9	6.4	8.6	12	16	11	6.1	14	28	26	26	75
25	8.0	8.2	15	12	16	12	6.0	12	17	26	18	98
26	66	34	280	12	15	11	6.8	16	16	74	15	73
27	18	21	476	12	14	11	7.6	113	14	36	14	43
28	18	8.6	260	11	27	9.6	11	234	14	22	19	31
29	13	7.7	84	11	---	11	7.2	287	14	121	22	23
30	11	7.1	68	11	---	9.6	6.1	58	17	64	16	41
31	11	---	44	14	---	9.0	---	36	---	27	15	---
TOTAL	418.9	291.5	1579.4	585	1065	467.2	244.3	1309.5	972	893	670	1132.8
MEAN	13.5	9.72	50.9	18.9	38.0	15.1	8.14	42.2	32.4	28.8	21.6	37.8
MAX	66	34	476	46	304	60	12	287	113	121	55	275
MIN	7.1	5.9	6.6	11	14	9.0	6.0	5.6	14	11	13	8.9
CFSM	2.25	1.62	8.48	3.15	6.33	2.52	1.36	7.03	5.40	4.80	3.60	6.30
IN.	2.60	1.81	9.79	3.63	6.60	2.90	1.51	8.12	6.03	5.54	4.15	7.02
AC-FT	831	578	3130	1160	2110	927	485	2600	1930	1770	1330	2250
CAL YR 1981	TOTAL	9476.1	MEAN 26.0	MAX 476	MIN 4.7	CFSM 4.33	IN 58.74	AC-FT 18800				
WTR YR 1982	TOTAL	9628.6	MEAN 26.4	MAX 476	MIN 5.6	CFSM 4.40	IN 59.69	AC-FT 19100				

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO SEPTEMBER 1982

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPEC- IFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)
AUG, 1981				
17...	1340	19.0	138	29.0
SEP				
22...	935	12.0	137	25.0
OCT				
25...	952	17.0	105	24.0
NOV				
17...	1435	7.1	144	27.5
FEB, 1982				
11...	1245	22.0	140	25.0
MAR				
10...	1220	14.0	143	24.0
APR				
7...	1310	9.9	154	27.0
MAY				
5...	1320	22.0	140	25.0
JUN				
9...	1200	30.0	137	26.0
JUL				
9...	1200	12.0	137	26.0
AUG				
10...	1245	15.0	148	28.5
SEP				
7...	1310	9.9	155	30.0

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.--Record poor.

AVERAGE DISCHARGE.--5 years (1978-82), 51.1 cu ft/s (1.447 cu m/s), 68.03 in/yr (1,728 mm/yr), 37,020 acre-ft/yr (45.6 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 daily discharge, 7.1 cu ft/s (0.201 cu m/s), Feb. 4, May 3, 1981.

EXTREMES FOR WATER YEARS 1981-82.--Peak discharges above base of 2,500 cu ft/s (70.8 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 23, 1981	1800	*3,380 95.7	6.08 1.853	May 29, 1982	1300	3,310 93.7	6.04 1.841
Dec. 26, 1981	2300	3,030 85.8	5.88 1.792	Sept. 12, 1982	1830	2,660 75.3	5.65 1.722
Dec. 27, 1981	0130	*8,860 251	8.29 2.527	Sept. 13, 1982	0815	3,980 113	6.39 1.948

Minimum daily discharges, 7.1 cu ft/s (0.201 cu m/s) Feb. 4, May 3, 1981; 7.8 cu ft/s (0.221 cu m/s) May 3, 1982.

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	17	25	20	24	9.5	18	13	13	320	42	31	24
2	13	28	21	14	9.9	16	15	12	131	28	26	24
3	9.6	22	22	13	12	19	21	7.1	98	22	25	24
4	18	87	20	13	7.1	23	14	9.3	128	20	35	22
5	31	47	20	13	8.4	35	16	20	172	32	31	21
6	43	25	23	13	9.0	23	12	17	73	37	28	24
7	132	21	24	13	11	19	17	18	53	35	31	26
8	44	18	21	13	11	20	20	12	47	25	26	31
9	39	18	19	12	14	15	16	13	43	26	51	24
10	32	16	18	12	15	11	14	80	38	30	52	21
11	25	16	18	30	18	15	12	24	36	22	34	21
12	22	15	19	22	16	16	9.2	32	35	19	38	22
13	21	14	18	16	15	16	8.4	28	36	25	77	23
14	20	13	35	16	15	15	11	43	33	24	70	21
15	23	14	40	16	51	14	9.9	31	31	29	37	21
16	22	16	20	16	43	12	9.9	40	29	27	34	23
17	21	16	20	14	29	14	11	25	28	55	38	22
18	33	17	22	15	25	17	11	22	27	37	41	23
19	22	19	25	15	22	10	9.0	21	28	67	47	33
20	20	21	26	11	20	9.6	7.8	20	26	101	37	24
21	19	28	27	11	19	10	9.3	114	26	46	41	24
22	23	23	24	14	19	11	45	242	23	34	42	22
23	33	24	29	13	18	20	36	445	22	40	46	20
24	30	20	43	13	16	18	17	87	23	99	38	20
25	33	18	42	17	15	22	15	62	26	48	34	19
26	28	18	47	14	16	19	26	68	24	35	31	26
27	24	17	17	23	17	19	35	41	21	30	30	24
28	23	18	13	13	18	19	19	43	27	28	29	19
29	22	17	12	10	---	27	17	34	39	27	28	18
30	71	22	11	11	---	20	15	31	25	27	26	17
31	32	---	38	10	---	16	---	123	---	34	25	---
TOTAL	945.6	673	754	460	498.9	538.6	491.5	1777.4	1668	1151	1159	683
MEAN	30.5	22.4	24.3	14.8	17.8	17.4	16.4	57.3	55.6	37.1	37.4	22.8
MAX	132	87	47	30	51	35	45	445	320	101	77	33
MIN	9.6	13	11	10	7.1	9.6	7.8	7.1	21	19	25	17
CFSM	2.99	2.20	2.38	1.45	1.75	1.71	1.61	5.62	5.45	3.64	3.67	2.24
IN.	3.45	2.45	2.75	1.68	1.82	1.96	1.79	6.48	6.08	4.20	4.23	2.49
AC-FT	1880	1330	1500	912	990	1070	975	3530	3310	2280	2300	1350

CAL YR 1980 TOTAL 8423.1 MEAN 23.0 MAX 657 MIN 7.6 CFSM 2.26 IN 30.72 AC-FT 16710
WTR YR 1981 TOTAL 10800.0 MEAN 29.6 MAX 445 MIN 7.1 CFSM 2.90 IN 39.38 AC-FT 21420

50051310 RIO CAYAGUAS AT CERRO GORDO, PR--Continued

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	17	19	13	66	20	60	15	9.7	39	23	41	32
2	21	18	22	53	26	40	15	8.6	58	22	49	31
3	22	17	37	48	49	30	20	7.8	38	21	39	28
4	18	28	21	44	41	25	20	13	35	24	34	26
5	26	22	18	36	130	20	20	22	40	25	32	24
6	41	20	17	33	95	25	25	125	34	49	31	23
7	21	19	22	32	52	30	19	40	54	32	29	22
8	18	16	29	31	49	35	19	23	41	23	30	21
9	18	32	19	30	73	30	18	33	33	22	29	24
10	17	21	22	28	42	28	18	79	30	27	57	22
11	15	17	46	27	35	28	18	48	29	24	46	21
12	14	16	34	27	36	26	18	53	27	22	31	491
13	12	20	29	28	31	25	18	32	25	22	41	741
14	12	19	27	27	36	25	19	48	62	18	41	64
15	17	16	28	26	33	24	20	32	30	17	68	43
16	16	13	26	25	33	23	21	27	27	18	37	38
17	16	14	27	24	35	25	19	47	26	19	32	35
18	21	18	32	24	39	25	17	31	25	26	33	32
19	44	20	34	23	31	20	15	25	37	65	29	31
20	21	22	25	22	33	20	15	24	47	50	27	30
21	26	17	33	22	31	20	15	135	29	46	26	29
22	23	17	35	21	27	20	14	43	27	74	40	55
23	19	17	23	21	37	20	15	61	30	45	51	35
24	17	17	21	21	26	30	13	39	37	37	39	40
25	16	20	21	20	26	25	11	33	27	36	30	39
26	28	21	306	20	26	25	16	32	25	64	28	75
27	29	29	966	21	25	25	19	47	24	64	27	42
28	21	18	450	20	56	25	22	138	23	34	28	39
29	23	17	198	19	---	20	17	407	23	47	73	33
30	25	15	73	19	---	20	10	65	25	111	39	31
31	25	---	51	21	---	20	---	43	---	37	36	---
TOTAL	659	575	2705	879	1173	814	521	1771.1	1007	1144	1173	2197
MEAN	21.3	19.2	87.3	28.4	41.9	26.3	17.4	57.1	33.6	36.9	37.8	73.2
MAX	44	32	966	66	130	60	25	407	62	111	73	741
MIN	12	13	13	19	20	20	10	7.8	23	17	26	21
CFSM	2.09	1.88	8.56	2.78	4.11	2.58	1.71	5.60	3.29	3.62	3.71	7.18
IN.	2.40	2.10	9.86	3.21	4.28	2.97	1.90	6.46	3.67	4.17	4.28	8.01
AC-FT	1310	1140	5370	1740	2330	1610	1030	3510	2000	2270	2330	4360

CAL YR 1981 TOTAL 12366.4 MEAN 33.9 MAX 966 MIN 7.1 CFSM 3.32 IN 45.10 AC-FT 24530
 WTR YR 1982 TOTAL 14618.1 MEAN 40.0 MAX 966 MIN 7.8 CFSM 3.92 IN 53.31 AC-FT 28990

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO SEPTEMBER 1982

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPEC- IFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)
AUG, 1981				
18...	827	37.0	110	25.0
SEP				
22...	1210	23.0	126	27.0
OCT				
27...	1225	27.0	106	26.5
NOV				
18...	850	17.0	125	24.0
FEB, 1982				
11...	955	35.0	111	22.0
MAR				
10...	1015	28.0	127	22.0
APR				
7...	1030	19.0	145	25.0
MAY				
5...	1015	15.0	145	25.0
JUN				
9...	930	33.0	125	25.0
JUL				
9...	1020	22.0	140	25.0
AUG				
10...	910	29.0	125	24.5
SEP				
8...	1440	21.0	130	29.5

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 the 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.--21 years (1961-81), 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).
--22 years (1961-82), 218 cu ft/s (6.174 cu m/s), 32.97 in/yr (837 mm/yr), 157,900 acre-ft/yr (195 cu hm/yr); median of yearly mean discharges 208 cu ft/s, (5.89 cu m/s), 151,000 acre-ft/yr (186 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 WATER YEARS 1981-82.--Peak discharges above base of 8,000 cu ft/s (227 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)
Apr. 22, 1981	0400	8,450 239	14.11 4.301	July 30, 1982	0015	8,370 237	14.07 4.288
May 22, 1981	1930	*31,100 881	21.56 6.571	Sept. 12, 1982	1930	9,490 269	14.61 4.453
Dec. 26, 1981	2400	9,260 262	14.50 4.420	Sept. 13, 1982	0845	9,450 268	14.59 4.447
Dec. 27, 1981	0230	*18,700 530	18.12 5.523				

Minimum discharges, 29 cu ft/s (0.821 cu m/s) Mar. 27-28, 1981; 36 cu ft/s (1.020 cu m/s) May 1, 3-4, 1982.

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	56	228	97	347	70	44	34	203	1970	675	224	110		
2	52	264	74	387	70	44	35	425	1250	246	160	110		
3	52	265	85	219	60	43	42	201	947	157	155	100		
4	68	588	71	150	100	76	38	432	1410	134	183	100		
5	38	543	68	147	80	69	39	326	1810	171	166	90		
6	180	174	668	226	70	55	51	246	797	213	156	90		
7	450	124	471	343	70	43	41	171	451	210	142	200		
8	230	100	224	277	70	44	52	112	350	151	132	500		
9	340	100	148	245	60	69	53	89	288	146	159	1000		
10	201	98	122	265	60	43	55	225	248	203	336	500		
11	123	92	107	658	60	39	46	120	220	125	219	200		
12	105	90	75	212	55	38	38	146	205	110	282	150		
13	101	83	54	134	52	37	34	154	221	235	501	120		
14	117	84	91	87	54	36	31	302	191	393	383	110		
15	218	81	93	85	202	37	31	250	167	405	194	100		
16	239	91	75	84	177	40	109	276	155	224	160	91		
17	159	92	65	74	161	37	119	462	146	653	205	88		
18	173	82	69	61	92	48	53	542	141	410	200	89		
19	135	76	61	74	75	38	44	311	143	588	300	111		
20	148	76	77	70	61	34	37	194	131	1050	200	110		
21	147	126	99	70	59	34	34	752	189	608	300	88		
22	156	131	127	77	56	34	1980	5170	173	369	250	100		
23	253	118	96	65	54	47	444	2270	124	424	200	83		
24	347	85	90	65	51	42	162	739	128	769	170	77		
25	235	80	229	153	49	35	107	369	129	422	160	76		
26	197	73	629	100	46	34	103	430	144	263	150	83		
27	188	74	579	80	46	32	140	276	113	208	140	109		
28	195	68	841	200	45	30	92	247	141	182	130	74		
29	194	76	933	100	---	59	86	197	232	164	130	71		
30	468	76	743	80	---	46	322	172	334	152	120	69		
31	318	---	514	70	---	36	---	898	---	429	120	---		
TOTAL	5963	4238	7675	5213	2105	1343	4452	16707	12948	10689	6327	4799		
MEAN	192	141	248	168	75.2	43.3	146	539	432	345	204	160		
MAX	460	588	933	659	202	76	1980	5170	1970	1050	501	1000		
MIN	52	68	54	61	45	30	31	89	113	110	120	69		
CFSM	2.14	1.57	2.76	1.87	84	48	1.65	6.00	4.61	3.84	2.27	1.78		
IN.	2.47	1.76	3.18	2.16	.87	.56	1.84	6.92	5.36	4.43	2.62	1.99		
AC-FT	11870	8410	15220	10340	4180	2660	8830	33140	25680	21200	12550	9520		
CAL YR 1980	TOTAL	61066	MEAN	167	MAX	4800	MIN	28	CFSM	1.86	IN	25.30	AC-FT	121100
WTR YR 1981	TOTAL	82459	MEAN	226	MAX	5170	MIN	30	CFSM	2.52	IN	34.16	AC-FT	163600

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

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	67	69	49	564	87	405	55	38	187	107	169	150
2	98	70	51	541	102	164	62	37	378	94	233	136
3	93	74	100	449	168	120	95	37	201	88	159	116
4	78	99	80	400	221	108	60	53	173	91	133	103
5	185	91	60	300	1050	103	96	262	208	120	121	92
6	252	68	60	250	646	111	86	1070	152	795	113	258
7	103	62	80	200	296	117	91	346	299	311	106	129
8	80	131	100	180	249	120	95	129	236	289	188	89
9	72	86	80	160	365	117	61	111	148	136	108	162
10	73	82	70	150	217	119	54	416	129	305	167	107
11	66	70	425	140	158	119	50	359	120	162	239	98
12	64	63	166	130	160	114	50	461	113	110	107	1920
13	61	63	153	125	138	99	50	187	106	109	171	3600
14	59	62	151	131	148	97	46	1020	370	94	187	522
15	62	62	140	135	157	90	46	367	152	89	262	245
16	102	58	129	121	141	92	49	169	124	87	170	185
17	192	57	112	118	150	84	54	236	110	99	117	158
18	147	70	154	112	152	81	57	160	102	96	121	147
19	259	100	188	107	134	81	46	117	271	226	103	137
20	112	80	122	104	230	77	45	101	418	190	94	134
21	98	59	139	99	209	75	47	326	173	197	88	127
22	81	57	229	98	125	71	45	199	134	736	139	481
23	70	55	116	94	137	70	43	176	124	331	299	205
24	67	53	99	92	115	94	41	131	313	178	183	222
25	67	51	90	89	101	77	40	103	138	164	136	462
26	150	60	661	88	97	75	40	92	116	331	291	515
27	100	100	4510	101	98	75	51	190	108	475	130	335
28	80	70	1820	83	119	68	57	1450	99	171	139	311
29	100	60	1400	81	---	63	63	1310	100	374	425	239
30	90	50	742	79	---	64	43	440	111	1360	214	192
31	60	---	528	86	---	58	---	248	---	219	167	---
TOTAL	3208	2132	12804	5407	5970	3208	1718	10341	5413	8134	5279	11577
MEAN	103	71.1	413	174	213	103	57.3	334	180	262	170	386
MAX	259	131	4510	564	1050	405	96	1450	418	1360	425	3600
MIN	59	50	49	79	87	58	40	37	99	87	88	89
CFSM	1.15	.79	4.60	1.94	2.37	1.15	.64	3.72	2.00	2.92	1.89	4.30
IN.	1.33	.88	5.30	2.24	2.47	1.33	.71	4.28	2.24	3.37	2.19	4.80
AC-FT	6360	4230	25400	10720	11840	6360	3410	20510	10740	16130	10470	22960
CAL YR 1981	TOTAL	82727	MEAN 227	MAX 5170	MIN 30	CFSM 2.53	IN 34.27	AC-PT	164100			
WTR YR 1982	TOTAL	75191	MEAN 206	MAX 4510	MIN 37	CFSM 2.29	IN 31.15	AC-FT	149100			

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 , 1980												
19...	1330	69	249	7.6	28.0	1.2	7.4	--	16	43000	940	69
JAN , 1981												
13...	1315	109	233	7.4	26.0	29	7.7	--	19	60000	8100	--
MAR												
11...	1125	38	272	7.4	25.0	68	8.0	--	22	K16000	290	81
MAY												
08...	1220	106	216	7.5	30.0	14	7.6	101	<10	K19000	350	--
JUL												
22...	1105	397	171	7.5	27.0	94	7.6	95	10	20000	4000	51
SEP												
16...	1415	92	243	7.4	32.0	50	7.7	104	14	K6700	K170	75
NOV												
17...	1340	61	288	7.6	28.0	130	7.6	97	<10	25000	900	--
JAN , 1982												
13...	1130	119	244	7.6	23.0	33	8.3	97	24	K11000	K200	70
MAR												
15...	1240	88	251	7.3	25.0	1.0	9.1	110	30	11000	K70	--
MAY												
21...	1345	474	145	7.4	26.0	120	7.6	93	44	K64000	50000	38
JUL												
13...	1355	114	244	7.1	29.0	70	7.7	100	15	K12000	820	--
SEP												
14...	1215	483	183	7.2	29.0	65	8.2	106	26	25000	K17000	46

DATE	HARD- NESS, MNCAR- 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)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUC- RIDE, DIS- SOLVED (MG/L AS P)	SILICA, DIS- SOLVED (MG/L AS SiO2)
NOV , 1980											
19...	0	17	6.5	25	1.3	2.1	79	14	18	.2	37
JAN , 1981											
13...	--	--	--	--	--	--	67	--	--	--	--
MAR											
17...	4	21	7.0	21	1.0	2.6	77	17	22	.2	36
MAY											
08...	--	--	--	--	--	--	64	--	--	--	--
JUL											
22...	0	12	5.1	16	1.0	2.0	54	9.6	11	.1	29
SEP											
16...	1	18	7.3	21	1.1	2.0	74	14	20	.1	28
NOV											
17...	--	--	--	--	--	--	84	--	--	--	--
JAN , 1982											
13...	0	17	6.6	23	1.3	1.7	72	16	17	.1	32
MAR											
15...	--	--	--	--	--	--	71	--	--	--	--
MAY											
21...	0	9.3	3.6	11	.8	1.7	41	9.0	10	.1	21
JUL											
13...	--	--	--	--	--	--	71	--	--	--	--
SEP											
14...	2	11	4.5	13	.9	2.3	44	10	11	.1	26

K = non-ideal count.

RIO GRANDE DE LOIZA BASIN

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

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

DATE	SOLIDS, SUM OF CCNSTI- 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 , 1980											
19...	167	31.1	218	.64	.040	.68	.200	.40	.60	1.3	5.7
JAN , 1981											
13...	--	--	213	.90	.070	.97	.330	.20	.53	1.5	6.6
MAR											
11...	173	17.7	48	.83	.080	.91	.230	.34	.57	1.5	6.6
MAY											
08...	--	--	20	.46	.040	.50	.100	.46	.56	1.1	4.7
JUL											
22...	117	125	--	.58	.050	.63	.110	.57	.68	1.3	5.8
SEP											
16...	155	38.5	62	.49	.040	.53	.080	.42	.50	1.0	4.6
NOV											
17...	--	--	192	.84	.070	.91	.110	.18	.29	1.2	5.3
JAN , 1982											
13...	157	50.4	38	.46	.050	.51	.030	.27	.30	.81	3.6
MAR											
15...	--	--	18	.45	.030	.48	.070	.16	.23	.71	3.1
MAY											
21...	90	115	119	.44	.060	.50	.160	.75	.91	1.4	6.2
JUL											
13...	--	--	64	.50	.080	.58	.190	.51	.70	1.3	5.7
SEP											
14...	110	143	64	.54	.060	.60	.180	.82	1.00	1.6	7.1
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 , 1980											
19...	.520	--	--	--	--	--	--	--	--	441	82
JAN , 1981											
13...	.300	--	--	--	--	--	--	--	--	216	64
MAR											
11...	.410	<1	100	1	5	5	.2	<1	<1	59	6.1
MAY											
08...	.150	--	--	--	--	--	--	--	--	58	17
JUL											
22...	.270	--	--	--	--	--	--	--	--	196	210
SEP											
16...	.170	--	100	1	150	5	<.1	<1	<1	92	23
NOV											
17...	.490	--	--	--	--	--	--	--	--	250	41
JAN , 1982											
13...	.120	1	100	1	<1	<1	.1	<1	1	78	25
MAR											
15...	.180	--	--	--	--	--	--	--	--	--	--
MAY											
21...	.170	--	--	--	--	--	--	--	--	905	1160
JUL											
13...	.210	--	--	--	--	--	--	--	--	--	--
SEP											
14...	.120	2	100	1	<1	5	.1	<1	<1	197	257

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.

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

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

WATER-QUALITY DATA, WATER YEARS OCTOBER 1980 TO SEPTEMBER 82

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 (CCLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)
NOV , 1980												
18...	1150	7.9	698	7.5	26.5	.40	6.2	--	10	410000	21000	200
JAN , 1981												
21...	1220	6.6	658	7.3	23.5	.90	7.3	--	23	230000	K14000	--
MAR												
11...	1505	4.2	738	8.1	30.0	1.1	9.8	--	17	40000	<1000	260
MAY												
08...	1505	16	540	7.4	30.0	.95	3.8	51	--	390000	K18000	--
JUL												
22...	1345	21	486	7.5	30.0	24	4.4	58	15	310000	K19000	170
SEP												
17...	1110	13	594	7.2	30.0	3.8	2.2	29	77	K14000000	690000	200
NOV												
11...	1340	13	564	7.0	28.0	1.6	4.2	54	69	K1100000	K50000	--
JAN , 1982												
13...	1325	17	539	7.3	26.0	3.0	5.8	72	35	390000	25000	180
MAR												
15...	1545	26	--	7.0	27.0	1.6	1.6	20	46	360000	63000	--
MAY												
24...	1300	11	--	7.2	30.0	4.7	2.4	32	42	3400000	K110000	190
JUL												
16...	1125	9.0	673	7.2	29.5	17	1.0	13	80	3200000	K150000	--
SEP												
17...	1425	24	552	7.3	30.5	--	3.4	49	16	540000	K150000	180

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- 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)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)
NOV , 1980												
18...	24	56	15	55	1.7	4.9	176	91	51	.4	37	416
JAN , 1981												
21...	--	--	--	--	--	--	160	--	--	--	--	--
MAR												
11...	96	81	13	40	1.1	4.7	164	130	56	.5	32	456
MAY												
08...	--	--	--	--	--	--	154	--	--	--	--	--
JUL												
22...	29	45	14	34	1.1	4.3	141	38	30	.3	34	333
SEP												
17...	47	55	15	41	1.3	4.8	153	70	47	.5	29	354
NOV												
11...	--	--	--	--	--	--	144	--	--	--	--	--
JAN , 1982												
13...	32	48	15	38	1.3	3.2	148	63	35	.2	34	325
MAR												
15...	--	--	--	--	--	--	120	--	--	--	--	--
MAY												
24...	30	53	14	43	1.4	5.2	160	72	50	.5	33	374
JUL												
16...	--	--	--	--	--	--	170	--	--	--	--	--
SEP												
17...	27	46	15	32	1.1	4.1	150	41	36	.4	34	302

K = non-ideal count.

RIO GRANDE DE LOIZA BASIN

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50055250 RIO CAGUITAS AT HIGHWAY 30 AT CAGUAS, PR--Continued

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

DATE	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)	PHOS- PHORUS, TOTAL (MG/L AS P)
NOV , 1980											
18...	8.9	3	.44	.090	.53	4.30	.30	4.60	5.1	23	1.00
JAN , 1981											
21...	--	12	.44	.150	.59	2.70	.30	3.00	3.6	16	.660
MAR											
11...	5.2	22	.44	.150	.59	2.10	1.3	3.40	4.0	18	.890
MAY											
08...	--	4	.49	.150	.64	1.50	.20	1.70	2.3	10	.630
JUL											
22...	18.9	--	.77	.150	.92	1.00	.80	1.80	2.7	12	.680
SEP											
17...	12.4	14	.58	.190	.77	2.60	4.0	6.60	7.4	33	1.40
NOV											
11...	--	29	.83	.110	.94	3.10	.60	3.70	4.6	21	1.60
JAN , 1982											
13...	15.2	12	.97	.230	1.2	1.50	.40	1.90	3.1	14	.560
MAR											
15...	--	38	.86	.060	.92	3.00	1.4	4.40	5.3	24	1.00
MAY											
24...	10.9	6	.18	.120	.30	7.00	.70	7.70	1.4	6.2	2.40
JUL											
16...	--	10	.84	.090	.93	5.30	--	--	--	--	2.20
SEP											
17...	19.2	16	.78	.220	1.0	1.60	1.7	3.30	4.3	19	.830

DATE	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)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
NOV , 1980											
18...	--	--	--	--	--	--	--	--	--	80	1.7
JAN , 1981											
21...	--	--	--	--	--	--	--	--	--	5	.09
MAR											
11...	2	100	<1	4	7	--	.1	<1	2	7	.08
MAY											
08...	--	--	--	--	--	--	--	--	--	5	.22
JUL											
22...	--	--	--	--	--	49000	--	--	--	112	6.4
SEP											
17...	--	100	9	50	6	--	.2	<1	1	15	.53
NOV											
11...	--	--	--	--	--	--	--	--	--	72	2.5
JAN , 1982											
13...	2	100	1	<1	<1	--	.2	<1	<1	69	3.2
MAR											
15...	--	--	--	--	--	--	--	--	--	--	--
MAY											
24...	--	--	--	--	--	--	--	--	--	--	--
JUL											
16...	--	--	--	--	--	--	--	--	--	--	--
SEP											
17...	3	100	3	6	5	--	.2	<1	<1	--	--

PESTICIDE ANALYSES, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982

		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)
DATE	TIME							
JUL , 1981								
22...	1345	<.10	<.01	<.10	<.01	<.01	<.01	.13
JUL , 1982								
16...	1125	<.10	<.01	<.10	<.01	<.01	<.01	.45

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)
JUL , 1981									
22...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	.03	<.01
JUL , 1982									
16...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	1.1	<.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)
JUL , 1981								
22...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01
JUL , 1982								
16...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01

RIO GRANDE DE LOIZA BASIN

50055400 RIO BAIROA 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.

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 UN-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)
NOV , 1980												
18...	1400	1.6	455	7.4	24.5	.30	6.4	--	4	K7200	770	140
JAN , 1981												
21...	1000	1.6	473	7.2	20.0	1.4	6.9	--	19	K6500	420	--
MAR												
12...	1335	E.40	520	7.6	25.0	4.5	6.7	--	<10	22000	540	170
MAY												
05...	1435	13	319	7.4	26.0	24	8.8	107	34	K100000	K120000	--
JUL												
16...	1015	3.5	379	7.5	27.0	--	7.4	93	--	32000	K15000	140
SEP												
14...	1420	3.6	434	7.4	28.0	6.5	7.2	96	<10	K18000	K150	150
NOV												
03...	1015	3.6	459	7.2	24.0	2.4	8.8	106	59	43000	4000	--
JAN , 1982												
07...	1120	5.6	437	7.5	23.0	5.4	8.2	95	150	K89000	4500	150
MAR												
09...	1330	3.4	520	7.8	24.0	5.0	8.6	101	110	K170000	70000	--
MAY												
04...	1255	1.9	500	7.7	25.0	1.2	7.8	94	--	K15000	830	160
JUL												
19...	1325	3.0	400	7.2	26.0	4.7	7.0	85	30	9200	2500	--
SEP												
02...	1340	3.7	532	7.4	27.5	--	5.4	68	11	200000	K190000	160

#	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- 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 , 1980											
	18...	0	31	16	34	1.2	6.0	143	17	44	.3	34
	JAN , 1981											
	21...	--	--	--	--	--	--	144	--	--	--	--
	MAR											
	12...	18	40	17	37	1.2	6.6	152	13	55	.3	35
	MAY											
	05...	--	--	--	--	--	--	87	--	--	--	--
	JUL											
	16...	10	30	16	28	1.0	4.9	130	20	31	.3	31
	SEP											
	14...	14	33	17	25	.9	4.7	136	16	36	.2	26
	NOV											
	03...	--	--	--	--	--	--	135	--	--	--	--
	JAN , 1982											
	07...	19	33	17	25	1.0	4.6	131	21	30	.2	32
	MAR											
	09...	--	--	--	--	--	--	150	--	--	--	--
	MAY											
	04...	15	38	17	31	1.2	4.5	150	17	45	.3	32
	JUL											
	19...	--	--	--	--	--	--	130	--	--	--	--
	SEP											
	02...	18	37	16	32	1.2	6.0	140	20	55	.4	31

E Estimated.

K = non-ideal count.

RIO GRANDE DE LOIZA BASIN

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50055400 RIO BAIROA NEAR CAGUAS, PR--Continued

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

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 , 1980											
18...	268	1.2	1	2.0	.010	2.0	.010	.33	.34	2.3	10
JAN , 1981											
21...	--	--	12	2.2	.020	2.2	.060	.43	.49	2.7	12
MAR											
12...	295	.32	15	1.8	.030	1.8	.050	.32	.37	2.2	9.6
MAY											
05...	--	--	351	1.5	.090	1.6	.230	1.4	1.60	3.2	14
JUL											
16...	239	2.3	--	1.1	.040	1.1	.050	.69	.74	1.8	8.1
SEP											
14...	240	2.3	18	1.8	.060	1.9	.070	.35	.42	2.3	10
NOV											
03...	--	--	26	1.8	.100	1.9	.070	.57	.64	2.5	11
JAN , 1982											
07...	247	3.8	12	2.0	.130	2.1	.100	.70	.80	2.9	13
MAR											
09...	--	--	12	1.7	.030	1.7	.100	.39	.49	2.2	9.7
MAY											
04...	275	1.4	6	2.0	.020	2.0	.070	.51	.58	2.6	11
JUL											
19...	--	--	8	1.9	.020	1.9	.060	.34	.40	2.3	10
SEP											
02...	282	2.8	52	1.9	.100	2.0	.130	.97	1.10	3.1	14
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 , 1980											
18...	.780	--	--	--	--	--	--	--	--	10	.04
JAN , 1981											
21...	.790	--	--	--	--	--	--	--	--	7	.03
MAR											
12...	.980	3	200	<1	6	5	<.1	<1	<1	8	--
MAY											
05...	.700	--	--	--	--	--	--	--	--	--	--
JUL											
16...	.530	--	--	--	--	--	--	--	--	141	1.3
SEP											
14...	.430	--	100	<1	20	5	.1	<1	<1	12	.12
NOV											
03...	.420	--	--	--	--	--	--	--	--	62	.60
JAN , 1982											
07...	.440	1	100	<1	4	3	.4	<1	<1	68	1.0
MAR											
09...	.790	--	--	--	--	--	--	--	--	--	--
MAY											
04...	.860	--	--	--	--	--	--	--	--	--	--
JUL											
19...	.780	--	--	--	--	--	--	--	--	--	--
SEP											
02...	.770	4	100	1	3	6	.1	<1	<1	--	--

LOCATION.--Lat 18°12'58", long 65°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 Rio 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 DISCHARGES.--10 years (1972-81), 49.9 cu ft/s (1.413 cu m/s), 41.32 in/yr (1,050 mm/yr), 36,150 acre-ft/yr (44.6 cu hm/yr); median of yearly mean discharges, 42 cu ft/s (1.19 cu m/s), 30,400 acre-ft/yr (37 cu hm/yr).
--11 years (1972-82), 49.9 cu ft/s (1.413 cu m/s), 41.32 in/yr (1,050 mm/yr), 36,150 acre-ft/yr (44.6 cu hm/yr); median of yearly mean discharges, 50 cu ft/s (1.42 cu m/s), 36,200 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 WATER YEARS 1981-82.--Peak discharges above base of 3,400 cu ft/s (96.3 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)
July 20, 1981	1330	*13,400 379	15.22 4.639	Sept. 13, 1982	0815	*7,150 202	11.08 3.377
Sept. 12, 1982	1830	6,110 173	10.21 3.112				

Minimum discharges, 4.9 cu ft/s (0.139 cu m/s) Apr. 15, 16, 1981; 6.1 cu ft/s (0.173 cu m/s) May 3, 4, 1980.

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	8.7	55	16	40	13	10	6.7	28	632	255	70	25
2	7.7	49	15	21	12	9.8	7.2	42	298	55	44	24
3	10	42	15	18	13	35	9.7	13	256	36	38	23
4	38	68	20	17	11	12	8.0	283	240	32	38	22
5	65	184	20	16	10	23	7.0	222	359	40	36	21
6	200	63	40	15	10	16	7.2	73	104	62	32	20
7	156	47	90	14	10	11	7.3	30	67	50	35	22
8	60	39	32	14	9.9	22	10	14	51	35	30	62
9	77	38	21	14	11	24	8.2	41	38	84	30	40
10	49	28	19	13	11	11	7.5	56	33	110	112	24
11	29	23	17	20	15	9.5	6.6	19	29	37	44	23
12	21	22	16	21	11	9.2	6.2	105	26	28	69	22
13	18	20	15	14	11	9.3	5.7	51	30	85	344	34
14	51	19	20	14	10	8.7	5.6	30	25	362	88	29
15	42	19	16	14	130	8.7	5.4	153	25	194	48	23
16	24	21	27	15	108	8.5	6.8	35	23	123	50	23
17	19	19	21	13	33	8.3	8.3	23	21	208	67	21
18	17	19	19	12	23	9.7	6.0	21	24	98	54	20
19	27	23	19	12	19	7.6	5.7	28	24	154	115	57
20	20	23	17	12	16	7.0	5.7	28	20	2020	59	50
21	16	67	20	11	24	7.0	6.7	49	45	160	62	23
22	49	35	16	11	21	8.8	19	340	30	96	68	23
23	147	40	13	11	14	9.9	19	330	26	101	63	19
24	82	25	13	11	12	7.9	7.6	109	31	88	82	17
25	68	21	19	29	11	7.5	6.9	53	22	64	56	16
26	53	19	21	16	11	7.0	14	42	43	62	42	234
27	28	18	20	40	11	6.6	16	42	21	45	35	56
28	23	17	14	24	11	7.3	7.5	56	51	39	32	27
29	20	16	13	15	---	14	7.5	32	97	35	35	22
30	228	16	12	13	---	8.0	20	32	115	35	28	20
31	84	---	67	12	---	6.8	---	332	---	275	27	---
TOTAL	1737.4	1095	703	522	601.9	351.1	265.0	2712	2806	5068	1933	1042
MEAN	56.0	36.5	22.7	16.8	21.5	11.3	8.83	87.5	93.5	163	62.4	34.7
MAX	228	184	90	40	130	35	20	340	632	2020	344	234
MIN	7.7	16	12	11	9.9	6.6	5.4	13	20	28	27	16
CFSM	3.42	2.23	1.38	1.02	1.31	.69	.54	5.34	5.70	9.94	3.81	2.12
IN	3.94	2.48	1.59	1.18	1.37	.80	.60	6.15	6.36	11.49	4.38	2.36
AC-FT	3450	2170	1390	1040	1190	696	526	5380	5570	10050	3830	2070

CAL YR 1980	TOTAL	10014.7	MEAN	27.4	MAX	653	MIN	3.8	CFSM	1.67	IN	22.71	AC-FT	19860
WTR YR 1981	TOTAL	18836.4	MEAN	51.6	MAX	2020	MIN	5.4	CFSM	3.15	IN	42.72	AC-FT	37360

50056400 RIO VALENCIANO NEAR JUNCOS, PR--Continued

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	19	23	12	97	13	327	10	7.5	45	16	35	55
2	37	19	18	76	15	43	13	6.8	35	15	37	78
3	29	17	50	54	15	27	24	6.7	28	14	32	41
4	21	17	20	47	15	23	12	9.2	42	15	26	37
5	34	16	15	37	15	21	30	21	50	18	23	31
6	38	13	14	34	43	24	34	174	28	137	23	28
7	21	12	27	32	20	21	16	45	192	54	21	26
8	17	23	21	29	18	24	12	18	79	24	29	25
9	16	256	15	27	27	21	11	17	37	20	20	42
10	14	33	29	26	18	23	11	290	31	131	66	28
11	15	20	183	25	19	15	11	156	23	34	41	29
12	15	16	116	24	23	16	11	267	19	22	24	677
13	12	70	89	24	17	15	10	46	17	25	242	1470
14	12	21	51	23	28	14	11	72	231	19	74	121
15	14	17	35	24	26	12	11	45	38	17	137	73
16	15	15	28	22	22	12	12	25	28	20	57	57
17	13	14	26	23	37	12	15	28	22	26	36	50
18	13	18	49	22	22	12	11	20	19	102	53	45
19	83	20	36	21	17	12	9.7	15	60	373	34	42
20	19	16	27	20	19	11	8.9	13	47	208	29	40
21	22	14	33	21	19	11	8.6	36	28	90	25	34
22	20	15	36	19	14	11	8.3	43	22	340	39	148
23	14	13	23	19	21	10	8.0	18	23	123	76	56
24	21	13	18	19	14	16	7.8	15	88	69	39	57
25	16	14	18	18	12	14	7.7	13	26	70	30	52
26	49	24	253	17	12	14	8.0	12	21	257	28	42
27	31	35	386	17	11	16	11	25	18	159	28	73
28	24	14	369	17	16	12	12	228	17	61	156	43
29	44	12	267	16	---	11	8.6	104	17	73	226	38
30	81	12	147	15	---	12	7.3	62	17	184	69	35
31	63	---	79	14	---	11	---	41	---	40	91	---
TOTAL	842	822	2490	879	548	823	370.9	1879.2	1348	2756	1846	3573
MEAN	27.2	27.4	80.3	28.4	19.6	26.5	12.4	60.6	44.9	88.9	59.5	119
MAX	83	256	386	97	43	327	34	290	231	373	242	1470
MIN	12	12	12	14	11	10	7.3	6.7	17	14	20	25
CFSM	1.66	1.67	4.90	1.73	1.20	1.62	.76	3.70	2.74	5.42	3.63	7.26
IN.	1.91	1.86	5.65	1.99	1.24	1.87	.84	4.26	3.06	6.25	4.19	8.10
AC-FT	1670	1630	4940	1740	1090	1630	736	3730	2670	5470	3660	7090

CAL YR 1981 TOTAL 19455.0 MEAN 53.3 MAX 2020 MIN 5.4 CFSM 3.25 IN 44.13 AC-FT 38590
 WTR YR 1982 TOTAL 18177.1 MEAN 49.8 MAX 1470 MIN 6.7 CFSM 3.04 IN 41.23 AC-FT 36050

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO SEPTEMBER 1982

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPEC- IFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)
AUG, 1981				
17...	1040	38.0	286	26.5
SEP				
18...	827	20.0	255	26.0
OCT				
20...	918	20.0	252	25.5
NOV				
18...	1130	19.0	285	26.5
MAR, 1982				
11...	830	14.4	244	22.5
APR				
19...	1130	9.9	250	26.5
MAY				
13...	1202	46.0	218	25.0
JUN				
14...	1047	124.0	98	26.0
SEP				
8...	1640	26.0	232	29.5

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 Loiza.

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 DISCHARGES.--22 years (1960-81), 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, 126 cu ft/s (3.57 cu m/s), 91,300 acre-ft/yr (113 cu hm/yr).

--23 years (1960-82), 131 cu ft/s (3.710 cu m/s), 29.55 in/yr (751 mm/yr), 94,910 acre-ft/yr (117 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 WATER YEARS 1981-82.--Peak discharges above base of 3,000 cu ft/s (85.0 cu m/s) and maximums (*):

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)
May 4, 1981	1900	3,130	88.6	8.57	2.612	Dec. 27, 1981	0515	3,060	86.6	8.48	2.585
May 22, 1981	1900	5,800	164	12.12	3.694	Dec. 28, 1981	1430	3,210	90.9	8.71	2.655
June 30, 1981	2215	3,030	85.8	8.42	2.566	Aug. 8, 1982	1630	3,140	88.9	8.60	2.621
July 20, 1981	1530	*16,200	459	18.31	5.581	Sept. 12, 1982	2215	3,990	113	9.85	3.002
Nov. 9, 1981	1145	4,180	118	10.11	3.082	Sept. 13, 1982	1100	*29,400	833	21.75	6.629

Minimum discharges, 14 cu ft/s (0.396 cu m/s) Apr 16, 1981; 5.0 cu ft/s (0.142 cu m/s) Apr. 26, 1982.

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	29	170	35	93	25	19	16	200	775	549	197	70
2	25	91	34	53	25	19	15	270	448	145	132	74
3	26	104	32	48	24	64	17	150	450	79	113	80
4	38	136	37	48	24	32	21	590	200	70	105	67
5	64	216	41	47	22	37	19	440	480	125	98	62
6	276	93	59	46	21	28	47	245	250	85	92	58
7	202	64	223	45	21	22	40	93	200	83	143	143
8	168	51	98	44	21	19	74	66	160	67	98	438
9	114	47	49	44	17	32	33	45	140	89	124	252
10	104	45	42	44	20	20	29	99	110	164	277	86
11	77	45	39	74	34	17	30	52	85	69	164	68
12	63	43	35	57	28	15	20	111	80	55	321	63
13	53	41	35	37	24	15	16	110	70	77	866	88
14	69	36	38	35	23	15	15	76	60	337	428	91
15	218	36	41	33	225	15	14	251	55	250	184	61
16	104	36	48	32	142	15	20	87	49	150	138	57
17	65	38	43	30	62	15	81	69	44	500	134	50
18	60	39	44	27	53	16	52	56	60	300	144	47
19	54	39	41	25	35	16	31	113	70	400	239	143
20	57	41	41	24	26	15	20	213	48	800	235	200
21	47	71	37	23	26	15	16	174	60	500	169	100
22	66	89	38	22	33	17	25	1710	60	350	155	71
23	185	70	36	22	24	19	37	728	44	400	234	64
24	268	51	40	17	22	18	28	303	41	600	147	56
25	200	43	63	84	20	17	22	161	47	350	139	65
26	182	40	86	45	20	17	19	138	47	200	106	340
27	138	37	50	68	19	16	28	149	38	160	93	240
28	92	36	40	79	19	16	22	154	55	140	86	110
29	65	35	39	26	---	24	17	87	113	130	90	75
30	285	34	38	24	---	31	46	64	405	120	79	55
31	203	---	87	24	---	22	---	985	---	250	72	---
TOTAL	3597	1917	1609	1320	1055	658	870	7989	4744	7594	5602	3374
MEAN	116	63.9	51.9	42.6	37.7	21.2	29.0	258	158	245	181	112
MAX	285	216	223	93	225	64	81	1710	775	800	866	438
MIN	25	34	32	17	17	15	14	45	38	55	72	47
CFSM	1.93	1.06	.86	.71	.63	.35	.48	4.29	2.63	4.07	3.01	1.86
IN.	2.22	1.18	.99	.82	.65	.41	.54	4.94	2.93	4.69	3.46	2.08
AC-FT	7130	3800	3190	2620	2090	1310	1730	15850	9410	15060	11110	6690

CAL YR 1980 TOTAL 19158 MEAN 52.3 MAX 1370 MIN 12 CFSM .87 IN 11.84 AC-FT 38000
WTR YR 1981 TOTAL 40329 MEAN 110 MAX 1710 MIN 14 CFSM 1.83 IN 24.92 AC-FT 79990

RIO GRANDE DE LOIZA BASIN

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50057000 RIO GURABO AT GURABO, PR--Continued

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	51	79	33	178	44	474	32	15	98	64	70	124
2	119	83	33	163	72	92	23	15	166	43	68	204
3	111	60	90	112	86	53	44	14	114	36	68	99
4	87	51	64	157	70	43	27	15	158	34	55	74
5	150	50	40	98	67	38	52	51	381	36	42	62
6	144	43	36	81	121	38	44	198	255	163	44	69
7	81	42	57	75	70	37	31	133	447	132	42	57
8	65	162	96	67	59	38	24	48	262	49	541	49
9	55	908	49	63	55	35	22	35	111	69	86	64
10	63	124	60	60	49	38	20	631	86	148	216	57
11	45	71	501	57	47	34	19	243	70	75	169	53
12	43	55	300	54	78	35	19	346	60	47	74	632
13	38	106	332	52	52	35	18	137	53	43	287	6830
14	38	64	355	51	86	33	19	160	185	65	221	338
15	40	54	167	50	103	29	19	123	73	37	179	185
16	52	45	100	49	88	28	20	76	59	36	119	146
17	117	42	81	48	91	26	21	67	50	47	81	134
18	89	53	96	47	85	25	22	59	45	43	95	116
19	545	163	101	45	61	25	19	48	67	393	74	107
20	109	82	79	42	56	24	17	44	69	206	62	102
21	95	50	91	41	62	24	17	282	52	167	55	97
22	103	45	102	39	47	22	16	343	45	382	89	862
23	70	41	72	45	43	23	16	97	43	245	134	157
24	65	38	59	37	48	24	16	66	112	109	94	132
25	64	38	55	37	36	27	15	55	50	123	69	124
26	104	39	384	37	35	32	14	48	42	348	125	92
27	100	84	1180	40	33	42	18	191	38	453	70	165
28	70	45	972	38	41	28	23	611	37	118	124	95
29	66	37	585	36	---	23	23	277	35	79	287	92
30	228	34	359	34	---	22	17	177	46	321	163	76
31	238	---	193	38	---	25	---	102	---	96	159	---
TOTAL	3245	2788	6722	1971	1785	1472	687	4907	3309	4207	3962	11394
MEAN	105	92.9	217	63.6	63.8	47.5	22.9	158	110	136	128	380
MAX	545	908	1180	178	121	474	52	631	447	453	541	6830
MIN	38	34	33	34	33	22	14	14	35	34	42	49
CFSM	1.74	1.54	3.61	1.06	1.06	.79	.38	2.63	1.83	2.26	2.13	6.31
IN.	2.01	1.72	4.15	1.22	1.10	.91	.42	3.03	2.04	2.60	2.45	7.04
AC-FT	6440	5530	13330	3910	3540	2920	1360	9730	6560	8340	7860	22600
CAL YR 1981	TOTAL	45961	MEAN 126	MAX 1710	MIN 14	CFSM 2.09	IN 28.40	AC-FT 91160				
WTR YR 1982	TOTAL	46449	MEAN 127	MAX 6830	MIN 14	CFSM 2.11	IN 28.70	AC-FT 92130				

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO SEPTEMBER 1982

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPEC- IFIC CON- DUCT- ANCE (UMHDS)	TEMPER- ATURE (DEG C)
AUG, 1981				
14...	910	269.0	165	26.5
SEP				
16...	1145	57.0	330	29.5
OCT				
14...	1010	37.0	399	27.5
NOV				
18...	1400	43.0	382	28.5
MAR, 1982				
8...	1520	39.3	372	27.5
APR				
16...	850	19.0	383	26.5
MAY				
13...	845	130.0	200	25.0
JUN				
11...	902	70.0	294	27.5
SEP				
8...	1145	50.0	321	29.5

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.

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

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

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

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECIL, 0.7 UM-HF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)
NOV , 1980												
18...	0925	35	396	7.4	25.5	4.5	4.7	--	14	3700	540	110
JAN , 1981												
19...	1215	25	434	6.6	24.0	.90	2.8	--	27	K19000	2300	--
MAR												
12...	1015	19	363	7.2	26.5	3.8	2.6	--	<10	K1900	K400	120
MAY												
05...	1110	201	193	7.1	25.5	65	6.0	81	34	K63000	K110000	--
JUL												
16...	1405	153	213	7.3	27.5	--	6.0	75	--	24000	25000	66
SEP												
14...	1125	80	286	7.0	28.0	17	5.4	70	19	K17000	K100	94
NOV												
03...	1320	54	318	6.8	26.0	12	4.8	59	36	K88000	K1000	--
JAN , 1982												
07...	1445	88	360	7.1	23.5	15	6.2	72	59	K18000	K1500	110
MAR												
09...	1025	27	380	7.5	26.0	8.3	5.4	66	<10	K1300	K1100	--
MAY												
04...	0950	16	450	7.5	28.0	4.5	5.6	71	--	5200	3300	140
JUL												
19...	1055	290	106	6.4	24.0	240	6.0	71	60	K160000	K180000	--
SEP												
02...	1010	254	264	7.3	27.0	--	4.8	60	<10	30000	5200	76

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- 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 , 1980											
18...	0	23	13	41	1.7	4.9	127	20	33	.2	37
JAN , 1981											
19...	--	--	--	--	--	--	135	--	--	--	--
MAR											
12...	0	29	12	30	1.2	6.4	125	19	37	.2	33
MAY											
05...	--	--	--	--	--	--	44	--	--	--	--
JUL											
16...	2	15	6.9	20	1.1	4.3	64	17	16	.1	25
SEP											
14...	1	21	10	23	1.0	3.3	93	13	24	.1	24
NOV											
03...	--	--	--	--	--	--	94	--	--	--	--
JAN , 1982											
07...	0	25	12	26	1.2	3.5	115	18	23	.2	33
MAR											
09...	--	--	--	--	--	--	120	--	--	--	--
MAY											
04...	0	30	15	37	1.5	5.5	140	24	37	.3	36
JUL											
19...	--	--	--	--	--	--	23	--	--	--	--
SEP											
02...	0	18	7.6	19	1.0	3.3	82	14	21	.2	29

X = non-ideal count.

50057025 RIO GURABO NEAR GURABO, PR--Continued

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

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 , 1980											
18...	248	23.4	15	1.9	.060	2.0	.060	.36	.42	2.4	11
JAN , 1981											
19...	--	--	33	1.5	.160	1.7	.480	.62	1.10	2.8	12
MAR											
12...	242	12.4	38	1.5	.140	1.6	.320	.07	.39	2.0	8.8
MAY											
05...	--	--	219	.85	.090	.94	.560	1.3	1.90	2.8	13
JUL											
16...	143	59.1	--	.79	.100	.89	.120	1.3	1.40	2.3	10
SEP											
14...	174	37.6	32	1.1	.120	1.2	.200	.57	.77	2.0	8.7
NOV											
03...	--	--	30	1.2	.120	1.3	.210	.60	.81	2.1	9.3
JAN , 1982											
07...	210	50.1	25	1.3	.130	1.4	.200	.80	1.00	2.4	11
MAR											
09...	--	--	24	1.3	.070	1.4	.190	.40	.59	2.0	8.8
MAY											
04...	269	11.8	3	1.5	.150	1.6	.840	.36	1.20	2.8	12
JUL											
19...	--	--	714	.41	.120	.53	.540	1.2	1.70	2.2	9.9
SEP											
02...	160	110	100	1.2	.090	1.3	.180	1.0	1.20	2.5	11

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 , 1980											
18...	.700	--	--	--	--	--	--	--	--	25	2.4
JAN , 1981											
19...	.880	--	--	--	--	--	--	--	--	65	4.4
MAR											
12...	.900	1	100	<1	6	4	<1	<1	<1	78	4.0
MAY											
05...	.430	--	--	--	--	--	--	--	--	211	115
JUL											
16...	.400	--	--	--	--	--	--	--	--	132	55
SEP											
14...	.360	--	100	<1	20	6	<1	<1	<1	64	14
NOV											
03...	.070	--	--	--	--	--	--	--	--	69	10
JAN , 1982											
07...	.350	1	<100	<1	21	<1	.4	<1	1	65	15
MAR											
09...	.580	--	--	--	--	--	--	--	--	--	--
MAY											
04...	.890	--	--	--	--	--	--	--	--	--	--
JUL											
19...	.440	--	--	--	--	--	--	--	--	1520	1190
SEP											
02...	.340	2	<100	<1	2	2	<1	<1	<1	--	--

PESTICIDE ANALYSES, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982

	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)	
	JUL , 1981									
	16...	1405	<.10	<.01	<.10	<.01	<.01	<.01	<.01	
	JUL , 1982									
	19...	1055	<.10	<.01	<.10	<.01	<.01	<.01	<.01	
	DATE	DI- ELDRIN TOTAL (UG/L)	ENDO- SULFAM, 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)
	JUL , 1981									
	16...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
	JUL , 1982									
	19...	<.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)	
	JUL , 1981									
	16...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01	
	JUL , 1982									
	19...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01	

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 , 1980												
19...	1130	124	261	6.7	27.5	1.4	.0	--	21	110	150	76
JAN , 1981												
16...	1245	124	282	6.5	25.0	2.4	.2	--	20	2200	410	--
MAR												
13...	0900	170	303	6.7	26.5	.80	2.6	--	10	230	K36	93
MAY												
11...	1025	170	216	6.5	27.0	50	.0	0	22	3200	820	--
JUL												
24...	1115	170	156	6.8	27.0	110	1.3	16	12	2000	K1200	46
SEP												
11...	1400	170	242	6.8	29.0	22	.6	8	38	3800	5700	82
NOV												
06...	1305	170	250	6.4	27.0	16	.6	8	--	K110	K160	--
JAN , 1982												
05...	0835	170	--	6.3	24.5	--	2.2	26	19	K1800	280	--
MAR												
04...	1240	170	298	6.5	25.0	--	.8	10	<10	60	54	--
MAY												
05...	0920	170	334	6.5	27.0	--	.0	0	--	62	410	--
JUL												
16...	1305	170	230	6.4	29.0	--	.0	0	20	500	180	--
SEP												
03...	1155	124	254	6.5	28.0	--	.0	0	36	450	680	--

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- 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 , 1980											
19...	0	18	7.5	22	1.1	4.1	83	14	22	.2	27
JAN , 1981											
16...	--	--	--	--	--	--	92	--	--	--	--
MAR											
13...	0	24	8.1	23	1.0	2.7	95	13	25	.2	30
MAY											
11...	--	--	--	--	--	--	62	--	--	--	--
JUL											
24...	0	11	4.6	13	.8	2.7	46	8.4	11	.1	19
SEP											
11...	2	18	9.0	18	.9	2.9	80	12	18	.2	21
NOV											
06...	--	--	--	--	--	--	69	--	--	--	--
JAN , 1982											
05...	--	--	--	--	--	--	41	--	--	--	--
MAR											
04...	--	--	--	--	--	--	82	--	--	--	--
MAY											
05...	--	--	--	--	--	--	100	--	--	--	--
JUL											
16...	--	--	--	--	--	--	79	--	--	--	--
SEP											
03...	--	--	--	--	--	--	82	--	--	--	--

K = non-ideal count.

WATER-QUALITY DATA, WATER YEARS 1980 TO SEPTEMBER 1982

[illegible]

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.

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

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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)	
JAN , 1981													
JAN 16...	1050	9.8	350	7.0	27.0	3.5	6.2	--	18	K7700	K110	--	
MAR 13...	1120	7.0	364	8.2	30.0	3.1	11.8	--	<10	K6600	K30	130	
MAY 11...	1410	103	241	7.2	29.0	32	6.9	91	21	23000	660	--	
AUG 03...	1235	15	220	7.3	31.0	17	6.6	88	<10	K140	K3	70	
SEP 11...	1050	9.6	288	7.2	30.0	3.6	5.2	68	41	3700	430	150	
NOV 06...	1030	9.3	326	7.1	28.5	2.2	5.2	67	59	40	770	--	
JAN , 1982													
MAR 05...	1105	37	196	7.0	24.0	75	8.8	103	<10	K1200	560	53	
MAR 04...	1045	8.6	358	7.5	27.0	<1.0	8.3	102	25	230	K100	--	
MAY 05...	1115	19	354	7.3	27.0	9.2	8.0	100	--	K7500	K1800	110	
JUL 16...	1430	8.0	282	7.7	31.0	2.2	8.4	112	--	K710	K70	--	
SEP 03...	0950	11	320	7.4	28.0	--	4.2	53	69	400	K55	100	
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- 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, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
JAN , 1981													
JAN 16...	--	--	--	--	--	--	--	111	--	--	--	--	--
MAR 13...	5	33	12	25	.9	2.7	125	15	25	.2	27	--	--
MAY 11...	--	--	--	--	--	--	--	72	--	--	--	--	--
AUG 03...	4	17	6.8	16	.8	3.0	66	14	16	.2	23	--	--
SEP 11...	53	40	11	24	.9	3.5	97	18	29	.2	24	234	--
NOV 06...	--	--	--	--	--	--	--	100	--	--	--	--	--
JAN , 1982													
MAR 05...	2	13	5.1	12	.8	2.9	51	11	12	<.1	19	--	--
MAR 04...	--	--	--	--	--	--	--	110	--	--	--	--	--
MAY 05...	0	24	11	27	1.3	2.5	110	19	25	.2	23	--	--
JUL 16...	--	--	--	--	--	--	--	87	--	--	--	--	--
SEP 03...	0	25	9.9	23	1.1	3.4	110	17	23	.2	26	--	--

E Estimated.

K = non-ideal count.

RIO GRANDE DE LOIZA BASIN

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50059100 RIO GRANDE DE LOIZA BELOW TRUJILLO ALTO, PR--Continued

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

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)
JAN , 1981											
16...	--	--	23	.88	.060	.94	.150	.38	.53	1.5	6.5
MAR											
13...	215	4.1	16	.69	.080	.77	.030	.20	.23	1.0	4.4
MAY											
11...	--	--	21	.25	.050	.30	.310	.62	.93	1.2	5.4
AUG											
03...	135	5.5	--	--	<.010	.72	.020	.24	.26	.98	4.3
SEP											
11...	208	6.1	16	.58	.080	.66	.140	.53	.67	1.3	5.9
NOV											
06...	--	--	17	--	<.010	.97	<.010	--	.34	1.3	5.8
JAN , 1982											
05...	106	10.6	16	.93	.050	.98	.070	.54	.61	1.6	7.0
MAR											
04...	--	--	6	--	<.010	.61	.040	.19	.23	.84	3.7
MAY											
05...	198	10.1	12	.67	.050	.72	.170	.73	.90	1.6	7.2
JUL											
16...	--	--	2	.31	.020	.33	.040	.56	.60	.93	4.1
SEP											
03...	194	5.6	2	.62	.020	.64	.030	.57	.60	1.2	5.5

DATE	PHOS- PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS EA)	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)
JAN , 1981											
16...	.380	--	--	--	--	--	--	--	--	47	1.2
MAR											
13...	.330	<1	100	<1	5	3	.5	<1	<1	5	--
MAY											
11...	.320	--	--	--	--	--	--	--	--	62	17
AUG											
03...	.180	--	--	--	--	--	--	--	--	5	.20
SEP											
11...	.230	--	100	<1	20	3	<.1	<1	<1	3	.08
NOV											
06...	.220	--	--	--	--	--	--	--	--	1	.03
JAN , 1982											
05...	.200	1	<100	<1	8	3	.3	<1	<1	74	7.4
MAR											
04...	.190	--	--	--	--	--	--	--	--	--	--
MAY											
05...	.590	--	--	--	--	--	--	--	--	--	--
JUL											
16...	.260	--	--	--	--	--	--	--	--	--	--
SEP											
03...	.260	1	<100	1	<1	4	.2	<1	<1	--	--

50061800 RIO CANOVANAS NEAR CAMPO RICO, PR

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.--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 DISCHARGES.--14 years (1968-81), 28.5 cu ft/s (0.807 cu m/s), 39.33 in/yr (999 mm/yr), 20,650 acre-ft/yr (25.5 cu hm/yr);

median of yearly mean discharges 24 cu ft/s (0.68 cu m/s), 17,400 acre-ft/yr (21 cu hm/yr).

--15 years (1968-82), 28.5 cu ft/s (0.807 cu m/s), 39.33 in/yr (999 mm/yr), 20,650 acre-ft/yr (25.5 cu hm/yr);

median of yearly mean discharges 27 cu ft/s (0.76 cu m/s), 19,600 acre-ft/yr (24 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 WATER YEARS 1981-82.--Peak discharges above base of 2,500 cu ft/s (70.8 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)
June 30, 1981	1715	*3,590 102	7.36 2.243	Dec. 14, 1982	Unknown	2,960 83.8	6.81 2.076
Sept. 9, 1981	1815	2,720 77.0	6.58 2.006	Sept. 13, 1982	Unknown	*15,000 425	13.1 3.993

Minimum discharges, 5.1 cu ft/s (0.144 cu m/s) Nov. 12-16, 19, 21, 1980; 5.1 cu ft/s (0.144 cu m/s) Apr. 26, 1982.

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	6.7	6.7	5.5	9.8	7.7	6.3	9.6	88	63	50	18	16
2	5.8	8.0	5.6	8.6	7.7	6.2	9.6	54	48	24	16	32
3	6.1	12	5.5	8.1	9.0	6.5	19	94	37	21	15	23
4	9.7	8.5	5.3	8.0	8.1	85	35	142	73	48	16	17
5	12	12	5.7	7.8	6.7	21	38	212	141	30	15	16
6	15	7.2	18	7.8	8.0	8.9	24	54	40	20	15	15
7	15	6.2	156	7.9	6.8	7.3	64	35	30	18	25	80
8	12	5.6	27	7.8	6.3	6.8	55	30	26	18	17	273
9	7.9	5.4	12	7.7	6.8	6.5	43	28	24	23	19	57
10	9.7	5.4	8.7	7.3	8.5	6.5	40	29	22	24	62	25
11	7.1	5.3	8.3	7.8	11	6.3	27	25	21	16	37	21
12	6.2	5.3	11	8.5	9.3	6.2	19	36	20	16	229	39
13	5.5	5.1	9.3	7.7	8.8	6.1	16	29	20	15	72	35
14	5.4	5.2	9.0	7.5	7.2	6.0	15	25	18	15	34	22
15	27	5.3	8.6	8.2	34	5.9	15	39	18	16	23	19
16	16	5.2	8.3	7.8	10	5.8	100	26	17	16	20	18
17	7.7	5.5	8.0	7.6	11	5.7	70	104	16	36	23	18
18	6.4	5.3	8.6	7.2	26	5.8	30	57	16	22	20	21
19	6.1	5.2	7.5	10	11	5.7	20	178	15	59	38	53
20	6.0	5.8	7.4	9.6	8.2	5.5	15	69	15	169	65	35
21	5.6	8.3	7.4	7.9	13	31	60	111	24	34	38	21
22	5.3	8.8	7.1	8.4	9.6	18	200	430	20	23	31	18
23	6.1	8.9	12	8.1	7.8	8.7	50	104	15	36	129	17
24	9.0	7.4	15	8.0	7.0	7.3	25	49	26	68	28	16
25	7.7	6.9	56	22	6.6	7.0	19	49	19	28	23	15
26	13	6.3	20	12	6.8	7.0	19	43	14	20	20	20
27	12	6.1	12	16	6.6	7.0	24	30	14	18	19	24
28	7.0	5.9	9.7	15	6.3	7.2	19	32	21	17	19	16
29	6.1	5.5	9.1	9.0	---	13	30	26	16	16	18	18
30	13	5.5	8.3	10	---	22	45	24	258	24	17	15
31	9.3	---	9.6	8.6	---	10	---	203	---	20	17	---
TOTAL	287.4	199.8	501.5	287.7	275.8	358.2	1155.2	2455	1107	960	1138	1015
MEAN	9.27	6.66	16.2	9.28	9.85	11.6	38.5	79.2	36.9	31.0	36.7	33.8
MAX	27	12	156	22	34	85	200	430	258	169	229	273
MIN	5.3	5.1	5.3	7.2	6.3	5.5	9.6	24	14	15	15	15
CFSM	.94	.68	1.65	.94	1.00	1.18	3.91	8.05	3.75	3.15	3.73	3.44
IN.	1.09	.76	1.90	1.09	1.04	1.35	4.37	9.28	4.18	3.63	4.30	3.84
AC-FT	570	396	995	571	547	710	2290	4870	2200	1900	2260	2010

CAL YR 1980	TOTAL	4520.4	MEAN 12.4	MAX 156	MIN 4.6	CFSM 1.26	IN 17.09	AC-FT 8970
WTR YR 1981	TOTAL	9740.6	MEAN 26.7	MAX 430	MIN 5.1	CFSM 2.71	IN 36.82	AC-FT 19320

50061800 RIO CANOVANAS NEAR CAMPO RICO, PR--Continued

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	60	64	15	35	20	64	7.0	7.8	12	13	11	12
2	57	24	80	30	50	19	7.7	8.5	32	8.8	11	16
3	27	14	50	50	118	14	13	7.8	15	8.0	9.8	11
4	22	13	20	75	26	13	7.9	8.7	13	8.2	8.2	10
5	37	13	15	40	118	12	12	18	38	8.1	8.0	9.0
6	41	12	20	35	75	12	8.8	22	102	8.4	8.3	158
7	19	12	50	40	28	12	7.3	18	93	8.6	7.2	21
8	16	83	90	30	23	11	6.8	11	49	7.9	7.2	12
9	15	121	20	25	21	12	6.6	13	24	8.3	7.5	11
10	14	23	15	25	19	12	6.5	78	19	8.7	17	11
11	14	16	100	25	19	12	6.4	26	18	8.3	13	150
12	13	14	150	25	25	12	6.3	119	16	6.8	8.1	400
13	13	15	130	20	18	12	5.9	18	14	6.5	40	1000
14	13	13	400	20	27	11	6.0	27	14	6.4	18	90
15	14	12	100	20	47	10	5.9	13	14	6.0	11	40
16	13	12	40	25	29	10	6.0	9.1	13	6.2	9.2	25
17	46	11	30	20	31	9.4	6.4	7.9	13	6.5	7.9	20
18	18	26	35	20	24	9.3	6.0	7.2	12	5.9	8.6	15
19	62	39	26	25	19	9.4	5.7	6.7	12	5.9	7.8	15
20	24	20	22	16	17	8.7	5.7	6.5	14	13	7.4	15
21	18	14	21	15	16	8.5	5.8	38	13	17	7.4	15
22	17	13	21	15	15	8.3	5.5	22	11	55	16	50
23	15	12	19	15	16	8.5	5.5	12	11	17	27	20
24	15	12	19	14	15	8.2	5.5	9.7	11	8.7	19	25
25	13	12	27	14	14	8.1	5.4	8.8	11	13	11	35
26	17	15	58	14	13	9.7	5.4	8.5	9.4	67	9.0	20
27	14	40	270	15	13	11	5.9	40	8.9	30	8.3	50
28	13	15	242	14	17	8.4	6.5	137	8.7	10	8.3	35
29	13	15	86	13	---	7.7	6.0	33	8.5	98	21	25
30	12	10	55	13	---	7.3	6.1	16	13	59	16	20
31	14	---	44	17	---	7.2	---	13	---	14	17	---
TOTAL	699	715	2270	760	873	377.7	201.5	771.2	642.5	548.2	386.2	2336.0
MEAN	22.5	23.8	73.2	24.5	31.2	12.2	6.72	24.9	21.4	17.7	12.5	77.9
MAX	62	121	400	75	118	64	13	137	102	98	40	1000
MIN	12	10	15	13	13	7.2	5.4	6.5	8.5	5.9	7.2	9.0
CFSM	2.29	2.42	7.44	2.49	3.17	1.24	.68	2.53	2.18	1.80	1.27	7.92
IN.	2.64	2.70	8.58	2.87	3.30	1.43	.76	2.92	2.43	2.07	1.46	8.83
AC-FT	1390	1420	4500	1510	1730	749	400	1530	1270	1090	766	4630

CAL YR 1981 TOTAL 12435.9 MEAN 34.1 MAX 430 MIN 5.5 CFSM 3.47 IN 47.01 AC-FT 24670
 WTR YR 1982 TOTAL 10580.3 MEAN 29.0 MAX 1000 MIN 5.4 CFSM 2.95 IN 39.99 AC-FT 20990

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO SEPTEMBER 1982

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPEC- IFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)
AUG, 1981				
18...	1103	20.0	191	26.0
SEP				
23...	1402	18.0	194	29.0
OCT				
16...	1250	13.0	228	27.5
NOV				
20...	1157	20.0	135	24.0
MAR, 1982				
8...	1112	12.0	197	23.5
APR				
15...	1140	6.1	240	25.0
MAY				
11...	1524	17.0	92	23.5
JUN				
8...	1248	42.0	87	25.5
SEP				
10...	1200	10.0	210	27.0

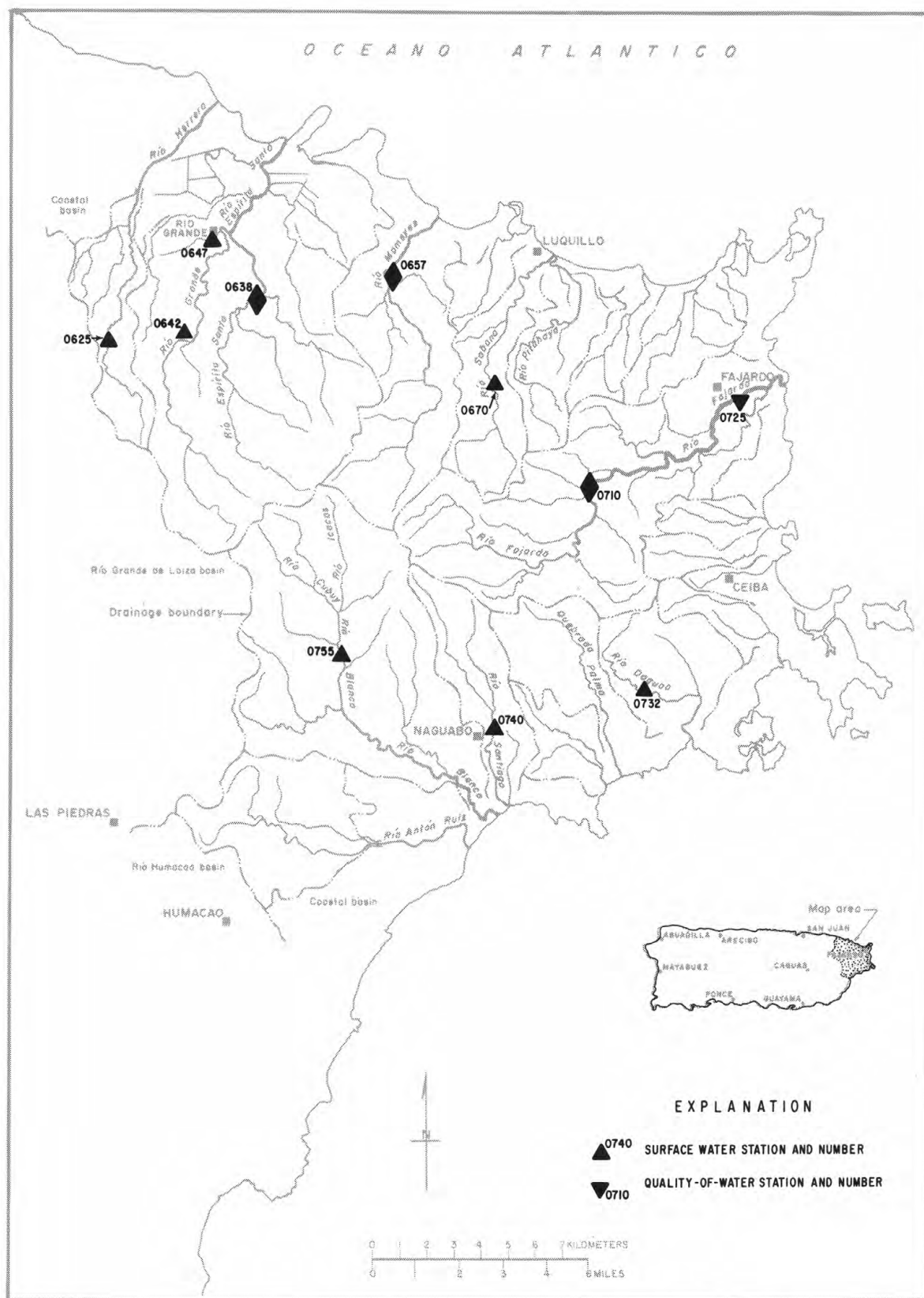


Figure 18.--Northeastern rivers basin--Río Herrera to Río Antón Ruiz basins.

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 DISCHARGES.--15 years (1967-81), 56.8 cu ft/s (1.609 cu m/s), 89.48 in/yr (2,273 mm/yr), 41,450 acre-ft/yr (50.7 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).
--16 years (1967-82), 57.3 cu ft/s (1.623 cu m/s), 90.27 in/yr (2,293 mm/yr), 41,510 acre-ft/yr (51.2 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 WATER YEARS 1981-82.--Peak discharges above base of 3,000 cu ft/s (85.0 cu m/s) revised, and maximums (*):

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. 6, 1980	1600	3,170	89.8	7.34	2.237	Dec. 14, 1981	0800	3,780	107	7.81	2.380
Dec. 7, 1980	0845	3,260	92.3	7.41	2.259	Dec. 27, 1981	1315	4,940	140	8.59	2.618
Mar. 4, 1981	1830	3,410	96.6	7.53	2.295	Dec. 28, 1981	0715	4,810	136	8.51	2.594
Apr. 22, 1981	0115	4,990	141	8.62	2.627	Feb. 3, 1982	1045	3,500	99.1	7.60	2.316
May 19, 1981	1915	4,550	129	8.34	2.542	May 9, 1982	2245	4,580	130	8.36	2.548
May 22, 1981	1630	*5,960	169	9.19	2.801	May 28, 1982	1330	*8,870	251	10.62	3.237
June 30, 1981	1745	3,400	96.3	7.52	2.292	Sept. 13, 1982	1715	3,410	96.6	7.53	2.295

Minimum discharges, 9.2 cu ft/s (0.260 cu m/s) Nov. 19, 1980; 5.9 cu ft/s (0.167 cu m/s) June 29, 1982.

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	14	23	13	16	23	15	107	83	162	105	52	20
2	12	74	25	14	29	15	67	75	190	32	25	19
3	17	34	21	15	121	14	135	107	84	35	25	19
4	147	122	22	14	28	502	254	169	340	98	75	18
5	44	48	21	13	19	525	56	326	357	85	111	16
6	100	19	338	12	51	32	60	65	71	32	35	15
7	74	15	751	12	22	23	176	42	49	78	109	31
8	32	13	98	12	28	20	106	33	41	45	30	152
9	38	12	34	11	24	18	183	29	36	77	25	60
10	22	13	27	11	30	17	115	30	32	81	391	24
11	17	12	25	14	56	16	53	25	30	27	89	20
12	14	11	66	13	31	15	33	33	31	24	289	40
13	12	11	36	11	26	17	27	46	64	29	182	58
14	12	10	50	65	28	14	26	24	30	91	55	26
15	137	11	22	28	139	13	25	73	24	101	34	19
16	32	14	19	55	71	13	246	32	21	31	28	19
17	16	14	19	15	129	12	194	68	20	281	48	27
18	14	10	23	12	276	12	139	445	19	69	35	35
19	16	9.6	17	145	37	11	39	392	19	120	104	106
20	21	17	19	33	27	11	28	99	18	341	85	56
21	13	111	31	18	128	324	219	89	23	67	77	29
22	12	28	23	29	51	60	736	527	28	36	88	19
23	41	88	115	44	25	58	109	144	17	81	250	17
24	42	17	96	19	21	20	74	59	55	311	55	16
25	22	45	37	125	19	16	64	120	26	96	32	16
26	44	21	25	23	19	57	67	112	16	57	24	25
27	26	34	19	54	19	199	47	47	15	31	21	23
28	17	23	16	28	17	61	33	56	29	26	21	16
29	15	14	15	16	---	172	39	36	18	24	35	15
30	125	12	16	148	---	49	121	48	291	55	21	15
31	22	---	16	78	---	22	---	368	---	91	22	---
TOTAL	1170	885.6	2055	1103	1494	2353	3578	3802	2156	2657	2473	971
MEAN	37.7	29.5	66.3	35.6	53.4	75.9	119	123	71.9	85.7	79.8	32.4
MAX	147	122	751	148	276	525	736	527	357	341	391	152
MIN	12	9.6	13	11	17	11	25	24	15	24	21	15
CFSM	4.37	3.42	7.69	4.13	6.20	8.81	13.8	14.3	8.34	9.94	9.26	3.76
IN	5.05	3.82	8.87	4.76	6.45	10.15	15.44	16.41	9.30	11.47	10.67	4.19
AC-FT	2320	1760	4080	2190	2960	4670	7100	7540	4280	5270	4910	1930

CAL YR 1980 TOTAL 15763.8 MEAN 43.1 MAX 984 MIN 6.9 CFSM 5.00 IN 68.02 AC-FT 31270
WTR YR 1981 TOTAL 24697.6 MEAN 67.7 MAX 751 MIN 9.6 CFSM 7.85 IN 106.57 AC-FT 48990

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

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	74	140	11	84	124	88	10	7.9	40	19	33	45
2	69	45	116	70	242	29	10	9.5	82	13	59	103
3	22	17	100	157	583	21	34	12	30	11	77	24
4	16	17	23	210	73	20	21	13	97	9.7	23	20
5	61	15	16	55	671	19	202	44	62	14	26	17
6	45	13	26	47	141	18	19	93	22	13	44	205
7	15	12	51	60	126	20	13	32	70	18	20	38
8	13	27	119	41	98	19	14	18	27	24	17	19
9	16	192	19	34	65	21	11	447	17	196	15	34
10	11	24	15	31	61	24	11	433	15	50	31	20
11	29	15	90	28	78	25	9.7	82	14	16	27	208
12	12	13	393	26	88	56	10	570	13	11	17	378
13	10	12	316	26	65	51	9.7	50	14	11	230	890
14	12	12	1150	26	134	19	9.1	92	23	12	40	68
15	15	11	156	31	180	17	9.4	52	19	16	228	36
16	19	10	48	34	73	18	11	24	17	21	47	30
17	69	10	34	27	111	16	37	20	12	16	23	26
18	25	34	128	26	56	15	17	18	10	9.8	45	23
19	130	66	44	37	35	14	10	17	11	47	20	21
20	31	27	29	25	30	13	9.1	15	28	46	17	19
21	15	13	38	23	28	13	9.5	55	14	70	16	18
22	16	11	55	23	25	12	9.2	30	10	372	59	82
23	17	11	28	22	25	12	8.5	17	11	40	207	29
24	15	12	23	21	24	12	8.0	15	8.9	27	70	33
25	15	12	41	20	21	12	8.4	14	8.8	70	23	54
26	12	15	391	19	20	20	9.1	14	8.0	267	21	28
27	12	53	782	24	22	25	9.6	133	7.4	60	23	78
28	18	12	620	27	86	13	30	652	7.0	22	31	67
29	15	11	282	18	---	11	13	58	6.6	234	213	47
30	55	9.9	259	17	---	11	8.8	28	27	118	51	23
31	30	---	151	118	---	11	---	19	---	27	137	---
TOTAL	914	871.9	5554	1407	3287	675	591.1	3084.4	731.7	1880.5	1890	2683
MEAN	29.5	29.1	179	45.4	117	21.8	19.7	99.5	24.4	60.7	61.0	89.4
MAX	130	192	1150	210	671	88	202	652	97	372	230	890
MIN	10	9.9	11	17	20	11	8.0	7.9	6.6	9.7	15	17
CFSM	3.42	3.38	20.8	5.27	13.6	2.53	2.29	11.5	2.83	7.04	7.08	10.4
IN.	3.94	3.76	23.97	6.07	14.18	2.91	2.55	13.31	3.16	8.11	8.16	11.58
AC-FT	1810	1730	11020	2790	6520	1340	1170	6120	1450	3730	3750	5320
CAL YR 1981	TOTAL	27926.9	MEAN	76.5	MAX	1150	MIN	9.9	CFSM	8.88	IN	120.51
WTR YR 1982	TOTAL	23569.6	MEAN	64.6	MAX	1150	MIN	6.6	CFSM	7.49	IN	101.70
									AC-FT	55390	AC-FT	46750

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CCN- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	CLLI- 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 , 1980												
14...	0920	10	107	7.6	25.0	--	8.7	--	--	K100	K130	33
JAN , 1981												
12...	1220	15	170	7.5	23.0	4.4	8.5	--	<10	5000	2700	--
MAR												
16...	1300	12	123	8.0	26.0	.70	8.2	--	<10	K110	230	42
MAY												
14...	1240	25	103	7.8	28.0	2.1	8.6	103	<10	2500	270	--
JUL												
27...	1500	29	92	7.6	27.0	2.7	8.6	108	<10	K10000	780	29
SEP												
21...	1205	26	69	7.2	24.0	4.0	9.0	108	54	K6100	550	20
NOV												
16...	1145	10	99	7.3	25.5	2.6	8.4	102	<10	470	50	--
JAN , 1982												
19...	1105	37	93	7.4	22.0	3.0	8.6	98	48	K1200	780	26
MAR												
11...	1050	23	113	7.5	22.0	1.6	8.6	98	84	400	520	--
MAY												
17...	1210	20	107	7.3	26.0	2.4	8.9	109	<10	K13000	K1100	31
JUL												
15...	1125	12	112	7.1	28.0	4.5	7.9	99	20	460	320	--
SEP												
16...	1005	30	90	7.4	24.0	--	9.3	109	18	560	700	26

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- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUC- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
NOV , 1980											
14...	0	6.9	3.8	7.8	.6	.3	38	.9	9.8	.2	22
JAN , 1981											
12...	--	--	--	--	--	--	34	--	--	--	--
MAR											
16...	1	8.8	4.9	9.6	.6	.4	41	4.1	11	<.1	19
MAY											
14...	--	--	--	--	--	--	34	--	--	--	--
JUL											
27...	0	6.2	3.4	7.1	.6	.4	31	2.0	9.2	<.1	17
SEP											
21...	3	4.0	2.4	5.2	.5	.2	17	3.0	7.3	<.1	11
NOV											
16...	--	--	--	--	--	--	38	--	--	--	--
JAN , 1982											
19...	0	5.7	2.9	6.6	.6	.4	26	2.0	9.6	<.1	16
MAR											
11...	--	--	--	--	--	--	36	--	--	--	--
MAY											
17...	0	6.6	3.5	7.0	.6	.3	31	2.0	9.6	<.1	18
JUL											
15...	--	--	--	--	--	--	33	--	--	--	--
SEP											
16...	1	5.4	3.0	6.4	.6	.2	25	<1.0	8.9	<.1	18

K = non-ideal count.

RIO ESPIRITU SANTO BASIN

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

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

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 , 1980											
14...	74	2.0	--	.09	.000	.09	.000	.05	.05	.14	.62
JAN , 1981											
12...	--	--	12	.13	.000	.13	.020	.16	.18	.31	1.4
MAR											
16...	82	2.7	9	.03	<.010	.04	.020	.26	.28	.32	1.4
MAY											
14...	--	--	4	.03	<.010	.04	.050	.34	.39	.43	1.9
JUL											
27...	64	5.0	--	.03	<.010	.04	.020	.23	.25	.29	1.3
SEP											
21...	49	3.4	9	--	<.010	.04	.030	.26	.29	.33	1.5
NOV											
16...	--	--	27	--	<.010	.07	.020	--	<.10	--	--
JAN , 1982											
19...	61	6.1	2	--	<.010	.06	.020	.22	.24	.30	1.3
MAR											
11...	--	--	15	--	<.010	.04	.020	.16	.18	.22	.97
MAY											
17...	69	3.7	6	--	<.010	<.10	.020	.28	.30	--	--
JUL											
15...	--	--	6	--	<.010	<.10	.040	1.2	1.20	--	--
SEP											
16...	--	--	4	--	<.010	<.10	.030	.57	.60	--	--

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 , 1980											
14...	.020	--	--	--	--	--	--	--	--	0	.00
JAN , 1981											
12...	.020	--	--	--	--	--	--	--	--	5	.20
MAR											
16...	.040	<1	<50	<1	2	5	.1	<1	1	0	.00
MAY											
14...	<.010	--	--	--	--	--	--	--	--	0	.00
JUL											
27...	.020	--	--	--	--	--	--	--	--	5	.39
SEP											
21...	.010	--	100	<1	10	4	.2	<1	<1	3	.21
NOV											
16...	.040	--	--	--	--	--	--	--	--	0	.00
JAN , 1982											
19...	<.010	1	100	<1	7	5	.2	<1	<1	1	.10
MAR											
11...	.020	--	--	--	--	--	--	--	--	--	--
MAY											
17...	.020	--	--	--	--	--	--	--	--	--	--
JUL											
15...	1.70	--	--	--	--	--	--	--	--	--	--
SEP											
16...	<.010	2	<100	1	5	4	<.1	<1	<1	--	--

RIO ESPIRITU SANTO BASIN

50064200 RIO GRANDE NEAR EL VERDE, PR

LOCATION.--Lat 18°20'43", long 65°50'30", Hydrologic Unit 21010005, on left bank 400 ft (120 m) upstream from bridge on Highway 960, 500 ft (150 m) southwest of junction of Highways 956 and 960, 1.1 mi (1.8 km) west of El Verde, and 2.7 mi (4.3 km) south of Río Grande.

DRAINAGE AREA.--7.31 sq mi (18.93 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1967 to December 1970, January 1972 to September 1982 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 125 ft (38.1 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGES.--12 years (1968-70, 1973-81), 47.9 cu ft/s (1.357 cu m/s), 88.99 in/yr (2,260 mm/yr), 34,700 acre-ft/yr (42.8 cu hm/yr); median of yearly mean discharges, 43 cu ft/s (1.22 cu m/s), 31,200 acre-ft/yr (38 cu hm/yr).
--13 years (1968-70, 1973-82), 46.9 cu ft/s (1.328 cu m/s), 87.13 in/yr (2,213 mm/yr), 33,980 acre-ft/yr (41.9 cu hm/yr); median of yearly mean discharges, 42 cu ft/s (1.19 cu m/s), 30,400 acre-ft/yr (37 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,400 cu ft/s (493 cu m/s), Sept. 16, 1975, gage height, 15.5 ft (4.72 m), but may have been exceeded by flood of Dec. 9, 1975, from rating curve extended above 100 cu ft/s (2.83 cu m/s) on basis of slope-area measurement of peak flow; minimum, 1.6 cu ft/s (0.045 cu m/s) Mar. 13, 1977, gage height, 1.50 ft (0.457 m).

EXTREMES FOR WATER YEARS 1981-82.--Peak discharges above base of 3,000 cu ft/s (85.0 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 5, 1981	1345	*2,870 81.3	8.92 2.719	May 28, 1982	1200	3,200 90.6	9.29 2.832
Feb. 3, 1982	1215	3,090 87.5	9.17 2.795	Sept. 13, 1982	0645	*4,140 117	10.22 3.115

Minimum discharges, 4.5 cu ft/s (0.127 cu m/s) Nov. 21, 1980; 4.3 cu ft/s (0.122 cu m/s) May 1-2, 1982.

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	9.0	20	7.7	9.8	15	9.5	27	104	84	110	38	16
2	6.8	36	9.3	9.1	14	10	22	64	74	25	24	15
3	9.3	25	11	8.6	57	10	67	67	47	30	26	17
4	60	33	9.1	8.5	20	121	100	124	104	65	27	16
5	25	29	15	7.1	15	57	60	219	138	60	41	16
6	93	13	85	8.0	30	18	50	60	50	25	23	26
7	69	9.6	319	8.0	15	14	45	30	30	50	58	50
8	27	8.6	63	8.0	20	12	60	25	23	35	27	120
9	47	7.9	24	8.0	15	11	80	25	22	30	25	30
10	22	7.4	16	8.0	25	11	35	25	20	60	194	20
11	13	7.3	15	8.3	45	10	25	20	20	20	52	15
12	11	7.7	39	10	20	10	20	26	19	20	176	40
13	9.7	7.7	24	10	20	10	20	20	23	20	101	20
14	8.3	7.4	29	32	16	9.8	15	19	19	35	40	15
15	55	7.6	18	26	60	9.0	15	30	15	25	28	15
16	12	8.0	16	33	25	8.0	100	20	16	23	26	15
17	10	8.8	14	19	30	8.0	60	60	16	77	26	25
18	13	8.6	23	16	40	8.0	40	150	17	51	26	30
19	18	7.6	13	55	20	8.0	30	130	20	100	78	70
20	26	7.3	13	27	15	8.0	20	45	20	193	82	30
21	17	25	13	17	43	103	20	86	20	52	56	15
22	15	12	14	18	25	47	200	279	20	34	65	15
23	37	39	48	24	14	14	100	96	20	45	153	12
24	56	12	42	17	12	8.6	60	52	25	109	48	12
25	26	16	18	98	10	8.7	40	63	30	56	37	12
26	30	13	17	20	10	11	30	64	20	35	31	26
27	23	15	13	42	10	48	25	25	20	25	28	24
28	13	13	12	26	9.5	15	20	37	20	24	27	13
29	11	9.6	12	14	---	58	20	23	20	26	25	11
30	69	8.2	12	42	---	44	63	25	30	50	19	11
31	23	---	13	26	---	12	---	164	---	58	17	---
TOTAL	864.1	430.3	977.1	663.4	650.5	731.6	1469	2177	1002	1568	1624	752
MEAN	27.9	14.3	31.5	21.4	23.2	23.6	49.0	70.2	33.4	50.6	52.4	25.1
MAX	93	39	319	98	60	121	200	279	138	193	194	120
MIN	6.8	7.3	7.7	7.1	9.5	8.0	15	19	15	20	17	11
CFSM	3.82	1.96	4.31	2.93	3.17	3.23	6.70	9.60	4.57	6.92	7.17	3.43
IN	4.40	2.19	4.97	3.38	3.31	3.72	7.47	11.08	5.10	7.98	8.26	3.83
AC-FT	1710	853	1940	1320	1290	1450	2910	4320	1990	3110	3220	1490

CAL YR 1980 TOTAL 7965.2 MEAN 21.8 MAX 319 MIN 4.5 CFSM 2.98 IN 40.53 AC-FT 15800
WTR YR 1981 TOTAL 12909.0 MEAN 35.4 MAX 319 MIN 6.8 CFSM 4.84 IN 65.68 AC-FT 25600

RIO ESPIRITU SANTO BASIN

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50064200 RIO GRANDE NEAR EL VERDE, PR--Continued

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	41	80	9.2	49	50	60	15	4.4	17	13	16	37
2	59	20	29	44	121	25	19	4.9	27	7.8	20	56
3	30	15	54	68	243	20	35	4.9	15	7.2	22	25
4	23	12	18	80	48	15	19	5.9	21	13	14	29
5	46	12	13	35	150	16	45	24	40	14	14	22
6	46	12	13	40	70	16	12	59	20	21	15	98
7	20	12	23	30	60	16	9.4	24	61	20	11	32
8	16	20	40	30	50	16	7.8	13	26	14	10	19
9	17	100	15	30	60	17	7.0	91	16	28	10	20
10	15	20	12	25	50	19	6.6	163	14	21	20	18
11	14	15	70	25	40	18	6.7	60	11	13	19	107
12	12	10	118	25	47	27	7.2	206	9.4	8.6	12	212
13	11	10	129	25	39	33	6.5	34	9.0	7.8	44	692
14	10	10	411	20	74	17	6.9	46	9.0	7.0	26	83
15	12	10	79	25	120	15	6.4	30	8.1	6.7	65	52
16	26	10	34	20	50	15	5.6	20	8.8	6.6	23	43
17	44	10	26	20	60	14	8.9	17	8.1	7.5	14	38
18	21	20	51	20	45	13	9.4	15	7.0	8.0	27	31
19	85	60	31	20	35	13	6.4	14	6.9	8.9	15	23
20	33	20	25	17	30	12	5.7	15	12	37	12	21
21	20	15	23	17	25	12	5.8	53	7.8	21	12	19
22	22	10	29	17	25	14	5.2	31	6.2	81	46	42
23	18	10	21	17	20	15	4.8	17	6.1	16	96	26
24	14	10	20	16	20	15	4.8	14	5.9	7.8	47	22
25	16	15	42	16	20	15	4.8	13	5.7	17	18	27
26	14	20	142	15	20	19	4.8	12	5.5	64	14	53
27	15	45	277	14	20	22	5.5	37	5.0	28	12	75
28	14	15	257	16	50	17	8.2	244	6.0	9.8	28	48
29	14	10	124	13	---	17	6.9	28	6.0	101	132	31
30	15	9.0	84	13	---	17	4.6	16	11	65	41	20
31	16	---	72	53	---	16	---	12	---	19	62	---
TOTAL	759	637.0	2291.2	855	1642	576	300.9	1328.1	411.5	699.7	917	2021
MEAN	24.5	21.2	73.9	27.6	58.6	18.6	10.0	42.8	13.7	22.6	29.6	67.4
MAX	85	100	411	80	243	60	45	244	61	101	132	692
MIN	10	9.0	9.2	13	20	12	4.6	4.4	5.0	6.6	10	18
CFSM	3.35	2.90	10.1	3.78	8.02	2.54	1.37	5.86	1.87	3.09	4.05	9.22
IN.	3.86	3.24	11.66	4.35	8.35	2.93	1.53	6.76	2.09	3.56	4.67	10.28
AC-FT	1510	1260	4540	1700	3260	1140	597	2630	816	1390	1820	4010

CAL YR 1981 TOTAL 14324.7 MEAN 39.2 MAX 411 MIN 7.1 CFSM 5.36 IN 72.89 AC-FT 28410
WTR YR 1982 TOTAL 12438.4 MEAN 34.1 MAX 692 MIN 4.4 CFSM 4.67 IN 63.29 AC-FT 24670

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO SEPTEMBER 1982

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPEC- IFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)
AUG, 1981				
19...	917	27.0	125	25.0
SEP				
24...	1022	12.0	127	27.0
OCT				
16...	930	13.0	110	25.5
NOV				
30...	1315	9.0	130	24.0
MAR, 1982				
10...	937	21.1	104	22.5
APR				
15...	847	6.6	141	24.0
MAY				
12...	1020	120.0	61	22.0
JUN				
9...	1138	16.0	82	26.5
SEP				
20...	1430	20.0	136	28.0

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 fair.

AVERAGE DISCHARGES.--15 years (1967-81), 73.1 cu ft/s (2.070 cu m/s), 84.13 in/yr (2,137 mm/yr), 52,960 acre-ft/yr (65.3 cu hm/yr); median of yearly mean discharges, 70 cu ft/s (1.98 cu m/s), 50,700 acre-ft/yr (63 cu hm/yr).

--16 years (1967-82), 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, 71 cu ft/s (2.01 cu m/s), 51,400 acre-ft/yr (63 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 WATER YEARS 1981-82.--Peak discharges above base of 5,300 cu ft/s (150 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 19, 1981	1930	*9,600 272	15.39 4.691	May 9, 1982	2245	*12,200 345	16.23 4.947
Dec. 27, 1981	1330	8,290 235	14.67 4.471				

Minimum discharges, 17 cu ft/s (0.481 cu m/s) Mar. 20-21, 1981; 11 cu ft/s (0.312 cu m/s) May 3-4, 1982.

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	45	37	30	28	36	25	84	100	371	133	67	26
2	41	94	37	27	42	24	58	85	258	43	44	32
3	74	57	34	27	121	23	72	111	159	38	40	25
4	159	145	63	27	41	488	121	193	301	56	59	23
5	84	68	42	24	31	818	49	261	332	92	67	22
6	120	35	212	24	68	80	50	79	141	52	46	22
7	164	30	490	28	35	48	164	59	112	115	107	35
8	64	27	115	24	51	39	101	48	90	54	48	127
9	59	24	50	23	40	34	120	52	80	83	51	49
10	52	26	40	22	51	30	98	54	70	87	312	29
11	36	24	35	26	44	28	45	47	60	45	76	26
12	30	22	53	31	35	26	35	89	50	39	231	76
13	28	21	42	22	35	29	30	83	70	39	210	67
14	26	20	78	42	92	25	28	45	50	91	100	40
15	175	21	34	37	216	22	27	86	40	122	51	26
16	50	33	31	39	136	21	138	63	37	50	50	25
17	34	26	37	22	120	20	93	77	35	330	67	41
18	30	22	42	20	245	19	70	368	34	107	51	66
19	42	20	30	228	57	18	33	721	37	133	91	48
20	43	41	36	56	44	17	27	241	32	247	75	84
21	27	142	49	31	95	273	266	251	31	92	77	38
22	26	52	41	33	58	68	291	413	36	56	97	26
23	53	116	123	42	36	71	145	239	82	69	208	23
24	47	39	144	25	32	28	88	141	49	342	66	21
25	37	56	68	98	29	24	89	221	33	152	45	21
26	45	41	45	31	28	22	95	189	27	84	38	37
27	37	50	38	42	28	107	74	127	27	53	34	25
28	31	39	32	34	26	62	57	143	85	45	33	22
29	24	32	31	24	---	198	53	101	40	40	34	21
30	125	30	30	129	---	48	130	109	236	71	29	28
31	38	---	29	104	---	28	---	376	---	135	28	---
TOTAL	1846	1390	2161	1367	1872	2763	2731	5172	3005	3095	2532	1151
MEAN	59.5	46.3	69.7	44.1	66.9	89.1	91.0	167	100	99.8	81.7	38.4
MAX	175	145	490	228	245	818	291	721	371	342	312	127
MIN	24	20	29	20	26	17	27	45	27	38	28	21
CFSM	5.04	3.92	5.91	3.74	5.67	7.55	7.71	14.2	8.48	8.46	6.92	3.25
IN.	5.82	4.38	6.81	4.31	5.90	8.71	8.61	16.30	9.47	9.76	7.98	3.63
AC-FT	3660	2760	4290	2710	3710	5480	5420	10260	5960	6140	5020	2280

CAL YR 1980	TOTAL	21440	MEAN 58.6	MAX 798	MIN 12	CFSM 4.97	IN 67.58	AC-FT 42530
WTR YR 1981	TOTAL	29085	MEAN 79.7	MAX 818	MIN 17	CFSM 6.75	IN 91.68	AC-FT 57690

RIO MAMEYES BASIN

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50065700 RIO MAMEYES AT HIGHWAY 191 AT MAMEYES, PR--Continued

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	59	117	26	137	114	148	15	12	117	30	43	40
2	64	72	112	108	171	48	16	12	215	27	80	123
3	30	34	140	185	416	32	33	11	89	27	73	34
4	25	34	38	161	93	29	23	48	150	26	34	31
5	42	30	29	74	541	26	216	77	111	41	37	27
6	45	30	47	62	197	28	35	148	59	29	51	84
7	24	24	104	66	154	29	32	56	146	24	31	37
8	23	49	234	51	114	26	44	26	68	29	27	26
9	29	290	39	45	76	36	21	671	47	81	25	50
10	23	45	31	42	67	35	18	907	43	63	40	29
11	30	31	119	38	96	28	17	134	37	27	33	107
12	22	27	407	36	121	56	16	474	34	26	27	364
13	19	28	332	34	101	58	16	168	31	25	40	503
14	18	25	773	33	141	29	17	159	36	23	35	96
15	18	24	220	37	171	24	16	87	40	22	111	50
16	31	23	104	40	86	26	21	45	31	22	44	38
17	167	22	71	34	98	22	66	35	26	22	27	33
18	41	73	180	32	74	21	31	27	24	23	38	30
19	189	122	88	35	48	20	18	23	26	130	24	28
20	48	49	61	28	80	19	15	22	37	51	23	31
21	30	27	75	26	51	18	17	85	27	67	22	29
22	70	24	98	26	39	17	15	121	26	228	39	97
23	34	24	56	24	39	17	15	47	27	54	111	46
24	28	26	46	22	33	16	14	24	23	53	67	51
25	25	23	55	20	30	17	14	19	22	96	27	78
26	29	23	181	19	27	30	14	17	19	232	26	43
27	27	49	820	19	34	47	14	144	18	81	25	80
28	54	22	567	18	122	21	56	354	18	35	36	93
29	52	21	303	17	---	17	19	167	19	104	159	71
30	151	20	356	18	---	20	13	83	45	120	57	40
31	67	---	217	94	---	17	---	55	---	40	121	---
TOTAL	1513	1408	5929	1581	3334	977	877	4258	1611	1858	1533	2389
MEAN	48.0	46.9	191	51.0	119	31.5	29.2	137	53.7	59.9	49.5	79.6
MAX	189	290	820	185	541	148	216	907	215	232	159	503
MIN	18	20	26	17	27	16	13	11	18	22	22	26
CFSM	4.14	3.98	16.2	4.32	10.1	2.67	2.48	11.6	4.55	5.08	4.20	6.75
IN.	4.77	4.44	18.69	4.98	10.51	3.08	2.76	13.42	5.08	5.86	4.83	7.53
AC-FT	3000	2790	11760	3140	6610	1940	1740	8450	3200	3690	3040	4740

CAL YR 1981 TOTAL 32538 MEAN 89.1 MAX 820 MIN 17 CFSM 7.55 IN 102.57 AC-FT 64540
 WTR YR 1982 TOTAL 27268 MEAN 74.7 MAX 907 MIN 11 CFSM 6.33 IN 85.96 AC-FT 54090

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO SEPTEMBER 1982

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPEC- IFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)
SEP, 1981				
25...	1016	22.0	135	26.5
OCT				
21...	1150	27.0	106	26.0
JAN				
9...	920	35.0	100	24.0
MAR, 1982				
9...	1227	31.2	119	24.5
APR				
14...	1130	17.1	137	25.5
MAY				
10...	1120	265.0		23.5
JUN				
9...	830	49.0	99	24.5
SEP				
20...	1100	31.0	122	26.0

50067000 RIO SABANA AT SABANA, PR

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 cu 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, 7,340 cu ft/s (208 cu m/s) May 10, 1982 gage height, 18.17 ft (5.538 m), from rating curve extended above 200 cu ft/s (5.66 cu m/s) on basis of step-backwater analysis and slope area measurement of peak flow; minimum discharge, 1.5 cu ft/s (0.042 cu m/s) Apr. 4-7, 1980.

EXTREMES FOR WATER YEAR 1981-82.--Peak discharges above base of 1,500 cu ft/s (42.5 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 4, 1981	1515	1,820 51.5	12.64 3.853	Dec. 28, 1981	0700	1,500 42.5	12.13 3.697
May 19, 1981	2015	*4,480 127	15.77 4.807	Feb. 5, 1982	1200	1,860 52.7	12.70 3.871
May 21, 1981	1245	1,690 47.9	12.44 3.792	May 10, 1982	0045	*7,340 208	18.17 5.538
Dec. 12, 1981	1530	2,780 78.7	13.93 4.246	May 29, 1982	1630	1,920 54.4	12.79 3.898
Dec. 27, 1981	1245	5,660 160	16.83 5.130	July 26, 1982	1815	1,710 48.4	12.46 3.798

Minimum discharges, 2.0 cu ft/s (0.057 cu m/s) Jan. 17-18, 1981; 1.7 cu ft/s (0.048 cu m/s) May 3, 4, 1982.

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	10	9.1	4.6	4.8	6.6	4.6	12	11	137	31	9.8	5.5
2	15	14	4.7	3.9	5.9	4.6	10	11	64	12	7.9	5.7
3	20	10	3.8	4.0	20	4.8	7.7	66	33	9.9	7.5	5.4
4	50	16	3.6	3.5	7.1	95	11	96	83	17	10	5.0
5	30	10	3.6	3.0	4.8	145	7.9	96	87	21	8.1	4.7
6	45	6.5	77	2.8	12	15	8.8	21	31	9.2	6.9	5.1
7	25	5.9	229	3.0	5.2	11	30	17	25	16	16	5.0
8	15	5.2	11	3.0	9.4	9.6	15	13	22	10	7.0	23
9	11	4.8	5.7	2.9	5.4	8.3	14	13	20	12	6.7	8.0
10	11	5.2	6.8	2.6	5.9	8.5	13	15	18	19	80	5.3
11	10	4.6	5.3	2.7	5.7	7.5	8.3	18	17	10	14	4.9
12	9.2	4.4	6.3	3.5	4.6	7.7	7.4	36	16	8.6	57	10
13	8.6	4.2	5.4	2.7	7.3	8.5	6.7	23	24	9.7	60	17
14	8.4	4.2	13	2.8	29	7.1	6.9	13	15	11	27	12
15	38	4.9	5.9	3.2	46	6.5	6.7	16	14	27	11	5.1
16	12	11	5.4	2.7	19	6.3	40	13	13	9.0	13	4.7
17	11	5.2	6.1	2.3	13	6.1	10	12	12	108	11	6.9
18	8.7	3.9	8.2	2.2	34	6.1	7.0	87	12	24	11	16
19	13	3.9	5.4	44	9.6	5.8	6.3	290	13	26	14	55
20	15	9.5	7.4	10	7.3	6.3	6.2	57	12	85	9.7	18
21	8.6	33	8.3	5.7	10	70	10	190	10	21	13	10
22	8.5	9.2	6.6	4.6	8.8	15	14	50	9.4	13	21	12
23	10	16	10	4.5	6.5	20	18	41	17	12	39	7.2
24	9.9	6.3	12	3.7	5.7	8.4	8.4	25	10	164	10	5.7
25	8.2	8.4	7.2	26	5.3	7.3	9.4	37	8.5	22	8.2	6.1
26	7.6	6.9	5.2	6.1	5.9	6.6	16	74	8.3	15	7.7	8.2
27	7.0	8.3	4.6	66	5.5	50	9.9	27	7.6	11	7.2	6.5
28	6.8	5.4	3.9	9.2	5.5	50	7.0	30	21	10	8.0	5.0
29	6.4	4.3	6.5	5.0	---	40	6.4	19	12	9.5	7.1	4.8
30	16	4.1	4.1	18	---	11	17	19	65	11	6.1	7.0
31	7.7	---	5.2	16	---	7.5	---	116	---	14	6.0	---
TOTAL	462.6	244.4	491.8	274.4	311.0	660.1	351.0	1552	836.8	777.9	520.9	294.8
MEAN	14.9	8.15	15.9	8.85	11.1	21.3	11.7	50.1	27.9	25.1	16.8	9.83
MAX	50	33	229	66	46	145	40	290	137	164	80	55
MIN	6.4	3.9	3.6	2.2	4.6	4.6	6.2	11	7.6	8.6	6.0	4.7
CFSM	3.76	2.06	4.02	2.24	2.80	5.38	2.96	12.7	7.05	6.34	4.24	2.48
IN.	4.34	2.30	4.62	2.58	2.92	6.20	3.30	14.58	7.86	7.31	4.89	2.77
AC-FT	918	485	975	544	617	1310	696	3080	1660	1540	1030	585

CAL YR 1980 TOTAL 4482.1 MEAN 12.2 MAX 233 MIN 1.5 CFSM 3.08 IN 42.09 AC-FT 8890
WTR YR 1981 TOTAL 6777.7 MEAN 18.6 MAX 290 MIN 2.2 CFSM 4.70 IN 63.65 AC-FT 13440

50067000 RIO SABANA AT SABANA, PR--Continued

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	13	17	6.9	29	10	23	3.0	1.9	26	6.5	5.7	5.3
2	6.0	11	13	24	15	8.6	3.7	1.8	59	5.5	6.7	22
3	6.4	6.5	39	37	93	6.6	5.9	1.9	27	6.0	7.9	5.1
4	5.1	11	8.0	25	12	6.0	3.9	22	24	5.9	4.3	4.5
5	5.5	7.6	5.6	19	142	6.1	30	17	25	8.0	8.7	3.8
6	11	5.6	9.8	17	32	6.3	4.1	33	18	5.1	8.4	6.3
7	5.4	5.1	26	16	27	6.0	3.7	8.8	49	4.4	5.3	4.2
8	3.7	19	60	15	18	5.4	4.9	3.9	23	5.4	3.5	3.0
9	3.6	152	8.3	13	12	6.6	2.8	261	17	27	3.1	10
10	3.9	6.6	7.6	13	8.7	6.5	2.7	681	18	11	4.1	3.5
11	4.2	3.1	270	12	16	6.1	2.5	62	19	4.7	4.0	3.7
12	3.4	2.1	270	11	29	7.3	2.3	138	16	3.3	4.3	126
13	2.9	12	65	11	15	6.9	2.2	74	15	3.2	16	127
14	2.9	8.9	210	10	23	5.1	2.6	46	14	2.6	7.0	13
15	9.5	8.2	35	11	28	5.1	2.7	24	18	2.3	15	7.5
16	4.3	8.2	22	10	13	5.2	4.6	20	15	2.3	6.2	5.9
17	47	7.9	17	9.6	12	4.6	6.6	18	10	2.1	3.8	5.1
18	14	29	48	9.7	12	4.7	3.7	16	9.6	2.2	5.0	5.0
19	73	19	21	8.9	8.6	4.2	2.5	16	10	9.7	3.5	4.2
20	12	9.6	16	8.4	9.1	4.0	2.3	16	11	5.1	3.1	4.7
21	7.2	5.8	19	8.2	8.3	3.7	2.3	55	9.0	6.7	2.8	4.2
22	13	5.1	20	7.4	7.2	3.6	2.3	53	9.5	30	4.7	10
23	6.9	5.2	13	7.2	7.7	3.6	2.3	27	8.1	6.6	12	4.7
24	4.8	4.9	12	7.1	7.1	3.3	2.1	18	7.8	5.9	7.9	5.9
25	4.4	4.7	12	6.9	6.7	3.7	2.1	15	7.4	10	3.2	10
26	7.9	5.8	24	6.5	6.5	4.0	2.2	14	6.9	82	3.2	5.9
27	5.2	7.2	355	8.6	7.2	5.0	2.2	27	6.7	16	2.6	13
28	38	4.8	148	5.9	19	3.5	3.9	105	6.3	6.6	3.3	20
29	19	4.8	96	5.8	---	3.1	2.5	157	6.5	9.3	27	10
30	15	4.3	84	5.9	---	4.3	2.0	29	13	15	8.1	5.1
31	15	---	46	11	---	3.3	---	20	---	6.3	15	---
TOTAL	374.0	402.0	1987.2	390.1	605.1	175.4	120.6	1982.3	504.8	316.7	215.4	458.6
MEAN	12.1	13.4	64.1	12.6	21.6	5.66	4.02	63.9	16.8	10.2	6.95	15.3
MAX	73	152	355	37	142	23	30	681	59	82	27	127
MIN	2.9	2.1	5.6	5.8	6.5	3.1	2.0	1.8	6.3	2.1	2.6	3.0
CFSM	3.06	3.38	16.2	3.18	5.46	1.43	1.02	16.1	4.24	2.58	1.76	3.86
IN.	3.31	3.78	18.66	3.66	5.68	1.65	1.13	18.62	4.74	2.97	2.02	4.31
AC-FT	742	797	3940	774	1200	348	239	3930	1000	628	427	910
CAL YR 1981	TOTAL	8342.1	MEAN 22.9	MAX 355	MIN 2.1	CFSM 5.78	IN 78.35	AC-FT 16550				
WTR YR 1982	TOTAL	7532.2	MEAN 20.6	MAX 681	MIN 1.8	CFSM 5.20	IN 70.74	AC-FT 14940				

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO SEPTEMBER 1982

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPEC- IFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)
19...	1307	19.0	97	26.5
AUG, 1981				
20...	950	51.0	101	24.5
SEP				
24...	1403	6.0	101	28.0
OCT				
15...	925	6.8	125	24.5
NOV				
25...	1434	4.9	115	27.0
MAR, 1982				
10...	1403	6.6	95	24.0
APR				
13...	1010	2.4	121	24.0
MAY				
11...	1020	25.0	82	23.5
JUN				
10...	931	21.0	69	25.0
SEP				
9...	1115	27.0	80	25.0

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 DISCHARGES.--20 years (1962-81), 68.7 cu ft/s (1.946 cu m/s), 62.61 in/yr (1.590 mm/yr), 49,800 acre-ft/yr (61.4 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).
--21 years (1962-82), 69.0 cu ft/s (1.954 cu m/s), 62.89 in/yr (1.597 mm/yr), 50,000 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 WATER YEARS 1981-82.--Peak discharges above base of 3,500 cu ft/s (99.1 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)	(ft) (m)
May 4, 1981	1445	*7,850 222	10.94 3.334	Dec. 27, 1981	1315	*10,600 300	12.57 3.831
May 19, 1981	2045	5,630 159	9.45 2.880	Feb. 3, 1982	1045	4,240 120	8.38 2.554
May 21, 1981	1315	4,270 121	8.40 2.560	May 9, 1982	2300	6,690 189	10.19 3.106
May 26, 1981	1500	5,330 151	9.23 2.813	May 28, 1982	1400	5,030 142	9.00 2.743
Nov. 9, 1981	0815	4,080 116	8.24 2.512	Sept. 12, 1982	2215	3,910 111	8.10 2.469
Dec. 8, 1981	0100	4,770 135	8.80 2.682				

Minimum discharges, 6.2 cu ft/s (0.176 cu m/s) Mar. 21, 1981; 3.4 cu ft/s (0.096 cu m/s) May 3, 1982.

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	60	38	17	21	19	12	23	163	298	140	36	19
2	50	70	14	17	21	11	30	102	345	41	27	37
3	100	40	15	15	64	9.8	23	230	144	41	24	22
4	100	67	12	14	22	30	55	659	344	266	25	18
5	400	39	33	14	14	478	72	138	700	108	23	16
6	200	25	94	12	26	23	37	55	100	40	22	15
7	250	22	361	12	14	15	86	45	80	44	113	22
8	106	27	69	11	20	18	64	38	60	52	24	56
9	66	25	28	13	20	14	66	51	50	54	35	31
10	68	27	22	9.6	25	13	75	121	40	45	427	17
11	56	25	19	12	23	14	47	55	35	58	52	18
12	46	22	23	15	14	11	34	47	30	40	267	44
13	40	17	24	9.3	20	11	28	103	50	32	289	40
14	39	16	110	8.8	234	9.7	25	39	40	49	59	32
15	372	16	31	11	318	9.5	27	34	37	61	40	16
16	63	35	22	15	131	9.9	155	39	30	33	83	15
17	46	22	32	8.9	54	8.3	66	37	30	546	44	19
18	37	16	31	8.1	153	7.6	48	111	34	67	41	26
19	77	15	20	53	40	7.6	29	792	47	93	127	37
20	53	23	22	23	29	7.5	24	221	33	475	57	50
21	36	58	34	13	77	218	41	519	38	82	47	25
22	35	35	26	12	36	40	70	82	31	51	66	30
23	50	74	43	12	22	34	90	187	51	53	250	17
24	57	24	61	9.4	19	15	42	59	36	229	46	14
25	73	37	32	168	17	12	38	279	26	97	35	13
26	43	27	63	25	18	20	55	447	22	62	30	23
27	37	30	28	199	16	77	45	88	21	47	26	19
28	27	23	21	35	14	90	31	76	349	41	29	12
29	25	15	62	18	---	191	25	48	48	35	23	11
30	92	13	23	16	---	45	101	68	261	41	21	28
31	36	---	24	36	---	23	---	658	---	48	21	---
TOTAL	2740	923	1416	846.1	1480	1484.9	1552	5591	3410	3071	2409	742
MEAN	88.4	30.8	45.7	27.3	52.9	47.9	51.7	180	114	99.1	77.7	24.7
MAX	400	74	361	199	318	478	155	792	700	546	427	56
MIN	25	13	12	8.1	14	7.5	23	34	21	32	21	11
CFSM	5.93	2.07	3.07	1.83	3.55	3.22	3.47	12.1	7.65	6.65	5.22	1.66
IN.	6.84	2.30	3.54	2.11	3.69	3.71	3.87	13.96	8.51	7.67	6.01	1.85
AC-FT	5430	1830	2810	1680	2940	2950	3080	11090	6760	6090	4780	1470

CAL YR 1980 TOTAL 19526.6 MEAN 53.4 MAX 1080 MIN 3.4 CFSM 3.58 IN 48.75 AC-FT 38730
WTR YR 1981 TOTAL 25665.0 MEAN 70.3 MAX 792 MIN 7.5 CFSM 4.72 IN 64.07 AC-FT 50910

RIO FAJARDO BASIN

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50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

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	51	94	26	131	31	70	10	4.8	77	25	29	30		
2	44	49	53	133	44	30	11	4.3	266	19	44	332		
3	29	24	158	86	474	22	15	3.9	77	18	36	33		
4	26	112	27	105	93	20	13	125	180	17	25	26		
5	23	33	17	61	354	19	85	52	84	35	24	20		
6	29	21	22	57	187	19	14	192	50	27	28	38		
7	14	18	182	55	59	18	14	32	123	20	20	34		
8	15	18	393	45	41	19	16	14	53	17	17	28		
9	19	506	33	43	34	24	8.6	487	41	82	15	81		
10	15	44	55	39	31	25	7.6	851	38	64	26	31		
11	17	25	174	36	94	19	6.7	231	34	27	23	27		
12	11	21	466	34	107	31	6.5	495	32	20	20	577		
13	9.7	89	296	31	51	26	6.4	124	29	17	210	795		
14	9.1	23	918	29	73	26	6.9	213	29	16	40	88		
15	40	17	293	31	156	17	6.3	78	30	14	72	46		
16	49	16	87	30	51	19	6.2	49	29	16	28	34		
17	135	15	59	28	46	16	15	40	25	19	21	27		
18	83	83	318	27	36	16	12	32	23	30	43	24		
19	429	129	84	26	30	14	7.7	27	24	239	20	20		
20	50	33	55	23	32	13	6.6	25	29	51	18	19		
21	70	19	87	22	26	13	6.1	229	23	71	16	17		
22	119	16	114	22	24	12	6.4	234	22	301	39	53		
23	41	17	47	21	44	12	6.4	161	22	50	57	23		
24	25	21	41	19	25	11	5.8	54	19	75	53	25		
25	21	16	50	18	22	12	5.3	40	22	105	20	42		
26	32	35	245	18	21	19	5.2	33	18	327	17	25		
27	22	37	1240	52	21	24	5.0	126	17	91	21	87		
28	75	15	559	19	45	13	17	405	16	44	52	135		
29	64	14	386	17	---	12	8.2	392	17	46	203	41		
30	83	13	314	16	---	11	5.7	106	51	85	40	26		
31	82	---	196	60	---	11	---	59	---	36	80	---		
TOTAL	1731.8	1573	6995	1334	2252	613	345.6	4919.0	1500	2004	1357	2784		
MEAN	55.9	52.4	226	43.0	80.4	19.8	11.5	159	50.0	64.6	43.8	92.8		
MAX	429	506	1240	133	474	70	85	851	266	327	210	795		
MIN	9.1	13	17	16	21	11	5.0	3.9	16	14	15	17		
CFSM	3.75	3.52	15.2	2.89	5.40	1.33	.77	10.7	3.36	4.34	2.94	6.23		
IN	4.32	3.93	17.46	3.33	5.62	1.53	.86	12.28	3.74	5.00	3.39	6.95		
AC-FT	3440	3120	13870	2650	4470	1220	685	9760	2980	3970	2690	5520		
CAL YR 1981	TOTAL	30885.8	MEAN	84.6	MAX	1240	MIN	7.5	CFSM	5.68	IN	77.11	AC-FT	61260
WTR YR 1982	TOTAL	27408.4	MEAN	75.1	MAX	1240	MIN	3.9	CFSM	5.04	IN	68.42	AC-FT	54360

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1981 to September 1982 (discontinued).
pH: October 1981 to September 1982 (discontinued).
WATER TEMPERATURE: October 1981 to September 1982 (discontinued).
DISSOLVED OXYGEN: October 1981 to September 1982 (discontinued).

INSTRUMENTATION.--Water-quality monitor since October 1981.

REMARKS.--Interruptions in the record are due to power failure or malfunctions of the instruments. Extremes for dissolved oxygen are not published because record is considered incomplete due to missing data.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 146 micromhos April 7, 1982; minimum, 13 micromhos September 13, 1982.
pH: Maximum, 9.1 units April 14, 1982; minimum daily, 6.3 units December 27, 1981.
WATER TEMPERATURES: Maximum, 35.5°C November 8, 1981; minimum, 21.5°C February 25, 1982.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 146 micromhos April 7, 1982; minimum, 13 micromhos September 13, 1982.
pH: Maximum, 9.1 units April 14, 1982; minimum daily, 6.3 units December 27, 1981.
WATER TEMPERATURES: Maximum, 35.5°C November 8, 1981; minimum, 21.5°C February 25, 1982.

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

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, TOTAL, IMMED. PER 100 ML	COLI- FORM, FECAL, 0.7 UM-HF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)
OCT , 1980												
07...	1200	94	70	6.0	25.0	7.1	8.0	--	64000	24000	20000	15
NOV												
13...	1215	16	132	7.8	29.5	.50	8.7	--	2800	200	110	31
DEC												
10...	1510	24	120	7.4	25.0	1.0	8.5	--	64000	K160	150	--
JAN , 1981												
15...	1245	11	136	7.4	26.5	.60	9.0	--	8000	K170	54	4
FEB												
04...	1315	23	110	7.1	25.0	1.5	8.8	--	K160	K170	78	--
MAR												
09...	1440	15	116	7.3	26.5	1.4	8.8	--	270	80	72	33
APR												
07...	1140	345	98	7.2	22.5	5.5	9.0	--	22000	5000	510	--
MAY												
05...	1645	59	120	7.3	25.0	8.7	8.0	99	--	K12000	2800	22
JUN												
15...	1645	37	112	8.0	30.0	2.5	7.8	105	K13000	510	430	--
JUL												
15...	1030	37	106	7.4	27.0	20	8.3	104	--	36000	30000	30
AUG												
14...	1155	62	112	7.3	28.0	6.8	8.0	104	--	K1400	350	--
SEP												
09...	1445	23	115	--	29.5	1.5	8.5	112	12000	440	200	26
OCT												
16...	1100	30	118	7.1	27.5	26	8.0	102	K14000	3400	4700	--
NOV												
02...	1415	36	100	7.4	26.0	17	8.2	102	5400	2400	2900	--
12...	1050	25	121	7.2	25.5	110	6.3	79	--	--	--	--
DEC												
10...	1240	24	110	7.4	26.0	2.9	8.5	105	750	260	340	30
JAN , 1982												
06...	1155	56	118	7.1	23.5	3.1	8.0	93	K1100	280	350	--
FEB												
01...	1200	23	118	7.8	25.5	2.8	9.0	111	440	210	--	31
MAR												
01...	1540	94	88	8.0	26.0	24	8.5	106	4500	2400	--	--
APR												
05...	1200	47	91	8.2	26.0	2.6	8.5	105	580	K910	280	--
MAY												
08...	1200	5.3	144	7.8	27.0	2.8	8.2	104	500	340	390	--
JUN , 1982												
03...	1100	87	103	7.9	26.0	20	8.0	99	2600	K1900	390	25
JUL												
07...	1100	18	130	8.1	28.0	1.6	8.6	110	310	K170	--	--
AUG												
10...	1215	16	128	7.8	29.5	1.1	10.9	144	K91	K100	91	32
SEP												
03...	1140	34	101	7.7	28.0	--	8.2	106	K15000	320	--	--

K = non-ideal count.

RIO FAJARDO BASIN

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50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

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

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)	
OCT , 1980												
07...	0	3.0	1.8	5.8	.7	2.1	15	4.6	6.1	.1	14	
NOV												
13...	0	6.3	3.7	12	.9	.9	36	2.8	13	.2	27	
DEC												
10...	--	--	--	--	--	--	33	--	12	--	--	
JAN , 1981												
15...	36	7.7	4.0	11	.8	1.1	32	3.4	13	.1	28	
FEB												
04...	--	--	--	--	--	--	30	--	13	--	--	
MAR												
09...	0	7.1	3.7	10	.8	1.1	35	3.4	14	.1	29	
APR												
07...	--	--	--	--	--	--	--	--	--	--	--	
MAY												
05...	6	5.0	2.3	7.8	.7	1.4	23	4.0	9.9	<.1	21	
JUN												
15...	--	--	--	--	--	--	30	--	11	--	--	
JUL												
15...	0	6.7	3.3	11	.9	1.3	30	3.4	11	<.1	24	
AUG												
14...	--	--	--	--	--	--	30	--	8.9	--	--	
SEP												
09...	0	5.6	2.9	10	.9	1.0	46	3.2	11	<.1	20	
OCT												
16...	--	--	--	--	--	--	28	--	10	--	--	
NOV												
02...	--	--	--	--	--	--	--	--	9.0	--	--	
12...	--	--	--	--	--	--	36	--	11	--	--	
DEC												
10...	0	6.6	3.4	10	.9	1.2	34	3.4	11	<.1	21	
JAN , 1982												
06...	--	--	--	--	--	--	33	--	9.9	--	--	
FEB												
01...	0	6.8	3.5	11	.9	1.1	34	4.0	11	<.1	21	
MAR												
01...	--	--	--	--	--	--	--	--	9.3	--	--	
APR												
05...	--	--	--	--	--	.8	20	3.9	9.4	<.1	--	
MAY												
04...	--	--	--	--	--	--	34	--	12	--	--	
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)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
JUN , 1982												
03...	0	5.5	2.8	8.1	.8	.9	29	4.0	8.2	<.1	21	70
JUL												
07...	--	--	--	--	--	--	38	--	11	--	--	--
AUG												
10...	0	6.7	3.6	12	1.0	.9	39	2.0	11	.2	26	89
SEP												
03...	--	--	--	--	--	--	28	--	9.0	--	--	--

RIO FAJARDO BASIN

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

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

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	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, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)
OCT , 1980											
07...	51	47	12.9	--	.10	.050	.15	.15	.120	.100	1.1
NOV											
13...	88	89	3.8	4	.25	.000	.25	.25	.000	.000	.28
DEC											
10...	--	--	--	3	.39	.000	.39	--	.000	--	.04
JAN , 1981											
15...	88	94	2.6	11	1.0	.010	1.0	.37	.060	.060	.41
FEB											
04...	--	--	--	9	.24	.000	.24	--	.020	--	.09
MAR											
09...	95	91	3.9	7	.31	.010	.32	.33	.030	.010	.22
APR											
07...	--	--	--	16	.15	.010	.16	--	.050	--	.17
MAY											
05...	64	66	10.2	11	.43	.010	.44	.44	.040	.030	.35
JUN											
15...	--	--	--	11	.06	.010	.07	--	.010	--	--
JUL											
15...	85	82	8.5	34	--	--	--	.19	.010	.010	.32
AUG											
14...	--	--	--	6	--	<.010	.25	--	.030	--	.14
SEP											
09...	82	82	5.1	--	--	--	.22	.23	.020	.020	.25
OCT											
16...	--	--	--	8	.37	.020	.39	.37	.070	.060	.18
NOV											
02...	--	--	--	22	--	<.010	.27	--	.020	--	.28
12...	--	--	--	206	--	--	--	--	--	--	--
DEC											
10...	104	79	6.8	4	--	<.010	.41	.41	.030	.020	.17
JAN , 1982											
06...	--	--	--	2	--	<.010	.28	--	<.010	--	--
FEB											
01...	85	80	5.2	4	--	<.010	.28	.27	<.010	<.010	--
MAR											
01...	--	--	--	13	--	<.010	.17	--	.020	--	.13
APR											
05...	63	--	8.0	6	--	<.010	.15	.12	.030	.020	.45
MAY											
04...	--	--	--	2	--	<.010	<.10	--	.040	--	.38
	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, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA ORGANIC TOTAL (MG/L AS N)
JUN , 1982											
03...	69	16.4	--	.19	.010	.20	.24	.030	<.010	--	<.10
JUL											
07...	--	--	3	--	<.010	.18	--	.080	--	.12	.20
AUG											
10...	85	3.8	--	--	<.010	<.10	<.10	<.010	<.010	--	.30
SEP											
03...	--	--	4	.18	<.010	.18	--	.030	--	.47	--

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

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

DATE	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN DIS- SOLVED (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	
OCT , 1980												
07...	.76	1.20	.86	1.4	1.0	6.0	.260	.040	--	--	<1	
NOV												
13...	.27	.28	.27	.53	.52	2.3	.010	.010	--	--	--	
DEC												
10...	--	.04	--	.43	--	1.9	.020	--	--	--	--	
JAN , 1981												
15...	.04	.46	.10	1.5	.05	6.5	.050	.010	--	--	--	
FEB												
04...	--	.11	--	.35	--	1.6	.030	--	--	--	--	
MAR												
09...	.22	.23	.23	.55	.56	2.4	.040	.040	--	--	<1	
APR												
07...	--	--	--	.38	--	1.7	.030	--	--	--	--	
MAY												
05...	.27	.39	.30	.83	.82	3.7	.030	.010	--	--	<1	
JUN												
15...	--	--	.18	.25	--	1.1	.020	--	--	--	--	
JUL												
15...	.31	.33	--	.52	--	--	--	--	--	--	--	
AUG												
14...	--	.17	--	.42	--	1.9	.020	--	--	--	--	
SEP												
09...	.25	.27	.27	.49	.50	2.2	<.010	<.010	--	--	1	
OCT												
16...	--	.25	--	.64	--	2.8	.040	.010	--	<.010	--	
NOV												
02...	--	.30	--	.57	--	2.5	.230	--	.040	--	--	
12...	--	--	--	--	--	--	--	--	--	--	--	
DEC												
10...	--	.20	--	.61	--	2.7	.030	.010	<.010	<.010	--	
JAN , 1982												
06...	--	.29	--	.57	--	2.5	.020	--	.010	--	--	
FEB												
01...	--	<.10	--	--	--	--	.050	.040	.060	.040	1	
MAR												
01...	--	.15	--	.32	--	1.4	.030	--	.020	--	--	
APR												
05...	--	.48	--	.63	--	2.8	.060	.020	.020	<.010	--	
MAY												
04...	--	.42	--	--	--	--	.030	--	<.010	--	--	
DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)
JUN , 1982												
03...	--	.030	.020	.020	.010	1	1	<100	33	2	2	10
JUL												
07...	1.7	.050	--	<.010	--	--	--	--	--	--	--	--
AUG												
10...	--	.030	<.010	.020	<.010	1	1	100	33	1	1	10
SEP												
03...	3.0	.040	--	.020	--	--	--	--	--	--	--	--

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

[illegible]

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

[illegible]

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

	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)	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT , 1980											
07...	<1	<1	<1	90	30	30	--	--	--	759	193
NOV											
13...	--	--	--	--	--	120	2.5	--	--	0	.00
DEC											
10...	--	--	--	--	--	--	1.7	--	--	1	.06
JAN , 1981											
15...	--	--	--	--	--	--	2.5	--	--	5	.15
FEB											
04...	--	--	--	--	--	--	--	--	--	6	.37
MAR											
09...	<1	1	<1	380	10	--	--	2.4	--	0	.00
APR											
07...	--	--	--	--	--	--	--	2.3	--	--	--
MAY											
05...	<1	<1	<1	20	<4	--	--	6.6	--	19	3.0
JUN											
15...	--	--	--	--	--	--	1.7	--	--	2	.20
JUL											
15...	--	--	--	--	--	1500	--	--	--	28	2.8
AUG											
14...	--	--	--	--	--	--	2.6	--	--	3	.50
SEP											
09...	<1	<1	<1	30	<10	150	--	2.8	.3	1	.06
OCT											
16...	--	--	--	--	--	--	--	--	--	10	.81
NOV											
02...	--	--	--	--	--	--	3.0	--	--	15	1.5
12...	--	--	--	--	--	--	--	--	--	178	12
DEC											
10...	--	--	--	--	--	--	1.2	--	--	7	.46
JAN , 1982											
06...	--	--	--	--	--	--	1.3	--	--	7	1.1
FEB											
01...	<1	<1	<1	40	<4	--	1.4	--	--	16	.98
MAR											
01...	--	--	--	--	--	--	2.0	--	--	5	1.3
APR											
05...	--	--	--	--	--	--	3.3	--	--	0	.00
MAY											
04...	--	--	--	--	--	--	1.5	--	--	--	--

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

BENTHIC INVERTEBRATE ANALYSES, OCTOBER 1980 TO SEPTEMBER 1982

DATE TIME	NOV 13, 80 1215	DEC 10, 80 1510	JAN 15, 81 1245	JUL 30, 81 1100	AUG 27, 81 0850	SEP 18, 81 1100
TOTAL COUNT	65	46	73	46	39	15
DIVERSITY: PHYLUM	0.3	0.9	0.9	0.3	1.0	0.8
...CLASS	0.3	1.1	1.1	0.3	1.3	0.8
...ORDER	0.8	1.2	1.3	1.0	2.0	0.8
...FAMILY	0.8	1.2	1.5	1.2	2.4	0.8
...GENUS	0.8	1.3	1.5	2.5	2.6	0.8
...GENUS-INSECTA	1.0	2.0	1.8	2.3	2.5	0.0
ORGANISM	COUNT	COUNT	COUNT	COUNT	COUNT	COUNT
ANNELIDA						
...OLIGOCHAETA						
...PLESIOPORA						
...TUBIFICIDAE						
...UNKNOWN GENUS	--	--	--	--	--	--
...PROSOPORA						
...UNKNOWN	--	--	--	--	--	--
ARTHROPODA (ARTHROPODS)						
...CRUSTACEA						
...DECAPODA						
...PALAEMONIDAE						
...MACROBRACHIUM	--	10	--	--	--	--
...PALAEMONETES	1	--	6	--	3	4
...INSECTA						
...COLEOPTERA						
...ELMIDAE						
...STENELNIS	--	--	--	--	--	--
...DIPTERA						
...CHIRONOMIDAE						
...ABLABESMYIA	--	--	2	5	3	--
...CHIRONOMUS	--	--	2	--	--	--
...CONCHAPELOPIA, ARCTO, RHEO	--	1	--	--	--	--
...CRICOTOPUS	--	--	--	4	--	--
...EUKIEFFERIELLA	--	--	--	--	--	--
...LABRUNDINIA	--	--	--	3	--	--
...LARSIA	--	--	--	--	--	--
...LINNOCHIRONOMUS	--	1	--	1	--	--
...PARAMERINA	--	--	--	--	--	--
...PENTANEURA	--	1	--	--	--	--
...POLYPEDILUM	1	--	--	21	4	--
...TANYTARSUS	--	--	--	--	--	--
...THIENEMANNIELLA	--	--	--	--	--	--
...EMPIDIDAE						
...UNKNOWN GENUS	--	--	--	--	--	--
...EPHEMEROPTERA						
...BAETIDAE						
...BAETIS	--	1	2	--	--	--
...UNKNOWN GENUS	--	--	--	--	1	--
...CAENIDAE						
...CAENIS	--	--	9	4	5	--
...EPHEMERELLIDAE						
...EPHEMERELLA	--	--	--	--	--	--
...HEPTAGENIIDAE						
...STENONEMA	--	--	--	--	--	--
...LEPTOPHLEBIIDAE						
...HERMANELLOPSIS	--	--	--	--	5	--
...LEPTOPHLEBIA	--	--	1	5	--	--
...UNKNOWN GENUS	--	--	--	--	--	--
...LEPIDOPTERA						
...PYRALIDIDAE						
...PARARGYACTIS	--	--	--	--	--	--
...ODONATA						
...COENAGRIONIDAE						
...ENALLAGMA	--	--	--	--	1	--
...UNKNOWN GENUS	1	--	--	--	--	--
...TRICHOPTERA						
...CALAMOCERATIDAE						
...PHYLLOICUS	--	--	--	--	1	--
...HYDROPTILIDAE						
...HYDROPTILA	--	--	--	--	--	--
...OXYETHIRA	--	--	--	--	--	--
MOLLUSCA (MOLLUSCS)						
...GASTROPODA						
...BASOMMATOPHORA						
...ANCYLIDAE						
...FERRISSIA	6	--	--	--	--	--
...MESOGASTROPODA						
...PLEUROCIDAE						
...GONIOBASIS	--	--	--	--	--	11
...PLEUROCERA	56	32	51	3	16	--
PLATYHELMINTHES (FLATWORMS)						
...TURBELLARIA						
...TRICLADIDA						
...PLANARIIDAE						
...UNKNOWN GENUS	--	--	--	--	--	--

RIO FAJARDO BASIN

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

BENTHIC INVERTEBRATE ANALYSES, OCTOBER 1980 TO SEPTEMBER 1982

DATE TIME	OCT 28,81 0915	NOV 2,81 1500	DEC 10,81 1240	JAN 6,82 1245	FEB 1,82 1200	MAR 15,82 1045
TOTAL COUNT	3	14	28	1	11	13
DIVERSITY: PHYLUM	0.9	0.4	0.6	0.0	0.7	0.0
...CLASS	0.9	0.4	0.7	0.0	1.3	0.0
...ORDER	0.9	0.4	0.7	0.0	1.3	1.3
...FAMILY	0.9	0.4	0.7	0.0	1.3	1.3
...GENUS	0.9	0.4	0.7	0.0	1.3	2.1
...GENUS-INSECTA	0.0	0.0	0.0	0.0	0.0	1.8
ORGANISM	COUNT	COUNT	COUNT	COUNT	COUNT	COUNT
ANNELIDA						
...OLIGOCHAETA						
...PLESIOPORA						
...TUBIFICIDAE						
...UNKNOWN GENUS	--	--	--	--	--	--
...PROSOPORA						
...UNKNOWN	--	--	--	--	--	--
ARTHROPODA (ARTHROPODS)						
...CRUSTACEA						
...DECAPODA						
...PALAEMONIDAE						
...MACROBRACHIUM			3			
...PALAEMONETES	1	--	--	--	7	3
...INSECTA						
...COLEOPTERA						
...ELMIDAE						
...STENELMIS	--	1	1	--	--	--
...DIPTERA						
...CHIRONOMIDAE						
...ABLABESMYIA	--	--	--	--	--	--
...CHIRONOMUS	--	--	--	--	--	--
...CONCHAPELOPIA, ARCTO, RHEO	--	--	--	--	--	--
...CRICOTOPIUS	--	--	--	--	--	5
...EUKIEFFERIELLA	--	--	--	--	--	--
...LABRUNDINIA	--	--	--	--	--	--
...LARSIA	--	--	--	--	--	1
...LIMNOCHIRONOMUS	--	--	--	--	--	--
...PARAMEIRIA	--	--	--	1	--	--
...PENTANEURA	--	--	--	--	--	2
...POLYPEDILUM	--	--	--	--	--	--
...TANYTARSUS	--	--	--	--	2	--
...THIENEMANNIELLA	--	--	--	--	--	--
...ENPIDIDAE						
...UNKNOWN GENUS	--	--	--	--	--	--
...EPHENEROPTERA						
...BAETIDAE						
...BAETIS	--	--	--	--	--	--
...UNKNOWN GENUS	--	--	--	--	--	--
...CAENIDAE						
...CAENIS	--	--	--	--	--	--
...EPHMERELLIDAE						
...EPHMERELLA	--	--	--	--	--	--
...NEPTAGENTIDAE						
...STENONEMA	--	--	--	--	--	2
...LEPTOPHLEBIIDAE						
...HERMAMELLOPSIS	--	--	--	--	--	--
...LEPTOPHLEBIA	--	--	--	--	--	--
...UNKNOWN GENUS	--	--	--	--	--	--
...LEPIDOPTERA						
...PYRALIDIDAE						
...PARARGYACTIS	--	--	--	--	--	--
...ODONATA						
...COENAGRIONIDAE						
...ENALLAGNA	--	--	--	--	--	--
...UNKNOWN GENUS	--	--	--	--	--	--
...TRICHOPTERA						
...CALAMOCERATIDAE						
...PHYLLOICUS	--	--	--	--	--	--
...HYDROPTILIDAE						
...HYDROPTILA	--	--	--	--	--	--
...OXYETHIRA	--	--	--	--	--	--
MOLLUSCA (MOLLUSCS)						
...GASTROPODA						
...BASOMMATOPHORA						
...ANCYLIDAE						
...FERRISSIA	--	--	--	--	--	--
...MESOGASTROPODA						
...PLEUROCERIDAE						
...GONIOBASIS	--	--	--	--	2	--
...PLEUROCERA	2	13	24	--	--	--
PLATYHELMINTHES (FLATWORMS)						
...TURBELLARIA						
...TRICLADIDA						
...PLANARIIDAE						
...UNKNOWN GENUS	--	--	--	--	--	--

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

BENTHIC INVERTEBRATE ANALYSES, OCTOBER 1980 TO SEPTEMBER 1982

DATE TIME	APR 5,82 1200	MAY 4,82 1200	JUN 3,82 1100	JUL 7,82 1100	AUG 10,82 1215	SEP 3,82 1140
TOTAL COUNT	9	107	5	39	142	13
DIVERSITY: PHYLUM	0.9	0.4	0.0	0.3	0.4	0.8
...CLASS	1.5	0.4	0.0	0.3	0.4	0.8
...ORDER	2.2	1.7	0.0	1.2	0.4	0.8
...FAMILY	2.2	1.9	0.0	1.2	0.4	1.0
...GENUS	2.2	2.6	1.0	1.7	0.0	1.0
...GENUS-INSECTA	1.5	2.3	0.0	1.5	1.0	0.9
ORGANISM	COUNT	COUNT	COUNT	COUNT	COUNT	COUNT
ANNELIDA						
...OLIGOCHAETA						
...PLESIOPODA						
...TUBIFICIDAE						
...UNKNOWN GENUS	--	1	--	--	--	--
...PROSOPORA						
...UNKNOWN	--	--	--	--	6	--
ARTHROPODA (ARTHROPODS)						
...CRUSTACEA						
...DECAPODA						
...PALAEMONIDAE						
...MACROBRACHIUM	--	--	2	--	--	--
...PALAEMONETES	2	--	3	--	--	--
...INSECTA						
...COLEOPTERA						
...ELMIDAE						
...STENELMIS	--	--	--	--	1	--
...DIPTERA						
...CHIRONOMIDAE						
...ABLABESMYIA	2	--	--	--	--	--
...CHIRONOMUS	--	--	--	--	--	--
...CONCHAPELOPIA, ARCTO, RHEO	--	--	--	--	--	--
...CRICOTOPUS	--	16	--	17	1	--
...EUKIEFFERIELLA	--	4	--	--	--	--
...LABRUNDINIA	--	--	--	--	--	--
...LARSIA	--	--	--	--	--	--
...LIMNOCHIRONOMUS	--	--	--	--	--	--
...PARAMERINA	--	--	--	--	--	--
...PENTAMEURA	--	--	--	--	--	--
...POLYPEDILUM	--	--	--	--	--	--
...TANYTARSUS	--	--	--	--	--	--
...THIENEMANNIELLA	--	--	--	8	--	--
...ENPIDIDAE						
...UNKNOWN GENUS	--	4	--	--	--	--
...EPHEMEROPTERA						
...BAETIDAE						
...BAETIS	--	8	--	--	--	1
...UNKNOWN GENUS	--	--	--	--	--	--
...CAENIDAE						
...CAENIS	--	--	--	--	--	--
...EPHEMERELLIDAE						
...EPHEMERELLA	1	--	--	--	--	--
...HEPTAGENIIDAE						
...STENOHEMA	--	--	--	--	--	--
...LEPTOPHLEBIIDAE						
...HERMANELLOPSIS	--	--	--	--	--	2
...LEPTOPHLEBIA	--	--	--	--	--	--
...UNKNOWN GENUS	--	1	--	--	--	--
...LEPIDOPTERA						
...PYRALIDIDAE						
...PARARGYACTIS	--	4	--	--	--	--
...ODONATA						
...COENAGRIONIDAE						
...ENALLAGMA	--	--	--	--	--	--
...UNKNOWN GENUS	--	--	--	--	--	--
...TRICHOPTERA						
...CALAMOCERATIDAE						
...PHYLLOICUS	--	--	--	--	--	--
...HYDROPTILIDAE						
...HYDROPTILA	--	20	--	--	--	--
...OXYETHIRA	1	44	--	12	--	--
MOLLUSCA (MOLLUSCS)						
...GASTROPODA						
...BACONMATOPHORA						
...ANCYLIDAE						
...FERRISSIA	--	--	--	--	--	--
...MESOGASTROPODA						
...PLEUROCERIDAE						
...GONIOBASIS	--	--	--	--	--	--
...PLEUROCERA	3	1	--	2	134	10
PLATYHELMINTHES (FLATWORMS)						
...TURBELLARIA						
...TRICLADIDA						
...PLANARIIDAE						
...UNKNOWN GENUS	--	4	--	--	--	--

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1980 TO SEPTEMBER 1981

DATE TIME	OCT 7,80 1200	NOV 13,80 1215	JAN 15,81 1245	MAR 9,81 1440				
TOTAL CELLS /ML	30	120	540	470				
DIVERSITY: DIVISION	1.0	0.0	0.7	0.4				
CLASS	1.0	0.0	0.7	0.4				
ORDER	1.0	0.5	2.3	1.1				
FAMILY	1.0	1.1	2.7	1.1				
GENUS	1.0	1.1	3.0	1.1				
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)								
BACILLARIOPHYCEAE								
ACHNANTHALES								
ACHNANTHACEAE								
ACHNANTHES	--	-	--	-	180#	32	28	6
COCONEIS	--	-	--	-	29	5	--	-
BACILLARIALES								
NITZSCHIACEAE								
NITZSCHIA	--	-	14	13	44	8	--	-
EUPODISCALES								
COSCINODISCACEAE								
CYCLOTELLA	--	-	--	-	29	5	--	-
MELOSIRA	--	-	--	-	44	8	--	-
NAVICULALES								
CYMBELLACEAE								
CYMBELLA	--	-	--	-	15	3	--	-
GOMPHONEMACEAE								
GOMPHONEMA	--	-	87#	75	59	11	14	3
NAVICULACEAE								
NAVICULA	15#	50	14	13	73	14	--	-
CHLOROPHYTA (GREEN ALGAE)								
CHLOROPHYCEAE								
CHLOROCOCCALES								
OOCYSTACEAE								
ANKISTRODESMUS	--	-	--	-	--	-	--	-
SCENEDESMACEAE								
SCENEDESMUS	--	-	--	-	44	8	--	-
VOLVOCALES								
CHLAMYDOMONADACEAE								
CHLAMYDOMONAS	--	-	--	-	15	3	--	-
ZYGNEMATALES								
DESMIDIACEAE								
STAUSTRUM	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
CYANOPHYCEAE								
CHROOCOCCALES								
CHROOCOCCACEAE								
ANACYSTIS	--	-	--	-	15	3	69	15
OSCILLATORIALES								
OSCILLATORIA	--	-	--	-	--	-	360#	76
EUGLENOPHYTA (EUGLENOIDS)								
EUGLENOPHYCEAE								
EUGLENALES								
EUGLENACEAE								
TRACHELOMONAS	15#	50	--	-	--	-	--	-

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

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

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

PHYTOPLANKTON ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE TIME	MAY 5,81 1645	JUL 15,81 1030	SEP 9,81 1445			
TOTAL CELLS/ML	150	1500	150			
DIVERSITY: DIVISION	1.4	1.0	0.0			
...CLASS	1.4	1.0	0.0			
...ORDER	2.6	2.3	1.2			
...FAMILY	2.6	2.6	2.2			
...GENUS	2.6	2.7	2.2			
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)						
..BACILLARIOPHYCEAE						
...ACHNANTHALES						
....ACHNANTHACEAE						
....ACHNANTHES	15	10	94	6	15	10
....COCCONEIS	--	-	42	3	--	-
..BACILLARIALES						
...NITZSCHIACEAE						
....NITZSCHIA	15	10	430#	30	29#	20
...EUPODISCALES						
....COSCINODISCAEAE						
....CYCLOTELLA	--	-	42	3	--	-
....MELOSIRA	--	-	--	-	--	-
..NAVICULALES						
...CYMBELLACEAE						
....CYMBELLA	--	-	--	-	29#	20
...GOMPHONEMACEAE						
....GOMPHONEMA	--	-	150	11	44#	30
...NAVICULACEAE						
....NAVICULA	29#	20	240#	16	29#	20
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCOCCALES						
....DOCCYSTACEAE						
....ANKISTRODESMUS	44#	30	--	-	--	-
...SCENEDESMACEAE						
....SCENEDESMUS	--	-	--	-	--	-
...VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	15	10	42	3	--	-
...ZYGHEMATALES						
...DESMIDIACEAE						
....STAUROSTRUM	15	10	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHROOCOCCALES						
....CHROOCOCCACEAE						
....ANACYSTIS	15	10	70	5	--	-
...OSCILLATORIALES						
....OSCILLATORIACEAE						
....OSCILLATORIA	--	-	350#	24	--	-
EUGLENOPHYTA (EUGLENIIDS)						
..EUGLENOPHYCEAE						
...EUGLENALES						
....EUGLENACEAE						
....TRACHELONAS	--	-	--	-	--	-

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

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

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	102	69	88	111	70	104	118	98	106	92	82	88
2	98	70	85	103	69	88	113	91	93	92	78	86
3	98	65	94	115	105	110	90	67	77	100	90	95
4	97	85	93	117	48	102	103	89	96	95	82	90
5	106	78	98	120	98	111	108	100	104	104	94	99
6	81	77	79	127	117	122	107	101	104	105	98	101
7	103	95	99	132	122	127	106	56	84	104	98	100
8	103	98	103	130	125	128	87	39	68	107	100	104
9	106	89	99	119	56	72	104	83	95	107	99	104
10	105	91	100	107	84	98	104	78	96	109	102	105
11	106	99	102	121	105	114	93	65	81	112	105	109
12	109	101	106	138	112	119	93	46	73	113	109	111
13	113	106	110	120	68	93	85	55	70	113	107	111
14	113	109	111	116	98	108	80	57	67	114	107	112
15	113	91	103	120	113	116	84	58	72	114	108	112
16	---	---	---	124	115	120	94	86	90	114	108	111
17	---	---	---	125	118	121	100	93	97	114	109	111
18	---	---	---	124	65	105	99	59	80	117	111	114
19	---	---	---	100	62	81	93	74	87	118	110	115
20	---	---	---	101	69	89	102	91	97	119	112	116
21	114	68	86	111	99	106	108	86	97	121	115	118
22	100	60	83	114	105	110	93	76	85	120	115	118
23	104	79	96	115	106	111	104	89	99	120	115	117
24	111	103	108	111	103	108	107	102	105	121	117	120
25	117	110	113	116	109	113	108	93	101	123	117	120
26	138	90	107	122	92	108	100	63	78	123	118	120
27	111	98	105	105	87	97	77	31	51	121	103	111
28	109	75	89	113	106	110	76	56	66	123	111	117
29	100	63	89	116	112	114	87	58	76	---	---	---
30	100	70	89	119	112	115	80	63	72	---	---	---
31	107	73	91	---	---	---	87	66	77	---	---	---
MONTH	138	60	97	138	48	107	118	31	85	123	78	108
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	---	---	---	102	83	95	137	122	131	133	122	127
2	---	---	---	116	101	109	135	121	131	141	124	132
3	---	---	---	125	114	119	134	122	129	138	129	133
4	---	---	---	135	118	125	132	123	128	137	72	119
5	---	---	---	130	124	127	125	76	91	102	71	88
6	---	---	---	131	122	125	123	103	113	94	64	82
7	---	---	---	129	121	125	146	119	123	108	79	98
8	---	---	---	129	119	125	125	114	120	117	105	111
9	---	---	---	127	116	122	131	121	127	121	105	116
10	---	---	---	122	106	116	134	124	129	---	---	---
11	---	---	---	127	119	123	137	118	130	---	---	---
12	---	---	---	118	103	111	135	125	130	---	---	---
13	---	---	---	117	106	112	133	127	131	---	---	---
14	---	---	---	120	110	115	135	127	133	---	---	---
15	---	---	---	126	115	120	135	125	132	---	---	---
16	---	---	---	127	119	122	142	118	134	---	---	---
17	---	---	---	126	118	123	137	105	127	---	---	---
18	114	107	110	130	118	125	122	103	112	---	---	---
19	123	112	117	135	121	128	126	117	122	---	---	---
20	125	91	109	136	124	129	130	120	125	133	128	131
21	112	105	109	136	126	131	130	124	127	130	77	102
22	114	107	111	134	123	131	132	124	128	108	68	91
23	123	101	107	137	121	132	134	126	129	115	84	99
24	111	99	106	139	123	133	135	127	131	129	103	120
25	112	104	109	137	126	132	138	122	133	132	122	129
26	117	107	111	133	112	127	136	129	133	135	127	130
27	120	111	116	115	102	110	137	129	133	132	81	113
28	118	92	108	126	113	122	132	96	117	113	67	93
29	---	---	---	131	122	126	119	104	112	107	70	93
30	---	---	---	131	123	128	126	117	122	114	88	105
31	---	---	---	132	116	128	---	---	---	123	109	118
MONTH	125	91	110	139	83	122	146	76	125	141	64	111

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	124	107	116	119	101	110	120	107	114	96	77	86
2	113	73	98	126	109	118	116	94	103	85	36	63
3	120	99	113	126	117	122	103	97	100	95	75	87
4	120	82	106	128	116	123	116	101	108	102	89	96
5	116	87	105	125	99	110	120	105	112	112	97	104
6	126	115	121	119	103	111	127	101	108	111	80	103
7	124	48	88	122	105	114	120	105	112	105	79	93
8	94	68	82	120	115	118	122	110	117	107	96	103
9	101	90	94	---	---	---	124	114	119	103	75	87
10	108	96	101	---	---	---	123	87	113	104	84	95
11	109	99	103	---	---	---	113	86	102	110	97	104
12	110	102	106	123	113	117	117	108	111	106	28	87
13	110	104	107	126	116	120	---	---	---	60	27	45
14	112	106	109	128	116	122	---	---	---	90	60	80
15	112	102	108	128	116	124	---	---	---	101	86	94
16	112	106	109	130	119	125	109	100	103	107	92	100
17	115	104	111	120	110	116	115	100	107	111	91	102
18	119	110	115	118	96	115	110	76	93	112	97	106
19	120	112	116	85	38	63	109	95	104	115	102	108
20	114	104	109	96	68	81	115	106	110	112	103	106
21	120	106	113	93	65	79	117	111	114	113	103	109
22	118	111	115	81	43	63	115	80	96	111	84	100
23	122	109	116	92	69	81	101	71	87	107	89	99
24	124	110	118	---	---	---	96	70	80	115	96	104
25	122	110	116	---	---	---	108	92	101	106	84	97
26	122	111	117	91	37	66	114	101	108	110	84	98
27	126	110	121	98	55	82	115	94	110	106	70	90
28	129	115	123	109	95	102	95	70	83	99	64	84
29	129	119	124	111	86	105	88	39	65	107	67	92
30	117	81	100	90	76	83	86	68	77	113	91	104
31	---	---	---	111	93	104	87	55	74	---	---	---
MONTH	129	48	109	130	37	103	127	39	101	115	27	94
YEAR	146	27	106									

PH (STANDARD UNITS), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	7.8	7.3	7.5	7.3	7.0	7.1	8.2	6.7	7.2	6.9	6.8	6.9
2	7.9	7.3	7.5	7.1	6.8	6.9	7.7	7.0	7.2	6.9	6.6	6.8
3	8.0	7.3	7.6	7.6	7.0	7.2	7.2	6.9	7.0	6.9	6.5	6.6
4	8.2	7.3	7.6	7.4	6.7	7.0	7.4	6.9	7.1	7.0	6.9	6.9
5	8.1	7.3	7.6	7.2	6.9	7.0	7.8	7.0	7.3	7.1	6.9	7.0
6	7.4	7.3	7.3	7.4	7.1	7.2	8.0	7.1	7.3	7.2	7.0	7.1
7	8.2	7.3	7.6	7.5	7.1	7.3	7.3	6.8	7.0	7.3	7.0	7.1
8	8.0	7.3	7.5	7.3	7.2	7.2	6.9	6.5	6.7	7.4	7.0	7.1
9	8.2	7.3	7.6	7.3	6.7	7.0	7.1	6.6	6.9	7.5	7.0	7.2
10	7.9	7.3	7.5	7.2	7.0	7.1	7.2	6.9	7.0	7.6	7.1	7.2
11	8.2	7.3	7.6	7.4	7.0	7.2	7.1	6.9	7.0	7.9	7.1	7.3
12	8.0	7.3	7.5	7.4	6.6	7.3	6.9	6.6	6.8	8.1	7.0	7.4
13	8.0	7.3	7.5	7.5	7.3	7.3	6.9	6.6	6.7	8.4	7.1	7.4
14	7.8	7.3	7.5	7.5	7.2	7.3	6.9	6.5	6.7	8.3	7.1	7.4
15	7.7	7.3	7.5	7.6	7.2	7.4	6.9	6.5	6.8	8.2	7.1	7.4
16	---	---	---	7.6	7.3	7.4	7.0	6.8	6.9	8.3	7.1	7.4
17	---	---	---	7.6	7.3	7.4	7.1	6.9	7.0	8.2	7.1	7.4
18	---	---	---	7.7	7.1	7.4	7.2	6.8	7.0	8.0	7.1	7.5
19	---	---	---	7.5	7.1	7.2	7.1	6.9	7.0	7.9	7.1	7.3
20	---	---	---	7.5	7.0	7.1	7.1	7.0	7.0	7.5	7.0	7.2
21	7.6	6.9	7.4	7.6	7.1	7.3	7.3	7.0	7.1	7.4	7.0	7.2
22	7.6	7.1	7.3	7.6	7.2	7.3	7.1	6.9	7.0	7.4	7.1	7.2
23	7.5	7.1	7.3	7.6	7.1	7.3	7.3	7.0	7.1	7.4	7.1	7.2
24	7.6	7.2	7.4	7.6	7.1	7.3	7.4	7.1	7.2	7.4	7.1	7.2
25	7.8	7.3	7.4	7.8	7.1	7.3	7.5	7.1	7.2	7.4	7.0	7.2
26	7.6	7.3	7.4	7.6	7.0	7.3	7.2	6.9	7.0	7.5	7.0	7.2
27	7.7	7.2	7.4	7.4	7.1	7.2	7.1	6.3	6.6	7.3	6.9	7.1
28	7.4	7.1	7.3	7.7	7.1	7.3	6.5	6.4	6.4	7.6	6.9	7.1
29	7.6	7.0	7.2	7.9	7.1	7.3	6.8	6.4	6.6	---	---	---
30	7.4	7.0	7.2	7.8	7.1	7.3	6.9	6.6	6.8	---	---	---
31	7.0	6.8	6.9	---	---	---	6.8	6.6	6.7	---	---	---
MONTH	8.2	6.8	7.4	7.9	6.6	7.2	8.2	6.3	7.0	8.4	6.5	7.2

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	7.8	7.0	7.3	8.4	7.1	7.5	7.6	6.8	7.1
2	---	---	---	8.4	7.0	7.5	7.9	7.2	7.3	7.3	6.8	7.0
3	---	---	---	8.4	7.1	7.5	8.8	7.2	7.8	7.2	6.8	6.9
4	---	---	---	8.2	7.1	7.4	9.0	7.2	7.7	7.1	6.8	6.9
5	---	---	---	8.3	7.1	7.5	8.4	7.0	7.5	6.9	6.7	6.7
6	---	---	---	8.2	7.2	7.5	8.9	7.1	7.7	7.0	6.7	6.8
7	---	---	---	8.5	7.2	7.5	8.8	7.2	7.7	6.9	6.6	6.7
8	---	---	---	8.5	7.2	7.5	8.8	7.1	7.6	7.0	6.7	6.8
9	---	---	---	8.2	7.2	7.5	8.9	7.1	7.7	7.0	6.8	6.9
10	---	---	---	8.5	7.2	7.5	8.9	7.2	7.7	---	---	---
11	---	---	---	8.4	7.1	7.5	8.9	7.2	7.7	---	---	---
12	---	---	---	8.1	7.1	7.5	9.0	7.2	7.8	---	---	---
13	---	---	---	8.1	7.1	7.4	9.0	7.2	7.8	---	---	---
14	---	---	---	8.2	7.1	7.4	9.1	7.2	7.9	---	---	---
15	---	---	---	8.1	7.1	7.4	8.9	7.2	7.7	---	---	---
16	---	---	---	7.9	7.1	7.4	8.9	7.1	7.7	---	---	---
17	---	---	---	7.6	7.1	7.3	8.8	7.1	7.6	---	---	---
18	7.4	7.0	7.2	7.6	7.1	7.3	9.0	7.1	7.8	---	---	---
19	7.6	7.0	7.2	7.6	7.2	7.3	8.9	7.1	7.7	---	---	---
20	7.7	7.0	7.1	7.5	7.1	7.3	8.6	7.0	7.5	7.8	7.1	7.5
21	7.8	7.0	7.2	7.5	7.1	7.3	8.5	6.9	7.4	7.6	7.3	7.5
22	8.1	7.0	7.3	7.6	7.1	7.3	8.4	7.0	7.4	7.4	7.2	7.3
23	7.3	7.0	7.1	7.6	7.1	7.3	8.4	6.9	7.4	7.4	7.0	7.2
24	8.3	7.0	7.4	7.7	7.1	7.3	8.2	6.9	7.3	7.4	7.0	7.2
25	8.5	7.1	7.5	7.7	7.1	7.3	8.0	6.9	7.2	8.3	7.1	7.5
26	8.7	7.0	7.5	7.8	7.2	7.4	7.9	6.9	7.2	7.8	7.1	7.4
27	8.5	7.0	7.5	8.1	7.1	7.4	7.6	6.9	7.1	7.8	7.2	7.4
28	8.2	7.0	7.3	8.3	7.1	7.5	7.9	6.9	7.2	7.5	7.1	7.2
29	---	---	---	8.4	7.1	7.5	7.5	6.9	7.1	7.3	7.1	7.2
30	---	---	---	8.4	7.2	7.5	7.6	6.9	7.1	7.3	7.1	7.3
31	---	---	---	8.4	7.2	7.5	---	---	---	7.5	7.3	7.4
MONTH	8.7	7.0	7.3	8.5	7.0	7.4	9.1	6.9	7.5	8.3	6.6	7.1
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	7.6	7.4	7.5	8.6	7.0	7.5	7.6	7.0	7.2	7.8	6.9	7.2
2	7.5	7.1	7.3	8.5	7.0	7.5	7.8	7.0	7.3	7.0	6.7	6.8
3	7.4	7.1	7.3	8.4	7.0	7.4	8.0	7.0	7.3	7.3	6.8	7.0
4	7.5	7.3	7.4	8.1	7.0	7.3	8.0	7.0	7.3	7.3	6.9	7.1
5	7.5	7.2	7.4	8.4	7.0	7.5	7.9	7.0	7.3	7.5	7.0	7.1
6	7.8	7.3	7.5	8.6	7.1	7.5	8.0	7.0	7.3	7.6	7.0	7.2
7	7.8	6.8	7.3	8.5	7.1	7.6	8.0	7.0	7.3	7.7	6.9	7.1
8	7.9	6.9	7.2	8.2	7.0	7.3	7.9	7.0	7.3	7.7	6.9	7.2
9	8.5	6.9	7.4	---	---	---	8.0	7.0	7.3	7.4	6.9	7.1
10	8.6	7.0	7.6	---	---	---	7.7	7.0	7.2	7.9	6.9	7.2
11	8.6	7.0	7.5	---	---	---	8.0	7.0	7.3	8.0	6.9	7.2
12	8.7	7.0	7.6	8.5	7.2	7.8	8.2	7.0	7.4	8.0	6.7	7.2
13	8.6	7.0	7.5	8.7	7.1	7.6	---	---	---	6.8	6.6	6.7
14	8.7	7.0	7.6	8.7	7.1	7.6	---	---	---	7.0	6.8	6.9
15	8.5	7.1	7.5	8.4	7.2	7.5	---	---	---	7.0	6.8	7.0
16	8.4	7.0	7.5	8.5	7.2	7.6	7.2	6.9	7.0	7.2	6.9	7.1
17	8.1	7.0	7.4	8.6	7.2	7.7	7.4	6.9	7.1	7.3	7.0	7.1
18	7.8	7.0	7.2	8.1	7.2	7.5	7.4	6.9	7.1	7.4	7.0	7.1
19	7.5	7.0	7.2	7.3	7.0	7.1	7.5	7.0	7.2	7.6	7.0	7.2
20	7.4	7.1	7.2	7.4	6.9	7.2	7.7	7.0	7.2	7.4	7.0	7.1
21	7.4	7.1	7.2	7.3	7.1	7.2	7.5	6.9	7.2	7.8	6.7	7.4
22	7.3	7.1	7.2	7.3	6.8	7.1	7.5	7.0	7.2	7.9	7.2	7.4
23	7.4	7.1	7.2	7.0	6.7	6.8	7.4	6.9	7.1	8.0	7.1	7.4
24	7.4	7.1	7.2	---	---	---	7.6	6.9	7.1	8.2	7.2	7.5
25	7.6	7.1	7.2	---	---	---	7.8	6.9	7.2	8.4	7.2	7.6
26	7.6	7.1	7.3	7.2	6.7	6.9	7.8	6.9	7.2	8.0	7.2	7.5
27	7.8	7.1	7.3	7.1	6.7	6.9	7.8	7.0	7.2	7.5	7.0	7.3
28	8.3	7.0	7.4	7.3	6.8	7.0	7.8	6.9	7.2	7.5	7.0	7.2
29	8.3	7.1	7.5	7.3	7.0	7.1	7.1	6.7	6.9	7.5	7.0	7.1
30	7.9	7.1	7.4	7.3	6.9	7.1	7.5	6.8	7.0	8.2	7.1	7.4
31	---	---	---	7.7	6.9	7.2	7.3	6.9	7.0	---	---	---
MONTH	8.7	6.8	7.4	8.7	6.7	7.3	8.2	6.7	7.2	8.4	6.6	7.2
YEAR	9.1	6.3	7.3									

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	30.5	26.5	28.5	27.0	24.5	25.5	26.0	23.0	24.5	29.0	26.5	27.5
2	31.0	26.5	28.5	26.5	24.0	25.0	25.0	23.5	24.0	31.5	25.5	28.5
3	30.5	27.0	28.5	29.0	24.0	26.0	25.0	23.0	24.0	31.5	28.5	30.0
4	31.5	26.5	28.5	29.5	25.0	27.0	27.0	23.0	25.0	30.0	27.0	28.5
5	32.5	27.0	29.5	32.5	28.0	30.0	26.5	23.0	24.5	28.5	23.5	27.0
6	27.0	27.0	27.0	33.5	28.0	30.5	27.0	23.5	25.0	25.5	22.5	23.5
7	32.5	26.5	29.0	34.5	29.0	32.0	25.0	23.5	24.0	25.5	22.5	24.0
8	32.0	27.0	30.0	35.5	31.0	33.5	28.0	23.5	26.0	26.0	22.5	24.0
9	32.5	26.5	29.0	29.5	25.0	27.0	28.5	24.5	26.5	26.5	23.0	24.5
10	32.5	27.0	29.0	28.5	25.5	27.0	26.0	23.5	24.5	26.5	22.5	24.5
11	32.0	27.0	29.5	29.5	25.0	27.0	24.0	23.0	23.5	27.0	23.0	25.0
12	32.5	26.5	29.0	27.5	24.5	26.0	26.5	23.5	24.5	27.0	23.5	25.0
13	32.0	26.5	29.0	25.0	23.0	24.0	26.5	23.5	25.0	26.5	24.0	25.0
14	31.5	26.5	28.5	27.5	23.5	25.0	25.5	23.5	24.5	27.0	23.5	25.0
15	30.0	26.5	28.0	27.0	24.0	25.0	26.0	23.0	24.5	26.5	24.0	25.0
16	---	---	---	28.0	23.5	25.5	27.0	23.5	25.0	27.0	24.0	25.0
17	---	---	---	28.5	23.5	26.0	27.5	24.0	25.5	26.5	23.0	25.0
18	---	---	---	26.5	24.0	25.0	24.5	23.0	23.5	26.0	23.5	25.0
19	---	---	---	26.5	23.5	24.5	25.0	22.5	23.5	26.5	23.5	25.0
20	---	---	---	27.5	23.5	25.0	26.0	22.0	24.0	26.5	23.0	24.5
21	29.0	24.5	27.0	27.5	24.0	25.5	25.5	23.0	24.0	26.5	23.0	24.5
22	28.0	25.0	26.0	27.0	24.0	25.5	26.5	23.0	24.5	27.0	23.5	25.0
23	30.0	25.0	27.0	26.5	24.5	25.0	26.0	23.0	24.5	27.0	24.0	25.0
24	30.0	25.5	27.0	28.0	24.5	26.0	26.5	23.0	24.5	26.5	23.0	24.5
25	31.0	25.0	27.5	29.5	24.5	26.5	26.0	23.5	24.5	26.5	22.5	24.5
26	27.5	25.0	26.0	27.5	24.0	25.5	24.5	22.5	23.5	27.5	23.5	25.0
27	29.0	24.5	26.5	26.0	23.0	24.5	29.0	22.0	24.5	27.5	23.5	25.5
28	26.5	25.0	25.5	26.5	23.5	24.5	33.0	27.0	29.0	27.5	23.5	25.5
29	29.0	24.0	26.0	27.0	23.5	25.0	30.5	25.5	28.0	---	---	---
30	27.5	24.0	25.5	25.5	22.5	24.5	26.5	24.0	25.5	---	---	---
31	27.5	24.5	26.0	---	---	---	28.5	25.0	26.5	---	---	---
MONTH	32.5	24.0	28.0	35.5	22.5	26.5	33.0	22.0	25.0	31.5	22.5	25.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	---	---	---	25.5	23.0	24.0	30.5	25.0	27.5	31.0	25.0	27.5
2	---	---	---	28.0	23.0	25.0	29.5	25.0	27.0	31.0	25.5	28.0
3	---	---	---	29.0	23.0	25.5	31.0	25.0	27.5	30.5	26.5	28.0
4	---	---	---	28.5	23.5	25.5	29.5	26.0	27.5	28.5	25.0	27.0
5	---	---	---	28.0	23.5	25.5	29.5	24.0	26.5	26.5	24.0	25.5
6	---	---	---	28.0	24.0	25.5	30.0	25.5	27.5	25.0	23.5	24.5
7	---	---	---	28.0	24.0	26.0	30.5	25.5	28.0	28.0	23.5	25.0
8	---	---	---	28.5	24.5	26.0	30.0	25.0	27.5	27.5	24.5	25.5
9	---	---	---	28.0	24.0	25.5	30.5	26.0	28.0	27.5	25.0	26.5
10	---	---	---	28.0	23.0	25.0	29.5	26.0	27.5	---	---	---
11	---	---	---	28.0	23.5	25.5	30.0	25.5	27.5	---	---	---
12	---	---	---	27.0	23.0	25.0	31.0	26.0	28.0	---	---	---
13	---	---	---	26.0	23.5	24.5	30.0	---	---	---	---	---
14	---	---	---	27.5	23.0	25.0	31.5	26.0	28.0	---	---	---
15	---	---	---	27.0	23.5	25.0	29.5	25.5	27.5	---	---	---
16	---	---	---	28.5	23.5	25.5	30.5	25.5	27.5	---	---	---
17	---	---	---	28.5	24.0	26.0	28.0	---	---	---	---	---
18	27.0	24.0	25.5	29.0	24.0	26.0	29.5	24.5	26.5	---	---	---
19	28.0	23.0	25.0	29.5	24.0	26.5	30.0	25.0	27.0	---	---	---
20	26.0	23.0	24.5	30.0	24.0	26.5	29.0	25.5	27.0	29.0	26.5	27.5
21	26.5	23.0	24.5	30.0	24.0	26.5	29.5	25.0	27.0	26.5	24.0	25.5
22	28.0	23.0	25.0	29.0	24.0	26.5	29.0	25.0	27.0	26.5	24.0	24.5
23	25.5	23.5	24.5	30.0	24.5	27.0	30.0	25.0	27.5	27.5	24.0	25.5
24	25.5	22.0	23.5	30.0	25.0	27.0	30.5	25.0	27.5	29.0	25.0	26.5
25	26.0	21.5	23.5	29.5	25.0	26.5	29.5	25.0	27.5	30.0	25.0	27.0
26	26.0	22.0	24.0	28.5	25.0	26.5	30.0	25.5	27.5	27.0	25.5	26.0
27	26.0	22.5	24.0	28.5	24.5	26.5	29.5	26.0	27.5	27.0	24.0	25.5
28	26.0	23.5	24.5	29.5	25.0	27.0	29.5	25.5	27.0	28.0	24.0	25.5
29	---	---	---	30.5	25.5	27.5	28.5	25.0	26.5	28.0	26.0	27.0
30	---	---	---	29.0	25.5	27.0	30.0	24.5	27.0	28.0	25.5	26.5
31	---	---	---	30.0	24.0	27.0	---	---	---	28.5	25.0	26.5
MONTH	28.0	21.5	24.5	30.5	23.0	26.0	31.5	24.0	27.5	31.0	23.5	26.0

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	29.0	25.0	26.5	31.0	26.0	28.0	30.0	26.0	28.0	30.5	25.5	28.0
2	29.0	25.0	27.0	31.5	26.5	29.0	30.0	26.5	28.0	29.0	24.0	26.5
3	---	---	---	31.5	27.0	29.0	31.0	26.5	28.0	30.0	25.0	27.0
4	---	---	---	30.0	26.5	28.5	31.0	25.5	28.0	29.5	25.5	27.5
5	---	---	---	31.0	26.5	28.0	31.0	26.0	28.5	31.0	25.5	28.0
6	---	---	---	31.5	26.5	28.5	31.0	26.0	28.5	30.0	26.0	27.5
7	27.5	25.0	26.5	30.0	26.5	28.0	31.5	26.0	28.5	31.5	25.0	28.0
8	28.5	24.5	26.0	29.5	26.5	27.5	31.0	26.0	28.5	30.0	26.5	28.0
9	29.5	24.5	27.0	---	---	---	31.5	26.0	28.5	29.0	26.0	27.0
10	30.0	26.0	28.0	---	---	---	30.0	25.5	27.5	30.5	25.5	27.5
11	30.5	26.0	28.0	---	---	---	30.5	25.0	27.5	30.5	26.0	28.0
12	31.0	26.0	28.0	30.0	28.0	29.0	31.0	26.0	28.0	29.5	24.0	27.0
13	30.0	26.0	28.0	31.5	27.0	29.0	---	---	---	26.0	24.0	25.0
14	31.0	26.5	28.5	32.0	27.0	29.0	---	---	---	28.5	24.5	26.5
15	30.5	26.5	28.0	31.5	27.5	29.0	---	---	---	30.0	25.5	27.5
16	30.5	26.5	28.5	31.0	27.0	29.0	30.5	27.5	29.5	30.0	25.0	27.0
17	31.0	26.5	28.5	31.0	27.0	29.0	31.5	26.0	28.5	29.5	25.0	27.5
18	31.5	26.5	28.5	30.0	27.0	28.5	30.5	26.0	28.0	30.0	25.5	27.5
19	30.0	26.5	28.0	30.0	25.5	27.0	30.0	26.5	28.0	31.5	26.0	27.5
20	28.5	26.5	27.5	31.0	26.0	28.0	31.0	26.5	28.0	28.0	26.0	26.5
21	30.0	26.5	28.0	30.5	25.5	27.5	30.0	26.0	28.0	29.5	---	---
22	29.5	26.5	28.0	30.0	26.0	27.5	30.5	26.0	28.0	27.5	25.0	26.5
23	31.5	26.0	28.5	32.5	30.0	31.0	29.0	26.0	27.5	30.5	25.0	27.0
24	31.0	26.5	28.5	---	---	---	31.0	25.5	28.0	29.5	25.5	27.5
25	31.5	26.5	29.0	---	---	---	31.0	26.5	28.5	29.5	25.5	27.0
26	31.5	27.0	29.0	27.5	25.5	27.0	31.0	26.5	28.5	29.0	25.0	27.0
27	31.0	26.5	29.0	31.0	27.5	29.0	31.0	26.0	28.0	29.0	24.0	26.5
28	32.0	27.0	29.0	30.5	27.0	28.5	29.0	25.5	27.0	27.5	24.0	25.5
29	31.5	27.0	29.0	29.0	26.5	28.0	29.5	24.5	27.5	29.5	23.5	26.5
30	29.5	25.5	27.5	29.0	25.5	27.0	30.5	25.5	28.0	29.5	24.5	26.5
31	---	---	---	30.5	25.5	27.5	29.0	25.5	27.0	---	---	---
MONTH	32.0	24.5	28.0	32.5	25.5	28.5	31.5	24.5	28.0	31.5	23.5	27.0
YEAR	35.5	21.5	26.5									

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	11.0	10.0	10.5	8.0	6.4	7.2	8.2	7.5	7.8
2	---	---	---	---	---	---	7.7	6.9	7.3	8.3	6.2	7.3
3	---	---	---	---	---	---	7.8	7.3	7.6	7.8	6.2	6.8
4	---	---	---	---	---	---	8.0	7.1	7.5	8.2	7.1	7.6
5	---	---	---	---	---	---	8.4	7.2	7.6	9.5	7.7	8.4
6	---	---	---	---	---	---	8.1	7.3	7.6	9.3	8.6	9.1
7	---	---	---	---	---	---	8.1	7.4	7.7	9.7	9.2	9.4
8	---	---	---	---	---	---	11.1	7.3	9.8	10.1	9.2	9.6
9	---	---	---	---	---	---	9.7	8.4	9.0	9.9	7.9	8.7
10	---	---	---	8.3	7.4	7.8	8.8	6.1	7.5	9.3	8.5	8.9
11	8.5	6.5	7.6	9.1	8.2	8.6	9.8	7.1	8.2	10.2	8.4	9.4
12	10.3	8.5	9.3	9.8	5.5	8.7	10.5	6.9	9.4	9.5	7.8	8.8
13	11.2	9.5	10.3	8.5	7.9	8.2	10.5	6.4	9.2	9.4	7.8	8.7
14	11.3	9.7	10.5	9.3	8.2	8.7	9.7	6.0	7.7	---	7.8	8.9
15	---	---	---	9.7	8.8	9.1	9.8	5.8	8.2	9.6	8.3	8.9
16	---	---	---	9.4	8.7	9.1	8.1	7.7	7.9	9.5	8.0	8.9
17	---	---	---	9.4	8.6	9.0	8.2	8.0	8.1	9.6	8.1	8.9
18	---	---	---	9.4	8.7	9.1	8.8	8.2	8.5	9.5	8.6	9.0
19	---	---	---	9.9	9.2	9.6	8.8	8.5	8.7	10.1	7.0	9.5
20	---	---	---	10.3	9.5	9.9	8.8	8.4	8.7	10.9	9.9	10.4
21	9.7	8.0	8.9	10.5	9.4	9.9	8.9	8.3	8.6	11.0	10.4	10.7
22	9.1	7.9	8.4	10.7	9.2	9.9	9.0	8.4	8.7	11.1	10.3	10.7
23	9.5	8.8	9.2	10.2	9.1	9.5	9.0	8.0	8.5	10.9	9.8	10.3
24	10.1	9.3	9.6	9.7	8.7	9.1	8.3	7.5	7.9	10.5	9.6	10.0
25	10.4	8.7	9.5	9.2	7.6	8.3	8.0	7.5	7.8	10.3	9.2	9.8
26	9.5	8.3	8.9	8.3	6.8	7.5	8.7	7.9	8.2	10.1	9.0	9.6
27	9.1	7.3	8.5	8.5	7.7	8.0	9.5	7.3	8.5	10.0	9.1	9.6
28	9.3	8.5	8.9	8.5	7.5	7.9	9.3	6.5	7.7	9.9	8.7	9.4
29	9.7	8.5	9.1	8.4	7.1	7.8	9.9	6.6	7.9	---	---	---
30	9.5	8.4	9.1	8.2	7.0	7.6	9.2	7.9	8.5	---	---	---
31	9.6	8.5	9.0	---	---	---	8.5	7.4	8.0	---	---	---
MONTH	11.3	6.5	9.1	11.0	5.5	8.8	11.1	5.8	8.2	11.1	6.2	9.1

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	---	---	---	9.8	7.4	8.2	8.7	6.2	7.3	8.2	5.4	6.7
2	---	---	---	9.7	7.2	8.3	8.6	6.3	7.1	8.0	5.5	6.6
3	---	---	---	9.6	7.1	8.2	8.5	6.4	7.4	7.8	5.4	6.5
4	---	---	---	9.5	6.9	8.0	8.5	6.5	7.3	8.0	5.4	6.9
5	---	---	---	9.3	6.9	7.9	9.0	6.8	7.9	8.1	5.4	7.3
6	---	---	---	9.3	6.8	7.8	9.3	6.6	7.8	8.1	5.3	7.3
7	---	---	---	9.3	6.8	7.8	9.3	6.7	7.7	8.0	6.9	7.5
8	---	---	---	9.1	6.6	7.6	9.1	6.5	7.7	7.9	6.6	7.2
9	---	---	---	9.0	6.8	7.6	9.2	6.3	7.5	7.6	6.5	7.0
10	---	---	---	9.0	6.8	7.8	9.2	6.4	7.5	---	---	---
11	---	---	---	9.1	6.7	7.7	9.4	6.5	7.6	---	---	---
12	---	---	---	9.1	6.9	7.8	9.6	6.3	7.7	---	---	---
13	---	---	---	9.0	7.0	7.8	9.6	6.3	7.6	---	---	---
14	---	---	---	9.1	6.6	7.8	9.6	6.3	7.6	---	---	---
15	---	---	---	9.2	6.8	7.7	9.5	6.1	7.5	---	---	---
16	---	---	---	8.9	6.9	7.7	9.8	6.0	7.5	---	---	---
17	---	---	---	8.8	6.8	7.6	9.1	6.2	7.6	---	---	---
18	9.1	8.1	8.6	8.6	6.8	7.6	9.4	6.4	7.9	---	---	---
19	9.8	8.1	8.7	8.6	6.7	7.5	9.4	6.5	7.6	---	---	---
20	10.1	8.2	8.8	8.6	6.7	7.5	9.0	6.1	7.3	8.4	7.1	7.6
21	9.9	8.0	8.8	8.5	6.6	7.4	9.0	5.9	7.2	8.5	7.3	7.9
22	10.0	7.6	8.7	8.6	6.6	7.4	9.0	6.1	7.2	8.5	7.6	8.1
23	9.3	7.7	8.4	8.6	6.5	7.4	8.9	5.9	7.2	8.7	7.4	8.0
24	10.2	7.9	8.8	8.5	6.4	7.3	8.7	5.5	7.0	8.6	7.1	7.7
25	10.4	7.7	8.7	8.5	6.6	7.3	8.4	5.6	6.9	9.0	6.9	7.8
26	10.2	7.6	8.7	8.5	6.9	7.5	8.4	5.6	6.8	9.1	7.1	7.9
27	10.2	7.2	8.4	8.4	6.6	7.5	8.4	5.7	6.7	8.9	7.2	8.0
28	9.5	7.2	8.0	8.7	6.4	7.3	8.5	5.8	7.1	---	---	---
29	---	---	---	8.7	6.2	7.3	8.4	6.1	7.1	---	---	---
30	---	---	---	8.7	6.4	7.3	8.4	5.6	7.0	---	---	---
31	---	---	---	8.6	6.2	7.3	---	---	---	---	---	---
MONTH	10.4	7.2	8.6	9.8	6.2	7.6	9.8	5.5	7.4	9.1	5.3	7.4
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	---	---	---	9.2	6.5	7.8	7.9	5.9	6.9	9.7	7.8	8.6
2	---	---	---	9.1	6.4	7.5	7.6	6.0	6.7	9.2	7.8	8.4
3	---	---	---	9.0	6.3	7.4	7.4	5.7	6.5	9.0	7.5	8.2
4	---	---	---	8.8	6.4	7.4	7.5	6.0	6.6	9.0	7.2	8.0
5	---	---	---	8.6	6.5	7.4	8.0	5.9	6.8	8.9	6.8	7.7
6	---	---	---	8.9	6.6	7.4	7.9	6.0	6.8	8.5	7.0	7.6
7	9.5	---	---	9.0	6.4	7.5	7.9	5.4	6.7	8.7	6.2	7.4
8	9.8	7.7	8.6	9.1	6.5	7.6	7.7	5.8	6.6	9.4	7.4	8.2
9	9.9	7.6	8.6	---	---	---	7.8	5.6	6.6	9.2	7.6	8.3
10	10.0	7.4	8.5	---	---	---	7.6	6.0	6.7	9.6	7.3	8.3
11	10.0	7.4	8.4	---	---	---	7.7	5.6	6.8	9.4	7.5	8.2
12	10.0	7.3	8.4	9.2	6.2	7.4	7.8	5.7	6.6	9.5	7.7	8.6
13	9.8	7.3	8.4	9.0	6.1	7.3	---	---	---	9.2	8.6	8.8
14	9.7	7.1	8.2	8.8	5.8	7.2	---	---	---	8.7	7.8	8.3
15	9.4	7.2	8.1	8.7	5.9	7.1	---	---	---	8.7	7.7	8.2
16	9.3	7.0	8.0	8.7	6.1	7.2	8.6	6.4	7.8	8.8	7.7	8.1
17	8.9	6.7	7.7	8.8	6.3	7.4	8.5	6.8	7.6	8.9	7.6	8.2
18	8.6	6.5	7.4	8.7	6.2	7.3	8.5	6.8	7.6	9.0	7.5	8.1
19	8.3	6.6	7.2	---	---	---	8.5	6.7	7.6	9.2	7.4	8.1
20	8.1	6.8	7.3	---	---	---	8.4	6.4	7.3	9.0	7.7	8.2
21	7.9	6.5	7.1	---	---	---	8.1	6.3	7.0	9.2	6.6	8.2
22	7.6	6.6	7.0	---	---	---	8.0	6.5	7.1	8.9	7.3	8.0
23	7.7	6.4	7.0	---	---	---	7.8	6.1	7.1	9.2	7.0	8.0
24	7.8	6.6	7.2	---	---	---	7.8	6.3	7.1	9.1	7.1	7.9
25	8.2	6.8	7.4	---	---	---	7.9	6.1	6.9	9.0	7.1	7.9
26	8.5	6.7	7.4	---	---	---	7.9	5.8	6.9	9.1	6.8	7.8
27	8.6	6.6	7.4	---	---	---	8.0	5.7	7.0	8.6	6.8	7.7
28	8.8	6.5	7.5	---	---	---	8.0	6.3	7.1	8.7	6.9	7.7
29	9.1	6.7	7.5	---	---	---	---	---	---	8.9	6.8	7.8
30	8.7	6.9	7.7	8.1	5.9	7.0	---	---	---	9.1	6.9	7.8
31	---	---	---	8.0	6.2	7.2	9.4	8.1	7.4	---	---	---
MONTH	10.0	6.4	7.7	9.2	5.8	7.4	9.4	5.4	7.0	9.7	6.2	8.1
YEAR	11.3	5.3	8.0									

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

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 AS CAC03)	HARD- NESS (MG/L AS CAC03)
NOV , 1980												
17...	1340	26	167	7.5	29.0	--	8.5	--	11	20000	K1000	40
JAN , 1981												
09...	0940	19	210	7.3	25.0	1.3	6.6	--	<10	K88000	9200	--
MAR												
24...	1315	23	175	7.6	30.0	6.5	8.2	--	35	42000	2500	51
MAY												
18...	1135	40	149	7.3	29.0	26	7.8	100	<10	24000	400	--
JUL												
29...	0925	40	142	7.5	29.5	300	7.1	93	10	--	350	40
SEP												
28...	1310	19	192	7.9	33.0	110	9.0	123	<10	K120000	810	51
NOV												
18...	0945	110	204	6.8	27.0	300	7.2	90	27	55000	31000	--
JAN , 1982												
25...	1435	26	199	7.8	28.0	3.7	10.0	127	<10	200000	78000	51
MAR												
19...	1015	19	230	7.0	24.0	--	8.4	99	17	450000	24000	--
MAY												
20...	1045	42	218	7.1	27.0	3.6	8.6	108	15	130000	9400	52
JUL												
22...	1045	79	132	6.9	26.0	37	7.2	87	20	K180000	35000	--
SEP												
22...	1340	38	156	7.2	28.0	6.6	8.4	105	30	K8200	950	39

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 SiO2)
NOV , 1980											
17...	2	8.7	4.4	16	1.1	1.5	38	4.1	22	.1	25
JAN , 1981											
09...	--	--	--	--	--	--	56	--	--	--	--
MAR											
24...	12	13	4.4	15	.9	1.2	39	4.6	22	.1	23
MAY											
18...	--	--	--	--	--	--	39	--	--	--	--
JUL											
29...	0	9.6	4.0	13	.9	1.1	44	4.4	16	<.1	24
SEP											
28...	15	13	4.6	15	1.0	1.7	36	5.8	32	.1	24
NOV											
18...	--	--	--	--	--	--	46	--	--	--	--
JAN , 1982											
25...	2	13	4.5	18	1.2	1.5	49	5.5	26	.1	20
MAR											
19...	--	--	--	--	--	--	52	--	--	--	--
MAY											
20...	6	13	4.7	16	1.0	1.7	46	7.0	27	.1	22
JUL											
22...	--	--	--	--	--	--	26	--	--	--	--
SEP											
22...	1	9.2	4.0	14	1.1	1.1	38	4.0	18	.1	24

K = non-ideal count.

RIO FAJARDO BASIN

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50072500 RIO FAJARDO BELOW FAJARDO, PR--Continued

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

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 , 1980											
17...	104	7.3	--	.20	.010	.21	.030	.23	.26	.47	2.1
JAN , 1981											
09...	--	--	12	.16	.010	.17	.380	.06	.44	.61	2.7
MAR											
24...	107	6.6	4	.14	.010	.15	.230	.58	.81	.96	4.3
MAY											
18...	--	--	36	.10	<.010	.11	.070	.14	.21	.32	1.4
JUL											
29...	99	10.7	--	.04	.040	.08	.140	.20	.34	.42	1.9
SEP											
28...	118	6.1	100	.11	.030	.14	.510	.24	.75	.89	3.9
NOV											
18...	--	--	694	.68	.080	.76	.380	.38	.76	1.5	6.7
JAN , 1982											
25...	118	8.2	12	.12	.010	.13	.630	.23	.86	.99	4.4
MAR											
19...	--	--	28	.07	.020	.09	1.50	.40	1.90	2.0	8.8
MAY											
20...	119	13.4	15	--	<.010	<.10	.680	.20	.88	--	--
JUL											
22...	--	--	70	.19	.020	.21	.330	.37	.70	.91	4.0
SEP											
22...	94	9.6	9	--	<.010	<.10	.070	.13	.20	--	--
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 , 1980											
17...	.050	--	--	--	--	--	--	--	--	30	2.1
JAN , 1981											
09...	.130	--	--	--	--	--	--	--	--	3	.15
MAR											
24...	.100	<1	100	<1	2	5	.1	<1	<1	17	1.1
MAY											
18...	.070	--	--	--	--	--	--	--	--	45	4.9
JUL											
29...	.630	--	--	--	--	--	--	--	--	738	80
SEP											
28...	.200	--	100	1	20	6	.1	<1	<1	130	6.7
NOV											
18...	.540	--	--	--	--	--	--	--	--	--	--
JAN , 1982											
25...	.220	1	<100	14	4	6	<.1	<1	<1	--	--
MAR											
19...	.330	--	--	--	--	--	--	--	--	--	--
MAY											
20...	.130	--	--	--	--	--	--	--	--	--	--
JUL											
22...	.140	--	--	--	--	--	--	--	--	--	--
SEP											
22...	.040	1	<100	1	<1	1	.4	<1	<1	--	--

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 DISCHARGES.--9 years (1946-52, 1980-81), 16.1 cu ft/s (0.456 cu m/s), 173.52 in/yr (4,407 mm/yr), 11,660 acre-ft/yr (14.4 cu hm/yr).

--10 years (1946-52, 1980-82), 15.9 cu ft/s (0.450 cu m/s), 171.37 in/yr (4,353 mm/yr), 11,520 acre-ft/yr (14.2 cu hm/yr); median of yearly mean discharges, 15 cu ft/s (0.42 cu m/s), 10,900 acre-ft/yr (13 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,460 cu ft/s (69.7 cu m/s) Oct. 25, 1947 and Oct. 25, 1953, gage height, 8.10 ft (2.469 m), from rating curve extended above 30 cu ft/s (0.850 cu m/s); minimum daily, 1.5 cu ft/s (0.042 cu m/s) Mar. 22, Apr. 10, 1946.

EXTREMES FOR WATER YEARS 1981-82.--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)
May 18, 1981	2115	694	19.7	Dec. 14, 1981	Unknown	799	22.6
May 19, 1981	1990	818	23.2	Dec 27, 1981	1300	868	24.6
May 25, 1981	1500	*859	24.3	Feb. 3, 1982	1115	954	27.0
June 30, 1981	1715	839	23.8	May 9, 1982	2230	*1,500	42.5
Aug. 23, 1981	0230	672	19.0	May 28, 1982	1330	864	24.5
Nov. 9, 1981	Unknown	1,220	34.6				

Minimum discharges, 4.2 cu ft/s (0.119 cu m/s) Mar. 18-20, 1981; 3.9 cu ft/s (0.110 cu m/s) May 1-4, 1982.

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	6.0	7.3	5.2	6.9	8.2	5.2	10	18	28	17	9.5	6.7
2	6.1	27	8.3	6.4	8.3	5.2	9.5	12	27	8.3	9.0	6.9
3	9.9	7.9	5.6	6.9	25	5.2	15	13	16	12	9.0	6.4
4	36	29	11	6.6	6.9	12	18	44	37	21	10	6.3
5	11	7.3	6.2	6.4	6.1	15	21	15	30	10	9.5	6.0
6	38	6.1	22	6.4	12	5.9	12	11	12	8.9	9.1	6.0
7	30	5.7	67	6.5	6.3	5.1	34	10	11	9.5	19	17
8	9.5	5.6	12	6.4	7.1	4.8	20	9.7	9.7	12	8.0	32
9	9.2	5.5	7.4	6.4	7.7	4.8	28	15	9.4	22	9.7	9.7
10	14	5.4	6.5	6.3	13	4.8	24	11	9.2	12	87	7.1
11	7.8	5.3	6.9	9.7	8.8	4.8	11	8.8	9.0	8.7	10	7.5
12	6.8	5.3	12	7.4	6.5	4.8	9.4	17	8.4	7.9	60	34
13	6.4	5.1	14	6.8	9.5	4.8	8.9	18	9.4	7.9	29	11
14	20	5.1	11	20	13	4.7	8.7	9.5	8.2	16	10	7.8
15	28	5.6	8.2	11	35	4.5	8.8	13	7.9	13	8.5	7.5
16	7.0	7.3	7.0	9.5	29	4.5	85	16	7.6	8.5	9.4	7.4
17	6.3	5.1	9.6	7.4	38	4.5	28	11	7.6	44	9.6	7.7
18	6.0	4.8	7.3	7.0	44	4.3	26	82	8.1	10	8.7	16
19	7.9	6.0	7.3	9.0	10	4.2	10	67	8.7	29	38	12
20	5.7	10	7.9	7.0	9.1	4.2	9.1	14	7.5	49	20	18
21	5.6	17	12	6.4	9.4	38	24	18	14	10	10	8.9
22	7.8	9.5	8.9	9.2	8.1	6.6	49	42	7.9	8.7	19	7.6
23	20	18	20	8.2	7.2	7.8	32	29	7.4	23	64	7.2
24	9.8	5.7	14	10	6.0	4.7	13	12	13	42	10	6.9
25	8.2	10	8.0	29	5.6	4.8	15	89	7.4	17	9.1	6.7
26	12	8.4	14	7.9	5.6	4.8	26	16	6.8	10	7.9	13
27	8.1	8.4	8.5	18	5.4	21	12	11	7.2	8.7	7.6	7.4
28	6.7	5.7	7.5	7.8	5.2	20	10	12	24	8.0	7.5	6.4
29	15	5.2	7.5	6.6	---	49	11	10	8.7	7.7	7.6	6.4
30	15	5.1	7.6	8.8	---	12	25	14	75	14	7.3	8.5
31	13	---	7.6	9.8	---	6.3	---	61	---	14	7.4	---
TOTAL	392.8	259.4	358.0	281.7	356.0	288.3	613.4	729.0	443.1	489.8	540.4	312.0
MEAN	12.7	8.65	11.5	9.09	12.7	9.30	20.4	23.5	14.8	15.8	17.4	10.4
MAX	38	29	67	29	44	49	85	89	75	49	87	34
MIN	5.6	4.8	5.2	6.3	5.2	4.2	8.7	8.8	6.8	7.7	7.3	6.0
CFSM	10.1	6.87	9.13	7.21	10.1	7.38	16.2	18.7	11.7	12.5	13.8	8.25
IN	11.59	7.65	10.56	8.31	10.50	8.50	18.10	21.51	13.07	14.45	15.94	9.20
AC-FT	779	515	710	559	706	572	1220	1450	879	972	1070	619

CAL YR 1980 TOTAL 4012.6 MEAN 11.0 MAX 114 MIN 4.2 CFSM 8.73 IN 118.37 AC-FT 7960
WTR YR 1981 TOTAL 5063.9 MEAN 13.9 MAX 89 MIN 4.2 CFSM 11.0 IN 149.39 AC-FT 10040

50075000 RIO ICACOS NEAR NAGUABO, PR--Continued

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

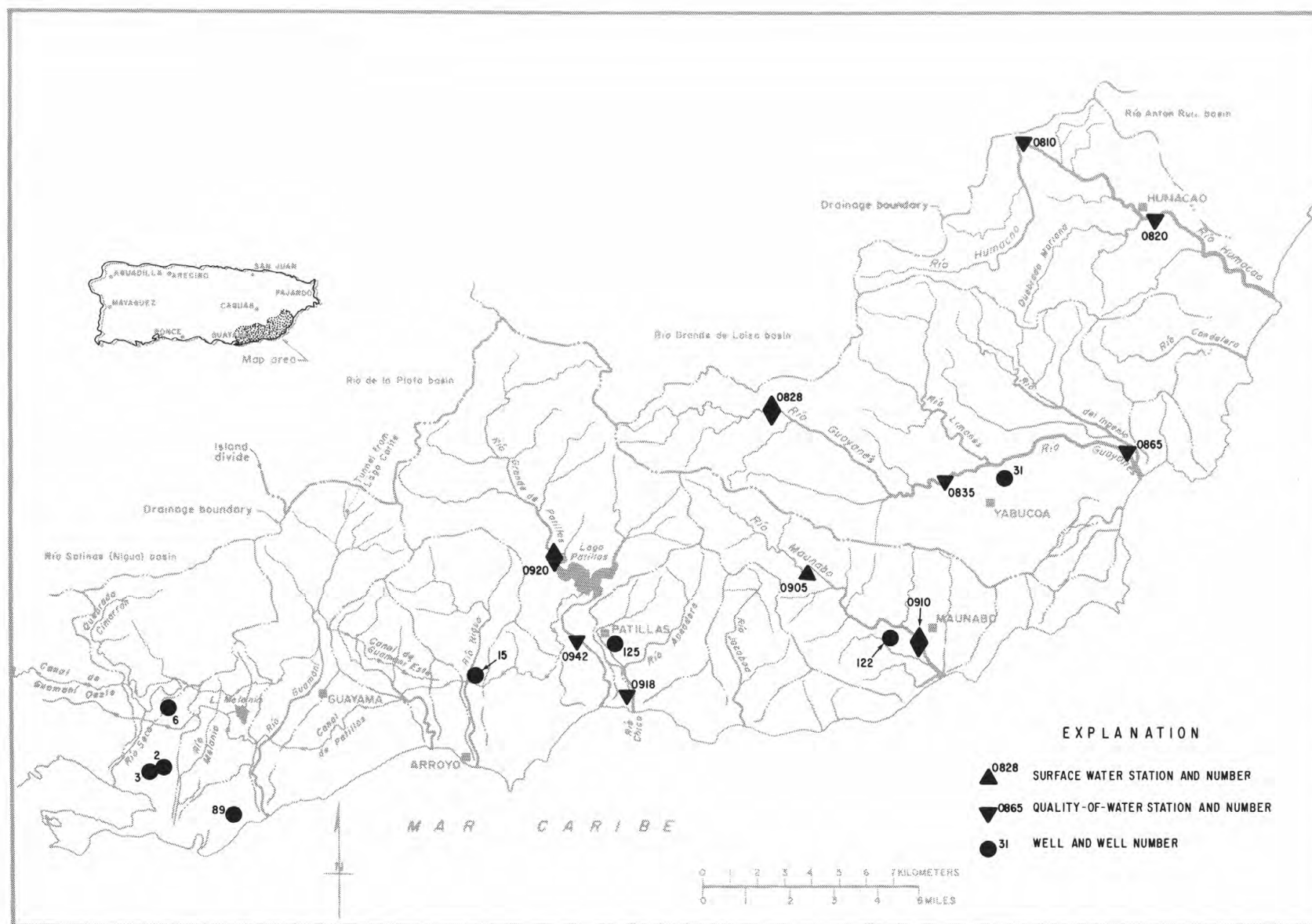
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	8.0	5.7	16	14	28	5.4	4.0	21	5.6	7.3	27
2	12	19	30	16	24	8.8	7.4	3.9	31	5.2	9.3	38
3	11	8.0	29	19	105	7.8	6.2	3.9	8.0	5.3	9.2	9.0
4	7.8	6.0	6.9	22	14	7.5	9.8	22	41	5.2	5.9	8.2
5	20	7.0	6.5	11	72	7.4	27	9.7	13	7.5	6.4	7.4
6	10	6.0	9.0	11	32	7.5	5.9	28	7.5	6.1	5.7	17
7	9.5	5.4	50	13	15	7.1	5.0	6.4	24	5.4	5.2	8.1
8	7.6	5.0	80	10	10	7.1	4.7	4.7	8.3	6.9	4.8	7.5
9	6.4	70	10	9.6	10	9.8	4.5	145	6.5	11	4.7	14
10	6.2	7.0	8.0	9.2	12	8.1	4.5	80	7.4	7.3	11	7.2
11	6.5	8.0	7.0	9.0	20	9.2	4.5	20	6.0	6.0	5.6	27
12	6.0	6.0	9.0	8.8	14	15	4.4	66	5.7	5.3	10	107
13	5.8	50	40	7.9	12	9.7	4.6	7.9	5.6	5.4	33	109
14	5.6	8.0	90	7.6	29	7.8	4.5	16	5.9	5.0	7.2	11
15	5.9	7.0	10	8.7	27	6.9	4.9	7.9	6.1	4.8	19	9.4
16	6.0	6.0	9.2	8.4	14	7.2	6.3	6.3	6.6	5.7	6.8	8.1
17	40	8.0	8.9	7.4	15	6.6	13	6.0	5.4	5.6	5.6	7.6
18	80	20	35	8.8	10	6.6	5.8	5.3	5.2	8.5	15	7.4
19	8.0	40	11	8.5	8.9	6.4	4.8	5.1	6.1	21	6.2	7.1
20	10	10	8.8	6.8	8.4	6.4	4.7	5.2	7.7	37	5.8	7.0
21	12	8.0	13	6.5	7.9	6.4	5.7	28	5.6	24	9.2	6.9
22	20	7.0	13	6.5	7.7	6.4	4.8	15	6.3	47	20	20
23	11	8.0	8.4	6.3	9.2	6.0	4.7	7.0	5.4	7.7	33	8.0
24	8.0	6.0	7.8	6.0	7.5	5.7	4.5	5.8	5.3	11	11	9.0
25	7.0	5.6	18	6.0	7.2	6.5	4.5	5.3	5.1	17	6.6	12
26	6.0	11	63	5.8	6.9	6.4	4.4	5.2	4.8	43	6.0	8.0
27	9.0	8.1	116	5.8	7.0	6.8	4.7	32	4.8	9.3	13	18
28	18	5.0	83	5.6	17	5.7	15	75	4.7	6.4	13	17
29	10	5.1	47	6.0	---	5.6	4.5	12	5.8	31	73	8.6
30	8.0	4.9	35	6.2	---	5.8	4.2	7.5	13	19	12	6.8
31	7.0	---	19	25	---	5.6	---	6.2	---	6.8	26	---
TOTAL	411.3	373.1	887.2	304.4	536.7	247.8	194.9	652.3	288.8	392.0	406.5	558.3
MEAN	13.3	12.4	28.6	9.82	19.2	7.99	6.50	21.0	9.63	12.6	13.1	18.6
MAX	80	70	116	25	105	28	27	145	41	47	73	109
MIN	5.6	4.9	5.7	5.6	6.9	5.6	4.2	3.9	4.7	4.8	4.7	6.8
CFSM	10.6	9.84	22.7	7.79	15.2	6.34	5.16	16.7	7.64	10.0	10.4	14.8
IN.	12.13	11.01	26.17	8.98	15.83	7.31	5.75	19.24	8.52	11.56	11.99	16.47
AC-FT	816	740	1760	604	1060	492	387	1290	573	778	806	1110
CAL YR 1981	TOTAL	5725.3	MEAN 15.7	MAX 116	MIN 4.2	CFSM 12.5	IN 168.90	AC-FT 11360				
WTR YR 1982	TOTAL	5253.3	MEAN 14.4	MAX 145	MIN 3.9	CFSM 11.4	IN 154.97	AC-FT 10420				

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO SEPTEMBER 1982

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPEC- IFIC CON- DUCT- ANCE (UMHDS)	TEMPER- ATURE (DEG C)
AUG, 1981				
20...	1123	9.8	59	22.0
SEP				
23...	1000	6.9	68	21.5
OCT				
15...	1245	5.5	74	22.0
NOV				
25...	1105	5.7	85	21.5
MAR, 1982				
9...	1011	13.0	86	19.5
APR				
13...	1320	5.0	76	20.0
MAY				
10...	1431	12.0	38	20.5
JUN				
10...	1333	7.9	68	21.5
SEP				
9...	1400	12.0	45	21.5



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.

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 , 1980												
20...	0815	32	294	7.3	23.5	.50	6.3	--	54	K1100000	K180000	84
JAN , 1981												
22...	0820	14	342	7.0	21.0	1.2	5.6	--	35	K790000	K110000	--
MAR												
24...	1010	10	337	7.4	29.5	6.0	7.4	--	39	2000000	230000	110
MAY												
18...	1410	17	309	7.3	29.0	24	6.6	85	15	K150000	K8000	--
JUL												
29...	1300	47	260	7.8	30.5	14	7.6	101	--	K130000	2800	84
SEP												
30...	1150	28	273	7.4	29.5	16	7.6	100	19	44000	K1500	87
NOV												
18...	1250	80	218	7.1	26.5	190	7.4	91	15	200000	K20000	--
JAN , 1982												
25...	1035	27	280	7.5	24.0	5.5	9.0	105	12	680000	78000	80
MAR												
19...	1300	21	290	7.3	29.0	--	8.2	106	11	K88000	20000	--
MAY												
20...	1430	29	294	7.2	29.0	23	7.5	97	11	K110000	9000	76
JUL												
22...	1350	106	188	7.0	26.0	150	6.6	80	--	K120000	34000	--
SEP												
22...	1000	159	140	6.9	25.0	180	7.9	95	54	K160000	68000	36

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 SiO2)
NOV , 1980											
20...	0	23	6.5	26	1.2	2.7	90	16	28	.2	36
JAN , 1981											
22...	--	--	--	--	--	--	107	--	--	--	--
MAR											
24...	16	32	7.2	29	1.2	1.8	94	15	35	.2	43
MAY											
18...	--	--	--	--	--	--	91	--	--	--	--
JUL											
29...	0	23	6.4	21	1.0	2.3	87	11	25	.1	39
SEP											
30...	7	24	6.5	22	1.1	1.9	80	12	30	.1	41
NOV											
18...	--	--	--	--	--	--	62	--	--	--	--
JAN , 1982											
25...	0	22	6.0	25	1.3	1.8	82	13	28	.1	37
MAR											
19...	--	--	--	--	--	--	79	--	--	--	--
MAY											
20...	0	21	5.7	22	1.2	2.0	76	14	26	.2	37
JUL											
22...	--	--	--	--	--	--	54	--	--	--	--
SEP											
22...	0	9.7	2.8	11	.9	2.6	36	7.0	11	.2	19

K = non-ideal count.

RIO HUMACAO BASIN

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50082000 RIO HUMACAO AT HIGHWAY 3 AT HUMACAO, PR--Continued

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

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 , 1980											
20...	193	16.7	69	.68	.040	.72	1.60	1.0	2.60	3.3	15
JAN , 1981											
22...	--	--	43	.62	.050	.67	3.50	.50	4.00	4.7	21
MAR											
24...	219	5.9	20	.72	.070	.79	.320	1.6	1.90	2.7	12
MAY											
18...	--	--	66	.87	.020	.89	.230	.52	.75	1.6	7.3
JUL											
29...	180	22.8	--	.62	.030	.65	.110	.33	.44	1.1	4.8
SEP											
30...	186	14.1	28	.70	.030	.73	.090	.35	.44	1.2	5.2
NOV											
18...	--	--	647	.61	.050	.66	.170	1.1	1.30	2.0	8.7
JAN , 1982											
25...	182	13.0	36	.89	.050	.94	.430	.67	1.10	2.0	9.0
MAR											
19...	--	--	40	.61	.040	.65	.270	.38	.65	1.3	5.8
MAY											
20...	176	13.7	28	.57	.030	.60	.190	.49	.68	1.3	5.7
JUL											
22...	--	--	362	.43	.050	.48	.200	.80	1.00	1.5	6.6
SEP											
22...	79	33.9	408	.53	.070	.60	.230	.37	.60	1.2	5.3

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 , 1980											
20...	.750	--	--	--	--	--	--	--	--	849	73
JAN , 1981											
22...	.780	--	--	--	--	--	--	--	--	70	2.6
MAR											
24...	.400	<1	100	<1	3	7	.2	<1	<1	84	2.3
MAY											
18...	.320	--	--	--	--	--	--	--	--	107	4.9
JUL											
29...	.190	--	--	--	--	--	--	--	--	60	7.6
SEP											
30...	.200	--	100	1	20	4	.1	<1	1	28	2.1
NOV											
18...	.640	--	--	--	--	--	--	--	--	--	--
JAN , 1982											
25...	.020	1	<100	6	5	13	<.1	<1	2	80	5.7
MAR											
19...	.270	--	--	--	--	--	--	--	--	--	--
MAY											
20...	.250	--	--	--	--	--	--	--	--	--	--
JUL											
22...	.300	--	--	--	--	--	--	--	--	524	150
SEP											
22...	.210	1	100	<1	<1	30	<.1	<1	<1	527	226

50082800 RIO GUAYANES NEAR COLONIA LAURA, PR

LOCATION.--Lat 18°04'55", long 65°57'32", Hydrologic Unit 21010005, on left bank, 1,000 ft (305 m) south of Highway 182, 4.5 mi (7.2 km) west of Colonia Laura, and 5.8 mi (9.3 km) north-northwest of Yabucoa.

DRAINAGE AREA.--4.69 sq mi (12.15 sq km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1969 to September 1982 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 920 ft (280 m), from topographic map. Previous to May 6, 1976, at site 400 ft (120 m) upstream at different datum.

REMARKS.--Records fair.

AVERAGE DISCHARGES.--12 years (1970-81), 29.1 cu ft/s (0.824 cu m/s), 84.26 in/yr (2,140 mm/yr), 21,080 acre-ft/yr (26.0 cu hm/yr); median of yearly mean discharges 28 cu ft/s, (0.79 cu m/s), 20,300 acre-ft/yr (25 cu hm/yr).

--13 years (1970-82), 28.7 cu ft/s (0.813 cu m/s), 83.10 in/yr (2,111 mm/yr), 20,790 acre-ft/yr (25.6 cu hm/yr); median of yearly mean discharges 27 cu ft/s, (0.76 cu m/s), 19,600 acre-ft/yr (24 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.-- Maximum discharge, 6,960 cu ft/s (197 cu m/s) Oct. 23, 1974, gage height, 13.4 ft (4.08 m) datum then in use, from floodmarks, from rating curve extended above 40 cu ft/s (1.13 cu m/s) on basis of slope-area measurements of peak flow; minimum daily, 2.4 cu ft/s (0.068 cu m/s) June 9, 1974.

EXTREMES FOR WATER YEARS 1981-82.--Peak discharges above base of 1,800 cu ft/s (51.0 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)	(ft)	(m)
June 1, 1981	1045	2,490	70.5	12.83	3.910	Dec. 27, 1981	0115	*2,460	69.7	12.79	3.898
June 5, 1981	Unknown	*3,000	85.0	Unknown		Sept. 13, 1982	0730	1,930	54.7	12.11	3.691

Minimum discharges, 4.6 cu ft/s (0.130 cu m/s) Apr. 16, 20-21, 1981; 7.0 cu ft/s (0.198 cu m/s) May 3, 1982.

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	9.1	40	13	18	8.6	11	5.3	28	230	71	17	15
2	8.3	42	13	10	8.4	11	5.9	22	124	23	15	15
3	14	17	11	9.1	12	9.9	7.3	17	100	18	13	15
4	13	140	10	8.9	7.8	8.4	6.5	15	200	17	24	15
5	33	34	10	8.5	6.9	8.6	6.0	20	300	47	16	15
6	52	20	13	8.1	6.8	8.3	5.8	14	100	30	14	14
7	47	17	14	18	6.5	7.8	5.8	29	50	20	14	20
8	15	15	13	12	6.5	11	6.6	11	35	18	14	45
9	41	15	13	8.9	6.9	8.9	6.2	11	25	21	40	25
10	16	13	12	8.3	7.0	7.1	6.0	66	20	20	46	17
11	12	13	12	8.8	8.0	6.5	5.5	13	20	16	18	15
12	11	12	12	9.3	6.7	6.6	5.4	11	20	14	30	14
13	10	12	12	8.1	6.0	6.1	5.1	24	40	15	50	14
14	9.6	13	33	8.1	6.6	5.9	5.2	107	20	35	30	17
15	9.7	16	14	8.2	107	5.8	5.1	34	20	111	23	14
16	10	30	31	11	42	5.6	4.8	22	20	23	22	13
17	12	14	17	8.1	14	5.9	5.2	15	20	92	19	17
18	13	13	13	8.2	12	6.4	5.2	13	17	37	21	13
19	13	12	15	9.8	11	5.8	4.9	12	17	25	24	25
20	11	12	12	8.5	11	5.6	4.8	15	16	85	19	17
21	9.7	56	12	7.7	12	5.4	8.2	70	15	31	25	21
22	14	18	11	7.6	12	5.5	99	145	15	32	20	15
23	29	21	11	7.3	11	6.7	24	102	14	50	46	13
24	13	14	13	7.1	11	5.6	8.8	29	14	182	31	12
25	22	12	11	38	10	5.3	9.4	21	16	61	20	11
26	14	11	10	15	11	5.3	12	51	18	25	18	15
27	12	11	10	25	10	5.3	14	32	14	21	17	12
28	11	11	10	10	11	5.2	7.6	22	28	23	16	11
29	11	14	9.9	8.9	---	6.5	36	18	20	20	17	10
30	71	21	12	8.1	---	5.7	41	22	63	18	16	10
31	14	---	72	7.8	---	5.3	---	196	---	18	15	---
TOTAL	580.4	689	474.9	340.4	389.7	214.0	372.6	1207	1611	1219	710	485
MEAN	18.7	23.0	15.3	11.0	13.9	6.90	12.4	38.9	53.7	39.3	22.9	16.2
MAX	71	140	72	38	107	11	99	196	300	182	50	45
MIN	8.3	11	9.9	7.1	6.0	5.2	4.8	11	14	14	13	10
CFSM	3.99	4.90	3.26	2.35	2.96	1.47	2.64	8.29	11.5	8.38	4.88	3.45
IN.	4.60	5.46	3.77	2.70	3.09	1.70	2.95	9.57	12.78	9.67	5.63	3.85
AC-FT	1150	1370	942	675	773	424	739	2390	3200	2420	1410	962

CAL YR 1980	TOTAL	5424.4	MEAN 14.8	MAX 247	MIN 5.0	CFSM 3.16	IN 43.01	AC-FT 10760
WTR YR 1981	TOTAL	8293.0	MEAN 22.7	MAX 300	MIN 4.8	CFSM 4.84	IN 65.76	AC-FT 16450

50082800 RIO GUAYANES NEAR COLONIA LAURA, PR--Continued

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	9.9	11	7.8	34	12	55	11	7.4	67	13	35	12
2	15	11	130	29	22	18	11	7.3	86	12	40	14
3	13	11	30	40	37	15	12	7.1	23	12	25	11
4	11	11	17	23	19	14	12	7.2	41	12	20	11
5	11	10	12	19	293	14	14	13	37	12	15	10
6	21	9.7	13	16	61	33	11	115	24	12	15	9.7
7	11	10	25	13	49	18	11	19	89	12	15	9.7
8	10	10	14	13	29	17	10	12	28	11	15	9.3
9	10	15	11	14	41	15	9.8	12	20	10	13	9.5
10	9.6	8.3	11	14	34	18	9.7	17	19	10	27	9.6
11	9.2	7.5	17	13	20	17	9.3	14	16	10	15	9.7
12	9.1	7.4	13	16	19	16	9.7	15	16	10	12	142
13	8.9	9.4	12	20	21	14	9.2	12	16	10	14	248
14	8.6	8.8	11	19	26	14	9.5	18	19	10	15	35
15	9.4	10	15	20	19	14	10	11	17	10	21	24
16	9.5	9.3	13	19	22	13	11	11	19	15	14	21
17	9.6	7.8	13	18	21	13	17	13	19	15	12	19
18	13	8.4	44	17	32	13	11	11	16	20	12	19
19	40	9.9	18	16	18	12	9.4	9.5	20	35	12	18
20	11	12	13	16	26	12	8.7	13	19	25	12	18
21	13	8.5	12	15	18	12	8.5	107	14	30	15	17
22	10	8.5	11	15	15	12	8.1	14	13	70	50	46
23	9.5	8.4	10	14	31	12	8.0	15	14	30	100	22
24	9.1	10	9.3	14	15	12	7.5	13	26	25	20	110
25	8.9	14	16	14	16	15	7.5	12	14	25	14	119
26	65	12	270	14	17	13	7.9	17	13	35	13	110
27	16	16	359	13	16	14	10	106	12	40	13	33
28	14	9.2	243	13	21	12	15	129	12	20	15	23
29	12	8.4	87	13	---	12	9.7	125	12	40	17	18
30	13	8.1	93	13	---	12	8.2	27	17	100	14	42
31	11	---	28	22	---	11	---	19	---	40	13	---
TOTAL	431.3	300.6	1578.1	548	970	492	306.7	928.5	758	731	643	1199.5
MEAN	13.9	10.0	50.9	17.7	34.6	15.9	10.2	30.0	25.3	23.6	20.7	40.0
MAX	65	16	359	40	293	55	17	129	89	100	100	248
MIN	8.6	7.4	7.8	13	12	11	7.5	7.1	12	10	12	9.3
CFSM	2.96	2.13	10.9	3.77	7.38	3.39	2.18	6.40	5.39	5.03	4.41	8.53
IN.	3.42	2.38	12.91	4.35	7.69	3.90	2.43	7.36	6.01	5.80	5.10	9.51
AC-FT	855	596	3130	1090	1920	976	608	1840	1500	1450	1280	2380
CAL YR 1981 TOTAL	8858.7											
WTR YR 1982 TOTAL	8886.7											
MEAN 24.3												
MAX 359												
MIN 4.8												
CFSM 5.18												
IN 70.25												
AC-FT 17570												
MEAN 24.3												
MAX 359												
MIN 7.1												
CFSM 5.18												
IN 70.47												
AC-FT 17630												

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO SEPTEMBER 1982

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPEC- IFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)
AUG, 1981				
13...	1040	31.0	100	25.0
SEP				
17...	1125	16.0	124	26.0
OCT				
20...	1255	11.0	132	27.0
NOV				
16...	1045	8.2	141	24.5
FEB, 1982				
8...	1035	25.0	110	22.0
MAR				
9...	1050	15.0	140	23.5
APR				
5...	1100	15.0	148	24.5
MAY				
4...	1105	7.0	147	26.0
JUL				
8...	1035	11.0	137	26.0
JUN				
8...	940	28.0	102	24.0
AUG				
9...	1055	13.0	147	26.0
SEP				
7...	1035	9.9	142	26.0

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.

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 (CCLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)
NOV , 1980												
20...	1350	38	154	6.8	26.0	.30	7.5	--	10	K12000	2000	42
JAN , 1981												
22...	1310	24	166	7.1	23.0	3.8	8.7	--	10	440	K150	--
MAR												
25...	0950	17	169	7.4	26.0	4.0	7.6	--	20	K890	450	50
MAY												
20...	1055	40	146	7.3	25.5	12	8.1	100	<10	K1700	920	--
JUL												
30...	1320	57	147	7.6	29.0	--	7.4	96	--	K15000	460	44
SEP												
29...	1430	26	160	7.4	29.0	12	7.2	94	<10	K1100	4200	45
NOV												
19...	1330	28	157	6.9	26.5	43	6.9	85	<10	38000	23000	--
JAN , 1982												
21...	1400	35	166	7.3	25.0	18	7.4	94	<10	K6700	3300	49
MAR												
18...	1230	34	158	7.1	25.5	42	7.2	88	<10	K850	500	--
MAY												
27...	1255	150	92	7.0	25.0	200	8.0	95	--	48000	27000	21
JUL												
26...	1230	55	134	6.7	27.0	39	7.2	88	15	4800	K11000	--
SEP												
23...	0955	49	139	7.1	25.5	55	7.4	90	34	4400	2000	37

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- 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 , 1980											
20...	0	9.9	4.1	14	.9	1.5	67	3.0	11	.2	39
JAN , 1981											
22...	--	--	--	--	--	--	59	--	--	--	--
MAR											
25...	0	12	4.8	17	1.1	1.1	61	2.9	11	.1	42
MAY											
20...	--	--	--	--	--	--	54	--	--	--	--
JUL											
30...	0	11	4.0	14	.9	1.0	56	3.0	9.9	.1	39
SEP											
29...	0	11	4.2	13	.9	1.1	57	3.7	12	.1	40
NOV											
19...	--	--	--	--	--	--	51	--	--	--	--
JAN , 1982											
21...	0	12	4.5	16	1.1	1.2	57	4.0	11	.1	38
MAR											
18...	--	--	--	--	--	--	56	--	--	--	--
MAY											
27...	0	5.2	1.9	7.7	.8	1.3	21	6.0	8.0	<.1	19
JUL											
26...	--	--	--	--	--	--	41	--	--	--	--
SEP											
23...	0	9.4	3.3	12	.9	1.4	39	4.0	10	.1	31

K = non-ideal count.

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

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

DATE	SOLIDS, SUN OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TCNS PER CAT)	SCLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITPO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NC2+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, 1980											
20...	123	12.6	18	.33	.010	.34	.040	.09	.13	.47	2.1
JAN, 1981											
22...	--	--	16	--	<.010	.27	.030	.15	.18	.45	2.0
MAR											
25...	127	5.8	4	--	<.010	.28	<.010	--	.93	1.2	5.4
MAY											
20...	--	--	22	.26	<.010	.27	.050	.12	.17	.44	1.9
JUL											
30...	115	17.7	--	--	<.010	.27	.020	.15	.17	.44	1.9
SEP											
29...	120	8.4	18	.28	.010	.29	.030	.23	.26	.55	2.4
NOV											
19...	--	--	55	.35	.010	.36	.050	.22	.27	.63	2.8
JAN, 1982											
21...	122	11.5	42	--	<.010	.35	.020	.40	.42	.77	3.4
MAR											
18...	--	--	84	.28	.010	.29	.070	.13	.20	.49	2.2
MAY											
27...	64	25.9	650	.24	.060	.30	.070	1.2	1.30	1.6	7.1
JUL											
26...	--	--	62	.36	.020	.38	.070	.53	.60	.98	4.3
SEP											
23...	101	13.4	5	.28	.020	.30	.050	.25	.30	.60	2.7

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 , 1980											
20...	.070	--	--	--	--	--	--	--	--	44	4.5
JAN , 1981											
22...	.050	--	--	--	--	--	--	--	--	10	.65
MAR											
25...	.050	<1	100	<1	<1	12	.1	<1	<1	18	.83
MAY											
20...	.040	--	--	--	--	--	--	--	--	42	4.5
JUL											
30...	.049	--	--	--	--	--	--	--	--	39	6.0
SEP											
29...	.050	--	100	1	10	3	.1	<1	1	19	1.3
NOV											
19...	.120	--	--	--	--	--	--	--	--	81	6.2
JAN , 1982											
21...	.060	1	100	<1	3	1	<.1	<1	3	58	5.5
MAR											
18...	.080	--	--	--	--	--	--	--	--	--	--
MAY											
27...	.110	--	--	--	--	--	--	--	--	634	257
JUL											
26...	.110	--	--	--	--	--	--	--	--	--	--
SEP											
23...	.070	1	<100	<1	<1	6	<.1	<1	<1	--	--

PESTICIDE ANALYSES, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE		TIME	PCB, TOTAL (UG/L)	ALEPIN, TCTAL (UG/L)	CHLOR- DAMEL TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)
JUL , 1981									
30...		1320	<.10	<.01	<.10	<.01	<.01	<.01	.01
JUL , 1982									
26...		1230	<.10	<.01	<.10	<.01	<.01	<.01	.01

DATE	DI- ENDRIN TOTAL (UG/L)	ENDO- SULFAM, TCTAL (UG/L)	ENDRIN, TCTAL (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- CHLCE, TOTAL (UG/L)
JUL , 1981									
30...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
JUL , 1982									
26...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01

DATE	METHYL PARA- THION, TOTAL (UG/L)	METHYL TFI- THION, TCTAL (UG/L)	MIREX, TCTAL (UG/L)	FARA- 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)
JUL , 1981								
30...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01
JUL , 1982								
26...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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-NF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)
NOV , 1980												
20...	1120	68	168	7.5	25.0	.90	8.0	--	14	K12000	3400	46
JAN , 1981												
22...	1040	32	168	7.6	22.5	4.8	8.6	--	11	K680	K160	--
MAR												
26...	1530	9.9	238	7.8	34.5	5.5	6.3	--	33	K1500	K190	78
MAY												
20...	1425	62	198	7.5	29.0	22	6.7	86	<10	2000	560	--
JUL												
30...	1000	101	186	7.5	27.0	--	7.7	98	--	K9000	730	51
SEP												
29...	1130	46	184	7.7	28.0	14	8.2	104	<10	K1100	400	49
NOV												
19...	1050	48	194	7.0	26.5	32	6.0	74	<10	5100	2500	--
JAN , 1982												
21...	1135	65	182	7.6	23.0	15	8.1	92	10	K720	K1600	53
MAR												
18...	0945	56	187	7.3	23.5	--	9.0	106	<10	860	450	--
MAY												
27...	1030	77	152	6.9	25.0	74	7.8	93	12	25000	6300	41
JUL												
26...	1035	104	155	6.9	26.5	50	7.2	88	15	3300	2800	--
SEP												
23...	1230	91	169	7.2	28.5	34	6.6	84	--	3800	K1400	43

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- LITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUC- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
NOV , 1980											
20...	0	11	4.4	18	1.2	1.9	57	4.4	12	.1	38
JAN , 1981											
22...	--	--	--	--	--	--	60	--	--	--	--
MAR											
26...	0	20	6.8	23	1.1	2.4	87	6.6	20	.2	42
MAY											
20...	--	--	--	--	--	--	62	--	--	--	--
JUL											
30...	0	13	4.6	17	1.0	1.6	62	4.2	13	.1	38
SEP											
29...	0	12	4.6	15	1.0	1.4	59	5.2	15	.1	39
NOV											
19...	--	--	--	--	--	--	57	--	--	--	--
JAN , 1982											
21...	0	13	5.0	20	1.3	1.5	61	6.1	14	.1	39
MAR											
18...	--	--	--	--	--	--	66	--	--	--	--
MAY											
27...	0	10	3.8	14	1.0	1.4	48	7.0	13	.1	30
JUL											
26...	--	--	--	--	--	--	51	--	--	--	--
SEP											
23...	0	11	3.8	16	1.1	2.3	46	5.0	14	.1	31

K = non-ideal count.

50086500 RIO GUAYANES ABOVE MOUTH AT PLAYA DE GUAYANES, PR--Continued

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

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 , 1980											
20...	124	22.8	51	.39	.000	.39	.000	.04	.04	.43	1.9
JAN , 1981											
22...	--	--	16	.34	<.010	.35	.020	.15	.17	.52	2.3
MAR											
26...	173	4.6	1	.07	<.010	.08	.070	.62	.69	.77	3.4
MAY											
20...	--	--	40	.29	<.010	.30	.110	.24	.35	.65	2.9
JUL											
30...	129	35.2	--	--	<.010	.36	.030	.31	.34	.70	3.1
SEP											
29...	128	16.0	16	--	<.010	.30	.030	.22	.25	.55	2.4
NOV											
19...	--	--	22	--	<.010	.35	.120	--	<.10	--	--
JAN , 1982											
21...	135	23.8	28	--	<.010	.50	.020	.54	.56	1.1	4.7
MAR											
18...	--	--	16	--	<.010	.34	.050	.41	.46	.80	3.5
MAY											
27...	111	23.1	93	.27	.030	.30	.030	.67	.70	1.0	4.4
JUL											
26...	--	--	63	.32	.030	.35	.080	.52	.60	.95	4.2
SEP											
23...	114	28.0	46	.29	.010	.30	.050	.25	.30	.60	2.7

DATE	PHOS- PHORUS, TOTAL (UG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	PARIUM, 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 , 1980											
20...	.100	--	--	--	--	--	--	--	--	99	18
JAN , 1981											
22...	.040	--	--	--	--	--	--	--	--	11	.95
MAR											
26...	.150	<1	100	<1	<1	5	.1	<1	<1	20	.53
MAY											
20...	.100	--	--	--	--	--	--	--	--	--	--
JUL											
30...	.080	--	--	--	--	--	--	--	--	--	--
SEP											
29...	.070	--	100	1	10	2	<.1	<1	6	--	--
NOV											
19...	.120	--	--	--	--	--	--	--	--	287	37
JAN , 1982											
21...	.060	1	100	1	6	1	<.1	<1	<1	46	8.1
MAR											
18...	.060	--	--	--	--	--	--	--	--	--	--
MAY											
27...	.110	--	--	--	--	--	--	--	--	--	--
JUL											
26...	.120	--	--	--	--	--	--	--	--	--	--
SEP											
23...	.170	1	<100	<1	<1	4	.2	<1	<1	--	--

50090500 RIO MAUNABO AT LIZAS, PR

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 DISCHARGES.--10 years (1972-81), 18.9 cu ft/s (0.535 cu m/s), 47.71 in/yr (1,212 mm/yr), 13,690 acre-ft/yr (16.9 cu hm/yr); median of yearly mean discharges, 15 cu ft/s (0.42 cu m/s), 10,900 acre-ft/yr (13 cu hm/yr).
--11 years (1972-82), 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, 15 cu ft/s (0.42 cu m/s), 10,900 acre-ft/yr (13 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 WATER YEARS 1981-82.--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)
May 14, 1981	0315	*297 8.41	5.62 1.713	Dec. 27, 1981	0045	1,200 34.0	8.17 2.490
Dec. 2, 1981	1845	601 17.0	6.72 2.048	Sept. 13, 1982	0630	*1,760 49.8	9.18 2.798

Minimum discharges, 2.8 cu ft/s (0.079 cu m/s) Mar. 28, 1981; 4.1 cu ft/s (0.116 cu m/s) July 1, 1982.

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	5.9	43	7.1	15	7.4	6.0	3.9	10	105	33	18	15		
2	5.8	33	7.7	9.3	7.2	5.8	4.1	11	83	15	15	14		
3	6.9	16	7.7	8.4	13	6.3	4.4	30	51	13	14	14		
4	8.1	55	7.0	8.1	8.3	5.6	6.0	7.6	53	13	16	14		
5	17	25	6.6	7.6	6.7	8.1	5.1	14	72	21	15	13		
6	28	16	10	7.2	6.7	6.3	4.6	11	40	15	14	13		
7	22	13	7.9	7.1	7.1	5.3	3.9	16	27	13	14	15		
8	11	12	6.9	7.1	7.6	6.4	4.3	8.1	25	17	17	22		
9	13	11	6.5	7.0	6.6	6.9	3.9	7.3	22	22	19	16		
10	14	11	6.3	6.7	9.9	5.2	3.6	35	21	15	23	14		
11	10	9.8	6.1	6.7	10	5.1	3.6	9.6	19	12	17	13		
12	7.9	9.4	6.3	6.6	7.9	5.0	3.5	8.1	18	11	25	12		
13	7.0	9.3	6.3	6.5	7.4	4.8	3.4	8.1	38	12	52	17		
14	6.1	8.5	17	6.4	20	4.5	3.3	51	18	34	30	18		
15	6.0	8.5	9.6	6.9	56	4.4	3.2	14	16	70	17	13		
16	6.0	9.6	12	7.5	83	4.4	3.2	11	15	20	15	13		
17	7.2	8.4	8.5	6.5	17	4.4	3.1	9.0	14	29	14	12		
18	8.3	8.0	7.8	6.3	12	4.7	3.1	7.9	15	19	15	13		
19	6.4	8.8	9.9	6.2	9.4	4.3	3.1	7.4	14	37	24	21		
20	6.1	11	8.2	6.1	8.4	4.1	3.1	7.3	14	62	16	15		
21	5.7	21	7.3	6.1	8.1	4.0	3.1	44	13	27	21	20		
22	21	11	7.1	5.8	8.0	3.9	39	23	12	26	21	14		
23	29	14	6.9	5.8	7.6	4.2	21	24	14	27	47	12		
24	24	13	7.7	5.9	7.2	4.7	6.7	15	13	46	27	11		
25	15	9.7	7.5	16	6.6	5.0	9.1	19	11	29	19	11		
26	20	8.5	6.9	7.6	6.3	4.1	7.4	27	11	23	16	11		
27	19	8.0	6.9	17	6.3	3.7	7.3	17	11	19	15	10		
28	11	7.8	7.1	7.6	6.2	3.9	5.4	14	17	18	14	9.6		
29	9.6	7.6	6.6	6.9	---	6.4	8.4	11	13	17	15	9.2		
30	26	7.9	6.5	6.7	---	4.1	9.5	18	21	18	17	9.2		
31	16	---	39	6.8	---	3.7	---	119	---	20	15	---		
TOTAL	399.0	434.8	274.9	241.4	367.9	155.3	193.3	614.4	816	753	617	414.0		
MEAN	12.9	14.5	8.87	7.79	13.1	5.01	6.44	19.8	27.2	24.3	19.9	13.8		
MAX	29	55	39	17	83	8.1	39	119	105	70	52	22		
MIN	5.7	7.6	6.1	5.8	6.2	3.7	3.1	7.3	11	11	14	9.2		
CFSM	2.40	2.70	1.65	1.45	2.44	.93	1.20	3.68	5.06	4.52	3.70	2.57		
IN	2.76	3.01	1.90	1.67	2.54	1.07	1.34	4.25	5.64	5.21	4.27	2.86		
AC-FT	791	862	545	479	730	308	383	1220	1620	1490	1220	821		
CAL YR 1980	TOTAL	3780.5	MEAN	10.3	MAX	80	MIN	3.8	CFSM	1.91	IN	26.14	AC-FT	7500
WTR YR 1981	TOTAL	5281.0	MEAN	14.5	MAX	119	MIN	3.1	CFSM	2.70	IN	36.51	AC-FT	10470

50090500 RIO MAUNABO AT LIZAS, PR--Continued

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	9.5	8.1	5.7	41	12	29	8.8	6.3	9.5	7.3	19	16
2	10	7.7	54	32	16	16	8.5	6.1	26	7.0	20	25
3	10	7.3	24	40	23	14	8.2	6.2	12	7.4	17	16
4	9.9	7.1	12	31	14	13	10	6.3	18	6.8	16	13
5	9.2	6.8	8.8	25	149	12	14	11	13	10	15	12
6	11	6.7	7.7	23	32	14	10	92	9.8	8.4	15	11
7	9.2	6.5	20	21	23	12	9.2	16	31	8.3	14	10
8	9.9	6.3	14	19	17	12	9.0	9.5	16	7.1	14	9.6
9	9.1	8.0	8.5	18	18	12	8.8	8.9	12	7.3	14	9.7
10	8.2	6.6	19	18	34	15	8.4	17	12	16	16	9.2
11	8.0	6.0	17	17	23	14	8.6	11	9.9	8.7	14	9.7
12	7.8	6.0	12	16	20	13	8.4	10	9.0	7.1	14	46
13	7.6	11	9.3	16	18	11	8.6	10	8.4	7.6	14	164
14	7.6	7.0	8.6	15	26	11	13	10	10	6.8	15	28
15	9.0	6.3	9.7	15	21	10	8.4	8.5	8.6	6.5	14	19
16	10	6.1	15	15	19	10	7.8	7.5	8.5	6.6	13	17
17	30	6.3	11	14	20	10	9.8	8.7	8.0	8.2	13	16
18	20	6.7	46	13	18	9.8	8.1	7.4	7.6	56	15	16
19	58	6.7	18	13	15	9.6	7.6	6.7	8.6	90	12	16
20	12	6.5	12	13	15	9.3	7.1	6.6	10	35	13	16
21	11	7.0	10	12	14	9.2	7.0	21	8.2	29	16	16
22	9.1	8.7	12	12	14	9.0	6.7	8.3	7.9	57	46	29
23	7.8	8.7	9.0	12	48	9.2	6.5	7.8	8.8	25	59	16
24	7.3	9.7	8.1	11	17	9.8	6.5	7.1	17	48	23	34
25	6.8	15	12	11	14	11	6.3	6.5	9.2	23	13	85
26	23	7.9	101	10	13	13	6.8	6.3	7.9	45	11	54
27	11	8.7	118	9.9	13	24	8.9	7.7	7.3	30	12	26
28	15	6.5	139	9.6	19	10	13	19	7.1	20	17	21
29	14	6.1	88	9.4	---	9.7	7.9	15	7.5	27	23	19
30	14	5.9	122	9.5	---	9.2	6.5	17	7.8	58	15	28
31	9.1	---	48	15	---	8.8	---	10	---	21	26	---
TOTAL	394.1	223.9	999.4	536.4	685	379.6	258.4	391.4	336.6	701.1	550	807.2
MEAN	12.7	7.46	32.2	17.3	24.5	12.2	8.61	12.6	11.2	22.6	18.0	26.9
MAX	58	15	139	41	149	29	14	92	31	90	59	164
MIN	6.8	5.9	5.7	9.4	12	8.8	6.3	6.1	7.1	6.5	11	9.2
CFSM	2.36	1.39	5.99	3.22	4.55	2.27	1.60	2.34	2.08	4.20	3.35	5.00
IN.	2.72	1.55	6.91	3.71	4.74	2.62	1.79	2.71	2.33	4.85	3.86	5.58
AC-FT	782	444	1980	1060	1360	753	513	776	668	1390	1110	1600

CAL YR 1981 TOTAL 5789.7 MEAN 15.9 MAX 139 MIN 3.1 CFSM 2.96 IN 40.03 AC-FT 11480
 WTR YR 1982 TOTAL 6271.1 MEAN 17.2 MAX 164 MIN 5.7 CFSM 3.20 IN 43.35 AC-FT 12440

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO SEPTEMBER 1982

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPEC- IFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)
AUG, 1981				
13...	1445	19.0	714	28.0
SEP				
21...	1411	43.0	149	25.5
OCT				
22...	1200	9.2	152	26.5
NOV				
16...	1445	6.1	186	27.5
FEB, 1982				
8...	1255	16.0	145	25.0
MAR				
9...	1345	11.0	177	26.0
APR				
5...	1110	14.0	173	27.0
MAY				
4...	1420	6.2	191	26.0
JUN				
8...	1150	16.0	147	26.0
JUL				
8...	1235	7.0	176	29.0
AUG				
9...	1315	13.0	175	26.0
SEP				
8...	1150	10.0	185	28.5

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, 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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHCS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 , 1980												
25...	0830	19	206	7.4	23.5	.40	7.9	--	20	4700	K1100	65
JAN , 1981												
22...	1545	8.2	237	7.2	26.0	3.0	7.6	--	10	2100	K90	--
MAR												
26...	1245	8.4	218	7.6	33.0	330	6.9	--	54	3800	2200	68
MAY												
19...	1335	14	195	7.4	29.0	350	7.0	90	27	4000	K1200	--
JUL												
28...	1515	37	191	7.5	30.0	11	7.2	95	<10	K14000	510	63
SEP												
24...	1040	18	210	7.3	29.0	5.0	7.6	99	120	K1600	670	75
NOV												
20...	1235	14	246	7.2	28.5	18	7.8	100	<10	3000	430	--
JAN , 1982												
22...	1330	23	202	7.4	27.0	80	8.0	100	100	K8500	940	74
MAR												
23...	1150	16	246	7.3	27.5	5.0	8.9	111	<10	2000	260	--
MAY												
28...	1020	40	203	7.0	25.0	83	8.2	98	40	31000	9400	58
JUL												
27...	1310	44	159	6.8	28.5	22	7.0	89	17	K7400	4800	--
SEP												
27...	1415	58	179	7.0	29.0	2.6	7.2	94	49	K18000	3600	50

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- 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 , 1980											
25...	0	16	6.0	17	.9	1.1	72	7.6	17	.1	39
JAN , 1981											
22...	--	--	--	--	--	--	80	--	--	--	--
MAR											
26...	0	17	6.2	22	1.2	.8	77	9.3	18	.2	38
MAY											
19...	--	--	--	--	--	--	69	--	--	--	--
JUL											
28...	0	15	6.3	19	1.0	.9	74	8.0	16	.1	38
SEP											
24...	0	17	7.9	19	1.0	.8	77	7.3	15	.2	43
NOV											
20...	--	--	--	--	--	--	79	--	--	--	--
JAN , 1982											
22...	0	18	7.0	20	1.1	1.0	80	9.8	13	.1	36
MAR											
23...	--	--	--	--	--	--	77	--	--	--	--
MAY											
28...	0	14	5.7	15	.9	1.3	61	8.0	15	.1	32
JUL											
27...	--	--	--	--	--	--	49	--	--	--	--
SEP											
27...	0	12	4.8	14	.9	1.4	52	9.0	13	.1	31

K = non-ideal count.

50091000 RIO MAUNABO AT MAUNABO, PR--Continued

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

DATE	SOLIDS, SUM OF CCNSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TCNS 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 , 1980											
25...	147	7.5	39	.37	.010	.38	.000	.14	.14	.52	2.3
JAN , 1981											
22...	--	--	14	.11	<.010	.12	.010	.11	.12	.24	1.1
MAR											
26...	158	3.6	1880	.07	.040	.11	.150	2.0	2.10	2.2	9.8
MAY											
19...	--	--	2000	.11	.060	.17	.390	.44	.83	1.0	4.4
JUL											
28...	148	14.8	--	.36	<.010	.37	.010	.38	.39	.76	3.4
SEP											
24...	157	7.6	16	--	<.010	.24	.080	.43	.51	.75	3.3
NOV											
20...	--	--	77	--	<.010	.30	.030	--	<.10	--	--
JAN , 1982											
22...	152	9.5	139	.41	.020	.43	.060	.30	.36	.79	3.5
MAR											
23...	--	--	20	.16	.010	.17	.120	.16	.28	.45	2.0
MAY											
28...	131	14.1	117	.17	.030	.20	.050	.55	.60	.80	3.5
JUL											
27...	--	--	25	.29	.020	.31	.050	.35	.40	.71	3.1
SEP											
27...	115	17.9	36	.29	.010	.30	.020	.38	.40	.70	3.1

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)	SFLE- 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 , 1980											
25...	.080	--	--	--	--	--	--	--	--	73	3.7
JAN , 1981											
22...	.050	--	--	--	--	--	--	--	--	10	.22
MAR											
26...	.830	<1	500	<1	<1	11	.2	<1	<1	--	--
MAY											
19...	.510	--	--	--	--	--	--	--	--	--	--
JUL											
28...	.080	--	--	--	--	--	--	--	--	41	4.1
SEP											
24...	.090	--	100	1	10	5	<.1	<1	<1	37	1.8
NOV											
20...	.100	--	--	--	--	--	--	--	--	63	2.4
JAN , 1982											
22...	.090	1	100	3	5	4	.1	<1	<1	170	11
MAR											
23...	.090	--	--	--	--	--	--	--	--	--	--
MAY											
28...	.130	--	--	--	--	--	--	--	--	--	--
JUL											
27...	.080	--	--	--	--	--	--	--	--	--	--
SEP											
27...	.090	1	<100	<1	<1	10	<.1	<1	<1	--	--

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.

DRAINAGE AREA.--4.9 sq mi (12.8 sq km).

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

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

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 , 1980												
25...	1100	1.6	498	7.1	26.0	1.3	1.5	--	67	K1900000	K50000	120
JAN , 1981												
09...	1310	.59	734	6.7	29.0	8.7	.0	0	14	K8700000	420000	--
APR												
08...	1140	E.75	720	6.9	27.0	3.4	.0	0	180	K7500000	220000	140
MAY												
19...	1135	1.1	611	7.1	28.0	17	1.2	15	92	370000	300000	--
JUL												
28...	1010	8.4	309	7.8	27.0	7.0	6.7	84	<10	K160000	9800	98
SEP												
24...	1250	1.2	540	7.2	30.0	4.0	.0	0	<5	K6900000	820000	140
NOV												
20...	1015	.30	551	6.9	27.5	2.6	.7	9	37	K1600000	K160000	--
JAN , 1982												
22...	1130	1.6	680	7.3	25.0	5.0	2.2	26	62	3100000	K150000	140
MAR												
23...	0840	.30	682	7.1	25.5	2.1	2.0	24	56	K960000	K99000	--
MAY												
28...	1235	2.3	518	7.4	26.0	12	6.8	82	68	<1000	<1000	110
JUL												
27...	1100	15	286	7.2	26.0	18	7.0	84	47	490000	20000	--
SEP												
27...	1145	16	276	7.4	26.0	8.0	7.2	88	10	250000	30000	75

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 SiO2)
NOV , 1980											
25...	0	27	12	42	1.7	3.5	166	30	40	.2	36
JAN , 1981											
09...	--	--	--	--	--	--	226	--	--	--	--
APR											
08...	0	34	14	57	2.1	6.7	234	40	50	.2	42
MAY											
19...	--	--	--	--	--	--	173	--	--	--	--
JUL											
28...	0	21	11	34	1.5	1.2	121	13	22	.2	35
SEP											
24...	0	31	14	51	1.9	3.6	182	30	40	.2	30
NOV											
20...	--	--	--	--	--	--	180	--	--	--	--
JAN , 1982											
22...	0	32	14	83	3.4	4.4	197	40	55	.2	31
MAR											
23...	--	--	--	--	--	--	180	--	--	--	--
MAY											
28...	0	25	11	53	2.4	2.7	150	32	49	.2	27
JUL											
27...	--	--	--	--	--	--	98	--	--	--	--
SEP											
27...	0	17	8.0	26	1.4	1.5	90	15	21	.2	30

E Estimated.

K = non-ideal count.

50091800 RIO CHICO AT PROVIDENCIA, PR--Continued

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

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 , 1980											
25...	290	1.3	5	.03	.020	.05	6.80	5.2	12.0	12	53
JAN , 1981											
09...	--	--	50	.00	.020	.02	17.0	28	45.0	45	199
APR											
08...	384	.78	91	.22	.020	.24	.090	.21	.30	.54	2.4
MAY											
19...	--	--	20	1.1	<.010	1.1	.040	.13	.17	1.3	5.6
JUL											
28...	210	4.8	--	.15	<.010	.16	.350	.46	.81	.97	4.3
SEP											
24...	320	1.0	12	.01	.020	.03	7.80	16	24.0	24	110
NOV											
20...	--	--	53	.03	.020	.05	7.70	7.3	15.0	15	67
JAN , 1982											
22...	378	1.6	12	--	<1.10	2.7	7.80	.40	8.20	11	48
MAR											
23...	--	--	19	.12	.160	.28	4.40	7.6	12.0	12	54
MAY											
28...	271	1.7	36	.63	.070	.70	5.00	1.3	6.30	7.0	31
JUL											
27...	--	--	16	.30	.110	.41	.610	.89	1.50	1.9	8.5
SEP											
27...	167	7.4	10	.29	.010	.30	.700	.30	1.00	1.3	5.8

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 , 1980											
25...	1.70	--	--	--	--	--	--	--	--	15	.06
JAN , 1981											
09...	6.00	--	--	--	--	--	--	--	--	7	.01
APR											
08...	3.00	1	100	1	4	1	1.5	1	1	31	.06
MAY											
19...	.080	--	--	--	--	--	--	--	--	74	.22
JUL											
28...	.270	--	--	--	--	--	--	--	--	15	.34
SEP											
24...	3.00	--	100	1	10	8	.4	<1	<1	8	.03
NOV											
20...	2.30	--	--	--	--	--	--	--	--	3	.00
JAN , 1982											
22...	<.010	1	100	<1	14	2	.2	1	<1	4	.02
MAR											
23...	1.50	--	--	--	--	--	--	--	--	--	--
MAY											
28...	.740	--	--	--	--	--	--	--	--	--	--
JUL											
27...	.270	--	--	--	--	--	--	--	--	42	1.7
SEP											
27...	.270	1	<100	<1	<1	6	<.1	<1	<1	--	--

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 DISCHARGES.--15 years (1967-81), 60.5 cu ft/s (1.713 cu m/s), 44.90 in/yr (1,140 mm/yr), 43,830 acre-ft/yr (54.0 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).
--16 years (1967-82), 60.5 cu ft/s (1.713 cu m/s), 44.90 in/yr (1,140 mm/yr), 43,830 acre-ft/yr (54.0 cu hm/yr); median of yearly mean discharges, 56 cu ft/s (1.59 cu m/s), 40,600 acre-ft/yr (50 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 WATER YEARS 1981-82.--Peak discharges above base of 2,500 cu ft/s (70.8 cu m/s) and maximums (*):

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)
June 1, 1981	1045	*4,500	127	10.15	3.094	Dec. 27, 1981	0130	3,300	94.3	9.23	2.813
June 4, 1981	2115	2,540	71.9	8.51	2.594	Dec. 27, 1981	1130	*6,360	180	11.35	3.459
Dec. 26, 1981	2030	3,040	86.1	8.98	2.737						

Minimum discharges, 9.0 cu ft/s (0.255 cu m/s) Jan. 22-24, 1981; 14 cu ft/s (0.396 cu m/s) May 26, 1982.

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	19	50	30	40	17	11	10	60	518	348	50	30
2	18	79	25	25	18	11	10	45	510	119	40	30
3	19	46	25	22	24	11	13	35	319	72	40	30
4	47	230	25	21	20	11	10	30	508	52	55	30
5	40	122	25	19	16	15	10	45	715	73	45	30
6	100	58	30	18	14	13	20	30	292	56	40	35
7	126	46	35	19	16	12	15	54	151	48	37	45
8	59	38	20	20	15	21	14	29	102	42	37	100
9	98	33	20	16	14	19	14	26	76	61	43	50
10	70	30	17	14	15	14	17	50	59	53	52	35
11	43	30	16	18	19	12	14	30	52	41	41	32
12	34	25	16	24	17	12	14	25	49	38	56	36
13	33	25	15	16	14	12	14	50	99	37	133	39
14	41	20	28	16	15	11	14	150	55	131	84	36
15	37	20	18	15	120	9.5	12	75	49	289	47	35
16	39	40	38	17	71	10	13	50	45	103	42	40
17	31	30	21	16	37	10	20	40	41	210	37	44
18	33	25	20	14	25	15	18	35	39	133	38	39
19	37	25	17	14	22	10	16	30	38	119	37	43
20	33	30	18	13	20	10	16	50	35	191	35	39
21	27	100	16	12	18	10	14	115	38	132	44	42
22	36	40	16	12	16	10	419	162	39	127	41	39
23	66	45	15	9.0	15	10	115	295	36	136	54	36
24	62	30	14	10	14	10	28	131	39	306	63	32
25	48	25	14	51	13	10	24	75	45	173	43	30
26	40	25	21	27	13	10	32	96	45	106	35	35
27	32	20	17	41	12	10	54	57	37	74	35	32
28	30	20	14	27	12	10	25	50	43	66	30	23
29	28	30	14	24	---	16	80	43	46	57	30	25
30	101	45	16	17	---	10	90	45	222	58	30	30
31	52	---	46	18	---	10	---	313	---	70	30	---
TOTAL	1479	1382	662	625.0	642	365.5	1165	2321	4342	3521	1424	1122
MEAN	47.7	46.1	21.4	20.2	22.9	11.8	38.8	74.9	145	114	45.9	37.4
MAX	126	230	46	51	120	21	419	313	715	348	133	100
MIN	18	20	14	9.0	12	9.5	10	25	35	37	30	23
CFSM	2.61	2.52	1.17	1.10	1.25	.65	2.12	4.09	7.92	6.23	2.51	2.04
IN.	3.01	2.81	1.35	1.27	1.30	.74	2.37	4.72	8.83	7.16	2.89	2.28
AC-FT	2930	2740	1310	1240	1270	725	2310	4600	8610	6980	2820	2230

CAL YR 1980	TOTAL	11694.7	MEAN	32.0	MAX	434	MIN	8.7	CFSM	1.75	IN	23.77	AC-FT	23200
WTR YR 1981	TOTAL	19050.5	MEAN	52.2	MAX	715	MIN	9.0	CFSM	2.85	IN	38.72	AC-FT	37790

RIO GRANDE DE PATILLAS BASIN

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50092000 RIO GRANDE DE PATILLAS NEAR PATILLAS, PR--Continued

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	34	23	17	143	22	117	20	16	23	21	94	33
2	66	23	203	120	38	56	20	15	109	18	100	39
3	46	22	83	120	116	41	21	15	35	18	64	32
4	36	21	30	113	58	35	19	58	41	16	49	29
5	26	20	22	80	682	33	22	137	54	15	43	25
6	50	20	18	69	277	44	20	489	28	15	38	24
7	35	20	26	62	146	35	20	105	219	15	35	27
8	29	20	21	56	111	34	23	38	137	15	34	24
9	24	24	18	50	138	31	18	28	80	15	31	24
10	22	22	17	45	127	37	17	48	62	35	42	23
11	23	19	68	44	80	35	16	54	51	25	42	23
12	24	18	43	43	71	32	17	51	44	20	30	348
13	21	20	33	42	67	27	17	31	37	20	32	839
14	20	21	21	44	66	26	18	38	49	20	33	204
15	25	23	33	42	56	24	16	27	31	17	46	100
16	24	19	33	37	51	23	16	23	30	20	37	69
17	37	17	26	31	50	22	26	24	32	25	28	54
18	32	16	71	30	49	21	20	20	28	35	30	46
19	60	18	46	29	43	20	16	17	36	89	26	40
20	40	19	28	27	60	18	16	16	52	65	24	37
21	37	17	23	25	53	19	16	61	31	80	24	39
22	30	17	23	24	40	21	16	25	26	327	76	116
23	27	16	19	23	64	21	16	20	26	118	288	49
24	27	16	17	23	44	22	15	18	38	68	107	141
25	26	18	33	23	38	28	15	16	26	61	60	268
26	62	56	534	22	34	34	15	15	23	87	43	323
27	46	80	1270	21	31	36	19	72	22	97	40	151
28	38	23	567	21	36	23	28	261	21	52	43	102
29	35	19	422	20	---	23	21	80	21	113	50	67
30	27	18	328	20	---	23	17	40	23	440	42	113
31	24	---	193	28	---	22	---	26	---	105	35	---
TOTAL	1053	685	4286	1477	2648	983	556	1884	1435	2067	1666	3409
MEAN	34.0	22.8	138	47.6	94.6	31.7	18.5	60.8	47.8	66.7	53.7	114
MAX	66	80	1270	143	682	117	28	489	219	440	288	839
MIN	20	16	17	20	22	18	15	15	21	15	24	23
CFSM	1.56	1.25	7.54	2.60	5.17	1.73	1.01	3.32	2.61	3.65	2.93	6.23
IN.	2.14	1.39	8.71	3.00	5.38	2.00	1.13	3.83	2.92	4.20	3.39	6.93
AC-FT	2090	1360	8500	2930	5250	1950	1100	3740	2850	4100	3300	6760
CAL YR 1981	TOTAL	21551.5	MEAN 59.0	MAX 1270	MIN 9.0	CFSM 3.22	IN 43.81	AC-FT 42750				
WTR YR 1982	TOTAL	22149.0	MEAN 60.7	MAX 1270	MIN 15	CFSM 3.32	IN 45.02	AC-FT 43930				

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CCN- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 (CCLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)
NOV, 1980											
14...	1200	22	170	8.4	26.5	.20	8.1	--	K850	--	46
DEC											
10...	1000	18	160	7.4	20.0	.60	9.6	--	420	170	48
JAN, 1981											
09...	1050	17	163	7.6	24.0	.40	8.1	--	510	92	51
FEB											
09...	1315	14	165	8.2	25.5	.40	8.1	--	430	170	48
MAR											
10...	1200	14	158	8.0	24.5	.50	8.5	--	600	210	52
APR											
08...	0945	16	166	7.7	23.0	.60	8.9	--	K720	140	48
MAY											
18...	1515	18	132	7.9	28.0	2.2	8.0	104	K1300	250	36
JUN											
18...	1240	41	135	8.3	28.5	1.2	8.4	114	570	90	44
JUL											
13...	1400	41	162	8.0	29.0	1.5	7.5	99	K6300	2300	48
AUG											
06...	1430	40	144	8.4	30.0	1.3	8.2	110	490	K10	43
SEP											
10...	1430	34	155	7.5	30.0	2.0	7.6	100	K930	K130	41
OCT											
05...	1400	25	--	--	29.5	1.6	7.5	99	K160	K120	52
DEC											
07...	1215	34	151	7.6	24.0	9.8	7.7	91	40000	7900	47
FEB, 1982											
04...	1200	52	124	8.2	23.0	12	8.9	104	K1400	850	35
MAR											
30...	1115	23	158	8.1	24.5	.80	8.2	101	K180	K160	53
JUN											
07...	1245	166	107	8.1	25.0	30	8.9	108	25000	4500	30
AUG											
09...	1200	33	163	8.1	26.5	1.0	9.2	113	350	K140	48

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- 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, 1980											
14...	10	10	5.0	14	.9	.4	36	8.9	11	.1	26
DEC											
10...	0	11	5.0	12	.8	.3	59	8.9	13	.1	17
JAN, 1981											
09...	5	12	5.1	14	.9	.4	57	12	11	.1	27
FEB											
09...	0	11	4.9	13	.8	.8	52	9.8	10	.1	25
MAR											
10...	0	12	5.3	14	.8	.5	52	11	12	.1	23
APR											
08...	0	11	4.9	13	.8	.5	54	9.7	10	.1	19
MAY											
18...	0	8.4	3.7	12	.9	.5	38	8.8	12	<.1	20
JUN											
18...	1	10	4.5	12	.8	.5	43	9.0	10	<.1	27
JUL											
13...	0	11	5.0	14	.9	.5	44	10	11	.1	25
AUG											
06...	0	9.7	4.6	16	1.1	.4	44	9.9	9.4	.1	25
SEP											
19...	0	9.0	4.5	12	.8	.5	54	8.4	12	<.1	21
OCT											
05...	0	12	5.3	14	.9	.5	56	9.5	13	.1	25
DEC											
07...	0	11	4.8	13	.9	.8	44	12	10	.1	18
FEB, 1982											
04...	0	8.1	3.7	11	.9	.3	46	8.5	9.3	.1	17
MAR											
30...	0	12	5.6	16	1.1	.2	57	12	10	.1	26
JUN											
07...	0	6.6	3.2	9.8	.9	.6	34	6.0	8.3	<.1	18
AUG											
09...	0	11	5.0	13	.9	<.1	57	9.0	9.8	.1	23

K = non-ideal count.

50092000 RIO GRANDE DE PATILLAS NEAR PATILLAS, PR--Continued

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

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)
NOV , 1980											
14...	107	98	6.2	.15	.15	.000	.000	.12	.01	.12	.01
DEC											
10...	--	103	5.0	.04	.04	.000	.000	.07	.07	.07	.07
JAN , 1981											
09...	105	109	4.8	.12	.12	.000	.000	.08	.01	.08	.01
FEB											
09...	112	106	4.2	--	--	--	--	--	--	--	--
MAR											
10...	111	108	4.2	.03	.03	<.010	<.010	--	--	.14	<.10
APR											
08...	96	101	4.2	<.01	<.01	.010	.010	.09	.09	.10	.10
MAY											
18...	93	89	4.5	2.2	.12	.460	<.010	.13	--	.59	.27
JUN											
18...	103	99	11.4	.05	.05	.040	.010	--	--	--	--
JUL											
13...	113	104	12.5	.05	.05	.040	.010	.84	.60	.88	.61
AUG											
06...	101	101	10.9	.03	.03	.030	.030	.21	.13	.24	.16
SEP											
10...	96	101	8.8	.12	.13	.030	.020	.53	.43	.56	.45
OCT											
05...	113	114	7.6	--	.11	--	<.010	--	--	.13	--
DEC											
07...	107	97	9.8	--	.17	--	.040	--	--	<.10	--
FEB , 1982											
04...	90	79	12.6	--	.55	--	.020	--	--	.93	--
MAR											
30...	115	115	7.1	--	.17	--	.050	--	--	<.10	--
JUN											
07...	69	72	30.9	--	.11	--	<.010	--	--	.40	--
AUG											
09...	104	103	9.3	--	<.10	--	<.010	--	--	.30	--

DATE	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, DIS- SOLVED (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)
NOV , 1980										
14...	.27	.18	1.2	.040	.040	--	--	--	--	--
DEC										
10...	.11	--	.49	.010	.010	--	--	--	--	--
JAN , 1981										
09...	.20	.14	.89	.020	.010	--	1	1	100	20
FEB										
09...	--	--	--	--	--	--	--	--	--	--
MAR										
10...	.17	--	.75	.020	.010	--	--	--	--	--
APR										
08...	--	.11	--	.020	.020	--	1	1	100	20
MAY										
18...	2.8	.39	12	.020	<.010	--	--	--	--	--
JUN										
18...	--	--	--	--	--	--	--	--	--	--
JUL										
13...	.93	.67	4.1	.040	.040	--	1	1	100	20
AUG										
06...	.27	.19	1.2	.020	<.010	--	--	--	--	--
SEP										
10...	.68	.58	3.0	.020	.010	--	1	1	100	<50
OCT										
05...	--	--	--	.020	.020	.010	1	1	<50	30
DEC										
07...	--	--	--	.030	<.010	.040	--	--	--	--
FEB , 1982										
04...	--	--	--	.040	.030	.030	1	<1	100	20
MAR										
30...	--	--	--	.020	.030	.020	--	--	--	--
JUN										
07...	--	--	--	.050	.030	.010	<1	<1	<100	18
AUG										
09...	--	--	--	.010	<.010	<.010	1	1	100	21

50092000 RIO GRANDE DE PATILLAS NEAR PATILLAS, PR--Continued

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

DATE	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRC- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)
NOV , 1980										
14...	--	--	--	--	--	--	--	--	--	--
DEC										
10...	--	--	--	--	--	--	--	--	--	--
JAN , 1981										
09...	<1	<1	10	<10	<1	<1	4	2	90	<10
FEB										
09...	--	--	--	--	--	--	--	--	--	--
MAR										
10...	--	--	--	--	--	--	--	--	--	--
APR										
08...	1	<1	10	<10	1	<1	3	1	100	10
MAY										
18...	--	--	--	--	--	--	--	--	--	--
JUN										
18...	--	--	--	--	--	--	--	--	--	--
JUL										
13...	1	<1	10	<10	4	2	4	3	210	30
AUG										
06...	--	--	--	--	--	--	--	--	--	--
SEP										
10...	<1	<1	10	10	1	<1	4	2	250	50
OCT										
05...	1	<1	20	<10	2	2	5	3	170	170
DEC										
07...	--	--	--	--	--	--	--	--	--	--
FEB , 1982										
04...	<1	<1	10	--	<1	<1	8	8	470	46
MAR										
30...	--	--	--	--	--	--	--	--	--	--
JUN										
07...	<1	1	10	10	<1	<1	9	7	2100	73
AUG										
09...	<1	<1	10	<10	2	<1	10	3	110	30

DATE	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)
NOV , 1980										
14...	--	--	--	--	--	--	--	--	--	--
DEC										
10...	--	--	--	--	--	--	--	--	--	--
JAN , 1981										
09...	4	<1	10	9	.1	.1	3	<1	<1	<1
FEB										
09...	--	--	--	--	--	--	--	--	--	--
MAR										
10...	--	--	--	--	--	--	--	--	--	--
APR										
08...	4	4	20	4	.8	.8	25	<1	<1	<1
MAY										
18...	--	--	--	--	--	--	--	--	--	--
JUN										
18...	--	--	--	--	--	--	--	--	--	--
JUL										
13...	1	1	30	10	4.0	1.5	6	6	<1	<1
AUG										
06...	--	--	--	--	--	--	--	--	--	--
SEP										
10...	<1	<1	20	<10	.1	.1	3	2	<1	<1
OCT										
05...	5	1	20	12	.1	.1	4	<1	<1	<1
DEC										
07...	--	--	--	--	--	--	--	--	--	--
FEB , 1982										
04...	2	1	30	11	.2	<.1	4	<1	<1	<1
MAR										
30...	--	--	--	--	--	--	--	--	--	--
JUN										
07...	5	<1	90	9	.1	<.1	4	3	<1	<1
AUG										
09...	3	2	10	9	.1	.1	6	2	<1	<1

50092000 RIO GRANDE DE PATILLAS NEAR PATILLAS, PR--Continued

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

DATE	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)	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
NOV , 1980										
14...	--	--	--	--	420	6.2	--	--	--	--
DEC										
10...	--	--	--	--	210	2.0	--	--	--	--
JAN , 1981										
09...	<1	<1	25	5	190	--	1.2	--	1	.05
FEB										
09...	--	--	--	--	390	--	--	--	0	.00
MAR										
10...	--	--	--	--	220	1.3	--	--	28	1.1
APR										
08...	<1	<1	10	<4	280	--	2.3	--	1	.04
MAY										
18...	--	--	--	--	44	2.2	--	--	2	.10
JUN										
18...	--	--	--	--	1300	--	--	--	0	.00
JUL										
13...	<1	<1	10	<4	78	--	3.0	--	1	.11
AUG										
06...	--	--	--	--	0	2.0	--	--	0	.00
SEP										
10...	<1	<1	30	<10	0	--	3.3	.6	2	.18
OCT										
05...	2	1	10	<4	--	--	--	--	1	.07
DEC										
07...	--	--	--	--	--	--	--	--	39	3.6
FEB , 1982										
04...	<1	<1	50	<4	--	--	--	--	35	4.9
MAR										
30...	--	--	--	--	--	--	--	--	2	.12
JUN										
07...	<1	<1	10	<4	--	--	--	--	153	69
AUG										
09...	<1	<1	40	<4	--	--	--	--	0	.00

50092000 RIO GRANDE DE PATILLAS NEAR PATILLAS, PR--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	CHLOR- DANE, TOTAL (UG/L)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDT, TOTAL (UG/L)
OCT , 1981												
05...	1400	--	<1	--	<.1	--	<1.0	--	.3	--	.3	--
FEB , 1982												
04...	1200	<.10	--	<.01	--	<.10	--	<.01	--	<.01	--	<.01
MAR												
30...	1115	<.10	<1	<.01	<.1	<.10	<1.0	<.01	<.1	<.01	<.1	<.01

DATE	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- AZINON, TOTAL (UG/L)	DI- ELDRIN, TOTAL (UG/L)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)
OCT , 1981											
05...	1.8	--	--	<.1	--	--	<.1	--	--	<.1	--
FEB , 1982											
04...	--	.03	<.01	--	<.01	<.01	--	<.01	<.01	--	<.01
MAR											
30...	<.1	<.01	<.01	<.1	<.01	<.01	<.1	<.01	<.01	<.1	<.01

DATE	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	MALA- THION, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	MIREX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	PARA- THION, TOTAL (UG/L)
OCT , 1981											
05...	<.1	--	<.1	--	--	<.1	--	--	--	<.1	--
FEB , 1982											
04...	--	<.01	--	<.01	<.01	--	<.01	<.01	<.01	--	<.01
MAR											
30...	<.1	<.01	<.1	<.01	<.01	<.1	<.01	<.01	<.01	<.1	<.01

DATE	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	PCN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	PER- THANE TOTAL (UG/L)	PER- THANE IN BOTTOM MATERIAL (UG/KG)	TOX- APHENE, TOTAL (UG/L)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	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)
OCT , 1981											
05...	--	<1.0	--	<.10	--	<1.0	--	--	--	--	--
FEB , 1982											
04...	<.10	--	<.10	--	<1	--	<.01	<.01	<.01	<.01	<.01
MAR											
30...	<.10	<1.0	<.10	<1.00	<1	<10	<.01	<.01	<.01	<.01	<.01

50092000 RIO GRANDE DE PATILLAS NEAR PATILLAS, PR--Continued

PHYTOPLANKTON ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE TIME	NOV 14, 80 1200		DEC 10, 80 1000		JAN 9, 81 1050		FEB 9, 81 1315		MAR 10, 81 1200		APR 8, 81 0945	
TOTAL CELLS/ML	420		210		190		390		220		280	
DIVERSITY: DIVISION	1.0		0.0		1.4		1.5		1.4		1.5	
..CLASS	1.0		0.0		1.4		1.5		1.4		1.5	
...ORDER	1.3		1.2		2.3		2.3		2.2		2.3	
...FAMILY	1.3		1.5		2.3		2.3		2.2		2.3	
....GENUS	1.5		1.5		2.3		2.6		2.2		2.3	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)												
..BACILLARIOPHYCEAE												
...ACHNANTHALES												
...ACHNANTHACEAE												
....ACHNANTHES	43	10	--	--	--	--	--	--	--	--	--	--
....COCCONEIS	43	10	14	7	43#	23	100#	26	74#	33	69#	25
...BACILLARIALES												
...NITZSCHACEAE												
....NITZSCHIA	14	3	--	--	--	--	15	4	15	7	--	--
...EPITHEMIALES												
...EPITHEMIAEAE												
....RHOPALODIA	--	--	--	--	--	--	--	--	--	--	14	5
...EUPODISCALES												
...COSCINODISCAEAE												
....CYCLOTELLA	--	--	--	--	--	--	--	--	--	--	14	5
....MELOSIRA	--	--	--	--	--	--	--	--	--	--	--	--
...FRAGILARIALES												
...FRAGILARIAEAE												
....SYNEDRA	14	3	130#	60	29#	15	--	--	--	--	14	5
...NAVICULALES												
...GOMPHONEMACEAE												
....GOMPHONEMA	--	--	14	7	--	--	--	--	--	--	14	5
...NAVICULACEAE												
....NAVICULA	--	--	57#	27	29#	15	44	11	44#	20	--	--
CHLOROPHYTA (GREEN ALGAE)												
..CHLOROPHYCEAE												
...CHLOROCOCCALES												
...OOCYSTACEAE												
....ANKISTRODESMUS	14	3	--	--	--	--	--	--	--	--	--	--
...SCENEDESMACEAE												
....CRUCIGENIA	--	--	--	--	--	--	--	--	--	--	--	--
....SCENEDESMUS	--	--	--	--	--	--	29	7	--	--	--	--
...VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	--	--	--	--	57#	31	58	15	44#	20	41	15
CYANOPHYTA (BLUE-GREEN ALGAE)												
..CYANOPHYCEAE												
...CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	--	--	--	--	--	100#	26	44#	20	--	--
....COCCOCHLORIS	--	--	--	--	29#	15	44	11	--	--	--	--
...NOSTOCALES												
...NOSTOCACEAE												
....APHANIZOMENON	290#	69	--	--	--	--	--	--	--	--	--	--
...OSCILLATORIALES												
...OSCILLATORIAEAE												
....OSCILLATORIA	--	--	--	--	--	--	--	--	--	--	110#	40

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

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

RIO GRANDE DE PATILLAS BASIN

50092000 RIO GRANDE DE PATILLAS NEAR PATILLAS, PR--Continued

PHYTOPLANKTON ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE TIME	MAY 18,81 1515	JUN 18,81 1240	JUL 13,81 1400	AUG 6,81 1430	SEP 10,81 1430					
TOTAL CELLS/ML	44	1300	78	0	0					
DIVERSITY: DIVISION	0.9	1.1	0.7	0.0	0.0					
...CLASS	0.9	1.1	0.7	0.0	0.0					
...ORDER	1.6	2.1	1.3	0.0	0.0					
...FAMILY	1.6	2.1	1.3	0.0	0.0					
...GENUS	1.6	2.2	1.3	0.0	0.0					
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)										
..BACILLARIOPHYCEAE										
...ACHNANTHALES										
...ACHNANTHACEAE										
...ACHNANTHES	--	-	150	11	--	-	--	-	--	-
...COCconeis	--	-	15	1	--	-	--	-	--	-
..BACILLARIALES										
...NITZSCHIACEAE										
...NITZSCHIA	15#	33	250#	19	13#	17	--	-	--	-
...EPITHEMIALES										
...EPITHEMIAEAE										
...RHOPALODIA	--	-	--	-	--	-	--	-	--	-
...EUPODISCALES										
...COSCINODISCACEAE										
...CYCLOTELLA	--	-	29	2	--	-	--	-	--	-
...MELOSIRA	--	-	--	-	52#	67	--	-	--	-
..FRAGILARIALES										
...FRAGILARIAEAE										
...SYNEDRA	--	-	15	1	--	-	--	-	--	-
...NAVICULALES										
...GOMPHONEMACEAE										
...GOMPHONEMA	15#	33	--	-	--	-	--	-	--	-
...NAVICULACEAE										
...NAVICULA	--	-	130	10	--	-	--	-	--	-
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
...CHLOROCOCCALES										
...OOCYSTACEAE										
...ANKISTRODESMUS	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE										
...CRUCIGENIA	--	-	58	4	--	-	--	-	--	-
...SCENEDESMUS	--	-	--	-	--	-	--	-	--	-
...VOLVOCALES										
...CHLAMYDOMONADACEAE										
...CHLAMYDOMONAS	15#	33	660#	50	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
..CYANOPHYCEAE										
...CHROOCOCCALES										
...CHROOCOCCACEAE										
...ANACYSTIS	--	-	15	1	13#	17	--	-	--	-
...COCCOCHLORIS	--	-	--	-	--	-	--	-	--	-
...NOSTOCALES										
...NOSTOCACEAE										
...APHANIZOMENON	--	-	--	-	--	-	--	-	--	-
...OSCILLATORIALES										
...OSCILLATORIAEAE										
...OSCILLATORIA	--	-	--	-	--	-	--	-	--	-

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

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

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 , 1980												
26...	1730	6.0	700	7.6	25.0	.30	3.6	--	35	26000	2100	250
JAN , 1981												
13...	1200	12	570	7.7	27.5	.30	6.4	--	19	K100000	260	--
MAR												
12...	1230	6.3	623	7.9	29.5	2.4	7.5	--	<10	44000	K1700	260
MAY												
07...	1645	9.0	580	7.4	30.5	6.0	4.7	--	55	K5000	--	--
AUG												
07...	0830	5.2	653	7.8	27.0	1.1	7.8	98	48	K1200	K1000	210
SEP												
08...	1145	7.5	624	8.0	30.0	1.3	8.2	111	14	8909	400	260
NOV												
16...	1200	35	627	8.2	28.0	1.7	8.4	109	16	K4900	K450	--
JAN , 1982												
22...	1330	15	685	8.2	27.0	1.5	9.1	115	25	K8700	K1500	260
MAR												
16...	1145	7.8	690	8.3	30.0	--	9.6	130	12	K1300	K100	--
MAY												
18...	0940	11	530	7.8	26.0	1.5	7.4	94	<10	32000	2400	220
JUL												
27...	1015	5.8	666	7.9	28.0	1.6	7.0	91	22	4500	K1800	--
SEP												
22...	0940	8.8	675	7.7	26.0	<1.0	6.3	79	23	28000	2500	230

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- 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 , 1980											
26...	0	67	19	34	.9	3.9	254	35	44	.2	33
JAN , 1981											
13...	--	--	--	--	--	--	221	--	--	--	--
MAR											
12...	10	71	21	37	1.0	3.5	250	32	45	.3	33
MAY											
07...	--	--	--	--	--	--	212	--	--	--	--
AUG											
07...	0	61	13	55	1.7	3.5	235	28	45	.3	34
SEP											
08...	35	68	21	36	1.0	2.6	225	28	42	.3	28
NOV											
16...	--	--	--	--	--	--	221	--	--	--	--
JAN , 1982											
22...	14	69	21	41	1.2	3.0	246	30	43	.2	29
MAR											
16...	--	--	--	--	--	--	250	--	--	--	--
MAY											
18...	0	58	18	32	1.0	2.5	220	30	40	.2	30
JUL											
27...	--	--	--	--	--	--	240	--	--	--	--
SEP											
22...	3	62	19	38	1.2	2.9	230	28	42	.2	33

K = non-ideal count.

RIO COAMO BASIN

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50106500 RIO COAMO NEAR COAMO, PR---Continued

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

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 , 1980											
26...	389	6.3	15	1.3	.280	1.6	1.20	.90	2.10	3.7	16
JAN , 1981											
13...	--	--	11	2.4	.230	2.6	.850	.35	1.20	3.8	17
MAR											
12...	393	6.7	16	2.0	.330	2.3	2.10	.00	2.10	4.4	19
MAY											
07...	--	--	20	1.8	.460	2.3	.860	.64	1.50	3.8	17
AUG											
07...	381	5.4	16	2.0	.180	2.2	.180	.43	.61	2.8	12
SEP											
08...	361	7.3	18	2.3	.150	2.4	.180	.40	.58	3.0	13
NOV											
16...	--	--	56	2.4	.050	2.4	.160	.10	.26	2.7	12
JAN , 1982											
22...	384	15.2	14	2.8	.230	3.0	.770	.53	1.30	4.3	19
MAR											
16...	--	--	17	2.5	.270	2.8	.730	.47	1.20	4.0	18
MAY											
18...	342	10.2	6	2.2	.200	2.4	.300	1.0	1.30	3.7	16
JUL											
27...	--	--	7	2.7	.180	2.9	.310	.29	.60	3.5	16
SEP											
22...	348	8.3	4	2.3	.310	2.6	.220	.28	.50	3.1	14

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 , 1980											
26...	1.10	--	--	--	--	--	--	--	--	11	.18
JAN , 1981											
13...	.780	--	--	--	--	--	--	--	--	9	.29
MAR											
12...	1.10	<1	100	<1	2	3	<.1	<1	<1	7	.12
MAY											
07...	.950	--	--	--	--	--	--	--	--	11	.27
AUG											
07...	.650	--	--	--	--	--	--	--	--	7	.10
SEP											
08...	.680	--	100	<1	10	2	.5	<1	<1	4	.08
NOV											
16...	.390	--	--	--	--	--	--	--	--	3	.28
JAN , 1982											
22...	.830	1	100	<1	4	<1	<.1	<1	2	2	.08
MAR											
16...	.890	--	--	--	--	--	--	--	--	--	--
MAY											
18...	.510	--	--	--	--	--	--	--	--	--	--
JUL											
27...	.710	--	--	--	--	--	--	--	--	--	--
SEP											
22...	.570	2	<100	<1	<1	3	.4	<1	<1	--	--

50112500 RIO INABON AT REAL ABAJO, PR

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 DISCHARGES.--15 years (1965-69, 72-81), 19.1 cu ft/s (0.541 cu m/s), 26.74 in/yr (679 mm/yr), 13,840 acre-ft/yr (17.1 cu hm/yr); median of yearly mean discharges, 19 cu ft/s (0.54 cu m/s), 13,800 acre-ft/yr (17 cu hm/yr).
--16 years (1965-69, 72-82), 18.9 cu ft/s (0.535 cu m/s), 26.46 in/yr (672 mm/yr), 13,690 acre-ft/yr (16.9 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 WATER YEARS 1981-82.--Peak discharges above base of 500 cu ft/s (14.2 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. 15, 1980	1530	*1,460	41.3	12.84	3.914	Oct. 10, 1981	1615	704	19.9	8.35	2.545
May 23, 1981	0500	1,040	29.5	10.96	3.341	Oct. 20, 1981	1715	595	16.9	7.40	2.256
Aug. 16, 1981	1730	1,080	30.6	11.11	3.386	Oct. 29, 1981	1500	692	19.6	8.25	2.515
Sept. 25, 1981	1745	788	22.3	9.07	2.765	Dec. 13, 1981	0645	506	14.3	6.65	2.027
Sept 26, 1981	1645	1,050	29.7	10.98	3.347	Sept. 12, 1982	2315	*4,190	119	18.89	5.758
Sept. 27, 1981	1800	733	20.8	8.60	2.621						

Minimum daily discharges, 2.0 cu ft/s (0.057 cu m/s) Apr. 22, 24, 1981; 2.0 cu ft/s (0.057 cu m/s) Mar. 25, 1982.

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	63	19	11	13	4.9	3.7	5.5	3.5	19	16	12	9.0
2	53	19	12	7.3	4.2	3.6	5.9	12	18	13	12	50
3	46	18	12	6.2	4.7	3.5	9.7	27	16	13	12	34
4	41	22	15	5.4	4.5	7.2	6.0	15	14	12	9.9	25
5	35	19	12	5.1	3.7	7.5	5.3	10	18	11	12	22
6	47	17	29	5.9	3.9	4.6	7.8	12	18	10	26	22
7	62	17	17	8.3	3.9	3.6	5.7	16	13	10	21	34
8	48	16	12	17	3.6	5.0	10	8.2	12	9.2	14	58
9	51	15	9.4	19	3.0	7.7	6.4	37	12	9.1	11	121
10	45	15	9.2	20	4.1	4.1	5.5	32	11	10	14	37
11	35	15	8.5	25	3.3	4.1	5.0	18	11	9.2	14	23
12	30	14	7.9	17	3.7	4.1	4.8	15	10	8.9	17	19
13	27	14	7.9	31	3.4	4.1	4.7	13	10	9.4	22	22
14	36	14	7.8	21	17	4.1	4.2	12	9.6	13	21	19
15	148	14	7.8	14	15	4.3	4.2	9.2	8.9	11	17	17
16	94	18	7.1	12	10	4.7	3.7	11	9.1	10	127	16
17	61	14	6.7	9.6	8.2	4.4	3.3	41	8.9	20	100	15
18	48	12	6.9	7.4	5.6	6.2	3.3	42	8.6	15	30	15
19	40	10	7.1	6.5	6.4	4.6	2.9	32	9.1	15	20	25
20	36	10	6.7	6.6	5.7	4.5	2.4	29	16	23	17	20
21	42	10	6.8	5.8	6.4	4.6	2.3	29	54	20	15	17
22	36	10	6.4	5.1	6.0	4.6	2.0	38	30	15	13	25
23	32	10	6.2	4.7	3.8	4.9	2.6	204	20	15	12	22
24	30	9.0	6.7	4.2	4.2	4.6	2.0	44	18	17	12	32
25	27	9.0	7.4	4.4	4.0	4.6	2.8	29	16	21	11	77
26	25	8.6	6.9	4.2	3.8	4.9	4.8	24	14	20	10	143
27	24	8.5	5.8	3.8	4.0	4.7	6.6	21	19	17	10	135
28	22	8.5	5.6	3.9	3.9	5.0	3.7	19	16	21	10	91
29	21	8.4	5.9	10	---	8.0	2.4	16	16	15	9.0	46
30	20	9.6	6.0	9.5	---	5.9	2.4	15	16	13	9.0	34
31	20	---	8.9	5.6	---	5.5	---	24	---	13	9.0	---
TOTAL	1345	403.6	285.6	318.5	154.9	152.9	137.9	857.9	471.2	434.8	648.9	1225.0
MEAN	43.4	13.5	9.21	10.3	5.53	4.93	4.60	27.7	15.7	14.0	20.9	40.8
MAX	148	22	29	31	17	8.0	10	204	54	23	127	143
MIN	20	8.4	5.6	3.8	3.0	3.5	2.0	3.5	8.6	8.9	9.0	9.0
CFSM	4.47	1.39	.95	1.06	.57	.51	.47	2.86	1.62	1.44	2.16	4.21
IN.	5.16	1.55	1.10	1.22	.59	.59	.53	3.29	1.81	1.67	2.47	4.70
AC-FT	2670	801	566	632	307	303	274	1700	935	862	1290	2430
CAL YR 1980	TOTAL	6939.6	MEAN 19.0	MAX 204	MIN 2.5	CFSM 1.96	IN 26.61	AC-FT	13760			
WTR YR 1981	TOTAL	6436.2	MEAN 17.6	MAX 204	MIN 2.0	CFSM 1.81	IN 24.68	AC-FT	12770			

50112500 RIO INABON AT REAL ABAJO, PR--Continued

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	29	33	15	11	5.1	4.5	3.0	2.5	7.8	5.3	11	15
2	26	43	15	11	4.9	5.7	2.8	2.4	7.5	5.1	11	42
3	24	40	16	9.9	5.3	3.8	3.2	2.4	6.8	4.9	12	28
4	25	40	15	9.4	5.4	3.5	4.6	30	6.5	5.9	11	21
5	59	33	14	8.9	6.4	3.3	11	22	6.5	6.6	10	13
6	44	31	14	8.6	5.5	3.4	5.0	33	6.8	16	10	27
7	33	28	13	8.2	5.0	3.5	3.6	11	8.8	12	9.6	19
8	40	55	13	8.0	5.0	3.5	2.9	5.3	8.8	6.8	31	15
9	44	46	13	7.9	5.0	3.2	4.6	11	8.8	6.1	21	14
10	88	35	14	7.8	4.9	3.0	2.9	20	9.6	5.7	48	11
11	58	30	53	7.7	4.8	2.8	2.5	23	10	4.8	34	10
12	38	28	24	7.8	6.0	3.0	2.5	20	10	5.3	25	222
13	32	26	70	7.6	5.3	2.9	2.5	13	8.8	4.8	23	266
14	28	28	30	7.6	5.3	3.1	2.5	18	8.8	3.9	16	74
15	26	25	21	7.4	5.1	3.0	2.3	11	8.8	6.1	14	41
16	29	23	17	7.5	5.1	3.1	2.4	7.5	8.6	7.2	13	30
17	63	22	15	7.2	5.1	2.8	3.4	31	8.3	6.5	11	24
18	76	21	14	6.9	5.2	3.0	6.9	19	7.2	16	12	22
19	51	25	13	6.9	4.7	3.2	6.3	10	6.8	49	10	28
20	87	21	12	7.1	4.3	3.0	3.6	26	7.5	41	8.4	32
21	90	19	14	6.9	4.0	2.7	4.2	27	7.5	28	8.5	29
22	62	18	12	6.6	4.8	2.7	3.6	15	5.7	26	8.5	27
23	50	18	11	6.5	8.3	2.8	3.4	8.5	20	21	8.8	21
24	40	18	10	6.3	4.3	2.4	3.8	5.3	10	15	9.3	19
25	55	20	10	6.3	3.6	2.0	2.5	4.4	6.0	12	23	16
26	69	21	10	6.1	3.4	2.7	2.5	4.5	6.0	12	24	17
27	54	20	18	17	3.2	2.8	3.2	8.8	6.8	13	17	16
28	42	17	12	13	3.5	2.4	2.6	27	6.8	14	12	14
29	78	16	11	6.3	---	2.5	2.7	20	5.7	12	17	13
30	48	15	13	6.2	---	2.5	2.7	13	5.9	12	13	15
31	38	---	11	5.4	---	3.3	---	8.5	---	11	10	---
TOTAL	1526	815	543	251.0	138.5	96.1	109.7	460.1	243.1	395.0	492.1	1141
MEAN	49.2	27.2	17.5	8.10	4.95	3.10	3.66	14.8	8.10	12.7	15.9	38.0
MAX	90	55	70	17	8.3	5.7	11	33	20	49	48	266
MIN	24	15	10	5.4	3.2	2.0	2.3	2.4	5.7	3.9	8.4	10
CFSM	5.07	2.80	1.80	.84	.51	.32	.38	1.53	.84	1.31	1.64	3.92
IN.	5.85	3.13	2.08	.96	.53	.37	.42	1.76	.93	1.51	1.89	4.38
AC-FT	3030	1620	1080	498	275	191	218	913	482	783	976	2260

CAL YR 1981 TOTAL 7286.0 MEAN 20.0 MAX 204 MIN 2.0 CFSM 2.06 IN 27.94 AC-FT 14450
WTR YR 1982 TOTAL 6210.6 MEAN 17.0 MAX 266 MIN 2.0 CFSM 1.75 IN 23.82 AC-FT 12320

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO SEPTEMBER 1982

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPEC- IFIC CON- DUCT- ANCE (UMHDS)	TEMPER- ATURE (DEG C)
AUG, 1981				
11...	1005	14.0	207	25.0
SEP				
15...	1420	18.0	219	29.5
DEC				
8...	1335	13.0	275	25.5
NOV				
17...	1230	21.8	265	26.0
FEB, 1982				
9...	1200	5.9	305	25.0
AUG				
11...	1035	33.0	270	24.0
MAR				
18...	1155	3.5	29	24.5
APR				
1...	1450	6.0	311	24.5
JUN				
9...	1110	8.6	297	25.5
SEP				
2...	1000	15.0	268	24.5

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 DISCHARGES.--17 years (1965-81), 36.2 cu ft/s (1.025 cu m/s), 27.62 in/yr (702 mm/yr), 26,230 acre-ft/yr (32.3 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).
--18 years (1965-82), 36.2 cu ft/s (1.025 cu m/s), 27.62 in/yr (702 mm/yr), 26,230 acre-ft/yr (32.3 cu hm/yr); median of yearly mean discharges, 35 cu ft/s (0.99 cu m/s), 25,400 acre-ft/yr (31 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 WATER YEARS 1981-82.--Peak discharges above base of 1,200 cu ft/s (34.0 cu m/s) and maximums (*):

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. 15, 1980	1615	1,220	34.6	7.92	2.414	Sept. 26, 1981	1615	1,320	37.4	8.14	2.481
May 23, 1981	0400	4,090	116	11.69	3.563	Sept. 1, 1982	1700	1,910	54.1	9.16	2.792
Aug. 16, 1981	1730	*4,600	130	12.17	3.709	Sept. 12, 1982	2230	*8,900	252	14.97	4.563
Sept. 25, 1981	1715	3,990	113	11.60	3.536						

Minimum discharges, 4.3 cu ft/s (0.122 cu m/s) Mar. 27, 1981; 3.7 cu ft/s (0.105 cu m/s) Apr. 2, 1982.

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	147	42	18	41	10	10	5.0	7.0	70	63	22	40
2	98	41	20	15	9.9	9.0	5.0	33	90	34	19	80
3	83	42	23	13	10	9.0	10	74	100	27	23	90
4	73	53	43	11	10	8.0	7.7	45	50	27	20	70
5	62	55	45	9.5	8.6	8.0	6.0	53	40	27	19	60
6	106	49	91	9.7	8.2	8.0	7.6	56	30	29	72	50
7	100	49	41	12	8.0	8.0	5.0	50	25	32	34	70
8	72	50	23	26	7.6	7.0	12	29	24	27	25	118
9	76	48	17	30	7.9	7.0	8.2	98	22	24	20	204
10	67	38	15	32	11	7.0	6.7	83	21	30	41	90
11	54	28	14	48	7.6	7.0	5.0	74	20	25	35	64
12	42	21	13	28	7.3	7.0	5.0	75	20	22	28	59
13	31	21	13	43	8.6	6.4	5.0	73	18	23	53	72
14	51	20	13	38	18	6.4	5.0	65	17	41	72	62
15	168	21	11	26	44	6.5	5.0	60	16	36	61	50
16	178	33	12	18	33	11	5.0	56	15	36	340	48
17	124	26	12	16	23	7.1	5.0	98	15	58	240	43
18	83	21	12	14	16	8.0	5.0	117	15	52	116	43
19	66	21	11	14	14	7.4	5.0	106	22	59	90	78
20	56	21	11	12	13	6.8	5.0	123	56	87	80	81
21	79	21	10	11	15	6.6	5.0	116	104	57	70	61
22	66	19	9.4	11	17	6.8	5.0	257	73	39	60	71
23	55	20	9.2	10	14	6.1	5.0	400	32	37	60	67
24	66	18	14	9.6	13	4.8	5.0	150	34	39	60	75
25	55	18	18	8.0	12	4.8	6.0	100	30	62	50	161
26	47	17	11	7.4	11	5.7	5.0	80	22	57	50	227
27	45	18	10	9.6	10	4.8	10	60	42	36	50	149
28	44	17	8.9	9.4	10	5.3	5.0	50	29	28	40	120
29	42	17	8.2	26	---	9.3	5.0	40	25	25	40	81
30	41	17	8.3	23	---	6.0	5.0	190	61	24	40	66
31	42	---	36	12	---	5.0	---	150	---	23	40	---
TOTAL	2319	882	601.0	593.2	377.7	219.8	179.2	2968.0	1138	1186	1970	2550
MEAN	74.8	29.4	19.4	19.1	13.5	7.09	5.97	95.7	37.9	38.3	63.5	85.0
MAX	178	55	91	48	44	11	12	400	104	87	340	227
MIN	31	17	8.2	7.4	7.3	4.8	5.0	7.0	15	22	19	40
CFSM	4.20	1.65	1.09	1.07	.76	.40	.34	5.38	2.13	2.15	3.57	4.78
IN	4.85	1.84	1.26	1.24	.79	.46	.37	6.20	2.38	2.48	4.12	5.33
AC-FT	4600	1750	1190	1180	749	436	355	5890	2260	2350	3910	5060

CAL YR 1980	TOTAL	11409.7	MEAN	31.2	MAX	224	MIN	4.8	CFSM	1.75	IN	23.84	AC-FT	22630
WTR YR 1981	TOTAL	14983.9	MEAN	41.1	MAX	400	MIN	4.8	CFSM	2.31	IN	31.31	AC-FT	29720

500114000 RIO CERRILLOS NEAR PONCE, PR--Continued

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	90	82	28	24	10	9.9	6.9	6.1	30	12	25	166		
2	70	93	26	24	10	12	6.6	6.0	25	12	27	146		
3	95	93	29	21	14	8.7	6.8	6.1	28	12	22	89		
4	100	101	27	21	12	8.2	8.3	60	33	12	21	55		
5	125	81	24	19	21	8.0	17	82	21	13	19	43		
6	88	73	23	18	15	7.9	10	105	20	23	17	46		
7	76	68	22	18	12	8.1	8.2	52	23	26	18	38		
8	63	90	22	18	11	7.8	7.7	35	25	15	75	35		
9	58	98	21	17	11	7.9	7.5	37	19	14	47	37		
10	91	73	23	18	11	7.7	7.1	72	18	15	101	31		
11	83	63	78	15	11	7.6	6.8	86	17	15	70	29		
12	85	58	39	15	12	7.5	6.6	95	16	16	42	450		
13	58	55	73	15	11	7.4	6.7	64	17	17	37	200		
14	53	65	48	15	11	7.8	6.5	81	17	16	25	120		
15	51	55	36	15	10	7.6	6.2	51	17	33	22	80		
16	85	51	29	15	10	7.5	6.1	37	16	27	20	60		
17	114	45	25	15	10	7.3	6.4	102	15	18	22	50		
18	122	43	24	15	9.8	7.5	7.0	86	15	49	24	45		
19	100	63	23	15	9.7	7.6	7.1	47	15	86	19	40		
20	160	48	21	15	9.7	7.3	10	71	17	86	17	45		
21	144	42	23	15	9.7	7.2	8.3	90	16	52	16	35		
22	124	39	23	15	11	7.1	8.0	75	17	63	16	30		
23	126	38	20	15	23	6.8	9.9	48	56	45	17	30		
24	107	36	18	15	12	6.8	7.6	36	24	31	15	32		
25	104	40	17	15	9.9	6.9	6.9	31	17	28	35	29		
26	121	39	18	15	9.3	7.5	6.5	26	15	30	55	31		
27	122	37	30	27	9.3	7.0	7.0	24	14	30	36	30		
28	93	31	23	27	9.0	7.0	7.1	73	13	26	26	25		
29	114	30	20	15	---	6.8	7.0	73	12	22	36	23		
30	110	29	34	15	---	6.7	6.6	59	12	24	31	27		
31	91	---	29	15	---	6.8	---	39	---	23	23	---		
TOTAL	2983	1759	896	537	324.4	237.9	230.4	1755.2	600	891	976	2097		
MEAN	96.2	58.6	28.9	17.3	11.6	7.67	7.68	56.6	20.0	28.7	31.5	69.9		
MAX	160	101	78	27	23	12	17	105	56	86	101	450		
MIN	51	29	17	15	9.0	6.7	6.1	6.0	12	12	15	23		
CFSM	5.40	3.29	1.62	.97	.65	.43	.43	3.18	1.12	1.61	1.77	3.93		
IN.	6.23	3.68	1.87	1.12	.68	.50	.48	3.67	1.25	1.86	2.04	4.38		
AC-FT	5920	3490	1780	1070	643	472	457	3480	1190	1770	1940	4160		
CAL YR 1981	TOTAL	16819.9	MEAN	46.1	MAX	400	MIN	4.8	CFSM	2.59	IN	35.15	AC-FT	33360
WTR YR 1982	TOTAL	13286.9	MEAN	36.4	MAX	450	MIN	6.0	CFSM	2.05	IN	27.77	AC-FT	26350

50114000 RIO CERRILLOS NEAR PONCE, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964 to current year.

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

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)
OCT , 1980									
01...	0830	144	187	8.4	23.0	--	8.6	--	K4000
NOV									
12...	1545	22	--	9.8	29.0	.75	7.2	--	K1000
DEC									
11...	1000	14	280	8.2	18.0	.40	--	--	600
JAN , 1981									
14...	1110	35	245	7.9	23.0	1.5	8.5	--	6700
FEB									
12...	1200	8.0	300	8.4	25.5	2.6	9.1	--	K19000
MAR									
11...	1250	7.2	281	8.1	26.5	5.6	8.5	--	K14000
APR									
09...	1200	8.6	274	8.4	28.0	.50	8.6	--	23000
MAY									
08...	1500	34	--	8.2	28.5	23	7.9	104	--
JUN									
12...	1400	20	262	8.5	29.0	.50	8.2	109	31000
JUL									
29...	1010	25	257	8.1	21.5	4.7	8.4	98	31000
AUG									
17...	1435	173	226	7.8	26.0	23	8.0	101	--
SEP									
09...	1240	E140	148	8.6	25.0	130	8.4	102	K38000
OCT									
01...	0830	14	280	8.2	18.0	--	9.2	--	--
07...	1450	70	269	8.2	28.0	1.6	7.4	97	6100
NOV									
04...	1145	99	311	8.2	25.0	50	8.4	102	21000
DEC									
08...	1400	--	304	8.2	27.0	17	8.1	102	K15000
JAN , 1982									
21...	1330	14	288	8.6	26.0	32	8.5	106	31000
FEB									
16...	1335	10	320	8.6	26.0	1.2	9.0	112	390
MAR									
03...	1115	8.9	306	8.5	26.0	1.6	8.3	104	K120
APR									
07...	1015	7.9	305	8.6	26.0	2.4	8.1	102	2000
MAY									
06...	1030	129	220	8.0	23.0	130	7.8	92	--
JUN , 1982									
09...	1230	7.6	--	8.7	29.0	<1.0	8.0	108	2100
JUL									
09...	1040	14	268	8.3	27.0	40	8.2	104	K15000
AUG									
18...	1110	23	258	8.4	26.0	--	8.2	101	2300
SEP									
09...	1100	33	242	8.0	25.0	1.3	8.1	99	--

E Estimated.

K = non-ideal count.

50114000 RIO CERRILLOS NEAR PONCE, PR--Continued

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

DATE	COLI- FCRM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	ALKA- LINITY FIELD (MG/L AS CACO3)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	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)
OCT , 1980									
01...	--	910	--	--	--	.83	.010	.84	.010
NOV									
12...	--	190	--	7.6	1	.37	.010	.38	.010
DEC									
11...	400	180	125	8.0	0	.72	.000	.72	.000
JAN , 1981									
14...	2600	K500	97	6.5	--	1.0	<.010	1.0	.040
FEB									
12...	440	130	135	8.2	4	.24	.030	.27	.080
MAR									
11...	K700	360	118	8.3	907	.06	.020	.08	.040
APR									
09...	360	44	--	--	16	.24	.010	.25	.090
MAY									
08...	2900	K1600	97	7.6	36	.82	<.010	.83	.030
JUN									
12...	570	K170	85	7.8	2	.03	<.010	.03	.020
JUL									
29...	220	810	94	6.4	13	.35	<.010	.36	<.010
AUG									
17...	K120	K100	95	5.8	34	1.2	<.010	1.2	.020
SEP									
09...	18000	38000	69	4.9	303	1.1	.050	1.1	.090
OCT									
01...	--	--	--	--	--	--	--	--	--
07...	700	230	108	6.9	4	--	<.010	.83	.030
NOV									
04...	5700	5500	--	7.2	109	.99	.010	1.0	.020
DEC									
08...	K800	--	--	7.9	38	--	<.010	.50	.030
JAN , 1982									
21...	K140	--	136	7.9	66	--	<.010	.49	.020
FEB									
16...	K90	--	--	8.5	4	--	<.010	.31	.020
MAR									
03...	K45	--	--	8.0	8	--	<.010	.31	.040
APR									
07...	540	--	130	8.5	8	--	<.010	.19	.060
MAY									
06...	--	--	80	8.5	363	1.3	.030	1.3	.060
JUN									
09...	320	--	100	6.7	6	--	<.010	<.10	.030
JUL									
09...	2700	--	120	7.3	67	.28	.010	.29	.050
AUG									
18...	K730	--	100	6.2	4	--	<.010	.30	<.010
SEP									
09...	8200	K14000	100	5.9	13	--	<.010	.50	.010

K = non-ideal count.

50114000 RIO CERRILLOS NEAR PONCE, PR--Continued

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

DATE	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, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDEDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (T/DAY)
OCT , 1980									
01...	.18	.19	1.0	4.6	.150	--	--	56	22
NOV									
12...	.00	.01	.39	1.7	.040	--	2.3	3	.17
DEC									
11...	.11	.11	.83	3.7	.040	--	1.9	4	.15
JAN , 1981									
14...	.33	.37	1.4	6.1	.060	--	3.0	283	27
FEB									
12...	.07	.15	.42	1.9	.260	--	6.0	374	8.1
MAR									
11...	--	<.10	--	--	.070	--	5.4	--	--
APR									
09...	.26	.35	.60	2.7	.040	--	1.3	12	.28
MAY									
08...	.34	.37	1.2	5.3	.020	--	2.9	66	6.1
JUN									
12...	.17	.19	.22	.97	.040	--	1.1	8	.43
JUL									
29...	.25	.26	.62	2.7	.030	--	2.1	1	.07
AUG									
17...	.18	.20	1.4	6.2	.060	--	2.1	55	26
SEP									
09...	.34	.43	1.5	6.8	.170	--	4.7	368	139
OCT									
01...	--	--	--	--	--	--	--	--	--
07...	.20	.23	1.1	4.7	.040	--	2.5	6	1.1
NOV									
04...	.27	.29	1.3	5.7	.030	.050	5.7	154	41
DEC									
08...	--	<.10	--	--	.050	.040	.7	76	--
JAN , 1982									
21...	.23	.25	.74	3.3	.080	.040	1.8	62	2.3
FEB									
16...	.46	.48	.79	3.5	.030	.030	2.2	--	--
MAR									
03...	1.8	1.80	2.1	9.3	.070	.030	.9	--	--
APR									
07...	.48	.54	.73	3.2	.030	.030	1.1	--	--
MAY									
06...	1.0	1.10	2.4	11	.320	.110	--	425	148
JUN									
09...	.27	.30	--	--	.020	.010	1.2	--	--
JUL									
09...	.95	1.00	1.3	5.7	.080	.080	3.1	--	--
AUG									
18...	--	2.30	2.6	12	.040	.030	2.0	--	--
SEP									
09...	--	<.10	--	--	.200	.030	1.2	--	--

50114000 RIO CERRILLOS NEAR PONCE, PR--Continued

BENTHIC INVERTEBRATE ANALYSES, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE TIME	OCT 1,80 0830	OCT 11,80 1000	MAY 8,81 1500	JUN 12,81 1500	JUL 29,81 1010
TOTAL COUNT	3	37	237	5	40
DIVERSITY: PHYLUM	0.0	0.0	0.3	0.0	0.4
CLASS	0.0	0.3	0.3	0.0	0.4
ORDER	0.0	1.1	0.3	0.7	0.4
FAMILY	0.9	1.8	0.3	0.7	0.4
GENUS	0.9	1.8	0.3	2.3	0.5
GENUS-INSECTA	0.9	1.6	1.3	2.3	0.9
ORGANISM	COUNT	COUNT	COUNT	COUNT	COUNT
ARTHROPODA (ARTHROPODS)					
CRUSTACEA					
DECAPODA					
PALAEMONIDAE					
PALAEMONETES	--	2	--	--	--
INSECTA					
COLEOPTERA					
ELMIDAE					
STENELMIS	--	--	--	--	--
PSEPHENIDAE					
UNKNOWN GENUS	--	1	--	--	--
PTILODACTYLIDAE					
ANCHYTARSUS	--	--	--	--	--
DIPTERA					
ATHERICIDAE=RHAGIONIDAE					
ATHERIX	--	2	--	--	--
CERATOPOGONIDAE=HELEIDAE					
UNKNOWN GENUS	--	--	--	--	--
CHIRONOMIDAE					
ABLABESMYIA	--	--	--	--	--
CONCHAPELOPIA	--	--	--	1	--
CRICOTOPUS	--	--	--	1	1
CRYPTOCHIRONOMUS	--	--	--	1	2
EUKIEFFERIELLA	--	--	--	--	--
PARACRICOTOPUS	--	--	--	--	--
PARAMERINA	--	--	1	--	--
PARATANYTARSUS	--	--	--	--	--
POLYPEDILUM	--	--	3	--	--
RHEOCRICOTOPUS	--	--	--	--	--
TANYTARSUS	--	--	--	1	--
THIENEMANNIELLA	--	--	--	--	--
EMPIDIDAE					
UNKNOWN GENUS	--	--	--	--	--
PSYCHODIDAE					
MARUINA	--	--	--	--	--
TIPULIDAE	--	--	--	--	--
EPHEMEROPTERA					
BAETIDAE					
BAETIS	2	21	--	--	--
CAENIDAE					
CAENIS	--	--	--	--	--
HEPTAGENIIDAE					
STENONEMA	1	--	6	--	--
LEPTOPHLEBIIDAE					
HERMANELLOPSIS	--	--	--	--	--
LEPTOPHLEBIA	--	9	--	1	--
UNKNOWN GENUS	--	--	--	--	--
ODONATA					
COENAGRIONIDAE					
ENALLAGMA	--	2	--	--	--
LIBELLULIDAE					
UNKN.GENUS	--	--	--	--	--
TRICHOPTERA					
HYDROPSYCHIDAE					
CHEUMATOPSYCHE	--	--	--	--	--
HYDROPTILIDAE					
ALISOTRICHIA	--	--	--	--	--
HYDROPTILA	--	--	--	--	--
PHILOPOTAMIDAE					
CHIMARRA	--	--	--	--	--
MOLLUSCA (MOLLUSCS)					
GASTROPODA					
MESOGASTROPODA					
PLEUROCIDAE					
PLEUROCERA	--	--	227	--	37

50114000 RIO CERRILLOS NEAR PONCE, PR--Continued

BENTHIC INVERTEBRATE ANALYSES, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE TIME	AUG 26,81 1015	SEP 24,81 1120	OCT 27,81 1035	NOV 4,81 1300	DEC 8,81 1400
TOTAL COUNT	7	0	0	0	2
DIVERSITY: PHYLUM	0.0	0.0	0.0	0.0	0.0
...CLASS	0.0	0.0	0.0	0.0	0.0
...ORDER	1.0	0.0	0.0	0.0	0.0
...FAMILY	1.0	0.0	0.0	0.0	0.0
...GENUS	1.0	0.0	0.0	0.0	0.0
...GENUS-INSECTA	1.0	0.0	0.0	0.0	0.0
ORGANISM	COUNT	COUNT	COUNT	COUNT	COUNT
ARTHROPODA (ARTHROPODS)					
...CRUSTACEA					
...DECAPODA					
...PALAEMONIDAE					
...PALAEMONETES	--	--	--	--	--
...INSECTA					
...COLEOPTERA					
...ELMIDAE					
...STENELMIS	--	--	--	--	--
...PSEPHENIDAE					
...UNKNOWN GENUS	--	--	--	--	--
...PTILODACTYLIDAE					
...ANCHYTARSUS	--	--	--	--	--
...DIPTERA					
...ATHERICIDAE=RHAGIONIDAE					
...ATHERIX	--	--	--	--	--
...CERATOPOGONIDAE=HELEIDAE					
...UNKNOWN GENUS	--	--	--	--	--
...CHIRONOMIDAE					
...ABLABESHYIA	--	--	--	--	--
...CONCHAPELOPIA	--	--	--	--	--
...CRICOTOPUS	4	--	--	--	--
...CRYPTOCHIRONOMUS	--	--	--	--	--
...EUKIEFFERIELLA	--	--	--	--	--
...PARACRICOTOPUS	--	--	--	--	--
...PARAMERINA	--	--	--	--	--
...PARATANYTARSUS	--	--	--	--	--
...POLYPEDILUM	--	--	--	--	--
...RHODCRICOTOPUS	--	--	--	--	--
...TANYTARSUS	--	--	--	--	--
...THIENEMANNIELLA	--	--	--	--	--
...EMPIDIDAE					
...UNKNOWN GENUS	--	--	--	--	--
...PSYCHODIDAE					
...MARUINA	--	--	--	--	--
...TIPULIDAE	--	--	--	--	2
...EPHEMEROPTERA					
...BAETIDAE					
...BAETIS	3	--	--	--	--
...CAENIDAE					
...CAENIS	--	--	--	--	--
...HEPTAGENIIDAE					
...STENONEMA	--	--	--	--	--
...LEPTOPHLEBIIDAE					
...HERMANELLOPSIS	--	--	--	--	--
...LEPTOPHLEBIA	--	--	--	--	--
...UNKNOWN GENUS	--	--	--	--	--
...ODONATA					
...COENAGRIONIDAE					
...ENALLAGHA	--	--	--	--	--
...LIBELLULIDAE					
...UNKN.GENUS	--	--	--	--	--
...TRICHOPTERA					
...HYDROPSYCHIDAE					
...CHEUMATOPSYCHE	--	--	--	--	--
...HYDROPTILIDAE					
...ALISOTRICHIA	--	--	--	--	--
...HYDROPTILA	--	--	--	--	--
...PHILOPOTAMIDAE					
...CHIMARRA	--	--	--	--	--
MOLLUSCA (MOLLUSCS)					
...GASTROPODA					
...MESOGASTROPODA					
...PLEUROCIDAE					
...PLEUROCERA	--	--	--	--	--

50114000 RIO CERRILLOS NEAR PONCE, PR--Continued

BENTHIC INVERTEBRATE ANALYSES, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE TIME	JAN 21,82 1300	FEB 16,82 1310	MAR 3,82 1115	APR 7,82 1015	MAY 6,82 1030
TOTAL COUNT	46	48	64	20	1
DIVERSITY: PHYLUM	0.0	0.0	0.0	0.0	0.0
..CLASS	0.0	0.0	0.0	0.0	0.0
..ORDER	1.2	1.0	1.5	1.8	0.0
...FAMILY	1.3	1.0	2.1	2.1	0.0
....GENUS	2.2	1.7	2.4	2.2	0.0
....GENUS-INSECTA	2.2	1.7	2.4	2.2	0.0
ORGANISM	COUNT	COUNT	COUNT	COUNT	COUNT
ARTHROPODA (ARTHROPODS)					
..CRUSTACEA					
...DECAPODA					
....PALAEMONIDAE					
.....PALAEMONETES	--	--	--	--	--
..INSECTA					
...COLEOPTERA					
....ELMIDAE					
.....STEMELMIS	--	--	15	7	--
....PSEPHENIDAE					
.....UNKNOWN GENUS	--	--	--	--	--
...PTILODACTYLIDAE					
....ANCHYTARSUS	--	--	--	--	--
..DIPTERA					
...ATHERICIDAE=RHAGIONIDAE					
....ATHERIX	--	--	--	--	--
...CERATOPOGONIDAE=HELEIDAE					
....UNKNOWN GENUS	--	--	6	2	--
...CHIRONOMIDAE					
....ABLABESMYIA	--	2	--	--	--
....CONCHAPELOPIA	--	--	--	3	--
....CRICOTOPUS	20	1	21	--	--
....CRYPTOCHIRONOMUS	--	--	--	--	--
....EUKIEFFERIELLA	--	9	1	--	1
....PARACRICOTOPUS	9	--	--	--	--
....PARAMERINA	--	--	--	--	--
....PARATANYTARSUS	--	--	--	--	--
....POLYPEDILUM	--	--	--	--	--
....RHEOCRICOTOPUS	--	6	1	1	--
....TANYTARSUS	--	--	--	--	--
....THIENEMANNIELLA	3	1	1	--	--
...EMPIDIDAE					
....UNKNOWN GENUS	--	--	1	--	--
...PSYCHODIDAE					
....MARUINA	--	--	1	--	--
...TIPULIDAE	--	--	--	--	--
..EPHEMEROPTERA					
...BAETIDAE					
....BAETIS	10	29	16	--	--
...CAENIDAE					
....CAENIS	--	--	1	--	--
...HEPTAGENIIDAE					
....STENOMEHA	--	--	--	--	--
...LEPTOPHLEBIIDAE					
....HERMANELLOPSIS	--	--	--	--	--
....LEPTOPHLEBIA	--	--	--	--	--
....UNKNOWN GENUS	1	--	--	--	--
..ODONATA					
...COENAGRIONIDAE					
....ENALLAGMA	--	--	--	--	--
...LIBELLULIDAE					
....UNKN. GENUS	1	--	--	1	--
..TRICHOPTERA					
...HYDROPSYCHIDAE					
....CHEUNATOPSYCHE	--	--	--	--	--
...HYDROPTILIDAE					
....ALISOTRICHIA	1	--	--	--	--
....HYDROPTILA	1	--	--	--	--
...PHILOPOTAMIDAE					
....CHIMARRA	--	--	--	6	--
MOLLUSCA (MOLLUSCS)					
..GASTROPODA					
...MESOGASTROPODA					
....PLEUROCIDAE					
.....PLEUROCERA	--	--	--	--	--

RIO BUCANA BASIN

50114000 RIO CERRILLOS NEAR PONCE, PR--Continued

BENTHIC INVERTEBRATE ANALYSES, OCTOBER 1980 TO SEPTEMBER 1982

DATE TIME	JUN 9,82 1230	JUL 9,82 1040	AUG 18,82 1110	SEP 9,82 1100
TOTAL COUNT	4	10	8	8
DIVERSITY: PHYLUM	0.8	1.0	0.5	0.0
...CLASS	0.8	1.0	0.5	0.0
...ORDER	0.8	1.6	0.5	1.6
...FAMILY	0.8	1.6	0.5	1.9
...GENUS	0.8	1.6	0.5	2.2
...GENUS-INSECTA	0.0	1.5	0.0	2.2
ORGANISM	COUNT	COUNT	COUNT	COUNT
ARTHROPODA (ARTHROPODS)				
...CRUSTACEA				
...DECAPODA				
...PALAEMONIDAE				
...PALAEMONETES	3	--	--	--
...INSECTA				
...COLEOPTERA				
...ELMIDAE				
...STENELMIS	--	--	--	--
...PSEPHENIDAE				
...UNKNOWN GENUS	--	--	--	--
...PTILODACTYLIDAE				
...ANCHYTARSUS	--	2	--	--
...DIPTERA				
...ATHERICIDAE=RHAGIONIDAE				
...ATHERIX	--	--	--	--
...CERATOPOGONIDAE=HELEIDAE				
...UNKNOWN GENUS	--	--	--	--
...CHIRONOMIDAE				
...ABLABESMYIA	--	--	--	--
...CONCHAPELOPIA	--	--	--	--
...CRICOTOPUS	--	--	--	1
...CRYPTOCHIRONOMUS	--	--	--	--
...EUKIEFFERIELLA	--	1	--	--
...PARACRICOTOPUS	--	--	--	--
...PARAMERINA	--	--	--	--
...PARATANYTARSUS	--	--	--	1
...POLYPEDILUM	--	--	--	--
...RHEOCRICOTOPUS	--	--	--	--
...TANYTARSUS	--	--	--	--
...THIENEMANNIELLA	--	--	--	--
...EMPIDIDAE				
...UNKNOWN GENUS	--	--	--	--
...PSYCHODIDAE				
...MARUINA	--	--	--	--
...TIPULIDAE	--	--	--	--
...EPHEMEROPTERA				
...BAETIDAE				
...BAETIS	--	--	--	1
...CAENIDAE				
...CAENIS	--	--	--	--
...HEPTAGENIIDAE				
...STENONEMA	--	1	--	--
...LEPTOPHLEBIIDAE				
...HERMANELLOPSIS	--	--	--	2
...LEPTOPHLEBIA	--	--	--	--
...UNKNOWN GENUS	--	--	--	--
...ODONATA				
...COENAGRIONIDAE				
...ENALLAGMA	--	--	--	--
...LIBELLULIDAE				
...UNKN. GENUS	--	--	--	--
...TRICHOPTERA				
...HYDROPSYCHIDAE				
...CHEUMATOPSYCHE	--	--	--	3
...HYDROPTILIDAE				
...ALISOTRICHIA	--	--	--	--
...HYDROPTILA	--	--	--	--
...PHILOPOTAMIDAE				
...CHIMARRA	--	--	1	--
MOLLUSCA (MOLLUSCS)				
...GASTROPODA				
...MESOGASTROPODA				
...PLEUROCERIDAE				
...PLEUROCERA	1	6	7	--

50114000 RIO CERRILLOS NEAR PONCE, PR--Continued

PHYTOPLANKTON ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	OCT 1, 80
TIME	0830

TOTAL CELLS/ML	520
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DIVERSITY: DIVISION	1.5
CLASS	1.5
ORDER	2.2
FAMILY	2.2
GENUS	2.2

ORGANISM	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)		
BACILLARIOPHYCEAE		
ACHNANTHALES		
ACHNANTHACEAE		
RHODICOSPHENIA	13	2
BACILLARIALES		
NITZSCHIACEAE		
NITZSCHIA	65	13
EUPODISCALES		
COSCINODISCACEAE		
CYCLOTELLA	26	5
STEPHANODISCUS	13	2
FRAGILARIALES		
FRAGILARIACEAE		
DIATOMA	13	2
NAVICULALES		
NAVICULACEAE		
NAVICULA	26	5
CHLOROPHYTA (GREEN ALGAE)		
CHLOROPHYCEAE		
CHAETOPHORALES		
CHAETOPHORACEAE		
STIGEOCLONIUM	130*	25
CYANOPHYTA (BLUE-GREEN ALGAE)		
CYANOPHYCEAE		
OSCILLATORIALES		
OSCILLATORIAACEAE		
OSCILLATORIA	230*	45

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

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

50115000 RIO PORTUGUES NEAR PONCE, PR

LOCATION.--Lat 18°04'45", long 66°38'01", Hydrologic Unit 21010004, on right bank at upstream side of bridge on Highway 503, 0.2 mi (0.3 km) upstream from small unnamed tributary, 4.4 mi (7.1 km) upstream from Río 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.

AVERAGE DISCHARGES.--17 years (1965-81), 17.9 cu ft/s (0.507 cu m/s), 27.56 in/yr (700 mm/yr), 12,970 acre-ft/yr (16.0 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).
--18 years (1965-82), 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, 17 cu ft/s (0.48 cu m/s), 12,300 acre-ft/yr (15 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 WATER YEARS 1981-82.--Peak discharges above base of 800 cu ft/s (22.7 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. 6, 1980	1700	857	24.3	Oct. 18, 1981	1330	929	26.3
May 5, 1981	1915	1,520	43.0	Oct. 20, 1981	1730	1,040	29.4
May 23, 1981	0330	*2,330	66.0	Oct. 23, 1981	1830	957	27.1
Aug. 6, 1981	1600	1,270	36.0	Oct. 29, 1981	1400	1,480	41.9
Aug. 16, 1981	1645	1,230	34.8	Nov. 8, 1981	1600	1,120	31.7
Sept. 25, 1981	1730	2,030	57.5	Dec. 11, 1981	0145	957	27.1
Sept. 26, 1981	1630	1,410	39.9	Sept. 1, 1982	1600	2,970	84.1
Oct. 17, 1981	1500	1,510	42.8	Sept. 12, 1982	2230	*3,800	108
							10.84 3.304

Minimum discharges, 1.7 cu ft/s (0.048 cu m/s) Apr. 25, 1981; 2.4 cu ft/s (0.068 cu m/s) Apr. 25-28, 1982.

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	49	13	12	30	5.8	4.8	3.1	27	19	15	9.4	8.5
2	20	13	16	8.8	5.5	4.8	3.1	51	28	8.6	8.5	12
3	17	13	14	7.5	5.8	4.8	5.6	63	30	8.2	12	19
4	20	14	17	6.4	5.6	5.8	5.9	25	22	7.8	8.7	13
5	15	15	18	5.8	5.1	5.7	3.9	178	19	6.9	9.0	8.7
6	120	13	30	7.6	4.8	4.9	4.2	100	17	9.6	100	8.5
7	89	11	15	6.4	4.5	4.4	3.4	40	15	8.8	43	9.7
8	53	11	10	18	4.5	4.2	6.7	18	14	6.6	24	54
9	64	11	8.0	29	4.5	4.2	4.5	101	13	6.3	18	84
10	44	10	7.0	21	4.5	4.2	3.6	52	12	10	48	21
11	30	11	6.3	15	4.5	3.9	3.4	30	12	6.6	28	13
12	23	10	6.3	11	4.7	3.6	3.2	20	11	6.0	35	30
13	19	8.9	6.3	12	5.5	3.8	3.6	13	11	9.8	59	80
14	31	7.6	7.0	18	8.6	3.6	3.6	11	10	39	42	34
15	58	7.8	7.0	13	18	3.7	3.6	10	10	19	31	22
16	64	33	6.2	10	14	5.7	3.6	10	10	14	163	16
17	60	18	5.8	8.1	10	4.2	3.1	65	9.6	19	98	21
18	42	12	5.5	7.5	6.6	4.1	3.3	80	9.0	33	32	21
19	29	12	5.5	8.2	5.8	3.8	3.9	35	12	40	20	114
20	23	12	5.2	6.9	5.5	3.6	3.8	25	26	35	17	92
21	22	11	6.0	6.3	9.2	3.6	3.9	20	62	22	15	51
22	22	10	5.4	6.3	8.3	3.6	17	125	23	17	13	31
23	20	10	4.8	5.9	5.8	3.6	9.6	462	11	15	12	22
24	46	9.0	6.0	5.9	5.4	3.3	4.6	76	12	20	12	24
25	29	9.0	8.6	5.6	5.2	3.4	3.5	39	11	32	11	169
26	20	9.0	12	5.5	5.2	3.6	3.2	27	8.6	28	9.8	268
27	18	8.0	9.1	5.4	5.2	3.3	3.7	21	9.5	19	9.2	167
28	16	8.0	7.1	5.0	5.1	3.2	4.0	67	8.3	15	9.5	92
29	15	8.0	7.0	12	---	4.6	3.2	33	7.1	13	8.9	62
30	15	8.0	6.7	12	---	3.5	3.1	24	17	11	8.5	45
31	14	---	48	6.2	---	3.1	---	22	---	11	10	---
TOTAL	1107	346.3	328.8	326.3	183.2	126.6	134.9	1870	479.1	512.2	924.5	1612.4
MEAN	35.7	11.5	10.6	10.5	6.54	4.08	4.50	60.3	16.0	16.5	29.8	53.7
MAX	120	33	48	30	18	5.8	17	462	62	40	163	268
MIN	14	7.6	4.8	5.0	4.5	3.1	3.1	10	7.1	6.0	8.5	8.5
CFSM	4.05	1.30	1.20	1.19	.74	.46	.51	6.84	1.81	1.87	3.38	6.09
IN	4.67	1.46	1.39	1.38	.77	.53	.57	7.89	2.02	2.16	3.90	6.80
AC-FT	2200	687	652	647	363	251	268	3710	950	1020	1830	3200

CAL YR 1980 TOTAL 6440.6 MEAN 17.6 MAX 322 MIN 2.2 CFSM 2.00 IN 27.16 AC-FT 12770
WTR YR 1981 TOTAL 7951.3 MEAN 21.8 MAX 462 MIN 3.1 CFSM 2.47 IN 33.53 AC-FT 15770

RIO PORTUGUES BASIN

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50115000 RIO PORTUGUES NEAR PONCE, PR--Continued

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	58	53	12	13	6.2	6.6	3.9	3.1	12	4.0	35	190
2	41	46	11	11	6.0	6.2	3.6	2.8	11	3.6	28	85
3	74	57	17	11	5.9	4.9	3.4	2.5	11	3.7	15	55
4	75	52	13	11	5.7	4.9	3.1	26	8.5	11	12	40
5	89	34	11	9.2	14	4.7	5.8	31	7.6	8.1	11	35
6	66	28	11	9.2	7.8	4.9	4.4	46	12	20	11	25
7	44	26	10	8.8	6.4	4.9	3.5	9.7	17	15	13	20
8	35	97	11	9.0	6.1	4.7	3.3	4.0	13	6.0	80	15
9	30	77	10	8.5	6.3	4.5	3.1	3.2	5.9	5.4	52	15
10	62	45	19	8.3	5.9	4.6	3.0	11	5.7	5.4	155	14
11	45	34	116	8.1	5.9	3.9	3.0	40	5.2	4.7	104	12
12	30	30	21	8.5	6.4	3.9	3.0	38	4.4	4.4	45	259
13	25	27	37	7.9	6.0	5.2	3.0	24	4.5	5.2	40	520
14	22	45	27	7.6	5.9	9.5	3.0	30	4.9	4.3	20	77
15	21	29	21	7.4	5.6	4.6	3.0	11	4.6	54	19	43
16	27	24	15	7.2	5.6	4.1	2.5	6.2	4.2	38	15	31
17	131	22	12	7.3	5.6	4.0	2.5	25	4.4	18	19	25
18	128	21	11	7.4	5.3	4.0	2.5	17	4.2	44	14	21
19	62	22	10	7.0	5.2	4.5	2.5	7.3	3.9	42	10	18
20	151	19	9.7	7.0	5.6	3.3	5.0	15	4.8	45	8.8	23
21	160	17	10	6.9	5.7	3.8	4.5	55	5.2	35	7.7	17
22	82	17	10	6.9	16	3.7	3.9	61	5.5	35	9.7	16
23	142	16	8.8	6.9	23	13	5.0	16	5.5	30	10	14
24	162	16	9.5	6.8	7.3	4.4	3.2	9.4	5.3	19	8.0	13
25	107	15	10	7.0	6.2	3.5	2.6	7.3	4.0	16	7.8	13
26	170	16	9.9	7.0	5.9	2.9	2.4	6.2	3.6	17	45	15
27	131	15	16	31	5.6	2.4	2.4	5.9	3.8	14	27	15
28	92	14	14	17	6.1	4.2	2.6	18	4.3	12	18	12
29	215	13	13	7.6	---	3.6	3.1	55	4.1	12	41	11
30	102	13	33	6.9	---	3.8	3.1	37	4.3	11	31	18
31	70	---	14	6.6	---	3.9	---	16	---	11	19	---
TOTAL	2649	940	552.9	285.0	203.2	147.1	99.9	639.6	194.4	553.8	931.0	1667
MEAN	85.5	31.3	17.8	9.19	7.26	4.75	3.33	20.6	6.48	17.9	30.0	55.6
MAX	215	97	116	31	23	13	5.8	61	17	54	155	520
MIN	21	13	8.8	6.6	5.2	2.4	2.4	2.5	3.6	3.6	7.7	11
CFSM	9.69	3.55	2.02	1.04	.82	.54	.38	2.34	.74	2.03	3.40	6.30
IN.	11.17	3.96	2.33	1.20	.86	.62	.42	2.70	.82	2.34	3.93	7.03
AC-FT	5250	1860	1100	565	403	292	198	1270	386	1100	1850	3310
CAL YR 1981 TOTAL	10311.1			MEAN 28.2	MAX 462	MIN 3.1	CFSM 3.20	IN 43.48	AC-FT 20450			
WTR YR 1982 TOTAL	8862.9			MEAN 24.3	MAX 520	MIN 2.4	CFSM 2.76	IN 37.38	AC-FT 17580			

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1981 to September 1982 (discontinued).

pH: October 1981 to September 1982 (discontinued).

WATER TEMPERATURE: October 1981 to September 1982 (discontinued).

DISSOLVED OXYGEN: October 1981 to September 1982 (discontinued)

SUSPENDED SEDIMENT DISCHARGE: January 1968 to December 1969, September 1973 to 1981 (discontinued).

INSTRUMENTATION.--Water-quality monitor from October 1981 to October 1982.

REMARKS.--Interruptions in the record are due to power failure or malfunctions of the instruments. Extremes for dissolved oxygen are not published because record is incomplete due to missing data.

EXTREMES FOR PERIOD OF DAILY RECORDS.--

SPECIFIC CONDUCTANCE: Maximum 341 micromhos, June 29, 1982; minimum 65 micromhos, October 17, 1981.

pH: Maximum 8.4 units, June 22, 1982; minimum 6.2 units, August 26, 1982.

WATER TEMPERATURES: Maximum 33.0°C, September 28-29, 1982, minimum 19.0°C, January 24, 1982.

SUSPENDED SEDIMENT CONCENTRATIONS: Maximum daily mean, 22,900 mg/L August 31, 1979; minimum daily mean, 0.0 mg/L several days during many years.

SEDIMENT LOADS: Maximum daily, 95,900 tons (87,000 tonnes) August 31, 1979; minimum daily mean, 0.0 ton (0.0 tonnes) several days during many years.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum 341 micromhos, June 29, 1982; minimum 65 micromhos, October 17, 1981.

pH: Maximum 8.4 units, June 22, 1982; minimum 6.2 units, August 26, 1982.

WATER TEMPERATURES: Maximum 33.0°C, September 28-29, 1982, minimum 19.0°C, January 24, 1982.

SUSPENDED SEDIMENT CONCENTRATIONS: Maximum daily mean, 7,200 mg/L May 23, 1981; minimum daily mean, 0.0 mg/L several days during the year.

SEDIMENT LOADS: Maximum daily, 18,300 tons (16,600 tonnes) May 23, 1981; minimum daily, 0.0 ton (0.0 tonnes) several days during the years.

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

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI KF AGAR (COLS. PER 100 ML)
OCT , 1980												
01...	1330	36	207	8.6	25.5	--	8.4	--	--	4600	--	K1300
NOV												
13...	1030	22	270	8.2	24.0	--	8.2	--	--	K16000	23000	9800
DEC												
11...	1700	5.7	301	8.1	24.5	.70	7.8	--	--	K600	210	K180
JAN , 1981												
15...	1210	14	260	7.8	22.5	1.1	8.4	--	11	35000	4700	800
FEB												
11...	1045	3.9	310	8.5	22.5	.30	8.5	--	--	K10000	K90	K40
MAR												
11...	0755	4.2	311	7.9	20.5	.80	8.6	--	32	K14000	200	370
APR												
09...	0920	4.5	294	8.0	23.0	.90	9.1	--	--	K1500	450	78
MAY												
07...	1220	33	225	7.9	24.5	41	8.2	101	<10	--	3700	4500
JUN												
11...	1500	12	273	8.6	28.0	.50	8.0	108	--	20000	230	250
JUL												
29...	1630	12	--	8.2	24.0	7.4	7.4	91	<10	31000	K55	270
AUG												
12...	1100	18	240	8.8	24.0	1.5	8.4	104	--	--	440	--
SEP												
09...	0830	104	166	8.0	23.0	65	8.6	102	50	K19000	9500	6700
OCT												
15...	1335	20	311	8.5	25.0	1.5	9.2	115	--	2800	370	350
NOV												
03...	1140	34	304	8.3	25.0	.60	8.0	100	--	2300	2000	K900
DEC												
09...	1035	10	313	8.0	23.0	.50	9.2	111	--	3200	2300	--
JAN , 1982												
08...	1135	9.0	305	8.4	21.5	.60	8.4	96	17	K1300	290	2900
FEB												
17...	1010	5.2	330	8.5	21.0	1.1	9.0	105	--	1200	K190	--
MAR												
02...	1540	5.3	310	8.5	25.0	--	9.2	115	37	270	81	470
APR												
06...	1200	4.0	315	8.4	23.0	.50	8.3	100	--	760	K100	--
MAY												
05...	1230	11	265	8.3	24.5	--	7.8	95	--	K9200	4200	K12000
JUN												
08...	1325	7.6	275	8.5	27.5	1.3	7.9	102	--	K1000	540	--
JUL , 1982												
13...	1140	5.1	307	8.4	27.0	3.3	7.9	101	--	K910	370	3000
AUG												
17...	1050	9.8	305	8.3	25.0	--	8.0	99	--	K1300	K190	--
SEP												
08...	1230	15	305	8.2	26.0	1.7	7.9	101	41	K900	270	340

K = non-ideal count.

RIO PORTUGUES BASIN

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50115000 RIO PORTUGUES NEAR PONCE, PR--Continued

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

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)	SILICA, DIS- SOLVED (MG/L AS SiO2)
OCT , 1980												
01...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
13...	130	4	40	6.7	10	.4	1.1	125	5.3	8.2	.1	22
DEC												
11...	--	--	--	--	--	--	--	--	--	8.6	--	--
JAN , 1981												
15...	--	--	--	--	--	--	--	110	--	7.1	--	--
FEB												
11...	--	--	--	--	--	--	--	144	--	9.3	--	--
MAR												
11...	160	10	50	7.7	9.5	.3	1.1	150	8.3	9.4	.1	23
APR												
09...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
07...	93	0	28	5.5	8.6	.4	1.3	107	7.4	7.1	.1	19
JUN												
11...	--	--	--	--	--	--	--	133	--	8.8	--	--
JUL												
29...	--	--	--	--	--	--	--	115	--	7.4	--	--
AUG												
12...	--	--	--	--	--	--	--	15	--	6.8	--	--
SEP												
09...	66	2	20	4.0	5.8	.3	1.1	64	5.3	5.5	<.1	14
OCT												
15...	--	--	--	--	--	--	--	147	--	8.9	--	--
NOV												
03...	--	--	--	--	--	--	--	--	--	8.4	--	--
DEC												
09...	--	--	--	--	--	--	--	--	--	8.8	--	--
JAN , 1982												
08...	140	0	43	8.2	12	.5	1.2	143	7.8	9.2	<.1	23
FEB												
17...	--	--	--	--	--	--	--	--	--	8.9	--	--
MAR												
02...	--	--	--	--	--	--	--	140	--	--	--	--
APR												
06...	--	--	--	--	--	--	--	150	--	9.5	--	--
MAY												
05...	110	5	35	6.6	11	.5	1.5	110	10	9.3	.1	19
JUN												
08...	--	--	--	--	--	--	--	120	--	8.1	--	--
JUL ,												
13...	--	--	--	--	--	--	--	140	--	8.9	--	--
AUG												
17...	--	--	--	--	--	--	--	130	--	7.5	--	--
SEP												
08...	120	0	37	6.3	8.4	.4	1.2	120	6.0	7.1	.1	20

RIO PORTUGUES BASIN

50115000 RIO PORTUGUES NEAR PONCE, PR--Continued

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

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, NO ₂ +NO ₃ TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO ₃)	PHOS- PHORUS, TOTAL (MG/L AS P)
OCT , 1980												
01...	--	--	18	1.6	.010	--	--	--	--	--	--	--
NOV												
13...	169	10.0	--	.91	.000	.91	.020	.03	.05	.96	4.3	.030
DEC												
11...	--	--	0	.97	.000	.97	.080	.11	.19	1.2	5.1	.050
JAN , 1981												
15...	--	--	83	1.5	.010	1.5	.060	.14	.20	1.7	7.5	.110
FEB												
11...	--	--	2	.74	.010	.75	.040	.06	.10	.85	3.8	--
MAR												
11...	199	2.3	10	.62	<.010	.63	.010	--	<.10	--	--	.030
APR												
09...	--	--	11	.25	.010	.26	.020	.14	.16	.42	1.9	.050
MAY												
07...	141	12.6	44	1.6	.020	1.6	.070	.30	.37	2.0	8.7	.030
JUN												
11...	--	--	2	--	<.010	.57	.020	.26	.28	.85	3.8	.040
JUL												
29...	--	--	14	.75	<.010	.76	<.010	.27	.28	1.0	4.6	.040
AUG												
12...	--	--	10	1.1	<.010	1.1	.020	.22	.24	1.3	5.9	.040
SEP												
09...	94	26.4	253	1.3	.060	1.4	.110	.41	.52	1.9	8.5	.150
OCT												
15...	--	--	2	--	<.010	1.1	.040	--	<.10	--	--	.030
NOV												
03...	--	--	12	--	<.010	1.3	<.010	--	.20	1.5	6.6	.040
DEC												
09...	--	--	6	--	<.010	1.0	.070	--	<.10	--	--	.030
JAN , 1982												
08...	190	4.6	1	--	<.010	1.1	<.010	--	.27	1.4	6.1	.040
FEB												
17...	--	--	3	--	<.010	.86	.010	.47	.48	1.3	5.9	.040
MAR												
02...	--	--	--	--	<.010	.79	.030	.35	.38	1.2	5.2	.040
APR												
06...	--	--	1	--	<.010	.70	.060	.35	.41	1.1	4.9	.030
MAY												
05...	159	4.7	42	1.5	.010	1.5	.030	.55	.58	2.1	9.2	.090
JUN												
08...	--	--	6	--	<.010	.70	.020	.38	.40	1.1	4.9	.040
JUL												
13...	--	--	5	--	<.010	.55	.020	.68	.70	1.3	5.5	.050
AUG												
17...	--	--	5	--	<.010	1.1	<.010	--	.20	1.3	5.8	.040
SEP												
08...	157	6.2	4	--	<.010	1.1	.020	--	<.10	--	--	.040

50115000 RIO PORTUGUES NEAR PONCE, PR--Continued

WATER QUALITY DATA, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	PHOS- PHORUS, ORTHO, 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)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT , 1980												
01...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
13...	--	--	--	--	--	--	--	--	--	3.1	13	.77
DEC												
11...	--	--	--	--	--	--	--	--	--	1.1	4	.06
JAN , 1981												
15...	--	--	--	--	--	--	--	--	--	2.9	101	3.8
FEB												
11...	--	--	--	--	--	--	--	--	--	1.0	2	.02
MAR												
11...	--	<1	100	<1	5	4	.3	<1	<1	--	24	.27
APR												
09...	--	--	--	--	--	--	--	--	--	3.5	20	.24
MAY												
07...	--	--	--	--	--	--	--	--	--	11	89	7.9
JUN												
11...	--	--	--	--	--	--	--	--	--	1.1	6	.19
JUL												
29...	--	--	--	--	--	--	--	--	--	2.6	9	.29
AUG												
12...	--	--	--	--	--	--	--	--	--	2.5	5	.24
SEP												
09...	--	--	100	1	10	11	.4	<1	<1	4.5	279	78
OCT												
15...	--	--	--	--	--	--	--	--	--	.7	0	.00
NOV												
03...	.050	--	--	--	--	--	--	--	--	2.7	5	.46
DEC												
09...	.040	--	--	--	--	--	--	--	--	.6	--	--
JAN , 1982												
08...	.030	1	<100	<1	20	<1	<.1	<1	1	.4	6	.15
FEB												
17...	.040	--	--	--	--	--	--	--	--	.7	--	--
MAR												
02...	.040	--	--	--	--	--	--	--	--	.5	--	--
APR												
06...	.030	--	--	--	--	--	--	--	--	.7	--	--
MAY												
05...	.050	--	--	--	--	--	--	--	--	.0	76	2.3
JUN												
08...	.030	--	--	--	--	--	--	--	--	1.2	--	--
JUL												
13...	.020	--	--	--	--	--	--	--	--	2.2	--	--
AUG												
17...	.040	--	--	--	--	--	--	--	--	1.4	--	--
SEP												
08...	.040	1	100	--	<1	--	<.1	<1	<1	.7	--	--

50115000 RIO PORTUGUES NEAR PONCE, PR--Continued

PESTICIDE ANALYSES, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982

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)
JUL , 1981								
29...	1630	<.10	<.01	<.10	<.01	<.01	<.01	<.01
JUL , 1982								
13...	1140	<.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)
JUL , 1981									
29...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
JUL , 1982									
13...	<.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)
JUL , 1981								
29...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01
JUL , 1982								
13...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01

50115000 RIO PORTUGUES NEAR PONCE, PR--Continued

BENTHIC INVERTEBRATE ANALYSES, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE TIME	OCT 1,80 1330	DEC 11,80 1700	JAN 15,81 1600	FEB 11,81 1045	JUL 29,81 1630
TOTAL COUNT	127	43	58	100	40
DIVERSITY: PHYLUM	0.1	0.0	0.0	0.0	0.0
...CLASS	0.2	0.0	0.1	0.1	0.0
...ORDER	0.6	1.5	1.0	1.1	1.2
...FAMILY	1.4	1.8	1.5	1.8	1.2
...GENUS	1.4	2.4	2.8	2.8	2.4
...GENUS-INSECTA	1.3	2.4	2.7	2.7	2.4
ORGANISM	COUNT	COUNT	COUNT	COUNT	COUNT
ARTHROPODA (ARTHROPODS)					
...CRUSTACEA					
...DECAPODA					
...PALAEMONIDAE					
...PALAEMONETES	2	--	1	2	--
...INSECTA					
...COLEOPTERA					
...ELMIDAE					
...OPTIOSERVUS	7	--	--	--	--
...STENELMIS	--	6	--	--	--
...PTILODACTYLIDAE					
...ANCHYTARSUS	--	--	--	--	--
...DIPTERA					
...CERATOPOGONIDAE=HELEIDAE					
...UNKNOWN GENUS	--	1	--	--	--
...CHIRONOMIDAE					
...ABLABESMYIA	--	--	1	10	--
...ACRICTOPUS	--	--	--	--	9
...CHIRONOMUS	--	--	1	--	--
...CONCHAPELOPIA	--	--	--	--	--
...CONCHAPELOPIA, ARCTO, RHEO	--	--	--	--	--
...CORYNONEURA	--	--	--	--	--
...CRICOTOPUS	--	--	2	10	4
...CRYPTOCHIRONOMUS	--	4	1	12	--
...EUKIEFFERIELLA	--	--	--	--	--
...HALOCLADIUS	--	--	--	--	--
...HYDROBAENUS	--	--	--	--	--
...LABRUNDINIA	--	--	--	--	--
...LARSIA	--	--	--	--	--
...MICROTENDIPES	--	--	--	--	--
...NANOCLADIUS	--	--	3	--	--
...NILOTANYPUS	--	3	4	--	--
...ORTHOCLADIUS	--	--	--	--	7
...PARACRICOTOPUS	--	--	--	--	--
...PARATENDIPES	1	--	--	--	--
...PENTANEURA	--	--	--	--	--
...POLYPEDILUM	--	18	23	18	--
...RHEOCRICOTOPUS	--	--	2	--	--
...RHEOTANYTARSUS	--	--	--	--	--
...TANYTARSUS	--	--	--	--	--
...THIENEMANNIELLA	--	--	--	--	4
...EMPIDIDAE					
...UNKNOWN GENUS	--	--	--	--	--
...SIMULIIDAE					
...SIMULIUM	--	--	--	--	--
...TIPULIDAE	--	--	--	--	--
...DICRANOTA	--	--	--	--	--
...UNKNOWN GENUS	--	1	--	--	--
...EPHEMEROPTERA					
...BAETIDAE					
...BAETIS	72	--	--	19	13
...UNKNOWN GENUS	--	--	--	--	--
...CAENIDAE					
...CAENIS	--	--	3	--	--
...HEPTAGENIIDAE					
...STENONEMA	44	--	10	7	--
...LEPTOPHLEBIIDAE					
...HERMANELLOPSIS	--	--	--	--	--
...LEPTOPHLEBIA	--	8	7	22	--
...LEPIDOPTERA					
...PYRALIIDAE					
...PARARGYACTIS	--	--	--	--	--
...UNKNOWN GENUS	--	--	--	--	--
...ODONATA					
...LIBELLULIDAE					
...ERYTHRODIPLAX	--	2	--	--	--
...MACROTHERIS	--	--	--	--	--
...PALTOETHERIS	--	--	--	--	--
...UNKN. GENUS	--	--	--	--	--
...TRICHOPTERA					
...HYDROPSYCHIDAE					
...SMICRIDEA	--	--	--	--	--
...HYDROPTILIDAE					
...HYDROPTILA	--	--	--	--	3
...NEOTRICHIA	--	--	--	--	--
...OXYETHIRA	--	--	--	--	--
...UNKNOWN GENUS	--	--	--	--	--
...PHILOPOTAMIDAE					
...CHIMARRA	--	--	--	--	--

CONTINUED...

RIO PORTUGUES BASIN

50115000 RIO PORTUGUES NEAR PONCE, PR--Continued

BENTHIC INVERTEBRATE ANALYSES, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE TIME	OCT 1,80 1330	DEC 11,80 1700	JAN 15,81 1600	FEB 11,81 1045	JUL 29,81 1630
ORGANISM	COUNT	COUNT	COUNT	COUNT	COUNT
MOLLUSCA (MOLLUSCS)					
..GASTROPODA					
..BASOMMATOPHORA					
....ANCYLIDAE					
....FERRISSIA	--	--	--	--	--
..MESOGASTROPODA					
....THIARIDAE					
....MELANOIDES	1	--	--	--	--
PLATYHELMINTHES (FLATWORMS)					
..TURBELLARIA					
..TRICLADIDA					
....PLANARIIDAE	--	--	--	--	--
....UNKNOWN GENUS	--	--	--	--	--
DATE TIME	AUG 26,81 1145	SEP 24,81 1325	OCT 27,81 1135	NOV 3,81 1315	DEC 9,81 1130
TOTAL COUNT	9	0	0	0	102
DIVERSITY: PHYLUM	0.0	0.0	0.0	0.0	0.0
..CLASS	0.0	0.0	0.0	0.0	0.0
..ORDER	0.5	0.0	0.0	0.0	0.5
..FAMILY	0.5	0.0	0.0	0.0	1.2
..GENUS	0.5	0.0	0.0	0.0	0.0
..GENUS-INSECTA	0.5	0.0	0.0	0.0	0.0
ORGANISM	COUNT	COUNT	COUNT	COUNT	COUNT
ARTHROPODA (ARTHROPODS)					
..CRUSTACEA					
..DECAPODA					
....PALAEMONIDAE	--	--	--	--	--
....PALAEMONETES					
..INSECTA					
..COLEOPTERA					
....ELMIDAE					
....OPTIOSERVUS	--	--	--	--	--
....STEMELMIS	1	--	--	--	--
....PTILODACTYLIDAE					
....ANCHYTARSUS	--	--	--	--	--
..DIPTERA					
....CERATOPOGONIDAE=HELEIDAE					
....UNKNOWN GENUS	--	--	--	--	18
..CHIRONOMIDAE					
....ABLABESNYIA	--	--	--	--	15
....ACRICTOPUS	--	--	--	--	--
....CHIRONOMUS	--	--	--	--	--
....CONCHAPELOPIA	--	--	--	--	--
....CONCHAPELOPIA, ARCTO, RHEO	--	--	--	--	--
....CORYNOEURA	--	--	--	--	3
....CRICOTOPUS	8	--	--	--	7
....CRYPTOCHIRONOMUS	--	--	--	--	--
....EUKIEFFERIELLA	--	--	--	--	--
....HALOCLADIUS	--	--	--	--	--
....HYDROBAENUS	--	--	--	--	--
....LABRUNDINIA	--	--	--	--	--
....LAFSIA	--	--	--	--	--
....MICROTENDIPES	--	--	--	--	5
....NANOCLADIUS	--	--	--	--	--
....NILOTAMYPUS	--	--	--	--	--
....ORTHOCLADIUS	--	--	--	--	14
....PARACRICOTOPUS	--	--	--	--	--
....PARATENDIPES	--	--	--	--	--
....PENTANEURA	--	--	--	--	--
....POLYPEDILUM	--	--	--	--	--
....RHEOCRICOTOPUS	--	--	--	--	--
....RHEOTANYTARSUS	--	--	--	--	--
....TANYTARSUS	--	--	--	--	6
....THIENEMANNIELLA	--	--	--	--	24
..EPIPIDAE					
....UNKNOWN GENUS	--	--	--	--	--
..SIMULIIDAE					
....SIMULIUM	--	--	--	--	--
..TIPULIDAE	--	--	--	--	1
..DICRANOTA	--	--	--	--	--
..UNKNOWN GENUS	--	--	--	--	--

CONTINUED

50115000 RIO PORTUGUES NEAR PONCE, PR--Continued

BENTHIC INVERTEBRATE ANALYSES, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE TIME	AUG 26,81 1145	SEP 24,81 1325	OCT 27,81 1135	NOV 3,81 1315	DEC 9,81 1130
ORGANISM	COUNT	COUNT	COUNT	COUNT	COUNT
..EPHEMEROPTERA					
...BAETIDAE					
....BAETIS	--	--	--	--	7
....UNKNOWN GENUS	--	--	--	--	--
...CAENIDAE					
....CAENIS	--	--	--	--	--
...HEPTAGENIIDAE					
....STENOHEMA	--	--	--	--	--
...LEPTOPHLEBIIDAE					
....HERMANELLOPSIS	--	--	--	--	--
....LEPTOPHLEBIA	--	--	--	--	--
...LEPIDOPTERA					
...PYRALIIDAE					
....PARARGYACTIS	--	--	--	--	--
....UNKNOWN GENUS	--	--	--	--	--
...ODONATA					
...LIBELLULIDAE					
....ERYTHRODIPLAX	--	--	--	--	--
....MACROTHEMIS	--	--	--	--	--
....PALTOHEMIS	--	--	--	--	2
....UNKN.GENUS	--	--	--	--	--
...TRICHOPTERA					
...HYDROPSYCHIDAE					
....SMICRIDEA	--	--	--	--	--
...HYDROPTILIDAE					
....HYDROPTILA	--	--	--	--	--
....NEOTRICHIA	--	--	--	--	--
....OXYETHIRA	--	--	--	--	--
....UNKNOWN GENUS	--	--	--	--	--
...PHILOPOTAMIDAE					
....CHIMARRA	--	--	--	--	--
MOLLUSCA (MOLLUSCS)					
...GASTROPODA					
...BASOMMATOPHORA					
...ANCYLIDAE					
....FERRISSIA	--	--	--	--	--
...MESOGASTROPODA					
...THIARIDAE					
...MELANOIDES	--	--	--	--	--
PLATYHELMINTHES (FLATWORMS)					
...TURBELLARIA					
...TRICLADIDA					
...PLANARIIDAE	--	--	--	--	--
...UNKNOWN GENUS	--	--	--	--	--
DATE TIME	JAN 8,82 1055	FEB 17,82 0950	MAR 2,82 1540	APR 6,82 1200	MAY 5,82 1230
TOTAL COUNT	43	56	97	60	32
DIVERSITY: PHYLUM	0.2	0.0	0.0	0.0	0.4
...CLASS	0.2	0.0	0.0	0.0	0.4
...ORDER	1.4	1.0	1.3	1.8	2.0
...FAMILY	2.2	1.4	1.3	2.2	2.6
...GENUS	0.0	2.7	2.5	2.8	3.6
...GENUS-INSECTA	2.7	2.7	2.5	2.8	3.4
ORGANISM	COUNT	COUNT	COUNT	COUNT	COUNT
ARTHROFODA (ARTHROPODS)					
...CRUSTACEA					
...DECAPODA					
...PALAEMONIDAE					
...PALAEMONETES	--	--	--	--	--
...INSECTA					
...COLEOPTERA					
...ELMIDAE					
....OPTIOSERVUS	--	2	4	--	--
....STENELMIS	--	--	--	3	--
...PTILODACTYLIDAE					
...ANCHYTARSUS	--	--	--	--	--
...DIPTERA					
...CERATOPOGONIDAE=HELEIDAE					
...UNKNOWN GENUS	--	--	--	--	--

50115000 RIO PORTUGUES NEAR PONCE, PR--Continued

BENTHIC INVERTEBRATE ANALYSES, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE TIME	JAN 8,82 1055	FEB 17,82 0950	MAR 2,82 1540	APR 6,82 1200	MAY 5,82 1230
ORGANISM	COUNT	COUNT	COUNT	COUNT	COUNT
...CHIRONOMIDAE	--	--	--	--	--
...ABLABESMYIA	--	--	--	--	--
...ACRICTOPUS	--	--	--	--	--
...CHIRONOMUS	--	--	1	--	--
...CONCHAPELOPIA	--	1	--	--	1
...CONCHAPELOPIA,ARCTO,RHEO	1	--	--	--	--
...CORYNONEURA	--	11	21	1	--
...CRICOTOPUS	--	--	--	--	3
...CRYPTOCHIRONOMUS	--	--	--	--	--
...EUKIEFFERIELLA	--	10	31	15	4
...HALOCLADIUS	2	--	--	--	--
...HYDROBAENUS	--	--	--	--	--
...LABRUNDINIA	--	2	--	--	--
...LAERSIA	--	--	2	--	--
...MICROTENDIPES	--	--	--	--	--
...NANOCLADIUS	--	--	--	--	--
...NILOTANYPUS	--	--	--	--	--
...ORTHOCLADIUS	--	--	--	--	--
...PARACRICOTOPUS	14	--	--	--	--
...PARATENDIPES	--	--	--	--	--
...PENTANEURA	1	--	--	--	--
...POLYPEDILUM	--	--	--	--	--
...RHEOCRICOTOPUS	--	--	--	2	--
...RHEOTANYTARSUS	--	17	7	4	5
...TANYTARSUS	--	--	--	--	1
...THIENEMANNIELLA	1	--	4	--	1
...EMPIDIDAE	--	--	--	--	--
...UNKNOWN GENUS	2	--	--	--	1
...SIMULIIDAE	--	--	--	--	--
...SIMULIUM	6	--	--	--	1
...TIPULIDAE	--	--	--	--	--
...DICRANOTA	--	--	--	1	--
...UNKNOWN GENUS	--	--	--	--	--
...EPHEMEROPTERA	--	--	--	--	--
...BAETIDAE	--	--	--	--	--
...BAETIS	11	4	22	21	--
...UNKNOWN GENUS	--	--	--	--	2
...CAENIDAE	--	--	--	--	--
...CAENIS	--	--	--	--	--
...HEPTAGENIIDAE	--	--	--	--	--
...STENONEMA	--	4	--	--	--
...LEPTOPHLEBIIDAE	--	--	--	--	--
...HERMANELLOPSIS	1	--	--	5	6
...LEPTOPHLEBIA	--	5	--	--	--
...LEPIDOPTERA	--	--	--	--	--
...PYRALIIDAE	--	--	--	--	--
...PARARGYACTIS	--	--	5	--	--
...UNKNOWN GENUS	--	--	--	--	1
...ODONATA	--	--	--	--	--
...LIBELLULIDAE	--	--	--	--	--
...ERYTHRODIPLAX	--	--	--	--	--
...MACROTREMIS	--	--	--	--	2
...PALTOTHEMIS	--	--	--	--	--
...UNKN. GENUS	2	--	--	3	--
...TRICHOPTERA	--	--	--	--	--
...HYDROPSYCHIDAE	--	--	--	--	--
...SMICRIDEA	1	--	--	--	--
...HYDROPTILIDAE	--	--	--	--	--
...HYDROPTILA	--	--	--	3	--
...NEOTRICHIA	--	--	--	--	--
...OXYETHIRA	--	--	--	--	1
...UNKNOWN GENUS	--	--	--	1	--
...PHILOPOTAMIDAE	--	--	--	--	--
...CHIMARRA	--	--	--	1	1
MOLLUSCA (MOLLUSCS)	--	--	--	--	--
...GASTROPODA	--	--	--	--	--
...BASOMMATOPHORA	--	--	--	--	--
...ANCYLIDAE	--	--	--	--	--
...FERRISSIA	--	--	--	--	1
...MESOGASTROPODA	--	--	--	--	--
...THIARIDAE	--	--	--	--	--
...MELANOIDES	--	--	--	--	--
PLATYHELMINTHES (FLATWORMS)	--	--	--	--	--
...TURBELLARIA	--	--	--	--	--
...TRICLADIDA	--	--	--	--	--
...PLANARIIDAE	1	--	--	--	--
...UNKNOWN GENUS	--	--	--	--	1

RIO PORTUGUES BASIN

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50115000 RIO PORTUGUES NEAR PONCE, PR--Continued

BENTHIC INVERTEBRATE ANALYSES, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE TIME	JUN 8.82 1325	JUL 13.82 1140	AUG 17.82 1050	SEP 8.82 1230
TOTAL COUNT	18	49	7	1
DIVERSITY: PHYLUM	0.0	0.0	0.0	0.0
...CLASS	0.0	0.0	0.0	0.0
...ORDER	1.4	1.8	1.6	0.0
...FAMILY	1.4	2.2	2.0	0.0
...GENUS	2.7	3.2	2.0	0.0
...GENUS-INSECTA	2.7	3.2	2.0	0.0
ORGANISM	COUNT	COUNT	COUNT	COUNT
ARTHROPODA (ARTHROPODS)				
...CRUSTACEA				
...DECAPODA				
...PALAEMONIDAE	--	--	--	--
...PALAEMONETES				
...INSECTA				
...COLEOPTERA				
...ELMIDAE				
...OPTIOSERVUS	--	--	--	--
...STEMELMIS	1	5	--	--
...PTILODACTYLIDAE				
...ANCHYTARSUS	--	--	2	--
...DIPTERA				
...CERATOPOGONIDAE=HELEIDAE				
...UNKNOWN GENUS	--	1	--	--
...CHIRONOMIDAE				
...ABLABESMYIA	--	--	--	--
...ACRICTOPUS	--	--	--	--
...CHIRONOMUS	--	--	--	--
...CONCHAPELOPIA	1	15	--	--
...CONCHAPELOPIA, ARCTO. RHEO	--	--	--	--
...CORYNONEURA	--	--	--	--
...CRICOTOPUS	2	2	2	--
...CRYPTOCHIRONOMUS	--	--	--	--
...EUKIEFFERIELLA	2	--	--	--
...HALOCLADIUS	--	--	--	--
...HYDROBAENUS	1	--	--	--
...LABRUNDINIA	--	--	--	--
...LARSIA	--	--	--	--
...MICROTENDIPES	--	--	--	--
...HAMOCLADIUS	--	--	--	--
...NILOTANYPUS	--	--	--	--
...ORTHOCLADIUS	--	--	--	--
...PARACRICOTOPUS	--	--	--	--
...PARATENDIPES	--	--	--	--
...PENTANEURA	--	--	--	--
...POLYPEDILUM	--	--	--	1
...RHEOCRICOTOPUS	--	6	--	--
...RHEOTANYTARSUS	--	--	--	--
...TANYTARSUS	--	3	--	--
...THIENEMANNIELLA	7	--	--	--
...EMPIDIDAE				
...UNKNOWN GENUS	--	--	--	--
...SIMULIIDAE				
...SIMULIUM	--	--	--	--
...TIPULIDAE	--	--	--	--
...DICRANOTA	--	--	--	--
...UNKNOWN GENUS	--	--	--	--
...EPHEMEROPTERA				
...BAETIDAE				
...BAETIS	--	--	1	--
...UNKNOWN GENUS	--	1	--	--
...CAENIDAE	--	--	--	--
...CAENIS	--	--	--	--
...HEPTAGENIIDAE				
...STENOMEMA	2	--	2	--
...LEPTOPHLEBIIDAE				
...HERMANELLOPSIS	--	1	--	--
...LEPTOPHLEBIA	--	--	--	--
...LEPIDOPTERA				
...PYRALIIDAE				
...PARARGYACTIS	1	1	--	--
...UNKNOWN GENUS	--	--	--	--
...ODONATA				
...LIBELLULIDAE				
...ERYTHRODIPLAX	--	--	--	--
...MACROTREMIS	--	3	--	--
...PALTOREMIS	--	--	--	--
...UNKN. GENUS	1	--	--	--
...TRICHOPTERA				
...HYDROPSYCHIDAE				
...SMICRIDEA	--	--	--	--
...HYDROPTILIDAE				
...HYDROPTILA	--	2	--	--
...NEOTRICHIA	--	1	--	--
...OXYETHIRA	--	2	--	--
...UNKNOWN GENUS	--	--	--	--
...PHILOPOTANIDAE				
...CHIMARRA	--	6	--	--
MOLLUSCA (MOLLUSCS)				
...GASTROPODA				
...BASOMMATOPHORA				
...ANCYLIDAE				
...FERRISSIA	--	--	--	--
...MESOGASTROPODA				
...THIARIDAE				
...MELANOIDES	--	--	--	--
PLATYHELMINTHES (FLATWORMS)				
...TURBELLARIA				
...TRICLADIDA				
...PLANARIIDAE	--	--	--	--
...UNKNOWN GENUS	--	--	--	--

50115000 RIO PORTUGUES NEAR PONCE, PR--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	273	215	253	271	245	262	290	281	285	297	244	283
2	255	221	246	279	248	273	289	284	287	315	289	304
3	246	142	214	280	263	269	296	266	286	318	301	310
4	223	147	191	269	198	248	278	264	272	304	292	300
5	239	146	190	275	261	271	288	279	283	307	293	299
6	230	147	180	280	266	272	295	288	291	308	296	301
7	267	227	235	282	266	275	295	292	293	311	298	304
8	291	240	260	276	73	214	300	291	297	303	296	300
9	266	245	255	215	172	197	301	291	296	304	297	301
10	268	147	237	240	217	231	306	233	293	313	296	304
11	265	175	234	252	236	244	223	162	191	314	300	307
12	296	261	275	262	246	253	261	227	248	310	301	307
13	304	270	288	263	256	260	264	189	237	310	301	306
14	301	273	286	265	180	237	267	245	256	307	302	304
15	275	260	269	256	209	241	271	240	256	309	303	306
16	297	270	277	270	253	261	292	272	281	307	302	305
17	305	65	209	275	262	268	298	281	288	310	299	305
18	211	79	159	278	266	272	288	274	279	314	301	307
19	235	173	211	280	264	272	289	275	281	307	302	305
20	256	110	195	274	247	261	291	276	283	314	298	306
21	223	122	184	271	258	264	294	263	283	300	295	298
22	248	210	231	271	260	265	296	281	288	304	291	296
23	280	135	236	273	264	269	299	281	289	305	291	297
24	246	139	205	275	267	271	296	284	290	303	286	295
25	272	236	258	274	269	272	300	288	293	305	291	297
26	282	159	227	305	254	269	301	291	295	307	293	298
27	244	181	222	276	267	272	297	282	290	305	190	277
28	261	213	247	282	273	278	295	285	289	260	195	236
29	282	78	219	284	276	280	291	280	285	286	260	274
30	252	192	228	285	277	281	300	150	263	298	282	289
31	269	233	248	---	---	---	277	159	228	302	291	296
MONTH	305	65	231	305	73	260	306	150	277	318	190	297

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	306	290	298	305	298	301	296	289	292	317	302	308
2	306	293	299	305	295	303	298	291	294	314	307	310
3	305	297	301	315	296	304	306	293	297	309	303	306
4	310	298	304	313	298	304	306	293	298	308	194	279
5	307	233	277	310	296	302	295	279	289	248	176	220
6	300	278	292	307	297	301	295	282	288	234	199	215
7	307	294	301	311	297	303	313	299	303	280	234	258
8	315	294	304	312	303	306	314	298	304	302	269	283
9	316	301	307	311	299	305	313	298	303	303	291	296
10	317	299	307	312	297	304	312	300	304	300	203	282
11	319	300	308	315	296	304	315	299	304	312	260	293
12	309	298	304	313	298	304	316	299	304	304	133	204
13	313	301	306	310	287	302	302	297	299	267	228	246
14	307	301	303	283	263	275	308	298	301	247	136	200
15	310	298	304	300	278	289	310	296	301	261	234	241
16	304	297	300	308	284	288	302	296	299	277	259	263
17	310	301	305	299	278	287	302	293	297	284	271	275
18	303	298	301	297	282	289	306	286	293	284	186	247
19	318	295	304	298	286	291	312	290	299	280	255	268
20	313	298	303	301	285	291	310	274	299	288	191	260
21	307	293	301	303	284	292	314	271	298	222	135	180
22	305	253	263	305	283	292	318	283	300	233	173	215
23	267	237	249	301	288	292	299	283	291	---	---	---
24	274	250	263	300	287	292	311	293	300	---	---	---
25	287	273	279	291	286	288	317	293	304	---	---	---
26	301	279	290	300	285	292	309	299	304	---	---	---
27	298	287	292	300	290	293	306	299	301	---	---	---
28	308	292	299	308	289	296	304	287	297	---	---	---
29	---	---	---	311	290	299	302	292	297	---	---	---
30	---	---	---	301	293	295	312	298	303	---	---	---
31	---	---	---	299	290	293	---	---	---	---	---	---
MONTH	319	233	296	315	263	296	318	271	299	317	133	257

50115000 RIO PORTUGUES NEAR PONCE, PR--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	---	---	---	295	285	289	290	154	257	254	---	---
2	---	---	---	297	287	291	254	174	228	189	---	---
3	---	---	---	296	291	293	278	255	267	214	149	189
4	---	---	---	299	185	281	286	267	276	213	168	198
5	---	---	---	257	159	224	288	272	280	238	210	223
6	---	---	---	282	155	253	287	277	281	233	214	224
7	---	---	---	244	132	213	288	275	282	252	232	241
8	---	---	---	275	244	259	275	108	219	256	242	250
9	---	---	---	285	261	274	225	115	181	258	247	251
10	---	---	---	283	278	281	256	150	209	264	246	254
11	---	---	---	297	279	287	258	151	205	262	251	257
12	---	---	---	300	285	291	290	249	264	261	74	234
13	---	---	---	294	283	288	263	222	245	185	114	152
14	---	---	---	295	285	288	298	248	271	217	187	206
15	---	---	---	293	285	289	297	264	280	239	216	227
16	---	---	---	---	---	---	302	249	270	251	229	238
17	---	---	---	---	---	---	307	234	264	254	238	245
18	---	---	---	275	140	215	255	217	240	255	244	249
19	---	---	---	239	193	221	273	254	264	263	247	254
20	---	---	---	260	165	227	282	268	273	258	206	244
21	---	---	---	248	187	224	283	272	277	271	244	257
22	278	244	263	249	185	232	286	277	281	264	258	261
23	289	270	276	249	203	230	279	268	275	271	258	262
24	293	273	281	262	242	252	284	277	280	272	262	266
25	299	289	295	275	252	262	283	267	277	275	263	268
26	316	299	307	277	242	261	281	122	241	275	250	263
27	327	317	320	300	265	276	232	150	203	251	245	248
28	333	318	326	294	279	284	241	211	229	---	---	---
29	341	326	333	288	273	281	261	134	221	---	---	---
30	289	283	285	287	273	280	230	164	207	---	---	---
31	---	---	---	292	280	284	246	217	232	---	---	---
MONTH	341	244	298	300	132	263	307	108	251	275	74	238
YEAR	341	65	270									

PH (STANDARD UNITS), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	7.3	6.9	7.2	7.7	7.6	7.6	7.9	7.6	7.7	7.8	7.4	7.6
2	7.3	6.9	7.1	7.7	7.6	7.6	7.9	7.6	7.7	7.6	7.5	7.6
3	7.3	6.8	7.1	7.8	7.6	7.7	7.9	7.6	7.7	7.6	7.3	7.5
4	7.1	6.7	7.0	7.8	7.5	7.7	7.8	7.6	7.7	7.7	7.2	7.5
5	7.3	6.5	6.8	7.8	7.6	7.7	7.8	7.5	7.7	7.7	7.4	7.6
6	7.1	6.5	6.8	7.8	7.7	7.7	7.9	7.6	7.7	7.7	7.4	7.6
7	7.3	7.1	7.2	7.8	7.7	7.7	7.9	7.6	7.7	7.7	7.4	7.6
8	7.3	7.1	7.2	7.8	7.0	7.6	7.9	7.7	7.8	7.8	7.4	7.6
9	7.4	7.2	7.3	7.7	7.4	7.6	8.0	7.6	7.8	7.7	7.5	7.6
10	7.4	6.8	7.1	7.7	7.6	7.6	7.9	7.5	7.7	7.8	7.5	7.6
11	7.1	6.6	6.9	7.8	7.6	7.7	7.5	6.9	7.3	7.8	7.5	7.6
12	7.2	6.8	7.0	7.8	7.6	7.7	7.6	7.4	7.5	7.9	7.6	7.7
13	7.5	6.9	7.2	7.7	7.6	7.7	7.6	7.3	7.5	7.9	7.6	7.7
14	7.4	7.2	7.3	7.8	7.5	7.6	7.7	7.5	7.6	7.9	7.6	7.7
15	7.4	7.2	7.3	7.8	7.6	7.7	7.7	7.5	7.6	7.9	7.6	7.7
16	7.9	7.6	7.7	7.9	7.4	7.7	7.7	7.6	7.6	7.9	7.5	7.7
17	7.9	6.8	7.4	7.8	7.6	7.7	7.8	7.6	7.7	7.9	7.5	7.7
18	7.6	7.1	7.3	7.8	7.6	7.5	7.7	7.6	7.6	7.9	7.5	7.7
19	7.6	7.4	7.5	7.9	7.7	7.7	7.8	7.6	7.6	7.9	7.6	7.7
20	7.7	7.2	7.4	7.9	7.7	7.7	7.8	7.5	7.6	7.9	7.5	7.7
21	7.6	7.1	7.3	7.9	7.7	7.8	7.8	7.6	7.7	7.9	7.6	7.7
22	7.6	7.0	7.4	7.9	7.7	7.7	7.8	7.6	7.7	7.9	7.5	7.7
23	7.7	7.2	7.5	7.9	7.7	7.8	7.8	7.6	7.7	7.9	7.5	7.7
24	8.2	7.2	7.7	7.9	7.7	7.8	7.8	7.6	7.7	7.9	7.5	7.7
25	7.9	7.6	7.8	7.9	7.7	7.8	7.8	7.6	7.7	7.9	7.5	7.7
26	7.9	7.5	7.7	7.9	7.7	7.8	7.9	7.6	7.7	7.9	7.5	7.7
27	7.7	7.4	7.6	7.9	7.6	7.8	7.8	7.6	7.7	7.9	7.4	7.6
28	7.6	7.5	7.6	7.9	7.6	7.7	7.8	7.6	7.7	7.7	7.3	7.5
29	7.8	7.2	7.5	7.9	7.6	7.7	7.9	7.6	7.7	7.8	7.4	7.6
30	7.7	7.4	7.5	7.9	7.6	7.7	7.9	7.0	7.6	8.0	7.5	7.6
31	7.7	7.5	7.6	---	---	---	7.6	6.8	7.1	7.9	7.6	7.7
MONTH	8.2	6.5	7.3	7.9	7.0	7.7	8.0	6.8	7.6	8.0	7.2	7.6

50115000 RIO PORTUGUES NEAR PONCE, PR--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN			
	FEBRUARY				MARCH				APRIL				MAY		
1	7.9	7.5	7.7	7.9	7.5	7.6	7.8	7.4	7.6	7.9	7.4	7.6			
2	7.9	7.5	7.7	7.9	7.6	7.7	7.8	7.4	7.6	7.9	7.4	7.6			
3	7.9	7.6	7.7	8.0	7.5	7.7	7.9	7.4	7.6	7.8	7.4	7.6			
4	7.9	7.6	7.7	7.9	7.5	7.7	7.9	7.4	7.6	7.7	7.1	7.5			
5	7.8	7.5	7.6	7.9	7.4	7.6	7.8	7.5	7.6	7.3	7.0	7.2			
6	7.9	7.5	7.7	7.9	7.4	7.6	7.8	7.4	7.7	7.3	7.1	7.2			
7	7.9	7.5	7.7	7.9	7.5	7.7	8.0	7.5	7.7	7.6	7.2	7.4			
8	7.9	7.5	7.7	7.9	7.5	7.6	8.0	7.5	7.7	7.7	7.2	7.4			
9	7.9	7.6	7.7	7.9	7.4	7.6	8.0	7.5	7.7	7.6	7.2	7.4			
10	7.9	7.5	7.7	7.9	7.4	7.6	8.0	7.5	7.7	7.5	7.1	7.3			
11	8.0	7.5	7.7	8.0	7.3	7.6	8.0	7.5	7.7	7.6	7.2	7.3			
12	8.0	7.5	7.7	7.9	7.4	7.6	8.0	7.5	7.7	7.4	6.5	6.9			
13	7.9	7.5	7.7	7.9	7.4	7.6	7.8	7.4	7.6	7.4	7.1	7.2			
14	7.8	7.5	7.6	7.8	7.3	7.5	7.9	7.5	7.6	7.4	6.8	7.1			
15	8.0	7.5	7.7	7.9	7.3	7.5	7.9	7.4	7.6	7.5	7.1	7.2			
16	7.7	7.5	7.6	7.9	7.3	7.7	7.8	7.4	7.6	7.5	7.1	7.3			
17	7.9	7.5	7.7	7.9	7.3	7.6	7.8	7.4	7.6	7.5	7.1	7.3			
18	7.9	7.5	7.6	7.9	7.3	7.6	7.8	7.4	7.5	7.7	6.9	7.4			
19	8.0	7.4	7.7	7.9	7.3	7.6	7.8	7.4	7.5	7.6	6.9	7.3			
20	7.9	7.5	7.7	7.8	7.3	7.6	7.8	7.4	7.6	7.5	6.8	7.2			
21	7.9	7.4	7.7	7.9	7.3	7.6	7.8	7.4	7.5	7.5	6.5	6.8			
22	7.7	7.4	7.6	7.9	7.3	7.6	7.9	7.4	7.5	7.1	6.5	6.8			
23	7.7	7.5	7.6	7.9	7.3	7.5	7.8	7.3	7.5	---	---	---			
24	7.8	7.3	7.5	7.9	7.3	7.6	7.8	7.3	7.5	---	---	---			
25	7.8	7.3	7.5	7.9	7.4	7.5	7.9	7.3	7.5	---	---	---			
26	7.8	7.3	7.5	7.9	7.4	7.6	7.7	7.4	7.5	---	---	---			
27	7.7	7.3	7.5	7.9	7.4	7.6	7.7	7.4	7.5	---	---	---			
28	7.9	7.4	7.6	7.9	7.4	7.6	7.7	7.4	7.5	---	---	---			
29	---	---	---	8.0	7.4	7.6	7.8	7.4	7.5	---	---	---			
30	---	---	---	7.9	7.5	7.6	7.9	7.4	7.6	---	---	---			
31	---	---	---	7.8	7.4	7.6	---	---	---	---	---	---			
MONTH	8.0	7.3	7.7	8.0	7.3	7.6	8.0	7.3	7.6	7.9	6.5	7.3			

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN			
	JUNE				JULY				AUGUST				SEPTEMBER		
1	---	---	---	8.3	7.0	7.6	8.1	6.9	7.5	---	---	---			
2	---	---	---	8.4	7.3	7.8	7.8	6.9	7.3	---	---	---			
3	---	---	---	8.1	7.3	7.7	7.9	7.0	7.4	---	---	---			
4	---	---	---	7.9	6.8	7.4	7.8	6.9	7.3	---	---	---			
5	---	---	---	7.6	6.5	7.0	7.9	6.9	7.2	---	---	---			
6	---	---	---	7.6	6.6	7.1	7.6	6.9	7.2	8.4	8.0	8.2			
7	---	---	---	7.6	6.4	6.9	7.5	6.9	7.2	7.8	7.4	7.6			
8	---	---	---	7.9	6.7	7.1	7.8	6.9	7.4	---	---	---			
9	---	---	---	7.8	6.7	7.2	7.6	6.7	7.2	---	---	---			
10	---	---	---	7.5	7.0	7.2	7.8	6.8	7.2	---	---	---			
11	---	---	---	7.8	6.8	7.3	7.7	6.4	7.1	---	---	---			
12	---	---	---	7.8	6.8	7.3	7.4	6.6	6.9	---	---	---			
13	---	---	---	7.9	7.0	7.4	7.6	6.8	7.2	---	---	---			
14	---	---	---	7.9	6.8	7.3	7.7	7.2	7.4	---	---	---			
15	---	---	---	7.5	6.8	7.1	7.6	7.1	7.3	---	---	---			
16	---	---	---	---	---	---	7.6	7.0	7.2	---	---	---			
17	---	---	---	---	---	---	7.7	6.9	7.1	---	---	---			
18	---	---	---	---	---	---	7.4	6.5	6.9	---	---	---			
19	---	---	---	7.6	6.8	7.2	7.6	6.6	7.0	---	---	---			
20	---	---	---	7.2	6.5	6.8	7.7	6.8	7.2	---	---	---			
21	---	---	---	7.5	6.5	6.9	7.5	6.9	7.2	---	---	---			
22	8.4	7.0	7.6	7.8	6.7	6.9	7.6	6.8	7.2	---	---	---			
23	7.5	6.7	7.1	7.6	6.6	7.0	7.4	6.8	7.1	---	---	---			
24	7.8	6.6	7.1	7.3	6.7	7.0	7.5	6.8	7.1	---	---	---			
25	7.8	6.9	7.4	7.4	6.6	6.9	7.3	6.7	7.0	---	---	---			
26	8.1	7.0	7.6	8.2	6.6	7.0	7.4	6.2	6.9	---	---	---			
27	8.3	7.3	7.8	7.8	6.7	7.1	7.0	6.5	6.7	---	---	---			
28	8.2	7.4	7.8	8.0	7.0	7.4	7.2	6.7	6.9	---	---	---			
29	8.3	7.3	7.8	7.7	6.9	7.2	7.3	6.5	7.0	---	---	---			
30	8.1	7.4	7.8	7.8	6.9	7.2	7.3	6.8	7.0	---	---	---			
31	---	---	---	7.9	6.8	7.3	7.5	6.9	7.1	---	---	---			
MONTH	8.4	6.6	7.6	8.4	6.4	7.2	8.1	6.2	7.1	8.4	7.4	7.9			

YEAR	8.4	6.2	7.5
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50115000 RIO PORTUGUES NEAR PONCE, PR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	29.5	25.0	27.5	24.5	22.0	23.0	24.0	20.5	22.0	27.0	24.5	25.5
2	28.0	24.0	26.5	23.5	22.0	22.5	24.0	21.0	22.5	28.5	24.5	26.5
3	27.0	23.0	25.0	25.5	22.0	23.0	24.0	22.0	23.0	27.0	24.5	25.5
4	28.0	25.0	26.0	25.5	22.0	23.5	24.5	21.0	22.5	25.0	21.5	23.0
5	28.5	23.5	25.5	26.0	22.5	24.0	24.0	20.5	22.0	24.0	20.0	22.0
6	27.0	24.0	25.0	25.5	23.0	24.0	24.0	20.5	22.0	24.0	20.0	21.5
7	26.0	23.5	25.0	25.5	23.0	24.0	24.0	21.5	22.5	24.0	20.0	22.0
8	26.5	23.0	24.5	25.5	23.0	24.0	25.0	22.0	23.5	22.5	19.5	21.0
9	26.5	23.0	24.5	25.0	22.5	24.0	25.0	22.0	23.5	22.5	20.0	21.0
10	26.0	24.0	25.5	25.5	22.0	23.0	24.5	22.5	23.0	24.0	19.5	21.5
11	29.5	23.5	26.5	24.5	21.0	22.5	24.0	21.5	22.5	24.5	20.0	22.0
12	30.0	24.5	27.0	24.5	21.0	22.5	23.5	22.0	22.5	24.5	21.0	22.5
13	27.5	23.5	25.5	23.5	21.5	22.5	25.0	22.5	23.0	23.5	20.5	22.0
14	26.5	22.5	24.5	24.0	22.0	23.0	24.5	22.5	23.0	23.5	20.5	21.5
15	27.5	20.5	25.0	25.5	21.5	23.5	24.5	21.5	23.0	24.0	20.5	22.0
16	25.0	23.5	24.5	25.0	21.5	23.0	25.5	22.0	23.5	23.0	20.5	21.5
17	26.5	22.5	23.5	25.5	21.5	23.5	25.0	21.5	23.0	24.5	20.0	22.0
18	25.5	22.5	23.0	26.0	22.0	24.0	23.5	21.5	22.5	25.0	20.0	22.0
19	25.5	23.0	24.0	25.5	22.5	24.0	24.0	21.0	22.0	23.0	20.5	22.0
20	25.0	23.0	24.0	26.0	22.0	23.5	24.0	20.5	22.0	25.0	19.5	22.0
21	25.5	23.0	24.5	25.5	22.0	23.5	24.5	20.5	22.5	24.0	21.0	22.5
22	26.0	21.0	24.5	25.5	22.0	23.0	25.0	21.0	22.5	24.5	19.5	21.5
23	25.5	21.5	23.5	25.5	21.5	23.5	24.5	20.5	22.0	24.5	19.5	22.0
24	27.5	23.0	25.0	26.0	22.0	23.5	24.0	20.5	22.0	24.5	19.0	21.5
25	27.0	23.0	25.5	25.0	22.5	24.0	24.0	20.5	22.0	24.5	20.0	22.0
26	26.5	24.0	25.0	25.0	22.5	23.5	24.5	21.0	22.5	25.0	20.0	22.0
27	25.0	22.0	23.5	25.0	21.5	23.0	23.0	22.0	22.5	24.5	20.0	22.0
28	22.5	21.5	22.0	24.0	21.0	22.0	24.0	21.5	22.5	23.5	20.0	21.5
29	25.0	21.0	22.0	24.5	20.5	22.0	24.5	21.5	23.0	24.5	19.5	21.5
30	24.5	21.0	22.5	24.0	20.5	22.0	25.5	22.0	23.0	24.0	20.0	21.5
31	25.5	21.5	23.0	---	---	---	29.0	22.0	25.0	24.5	20.5	22.0
MONTH	30.0	20.5	24.5	26.0	20.5	23.0	29.0	20.5	22.5	28.5	19.0	22.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	25.0	20.0	22.0	25.0	21.5	23.0	25.0	21.0	22.5	29.0	22.5	25.0
2	25.0	20.5	22.5	25.5	22.5	24.0	24.5	21.5	23.0	29.0	24.0	25.5
3	24.0	21.0	22.5	26.5	21.0	23.5	26.5	22.0	24.0	27.0	23.0	24.5
4	25.5	21.5	23.0	25.5	21.0	23.0	26.5	21.5	23.5	25.0	23.0	24.0
5	23.5	21.5	22.5	25.5	20.5	22.5	25.5	22.5	23.5	24.5	22.5	23.5
6	25.0	21.0	22.5	25.0	20.5	22.5	24.5	21.5	23.0	23.5	22.0	22.5
7	24.5	21.0	22.5	26.5	21.0	23.5	28.5	22.5	25.0	27.5	21.5	24.0
8	25.5	20.5	22.5	26.0	21.5	23.5	28.5	22.0	24.5	28.5	22.0	24.5
9	26.0	21.0	23.0	26.0	21.0	23.0	28.0	22.0	25.0	26.5	23.5	24.5
10	26.0	21.0	23.0	26.0	20.5	23.0	28.5	22.5	25.0	25.0	23.0	24.0
11	26.5	21.0	23.5	26.5	20.0	23.0	28.5	22.5	25.0	26.5	22.0	24.0
12	25.5	21.5	23.0	26.5	20.5	23.0	28.0	22.5	24.5	27.0	22.5	25.0
13	25.5	21.5	23.0	25.5	20.5	22.5	25.5	22.0	23.5	27.0	23.5	24.5
14	24.5	21.5	22.5	25.0	19.5	22.0	26.0	22.0	24.0	26.5	22.5	23.5
15	25.0	21.0	23.0	26.0	20.0	22.5	27.5	21.5	24.0	26.5	22.5	24.0
16	23.5	21.0	22.0	26.5	20.5	24.0	25.0	21.5	23.0	26.5	22.5	24.5
17	25.0	21.5	23.0	26.0	19.5	22.5	24.5	22.0	23.0	26.0	23.0	24.5
18	24.0	20.5	22.0	25.5	20.5	22.5	26.0	21.0	23.0	27.5	23.0	25.0
19	26.0	20.0	22.5	25.5	20.5	22.5	26.5	21.0	23.5	27.5	22.5	24.5
20	25.0	20.5	22.5	25.5	20.5	22.5	26.5	20.5	23.5	27.0	22.5	24.5
21	25.0	20.0	22.5	26.5	20.0	23.0	26.0	21.0	23.5	24.5	23.0	23.5
22	23.5	20.5	22.0	27.0	20.0	23.0	27.0	21.0	23.0	25.5	23.0	24.0
23	25.0	21.0	22.5	26.0	20.5	22.5	25.0	20.5	22.5	---	---	---
24	24.0	20.0	22.0	26.5	21.0	23.0	27.0	21.0	23.5	---	---	---
25	24.0	20.0	21.5	23.5	20.5	21.5	28.0	20.5	24.0	---	---	---
26	25.5	19.5	22.0	26.5	20.5	23.5	26.0	21.5	23.5	---	---	---
27	23.5	20.0	21.5	25.5	21.5	23.5	25.0	21.5	23.5	---	---	---
28	25.5	20.5	22.5	27.5	21.0	23.5	25.0	21.5	23.0	---	---	---
29	---	---	---	28.0	21.0	24.0	25.5	21.5	23.5	---	---	---
30	---	---	---	25.5	22.0	23.5	27.5	22.0	24.0	---	---	---
31	---	---	---	25.0	21.5	23.0	---	---	---	---	---	---
MONTH	26.5	19.5	22.5	28.0	19.5	23.0	28.5	20.5	23.5	29.0	21.5	24.5

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	---	---	---	29.0	23.0	25.5	29.0	24.0	26.0	---	---	---
2	---	---	---	29.5	24.0	26.5	28.5	23.0	25.5	---	---	---
3	---	---	---	28.5	24.0	26.0	29.5	24.0	26.0	28.0	23.0	26.0
4	---	---	---	27.5	23.5	25.0	29.0	23.0	25.5	28.0	23.5	26.0
5	---	---	---	28.0	22.5	24.5	29.0	23.0	25.5	27.5	22.5	24.5
6	---	---	---	28.0	23.0	24.5	28.0	23.5	25.5	25.5	22.5	24.0
7	---	---	---	28.5	22.0	24.5	27.5	22.5	25.0	27.0	22.5	24.5
8	---	---	---	28.5	22.5	24.5	26.0	22.5	24.5	26.5	23.5	25.0
9	---	---	---	28.5	22.5	25.0	26.0	23.0	24.5	26.0	23.5	24.5
10	---	---	---	26.5	24.5	25.0	27.5	21.5	24.5	27.0	22.5	24.5
11	---	---	---	29.0	23.5	25.5	31.0	22.0	27.0	25.5	23.0	24.0
12	---	---	---	29.0	23.5	25.5	30.5	25.0	27.0	25.5	23.0	24.0
13	---	---	---	29.0	24.0	26.0	28.0	23.5	26.5	23.5	22.5	23.0
14	---	---	---	29.0	24.0	26.0	31.5	23.5	27.5	26.0	22.5	24.0
15	---	---	---	27.0	23.5	25.0	30.0	26.0	27.5	26.5	22.5	24.0
16	---	---	---	---	---	---	32.0	24.0	27.5	26.5	22.5	24.0
17	---	---	---	---	---	---	31.5	24.0	26.0	26.0	22.5	24.0
18	---	---	---	28.0	23.0	25.5	28.0	23.0	25.0	25.5	23.0	24.0
19	---	---	---	29.0	23.0	25.5	28.5	23.0	25.5	26.5	22.5	24.0
20	---	---	---	26.0	22.0	23.5	29.5	23.5	26.0	25.5	22.5	24.0
21	---	---	---	28.0	22.5	24.5	28.5	23.5	25.5	27.5	22.0	24.5
22	27.0	24.5	26.0	24.5	23.0	23.5	29.0	24.0	26.0	25.0	23.5	24.5
23	27.5	23.0	25.0	28.5	22.5	25.0	28.5	24.0	26.0	26.5	23.0	24.0
24	28.5	23.0	25.5	27.0	23.0	24.5	29.0	24.5	26.5	27.0	23.5	25.0
25	27.5	23.5	25.5	28.0	22.5	25.0	27.5	24.0	25.5	27.5	23.5	25.0
26	28.0	23.5	25.5	27.5	22.5	24.5	27.0	22.5	24.5	27.5	23.5	25.0
27	28.5	24.0	26.0	27.5	23.5	25.0	26.0	21.5	23.5	32.0	23.0	27.0
28	27.0	23.5	25.5	30.0	24.0	26.5	27.0	22.0	24.0	33.0	24.5	28.0
29	27.5	23.0	25.0	28.5	23.5	26.0	27.0	22.5	24.0	33.0	23.5	27.5
30	27.5	24.0	26.0	29.5	24.0	26.5	27.5	22.0	24.0	---	---	---
31	---	---	---	30.5	24.0	26.5	27.5	22.5	24.5	---	---	---
MONTH	28.5	23.0	25.5	30.5	22.0	25.0	32.0	21.5	25.5	33.0	22.0	25.0
YEAR	33.0	19.0	24.0									

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	8.1	7.5	7.9	9.8	8.9	9.3	---	---	---
2	---	---	---	8.1	7.7	7.9	9.7	8.6	9.1	---	---	---
3	---	---	---	8.2	7.6	8.0	9.3	8.7	9.0	---	---	---
4	---	---	---	8.1	7.5	7.8	9.7	8.8	9.2	---	---	---
5	---	---	---	8.0	7.1	7.6	9.7	8.7	9.2	9.1	8.1	8.6
6	---	---	---	7.8	7.3	7.6	9.4	8.5	8.9	8.9	8.1	8.5
7	---	---	---	7.8	7.3	7.6	9.4	8.3	8.8	8.8	8.1	8.5
8	---	---	---	8.1	7.2	7.6	8.9	8.0	8.4	9.0	8.3	8.6
9	---	---	---	7.9	---	---	8.8	8.0	8.3	9.0	8.3	8.6
10	---	---	---	7.8	6.9	7.5	8.8	8.1	8.5	8.9	8.0	8.5
11	---	---	---	8.0	7.5	7.7	9.0	8.2	8.5	8.8	8.0	8.4
12	---	---	---	---	---	---	8.8	8.3	8.5	8.7	7.9	8.3
13	---	---	---	---	---	---	8.7	7.1	8.4	8.8	8.0	8.4
14	---	---	---	---	---	---	8.8	8.2	8.4	8.9	8.1	8.4
15	---	---	---	---	---	---	8.7	7.8	8.3	8.9	8.0	8.4
16	8.5	8.2	8.3	---	---	---	8.7	7.8	8.2	8.9	8.0	8.4
17	9.6	7.8	8.7	10.9	10.0	10.4	8.8	8.1	8.5	8.8	7.8	8.3
18	7.8	---	---	10.7	9.9	10.3	8.8	8.2	8.5	8.7	7.8	8.2
19	---	---	---	10.6	10.0	10.3	8.8	8.2	8.6	8.8	8.0	8.3
20	---	---	---	10.6	9.8	10.2	9.0	8.2	8.6	8.8	7.7	8.3
21	---	---	---	10.6	9.7	10.1	8.9	8.1	8.5	8.2	7.8	7.9
22	---	---	---	10.5	9.6	10.1	8.7	8.0	8.4	8.8	8.0	8.3
23	---	---	---	10.4	9.5	10.0	8.9	8.0	8.5	8.8	7.8	8.3
24	---	---	---	10.2	9.3	9.8	8.9	8.2	8.5	9.0	7.8	8.4
25	---	---	---	10.1	9.2	9.6	8.8	8.3	8.6	8.9	7.9	8.3
26	---	---	---	10.0	9.3	9.6	8.9	8.2	8.5	8.8	7.9	8.3
27	8.2	---	---	10.0	9.2	9.6	8.6	8.2	8.4	8.8	7.8	8.4
28	8.4	8.2	8.3	10.2	9.3	9.7	8.5	7.8	8.2	8.6	7.9	8.2
29	8.6	7.8	8.2	10.1	9.0	9.5	8.4	7.7	8.0	8.8	7.8	8.3
30	8.2	7.7	8.0	10.0	9.0	9.5	---	---	---	8.7	7.9	8.3
31	8.1	7.4	7.9	---	---	---	---	---	---	8.7	7.9	8.2
MONTH	9.6	7.4	8.2	10.9	6.9	9.0	9.8	7.1	8.6	9.1	7.7	8.4

50115000 RIO PORTUGUES NEAR PONCE, PR--Continued

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	8.8	7.9	8.3	8.4	7.7	8.0	8.2	7.1	7.5	8.0	7.3	7.7
2	8.7	7.9	8.2	8.5	7.6	8.0	8.2	7.1	7.5	7.7	7.1	7.4
3	8.6	7.8	8.1	8.7	7.5	8.1	8.3	7.0	7.5	7.7	7.3	7.5
4	8.5	7.6	8.0	8.8	7.7	8.2	8.4	7.0	7.6	7.7	7.2	7.5
5	8.3	7.8	8.0	8.9	7.8	8.3	8.2	7.3	7.7	7.8	7.1	7.5
6	8.7	8.0	8.3	9.0	7.8	8.3	8.5	7.6	7.9	7.3	6.9	7.2
7	8.9	8.0	8.3	8.9	7.7	8.2	8.8	7.5	8.1	7.6	6.8	7.2
8	8.8	7.7	8.2	8.8	7.7	8.2	8.9	7.5	8.1	7.6	6.7	7.2
9	8.5	7.5	8.0	8.9	7.7	8.2	9.0	7.5	8.2	7.2	6.9	7.1
10	8.4	7.2	7.8	8.9	7.7	8.2	9.0	7.5	8.1	7.2	6.9	7.1
11	7.8	7.0	7.4	9.0	7.6	8.3	8.9	7.5	8.1	7.5	6.9	7.2
12	8.1	7.3	7.6	8.9	7.5	8.1	8.8	7.4	8.0	8.7	6.0	6.8
13	8.6	7.7	8.0	8.8	7.6	8.1	8.8	7.6	8.1	8.0	6.5	7.2
14	8.5	7.8	8.1	8.6	7.4	8.0	8.8	7.5	8.0	7.6	7.3	7.5
15	8.7	7.8	8.2	8.6	7.4	7.9	8.8	7.4	8.0	7.6	7.2	7.4
16	8.7	8.1	8.5	8.5	7.4	7.6	8.7	7.5	8.0	7.4	7.2	7.3
17	8.9	8.2	8.4	8.8	7.4	8.1	8.7	7.5	8.0	7.4	7.0	7.2
18	9.2	8.2	8.7	8.8	7.5	8.0	8.7	7.4	7.9	8.8	6.8	7.2
19	9.2	8.1	8.6	8.7	7.5	8.0	9.6	7.3	7.8	7.0	6.5	6.7
20	9.4	8.4	8.7	8.7	7.6	8.0	8.7	7.1	7.8	7.1	6.5	6.7
21	9.3	8.1	8.7	8.8	7.3	8.0	8.4	7.5	7.9	7.8	7.0	7.2
22	8.9	8.2	8.5	8.7	7.2	7.9	8.2	7.5	7.8	7.1	6.7	7.0
23	8.9	8.1	8.4	8.5	6.6	7.8	8.3	7.8	8.0	---	---	---
24	9.0	8.1	8.5	8.5	7.3	7.9	8.2	7.5	7.8	---	---	---
25	9.0	8.1	8.5	8.5	7.6	7.9	8.3	7.5	7.8	---	---	---
26	9.0	7.8	8.4	8.6	7.2	7.7	8.1	7.7	7.9	---	---	---
27	8.9	7.9	8.3	8.3	7.0	7.6	8.1	7.8	7.9	---	---	---
28	8.7	7.6	8.1	8.1	6.7	7.3	8.2	7.8	8.0	---	---	---
29	---	---	---	7.9	6.6	7.2	8.2	7.7	8.0	---	---	---
30	---	---	---	7.9	6.9	7.3	8.1	7.6	7.8	---	---	---
31	---	---	---	8.2	7.0	7.4	---	---	---	---	---	---
MONTH	9.4	7.0	8.2	9.0	6.6	7.9	9.0	7.0	7.9	8.8	6.0	7.2
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	---	---	---	7.7	7.0	7.3	8.1	7.5	7.8	8.9	6.1	7.7
2	---	---	---	7.7	7.1	7.3	8.1	7.7	7.9	8.9	5.9	7.6
3	---	---	---	7.9	7.3	7.5	8.1	7.7	8.0	9.3	7.7	8.6
4	---	---	---	7.8	7.3	7.6	8.3	7.8	8.1	9.8	8.3	8.7
5	---	---	---	8.2	7.7	7.9	8.6	7.8	8.2	9.0	8.4	8.7
6	---	---	---	8.1	7.6	7.8	8.5	8.0	8.2	9.0	8.7	8.9
7	---	---	---	8.2	7.7	7.9	8.5	8.0	8.2	9.5	8.8	9.0
8	---	---	---	8.2	7.7	7.9	9.5	8.0	8.4	---	---	---
9	---	---	---	8.1	7.8	8.0	9.4	8.0	8.7	---	---	---
10	---	---	---	7.9	7.8	7.9	8.8	7.7	8.4	---	---	---
11	---	---	---	8.1	7.8	7.9	9.1	7.7	8.4	---	---	---
12	---	---	---	8.0	7.8	7.9	8.7	7.4	8.2	---	---	---
13	---	---	---	8.0	7.4	7.7	9.1	7.7	8.3	---	---	---
14	---	---	---	7.7	7.4	7.5	9.0	7.6	8.2	---	---	---
15	---	---	---	7.7	7.6	7.7	8.9	7.9	8.2	---	---	---
16	---	---	---	---	---	---	8.8	7.7	8.2	---	---	---
17	---	---	---	---	---	---	8.4	7.7	8.2	---	---	---
18	---	---	---	8.4	7.5	8.7	8.5	7.9	8.2	---	---	---
19	---	---	---	9.4	7.5	8.1	8.3	7.8	8.1	---	---	---
20	---	---	---	8.4	8.0	8.2	8.6	7.9	8.3	---	---	---
21	---	---	---	8.3	7.8	8.1	8.6	8.3	8.4	---	---	---
22	7.5	7.1	7.2	8.8	7.9	8.2	8.5	7.8	8.2	---	---	---
23	7.4	6.6	7.0	8.4	7.8	8.1	8.5	7.9	8.3	---	---	---
24	7.2	6.2	6.8	8.2	7.9	8.1	8.5	8.0	8.3	---	---	---
25	7.1	6.6	6.8	8.3	7.8	8.1	8.7	7.9	8.4	---	---	---
26	7.1	6.5	6.8	9.8	8.0	8.2	9.0	8.0	8.4	---	---	---
27	7.1	6.6	7.0	8.3	7.5	7.9	9.1	8.3	8.7	---	---	---
28	7.2	6.8	7.0	7.8	7.5	7.7	9.1	8.3	8.8	---	---	---
29	7.2	6.4	6.9	7.9	7.6	7.7	9.0	8.3	8.7	---	---	---
30	8.2	7.2	7.4	7.9	7.6	7.7	9.1	8.2	8.7	---	---	---
31	---	---	---	8.4	7.5	8.0	9.1	8.3	8.8	---	---	---
MONTH	8.2	6.2	7.0	9.8	7.0	7.9	9.5	7.4	8.3	9.8	5.9	8.5
YEAR	10.9	5.9	8.1									

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

RIO PORTUGUES BASIN

50115000 RIO PORTUGUES NEAR PONCE, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS PER DAY), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

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	49	6	.79	13	10	.35	12	10	.32
2	20	6	.32	13	10	.35	16	7	.30
3	17	2	.09	13	10	.35	14	2	.08
4	20	125	11	14	20	.76	17	1	.05
5	15	20	.81	15	25	1.0	18	1	.05
6	120	2540	2550	13	10	.35	30	370	30
7	89	1660	460	11	10	.30	15	74	3.0
8	53	775	196	11	10	.30	10	12	.32
9	64	861	181	11	10	.30	8.0	13	.28
10	44	29	3.4	10	10	.27	7.0	18	.34
11	30	22	1.8	11	10	.30	6.3	1	.02
12	23	6	.37	10	10	.27	6.3	2	.03
13	19	7	.36	8.9	5	.12	6.3	2	.03
14	31	246	49	7.6	7	.14	7.0	4	.08
15	58	337	86	7.8	17	.36	7.0	2	.04
16	64	317	53	33	18	1.6	6.2	10	.17
17	60	311	71	18	5	.24	5.8	2	.03
18	42	25	2.8	12	10	.32	5.5	5	.07
19	29	10	.78	12	8	.26	5.5	2	.03
20	23	5	.31	12	5	.16	5.2	16	.22
21	22	110	11	11	11	.33	6.0	6	.10
22	22	199	18	10	10	.27	5.4	4	.06
23	20	48	2.6	10	8	.22	4.8	3	.04
24	46	999	438	9.0	17	.41	6.0	3	.05
25	29	459	46	9.0	7	.17	8.6	13	.30
26	20	100	5.4	9.0	15	.36	12	3	.10
27	18	25	1.2	8.0	9	.19	9.1	3	.07
28	16	10	.43	8.0	17	.37	7.1	9	.17
29	15	10	.41	8.0	27	.58	7.0	7	.13
30	15	10	.41	8.0	9	.19	6.7	25	.45
31	14	10	.38	---	---	---	48	1230	975
TOTAL	1107	---	4192.66	346.3	---	11.19	328.8	---	1011.93
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	30	738	144	5.8	75	1.2	4.8	5	.06
2	8.8	6	.14	5.5	35	.52	4.8	23	.30
3	7.3	23	.40	5.8	6	.09	4.8	7	.09
4	6.4	12	.21	5.6	9	.14	5.8	9	.14
5	5.8	10	.16	5.1	6	.08	5.7	3	.05
6	7.6	29	1.4	4.8	5	.06	4.9	4	.05
7	6.4	8	.14	4.5	6	.07	4.4	6	.07
8	10	324	75	4.5	6	.07	4.2	14	.16
9	29	427	69	4.5	5	.06	4.2	2	.02
10	21	199	21	4.5	7	.09	4.2	8	.09
11	15	61	3.7	4.5	6	.07	3.9	2	.02
12	11	10	.30	4.7	8	.10	3.6	3	.03
13	12	77	4.9	5.5	87	1.3	3.8	24	.25
14	18	342	41	8.6	277	14	3.6	11	.11
15	13	158	5.5	18	301	24	3.7	9	.09
16	10	2	.05	14	466	17	5.7	24	.37
17	8.1	4	.09	10	141	3.8	4.2	22	.25
18	7.5	4	.08	6.6	6	.11	4.1	1	.01
19	8.2	4	.09	5.8	7	.11	3.8	8	.08
20	6.9	2	.04	5.5	60	.89	3.6	11	.11
21	6.3	6	.10	9.2	289	14	3.6	15	.15
22	6.3	16	.27	8.3	140	3.1	3.6	7	.07
23	5.9	2	.03	5.8	100	1.6	3.6	10	.10
24	5.9	2	.03	5.4	46	.67	3.3	8	.07
25	5.6	15	.23	5.2	0	.00	3.4	10	.09
26	5.5	0	.00	5.2	14	.20	3.6	9	.09
27	5.4	101	1.5	5.2	16	.22	3.3	3	.03
28	5.0	78	1.1	5.1	21	.29	3.2	5	.04
29	12	490	50	---	---	---	4.6	6	.07
30	12	390	23	---	---	---	3.5	8	.08
31	6.2	110	1.8	---	---	---	3.1	4	.03
TOTAL	326.3	---	445.26	183.2	---	83.84	126.6	---	3.17

50115000 RIO PORTUGUES NEAR PONCE, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS PER DAY), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

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	3.1	4	.03	27	1800	593	19	8	.41
2	3.1	6	.05	51	3030	1430	28	10	.76
3	5.6	43	1.3	63	3520	1310	30	20	1.6
4	5.9	15	.24	25	1640	175	22	12	.71
5	3.9	4	.04	178	3140	7490	19	7	.36
6	4.2	5	.06	100	1310	1490	17	3	.14
7	3.4	5	.05	40	247	100	15	5	.20
8	6.7	10	.18	18	110	6.9	14	15	.57
9	4.5	8	.10	101	2470	2200	13	15	.53
10	3.6	4	.04	52	526	124	12	25	.81
11	3.4	12	.11	30	3	.24	12	25	.81
12	3.2	10	.09	20	4	.22	11	13	.39
13	3.6	6	.06	13	4	.14	11	19	.56
14	3.6	10	.10	11	6	.18	10	11	.30
15	3.6	9	.09	10	4	.11	10	9	.24
16	3.6	14	.14	10	20	.54	10	14	.38
17	3.1	10	.08	65	2470	1020	9.6	11	.29
18	3.3	12	.11	80	2600	1290	9.0	10	.24
19	3.9	26	.27	35	740	98	12	206	12
20	3.8	22	.23	25	676	65	26	675	124
21	3.9	28	.29	20	325	26	62	2650	1540
22	17	404	74	125	4460	1720	23	857	79
23	9.6	381	16	462	7200	18300	11	23	.68
24	4.6	225	2.8	76	828	217	12	33	1.1
25	3.5	160	1.5	39	9	.95	11	25	.74
26	3.2	75	.65	27	5	.36	8.6	30	.70
27	3.7	80	.80	21	5	.28	9.5	60	1.5
28	4.0	64	.69	67	1230	306	8.3	70	1.6
29	3.2	10	.09	33	66	5.9	7.1	47	.90
30	3.1	1	.00	24	9	.58	17	450	77
31	---	---	---	22	10	.59	---	---	---
TOTAL	134.9	---	100.19	1870	---	37970.99	479.1	---	1848.52
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	15	376	23	9.4	2	.05	8.5	7	.16
2	8.6	6	.14	8.5	1	.02	12	135	.11
3	8.2	10	.22	12	54	2.9	19	621	110
4	7.8	5	.11	8.7	20	.47	13	439	30
5	6.9	5	.09	9.0	31	.75	8.7	1	.02
6	9.6	88	6.2	100	1500	1690	8.5	4	.09
7	8.8	50	1.2	43	528	95	9.7	155	4.1
8	6.6	3	.05	24	18	1.2	54	1410	899
9	6.3	16	.27	18	18	.87	84	1120	410
10	10	86	2.3	48	1090	384	21	2	.11
11	6.6	8	.14	28	838	83	13	6	.21
12	6.0	10	.16	35	504	89	30	854	244
13	9.8	64	5.9	59	670	120	80	3100	2170
14	39	1630	562	42	209	28	34	488	75
15	19	664	44	31	30	2.5	22	272	50
16	14	81	4.7	163	2690	4210	16	200	8.6
17	19	235	28	98	911	424	21	539	84
18	33	959	240	32	1	.09	21	419	57
19	40	1290	312	20	4	.22	114	2460	2640
20	35	940	137	17	11	.50	92	1490	695
21	22	11	.65	15	3	.12	51	216	41
22	17	12	.55	13	3	.11	31	420	35
23	15	10	.41	12	3	.10	22	190	11
24	20	179	24	12	6	.19	24	150	9.7
25	32	761	182	11	5	.15	169	3640	7010
26	28	503	57	9.8	19	.50	268	5690	8040
27	19	10	.51	9.2	3	.07	167	2620	1700
28	15	13	.53	9.5	9	.23	92	574	171
29	13	0	.00	8.9	25	.60	62	358	83
30	11	3	.09	8.5	4	.09	45	205	31
31	11	1	.03	10	2	.05	---	---	---
TOTAL	512.2	---	1633.25	924.5	---	7134.78	1612.4	---	24619.99
YEAR	7951.3		79055.77						

50115000 RIO PORTUGUES NEAR PONCE, PR--Continued

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

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDED (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
OCT , 1980							
06...	1600	33	10500	15	22	31	41
06...	1700	861	9960	17	26	36	47
06...	1730	572	11000	16	25	34	44
06...	1800	489	8930	17	26	35	40
DEC							
06...	1700	340	10300	21	30	41	53
06...	1730	284	12100	23	31	40	50
MAY , 1981							
01...	1915	273	5520	16	27	35	56
01...	1930	247	10400	12	18	24	36
01...	2000	181	11900	11	17	23	32
17...	1700	166	5970	6	10	15	30
22...	1700	106	9240	6	10	16	28
22...	1730	104	14700	9	14	20	33
23...	1000	459	8620	25	34	43	64
23...	1700	217	8430	24	34	44	60
27...	1700	20	6510	23	33	46	61
27...	1730	284	6850	25	36	47	63
AUG							
10...	1715	27	5740	14	22	37	59
10...	1730	39	5720	14	24	38	58
16...	1645	1230	15000	16	22	29	40
16...	1700	1130	17300	14	20	27	37
16...	1715	1030	14400	16	23	31	43
SEP							
17...	1700	450	16200	16	24	32	43
22...	1700	25	14100	16	24	32	44
23...	1700	20	14500	18	27	35	48
24...	1700	42	17000	15	23	30	41
25...	1700	450	17800	16	23	29	39
26...	1700	1000	15900	14	21	28	41
27...	1700	114	17000	14	21	27	39
28...	1700	780	15700	17	26	33	45
OCT							
04...	1700	85	24300	10	16	21	30
17...	1730	318	24600	12	17	24	32
17...	1745	283	23300	11	17	23	31
23...	1700	67	24300	10	17	22	32
23...	1730	66	24800	11	17	23	31
29...	1400	55	19400	14	20	27	37
29...	1430	53	18800	14	21	26	40
29...	1500	53	18900	15	21	29	39
29...	1530	579	20700	13	19	26	35
29...	1600	533	19900	12	21	24	34
29...	1700	400	19400	15	21	28	38

50115000 RIO PORTUGUES NEAR PONCE, PR--Continued

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

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

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
OCT , 1980						
06...	50	82	89	98	100	100
06...	59	86	95	99	100	100
06...	54	80	90	98	99	100
06...	58	86	95	99	100	100
DEC						
06...	66	92	97	99	100	100
06...	61	82	90	95	98	99
MAY , 1981						
01...	75	88	95	99	100	100
01...	48	87	93	98	99	100
01...	44	87	96	99	100	100
17...	50	67	85	97	99	100
22...	46	71	89	98	100	100
22...	51	75	92	98	99	100
23...	83	95	99	100	100	100
23...	78	93	98	99	99	100
27...	77	96	97	99	99	100
27...	80	93	98	99	100	100
AUG						
10...	82	94	98	100	100	100
10...	75	92	97	99	99	100
16...	53	71	80	89	96	99
16...	49	64	75	87	95	99
16...	57	75	86	92	96	99
SEP						
17...	58	77	87	97	99	100
22...	56	82	90	98	99	100
23...	62	81	91	97	99	99
24...	54	77	87	97	99	100
25...	50	73	84	93	99	100
26...	58	83	93	98	100	100
27...	54	79	89	96	99	100
28...	59	84	93	98	99	100
OCT						
04...	38	77	87	94	98	99
17...	39	78	87	95	98	99
17...	40	78	87	95	99	99
23...	38	75	83	92	97	98
23...	39	77	86	94	98	99
29...	49	71	78	85	92	96
29...	54	72	80	87	92	95
29...	52	72	79	85	89	92
29...	45	69	76	85	94	97
29...	47	70	77	84	93	97
29...	49	71	78	86	93	97

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 , 1980												
13...	1420	9.4	331	8.0	32.0	--	6.1	--	--	2300	2200	110
JAN , 1981												
12...	1520	16	315	8.9	31.5	.40	8.0	--	18	K11000	K1700	--
MAR												
09...	1430	3.6	328	8.4	34.0	5.6	9.1	--	36	K1100	430	130
MAY												
05...	0850	13	305	7.8	25.0	45	7.2	--	13	60000	46000	--
AUG												
10...	1220	12	330	8.1	31.0	2.6	8.0	110	46	45000	5800	130
SEP												
08...	1430	10	274	8.8	32.0	2.2	7.0	97	<10	7000	360	110
NOV												
04...	1545	49	376	8.2	30.0	8.9	7.0	94	47	K65000	2300	--
JAN , 1982												
22...	0925	7.9	491	8.0	21.5	12	8.1	92	13	K11000	K730	190
MAR												
03...	1515	4.5	464	8.5	32.0	18	7.1	100	<10	2900	4500	--
MAY												
06...	1455	80	320	7.9	25.0	150	6.8	83	--	K17000	K120000	120
JUL												
09...	1335	6.2	410	8.4	33.0	80	8.2	117	41	24000	K1800	--
SEP												
09...	1400	14	410	8.1	29.0	75	8.0	102	24	25000	6800	150

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 , 1980											
13...	7	31	7.4	22	.9	2.2	103	22	19	.2	19
JAN , 1981											
12...	--	--	--	--	--	--	122	--	--	--	--
MAR											
09...	9	36	9.0	21	.8	2.1	121	31	20	.3	20
MAY											
05...	--	--	--	--	--	--	108	--	--	--	--
AUG											
10...	--	39	8.4	20	.8	1.8	--	24	15	.2	20
SEP											
08...	8	29	8.2	17	.7	1.2	102	20	15	.3	17
NOV											
04...	--	--	--	--	--	--	135	--	--	--	--
JAN , 1982											
22...	26	54	13	39	1.3	1.6	164	37	30	.2	18
MAR											
03...	--	--	--	--	--	--	150	--	--	--	--
MAY											
06...	0	34	8.1	18	.8	2.1	120	22	14	.2	17
JUL											
09...	--	--	--	--	--	--	140	--	--	--	--
SEP											
09...	11	45	9.5	23	.9	1.8	140	38	18	.3	19

K = non-ideal count.

50116200 RIO PORTUGUES AT PONCE, PR--Continued

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

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 , 1980											
13...	185	4.7	--	.18	.030	.21	.110	.40	.51	.72	3.2
JAN , 1981											
12...	--	--	27	.96	.040	1.0	.090	.13	.22	1.2	5.4
MAR											
09...	212	2.1	16	.10	.020	.12	.070	.49	.56	.68	3.0
MAY											
05...	--	--	50	.97	.030	1.0	.140	.96	1.10	2.1	9.3
AUG											
10...	--	--	19	.64	.020	.66	.070	.52	.59	1.3	5.5
SEP											
08...	169	4.6	18	.21	.020	.23	.040	.35	.39	.62	2.7
NOV											
04...	--	--	39	--	<.010	1.2	.030	.42	.45	1.7	7.3
JAN , 1982											
22...	289	6.2	25	.64	.030	.67	.080	.15	.23	.90	4.0
MAR											
03...	--	--	48	.52	.100	.62	.280	7.7	8.00	8.6	38
MAY											
06...	188	40.8	455	1.4	.040	1.4	.140	.82	.96	2.4	10
JUL											
09...	--	--	165	.40	.060	.46	.090	.81	.90	1.4	6.0
SEP											
09...	233	8.5	140	.56	.040	.60	.210	.59	.80	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 , 1980											
13...	.420	--	--	--	--	--	--	--	--	450	11
JAN , 1981											
12...	.190	--	--	--	--	--	--	--	--	16	.69
MAR											
09...	.180	<1	100	<1	6	6	<.1	<1	<1	13	.13
MAY											
05...	.160	--	--	--	--	--	--	--	--	82	2.9
AUG											
10...	.130	--	--	--	--	--	--	--	--	16	.52
SEP											
08...	.120	--	<50	1	<10	8	.2	<1	<1	9	.24
NOV											
04...	.080	--	--	--	--	--	--	--	--	52	6.9
JAN , 1982											
22...	.120	1	<100	<1	2	1	.2	<1	2	16	.34
MAR											
03...	.300	--	--	--	--	--	--	--	--	--	--
MAY											
06...	.310	--	--	--	--	--	--	--	--	313	68
JUL											
09...	.260	--	--	--	--	--	--	--	--	--	--
SEP											
09...	.200	1	100	2	<1	7	<.1	<1	<1	--	--

RIO GUAYANILLA BASIN

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 the gage is 80 ft (24.4 m) from topographic map.

REMARKS.--Records fair.

EXTREMES FOR PERIOD MARCH 1981 to SEPTEMBER 1982.--Peak discharges above base of 800 cu ft/s (22.7 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 18, 1981	1600	811 23.0	9.04 2.755	Sept. 25, 1981	1800	*8,130 230	17.08 5.206
Sept. 8, 1981	2145	1,310 37.1	10.15 3.094	Sept. 27, 1981	2015	1,060 30.0	9.64 2.938
Sept. 11, 1981	1700	1,210 34.3	9.94 3.030	Sept. 28, 1981	1830	822 23.3	9.07 2.764
Sept. 12, 1981	1730	866 24.5	9.18 2.798	May 17, 1982	1645	850 24.1	9.14 2.786
Sept. 13, 1981	1530	980 27.8	9.45 2.880	Sept. 12, 1982	2400	*14,700 416	20.4 6.21

Minimum discharges, 1.8 cu ft/s (0.051 cu m/s) April 17, 18, 19, 1981; 3.4 cu ft/s (0.096) cu m/s Apr. 17, May 1, 1982.

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						2.5	2.6	2.6	32	11	9.2	15
2						2.4	5.8	3.5	57	7.0	7.5	30
3						2.3	25	46	42	6.5	52	27
4						2.2	8.5	17	30	8.1	27	13
5						2.4	6.6	24	23	6.6	26	10
6						2.5	3.5	46	18	14	35	10
7						2.8	2.8	17	14	9.8	50	19
8						2.8	2.9	25	12	6.9	33	184
9						3.2	3.2	25	12	6.7	16	325
10						2.7	2.8	34	11	21	87	80
11						2.4	2.4	14	11	8.1	56	132
12						2.5	2.2	9.5	10	26	51	159
13						2.7	2.2	7.2	9.8	9.0	61	150
14						2.5	2.1	6.0	9.1	9.6	42	110
15						2.6	2.0	5.5	8.8	7.8	35	80
16						4.0	2.2	5.0	8.6	7.5	27	57
17						3.2	2.0	81	8.6	8.8	36	48
18						3.0	1.9	127	8.5	21	26	91
19						3.0	1.8	64	8.0	38	21	72
20						2.8	2.0	47	9.9	32	34	96
21						2.8	2.2	45	12	14	30	66
22						3.0	17	63	13	12	21	89
23						3.0	9.3	60	9.0	26	17	55
24						2.8	3.8	44	8.1	20	20	81
25						2.8	3.0	30	7.9	15	13	250
26						3.1	2.8	21	7.7	14	12	184
27						2.9	3.5	22	14	10	11	197
28						3.8	4.4	87	11	9.1	12	243
29						3.9	3.1	45	7.7	11	14	107
30						3.2	2.8	27	7.1	10	10	68
31						2.6	---	29	---	8.4	16	---
TOTAL						88.4	136.4	1079.3	440.8	414.9	907.7	3048
MEAN						2.85	4.55	34.8	14.7	13.4	29.3	102
MAX						4.0	25	127	57	38	87	325
MIN						2.2	1.8	2.6	7.1	6.5	7.5	10
CFSM						.15	.24	1.84	.78	.71	1.55	5.40
IN.						.17	.27	2.12	.87	.82	1.79	6.00
AC-FT						175	271	2140	874	823	1800	6050

50124200 RIO GUAYANILLA NEAR GUAYANILLA, PR--Continued

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	56	44	13	21	8.2	6.6	4.9	4.0	6.7	7.2	11	10
2	49	37	12	18	8.1	6.8	4.4	4.2	6.5	7.1	11	5.0
3	47	39	12	18	7.6	6.3	4.2	4.4	7.1	7.3	12	5.0
4	62	39	13	18	9.4	6.2	12	15	6.3	12	13	5.0
5	126	39	11	14	13	6.0	20	58	6.2	15	14	10
6	139	37	11	13	11	5.9	7.6	45	5.7	7.4	11	10
7	71	36	11	12	8.4	5.9	7.8	17	5.6	24	12	10
8	53	70	11	12	7.9	5.5	5.2	8.5	5.8	46	16	10
9	45	38	11	12	7.6	5.4	5.0	6.2	5.2	20	15	10
10	47	27	11	12	7.4	5.3	4.5	9.4	5.1	15	28	10
11	40	24	65	11	7.3	5.1	4.0	9.6	5.0	10	24	10
12	37	23	20	11	7.2	5.1	3.8	27	4.8	10	11	200
13	34	22	18	11	7.0	5.5	3.8	13	4.6	10	13	500
14	32	22	31	10	7.2	9.8	3.9	19	4.7	10	9.0	110
15	32	21	19	10	6.7	5.5	3.8	11	4.7	8.8	7.8	43
16	30	19	16	10	6.8	5.9	3.8	8.3	4.3	14	7.8	36
17	46	20	16	9.6	6.9	5.3	3.7	131	4.0	21	7.8	31
18	75	18	14	9.3	6.7	5.1	4.7	47	4.0	50	8.0	33
19	53	27	14	9.1	6.7	5.1	4.4	21	4.1	42	8.3	30
20	44	21	13	9.2	6.6	5.0	4.1	13	4.3	17	8.2	25
21	43	18	12	8.8	6.8	4.6	4.0	12	4.6	12	8.2	22
22	44	17	12	8.8	9.9	4.5	4.9	10	5.0	30	8.4	20
23	60	15	12	8.7	28	4.3	6.3	8.6	5.7	34	10	1
24	54	15	11	8.4	9.2	4.4	4.4	7.8	4.8	17	10	19
25	47	15	11	8.4	7.9	4.3	4.1	7.5	5.2	14	15	17
26	83	15	11	8.2	7.6	4.3	4.3	7.2	5.5	14	15	17
27	66	15	13	16	7.2	4.4	3.8	6.8	6.1	12	20	17
28	53	13	17	17	7.1	4.1	4.0	7.4	7.2	12	10	21
29	84	13	15	9.3	---	4.0	4.1	14	7.1	9.0	10	24
30	58	13	52	8.8	---	4.0	4.4	10	7.2	10	10	21
31	44	---	42	8.5	---	4.4	---	7.3	---	11	15	---
TOTAL	1754	772	550	361.1	241.4	164.6	159.9	570.2	163.1	528.8	379.5	1300.0
MEAN	56.6	25.7	17.7	11.6	8.62	5.31	5.33	18.4	5.44	17.1	12.2	43.3
MAX	139	70	65	21	28	9.8	20	131	7.2	50	28	500
MIN	30	13	11	8.2	6.6	4.0	3.7	4.0	4.0	7.1	7.8	5.0
CFSM	3.00	1.36	.94	.61	.46	.28	.28	.97	.29	.91	.65	2.29
IN.	3.45	1.52	1.08	.71	.48	.32	.31	1.12	.32	1.04	.75	2.56
AC-FT	3480	1530	1090	716	479	326	317	1130	324	1050	753	2580

WTR YR 1982 TOTAL 6944.6 MEAN 19.0 MAX 500 MIN 3.7 CFSM 1.01 IN 13.67 AC-FT 13770

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO SEPTEMBER 1982

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPEC- IFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)
AUG, 1981				
10...	1300	12.0	379	31.0
SEP				
14...	1100	90.0	327	25.0
NOV				
17...	835	20.0	439	23.5
DEC				
8...	1030	12.0	440	25.0
FEB, 1982				
25...	930	9.0	403	24.0
MAR				
18...	1412	5.3	364	29.0
APR				
19...	1140	5.0	364	30.0
JUN				
10...	1015	5.1	487	29.5
AUG				
13...	1045	14.0	412	26.5
SEP				
17...	951	31.0	441	26.0

RIO GUAYANILLA BASIN

50124700 RIO GUAYANILLA AT CENTRAL RUFINA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°00'40", long 66°46'49", at railroad 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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 , 1980												
25...	1000	1.0	1120	7.8	25.5	1.8	.9	--	140	K8300000	K1000000	310
JAN , 1981												
20...	1030	3.1	685	7.3	25.0	.70	3.0	--	50	2400000	200000	--
MAR												
12...	0830	E3.0	1060	7.5	24.0	4.9	1.1	--	15	K8500000	K1600000	340
MAY												
05...	1140	1.2	818	7.5	31.5	33	.3	--	220	K15000000	890000	--
AUG												
10...	1550	2.6	515	7.8	30.5	2.3	7.6	102	75	<1000	<1000	200
SEP												
10...	0820	110	311	8.1	24.0	26	7.8	92	17	20000	11000	140
NOV												
06...	1240	26	459	8.2	30.0	2.9	8.1	109	<10	K190000	9400	--
JAN , 1982												
29...	1325	2.8	--	7.7	29.5	2.1	4.5	58	<10	470000	11000	250
MAR												
04...	1145	1.7	830	7.9	27.0	2.4	7.2	92	23	75000	1000	--
MAY												
27...	1140	4.2	680	7.8	28.0	2.5	4.2	54	<10	K1100000	K1100000	240
JUL												
08...	1340	2.0	400	7.8	29.0	22	6.4	83	37	K630000	58000	--
SEP												
10...	1100	1.0	--	7.5	29.0	3.5	.4	5	--	330000	270000	280

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- LINITY FIELD (MG/L AS CaCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLC- RIDE, DIS- SOLVED (MG/L AS Cl)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
NOV , 1980											
25...	0	87	22	62	1.5	9.5	363	96	73	.1	27
JAN , 1981											
20...	--	--	--	--	--	--	212	--	--	--	--
MAR											
12...	0	95	25	74	1.7	9.4	385	85	80	.1	29
MAY											
05...	--	--	--	--	--	--	291	--	--	--	--
AUG											
10...	17	53	16	26	.8	3.0	183	37	23	.1	17
SEP											
10...	32	37	12	10	.4	1.3	108	29	11	.1	17
NOV											
06...	--	--	--	--	--	--	167	--	--	--	--
JAN , 1982											
29...	12	69	19	42	1.2	3.8	238	69	41	.1	18
MAR											
04...	--	--	--	--	--	--	300	--	--	--	--
MAY											
27...	20	63	20	33	1.0	3.5	220	61	32	.1	20
JUL											
08...	--	--	--	--	--	--	130	--	--	--	--
SEP											
10...	0	78	21	50	1.4	6.2	290	85	52	.2	24

E Estimated.

K = non-ideal count.

50124700 RIO GUAYANILLA AT CENTRAL RUFINA, PR--Continued

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

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, 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, NITRO- GEN, NC2+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, (MG/L AS N)	NITRO- GEN, (MG/L AS NO3)
NOV , 1980											
25...	594	1.6	18	.00	.010	.01	40.0	5.7	46.0	46	204
JAN , 1981											
20...	--	--	12	.08	.020	.10	9.20	5.8	15.0	15	67
MAR											
12...	629	5.1	16	.00	.010	.01	17.0	9.0	26.0	26	120
MAY											
05...	--	--	22	.00	.010	.01	.340	36	36.0	36	159
AUG											
10...	285	2.0	12	.31	.280	.59	.080	2.2	2.30	2.9	13
SEP											
10...	182	54.1	10	1.7	.030	1.7	.130	.43	.56	2.3	10
NOV											
06...	--	--	36	.68	.010	.69	.870	.33	1.20	1.9	8.4
JAN , 1982											
29...	394	3.0	1	.57	.430	1.0	4.80	3.0	7.80	8.8	39
MAR											
04...	--	--	15	.30	.280	.58	1.10	6.9	8.00	8.6	38
MAY											
27...	338	3.8	8	.05	.050	.10	7.00	.80	7.80	7.9	35
JUL											
08...	--	--	34	.71	.030	.74	2.40	.80	3.20	3.9	17
SEP											
10...	437	1.2	14	--	.070	<.10	14.0	6.0	20.0	--	--

DATE	PHOS- PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARION, 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 , 1980											
25...	5.50	--	--	--	--	--	--	--	--	18	.05
JAN , 1981											
20...	2.00	--	--	--	--	--	--	--	--	560	4.7
MAR											
12...	5.80	1	200	<1	5	7	.5	<1	<1	3	--
MAY											
05...	6.50	--	--	--	--	--	--	--	--	16	.05
AUG											
10...	.940	--	--	--	--	--	--	--	--	8	.06
SEP											
10...	.150	--	100	<1	<10	9	.2	1	<1	71	21
NOV											
06...	.060	--	--	--	--	--	--	--	--	71	5.0
JAN , 1982											
29...	1.20	3	100	<1	6	2	.1	<1	1	--	--
MAR											
04...	3.60	--	--	--	--	--	--	--	--	--	--
MAY											
27...	1.40	--	--	--	--	--	--	--	--	--	--
JUL											
08...	.650	--	--	--	--	--	--	--	--	--	--
SEP											
10...	3.40	3	100	1	<1	4	.3	<1	<1	--	--

PESTICIDE ANALYSES, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982

		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)	
DATE	TIME								
AUG , 1981									
10...	1550	<.10	<.01	<.10	<.01	<.01	<.01	.16	
JUL , 1982									
08...	1340	<.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)
AUG , 1981									
10...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
JUL , 1982									
08...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
DATE	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	MIPEY, TOTAL (UG/L)	FAEA- 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)	
AUG , 1981									
10...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01	
JUL , 1982									
08...	<.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 127, 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 Yaucó 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 fair.

AVERAGE DISCHARGE.--5 years (1978-82), 23.7 cu ft/s (0.671 cu m/s), 11.83 in /yr (300 mm/yr), 17,170 acre-ft/yr (21.2 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 WATER YEARS 1981-82.--Peak discharges above base of 1,000 cu ft/s (28.3 cu m/s) and maximums (*):

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)
Sept. 8, 1981	2100	1,930	54.7	5.24	1.597	Sept. 26, 1981	1715	1,030	29.2	4.14	1.262
Sept. 12, 1981	1745	1,540	43.6	4.81	1.466	Sept. 27, 1981	1845	1,280	36.2	4.49	1.368
Sept. 13, 1981	1530	1,010	28.6	4.12	1.256	May 17, 1982	1545	1,570	44.5	4.85	1.478
Sept. 25, 1981	1700	*3,440	97.4	6.49	1.978	Sept. 12, 1982	2400	*8,200	232	8.97	2.734

Minimum discharges, 1.5 cu ft/s (0.042 cu m/s) May 1-2, 15-17, 1981; 1.8 cu ft/s (0.051 cu m/s) Apr. 2, 11-12, 1982.

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	30	6.8	3.8	3.7	3.3	2.4	2.8	1.7	12	5.8	4.7	31
2	15	6.5	4.3	3.6	3.2	2.4	2.8	1.8	25	3.2	3.5	51
3	20	6.6	4.5	3.5	3.0	2.2	2.8	3.6	19	2.7	4.5	36
4	25	7.6	4.5	4.9	2.7	2.1	35	2.9	11	2.6	23	9.8
5	20	8.6	4.8	4.1	2.6	2.7	19	24	8.8	2.9	9.4	6.9
6	60	7.6	12	4.3	2.6	2.6	4.5	40	7.0	3.4	20	6.3
7	45	7.1	8.7	5.4	2.4	2.2	3.0	6.7	5.2	3.8	8.3	80
8	30	7.1	5.3	4.0	2.5	2.2	2.8	7.3	4.7	2.7	5.2	244
9	33	6.7	4.8	4.0	2.5	2.2	2.7	9.3	4.4	2.9	3.7	317
10	16	6.3	4.7	4.4	2.4	2.2	2.6	12	4.1	15	65	27
11	11	6.7	4.5	24	2.4	2.1	2.3	4.1	3.9	16	35	89
12	7.7	6.3	4.5	6.2	2.4	2.1	2.1	2.7	3.5	45	28	155
13	7.1	6.3	4.5	4.4	2.4	2.1	2.1	2.2	3.2	7.7	43	162
14	88	6.3	4.8	4.1	2.5	2.1	2.1	2.0	3.1	4.1	23	102
15	74	5.9	4.5	3.7	5.5	2.1	2.2	1.5	3.0	3.5	21	55
16	54	6.0	4.5	3.4	4.5	2.5	1.9	1.5	3.0	3.4	10	20
17	21	5.5	4.5	3.4	4.8	3.0	1.8	65	2.7	3.3	9.9	12
18	14	5.0	3.7	3.4	2.8	3.4	2.2	79	2.2	5.3	7.0	108
19	12	5.0	3.4	3.4	2.6	3.4	2.4	39	1.9	16	7.0	85
20	10	4.5	3.4	3.4	2.5	3.2	2.3	14	1.9	11	5.6	95
21	9.0	5.0	3.4	3.4	2.8	3.2	1.8	38	2.2	4.9	6.9	29
22	16	4.5	3.4	3.3	6.0	3.2	13	74	17	6.5	5.8	34
23	15	4.0	4.1	3.0	3.0	3.2	8.8	92	18	21	5.0	21
24	17	4.0	5.3	3.0	2.7	3.2	2.7	30	8.5	15	5.5	58
25	11	3.9	7.9	3.0	2.4	3.2	2.3	14	2.6	10	4.3	277
26	9.0	4.0	7.0	3.0	2.4	3.2	2.2	10	2.6	4.6	3.6	243
27	8.4	4.0	5.0	3.0	2.5	3.2	2.7	11	2.8	3.9	3.4	273
28	7.8	4.0	4.0	3.0	2.5	6.8	2.8	73	4.6	3.3	5.5	170
29	7.4	3.7	3.9	12	---	5.8	2.3	30	3.1	4.4	7.3	134
30	7.0	3.7	3.7	18	---	3.7	2.0	13	2.9	4.2	14	86
31	6.7	---	3.7	4.1	---	2.9	---	12	---	3.6	46	---
TOTAL	707.1	169.2	151.1	160.0	83.9	90.8	140.0	717.3	193.9	241.7	484.6	3017.0
MEAN	22.8	5.64	4.87	5.16	3.00	2.93	4.67	23.1	6.46	7.80	15.6	101
MAX	88	8.6	12	24	6.0	6.8	35	92	25	45	65	317
MIN	6.7	3.7	3.4	3.0	2.4	2.1	1.8	1.5	1.9	2.6	3.4	6.3
CFSM	.84	.21	.18	.19	.11	.11	.17	.85	.24	.29	.57	3.71
IN.	.97	.23	.21	.22	.11	.12	.19	.98	.27	.33	.66	4.13
AC-FT	1400	336	300	317	166	180	278	1420	385	479	961	5980

CAL YR 1980 TOTAL 5133.6 MEAN 14.0 MAX 1200 MIN 1.7 CFSM .52 IN 7.02 AC-FT 10180
WTR YR 1981 TOTAL 6156.6 MEAN 16.9 MAX 317 MIN 1.5 CFSM .62 IN 8.42 AC-FT 12210

50126150 RIO YAUCO ABOVE DIVERSION MONSERRATE NEAR YAUCO, PR--Continued

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	52	21	13	11	6.7	4.8	2.0	7.0	3.8	4.8	4.5	6.3
2	36	18	12	10	6.7	4.2	1.9	6.6	3.7	4.4	9.3	6.4
3	29	18	12	8.6	5.9	4.0	2.1	6.5	3.6	3.9	5.9	7.1
4	46	16	14	9.3	5.9	4.0	19	34	44	12	3.8	5.6
5	131	15	10	8.1	6.8	4.0	66	118	7.1	21	3.1	5.2
6	114	15	8.9	7.6	8.4	3.5	23	160	3.8	7.3	3.3	6.4
7	67	14	7.9	7.6	6.5	3.5	11	66	3.5	13	3.4	5.5
8	42	39	6.7	7.6	6.3	3.5	5.7	15	3.5	59	16	5.2
9	33	28	6.7	7.0	6.3	3.5	2.9	5.5	3.4	25	16	5.0
10	27	17	17	6.7	6.2	3.0	1.9	9.9	3.4	7.6	54	4.9
11	25	15	80	6.3	5.9	3.0	2.0	15	3.4	6.0	28	4.8
12	20	14	15	6.5	5.9	3.0	1.8	70	3.7	5.0	7.3	295
13	19	14	11	6.9	5.9	3.6	2.7	9.6	3.7	4.3	13	784
14	17	13	18	6.7	5.9	12	2.9	16	3.5	3.5	9.6	113
15	17	13	14	6.7	5.9	2.9	3.2	7.0	3.4	3.6	6.7	28
16	17	12	12	6.7	5.6	3.7	3.5	6.0	3.4	5.3	5.6	13
17	71	12	12	6.7	4.8	3.3	4.5	200	3.7	15	5.0	8.8
18	92	12	12	6.7	4.8	3.1	5.6	50	3.8	23	5.2	58
19	58	24	12	6.7	4.8	3.0	7.6	12	3.5	13	4.8	24
20	39	15	11	6.3	4.8	3.0	22	8.3	3.3	6.8	4.8	10
21	29	13	9.7	6.3	4.8	2.9	6.7	7.7	3.0	5.7	6.1	8.0
22	42	13	9.5	6.3	5.7	2.8	13	6.9	3.2	16	4.8	7.0
23	47	12	9.1	6.3	19	3.0	27	5.3	11	17	4.2	6.0
24	31	15	9.0	6.3	7.4	2.8	5.9	4.5	6.4	6.3	6.2	6.0
25	23	19	8.6	6.3	6.7	3.4	4.4	4.4	6.2	5.8	6.9	6.0
26	48	23	9.0	6.3	6.8	3.4	4.0	4.3	4.3	6.5	30	5.0
27	37	17	10	7.2	5.9	3.1	4.7	4.2	4.2	5.6	26	5.0
28	25	15	11	10	5.5	3.1	4.9	4.9	4.6	4.2	7.4	5.0
29	35	15	14	7.6	---	3.4	6.9	5.0	15	4.2	6.1	5.0
30	25	13	32	7.2	---	3.2	13	4.8	8.3	8.0	9.1	5.0
31	19	---	16	6.7	---	3.1	---	3.8	---	6.7	13	---
TOTAL	1313	500	443.1	226.2	181.8	112.8	281.8	878.2	181.4	329.5	329.1	1454.2
MEAN	42.4	16.7	14.3	7.30	6.49	3.64	9.39	28.3	6.05	10.6	10.6	48.5
MAX	131	39	80	11	19	12	66	200	44	59	54	784
MIN	17	12	6.7	6.3	4.8	2.8	1.8	3.8	3.0	3.5	3.1	4.8
CFSM	1.56	.61	.53	.27	.24	.13	.35	1.04	.22	.39	.39	1.78
IN.	1.80	.68	.61	.31	.25	.15	.39	1.20	.25	.45	.45	1.99
AC-FT	2600	992	879	449	361	224	559	1740	360	654	653	2880
CAL YR 1981	TOTAL	7385.3	MEAN 20.2	MAX 317	MIN 1.5	CFSM .74	IN 10.10	AC-FT 14650				
WTR YR 1982	TOTAL	6231.1	MEAN 17.1	MAX 784	MIN 1.8	CFSM .63	IN 8.52	AC-FT 12360				

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO SEPTEMBER 1982

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPEC- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)
AUG, 1981				
10...	1035	4.0	379	29.5
SEP				
14...	1315	58.0	276	28.0
NOV				
16...	1050	12.1	430	27.0
DEC				
7...	1130	8.0	430	25.0
FEB, 1982				
24...	1015	66.0	978	23.5
MAR				
16...	815	3.3	429	22.0
APR				
16...	950	3.0	451	26.0
JUN				
11...	1005	3.3	508	28.0
AUG				
18...	1025	7.5	432	27.0
SEP				
16...	1137	13.0	400	28.0

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 19.14 ft (5.834 m) above mean sea level, datum of 1929.

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.--5 years (1978-82), 18.4 cu ft/s (0.521 cu m/s), 5.49 in/yr (139 mm/yr), 13,330 acre-ft/yr (16.4 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 WATER YEARS 1981-82.--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. 6, 1980	2145	1,160 32.8	10.59 3.228	Sept. 27, 1981	0945	*1,820 51.5	12.04 3.670
Sept. 9, 1981	0300	1,740 49.3	11.85 3.612	Oct. 5, 1981	0615	1,100 31.2	10.44 3.182
Sept. 12, 1981	2245	1,650 46.7	11.65 3.551	May 17, 1982	2000	1,390 39.4	11.07 3.374
Sept. 25, 1981	2215	1,690 47.9	11.74 3.578	Sept. 13, 1982	Unknown	*10,300 292	15.0 4.572

Minimum discharges, no flow many days in 1981; 1982, 0.06 cu ft/s (0.002 cu m/s) Mar. 29-30, 1982.

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	1.6	.75	.00	.00	.00	.00	.00	.00	.13	.00	.00	32
2	.14	.58	.00	.00	.00	.00	.00	.00	.62	.00	.00	10
3	.00	.47	.00	.00	.00	.00	.00	.00	2.5	.00	.00	65
4	.00	.38	.00	.00	.00	.00	5.8	.00	.54	.00	6.9	3.8
5	.00	.41	.00	.00	.00	.00	8.6	.00	.19	.00	.39	.61
6	174	.37	.00	.00	.00	.00	.02	3.8	.08	.00	.05	.16
7	196	.31	.00	.00	.00	.00	.00	.02	.04	.00	.26	91
8	20	.29	.00	.00	.00	.00	.00	.00	.01	.00	.00	177
9	9.5	.28	.00	.00	.00	.00	.00	.00	.00	.00	.00	1220
10	3.6	.22	.00	.00	.00	.00	.00	.00	.00	.00	12	88
11	.95	.09	.00	.00	.00	.00	.00	.00	.00	.00	71	132
12	.38	.05	.00	.61	.00	.00	.00	.00	.00	1.8	1.7	387
13	.23	.03	.00	.00	.00	.00	.00	.00	.00	3.2	19	459
14	83	.03	.00	.00	.00	.00	.00	.00	.00	.10	4.5	121
15	43	.01	.00	.00	.00	.00	.00	.00	.09	.01	3.1	61
16	18	.00	.00	.00	.00	.00	.00	.00	.00	.06	.88	24
17	8.2	.02	.00	.00	.00	.00	.00	21	.00	.06	.51	14
18	1.6	.00	.00	.00	.00	.00	.00	35	.00	.05	.37	179
19	.87	.10	.02	.00	.00	.00	.00	20	.00	.04	.17	83
20	.67	.12	.03	.00	.00	.00	.00	.52	.00	.02	.10	120
21	.59	.08	.00	.00	.00	.00	.00	.02	.00	.04	.11	26
22	.62	.05	.00	.00	.00	.00	.00	41	.00	.12	.01	14
23	1.5	.00	.00	.00	.00	.00	.00	29	9.5	.07	.00	26
24	.95	.01	.00	.00	.00	.00	.00	6.7	8.8	.01	.00	51
25	1.2	.00	.00	.00	.00	.00	.00	.63	.02	.00	.00	349
26	.69	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	296
27	.53	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	714
28	.63	.00	.00	.00	.00	.00	.00	13	.00	.00	.00	144
29	.74	.00	.00	.00	---	.00	.00	5.8	.00	.00	.00	96
30	.74	.00	.00	.00	---	.00	.00	.67	.00	.00	.00	40
31	.77	---	.00	.00	---	.00	---	.19	---	.00	2.8	---
TOTAL	570.70	4.65	.05	.61	.00	.00	30.42	177.53	22.52	5.58	123.85	5023.57
MEAN	18.4	.16	.002	.020	.000	.000	1.01	5.73	.75	.18	4.00	167
MAX	196	.75	.03	.61	.00	.00	16	41	9.5	3.2	71	1220
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.16
CFSM	.40	.004	.000	.000	.000	.000	.02	.13	.02	.004	.09	3.67
IN.	.47	.00	.00	.00	.00	.00	.02	.15	.02	.00	.10	4.11
AC-FT	1130	9.2	.10	1.2	.00	.00	60	352	45	11	246	9960

CAL YR 1980 TOTAL 3504.63 MEAN 9.58 MAX 1400 MIN .00 CFSM .21 IN 2.87 AC-FT 6950
WTR YR 1981 TOTAL 5959.48 MEAN 16.3 MAX 1220 MIN .00 CFSM .36 IN 4.87 AC-FT 11820

RIO YAUCO BASIN

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50128000 RIO YAUCO NEAR YAUCO, PR--Continued

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	28	13	2.1	4.8	1.0	.55	.07	.19	.94	.28	.36	.50		
2	22	18	1.9	4.0	1.0	.51	.07	.28	.81	.26	.37	.50		
3	19	12	2.0	2.9	1.0	.46	.07	.30	.77	.27	.37	.50		
4	36	11	2.6	3.6	1.0	.43	.07	.30	13	.32	.39	.50		
5	208	9.4	2.2	2.4	.90	.41	.07	.43	14	.32	.39	.50		
6	58	9.0	2.0	1.7	.87	.39	.07	34	.88	.28	.42	.50		
7	27	8.1	1.8	1.8	.83	.36	.07	13	.60	.24	.52	.50		
8	19	7.3	1.8	1.6	.79	.32	.07	1.2	.62	.24	.59	.50		
9	15	46	1.8	1.8	.74	.30	.07	.59	.54	30	.55	.50		
10	14	14	1.8	1.4	.71	.23	.07	1.5	.50	1.3	1.3	.50		
11	12	9.7	145	1.2	.74	.19	.08	1.7	.49	.38	64	.50		
12	11	8.6	15	1.3	.76	.16	.07	13	.45	.29	2.9	.50		
13	10	7.5	8.4	1.2	.73	.14	.07	5.8	.43	.23	.92	1000		
14	9.8	7.0	32	1.4	.69	.12	.09	2.2	.43	.19	.75	90		
15	10	7.0	19	1.3	.77	.12	.32	2.2	.42	.21	.67	39		
16	8.9	6.6	6.5	1.2	.96	.10	.32	1.0	.38	.30	.60	21		
17	68	6.3	8.3	1.1	.93	.09	.30	266	.37	.23	.50	16		
18	68	5.9	4.9	.99	1.0	.09	.30	113	.37	5.1	.50	15		
19	37	12	4.7	1.1	1.0	.08	.30	12	.35	2.7	.50	41		
20	19	13	3.9	1.2	1.1	.09	.28	3.5	.35	.96	.50	13		
21	19	4.9	3.5	1.1	2.1	.09	.26	2.2	.33	.37	.50	11		
22	16	3.5	3.3	.98	6.7	.09	.26	1.9	.36	.34	.50	10		
23	35	3.2	3.0	.91	2.0	.09	.24	1.7	.37	5.1	.50	9.0		
24	31	2.8	2.1	.93	1.2	.08	.23	1.6	.37	1.2	.50	8.4		
25	16	2.7	1.8	.85	.92	.07	.22	1.5	.38	.43	.50	8.3		
26	27	4.2	1.8	.79	.77	.07	.21	1.4	.37	.37	5.0	8.0		
27	44	5.0	1.8	1.1	.71	.07	.21	1.3	.36	.37	.50	7.9		
28	21	3.5	2.0	.96	.64	.07	.21	1.3	.35	.35	.50	7.7		
29	19	3.3	2.6	.84	---	.06	.21	1.3	.31	.35	.50	7.6		
30	27	2.9	16	.83	---	.06	.21	1.2	.30	.35	.50	7.6		
31	14	---	18	.89	---	.07	---	1.1	---	.37	.50	---		
TOTAL	968.7	267.4	323.6	48.17	32.56	5.96	5.09	488.69	40.20	53.70	87.10	1326.50		
MEAN	31.2	8.91	10.4	1.55	1.16	.19	.17	15.8	1.34	1.73	2.81	44.2		
MAX	208	46	145	4.8	6.7	.55	.32	266	14	30	64	1000		
MIN	8.9	2.7	1.8	.79	.64	.06	.07	.19	.30	.19	.36	.50		
CFSM	.69	.20	.23	.03	.03	.004	.004	.35	.03	.04	.06	.97		
IN.	.79	.22	.26	.04	.03	.00	.00	.40	.03	.04	.07	1.08		
AC-FT	1920	530	642	96	65	12	10	969	80	107	173	2630		
CAL YR 1981	TOTAL	6943.78	MEAN	19.0	MAX	1220	MIN	.00	CFSM	.42	IN	5.68	AC-FT	13770
WTR YR 1982	TOTAL	3647.67	MEAN	9.99	MAX	1000	MIN	.06	CFSM	.22	IN	2.98	AC-FT	7240

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO SEPTEMBER 1982

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPEC- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)
NOV, 1981				
16...	1400	7.0	603	28.0
FEB, 1982				
24...	1230	3.5	475	25.5
MAR				
16...	1115	0.9	918	24.0
JUN				
10...	1235	0.5	738	30.0
AUG				
12...	1243	2.0	500	25.0
SEP				
16...	1340	20.0	581	28.5

CANAL PRINCIPAL DE RIEGO VALLE DE LAJAS BASIN

50128950 LAJAS IRRIGATION CANAL NR 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 WATER YEARS 1981-82.--Water Year 1981: Maximum discharge, 34 cu ft/s (0.963 cu m/s) June 11, gage height 2.56 ft (0.780 m); no flow many days.
Water Year 1982: Maximum discharge, 20 cu ft/s (0.566 cu m/s) Apr. 26, gage height 1.61 ft (0.491 m); no flow many days.

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											1.5	.21
2											.31	.31
3											.21	.25
4											5.0	.21
5											4.5	.17
6											2.9	.17
7											3.5	.17
8											1.4	3.2
9											.13	A
10											5.6	
11											A	
12											A	
13												
14											8.5	
15											4.4	
16											.25	A
17											.17	.48
18											1.4	2.4
19											6.2	.85
20											.25	.36
21											.94	.36
22											.21	3.4
23											.09	7.7
24											.09	A
25											4.8	
26											4.4	
27											.25	
28											.21	
29											.21	
30											.17	A
31											.13	---
TOTAL											---	---
MEAN											---	---
MAX											---	---
MIN											---	---
AC-FT											---	---

A No gage-height record.

50128950 LAJAS IRRIGATION CANAL NR BOQUERON, PR--Continued

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	A	.21	3.6	.00	.00	.98	.00	.28	.00	.31	.00	.38
2		.17	7.2	.00	3.4	.06	.00	.13	.00	.13	.00	.04
3		.09	.09	.00	7.0	.05	.05	1.1	.00	.25	2.0	.48
4		.00	.05	.00	2.4	1.8	.05	3.2	.00	.25	3.9	.00
5		.00	.00	.00	3.3	.05	.05	.16	.00	.25	.10	.48
6		.22	.00	.06	3.5	.00	1.6	.26	.00	.55	.10	.00
7	A	.17	.00	6.2	.00	.00	.00	1.6	.00	3.0	.00	.00
8	3.0	.13	1.1	5.9	.00	.00	.00	.22	.00	.93	.00	1.0
9	.40	.09	2.5	5.1	4.8	.69	.00	.17	.93	.13	.00	.13
10	.31	.00	.00	.00	4.4	.00	.00	.13	8.1	.09	.00	.00
11	.25	14	.00	3.6	.00	.00	.00	.09	5.6	.00	.00	.00
12	.17	6.9	.00	.09	.00	.00	.00	.09	2.1	.00	.00	.56
13	.02	.00	.00	.00	.00	.00	.00	.00	.21	.19	.00	3.0
14	1.1	.07	.00	.05	A	.00	.00	.00	.17	1.8	.00	5.4
15	5.9	.00	.00	2.1		.04	.37	.00	.90	.00	.00	1.4
16	1.1	.00	1.4	1.2		.31	.09	.00	7.6	.00	.00	6.7
17	.82	.22	.00	.05		.00	.00	2.0	4.3	.00	.00	3.0
18	.25	1.0	.94	.00		.00	.00	.70	.17	.00	.00	5.8
19	.21	.00	7.6	.74		.00	.00	.00	.13	.00	.08	3.4
20	3.1	1.2	4.6	2.7		.00	1.0	.00	.13	5.0	.21	1.4
21	3.8	.00	5.5	1.8		.00	3.6	.00	.13	7.4	.00	5.2
22	2.2	.00	6.2	.53		.00	4.4	.00	.75	3.2	.00	3.7
23	.28	.00	8.2	.00		.15	.33	.00	.80	.00	.00	2.1
24	1.5	.00	3.6	.00	A	4.0	.13	.00	.17	.00	.00	.05
25	.21	.48	.36	.00	.33	.00	.09	.00	.17	.00	.00	.09
26	.17	.00	.90	.01	.15	.00	1.3	2.3	.16	.00	.00	.21
27	2.0	.00	.25	.98	.00	.00	3.3	.00	.09	.00	.00	1.4
28	8.5	.00	.00	.02	.00	.00	.31	.00	.05	5.1	.00	5.1
29	4.3	.00	3.6	.31	---	.29	.13	.00	5.2	5.1	.40	.21
30	2.0	.00	14	3.7	---	1.9	.86	.00	4.2	.00	.88	.21
31	.18	---	7.5	.00	---	.05	---	.00	---	.00	1.5	---
TOTAL	---	24.95	79.19	35.14	---	10.37	17.66	12.43	42.06	33.68	9.17	51.44
MEAN	---	.83	2.55	1.13	---	.33	.59	.40	1.40	1.09	.30	1.71
MAX	---	14	14	6.2	---	4.0	4.4	3.2	8.1	7.4	3.9	6.7
MIN	---	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
AC-FT	---	49	157	70	---	21	35	25	83	67	18	102

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	.00	.10	.00	A	.65	.87	1.0	.00	.00	2.7	.00	1.1
2	.00	.00	A	A	.02	.90	.65	.00	.00	2.6	.00	2.3
3	.00	.00	A	A	.00	.00	.00	.59	.00	.00	.00	.75
4	.00	.00	A	2.7	.00	.00	.00	6.4	.00	.00	.00	.31
5	1.6	.00	.00	2.8	.19	.00	.00	2.5	.00	.00	.52	.13
6	.40	.00	.00	1.5	.00	.00	.43	5.5	.00	1.3	1.5	.01
7	.00	.00	.00	1.2	.00	.00	.00	.00	4.5	1.7	.00	.46
8	.00	.00	.00	.90	1.1	.00	.91	.00	6.8	1.6	.00	A
9	.00	.00	1.3	.00	2.4	.23	.00	.00	3.3	2.4	1.4	.00
10	2.4	.00	2.3	.00	.23	.00	.00	.00	1.8	.00	4.3	.00
11	.04	.00	A	.00	.00	.00	.00	.00	.12	.00	.00	.00
12	.00	.90	.00	1.8	.00	.00	.65	.00	.00	.00	.27	.85
13	2.3	A	.00	.00	.00	.00	3.9	.15	.00	.00	.63	6.5
14	.50	.00	.00	.00	.00	.00	2.3	.65	.00	1.1	.00	.26
15	.40	.00	.54	.00	.00	.00	.98	.71	.35	.69	.00	.17
16	.16	.00	.00	.00	5.7	.00	.00	.65	1.8	.05	.12	.17
17	.04	.00	.00	.00	9.4	.00	.00	.30	3.0	.00	3.5	.13
18	.60	.00	.00	1.2	3.4	.00	.00	1.9	2.5	.00	3.2	.00
19	3.5	.00	.97	.31	.00	.00	3.3	.00	.00	.25	5.6	.00
20	2.5	.00	.53	.00	.00	.00	5.6	.00	.00	.05	7.2	.00
21	1.4	.00	.00	.00	.71	.00	2.3	.00	2.7	.00	A	.10
22	.20	.00	2.2	2.7	.00	.00	3.4	.00	1.6	.14	A	.28
23	.00	.00	.04	3.2	.00	.93	.00	.00	.72	3.6	1.8	.23
24	.00	.00	.00	2.1	.22	.01	.00	.00	.00	2.5	8.8	.13
25	.00	.00	2.1	1.2	4.0	.00	.00	.00	.00	1.6	9.6	.00
26	.00	.00	.00	.02	.11	2.7	.00	.00	.00	1.1	11	.00
27	.00	.00	.00	.00	.00	2.2	.00	.00	.00	1.0	A	.00
28	.00	.00	.31	.00	.00	1.1	.00	.00	.00	1.6	.00	.00
29	.00	.00	.42	---	1.0	1.2	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.60	.73	.00	1.6	.00	.00	.00
31	.00	---	A	.00	---	.71	---	.00	---	.00	A	---
TOTAL	16.04	---	---	---	36.65	9.64	40.14	19.35	30.79	25.98	---	---
MEAN	.52	---	---	---	1.31	.28	1.34	.62	1.03	.84	---	---
MAX	3.5	---	---	---	9.4	4.0	6.5	6.4	6.8	---	---	---
MIN	.00	---	---	---	.00	.00	.00	.00	.00	.00	---	---
AC-FT	32	---	---	---	73	17	80	38	61	52	---	---

A No gage-height record.

CANAL PRINCIPAL DE RIEGO VALLE DE LAJAS BASIN

50128950 LAJAS IRRIGATION CANAL BOQUERON, PR

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years August 1981 to September 1982.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPEC- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)
AUG, 1981				
6...	910	1.1	287	27.5
NOV				
12...	820	1.2	270	25.0
DEC				
3...	825	3.1	280	25.0
APR, 1982				
15...	1230	1.0	324	30.0
JUN				
17...	940	4.6	314	27.5
AUG				
19...	1125	4.9	270	30.0

RIO LOCO BASIN

283

50129300 LAJAS DRAINAGE CANAL NR 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 WATER YEARS 1980-82.--Water Year 1980: Maximum discharge, 645 cu ft/s (18.3 cu m/s) May 28, gage height, 10.66 ft (3.249 m); minimum daily, 3.3 cu ft/s (0.093 cu m/s) Mar. 3.

Water Year 1981: Maximum discharge, 348 cu ft/s (9.86 cu m/s) Sept. 28, gage height, 8.07 ft (2.460 m); minimum daily, 3.6 cu ft/s (0.102 cu m/s) Mar. 29.

Water Year 1982: Maximum discharge, 761 cu ft/s (21.6 cu m/s) Dec. 11, gage height, 11.47 ft (3.496 m); minimum daily, 1.0 cu ft/s (0.028 cu m/s) May 9, 16.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							5.2	3.2	20	6.6	11	1620
2							4.8	4.0	22	5.8	18	A
3							5.7	4.5	9.4	7.2	9.3	
4							6.4	5.8	16	8.5	3.6	
5							6.7	4.2	23	8.4	2.0	
6							7.5	2.2	24	9.1	1.6	
7							5.6	1.6	17	9.5	6.3	
8							4.2	2.7	9.6	8.3	12	
9							3.6	3.6	8.4	4.8	7.9	
10							5.0	4.5	122	5.8	5.3	
11							5.5	4.9	874	6.3	3.7	
12							6.2	4.0	958	3.5	3.7	
13							4.0	7.4	626	18	6.3	A
14						9.1	2.7	7.0	474	16	12	49
15						12	2.2	5.7	336	2.1	24	46
16						14	1.6	16	185	1.0	18	43
17						14	1.4	21	29	1.0	18	39
18						12	2.6	24	41	96	12	33
19						11	4.2	68	20	A	8.4	28
20						12	4.7	154	16		17	26
21						13	3.3	206	12		21	33
22						12	2.1	61	9.3		71	35
23						12	4.8	31	9.6	A	122	22
24						9.9	4.2	17	8.4	12	35	20
25						7.8	5.3	18	6.4	11	30	19
26						7.2	5.5	19	6.3	15	16	18
27						7.8	5.4	13	7.0	11	12	18
28						9.7	4.5	21	7.7	10	18	18
29						9.0	2.5	25	9.1	4.6	58	A
30						9.2	1.9	22	9.1	4.6	71	A
31						7.1	---	14	---	11	968	---
TOTAL						---	129.3	795.3	3915.3	---	1622.1	---
MEAN						---	4.31	25.7	131	---	52.3	---
MAX						---	7.5	206	958	---	968	---
MIN						---	1.4	1.6	6.3	---	1.6	---
AC-FT						---	256	1580	7770	---	3220	---

A No gage-height record.

50129300 LAJAS DRAINAGE CANAL NR ENSENADA, PR--Continued

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	A	17	32	16	13	11	7.3	8.8	A	7.7	A	13
2		25	30	18	9.5	3.6	7.9	8.9		8.2		12
3		9.5	30	18	7.5	3.3	8.2	8.5		7.7		13
4		12	39	19	7.3	3.6	8.4	8.4		5.8		14
5		7.4	46	17	10	4.7	8.2	8.4		5.0		16
6		12	35	20	11	6.0	8.4	8.4		5.0		13
7		20	37	39	11	5.4	8.5	8.3		5.0		14
8		23	21	20	9.9	4.4	12	8.4		5.0		14
9		25	25	25	8.3	3.9	26	8.4		5.4		13
10	A	13	30	28	7.0	3.8	11	8.4		6.8		15
11	36	6.9	28	22	7.1	4.0	14	8.4	A	7.0		15
12	32	5.6	24	16	6.4	4.5	29	8.3	5.6	5.9		15
13	30	5.4	28	17	7.1	4.7	16	8.3	7.9	5.4	A	16
14	29	9.1	25	14	8.0	5.4	8.8	8.3	5.3	5.3	14	16
15	28	12	23	17	8.9	4.8	8.8	8.7	4.5	5.3	14	16
16	31	13	21	20	7.1	4.8	8.8	8.9	7.8		12	17
17	35	6.4	21	21	5.1	4.9	8.7	8.9	12		11	17
18	35	8.5	21	21	12	5.1	8.9	8.5	5.0		11	16
19	32	18	22	16	6.3	5.4	8.7	13	4.9		11	15
20	26	168	26	12	6.2	7.2	8.5	12	4.8		12	15
21	24	334	27	11	8.3	7.0	8.5	8.7	4.6		13	14
22	24	76	22	14	9.1	6.2	8.4	8.7	4.5		12	14
23	21	59	19	15	7.7	5.9	8.7	8.8	4.6		12	13
24	17	127	25	14	6.3	6.0	10	8.9	5.8		11	12
25	12	177	24	16	11	6.1	11	8.7	17		11	18
26	11	70	18	12	8.7	6.8	12	8.7	9.3		11	17
27	10	45	21	8.9	9.1	7.8	8.7	167	7.7		11	26
28	10	39	25	8.4	7.6	7.2	8.5		7.0		12	66
29	10	35	20	10	13	7.0	8.5		4.6		19	34
30	13	34	17	12	---	7.1	8.5		15		15	31
31	19	---	17	13	---	7.1	---	A	---	A	12	---
TOTAL	---	1412.8	799	530.3	249.5	174.7	318.9	---	---	---	---	540
MEAN	---	47.1	25.8	17.1	8.60	5.64	10.6	---	---	---	---	18.0
MAX	---	334	46	39	13	11	29	---	---	---	---	66
MIN	---	5.4	17	8.4	5.1	3.3	7.3	---	---	---	---	12
AC-FT	---	2800	1580	1050	495	347	633	---	---	---	---	1070

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	44	A	A	A	A	A	4.9	A	A	13	7.8	130
2	19						5.3			15	5.6	17
3	20						6.2			17	6.5	8.1
4	A						11		13	16	7.3	6.6
5	A						9.9		10	12	7.0	6.4
6	20						7.4		8.4	10	7.8	6.5
7	36						7.1		7.9	9.9	9.0	5.7
8	36						6.7		7.4	10	13	7.7
9	36						7.1		6.8	10	7.6	20
10	40						7.7		6.3	11	8.5	20
11	61						6.8		6.3	9.2	25	24
12	44						4.8		7.5	10	18	68
13	19						4.2	A	7.9	8.0	78	112
14	30						3.7	5.7	8.0	8.4	17	33
15	37						5.3	5.8	7.3	11	7.1	20
16	25							10	6.9	11	6.8	16
17	24	A						9.2	8.0	10	7.8	54
18	64	12						7.0	8.7	7.4	7.2	57
19	23	13						6.8	9.2	7.1	7.2	102
20	25	13						7.0	8.8	7.2	6.6	104
21	27	12	A				6.7		37	8.3	7.6	32
22	A	13	4.8				10		66	8.8	6.8	50
23		13	1.0					A	24	9.7	6.4	36
24		13	1.5						19	11	6.1	64
25		A	5.5			A			18	10	11	50
26			2.0			4.5			18	6.6	9.1	88
27			1.1			6.3			16	6.5	5.4	102
28			1.0			6.4			11	5.5	7.0	280
29			1.0			3.6	A		9.6	5.4	7.7	166
30		A	A		A	6.2			9.9	8.1	7.2	128
31	A	---	A	A	A	4.0	---	A	---	8.8	28	---
TOTAL	---	---	---	---	---	---	---	---	---	301.9	363.1	1814.0
MEAN	---	---	---	---	---	---	---	---	---	9.74	11.7	60.5
MAX	---	---	---	---	---	---	---	---	---	17	78	280
MIN	---	---	---	---	---	---	---	---	---	5.4	5.4	5.7
AC-FT	---	---	---	---	---	---	---	---	---	599	720	3600

A No gage-height record.

50129300 LAJAS DRAINAGE CANAL NR ENSENADA, PR--Continued

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	108	66	12	9.9	4.8	A	4.8	8.7	1.6	2.7	5.4	3.6
2	102	65	15	7.3	6.2	A	4.8	5.4	5.6	2.6	5.8	3.5
3	99	18	16	10	6.0	A	4.3	4.1	A	2.9	4.2	A
4	63	6.1	14	10	3.6	4.9		6.5		2.1	4.0	
5	115	19	10	15	6.6	6.3	3.6	20		4.5	3.9	
6	85	47	8.8	14	6.1	5.0	4.3	62		4.2	5.2	
7	92	6.0	9.1	8.3	5.6	5.4	5.8	24		2.9	5.4	
8	85	40	14	7.3	5.4	A	4.2	3.9		4.5	5.4	A
9	83	88	38	6.6	5.9	A	5.9	.68		19	17	4.0
10	84	16	37	6.6	6.6	4.2	3.8	2.6		10	12	3.7
11	39	23	630	6.5	5.8	4.7	3.7	13		5.0	10	7.0
12	5.2	24	A	5.0	6.2	4.9	3.6	5.2		3.2	7.8	28
13	7.7	24		6.1	5.1	3.8	3.9	1.6		3.0	5.4	641
14	14	7.3		8.0	A	A	4.8	5.2		4.0	4.3	521
15	46	3.6	A	6.2			5.2	9.3		4.1	3.0	324
16	29	3.9	27	5.1	A	A	5.9	.64		6.0	2.4	134
17	26	3.6	15	A	5.4	4.4	4.5	4.8	A	7.1	2.4	22
18	17	3.7	11	A	5.6	5.4	5.8	58	4.2	4.7	3.0	10
19	27	5.2	9.3	5.4	5.1	3.9	6.0	17	3.6	3.9	2.7	7.1
20	30	8.0	8.3	5.4	5.0	3.6	6.4	4.2	2.2	4.9	2.5	7.4
21	47	5.9	8.0	6.0	5.2	3.6	8.2	2.4	1.7	6.2	2.5	5.9
22	68	5.8	22	7.1	5.4	3.6	12	16	2.2	7.3	2.7	15
23	65	6.0	21	5.8	6.7		12	3.7	6.1	12	2.9	5.0
24	45	66	6.8	5.2	4.8	3.9	9.6	21	4.3	11	3.1	3.6
25	58	72	7.3	4.7	4.6	4.3	6.0	53	2.6	12	2.0	3.3
26	64	16	7.2	5.9	5.8	4.3	5.3	53	2.0	12	13	26
27	78	28	7.2	7.1	5.1	5.2	6.1	53	1.6	9.2	67	13
28	26	12	7.4	6.1		5.2	7.1	18	1.2	6.5	9.5	6.1
29	28	8.0	6.6	5.6	---	3.6	8.5	11	1.6	4.9	3.5	8.0
30	41	7.7	6.4	5.6	---	3.6	8.9	4.2	4.6	5.5	2.8	4.3
31	32	---	8.4	5.1	---	4.3	---	2.1	---	7.7	3.8	---
TOTAL	1708.9	704.8	---	---	---	---	---	494.22	---	195.6	224.6	---
MEAN	55.1	23.5	---	---	---	---	---	15.9	---	6.31	7.25	---
MAX	115	88	---	---	---	---	---	62	---	19	67	---
MIN	5.2	3.6	---	---	---	---	---	.64	---	2.1	2.0	---
AC-FT	3390	1400	---	---	---	---	---	980	---	388	445	---

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO SEPTEMBER 1982

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPEC- IFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)
AUG, 1981				
6...	1130	6.5	758	30.0
SEP				
10...	1305	7.0	683	30.5
DEC				
3...	1035	15.0	680	25.0
FEB, 1982				
10...	1150	6.4	792	25.5
MAR				
19...	1350	3.6	713	28.5
APR				
15...	1515	7.0	684	30.0
JUN				
17...	1200	4.1	667	29.0
AUG				
19...	1345	2.1	655	30.0
SEP				
9...	1105	1.9	662	29.0

A No gage-height record.

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 , 1980												
17...	1345	.00	17000	7.7	25.0	.50	4.6	--	410	560	300	2400
JAN , 1981												
16...	0900	.00	15100	7.8	26.5	--	3.5	--	--	340	290	--
MAR												
11...	1440	.00	22200	7.7	29.0	1.7	3.4	--	<10	260	K90	2800
MAY												
05...	1415	.00	23700	7.7	32.0	11	4.6	--	270	280	210	--
AUG												
06...	1400	.00	21800	7.8	32.0	2.5	8.4	115	830	<100	K270	2400
SEP												
10...	1005	E5.0	938	8.1	29.0	20	4.2	54	23	13000	2700	230
NOV												
06...	0940	E5.0	262	8.0	25.5	27	6.4	78	210	K1200	K1100	--
JAN , 1982												
29...	0935	.00	13000	7.9	25.0	5.8	5.1	64	120	500	150	1400
MAR												
04...	0900	.00	28500	7.7	27.0	3.0	5.1	71	340	210	K180	--
MAY												
27...	0825	E30	282	7.9	24.0	20	7.8	93	30	K180	700	120
JUL												
08...	1100	.00	26000	7.7	30.0	2.0	4.4	65	1600	K96000	K13000	--
SEP												
10...	0835	E1.0	21000	7.5	29.0	3.7	2.4	33	64	<10	700	2600

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- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUC- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
NOV , 1980											
17...	2100	130	500	4300	38	110	258	700	4800	.5	27
JAN , 1981											
16...	--	--	--	--	--	--	295	--	--	--	--
MAR											
11...	2500	200	550	4100	34	180	276	1100	8000	.6	19
MAY											
05...	--	--	--	--	--	--	254	--	8000	--	--
AUG											
06...	2100	160	490	4000	35	160	253	860	7400	.5	16
SEP											
10...	20	41	30	110	3.2	4.6	210	52	160	.3	19
NOV											
06...	--	--	--	--	--	--	108	--	--	--	--
JAN , 1982											
29...	1100	120	270	2300	27	80	279	700	4200	.5	19
MAR											
04...	--	--	--	--	--	--	250	--	5200	--	--
MAY											
27...	3	31	11	12	.5	2.0	120	13	9.4	.1	20
JUL											
08...	--	--	--	--	--	--	270	--	9000	--	--
SEP											
10...	2300	190	510	4500	39	150	266	980	7100	.5	18

E Estimated.

K = non-ideal count.

50129700 RIO LOCO AT GUANICA, PR--Continued

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

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 , 1980											
17...	10700	.00	21	.65	.020	.67	.140	.17	.31	.98	4.3
JAN , 1981											
16...	--	--	--	--	--	--	--	--	--	--	--
MAR											
11...	14300	.00	17	.09	.010	.10	.060	.29	.35	.45	2.0
MAY											
05...	--	--	15	.04	.010	.05	.030	.67	.70	.75	3.3
AUG											
06...	13200	.00	14	.02	<.010	.03	.010	.35	.36	.39	1.7
SEP											
10...	543	7.3	54	.17	.030	.20	.070	.62	.69	.89	3.9
NOV											
06...	--	--	55	--	<.010	.79	.010	.37	.38	1.2	5.2
JAN , 1982											
29...	7860	.00	8	.15	.020	.17	.080	.09	.17	.34	1.5
MAR											
04...	--	--	12	.03	.010	.04	.250	.07	.32	.36	1.6
MAY											
27...	169	13.7	31	.37	.030	.40	<.010	--	.70	1.1	4.9
JUL											
08...	--	--	6	--	<.010	<.10	.070	.33	.40	--	--
SEP											
10...	13800	--	6	--	.010	<.10	.170	.03	.20	--	--

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 , 1980											
17...	.140	--	--	--	--	--	--	--	--	10	.00
JAN , 1981											
16...	--	--	--	--	--	--	--	--	--	28	.00
MAR											
11...	.160	1	100	<1	7	10	.5	<1	<1	9	.00
MAY											
05...	.270	--	--	--	--	--	--	--	--	9	.00
AUG											
06...	.150	--	--	--	--	--	--	--	--	5	.00
SEP											
10...	.340	--	100	1	20	5	.2	1	<1	50	.68
NOV											
06...	.060	--	--	--	--	--	--	--	--	83	1.1
JAN , 1982											
29...	.150	1	<100	<1	8	1	.3	<1	<1	--	--
MAR											
04...	.100	--	--	--	--	--	--	--	--	--	--
MAY											
27...	.050	--	--	--	--	--	--	--	--	--	--
JUL											
08...	.100	--	--	--	--	--	--	--	--	--	--
SEP											
10...	.310	1	100	1	<1	4	.6	<1	<1	--	--

PESTICIDE ANALYSES, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TCTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TCTAL (UG/L)	
AUG , 1981									
06...	1400	<.10	<.01	<.10	<.01	<.01	<.01	.01	
JUL , 1982									
08...	1100	<.10	<.01	<.10	<.01	<.01	<.01	<.01	
DATE	DI- ELDRIN TOTAL (UG/L)	ENDO- SULFAM, TCTAL (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- CXY- CHLOR, TCTAL (UG/L)
AUG , 1981									
06...	<.01	<.01	<.01	<.01	<.01	<.01	.03	<.01	<.01
JUL , 1982									
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)	
AUG , 1981									
06...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01	
JUL , 1982									
08...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01	

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.

DRAINAGE AREA.--45.5 sq mi (117.8 sq km).

PERIOD OF RECORD.--November 1979 to September 1980.

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

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 , 1980												
20...	1300	17	520	7.4	27.0	.30	5.3	--	5	K16000	K400	240
JAN , 1981												
22...	1155	10	590	7.6	24.0	.40	3.6	--	18	3300	K180	--
MAR												
10...	1120	5.9	698	7.6	26.5	.80	1.2	--	<10	>60000	47000	270
MAY												
06...	1100	E179	291	8.0	26.5	80	6.2	--	58	K15000	K14000	--
AUG												
11...	1145	113	360	7.8	26.5	9.4	6.9	86	75	37000	7000	180
SEP												
10...	1305	124	347	7.9	29.0	14	5.6	72	10	56364	500	150
NOV												
05...	1310	64	504	8.0	28.5	1.6	8.1	105	110	K9600	K900	--
JAN , 1982												
26...	0825	19	721	7.8	23.0	1.4	4.8	56	11	K72000	K2600	260
MAR												
10...	0845	8.3	810	7.6	22.0	2.4	1.4	16	47	K1400000	78000	--
MAY												
26...	0805	17	590	7.8	25.0	1.1	3.6	44	<10	K13000	<100	250
JUL												
21...	0920	19	--	7.6	25.0	2.1	3.4	41	10	46000	2800	--
SEP												
30...	0935	58	420	7.7	26.0	5.4	5.2	65	34	K67000	K4000	200

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- 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 , 1980											
20...	17	24	43	20	.6	2.1	223	26	22	.3	36
JAN , 1981											
22...	--	--	--	--	--	--	238	--	--	--	--
MAR											
10...	8	33	45	48	1.3	3.9	262	39	62	1.0	39
MAY											
06...	--	--	--	--	--	--	118	--	--	--	--
AUG											
11...	17	20	31	12	.4	1.8	163	17	13	.1	31
SEP											
10...	0	32	16	10	.4	1.1	150	15	11	.4	27
NOV											
05...	--	--	--	--	--	--	217	--	--	--	--
JAN , 1982											
26...	6	27	46	25	.8	2.3	254	29	30	.4	32
MAR											
10...	--	--	--	--	--	--	280	--	--	--	--
MAY											
26...	16	26	44	32	1.1	2.0	230	51	32	.7	34
JUL											
21...	--	--	--	--	--	--	230	--	--	--	--
SEP											
30...	13	22	36	12	.4	1.7	190	16	13	.2	32

E Estimated.

K = non-ideal count.

RIO GUANAJIBO BASIN

291

50133600 RIO GUANAJIBO NEAR SAN GERMAN, PR--Continued

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

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 , 1980											
20...	307	14.1	9	.39	.090	.48	.880	.22	1.10	1.6	7.0
JAN , 1981											
22...	--	--	10	.21	.090	.30	1.90	.30	2.20	2.5	11
MAR											
10...	428	6.8	12	.04	.020	.06	3.20	1.6	4.80	4.9	22
MAY											
06...	--	--	116	.82	.030	.85	.210	.70	.91	1.8	7.8
AUG											
11...	224	68.3	2	.51	.030	.54	.350	.35	.70	1.2	5.5
SEP											
10...	203	68.0	39	.51	.040	.55	.530	.42	.95	1.5	6.6
NOV											
05...	--	--	18	.43	.050	.48	.230	.59	.82	1.3	5.8
JAN , 1982											
26...	336	16.8	5	.37	.110	.48	1.60	.10	1.70	2.2	9.7
MAR											
10...	--	--	9	.01	.010	.02	4.70	5.3	10.0	10	44
MAY											
26...	356	16.1	2	.30	.100	.40	1.50	.40	1.90	2.3	10
JUL											
21...	--	--	6	.12	.030	.15	1.20	1.2	2.40	2.6	11
SEP											
30...	247	38.8	11	.25	.050	.30	.300	.60	.90	1.2	5.3
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 , 1980											
20...	.450	--	--	--	--	--	--	--	--	6	.28
JAN , 1981											
22...	1.40	--	--	--	--	--	--	--	--	58	1.6
MAR											
10...	1.50	<1	200	<1	10	5	<.1	<1	<1	74	1.2
MAY											
06...	.410	--	--	--	--	--	--	--	--	180	87
AUG											
11...	.250	--	--	--	--	--	--	--	--	38	12
SEP											
10...	.190	--	100	1	20	6	.4	<1	<1	32	11
NOV											
05...	.190	--	--	--	--	--	--	--	--	10	1.7
JAN , 1982											
26...	1.30	1	100	<1	5	3	.1	<1	<1	57	2.8
MAR											
10...	2.50	--	--	--	--	--	--	--	--	--	--
MAY											
26...	1.30	--	--	--	--	--	--	--	--	--	--
JUL											
21...	.680	--	--	--	--	--	--	--	--	--	--
SEP											
30...	.220	1	100	1	<1	3	.1	<1	<1	--	--

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.

DRAINAGE AREA.--18.3 sq mi (47.4 sq km).

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

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

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CPS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 (CCLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)
NOV , 1980												
18...	1245	36	272	8.0	26.0	.10	8.4	--	5	K70	K70	120
JAN , 1981												
21...	1110	18	275	8.6	22.0	.30	9.9	--	10	K160	410	--
MAR												
10...	0815	13	286	7.9	23.0	.60	8.1	--	130	82	84	140
MAY												
06...	0845	21	246	8.0	25.0	8.0	7.4	--	<10	230	620	--
AUG												
11...	0845	49	260	7.8	23.0	4.2	8.4	100	33	K1000	K1600	110
SEP												
10...	1530	74	225	8.2	29.0	3.0	7.7	100	<10	576	290	110
NOV												
05...	0935	59	262	8.1	24.0	--	8.7	105	170	K190	300	--
JAN , 1982												
26...	1215	23	284	8.2	22.5	1.3	9.1	106	120	K20	<10	130
MAR												
10...	1035	14	310	8.7	23.0	.50	10.4	121	<10	K10	K64	--
MAY												
26...	1040	23	264	8.4	24.0	1.2	8.6	104	<10	440	780	120
JUL												
21...	1130	59	212	8.1	25.0	17	8.1	99	20	30000	2400	--
SEP												
30...	1135	58	420	7.7	26.0	2.5	8.1	105	31	K1100	500	110

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- 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 , 1980											
18...	0	23	15	8.4	.3	1.3	120	5.4	7.5	.1	31
JAN , 1981											
21...	--	--	--	--	--	--	135	--	--	--	--
MAR											
10...	10	28	16	9.5	.4	1.3	130	7.4	9.5	<.1	27
MAY											
06...	--	--	--	--	--	--	112	--	--	--	--
AUG											
11...	0	22	14	6.7	.3	1.5	114	4.8	7.2	<.1	28
SEP											
10...	8	18	16	5.3	.2	.7	102	6.2	5.6	<.1	25
NOV											
05...	--	--	--	--	--	--	121	--	--	--	--
JAN , 1982											
26...	0	24	18	10	.4	1.1	138	6.3	7.8	.1	28
MAR											
10...	--	--	--	--	--	--	140	--	--	--	--
MAY											
26...	3	23	16	7.5	.3	1.1	120	8.0	7.1	<.1	27
JUL											
21...	--	--	--	--	--	--	93	--	--	--	--
SEP											
30...	35	19	15	5.9	.3	1.2	74	5.0	5.6	<.1	29

K = non-ideal count.

50136400 RIO ROSARIO NEAR HORMIGUEROS, PR--Continued

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

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 , 1980											
18...	164	15.9	9	.82	<.010	.82	.020	.22	.24	1.1	4.7
JAN , 1981											
21...	--	--	6	.47	<.010	.48	.030	.16	.19	.67	3.0
MAR											
10...	177	6.2	10	.18	<.010	.19	.010	.09	.10	.29	1.3
MAY											
06...	--	--	13	.65	<.010	.66	.030	.36	.39	1.1	4.6
AUG											
11...	153	20.2	10	.92	<.010	.93	.020	.20	.22	1.2	5.1
SEP											
10...	138	27.6	--	--	<.010	.78	.020	.18	.20	.98	4.3
NOV											
05...	--	--	18	--	<.010	.88	<.010	--	.25	1.1	5.0
JAN , 1982											
26...	173	10.9	5	--	<.010	.62	.020	.19	.21	.83	3.7
MAR											
10...	--	--	10	--	<.010	.57	.010	.21	.22	.79	3.5
MAY											
26...	164	10.0	4	--	<.010	.40	.010	.79	.80	1.2	5.3
JUL											
21...	--	--	--	--	<.010	.84	.030	.27	.30	1.1	5.0
SEP											
30...	136	21.4	5	--	<.010	.60	.590	.31	.90	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 (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 , 1980											
18...	.050	--	--	--	--	--	--	--	--	1	.10
JAN , 1981											
21...	.080	--	--	--	--	--	--	--	--	1	.05
MAR											
10...	.040	<1	100	<1	2	23	<.1	<1	<1	0	.00
MAY											
06...	.040	--	--	--	--	--	--	--	--	12	.68
AUG											
11...	.070	--	--	--	--	--	--	--	--	10	1.3
SEP											
10...	.030	--	100	<1	30	2	.2	<1	<1	10	2.0
NOV											
05...	.040	--	--	--	--	--	--	--	--	1	.16
JAN , 1982											
26...	.060	1	<100	<1	6	1	<.1	<1	<1	2	.13
MAR											
10...	.040	--	--	--	--	--	--	--	--	--	--
MAY											
26...	.060	--	--	--	--	--	--	--	--	--	--
JUL											
21...	.050	--	--	--	--	--	--	--	--	80	13
SEP											
30...	.040	1	100	1	<1	2	<.1	<1	<1	--	--

PESTICIDE ANALYSES, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982

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)
AUG , 1981								
11...	0845	<.10	<.01	<.10	<.01	<.01	<.01	<.01
JUL , 1982								
21...	1130	<.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)
AUG , 1981									
11...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
JUL , 1982									
21...	<.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)	FARA- 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)
AUG , 1981								
11...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01
JUL , 1982								
21...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01

RIO GUANAJIBO BASIN

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 DISCHARGES.--6 years (1976-81), 43.4 cu ft/s (1.229 cu m/s), 35.94 in/yr (913 mm/yr), 31,440 acre-ft/yr (38.8 cu hm/yr).
--7 years (1976-82), 44.8 cu ft/s (1.269 cu m/s), 37.10 in/yr (942 mm/yr), 32,460 acre-ft/yr (40.0 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 WATER YEARS 1981-82.--Peak discharges above base of 1,500 cu ft/s (42.5 cu m/s), revised 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. 7, 1980	Unknown	*5,420 153	9.13 2.783	Oct. 25, 1981	1745	1,500 42.5	5.58 1.701
Aug. 16, 1981	1545	2,280 64.6	6.54 1.993	Nov. 8, 1981	1615	2,080 58.9	6.31 1.923
Sept. 24, 1981	1630	1,850 52.4	6.04 1.841	Dec. 16, 1981	1630	1,620 45.9	5.75 1.753
Sept. 25, 1981	1715	2,880 81.6	7.14 2.176	July 17, 1982	1815	1,770 50.1	5.94 1.810
Sept. 26, 1981	1645	2,980 84.4	7.24 2.207	Aug. 8, 1982	1700	3,230 91.5	7.46 2.274
Oct. 17, 1981	1615	*3,550 100	7.73 2.356	Aug. 23, 1982	1645	2,080 58.9	6.32 1.926
Oct. 24, 1981	1530	2,620 74.2	6.89 2.100	Sept. 13, 1982	0145	1,900 53.8	6.10 1.859

Minimum daily discharges, 9.8 cu ft/s (0.278 cu m/s) Apr. 21, 1981; 10 cu ft/s (0.283 cu m/s) June 10-22, June 25-July 2, 1982.

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	120	45	26	21	29	15	18	64	42	26	26	37
2	100	45	26	21	35	14	15	46	31	46	23	44
3	170	48	26	19	23	15	24	39	20	239	46	30
4	110	48	25	21	21	15	41	29	17	93	26	26
5	130	48	25	19	20	14	37	19	16	43	30	25
6	160	40	29	19	19	15	19	22	14	35	74	92
7	330	40	30	18	19	15	16	20	13	38	56	92
8	150	40	26	20	18	15	17	18	12	59	38	93
9	117	40	24	21	21	15	15	16	12	39	170	202
10	99	40	24	25	21	14	15	15	12	45	70	70
11	96	40	23	27	18	14	12	15	12	43	84	76
12	90	40	23	31	17	14	12	14	14	51	56	52
13	85	35	27	24	18	14	12	13	15	35	41	56
14	80	35	31	28	26	14	11	12	12	30	128	60
15	120	35	28	21	57	13	11	11	11	25	63	44
16	250	35	24	20	57	15	11	14	24	27	189	43
17	120	35	23	21	53	13	10	29	27	25	73	54
18	80	35	23	23	33	13	10	50	13	41	64	78
19	75	35	22	22	25	13	9.9	35	40	104	51	97
20	70	36	22	19	23	13	9.9	21	23	90	47	68
21	80	39	21	18	24	12	9.8	16	165	51	62	47
22	120	35	21	18	20	13	20	14	77	46	71	38
23	65	31	20	17	18	13	22	40	36	41	57	34
24	60	30	28	17	16	12	14	22	52	41	45	145
25	55	30	32	17	15	13	18	20	35	43	38	227
26	50	29	22	16	15	13	12	17	25	36	33	349
27	50	29	21	16	15	20	13	16	95	29	30	160
28	50	28	20	16	15	21	29	14	134	27	28	95
29	50	28	19	16	---	21	66	13	66	24	27	77
30	70	27	19	19	---	14	22	21	34	25	26	95
31	45	---	20	19	---	13	---	21	---	36	46	---
TOTAL	3267	1092	750	629	691	448	551.6	716	1099	1533	1818	2606
MEAN	105	36.4	24.2	20.3	24.7	14.5	18.4	23.1	36.6	49.5	58.6	86.9
MAX	350	45	32	31	57	21	66	64	165	239	189	349
MIN	45	27	19	16	15	12	9.8	11	11	24	23	25
CFSM	6.40	2.22	1.48	1.24	1.51	1.88	1.12	1.41	2.23	3.02	3.57	5.30
IN	7.41	2.48	1.70	1.43	1.57	1.02	1.25	1.62	2.49	3.48	4.12	5.91
AC-FT	6480	2170	1490	1250	1370	889	1090	1420	2180	3040	3610	5170

CAL YR 1980 TOTAL 20220.6 MEAN 55.2 MAX 658 MIN 9.8 CFSM 3.37 IN 45.86 AC-FT 40110
WTR YR 1981 TOTAL 15200.6 MEAN 41.6 MAX 350 MIN 9.8 CFSM 2.54 IN 34.48 AC-FT 30150

50136000 RIO ROSARIO AT ROSARIO, PR--Continued

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	105	74	37	67	21	16	10	13	16	10	35	77
2	72	69	35	55	21	15	10	13	16	10	33	56
3	203	72	42	58	27	15	10	13	15	54	26	48
4	167	67	36	50	21	15	10	24	14	20	95	46
5	236	62	33	43	26	15	20	53	14	18	112	43
6	144	62	32	40	24	15	15	151	13	13	55	46
7	92	61	32	38	22	16	25	52	13	25	55	39
8	75	186	31	36	21	15	30	29	13	25	277	35
9	50	176	30	35	20	15	50	46	13	15	149	34
10	75	80	37	34	19	14	20	42	13	13	110	32
11	101	65	149	34	19	14	25	29	12	12	90	31
12	65	60	60	33	19	14	15	32	12	12	92	30
13	55	59	83	32	19	14	15	30	12	14	102	452
14	51	54	105	31	18	20	20	88	12	11	73	87
15	48	50	75	30	18	16	50	55	12	45	59	59
16	68	47	264	29	17	19	106	32	12	26	50	49
17	286	45	134	28	17	15	84	30	12	218	65	53
18	148	86	98	27	17	14	49	31	11	237	49	51
19	85	87	71	26	17	14	52	24	11	103	42	69
20	71	58	57	26	16	13	53	32	11	98	38	109
21	75	49	89	25	16	13	29	61	10	120	98	73
22	118	46	78	25	17	12	26	66	10	74	78	59
23	112	44	57	24	25	12	24	58	20	43	367	70
24	297	41	49	24	17	12	26	35	15	39	154	52
25	345	73	52	23	16	12	21	27	13	163	81	44
26	202	65	52	23	16	12	18	23	12	177	87	40
27	116	79	44	24	15	12	16	21	12	79	77	38
28	95	48	41	26	16	12	15	20	11	51	63	172
29	143	42	73	25	---	12	15	19	11	44	53	97
30	103	39	168	23	---	10	15	18	10	39	97	65
31	80	---	95	22	---	15	---	17	---	32	66	---
TOTAL	3913	2046	2239	1016	537	438	874	1184	381	1840	2828	2156
MEAN	126	68.2	72.2	32.8	19.2	14.1	29.1	38.2	12.7	59.4	91.2	71.9
MAX	345	186	264	67	27	20	106	151	20	237	367	452
MIN	48	39	30	22	15	10	10	13	10	10	26	30
CFSM	7.68	4.16	4.40	2.00	1.17	.86	1.77	2.33	.77	3.62	5.56	4.38
IN.	8.88	4.64	5.08	2.30	1.22	.99	1.98	2.69	.86	4.17	6.41	4.89
AC-FT	7760	4060	4440	2020	1070	869	1730	2350	756	3650	5610	4280

CAL YR 1981 TOTAL 18289.6 MEAN 50.1 MAX 349 MIN 9.8 CFSM 3.06 IN 41.48 AC-FT 36280
WTR YR 1982 TOTAL 19452.0 MEAN 53.3 MAX 452 MIN 10 CFSM 3.25 IN 44.12 AC-FT 39580

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO SEPTEMBER 1982

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPEC- IFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)
AUG, 1981				
5...	1320	22.0	282	26.5
SEP				
10...	930	73.0	226	23.5
NOV				
11...	1445	66.2	245	23.5
DEC				
2...	825	35.0	250	22.5
FEB, 1982				
10...	1355	20.0	257	26.5
MAR				
18...	1500	14.0	289	27.0
APR				
15...	925	15.0	283	23.5
AUG				
19...	915	42.0	271	24.0
SEP				
8...	1300	36.0	230	26.0

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 DISCHARGES.--8 years (1974-81), 228 cu ft/s (6.457 cu m/s), 25.80 in/yr (655 mm/yr), 165,200 acre-ft/yr (204 cu hm/yr).
--9 years (1974-82), 227 cu ft/s (6.429 cu m/s), 25.69 in/yr (653 mm/yr), 164,500 acre-ft/yr (203 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), 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 WATER YEARS 1981-82.--Peak discharges above base of 2,000 cu ft/s (56.6 cu m/s) and maximums (*):

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. 3, 1980	1030	2,260	64.0	10.85	3.307	Oct. 4, 1981	2300	2,070	58.6	18.60	5.669
Oct. 5, 1980	0700	2,990	84.7	11.50	3.505	Oct. 5, 1981	2345	2,170	61.4	18.88	5.755
Oct. 6, 1980	0745	*3,960	112	12.19	3.716	Oct. 18, 1981	0615	2,380	67.4	19.43	5.922
Sept. 26, 1981	0100	2,090	59.2	18.67	5.691	Nov. 8, 1981	2400	2,140	60.6	18.78	5.724
Sept. 27, 1981	0900	2,950	83.5	20.30	6.187	Sept. 13, 1982	1300	*11,400	323	24.12	7.352

Minimum discharges, 14 cu ft/s (0.396 cu m/s) Mar. 20, 1981; 17 cu ft/s (0.481 cu m/s) July 02, 1982.

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	1090	150	55	45	47	30	40	46	97	137	63	119
2	733	250	57	47	94	28	35	103	129	115	73	217
3	1080	130	57	46	168	27	70	48	81	281	253	97
4	515	110	55	43	63	27	259	103	67	365	166	74
5	1440	100	73	41	45	26	262	98	58	253	87	64
6	2610	130	111	39	41	25	148	565	50	148	238	106
7	798	90	72	43	40	25	105	192	43	126	199	194
8	567	89	59	41	38	26	81	158	39	118	113	171
9	451	86	52	44	36	23	62	129	37	130	312	694
10	384	83	48	49	45	22	52	104	39	119	582	284
11	338	81	47	41	39	25	42	87	38	95	439	642
12	304	78	45	71	34	25	36	77	39	127	242	689
13	278	78	46	45	34	26	34	63	43	121	230	864
14	284	77	97	57	132	25	31	55	31	99	275	647
15	436	75	80	44	490	28	29	50	28	82	215	326
16	642	74	54	40	281	32	28	46	29	73	311	238
17	544	71	48	59	165	25	25	341	56	74	219	211
18	318	69	44	49	99	22	24	332	33	83	327	302
19	267	67	45	50	71	21	23	208	55	404	217	669
20	257	66	45	40	58	18	23	136	81	249	122	704
21	286	87	43	37	52	18	23	96	344	140	120	335
22	514	85	42	35	54	18	71	78	766	224	140	227
23	374	67	40	33	47	19	246	97	296	152	122	181
24	322	60	43	32	43	19	225	84	225	112	94	409
25	260	58	85	31	38	35	104	57	207	104	84	584
26	240	58	53	32	35	25	70	64	153	88	73	1520
27	220	57	52	31	34	21	58	68	200	73	68	2280
28	200	55	45	30	33	20	58	62	298	67	72	1040
29	250	54	42	32	---	20	110	61	251	61	85	544
30	190	54	41	67	---	120	55	63	139	63	69	454
31	170	---	43	40	---	50	---	84	---	63	79	---
TOTAL	16362	2589	1719	1334	2356	871	2429	3755	3952	4346	5689	14886
MEAN	528	86.3	55.5	43.0	84.1	28.1	81.0	121	132	140	184	496
MAX	2610	250	111	71	490	120	262	565	766	404	582	2280
MIN	170	54	40	30	33	18	23	46	28	61	63	64
CFSM	4.40	.72	.46	.36	.70	.23	.68	1.01	1.10	1.17	1.53	4.13
IN	5.07	.80	.53	.41	.73	.27	.75	1.16	1.23	1.35	1.76	4.61
AC-FT	32450	5140	3410	2650	4670	1730	4820	7450	7840	8620	11280	29530

CAL YR 1980 TOTAL 76047 MEAN 208 MAX 8980 MIN 16 CFSM 1.73 IN 23.57 AC-FT 150800
WTR YR 1981 TOTAL 60288 MEAN 165 MAX 2610 MIN 18 CFSM 1.38 IN 18.69 AC-FT 119600

RIO GUANAJIBO BASIN

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50138000 RIO GUANAJIBO NEAR HORMIGUEROS, PR--Continued

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	398	316	112	326	68	41	27	24	40	20	146	180
2	326	274	105	233	70	40	25	23	38	19	181	164
3	483	252	113	244	62	40	26	21	36	21	113	136
4	1100	244	118	217	54	39	25	29	35	65	159	138
5	1450	206	101	159	52	38	36	187	33	99	346	234
6	1260	191	96	135	60	37	38	679	32	48	188	227
7	501	179	94	122	57	38	51	254	30	69	141	137
8	374	692	95	112	57	36	91	121	28	193	549	116
9	301	1060	91	106	57	37	114	84	28	152	662	107
10	478	446	104	101	52	36	44	95	26	76	234	113
11	610	345	1070	96	48	35	59	67	26	57	293	127
12	433	276	423	92	45	35	33	92	25	50	205	110
13	265	262	309	89	44	40	26	112	25	43	370	6270
14	235	245	317	85	43	68	25	544	24	36	212	2780
15	200	205	331	82	42	61	33	355	23	38	159	940
16	291	182	542	81	41	63	89	205	23	84	124	463
17	676	168	834	77	42	43	143	161	21	122	117	335
18	2010	156	435	76	41	39	70	171	21	586	126	397
19	966	254	309	73	40	37	61	125	21	351	97	412
20	530	233	216	73	40	35	90	101	21	176	88	514
21	647	182	190	72	40	34	58	146	21	251	108	373
22	845	157	229	71	55	32	53	97	27	240	158	265
23	669	142	216	69	67	30	51	128	44	127	432	225
24	768	133	188	67	54	30	52	79	38	261	709	210
25	1030	155	345	63	48	28	41	67	24	537	276	177
26	1130	202	246	62	43	27	35	60	22	535	345	158
27	781	224	159	75	42	27	31	56	21	255	439	146
28	459	150	135	97	42	26	29	53	21	177	222	281
29	905	130	133	66	---	25	26	53	24	242	175	336
30	615	118	681	63	---	25	26	52	22	172	232	176
31	366	---	702	62	---	27	---	46	---	125	222	---
TOTAL	21102	7779	9039	3346	1406	1149	1510	4287	820	5227	7828	16247
MEAN	661	259	292	108	50.2	37.1	50.3	138	27.3	169	253	542
MAX	2010	1060	1070	326	70	68	143	679	44	586	709	6270
MIN	200	118	91	62	40	25	25	21	21	19	88	107
CFSM	5.68	2.16	2.43	.90	.42	.31	.42	1.15	.23	1.41	2.11	4.52
IN.	6.54	2.41	2.80	1.04	.44	.36	.47	1.33	.25	1.62	2.43	5.04
AC-FT	41860	15430	17930	6640	2790	2280	3000	8500	1630	10370	15530	32230
CAL YR 1981	TOTAL	77538	MEAN 212	MAX 2280	MIN 18	CFSM 1.77	IN 24.04	AC-FT 153800				
WTR YR 1982	TOTAL	79740	MEAN 218	MAX 6270	MIN 19	CFSM 1.82	IN 24.72	AC-FT 158200				

RIO GUANAJIBO BASIN

0138000 RIO GUANAJIBO NEAR HORMIGUEROS, PR--Continued

WATER-QUALITY RECORDS

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

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

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 , 1980												
19...	0915	66	405	7.6	21.0	.20	7.0	--	23	K13000	2500	180
JAN , 1981												
22...	0945	34	470	7.5	23.0	.70	5.9	--	15	370	K1900	--
MAR												
10...	1500	21	488	8.1	29.0	4.4	6.1	--	<10	K14000	3300	220
MAY												
06...	1630	386	233	7.8	27.0	180	5.2	--	46	>60000	53000	--
AUG												
06...	0950	81	420	7.8	27.0	12	7.4	94	<10	K100000	4900	190
SEP												
11...	1110	167	352	7.9	27.0	21	6.1	75	17	23000	4200	180
NOV												
10...	1235	447	316	7.7	25.0	50	5.6	68	30	K8100	2600	--
JAN , 1982												
27...	1000	60	471	8.1	23.5	1.9	7.4	87	16	K77000	7300	210
MAR												
09...	1100	35	460	7.9	25.0	4.9	6.8	82	72	K19000	4500	--
MAY												
10...	1325	87	380	7.7	25.0	49	5.6	68	100	55000	24000	150
JUL												
20...	1140	146	325	7.8	25.0	29	6.4	77	<10	31000	K15000	--
SEP												
29...	1210	--	304	7.6	24.0	70	7.0	84	23	K160000	88000	140

DATE	HARD- NESS, MNCAR- 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)	CHLOR- IDE, DIS- SOLVED (MG/L AS CL)	FLUOR- IDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
NOV , 1980											
19...	7	27	27	14	.5	1.8	173	17	15	.1	32
JAN , 1981											
22...	--	--	--	--	--	--	189	--	--	--	--
MAR											
10...	10	36	32	21	.6	2.7	210	15	25	.2	36
MAY											
06...	--	--	--	--	--	--	112	--	--	--	--
AUG											
06...	3	29	29	17	.5	2.1	187	18	14	.2	29
SEP											
11...	28	24	29	10	.3	1.2	152	15	11	.2	26
NOV											
10...	--	--	--	--	--	--	137	--	--	--	--
JAN , 1982											
27...	0	31	32	16	.6	1.7	213	23	18	.2	27
MAR											
09...	--	--	--	--	--	--	210	--	--	--	--
MAY											
10...	2	23	23	12	.5	2.1	150	17	12	.1	25
JUL											
20...	--	--	--	--	--	--	140	--	--	--	--
SEP											
29...	7	20	21	7.9	.3	1.6	130	10	8.9	.1	27

K = non-ideal count.

50138000 RIO GUANAJIBO NEAR HORMIGUEROS, PR--Continued

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

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 , 1980											
19...	238	42.4	11	1.0	.070	1.1	.160	.16	.32	1.4	6.3
JAN , 1981											
22...	--	--	56	.75	.090	.84	.660	.44	1.10	1.9	8.6
MAR											
10...	294	16.7	20	.67	.130	.80	1.20	.30	1.50	2.3	10
MAY											
06...	--	--	373	.84	.060	.90	.340	1.6	1.90	2.8	12
AUG											
06...	251	54.9	39	.49	.040	.53	.270	.39	.66	1.2	5.3
SEP											
11...	208	93.8	44	.74	.070	.81	.250	.58	.83	1.6	7.3
NOV											
10...	--	--	107	--	<.010	.56	.100	.65	.75	1.3	5.8
JAN , 1982											
27...	275	44.5	8	.91	.020	.93	.230	.43	.66	1.6	7.0
MAR											
09...	--	--	19	.59	.020	.61	.300	.32	.62	1.2	5.4
MAY											
10...	204	47.8	86	.83	.060	.89	.270	2.0	2.30	3.2	14
JUL											
20...	--	--	52	.62	.040	.66	.250	.55	.80	1.5	6.5
SEP											
29...	174	--	80	.55	.050	.60	.170	.43	.60	1.2	5.3

DATE	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 (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 , 1980											
19...	.280	--	--	--	--	--	--	--	--	10	1.8
JAN , 1981											
22...	.700	--	--	--	--	--	--	--	--	110	10
MAR											
10...	.820	<1	100	<1	15	4	<.1	<1	<1	10	.57
MAY											
06...	.590	--	--	--	--	--	--	--	--	430	448
AUG											
06...	.290	--	--	--	--	--	--	--	--	32	7.0
SEP											
11...	.290	--	100	1	10	6	.2	<1	<1	52	23
NOV											
10...	.280	--	--	--	--	--	--	--	--	198	239
JAN , 1982											
27...	.380	1	100	<1	5	1	<.1	<1	1	58	9.4
MAR											
09...	.490	--	--	--	--	--	--	--	--	--	--
MAY											
10...	.380	--	--	--	--	--	--	--	--	115	27
JUL											
20...	.310	--	--	--	--	--	--	--	--	86	34
SEP											
29...	.250	1	100	1	<1	6	.1	<1	<1	--	--

PESTICIDE ANALYSES, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982

		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)	AZINON, TOTAL (UG/L)	
DATE	TIME								
AUG , 1981									
06...	0950	<.10	<.01	<.10	<.01	<.01	<.01	.03	
JUL , 1982									
20...	1140	<.10	<.01	<.10	<.01	<.01	<.01	<.01	
DATE	DI- ELDPIN TOTAL (UG/L)	ENDO- SULFAM, 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)
AUG , 1981									
06...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
JUL , 1982									
20...	<.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)	
AUG , 1981									
06...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01	
JUL , 1982									
20...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01	

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.

DRAINAGE AREA.--6.7 sq mi (17.3 sq km).

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

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

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION (MG/L)	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 CACO3)
NOV , 1980												
20...	1135	16	262	7.8	25.0	.30	8.8	--	10	K6400	6200	110
JAN , 1981												
22...	1325	6.6	286	8.3	24.0	.90	10.0	--	<10	K710	390	--
MAY												
07...	1000	2.5	296	7.9	26.5	6.0	9.0	--	<10	K2000	--	--
AUG												
11...	1520	96	145	7.1	24.5	170	8.8	106	59	K80000	66000	59
SEP												
.11...	0740	17	265	7.8	24.0	1.0	7.6	89	<10	1054	1207	120
NOV												
09...	1545	84	128	7.6	25.0	210	7.6	93	73	K70000	43000	--
JAN , 1982												
26...	1525	6.5	302	8.2	23.5	.80	8.6	102	19	K600	K200	130
MAR												
10...	1340	6.1	318	8.2	24.0	1.0	8.6	102	33	K1000	3000	--
MAY												
11...	0840	6.3	290	8.1	23.5	1.3	8.0	95	81	2400	800	120
JUL												
20...	0735	17	--	7.6	22.0	110	7.9	91	<10	2500	47000	--
SEP												
29...	1405	16	194	7.7	25.0	25	7.8	95	34	K9600	7900	79

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- 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 , 1980											
20...	5	29	9.1	9.9	.4	2.0	105	6.1	7.9	.1	30
JAN , 1981											
22...	--	--	--	--	--	--	136	--	--	--	--
MAY											
07...	--	--	--	--	--	--	127	--	--	--	--
AUG											
11...	0	14	5.8	7.1	.4	1.9	61	5.7	5.0	<.1	20
SEP											
11...	4	30	10	10	.4	1.5	116	6.6	8.5	.1	24
NOV											
09...	--	--	--	--	--	--	54	--	--	--	--
JAN , 1982											
26...	0	34	11	15	.6	2.0	139	7.7	9.2	.1	31
MAR											
10...	--	--	--	--	--	--	140	--	--	--	--
MAY											
11...	0	32	9.7	11	.5	1.9	130	8.0	8.9	<.1	27
JUL											
20...	--	--	--	--	--	--	62	--	--	--	--
SEP											
29...	2	21	6.4	6.8	.4	2.1	77	6.0	6.1	<.1	22

K = non-ideal count.

RIO YAGUEZ BASIN

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50138800 RIO YAGUEZ NEAR MAYAGUEZ, PR--Continued

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

DATE	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SCLIDS, 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 , 1980											
20...	157	6.8	8	.99	.010	1.0	.030	.25	.28	1.3	5.7
JAN , 1981											
22...	--	--	2	.91	<.010	.92	<.010	.09	<.10	--	--
MAY											
07...	--	--	10	.44	.010	.45	.070	.26	.33	.78	3.5
AUG											
11...	96	24.9	5160	.88	.070	.95	.260	.63	.89	1.8	8.1
SEP											
11...	160	7.3	12	--	<.010	.87	.010	.31	.32	1.2	5.3
NOV											
09...	--	--	285	.96	.040	1.0	.120	.50	.62	1.6	7.2
JAN , 1982											
26...	188	3.3	2	--	<.010	.83	.010	.18	.19	1.0	4.5
MAR											
10...	--	--	4	--	<.010	.69	.040	.17	.21	.90	4.0
MAY											
11...	177	3.0	5	--	<.010	.73	.030	.37	.40	1.1	5.0
JUL											
20...	--	--	46	.75	.060	.81	.110	.59	.70	1.5	6.7
SEP											
29...	109	4.7	20	.98	.020	1.0	.060	.24	.30	1.3	5.8
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 , 1980											
20...	.070	--	--	--	--	--	--	--	--	9	.39
JAN , 1981											
22...	.050	--	--	--	--	--	--	--	--	1	.02
MAY											
07...	.030	--	--	--	--	--	--	--	--	5	.03
AUG											
11...	.610	--	--	--	--	--	--	--	--	5290	1370
SEP											
11...	.030	--	200	1	10	7	.2	<1	<1	4	.18
NOV											
09...	.200	--	--	--	--	--	--	--	--	788	179
JAN , 1982											
26...	.060	1	100	<1	3	2	<.1	<1	1	1	.02
MAR											
10...	.070	--	--	--	--	--	--	--	--	--	--
MAY											
11...	.050	--	--	--	--	--	--	--	--	--	--
JUL											
20...	.070	--	--	--	--	--	--	--	--	89	4.0
SEP											
29...	.060	1	200	1	<1	2	.2	<1	<1	--	--

RIO GRANDE DE AÑASCO BASIN

50141000 RIO BLANCO NEAR ADJUNTAS, PR

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 Limana.

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 DISCHARGES.--21 years (1947-66, 81), 38.0 cu ft/s (1.076 cu m/s), 33.51 in/yr (851 mm/yr), 27,530 acre-ft/yr (33.9 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).
--22 years (1947-66, 81-82), 38.0 cu ft/s (1.076 cu m/s), 33.51 in/yr (851 mm/yr), 27,530 acre-ft/yr (33.9 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 daily, 5.8 cu ft/s (0.164 cu m/s) July 20-23, 1957.

EXTREMES FOR WATER YEARS 1981-82.--Peak discharges above base of 1,700 cu ft/s (48.1 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. 14, 1980	1715	4,670	132	Sept. 27, 1981	1945	2,550	72.2
Oct. 22, 1980	1715	*10,300	292	Oct. 5, 1981	1600	9,610	272
May 23, 1981	0345	1,960	55.5	Oct. 17, 1981	1530	6,800	193
July 3, 1981	1700	2,600	73.6	Nov. 8, 1981	2400	2,060	58.3
July 11, 1981	1800	2,080	58.9	May 13, 1982	Unknown	*10,900	309
July 19, 1981	1845	4,440	126	Sept. 13, 1982	0300	10,700	303

Minimum daily discharges, 11 cu ft/s (0.312 cu m/s) Mar. 16-26, 1981; 9.2 cu ft/s (0.260 cu m/s) July 2-3, 1982.

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									---	19	17	16
2									---	19	16	47
3									---	20	16	62
4									---	19	17	367
5									---	21	16	79
6									---	20	15	32
7									---	18	14	24
8									---	19	13	22
9									---	32	13	24
10									---	19	16	23
11									---	18	15	23
12									---	18	14	22
13									---	18	13	35
14									---	17	13	50
15									---	17	12	40
16									---	19	48	26
17									---	18	22	39
18									---	44	18	37
19									---	46	17	27
20									---	25	16	20
21									---	19	15	30
22									---	15	14	50
23									---	24	15	80
24									---	23	16	100
25									---	31	15	62
26									---	24	14	60
27									---	20	14	318
28									---	19	14	191
29									---	23	14	181
30									---	22	14	117
31									---	23	17	---
TOTAL									---	619	533	2204
MEAN									---	20.0	17.2	73.5
MAX									---	46	48	367
MIN									---	14	12	16
CFSM									---	1.30	1.12	4.77
IN.									---	1.50	1.29	5.32
AC-FT									---	1230	1060	4370

50141000 RIO BLANCO NEAR ADJUNTAS, PR--Continued

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	96	36	18	17	15	12	12	18	18	15	30	21
2	130	34	20	16	14	12	12	15	38	15	30	41
3	107	35	19	15	14	12	82	58	27	135	56	37
4	107	33	18	16	13	12	97	43	25	29	35	26
5	104	33	25	17	13	12	57	106	23	19	25	20
6	112	31	35	20	13	12	32	61	21	17	76	25
7	128	30	37	17	13	12	23	30	19	30	31	63
8	100	27	24	15	13	12	30	25	19	42	25	132
9	90	27	20	15	13	16	34	25	18	22	39	260
10	80	26	18	15	20	12	30	20	17	24	56	53
11	70	25	18	23	13	12	20	20	17	147	38	52
12	60	24	18	17	13	12	18	18	23	38	33	37
13	100	24	19	15	13	12	15	17	18	28	41	33
14	500	23	23	15	26	12	15	16	17	63	158	31
15	100	23	19	15	59	12	14	15	16	30	59	30
16	70	23	18	15	65	11	14	15	16	24	37	124
17	45	23	17	15	33	11	14	30	15	28	39	86
18	50	22	17	15	25	11	13	123	15	132	41	43
19	40	21	17	19	20	11	13	33	14	485	35	51
20	35	22	17	16	15	11	13	25	16	191	30	41
21	100	22	16	15	20	11	13	34	31	71	28	36
22	778	21	16	15	15	11	25	35	78	80	25	34
23	135	21	16	15	14	11	17	280	28	56	24	33
24	81	20	46	15	13	11	15	56	20	50	24	36
25	58	19	32	15	12	11	14	45	17	45	23	165
26	60	19	22	13	12	11	14	36	15	40	22	62
27	54	19	24	13	12	19	13	31	21	40	22	201
28	45	19	20	13	12	20	13	37	15	35	22	80
29	41	18	20	13	---	23	13	30	15	35	22	47
30	40	18	17	22	---	15	13	27	15	35	21	40
31	38	---	16	15	---	13	---	28	---	30	27	---
TOTAL	3554	738	662	492	533	395	708	1352	647	2031	1174	1940
MEAN	115	24.6	21.4	15.9	19.0	12.7	23.6	43.6	21.6	65.5	37.9	64.7
MAX	778	36	46	23	65	23	97	280	78	485	158	260
MIN	35	18	16	13	12	11	12	15	14	15	21	20
CFSM	7.47	1.60	1.39	1.03	1.23	.83	1.53	2.83	1.40	4.25	2.46	4.20
IN.	8.58	1.78	1.60	1.19	1.29	.95	1.71	3.27	1.56	4.91	2.84	4.69
AC-FT	7050	1460	1310	976	1060	783	1400	2680	1280	4030	2330	3850
WTR YR 1981	TOTAL	14226	MEAN 39.0	MAX 778	MIN 11	CFSM 2.53	IN 34.36	AC-FT 28220				

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	39	46	24	25	23	14	12	14	15	9.6	28	25
2	36	40	24	25	20	13	12	14	15	9.2	28	20
3	34	39	24	31	20	13	12	13	15	9.2	16	18
4	38	37	27	26	20	13	22	15	14	15	41	16
5	619	41	23	23	24	13	24	100	14	15	25	14
6	100	37	23	22	20	13	14	80	13	13	19	133
7	58	36	22	23	20	13	21	50	14	16	18	33
8	46	156	22	21	20	12	14	30	14	13	31	21
9	41	301	22	21	20	11	13	25	13	16	24	18
10	42	81	21	21	16	11	11	20	13	13	75	17
11	42	54	136	21	16	11	11	40	13	13	43	16
12	36	46	46	21	16	11	10	50	13	24	27	199
13	34	43	74	20	16	63	9.7	1000	13	20	22	1110
14	33	39	103	19	15	27	9.6	100	13	11	20	81
15	31	38	70	20	15	32	37	50	12	40	26	56
16	42	36	40	20	15	20	126	40	11	21	21	51
17	355	35	33	20	15	14	40	30	11	29	18	52
18	48	34	39	19	14	13	33	20	11	41	19	57
19	48	39	33	19	14	13	31	20	12	22	17	81
20	44	36	31	19	15	12	24	70	12	17	16	63
21	43	34	37	19	15	11	19	30	11	17	26	42
22	41	33	31	18	15	11	18	25	11	44	20	29
23	57	32	28	18	21	11	20	20	14	30	24	26
24	86	32	26	18	15	10	20	18	11	22	23	25
25	96	38	29	18	15	10	18	17	11	22	19	24
26	153	30	27	18	14	11	16	17	11	32	50	23
27	83	40	26	80	13	10	16	16	10	20	38	22
28	53	30	25	39	13	9.8	15	30	10	15	31	27
29	47	25	24	24	---	9.3	15	25	10	14	23	25
30	43	25	25	23	---	11	14	20	9.8	15	35	21
31	11	---	26	22	---	13	---	16	---	13	40	---
TOTAL	2529	1533	1141	733	475	459.1	657.3	2015	369.8	611.0	863	2345
MEAN	81.6	51.1	36.8	23.6	17.0	14.8	21.9	65.0	12.3	19.7	27.8	78.2
MAX	619	301	136	80	24	63	126	1000	15	44	75	1110
MIN	31	25	21	18	13	9.3	9.6	13	9.8	9.2	16	14
CFSM	5.30	3.32	2.39	1.53	1.10	.96	1.42	4.22	.80	1.28	1.81	5.08
IN.	6.11	3.70	2.76	1.77	1.15	1.11	1.59	4.87	.89	1.48	2.08	5.66
AC-FT	5020	3040	2260	1450	942	911	1300	4000	733	1210	1710	4650
CAL YR 1981	TOTAL	14475.0	MEAN 39.7	MAX 619	MIN 11	CFSM 2.58	IN 34.96	AC-FT 28710				
WTR YR 1982	TOTAL	13731.2	MEAN 37.6	MAX 1110	MIN 9.2	CFSM 2.44	IN 33.17	AC-FT 27240				

RIO GRANDE DE AÑASCO BASIN

50141000 RIO BLANCO NR ADJUNTAS, PR

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years August 1981 to September 1982.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPEC- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)
AUG, 1981				
4...	1000	28.0	205	23.5
SEP				
8...	1030	27.0	216	23.5
NOV				
30...	1035	25.0	227	21.0
FEB, 1982				
9...	1050	18.0	232	21.0
MAR				
16...	1200	19.0	209	24.0
APR				
13...	945	10.0	265	22.0
JUN				
15...	910	12.0	299	23.5
AUG				
17...	1000	17.0	265	23.0
OCT				
4...	855	19.0	239	22.0

50141100 LAGO YAHUECAS NR 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/s) 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 (1076 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 WATER YEARS 1981-82.--Water Year 1981: Maximum elevation, 75.63 ft (23.052 m) Oct. 22; minimum, 48.42 ft (14.758 m) Feb. 4.

Water Year 1982: Maximum elevation, 76.61 ft (23.351 m) Sept. 13; minimum, 52.45 ft (15.987 m) June 24.

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 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							---	A	70.91	64.08	65.79	59.31
2							---		70.89	63.80	65.62	61.53
3							---		70.87	63.59	65.36	64.19
4							---		70.87	63.39	65.18	71.38
5							---		70.89	63.19	64.90	71.07
6							---		70.91	63.16	64.53	70.68
7							---		70.87	62.95	64.17	69.99
8							---		70.84	62.79	63.80	69.26
9							---		70.77	63.43	63.59	68.52
10							---		70.78	63.70	63.40	67.59
11							---		70.80	63.62	63.13	66.84
12							---		70.77	63.41	62.69	66.11
13							---		70.68	63.18	62.30	66.28
14							---		70.52	63.07	61.89	67.96
15							---		70.25	62.90	61.49	68.88
16							---		69.87	62.71	63.28	68.77
17							---		69.41	62.78	63.63	69.80
18							---		68.88	63.98	63.45	70.05
19							---		68.19	65.81	63.09	69.77
20							---		67.75	66.59	62.63	70.94
21							---	A	67.44	66.79	62.01	71.17
22							---	62.96	67.06	66.89	61.26	71.08
23							65.97	63.93	66.71	66.89	60.50	71.08
24							65.31	71.12	66.44	66.89	60.18	71.08
25							68.72	70.92	66.27	66.80	59.78	70.95
26							A	70.92	66.12	66.63	59.33	70.92
27								71.65	65.57	66.44	58.19	71.42
28								71.14	64.90	66.24	60.08	71.42
29								71.05	64.43	66.02	60.42	71.32
30							A	70.93	64.42	65.74	60.42	71.28
31							---	70.95	---	65.68	59.98	---
TOTAL							---	---	2065.08	2003.14	1936.07	2070.64
MEAN							---	---	68.84	64.62	62.45	69.02
MAX							---	---	70.91	66.89	65.79	71.42
MIN							---	---	64.42	62.71	58.19	59.31

A No gage-height record.

RIO GRANDE DE AÑASCO BASIN

50141100 LAGO YAHUECAS NR CASTAÑER, PR--Continued

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71.13	71.19	68.56	64.79	49.29	55.71	56.76	66.63	71.19	70.70	55.77	55.71
2	71.34	71.19	68.24	64.67	48.69	54.88	56.49	66.54	71.17	70.55	56.03	54.87
3	71.18	71.19	67.82	64.41	48.58	53.98	63.48	68.58	71.14	71.30	56.72	55.06
4	71.19	71.18	67.32	64.14	49.05	53.11	67.29	69.87	71.13	71.16	55.76	54.41
5	71.19	71.18	67.24	63.90	49.32	52.32	69.26	71.67	71.12	71.10	56.03	54.66
6	71.34	71.17	67.82	63.94	49.55	51.56	69.05	71.21	71.09	71.00	57.62	55.33
7	71.28	71.15	68.53	63.64	49.35	50.96	70.03	71.17	71.02	71.21	56.83	56.91
8	71.18	71.14	68.48	63.40	49.17	50.84	70.55	71.12	70.97	71.22	55.54	62.47
9	71.18	71.12	68.06	63.18	49.34	51.14	71.17	71.08	70.89	71.08	55.64	63.53
10	71.18	71.12	67.56	62.70	49.40	50.94	71.18	71.08	70.79	71.08	56.93	59.54
11	71.17	71.12	67.13	63.28	49.31	50.88	71.06	71.10	70.67	71.47	56.71	59.55
12	71.11	71.10	66.69	62.87	49.24	50.85	70.89	71.04	70.84	71.19	57.25	58.26
13	71.11	71.09	66.33	62.39	49.31	50.97	70.69	70.92	70.86	71.25	57.66	58.39
14	71.18	71.05	66.15	61.60	54.24	51.06	70.39	70.76	70.74	71.29	63.25	58.64
15	71.32	71.05	65.90	60.63	60.02	51.14	70.07	70.57	70.59	71.18	59.93	58.69
16	71.28	71.05	65.48	59.60	63.48	51.75	69.80	70.37	70.42	71.12	60.14	62.20
17	71.19	71.05	65.06	58.57	63.61	51.79	69.66	70.80	70.25	71.22	60.26	60.12
18	71.19	71.04	64.60	57.25	63.21	51.71	69.51	71.32	70.08	71.40	60.45	59.82
19	71.20	71.01	64.19	55.86	62.52	51.53	69.22	71.19	69.91	71.71	60.20	60.05
20	71.18	71.12	63.83	52.85	61.75	51.40	68.91	71.18	69.79	71.45	60.18	60.11
21	71.21	70.99	63.46	49.52	61.34	51.37	68.59	71.34	70.60	71.29	60.18	59.47
22	71.83	70.99	63.11	50.46	61.13	51.68	68.72	71.20	71.27	71.36	60.16	59.17
23	71.40	70.93	62.81	50.19	60.47	51.89	68.78	71.44	71.10	71.27	60.14	59.48
24	71.37	70.82	64.64	50.64	59.72	51.94	68.51	71.29	71.07	68.50	60.15	59.00
25	71.30	70.66	65.36	51.11	58.95	52.08	68.22	71.25	71.01	63.40	60.15	63.38
26	71.35	70.45	65.35	51.18	58.12	52.20	67.94	71.20	70.86	60.31	60.15	59.98
27	71.26	70.17	65.56	51.20	57.30	53.74	67.66	71.14	71.12	58.72	60.08	65.53
28	71.24	69.83	65.40	49.66	56.52	55.44	67.33	71.21	70.99	57.44	60.13	60.18
29	71.22	69.45	65.17	50.04	---	57.16	67.03	71.18	70.85	56.60	60.14	59.73
30	71.21	69.00	65.02	49.80	---	57.27	66.72	71.18	70.72	56.66	59.56	58.88
31	71.20	---	64.89	49.01	---	57.04	---	71.24	---	55.93	57.82	---
TOTAL	2209.24	2125.49	2045.76	1786.48	1541.98	1630.33	2045.76	2191.87	2124.25	2115.16	1817.56	1773.12
MEAN	71.27	70.85	65.99	57.63	55.07	52.59	68.19	70.71	70.81	68.23	58.63	59.10
MAX	71.83	71.19	68.56	64.79	63.61	57.27	71.18	71.67	71.27	71.71	63.25	65.53
MIN	71.11	69.00	62.81	49.01	48.58	50.84	56.49	66.54	69.79	55.93	55.54	54.41
WTR YR 1981 TOTAL 23407.00 MEAN 64.13 MAX 71.83 MIN 48.58												

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58.13	59.67	60.56	60.69	60.28	59.96	71.29	61.44	53.91	62.52	63.17	66.32
2	57.15	58.96	60.58	60.74	60.36	59.85	71.29	57.06	53.88	62.99	66.42	66.42
3	56.30	58.42	60.65	60.67	60.25	60.53	71.20	55.16	53.88	63.76	62.08	66.37
4	56.06	57.66	60.64	60.56	60.22	61.57	71.48	61.88	53.87	64.66	64.10	66.19
5	70.91	57.81	60.66	60.51	60.29	62.46	71.32	65.03	53.87	65.50	64.03	65.94
6	61.77	57.20	60.63	60.51	60.20	63.27	71.25	71.24	53.88	66.19	63.44	71.65
7	59.85	57.36	60.58	60.50	60.16	64.02	71.42	70.87	53.88	67.04	62.74	71.75
8	59.33	62.18	60.55	60.55	A	64.71	71.29	69.56	53.90	67.70	63.00	71.53
9	58.82	64.94	60.59	60.54	A	65.41	71.27	68.08	53.85	68.55	62.77	71.49
10	58.77	60.54	60.70	60.58	60.00	66.03	71.27	65.13	53.87	69.10	65.86	71.39
11	59.42	59.79	61.44	60.57	60.11	66.64	71.24	65.70	53.76	69.62	66.64	71.26
12	59.98	59.98	60.73	60.53	60.12	67.24	71.24	65.09	53.67	70.69	66.73	75.02
13	59.77	60.45	61.08	60.68	60.11	70.39	71.26	66.43	53.54	71.08	66.51	71.76
14	59.57	60.45	62.12	60.68	60.11	71.05	71.28	67.73	53.47	71.08	66.08	71.65
15	58.24	60.25	60.97	60.70	60.10	71.41	71.76	65.53	53.54	71.69	65.98	71.55
16	58.00	60.45	60.79	60.67	60.06	71.31	71.42	62.46	53.54	71.34	65.63	71.51
17	67.84	60.44	60.61	60.74	60.06	71.23	71.11	59.36	53.50	71.52	65.61	71.47
18	61.17	60.40	60.83	60.71	60.05	71.23	71.14	54.30	53.49	71.35	65.34	71.57
19	60.03	60.72	60.69	60.76	60.03	71.24	71.10	54.22	53.58	70.68	64.86	71.46
20	59.85	60.49	60.60	60.76	60.03	71.24	71.03	54.51	53.58	69.85	64.34	71.39
21	59.98	60.40	60.78	60.80	60.01	71.24	71.01	54.20	53.40	68.98	64.20	71.35
22	60.72	60.33	60.68	60.75	60.01	71.22	70.99	54.19	52.85	69.33	63.93	71.34
23	60.79	60.41	60.64	60.75	60.10	71.21	71.03	54.23	52.75	69.09	63.74	71.32
24	61.58	60.51	60.62	60.71	60.00	71.21	70.98	54.21	54.00	68.36	63.63	71.30
25	63.13	60.79	60.66	60.74	59.98	71.22	70.95	54.19	56.73	68.00	63.56	71.28
26	63.58	60.82	60.64	60.75	59.95	71.23	70.92	54.12	58.30	67.96	64.89	71.27
27	61.89	60.48	60.67	63.40	59.97	71.23	70.89	54.04	59.39	67.22	65.47	71.25
28	60.35	60.38	60.62	60.50	59.97	71.23	69.88	54.37	60.29	66.23	65.74	71.26
29	60.30	60.32	60.62	60.36	---	71.21	67.59	54.18	61.10	65.23	65.62	71.22
30	60.03	60.53	60.71	60.30	---	71.28	64.66	53.99	61.85	64.32	65.81	71.19
31	59.98	---	60.70	60.29	---	71.28	---	53.96	---	63.31	65.78	---
TOTAL	1873.19	1803.13	1883.34	1882.00	---	2114.35	2124.56	1856.46	1645.12	2105.08	2004.27	2120.47
MEAN	60.43	60.10	60.75	60.71	---	68.20	70.82	59.89	54.84	67.91	64.65	70.68
MAX	70.91	64.94	62.12	63.40	---	71.41	71.76	71.24	61.85	71.69	66.73	75.02
MIN	56.06	57.20	60.55	60.29	---	59.85	64.66	53.96	52.75	62.52	62.08	65.94
CAL YR 1981 TOTAL 22586.17 MEAN 61.88 MAX 71.71 MIN 48.58												

A No gage-height record.

50141500 LAGO GUAYO NR 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 1400.00 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 m). 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 WATER YEARS 1981-82.--Water Year 1981: Maximum elevation, 60.89 ft (18.559 m) Sept. 9; minimum, 35.13 ft (10.708 m) Jan. 20.

Water Year 1982: Maximum elevation, 60.97 ft (18.584 m) Oct. 6; minimum, 35.64 ft (10.863 m) June 30.

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 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							---	55.11	59.88	50.40	51.54	39.54
2							---	55.56	59.08	50.74	51.11	39.69
3							---	55.86	58.81	51.07	50.98	40.33
4							---	56.20	57.74	51.40	49.75	42.78
5							---	56.04	57.17	51.73	49.32	43.84
6							---	56.29	55.86	52.04	49.55	44.44
7							---	56.52	56.20	52.45	49.80	44.40
8							---	56.37	56.62	52.78	50.00	44.58
9							---	56.67	56.11	52.96	50.31	44.98
10							---	56.88	55.41	53.25	50.14	45.41
11							---	57.08	55.36	53.54	48.93	45.45
12							---	57.28	55.02	53.51	47.57	45.84
13							---	57.50	54.30	53.77	47.70	46.33
14							---	57.40	54.68	54.03	47.12	46.65
15							---	56.59	54.31	54.28	46.21	46.93
16							---	56.83	52.48	54.52	46.32	47.34
17							---	57.08	51.32	54.04	46.43	47.94
18							---	57.32	51.71	53.46	45.59	48.44
19							---	58.18	51.69	53.63	44.42	48.86
20							---	58.59	52.07	53.68	43.71	49.46
21							---	58.63	52.48	53.79	42.76	50.05
22							---	58.55	52.29	54.04	41.93	50.49
23							50.32	58.74	51.84	54.27	41.93	50.96
24							50.69	60.06	50.72	53.80	41.73	51.53
25							52.07	60.17	49.78	53.91	39.84	52.47
26							53.67	59.65	49.97	53.14	38.19	52.88
27							54.82	61.95	48.96	52.69	38.50	55.82
28							54.30	60.96	49.34	52.09	39.24	58.09
29							54.99	59.90	49.61	51.28	39.85	59.43
30							55.60	59.34	50.06	51.51	40.15	58.85
31							---	59.44	---	51.46	39.26	---
TOTAL							---	1792.74	1610.87	1639.26	1409.88	1443.80
MEAN							---	57.83	53.70	52.88	45.48	48.13
MAX							---	61.95	59.88	54.52	51.54	59.43
MIN							---	55.11	48.96	50.40	38.19	39.54

RIO GRANDE DE AÑASCO BASIN

50141500 LAGO GUAYO NR CASTAÑER, PR--Continued

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57.06	60.13	51.00	55.85	38.00	43.86	47.69	53.99	60.12	60.10	55.80	55.63
2	56.26	59.89	50.85	55.43	38.17	44.05	47.81	54.14	60.11	60.11	56.09	54.59
3	54.83	59.57	50.69	54.45	38.33	44.23	48.54	54.45	60.11	60.09	56.51	54.95
4	55.18	59.66	50.52	53.95	38.48	44.39	48.74	54.74	60.10	59.98	55.80	54.41
5	56.37	59.48	50.37	53.70	38.63	44.53	49.03	55.35	60.09	59.95	56.11	54.68
6	55.91	59.15	50.36	54.01	38.78	44.66	49.25	55.70	60.08	59.41	56.86	55.23
7	55.73	58.87	50.37	53.32	38.93	44.81	49.54	55.91	60.06	57.84	56.84	56.33
8	54.85	58.55	50.27	53.55	39.09	44.93	49.77	56.12	60.06	56.40	55.55	57.51
9	53.62	58.33	50.23	52.22	39.21	45.05	50.04	56.30	60.05	55.13	55.63	60.48
10	52.01	58.00	50.19	51.25	39.36	45.15	50.28	56.47	60.06	54.05	56.27	59.44
11	50.70	57.68	50.16	50.89	39.51	45.26	50.48	56.72	60.05	54.70	56.78	58.98
12	50.73	57.65	50.17	49.54	39.65	45.38	50.65	56.89	60.06	55.28	57.16	58.19
13	50.37	57.64	50.51	48.25	39.79	45.49	50.84	57.06	60.06	55.64	57.67	58.42
14	50.90	57.98	50.87	46.90	40.04	45.60	51.01	57.21	60.06	55.97	58.88	58.83
15	50.29	58.25	51.19	45.47	40.42	45.71	51.20	57.35	60.07	56.27	59.90	58.87
16	51.62	58.60	51.48	43.94	40.80	45.84	51.40	57.50	60.07	56.54	60.14	60.13
17	52.24	58.40	51.81	43.41	41.08	45.94	51.60	57.67	60.07	56.87	60.19	59.54
18	52.87	58.68	52.12	40.43	41.32	46.04	51.77	57.88	60.07	57.28	60.20	59.94
19	53.44	58.94	52.44	37.72	41.57	46.16	51.94	58.38	60.07	58.97	60.19	60.03
20	53.97	58.73	52.76	35.15	41.82	46.25	52.10	58.57	60.08	59.82	60.17	60.23
21	55.07	58.43	53.07	35.56	42.17	46.34	52.28	58.82	60.15	60.14	60.16	59.64
22	57.77	58.30	53.38	35.89	42.43	46.44	52.50	59.03	60.20	60.26	60.16	59.47
23	58.96	58.47	53.67	36.17	42.65	46.54	52.68	59.54	60.12	60.13	60.14	59.80
24	59.42	58.13	54.33	36.38	42.87	46.63	52.85	59.74	60.10	60.13	60.14	59.20
25	60.12	57.10	54.75	36.55	43.09	46.75	53.02	59.92	60.11	59.93	60.14	59.71
26	60.20	55.97	55.12	36.73	43.30	46.86	53.21	60.06	60.10	59.15	60.13	60.07
27	60.16	54.73	55.50	36.90	43.50	46.97	53.34	60.09	60.10	58.09	60.10	60.40
28	60.20	53.62	55.81	37.10	43.68	47.15	53.49	60.10	60.11	57.35	60.15	60.07
29	60.21	52.65	56.08	37.34	---	47.35	53.64	60.09	60.10	56.61	60.14	59.83
30	60.20	51.41	56.37	37.60	---	47.46	53.78	60.08	60.10	56.50	59.42	59.08
31	60.20	---	56.58	37.78	---	47.58	---	60.10	---	55.98	57.64	---
TOTAL	1721.76	1732.99	1623.02	1383.43	1136.67	1419.40	1534.47	1786.27	1802.69	1794.67	1811.06	1753.68
MEAN	55.54	57.77	52.36	44.63	40.60	45.79	51.15	57.62	60.09	57.89	58.42	58.46
MAX	60.21	60.13	56.58	55.85	43.68	47.58	53.78	60.10	60.20	60.26	60.20	60.48
MIN	50.29	51.41	50.16	35.15	38.00	43.86	47.69	53.99	60.05	54.05	55.55	54.41
WTR YR 1981	TOTAL	19500.11	MEAN	53.42	MAX	60.48	MIN	35.15				

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58.31	59.28	60.26	60.27	60.17	60.12	60.07	46.35	40.91	35.74	39.45	50.08
2	57.45	58.73	60.25	60.25	60.19	60.12	60.08	46.88	39.43	35.81	39.85	50.33
3	56.61	57.92	60.26	60.27	60.17	60.09	60.07	47.15	38.05	35.97	40.21	50.38
4	56.31	57.25	60.25	60.25	60.16	60.07	60.15	48.08	37.20	36.10	41.24	50.84
5	60.57	56.98	60.25	60.23	60.19	60.06	60.13	48.52	37.40	36.25	41.72	51.07
6	60.30	56.99	60.24	60.23	60.17	60.06	60.10	49.55	37.47	36.05	41.55	51.95
7	59.90	57.11	60.25	60.23	60.17	60.05	60.10	49.36	37.75	36.23	41.91	52.30
8	59.46	57.42	60.25	60.23	60.16	60.05	59.89	49.81	37.98	36.37	42.52	52.44
9	58.93	59.67	60.25	60.22	60.14	60.05	59.67	49.86	38.21	36.68	42.95	51.67
10	58.81	59.80	60.53	60.22	60.15	60.04	59.50	50.09	38.48	36.88	43.48	51.44
11	59.53	59.37	60.48	60.23	60.14	60.04	59.34	50.41	38.66	36.93	44.05	50.79
12	60.01	59.88	60.34	60.23	60.14	60.04	58.44	50.85	38.88	36.90	44.39	51.89
13	59.92	60.22	60.44	60.23	60.13	60.35	58.40	50.97	39.10	37.06	44.73	57.96
14	59.59	60.25	60.55	60.21	60.14	60.12	57.63	50.99	39.33	36.93	45.04	58.60
15	58.31	60.25	60.37	60.21	60.13	60.10	56.83	51.31	38.76	36.91	45.38	58.99
16	57.66	60.26	60.32	60.22	60.13	60.07	57.44	51.44	38.40	37.08	45.66	59.29
17	60.11	60.25	60.30	60.22	60.13	60.06	57.64	51.28	38.07	37.41	45.89	59.59
18	60.45	60.26	60.31	60.22	60.13	60.07	58.17	50.51	37.90	38.00	45.96	59.92
19	59.60	60.35	60.27	60.22	60.13	60.07	59.65	49.69	38.10	37.82	46.23	60.28
20	59.53	60.26	60.26	60.21	60.13	60.08	59.67	48.56	38.34	37.88	46.02	60.24
21	59.77	60.22	60.34	60.21	60.14	60.07	58.50	47.37	38.44	38.40	46.35	60.25
22	60.27	60.20	60.28	60.21	60.13	60.07	57.75	46.17	38.06	39.13	46.60	60.27
23	60.18	60.20	60.26	60.21	60.15	60.06	55.55	44.72	38.39	39.09	46.81	60.18
24	60.10	60.20	60.25	60.20	60.12	60.05	53.23	44.03	37.99	39.55	47.07	60.18
25	60.46	60.39	60.26	60.20	60.12	60.06	51.30	44.23	38.09	40.06	47.31	59.77
26	60.50	60.32	60.26	60.19	60.11	60.06	49.70	44.11	37.92	39.78	48.18	58.46
27	60.18	60.26	60.26	60.42	60.12	60.05	48.24	42.84	37.72	39.86	48.70	57.76
28	60.00	60.21	60.25	60.28	60.12	60.05	46.91	42.28	37.43	39.86	49.00	58.18
29	60.11	60.20	60.26	60.20	---	60.06	45.93	42.21	36.10	39.50	49.26	58.17
30	59.87	60.25	60.38	60.18	---	60.08	45.86	42.40	35.65	39.07	49.54	58.43
31	59.67	---	60.28	60.18	---	60.07	---	42.28	---	39.42	49.82	---
TOTAL	1842.47	1794.95	1869.51	1867.08	1684.01	1862.39	1695.94	1474.30	1144.21	1168.72	1396.87	1681.90
MEAN	59.43	59.50	60.31	60.23	60.14	60.08	56.53	47.56	38.14	37.70	45.06	56.06
MAX	60.57	60.39	60.55	60.42	60.19	60.35	60.15	51.44	40.91	40.06	49.82	60.28
MIN	56.31	56.98	60.24	60.18	60.11	60.04	45.86	42.21	35.65	35.74	39.45	50.08
CAL YR 1981	TOTAL	19919.27	MEAN	54.57	MAX	60.57	MIN	35.15				
WTR YR 1982	TOTAL	19472.35	MEAN	53.35	MAX	60.57	MIN	35.65				

50142500 LAGO PRIETO NR 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/s) 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 WATER YEARS 1981-82.--WATER YEAR 1981: Maximum elevation, 83.45 ft (25.436 m) Oct. 14; minimum, less than 55.05 ft (16.779 m) most days.

WATER YEAR 1982: Maximum elevation, 87.49 ft (26.667 m) Sept. 13; minimum, less than

55.05 ft (16.779 m) many 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 1979 TO SEPTEMBER 1980
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1								66.79	63.93	63.61	62.58	64.24
2								66.60	64.22	63.60	62.43	69.80
3								66.24	64.77	63.89	62.42	69.23
4								65.59	65.02	63.82	62.42	70.09
5								65.26	63.84	63.91	62.45	68.50
6								64.99	63.75	63.96	62.55	
7								65.04	64.23	64.56	62.54	
8								64.93	63.29	63.87	62.54	
9								61.89	63.22	64.58	62.53	
10								61.87	63.36	64.10	62.53	
11								61.98	63.50	63.97	62.63	
12								61.98	62.47	62.10	62.62	
13								62.45	62.50	62.42	62.61	
14								60.81	62.65	62.38	62.64	
15								59.71	62.90	62.29	62.64	
16								59.38	62.92	62.35	64.33	
17								60.51	62.91	61.99	66.27	
18								61.11	62.92	61.95	64.12	
19								62.84	62.89	64.05	63.55	
20								66.08	62.93	63.07	63.32	
21								62.25	62.96	62.80	63.19	
22								60.59	62.94	62.86	63.14	
23								63.34	63.11	61.83	63.14	
24								70.33	63.26	61.79	63.13	
25								64.91	63.89	61.66	63.13	70.80
26								61.66	63.42	61.74	63.12	70.03
27								83.25	63.42	61.74	63.12	77.20
28								72.20	63.47	61.73	67.07	78.13
29								69.72	63.51	61.75	65.64	76.02
30								68.21	63.68	61.83	65.05	72.97
31								67.35	--	63.58	64.43	--
TOTAL								2009.86	1901.88	1949.78	1963.88	--
MEAN								64.83	63.40	62.90	63.35	--
MAX								83.25	65.02	64.58	67.07	--
MIN								59.38	62.47	61.66	62.42	--

A No gage-height record.

RIO GRANDE DE AÑASCO BASIN

50142500 LAGO PRIETO NR CASTAÑER, PR--Continued

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71.65	60.34	B	B	B	B	B	B	B	B	55.99	A
2	71.94	60.08									56.30	
3	71.76	59.76									56.48	
4	71.09	59.87									55.96	
5	74.08	59.68									56.19	
6	75.75	59.37									56.71	
7	74.01	59.06									56.58	A
8	73.46	58.80									55.49	74.48
9	73.32	58.68										56.82
10	72.53	58.35								B		59.40
11	72.04	57.97								57.73		55.33
12	71.58	57.91								55.65		55.05
13	72.09	58.07								55.71		58.14
14	78.78	58.44								56.14		59.45
15	74.76	58.49								56.39		59.00
16	62.02	58.84								56.51		59.99
17	58.93	58.73								56.80		60.00
18	58.71	58.93								57.23		60.13
19	58.66	59.14								59.31		60.13
20	58.57	58.95								59.63		60.29
21	59.58	58.69								60.02		60.25
22	68.30	58.64								60.59		60.25
23	64.36	58.73								59.95		60.25
24	61.09	B								59.82		60.15
25	60.94									58.86		65.39
26	60.91									57.35		59.08
27	60.51									57.29		60.93
28	60.58				B					57.44		61.03
29	60.60						B			56.78		58.09
30	60.44	B		B						56.52		57.12
31	60.56	---	B	B		B		B		56.11	A	---
TOTAL	2074.40	---								---	---	---
MEAN	66.92	---								---	---	---
MAX	78.78	---								---	---	---
MIN	58.57	---								---	---	---

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56.77	58.07	60.18	60.12	59.99	60.08	60.08	B	B	B	B	B
2	55.46	57.46	60.15	60.07	60.01	60.10	60.09					
3	55.05	55.83	60.08	60.14	59.97	60.11	60.10					
4	55.05	55.96	60.03	60.09	59.97	60.03	60.12					
5	78.27	55.74	60.07	60.02	59.97	60.04	60.11					
6	59.27	57.29	60.01	60.04	A	60.02	60.11					
7	58.70	55.42	60.05	60.01		60.04	60.13					
8	58.32	56.45	60.12	60.00		60.07	59.71					
9	57.80	58.29	60.15	59.99		60.06	59.56					
10	59.01	57.99	62.93	60.06		60.03	59.58					
11	59.37	59.43	60.33	60.13		60.02	59.44					B
12	59.90	59.82	60.20	60.10		60.02	58.44					60.50
13	59.90	60.26	60.48	60.06		60.33	58.36					60.46
14	55.85	60.33	60.65	60.03		60.18	57.50					58.87
15	58.36	60.33	60.28	60.01		60.11	56.94					59.16
16	57.72	60.40	60.25	60.03		59.98	57.50					59.41
17	63.69	60.40	60.20	60.08		59.96	57.52					59.62
18	60.56	60.48	60.12	60.06		60.01	58.15					59.88
19	59.61	60.53	60.09	60.02		60.03	60.26					60.31
20	59.45	60.42	60.11	60.01		60.08	59.55					60.30
21	59.78	60.34	60.22	59.98		60.06						60.31
22	60.07	60.32	60.11	59.99	A	60.06	58.45					60.30
23	60.15	60.36	60.13	59.99	60.06	60.04	B					60.30
24	59.34	60.42	60.12	59.95	60.03	60.02						60.32
25	59.96	60.81	60.09	59.99	60.02	60.05						55.05
26	60.30	60.62	60.15	59.93	59.98	60.10						58.63
27	58.65	60.36	60.07	60.01	60.03	60.04						57.96
28	59.10	60.30	60.12	60.01	60.08	56.31						58.56
29	59.34	60.35	60.10	59.92	---	58.49						58.36
30	58.70	60.15	60.32	59.99	---	60.07	B		B			58.57
31	58.41	---	---	59.91	---	60.05	---	B		B	B	---
TOTAL	1841.91	1774.93	---	1860.72	---	1856.59	---					---
MEAN	59.42	59.16	---	60.02	---	59.89	---					---
MAX	78.27	60.81	---	60.14	---	60.33	---					---
MIN	55.05	55.42	---	59.91	---	56.31	---					---

A No gage-height record.

B Stage below elevation 55.05 ft.

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.

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 , 1980												
13...	1435	46	280	8.5	29.0	--	9.6	--	--	250	80	110
JAN , 1981												
20...	1355	26	265	8.5	26.0	1.5	10.2	--	<10	K140	K32	--
MAR												
05...	1000	22	304	8.1	25.0	.80	11.4	--	<10	82	56	140
MAY												
20...	1105	53	240	7.7	25.0	31	8.0	97	10	K880	K1700	--
AUG												
04...	1335	22	285	7.6	31.0	2.1	12.6	175	22	K18	<10	120
SEP												
16...	1055	34	294	8.4	27.0	1.2	9.3	119	<10	1500	110	100
NOV												
24...	1300	104	253	8.2	25.0	3.4	8.3	104	<10	K630	230	--
FEB , 1982												
04...	0830	64	253	7.9	21.0	5.5	8.6	98	<10	550	590	100
MAR												
30...	1140	53	292	8.8	26.0	1.0	9.4	119	<10	K23	K35	--
MAY												
12...	0930	144	197	8.0	22.0	140	7.2	84	--	4500	54000	76
JUL												
28...	1515	30	280	8.3	31.0	--	8.1	112	54	--	--	--
SEP												
28...	0845	42	289	8.0	24.0	<1.0	8.4	104	44	2000	280	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- 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 , 1980											
13...	1	31	9.0	12	.5	1.4	109	19	9.9	.1	32
JAN , 1981											
20...	--	--	--	--	--	--	115	--	--	--	--
MAR											
05...	18	38	10	13	.5	1.3	122	16	10	.1	28
MAY											
20...	--	--	--	--	--	--	86	--	--	--	--
AUG											
04...	8	31	9.7	15	.6	1.9	112	22	9.7	.1	30
SEP											
16...	0	32	5.5	12	.5	1.8	113	22	9.7	<.1	25
NOV											
24...	--	--	--	--	--	--	98	--	--	--	--
FEB , 1982											
04...	2	28	8.2	9.7	.4	2.1	98	15	8.9	.1	22
MAR											
30...	--	--	--	--	--	--	120	--	--	--	--
MAY											
12...	1	21	5.8	7.5	.4	1.7	75	10	7.2	.1	18
JUL											
28...	--	--	--	--	--	--	110	--	--	--	--
SEP											
28...	16	32	8.7	11	.5	2.1	100	18	10	<.1	27

K = non-ideal count.

50143000 RIO GRANDE DE AÑASCO NEAR LARES, PR--Continued

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

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 , 1980											
13...	180	22.4	--	1.1	.000	1.1	.000	.11	.11	1.2	5.4
JAN , 1981											
20...	--	--	5	.70	<.010	.72	<.010	.21	.22	.94	4.2
MAR											
05...	190	11.3	8	.46	<.010	.47	.020	.11	.13	.60	2.7
MAY											
20...	--	--	48	.88	.020	.90	.060	.19	.25	1.2	5.1
AUG											
04...	186	11.0	14	--	--	--	--	--	--	--	--
SEP											
16...	174	16.0	8	--	<.010	.87	.010	.25	.26	1.1	5.0
NOV											
24...	--	--	5	--	<.010	.72	.030	.44	.47	1.2	5.3
FEB , 1982											
04...	154	26.5	15	.81	.020	.83	.020	.24	.26	1.1	4.8
MAR											
30...	--	--	6	--	<.010	.16	.040	.49	.53	.69	3.1
MAY											
12...	117	45.5	380	.78	.080	.86	.220	.29	.51	1.4	6.1
JUL											
28...	--	--	6	.77	.010	.78	.040	.36	.40	1.2	5.2
SEP											
28...	172	19.5	2	.59	.010	.60	.040	.56	.60	1.2	5.3

DATE	PHOS- PHORUS, TOTAL (UG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECCV- 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 RECCV- ERABLE (UG/L AS AG)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
NOV , 1980											
13...	.030	--	--	--	--	--	--	--	--	7	.87
JAN , 1981											
20...	.040	--	--	--	--	--	--	--	--	1	.07
MAR											
05...	.020	<1	100	<1	2	7	<.1	<1	<1	2	.12
MAY											
20...	.070	--	--	--	--	--	--	--	--	68	9.7
AUG											
04...	--	--	--	--	--	--	--	--	--	4	.24
SEP											
16...	.030	--	100	1	20	4	<.1	<1	<1	2	.18
NOV											
24...	.060	--	--	--	--	--	--	--	--	6	1.7
FEB , 1982											
04...	.050	1	100	<1	12	3	.2	<1	2	10	1.7
MAR											
30...	.020	--	--	--	--	--	--	--	--	--	--
MAY											
12...	.150	--	--	--	--	--	--	--	--	410	159
JUL											
28...	.040	--	--	--	--	--	--	--	--	--	--
SEP											
28...	.030	1	100	1	<1	3	.1	<1	<1	--	--

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 DISCHARGES.--18 years (1964-81), 305 cu ft/s (8.638 cu m/s), 43.92 in/yr (1,116 mm/yr), 221,000 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).
--19 years (1964-82), 309 cu ft/s (8.751 cu m/s), 44.50 in/yr (1,130 mm/yr), 223,900 acre-ft/yr (276 cu hm/yr); median of yearly mean discharges 302 cu ft/s (8.55 cu m/s), 219,000 acre-ft/yr (270 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 WATER YEARS 1981-82.--Peak discharges above base of 6,000 cu ft/s (170 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. 16, 1980	1915	6,660	189	Oct. 29, 1981	1600	9,420	267
Oct. 22, 1980	2100	6,970	197	Nov. 5, 1981	2000	7,100	201
July 8, 1981	1700	6,010	170	Nov. 9, 1981	1200	6,380	181
July 11, 1981	2000	6,140	174	May 14, 1982	1945	6,120	173
July 14, 1981	1530	*7,830	222	Aug. 5, 1982	1830	9,360	265
Aug. 16, 1981	1800	7,760	220	Aug. 8, 1982	1930	10,800	306
Sept. 30, 1981	1730	7,800	221	Aug. 10, 1982	1830	8,190	232
Oct. 22, 1981	1715	6,810	193	Sept. 13, 1982	0515	*29,700	841
Oct. 25, 1981	1800	16,500	467	Sept. 21, 1982	1815	7,440	211
Oct. 27, 1981	1600	8,480	240				

Minimum discharges, 75 cu ft/s (2.124 cu m/s) Apr. 20-22, 1981; 73 cu ft/s (2.067 cu m/s) May 4, 1982.

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	969	383	220	100	123	105	87	90	400	223	174	580
2	839	612	200	500	134	104	83	306	300	181	157	600
3	925	413	180	300	112	104	704	176	223	205	143	359
4	721	320	180	200	104	101	406	278	197	394	139	257
5	714	285	180	180	101	101	211	143	179	197	145	173
6	1290	324	500	160	99	100	133	681	166	159	628	358
7	1090	328	400	150	97	97	114	208	152	451	258	681
8	630	257	300	200	97	95	138	147	139	1370	174	390
9	493	242	250	200	180	94	127	129	130	701	387	898
10	426	235	200	180	151	93	122	140	123	549	272	606
11	385	231	180	160	100	89	118	246	180	1060	203	250
12	354	219	160	140	95	89	99	263	162	802	218	231
13	349	215	150	130	93	87	89	139	179	729	179	216
14	399	209	140	130	114	89	84	111	132	980	1240	290
15	719	223	136	127	853	89	82	139	123	300	1060	221
16	1630	282	136	128	432	106	79	127	117	506	1260	377
17	925	209	134	213	275	95	81	121	128	361	607	433
18	593	323	154	137	157	88	83	244	117	209	376	277
19	420	359	160	144	131	87	81	399	134	424	368	269
20	370	239	150	127	122	81	77	165	144	1640	276	276
21	630	201	140	118	125	79	75	133	419	665	427	270
22	1710	194	130	114	149	81	78	166	399	320	275	216
23	1570	191	120	111	125	83	114	672	423	327	257	373
24	1090	182	150	117	115	79	93	296	543	289	229	975
25	703	248	120	117	110	199	105	432	712	397	209	574
26	489	267	110	112	108	138	97	262	299	271	195	518
27	507	299	100	110	106	124	102	203	503	458	187	567
28	501	297	100	108	106	154	104	180	661	211	196	838
29	429	264	100	117	---	222	126	160	421	161	219	1290
30	422	240	100	134	---	134	87	150	439	196	192	1520
31	400	---	100	119	---	98	---	500	---	260	224	---
TOTAL	22692	8291	5380	4883	4514	3285	3979	7406	8244	14996	10874	14883
MEAN	732	276	174	158	161	106	133	239	275	484	351	496
MAX	1710	612	500	500	853	222	704	681	712	1640	1260	1520
MIN	349	182	100	100	93	79	75	90	117	159	139	173
CFSM	7.76	2.93	1.85	1.68	1.71	1.12	1.41	2.53	2.92	5.13	3.72	5.26
IN.	8.95	3.27	2.12	1.93	1.78	1.30	1.57	2.92	3.25	5.92	4.29	5.87
AC-FT	45010	16450	10670	9690	8950	6520	7890	14690	16350	29740	21570	29520

CAL YR 1980 TOTAL 132503 MEAN 362 MAX 6910 MIN 61 CFSM 3.84 IN 52.27 AC-FT 262800
WTR YR 1981 TOTAL 109427 MEAN 300 MAX 1710 MIN 75 CFSM 3.18 IN 43.17 AC-FT 217000

RIO GRANDE DE AÑASCO BASIN

50144000 RIO GRANDE DE AÑASCO NEAR SAN SEBASTIAN, PR--Continued

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	631	640	320	320	160	128	97	85	144	89	230	468
2	382	779	296	256	160	121	90	83	140	83	272	250
3	286	721	282	232	234	119	89	81	277	79	158	211
4	372	676	283	248	164	114	87	221	390	146	703	288
5	954	1220	272	223	194	110	179	507	226	265	1430	227
6	1200	856	262	214	187	104	140	992	158	270	352	248
7	462	542	257	212	160	102	154	462	140	125	642	284
8	283	1720	253	208	152	102	183	220	125	86	1560	255
9	274	3020	247	204	151	99	166	259	128	118	932	237
10	383	988	245	201	146	97	161	250	116	116	1530	181
11	566	686	788	197	143	95	147	219	118	93	863	187
12	822	631	459	195	143	95	89	243	107	468	451	178
13	478	567	568	191	140	188	82	376	103	201	966	6630
14	276	587	1490	190	139	290	88	1370	102	391	753	661
15	245	648	650	189	138	157	149	689	98	219	422	443
16	405	538	434	187	136	150	392	360	97	353	343	350
17	651	748	457	185	136	125	587	291	96	230	326	293
18	1110	590	337	182	138	112	192	334	93	1150	305	525
19	577	1130	334	180	134	104	246	213	91	893	268	460
20	900	606	293	178	132	104	389	490	91	1270	223	733
21	479	480	409	176	129	103	158	499	91	406	210	1190
22	1370	434	398	173	128	101	132	278	92	230	224	536
23	1220	467	317	169	139	97	123	217	116	209	248	434
24	1710	399	286	170	135	97	130	389	173	170	316	363
25	3110	394	261	160	125	97	118	251	105	461	474	309
26	1670	588	258	160	121	96	106	167	93	801	276	278
27	1850	648	256	200	120	92	112	149	88	331	338	242
28	920	399	258	180	121	90	104	197	88	210	604	242
29	1700	343	251	170	---	87	91	158	128	179	271	306
30	1200	328	406	160	---	98	95	140	102	163	228	318
31	797	---	371	160	---	130	---	156	---	149	230	---
TOTAL	27263	22373	11998	6070	4105	3604	4876	10346	3916	9954	16148	17327
MEAN	860	746	387	196	147	116	163	334	131	321	521	578
MAX	3110	3020	1490	320	234	290	587	1370	390	1270	1560	6630
MIN	245	328	245	160	120	87	82	81	88	79	158	178
CFSM	9.33	7.91	4.10	2.08	1.56	1.23	1.73	3.54	1.39	3.40	5.53	6.13
IN.	10.76	8.83	4.73	2.39	1.62	1.42	1.92	4.08	1.54	3.93	6.37	6.84
AC-FT	54120	44380	23800	12040	8140	7150	9670	20520	7770	19740	32030	34370
CAL YR 1981	TOTAL	134719	MEAN	369	MAX	3110	MIN	75	CFSM	3.91	IN	53.14
WTR YR 1982	TOTAL	138000	MEAN	378	MAX	6630	MIN	79	CFSM	4.01	IN	54.44
									AC-FT	267200		273700

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 CaCO3)
OCT , 1981											
01...	1245	961	180	7.6	25.0	18	8.6	--	2000	K1400	89
NOV											
14...	1040	211	230	8.1	25.0	.24	9.4	--	230	K30	92
DEC											
16...	1145	136	226	8.3	25.0	1.9	9.4	--	420	K170	94
JAN , 1981											
15...	1030	127	227	7.9	23.5	3.4	8.7	--	K680	110	94
FEB											
12...	1050	95	226	7.6	24.0	.80	8.8	--	K7500	K190	98
MAR											
12...	0840	85	242	7.6	19.0	.70	9.1	--	K110	78	100
APR											
14...	0920	83	247	7.7	23.5	1.4	8.5	--	K170	K24	110
MAY											
15...	1400	96	247	7.8	30.0	11	8.2	109	200	K100	100
JUN											
19...	1040	145	228	8.1	25.5	5.9	8.8	107	230	50	97
JUL											
14...	1345	289	182	7.5	25.0	64	8.5	110	K11000	4700	74
AUG											
05...	1300	142	246	8.2	28.5	2.7	8.2	106	K55	K100	92
SEP											
03...	1215	265	175	7.7	26.0	120	8.7	106	27000	780	66
OCT											
14...	1200	277	289	7.7	24.0	19	8.6	103	1400	290	91
DEC											
03...	0930	278	213	7.7	25.0	2.0	8.3	100	320	560	99
FEB , 1982											
02...	1200	154	214	8.1	23.5	4.5	9.0	107	190	K40	100
APR											
01...	1145	97	246	8.8	25.0	2.4	8.7	106	K120	K140	110
JUN											
09...	0930	130	247	8.2	25.5	12	8.0	98	K1900	K170	100
AUG											
05...	1350	465	178	7.7	26.0	100	9.2	114	K15000	8000	74
SEP											
13...	1830	2020	133	7.0	24.0	240	9.7	115	3200	28000	54

E Estimated.

K = non-ideal count.

50144000 RIO GRANDE DE AÑASCO NEAR SAN SEBASTIAN, PR--Continued

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

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)	FLUC- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)
OCT , 1980											
01...	18	22	8.2	7.2	.3	1.5	71	8.8	5.2	.1	28
NOV											
14...	0	23	8.5	9.4	.4	1.2	100	7.7	7.2	.1	31
DEC											
16...	0	24	8.3	8.7	.4	1.3	102	9.7	6.9	.1	32
JAN , 1981											
15...	0	24	8.3	9.0	.4	1.3	98	9.5	7.4	.1	30
FEB											
12...	0	25	8.7	9.2	.4	1.4	102	10	7.3	.1	29
MAR											
12...	0	27	9.1	9.7	.4	1.4	103	8.6	7.4	.1	30
APR											
14...	4	27	9.5	11	.5	1.5	106	9.8	7.6	.1	33
MAY											
15...	0	27	8.9	9.8	.4	1.8	102	11	7.3	.1	30
JUN											
19...	0	25	8.3	8.2	.4	1.6	100	9.6	7.4	<.1	28
JUL											
14...	5	19	6.4	6.7	.3	1.9	69	7.9	5.4	<.1	26
AUG											
05...	0	23	8.4	9.2	.4	1.6	100	9.4	6.8	.1	29
SEP											
03...	0	17	5.6	6.4	.3	1.8	74	5.8	9.0	<.1	19
OCT											
14...	1	23	8.0	8.8	.4	1.7	90	6.7	5.9	<.1	27
DEC											
03...	9	25	8.9	9.9	.5	1.4	90	10	7.0	.1	29
FEB , 1982											
02...	0	25	9.1	9.8	.5	1.6	130	9.5	7.5	.1	26
APR											
01...	19	27	9.4	11	.5	1.4	87	14	8.2	<.1	26
JUN											
09...	0	25	9.6	10	.5	1.6	110	10	6.6	<.1	28
AUG											
05...	7	20	5.9	6.6	.4	1.8	67	10	5.6	<.1	23
SEP											
13...	3	14	4.6	4.9	.3	1.5	51	7.0	4.6	<.1	20

50144000 RIO GRANDE DE AÑASCO NEAR SAN SEBASTIAN, PR--Continued

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

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CCNSTI- TUENTS, DIS- SOLVED (MG/L)	SCLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)
OCT , 1980											
01...	122	129	317	1.6	1.3	.020	--	.21	--	.23	--
NOV											
14...	153	152	87.2	.79	.79	.000	.000	.19	.07	.19	.07
DEC											
16...	146	152	53.6	--	--	--	--	--	--	--	--
JAN , 1981											
15...	160	153	54.9	--	1.0	.700	.060	--	.38	--	.44
FEB											
12...	156	152	40.0	--	--	--	--	--	--	--	--
MAR											
12...	158	156	36.3	.25	.25	.030	<.010	--	--	<.10	.03
APR											
14...	166	165	37.2	.41	.41	.020	.020	.33	.21	.35	.23
MAY											
15...	150	160	38.9	.60	.59	.030	.020	.47	.34	.50	.36
JUN											
10...	151	150	59.1	.30	.30	<.010	<.010	--	.25	.31	.26
JUL											
14...	114	119	89.0	1.0	1.0	.030	.010	.38	.32	.41	.33
AUG											
05...	153	149	58.7	.41	.40	<.010	.010	--	.23	.39	.24
SEP											
03...	126	114	90.2	1.3	1.2	.110	.030	.53	.55	.64	.58
OCT											
14...	139	136	104	--	1.1	--	.050	--	--	<.10	--
DEC											
03...	150	151	113	--	.81	--	<.010	--	--	.24	--
FEB , 1982											
02...	156	149	64.9	--	.66	--	.030	--	--	.91	--
APR											
01...	158	155	41.4	--	.45	--	.040	--	--	<.10	--
JUN											
09...	152	154	53.4	--	.47	--	<.010	--	--	.40	--
AUG											
05...	122	112	153	--	1.4	--	.020	--	--	.60	--

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CCNSTI- TUENTS, DIS- SOLVED (MG/L)	SCLIDS, 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,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)
SEP , 1982									
13...	89	97	485	1.5	.070	.80	.150	.030	.020

50144000 RIO GRANDE DE AÑASCO NEAR SAN SEBASTIAN, PR--Continued

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

[illegible][illegible]

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

[illegible]

50144000 RIO GRANDE DE AÑASCO NEAR SAN SEBASTIAN, PR--Continued

PESTICIDE ANALYSIS, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	CHLOR- DANE, TOTAL (UG/L)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDT, TOTAL (UG/L)
OCT , 1981												
14...	1200	--	1	--	<.1	--	<1.0	--	<.1	--	<.1	--
FEB , 1982												
02...	1200	<.10	--	<.01	--	<.10	--	<.01	--	<.01	--	<.01
APR												
01...	1145	<.10	<1	<.01	<.1	<.10	<1.0	<.01	<.1	<.01	<.1	<.01

DATE	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- AZINON, TOTAL (UG/L)	DI- ELDRIN, TOTAL (UG/L)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)
OCT , 1981											
14...	<.1	--	--	<.1	--	--	<.1	--	--	<.1	--
FEB , 1982											
02...	--	<.01	<.01	--	<.01	<.01	--	<.01	<.01	--	<.01
APR											
01...	<.1	.01	<.01	<.1	<.01	<.01	<.1	<.01	<.01	<.1	<.01

DATE	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	MALA- THION, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	MIREX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	PARA- THION, TOTAL (UG/L)
OCT , 1981											
14...	<.1	--	<.1	--	--	<.1	--	--	--	<.1	--
FEB , 1982											
02...	--	<.01	--	<.01	<.01	--	<.01	<.01	<.01	--	<.01
APR											
01...	<.1	<.01	<.1	<.01	<.01	<.1	<.01	<.01	<.01	<.1	<.01

DATE	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	PCN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	PER- THANE TOTAL (UG/L)	PER- THANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TOX- APHENE, TOTAL (UG/L)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	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)
OCT , 1981											
14...	--	<1.0	--	<.10	--	<1.0	--	--	--	--	--
FEB , 1982											
02...	<.10	--	<.10	--	<1	--	<.01	<.01	<.01	<.01	<.01
APR											
01...	<.10	<1.0	<.10	<1.00	<1	<10	<.01	<.01	<.01	<.01	<.01

50144000 RIO GRANDE DE AÑASCO NEAR SAN SEBASTIAN, PR--Continued

PHYTOPLANKTON ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE TIME	OCT 1,80 1245	NOV 14,80 1040	DEC 16,80 1145	JAN 15,81 1030	FEB 12,81 1050	MAR 12,81 0840				
TOTAL CELLS/ML	290	1900	360	160	420	230				
DIVERSITY: DIVISION	0.3	0.1	1.7	0.7	1.1	1.4				
... CLASS	0.3	0.1	1.7	0.7	1.1	1.4				
... ORDER	0.3	1.9	2.6	1.1	2.6	3.0				
... FAMILY	0.3	2.3	3.1	1.1	2.8	3.5				
... GENUS	0.3	2.4	3.1	1.1	2.8	3.5				
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)										
.BACILLARIOPHYCEAE										
...ACHNANTHALES										
...ACHNANTHACEAE	--	-	72	4	--	-	--	-	44#	19
...ACHNANTHES	--	-	--	-	--	-	--	-	--	-
...COCCONEIS	--	-	--	-	--	-	29	7	--	-
...BACILLARIALES										
...NITZSCHIA	--	-	980#	52	27	8	--	-	44	10
...EUPODISCALES										
...COSCINODISCAEAE										
...CYCLOTELLA	--	-	160	9	41	12	--	-	--	-
...MELOSIRA	--	-	--	-	--	-	120#	73	--	-
...FRAGILARIALES										
...FRAGILARIACEAE										
...FRAGILARIA	--	-	72	4	--	-	--	-	--	-
...SYNEURA	--	-	160	9	--	-	--	-	88#	21
...NAVICULALES										
...CYMBELLACEAE										
...AMPHORA	--	-	--	-	--	-	--	-	--	-
...CYMBELLA	--	-	160	9	14	4	--	-	--	-
...GOMPHONEMACEAE										
...GOMPHONEMA	--	-	90	5	14	4	14	9	29	7
...NAVICULACEAE										
...GYROSIGMA	--	-	--	-	--	-	--	-	--	-
...NAVICULA	14	5	140	8	69#	19	--	-	58	14
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
...CHLOROCOCCALES										
...DICTYOSPHAERIACEAE										
...DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE										
...ANKISTRODESMUS	--	-	18	1	14	4	--	-	15	3
...CHODATELLA	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE										
...SCENEDESMUS	--	-	--	-	55#	15	--	-	--	-
...VOLVOCALES										
...CHLAMYDOMONADACEAE										
...CHLAMYDOMONAS	--	-	18	1	--	-	29#	18	--	-
...POLYBLEPHARIDACEAE										
...SPERMATOCOPSI	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA										
.CHRYSOPHYCEAE										
...OCHROMONADALES										
...OCHROMONADACEAE										
...OCHROMONAS	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
...CRYPTOMONADALES										
...CRYPTOMONADACEAE										
...CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
...CHROOCOCCALES										
...CHROOCOCCACEAE										
...ANACYSTIS	--	-	--	-	41	12	--	-	58	14
...OSCILLATORIALES										
...OSCILLATORIACEAE										
...LYNGBYA	--	-	--	-	--	-	--	-	--	-
...OSCILLATORIA	270#	95	--	-	69#	19	--	-	100#	24
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
...EUGLENALES										
...EUGLENACEAE										
...TRACHELOMONAS	--	-	--	-	14	4	--	-	--	-

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

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

RIO GRANDE DE AÑASCO BASIN

50144000 RIO GRANDE DE AÑASCO NEAR SAN SEBASTIAN, PR--Continued

PHYTOPLANKTON ANALYSES, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE TIME	APR 14.81 0920	MAY 15.81 1400	JUN 19.81 1040	JUL 14.81 1345	AUG 5.81 1300	SEP 3.81 1215						
TOTAL CELLS/ML	42	130	150	210	140	1700						
DIVERSITY: DIVISION	0.9	0.8	2.0	1.2	1.4	0.7						
..CLASS	0.9	0.8	2.0	1.2	1.4	0.7						
...ORDER	0.9	1.4	2.2	1.4	2.1	0.9						
...FAMILY	1.6	1.7	2.2	1.6	2.1	1.0						
...GENUS	1.6	2.1	2.2	1.6	2.1	1.6						
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)												
..BACILLARIOPHYCEAE												
...ACHNANTHALES												
...ACHNANTHACEAE												
...ACHNANTHES	--	-	--	-	15	10	--	-	--	-	58	3
...COCCONEIS	--	-	--	-	--	-	--	-	--	-	15	1
..BACILLARIALES												
...NITZSCHIA	--	-	--	-	15	10	14	7	14	10	--	-
...EUPODISCALES												
...COSCINODISCAEAE												
...CYCLOTELLA	--	-	59#	44	--	-	--	-	56#	40	58	3
...MELOSIRA	--	-	15	11	--	-	--	-	--	-	--	-
..FRAGILARIALES												
...FRAGILARIAEAE												
...FRAGILARIA	--	-	--	-	--	-	--	-	--	-	--	-
...SYNEDRA	--	-	--	-	--	-	--	-	--	-	--	-
..NAVICULALES												
...CYMBELLACEAE												
...AMPHORA	--	-	--	-	--	-	--	-	--	-	29	2
...CYMBELLA	--	-	--	-	--	-	--	-	--	-	--	-
...GOMPHONEMACEAE												
...GOMPHONEMA	--	-	15	11	--	-	14	7	14	10	29	2
...NAVICULACEAE												
...GYROSIGMA	--	-	--	-	--	-	--	-	--	-	15	1
...NAVICULA	--	-	15	11	--	-	14	7	--	-	--	-
CHLOROPHYTA (GREEN ALGAE)												
..CHLOROPHYCEAE												
...CHLOROCOCCALES												
...DICTYOSPHAERIACEAE												
...DICTYOSPHAERIUM	14#	33	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
...ANKISTRODESMUS	--	-	--	-	--	-	27	13	--	-	15	1
...CHODATELLA	14#	33	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
...SCENEDESMUS	--	-	--	-	--	-	--	-	--	-	--	-
...VOLVOCALES												
...CHLAMYDOMONADACEAE												
...CHLAMYDOMONAS	--	-	30#	22	29#	20	--	-	28#	20	29	2
...POLYBLEPHARIDACEAE												
...SPERMATOCOPSIS	--	-	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA												
..CHRYSOPHYCEAE												
...OCHROMONADALES												
...OCHROMONADACEAE												
...OCHROMONAS	--	-	--	-	44#	30	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
..CRYPTOPHYCEAE												
...CRYPTOMONADALES												
...CRYPTOMONADACEAE												
...CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
..CYANOPHYCEAE												
...CHROOCOCCALES												
...CHROOCOCCACEAE												
...ANACYSTIS	14#	33	--	-	44#	30	--	-	28#	20	--	-
...OSCILLATORIALES												
...OSCILLATORIAEAE												
...LYNGBYA	--	-	--	-	--	-	--	-	--	-	1200#	68
...OSCILLATORIA	--	-	--	-	--	-	140#	67	--	-	290#	17
EUGLENOPHYTA (EUGLENOIDS)												
..EUGLENOPHYCEAE												
...EUGLENALES												
...EUGLENACEAE												
...TRACHELOMONAS	--	-	--	-	--	-	--	-	--	-	--	-

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

50144000 RIO GRANDE DE AÑASCO NEAR SAN SEBASTIAN, PR--Continued

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

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN 062 MM
JUN	1981			
19...	1040	145	12	0
JUL				
14...	1345	289	4030	1080
AUG				
05...	1300	142	8	2
SEP				
03...	1215	265	244	241
OCT				
14...	1200	277	97	72
DEC				
03...	0930	278	30	63
AUG	1982			
05...	1240	465	194	64
05...	1350	465	194	64
SEP				
13...	1425	E2480	934	97
13...	1615	E2080	3340	88
13...	1845	E1650	3260	92

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 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.

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 , 1980												
20...	0900	320	163	7.1	24.0	2.4	8.6	--	15	20000	34000	65
JAN , 1981												
22...	0915	150	223	7.7	22.0	2.3	8.6	--	<10	240	K140	--
MAR												
11...	0810	102	241	8.0	24.0	3.8	7.8	--	16	46	48	100
MAY												
07...	0725	E150	194	7.6	25.5	140	7.1	--	25	K1000	--	--
AUG												
12...	0845	350	220	7.6	27.0	30	8.2	102	<10	2400	K1400	92
SEP												
17...	1250	E200	184	7.7	27.0	140	7.4	91	<10	K1500	2100	69
NOV												
10...	1515	300	198	7.9	25.5	23	7.6	94	<10	2000	2300	--
JAN , 1982												
27...	1445	230	242	8.6	24.5	3.1	11.4	137	17	K110	<10	97
MAR												
09...	1340	90	240	8.3	27.0	2.3	10.2	128	<10	K110	K180	--
MAY												
11...	1030	E120	215	7.7	25.0	120	7.6	93	110	2800	1800	91
JUL												
20...	1420	350	165	7.3	25.0	140	7.0	84	<10	6000	28000	--
SEP												
29...	0945	200	225	7.6	26.0	36	7.7	95	50	3400	2900	91

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- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUC- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
NOV , 1980											
20...	31	16	6.1	6.6	.4	1.9	34	6.8	5.5	.1	24
JAN , 1981											
22...	--	--	--	--	--	--	105	--	--	--	--
MAR											
11...	0	26	9.2	9.2	.4	1.6	103	7.3	7.6	.1	30
MAY											
07...	--	--	--	--	--	--	72	--	--	--	--
AUG											
12...	2	23	8.4	9.1	.4	1.8	90	7.8	5.7	<.1	29
SEP											
17...	0	18	5.8	7.7	.4	1.7	79	7.5	5.7	<.1	20
NOV											
10...	--	--	--	--	--	--	75	--	--	--	--
JAN , 1982											
27...	0	24	9.0	9.6	.5	1.6	97	9.4	7.4	.1	22
MAR											
09...	--	--	--	--	--	--	110	--	--	--	--
MAY											
11...	0	23	8.2	8.0	.4	1.6	95	10	6.3	<.1	24
JUL											
20...	--	--	--	--	--	--	66	--	--	--	--
SEP											
29...	0	23	8.1	8.5	.4	1.8	93	8.0	6.3	<.1	29

E Estimated.

K = non-ideal count.

50146000 RIO GRANDE DE AÑASCO NEAR AÑASCO, PR--Continued

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

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, NITRATE 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 , 1980											
20...	88	76.0	207	.66	.030	.69	.020	.62	.64	1.3	5.9
JAN , 1981											
22...	--	--	22	.59	<.010	.60	.020	.11	.13	.73	3.2
MAR											
11...	153	42.1	26	.12	<.010	.13	.020	.17	.19	.32	1.4
MAY											
07...	--	--	236	1.1	.040	1.1	.190	.79	.98	2.1	9.2
AUG											
12...	139	131	81	.77	<.010	.78	.030	.33	.36	1.1	5.0
SEP											
17...	114	61.6	298	.83	.050	.88	.090	.37	.46	1.3	5.9
NOV											
10...	--	--	317	--	<.010	1.4	.020	.24	.26	1.7	7.3
JAN , 1982											
27...	143	88.8	13	--	<.010	.36	.020	.31	.33	.69	3.1
MAR											
09...	--	--	10	--	<.010	.32	.030	.11	.14	.46	2.0
MAY											
11...	136	--	191	.92	.030	.95	.140	.24	.38	1.3	5.9
JUL											
20...	--	--	378	.94	.040	.98	.110	.39	.50	1.5	6.6
SEP											
29...	139	75.1	74	.58	.020	.60	.060	.04	.10	.70	3.1

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 , 1980											
20...	.630	--	--	--	--	--	--	--	--	252	218
JAN , 1981											
22...	.050	--	--	--	--	--	--	--	--	19	7.7
MAR											
11...	.040	<1	100	1	37	5	<.1	<1	<1	65	18
MAY											
07...	.230	--	--	--	--	--	--	--	--	286	116
AUG											
12...	.100	--	--	--	--	--	--	--	--	--	--
SEP											
17...	.130	--	200	1	30	10	.1	<1	<1	298	161
NOV											
10...	.150	--	--	--	--	--	--	--	--	409	331
JAN , 1982											
27...	.030	1	<100	<1	3	1	.1	<1	<1	28	17
MAR											
09...	.050	--	--	--	--	--	--	--	--	--	--
MAY											
11...	.240	--	--	--	--	--	--	--	--	241	--
JUL											
20...	.120	--	--	--	--	--	--	--	--	431	407
SEP											
29...	.080	1	100	1	<1	4	.1	<1	<1	--	--

PESTICIDE ANALYSES, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982

		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)	
DATE	TIME								
AUG , 1981									
12...	0845	<.10	<.01	<.10	<.01	<.01	<.01	<.01	
JUL , 1982									
20...	1420	<.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)
AUG , 1981									
12...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
JUL , 1982									
20...	<.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)	
AUG , 1981									
12...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01	
JUL , 1982									
20...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01	

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 , 1980													
19...	0930	121	196	7.5	23.5	1.1	8.0	--	19	54000	39000	77	
JAN , 1981													
21...	0915	39	265	7.7	21.0	3.4	7.4	--	<10	60000	760	--	
MAR													
05...	1315	48	272	7.7	26.5	3.7	8.6	--	15	K12000	400	120	
MAY													
20...	1500	200	426	7.2	26.0	110	6.9	85	28	47000	40000	--	
AUG													
04...	1800	68	265	7.4	28.5	4.2	11.8	153	<10	K1800	K64	110	
SEP													
17...	0720	72	266	7.9	24.5	4.9	7.7	91	<10	4800	K1500	96	
NOV													
24...	1550	188	267	7.5	25.0	50	7.6	93	<10	K150000	29000	--	
JAN , 1982													
28...	0945	57	254	8.1	22.0	11	9.0	103	29	K7700	K910	96	
MAR													
11...	1105	27	292	7.9	24.0	3.3	8.9	106	31	K200	K300	--	
MAY													
13...	0845	138	370	7.8	23.0	18	7.4	87	--	K8100	5600	170	
JUL													
22...	0930	236	284	8.0	24.0	14	8.2	99	<10	K12000	6200	--	
SEP													
28...	1315	80	258	8.1	26.0	2.5	9.6	118	12	3700	280	90	
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- 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)
NOV , 1980													
19...	1	25	3.5	7.6	.4	2.4	76	9.1	7.7	.1	23	124	
JAN , 1981													
21...	--	--	--	--	--	--	112	--	--	--	--	--	--
MAR													
05...	14	40	4.8	12	.5	3.0	106	11	14	.1	30	178	
MAY													
20...	--	--	--	--	--	--	159	--	--	--	--	--	--
AUG													
04...	0	35	4.9	12	.5	1.8	115	10	9.8	.1	33	176	
SEP													
17...	0	32	3.8	12	.5	2.2	107	14	13	<.1	28	171	
NOV													
24...	--	--	--	--	--	--	115	--	--	--	--	--	--
JAN , 1982													
28...	0	30	5.0	12	.6	2.2	107	9.2	9.9	.1	36	163	
MAR													
11...	--	--	--	--	--	--	120	--	--	--	--	--	--
MAY													
13...	6	58	5.2	9.7	.3	2.2	160	22	9.3	.2	16	219	
JUL													
22...	--	--	--	--	--	--	120	--	--	--	--	--	--
SEP													
28...	0	33	1.9	11	.5	2.0	--	8.0	9.2	<.1	34	153	

K = non-ideal count.

50147600 RIO CULEBRINAS NEAR SAN SEBASTIAN, PR--Continued

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

DATE	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)	PHOS- PHORUS, TOTAL (MG/L AS P)
NOV , 1980											
19...	40.5	17	1.2	.040	1.2	.090	.31	.40	1.6	7.1	.150
JAN , 1981											
21...	--	10	1.1	.030	1.1	.010	.37	.38	1.5	6.6	.100
MAR											
05...	23.1	72	.78	.060	.84	.060	.40	.46	1.3	5.8	.140
MAY											
20...	--	135	.88	.020	.90	.040	.23	.27	1.2	5.2	.090
AUG											
04...	32.3	212	.97	.030	1.0	.020	.22	.24	1.2	5.5	.070
SEP											
17...	33.2	14	1.3	.050	1.3	.040	.41	.45	1.8	7.7	.100
NOV											
24...	--	4	1.2	.040	1.2	.130	.74	.87	2.1	9.2	.090
JAN , 1982											
28...	25.2	16	1.4	.050	1.4	.040	.29	.33	1.7	7.7	.130
MAR											
11...	--	8	.55	.040	.59	.110	.30	.41	1.0	4.4	.220
MAY											
13...	81.6	22	.77	.030	.80	.120	.32	.44	1.2	5.5	.110
JUL											
22...	--	17	1.1	.020	1.1	.040	.76	.80	1.9	8.4	.050
SEP											
28...	33.2	2	1.1	.050	1.1	.050	1.4	1.40	2.5	11	.070

DATE	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)	SELB- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
NOV , 1980											
19...	--	--	--	--	--	--	--	--	--	225	74
JAN , 1981											
21...	--	--	--	--	--	--	--	--	--	11	1.2
MAR											
05...	<1	100	<1	15	5	<.1	<1	<1	<1	45	5.8
MAY											
20...	--	--	--	--	--	--	--	--	--	93	50
AUG											
04...	--	--	--	--	--	--	--	--	--	5	.92
SEP											
17...	--	100	1	20	3	.2	<1	<1	--	9	1.7
NOV											
24...	--	--	--	--	--	--	--	--	--	--	--
JAN , 1982											
28...	1	<100	<1	2	2	<.1	<1	<1	--	55	8.5
MAR											
11...	--	--	--	--	--	--	--	--	--	--	--
MAY											
13...	--	--	--	--	--	--	--	--	--	--	--
JUL											
22...	--	--	--	--	--	--	--	--	--	56	36
SEP											
28...	2	<100	1	<1	2	.3	<1	<1	--	--	--

PESTICIDE ANALYSES, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982

		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)
DATE	TIME							
AUG , 1981								
04...	1800	<.10	<.01	<.10	<.01	<.01	<.01	.02
JUL , 1982								
22...	0930	<.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)
AUG , 1981									
04...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
JUL , 1982									
22...	<.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)
AUG , 1981								
04...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01
JUL , 1982								
22...	<.01	<.01	<.01	<.01	<.10	<.10	<1	<.01

50147800 RIO CULEBRINAS AT HIGHWAY 404 NEAR MOCA, PR

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 DISCHARGES.--14 years (1968-81), 296 cu ft/s (8.383 cu m/s), 56.46 in/yr (1.434 mm/yr), 214,500 acre-ft/yr (264 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).

--15 years (1968-82), 305 cu ft/s (8,638 cu m/s), 58.17 in/yr (1,478 mm/yr), 221,700 acre-ft/yr (272 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 WATER YEARS 1981-82.--Peak discharges above base of 11,300 cu ft/s (320 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. 6, 1980	2115	18,200	515	25.35	7.727	Oct. 30, 1981	2045	13,200	374	23.33	7.111
Feb. 15, 1981	2045	*20,100	569	26.00	7.925	Nov. 3, 1981	2130	11,300	320	22.45	6.843
Mar. 26, 1981	2330	18,900	535	25.59	7.800	Nov. 8, 1981	2000	13,500	382	23.47	7.154
May 15, 1981	2330	16,400	464	24.65	7.513	Dec. 14, 1981	2145	16,300	462	24.61	7.501
May 25, 1981	1745	17,600	498	25.10	7.650	May 11, 1982	2100	12,900	365	23.18	7.065
May 31, 1981	1930	12,300	348	22.92	6.986	May 14, 1982	2145	15,200	430	24.18	7.370
June 27, 1981	2400	11,600	328	22.61	6.892	June 4, 1982	1945	13,400	379	23.42	7.138
July 17, 1981	1715	19,200	544	25.69	7.830	June 6, 1982	1900	19,800	561	25.88	7.888
Oct. 22, 1981	2000	13,500	382	23.48	7.157	July 6, 1982	1845	11,400	323	22.49	6.855
Oct. 24, 1981	2000	*33,000	935	29.71	9.056	July 9, 1982	2100	16,800	476	24.81	7.562
Oct. 29, 1981	2030	18,900	535	25.58	7.797	July 20, 1982	1815	24,100	682	27.29	8.318

Minimum discharges, 40 cu ft/s (1.133 cu m/s) Mar. 20, 1981; 42 cu ft/s (1.189 cu m/s) Mar. 23-24, 1982.

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	1070	730	110	133	150	65	115	362	1270	384	125	454
2	372	585	108	336	68	63	104	284	598	220	115	218
3	394	465	104	97	69	63	1350	160	314	161	109	137
4	857	257	102	86	60	71	754	124	251	146	138	124
5	317	298	101	81	57	72	427	96	208	168	124	118
6	3870	221	110	80	57	62	207	107	181	167	129	197
7	1730	197	106	88	55	58	163	91	158	200	129	234
8	584	183	112	80	53	59	197	85	139	156	566	144
9	371	172	100	99	61	56	145	378	128	432	256	174
10	290	163	96	94	82	53	142	1270	126	174	142	134
11	256	157	95	76	54	52	121	305	197	141	129	123
12	232	146	92	77	51	50	106	393	214	131	493	119
13	218	143	89	78	52	50	100	1280	142	217	303	126
14	205	139	89	132	161	50	94	360	133	1150	527	316
15	192	158	103	91	4050	52	91	1100	103	290	308	155
16	732	541	95	73	619	57	89	2220	97	243	1520	127
17	510	213	92	71	157	55	85	345	94	4320	1350	293
18	484	442	90	120	107	50	87	711	93	449	340	163
19	286	306	102	108	93	49	80	827	141	229	334	123
20	224	187	92	81	86	46	77	409	132	201	260	131
21	736	151	86	71	105	51	75	235	90	194	248	128
22	587	141	84	72	127	61	75	184	123	157	214	151
23	773	137	83	70	82	51	77	219	92	165	809	151
24	1220	129	86	68	74	48	74	500	258	2040	371	444
25	901	130	107	65	72	188	85	4040	290	454	217	206
26	421	124	87	65	68	1440	93	701	465	422	174	129
27	521	121	82	61	69	1330	94	757	1290	266	159	116
28	286	115	81	63	69	710	116	333	1970	169	156	160
29	247	115	78	60	---	4470	97	234	538	147	177	205
30	228	113	78	58	---	258	87	279	410	134	164	956
31	365	---	77	67	---	144	---	2830	---	136	137	---
TOTAL	19479	6979	2917	2801	6808	9884	5407	21219	10245	13863	10223	6256
MEAN	628	233	94.1	90.4	243	319	180	684	342	447	330	209
MAX	3870	730	112	336	4050	4470	1350	4040	1970	4320	1520	956
MIN	192	113	77	58	51	46	74	85	90	131	109	116
CFSM	8.82	3.27	1.32	1.27	3.41	4.48	2.53	9.61	4.80	6.28	4.64	2.94
IN	10.18	3.65	1.52	1.46	3.56	5.16	2.82	11.09	5.35	7.24	5.34	3.27
AC-FT	38640	13840	5790	5560	13500	19600	10720	42090	20320	27500	20280	12410
QAL YR 1980	TOTAL	123127		MEAN 336	MAX 10600	MIN 28	CFSM 4.72	IN 64.33	AC-FT	244200		
WTR YR 1981	TOTAL	116081		MEAN 318	MAX 4470	MIN 46	CFSM 4.47	IN 60.65	AC-FT	230200		

50147800 RIO CULEBRINAS AT HIGHWAY 404 NEAR MOCA, PR--Continued

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	307	558	183	186	83	95	56	49	816	140	176	1280
2	152	555	173	140	82	85	50	60	710	132	284	1510
3	342	1820	168	120	86	64	50	52	404	121	187	544
4	290	2110	159	117	83	62	52	49	2530	117	392	455
5	147	776	151	112	76	57	90	138	830	548	429	297
6	149	481	147	109	73	56	65	861	3700	2570	209	675
7	123	286	150	107	70	55	67	167	619	379	152	391
8	122	2730	147	104	67	54	58	100	586	215	212	525
9	134	3630	138	102	65	55	57	215	420	2320	167	312
10	110	557	140	100	63	53	114	458	239	609	193	180
11	206	360	422	97	67	51	98	2030	209	246	192	990
12	505	340	291	94	92	50	65	716	219	488	301	440
13	254	320	802	94	67	61	57	398	190	307	782	2070
14	125	310	6090	93	62	73	100	2610	237	337	698	410
15	112	300	718	91	62	53	433	1190	328	362	386	397
16	223	540	370	90	61	49	246	545	352	1080	221	319
17	231	400	290	88	61	48	105	357	248	308	183	301
18	185	300	250	87	60	45	80	238	151	637	186	388
19	608	2500	228	85	62	45	130	171	137	2420	165	305
20	1080	350	210	84	59	45	72	407	129	5520	149	208
21	471	300	210	82	60	45	63	251	126	764	142	183
22	2880	450	188	79	61	44	57	664	118	402	351	188
23	1910	330	174	77	61	44	54	605	280	331	179	181
24	8390	2000	165	76	59	45	51	447	945	268	170	159
25	1170	300	158	82	56	50	49	285	845	249	253	151
26	464	280	257	111	56	47	66	200	281	318	154	141
27	392	450	157	78	58	47	62	190	171	204	507	143
28	300	230	194	126	59	45	68	1480	148	183	596	133
29	3620	210	141	328	---	48	62	1010	220	169	305	165
30	3190	190	132	171	---	47	52	374	164	166	206	138
31	935	---	128	92	---	58	---	841	---	153	162	---
TOTAL	29127	23963	13131	3402	1871	1676	2629	17158	16352	22063	8689	13579
MEAN	940	799	424	110	66.8	54.1	87.6	553	545	712	280	453
MAX	8390	3630	6090	328	92	95	433	2610	3700	5520	782	2070
MIN	110	190	128	76	56	44	49	49	118	117	142	133
CFSM	13.2	11.2	5.96	1.55	.94	.76	1.23	7.77	7.65	10.0	3.93	6.36
IN.	15.22	12.52	6.86	1.78	.98	.88	1.37	8.96	8.54	11.53	4.54	7.09
AC-FT	57770	47530	26050	6750	3710	3320	5210	34030	32430	43760	17230	26930

CAL YR 1981 TOTAL 152927 MEAN 419 MAX 8390 MIN 46 CFSM 5.89 IN 79.90 AC-FT 303300
WTR YR 1982 TOTAL 153640 MEAN 421 MAX 8390 MIN 44 CFSM 5.91 IN 80.27 AC-FT 304700

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO SEPTEMBER 1982

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPECI- FIC CON- DUCTI- ANCE (UMHOS)	TEMPER- ATURE (DEG C)
AUG. 1981				
5...	845	117.0	284	26.0
SEP				
9...	845	193.0	245	25.5
NOV				
11...	1030	360.0	306	23.5
DEC				
1...	920	185.0	286	23.0
FEB. 1982				
18...	945	81.0	756	22.5
MAR				
18...	920	44.0	281	23.0
APR				
14...	830	75.0	350	25.0
JUN				
16...	910	173.0	317	25.5
AUG				
18...	1000	171.0	304	26.0
SEP				
8...	850	209.0	315	25.0

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982

		STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CCN- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	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 , 1980													
19...	1400	E250	228	7.5	25.5	.60	8.0	--	35	46000	54000	91	
JAN , 1981													
21...	1420	65	350	7.4	25.0	13	5.6	--	69	200000	7200	--	
MAR													
05...	1515	E60	360	7.2	30.0	5.6	5.4	--	44	K650000	8000	160	
MAY													
21...	1020	357	420	7.4	25.0	50	9.0	108	11	21000	--	--	
AUG													
05...	1500	E150	310	7.4	27.5	55	7.7	98	<10	4700	K300	130	
SEP													
17...	0920	145	291	7.8	25.5	--	7.9	95	--	3200	2800	110	
NOV													
25...	0820	E130	279	7.7	24.0	150	7.1	86	33	38000	30000	--	
JAN , 1982													
28...	1330	E120	291	8.0	24.0	5.4	7.4	88	19	K800	K100	120	
MAR													
11...	0740	E40	370	6.8	25.0	30	5.0	57	--	K1500	35000	--	
MAY													
13...	1055	E100	400	7.3	25.0	58	4.0	49	--	35000	3800	180	
JUL													
22...	1130	E200	--	7.3	26.0	110	4.6	57	10	34000	K13000	--	
SEP													
29...	0750	60	278	7.7	24.0	55	8.0	96	29	K7300	8400	120	
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- 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 CONSTITU- ENTS, DIS- SOLVED (MG/L)
NOV , 1980													
19...	0	30	3.8	7.2	.3	2.5	94	8.5	7.7	.1	18	134	
JAN , 1981													
21...	--	--	--	--	--	--	146	--	--	--	--	--	
MAR													
05...	16	52	6.1	14	.5	5.9	144	8.4	18	.1	33	224	
MAY													
21...	--	--	--	--	--	--	181	--	--	--	--	--	
AUG													
05...	0	42	6.1	15	.6	2.2	131	11	10	.1	29	194	
SEP													
17...	0	36	4.5	11	.5	2.2	117	7.0	10	<.1	26	167	
NOV													
25...	--	--	--	--	--	--	123	--	--	--	--	--	
JAN , 1982													
28...	0	38	5.0	9.3	.4	2.0	123	8.6	9.7	.1	26	171	
MAR													
11...	--	--	--	--	--	--	140	--	--	--	--	--	
MAY													
13...	0	58	8.0	12	.4	6.6	180	18	12	.1	19	242	
JUL													
22...	--	--	--	--	--	--	110	--	--	--	--	--	
SEP													
29...	0	38	5.1	11	.5	2.1	120	8.0	9.9	.1	32	174	

E Estimated.

K = non-ideal count.

RIO CULEBRINAS BASIN

50149100 RIO CULEBRINAS NEAR AGUADA, PR--Continued

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

DATE	SOLIDS, DIS- SOLVED (TONS PER DAY)	SCLIDS, 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 , 1980											
19...	90.4	437	.73	.030	.76	.070	1.2	1.30	2.1	9.1	.320
JAN , 1981											
21...	--	44	.39	.020	.41	.020	.56	.58	.99	4.4	.190
MAR											
05...	36.3	50	.39	.020	.41	.010	1.1	1.10	1.5	6.7	.270
MAY											
21...	--	122	.68	.020	.70	.070	.25	.32	1.0	4.5	.170
AUG											
05...	78.6	76	.57	.020	.59	.050	.15	.20	.79	3.5	.110
SEP											
17...	65.4	--	.71	.030	.74	.060	.30	.36	1.1	4.9	.080
NOV											
25...	--	282	.86	.050	.91	.100	1.1	1.20	2.1	9.3	.170
JAN , 1982											
28...	55.4	15	.63	.020	.65	.060	.51	.57	1.2	5.4	.090
MAR											
11...	--	35	.15	.030	.18	.050	.86	.91	1.1	4.8	.980
MAY											
13...	65.3	108	.44	.040	.48	.320	.64	.96	1.4	6.4	1.40
JUL											
22...	--	213	.54	.040	.58	.100	.50	.60	1.2	5.2	.180
SEP											
29...	28.2	71	.67	.030	.70	.100	.80	.90	1.6	7.1	.090
DATE	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)	SILVER, DIS- SOLVED (UG/L AS AG)	SEDI- MENT, DIS- SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
NOV , 1980											
19...	--	--	--	--	--	--	--	--	--	704	475
JAN , 1981											
21...	--	--	--	--	--	--	--	--	--	29	5.1
MAR											
05...	<1	100	<1	4	140	<.1	<1	<1	<1	173	28
MAY											
21...	--	--	--	--	--	--	--	--	--	158	152
AUG											
05...	--	--	--	--	--	--	--	--	--	118	48
SEP											
17...	--	100	1	10	8	<.1	<1	<1	--	107	42
NOV											
25...	--	--	--	--	--	--	--	--	--	365	128
JAN , 1982											
28...	1	100	<1	5	1	<.1	<1	<1	--	72	23
MAR											
11...	--	--	--	--	--	--	--	--	--	--	--
MAY											
13...	--	--	--	--	--	--	--	--	--	--	--
JUL											
22...	--	--	--	--	--	--	--	--	--	261	141
SEP											
29...	1	100	1	<1	7	.3	<1	<1	--	--	--

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 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 years 1981-82

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)
<u>Rio Camuy basin</u>							
50014000	Rio Criminales near Lares, PR	Lat 18°17'57", long 66°49'22", left and right abutments on Highway 111 bridge, 3.6 mi (5.8 km) east of Lares.	4.68 (12.12)	1965-82, discontinued.	July 8, 1981 May 13, 1982	10.43 (3.179) 8.91 (.716)	3,140 (88.9) 2,040 (57.8)
<u>Rio Grande de Manatí basin</u>							
50035950	Rio Cialitos at Highway 649 at Ciales, PR.	Lat 18°20'18", long 66°28'28", on left bank 150 ft (46 m) upstream from bridge, on Highway 649, 0.4 mi (0.64 km) west of Ciales Plaza.	17.0 (44.0)	1969-82, discontinued.	Sept. 7, 1981 Dec. 13, 1981	8.96 (2.731) 12.77 (3.892)	4,060 (115) 8,100 (229)
<u>Rio Piedras basin</u>							
50049100	Rio Piedras at Hato Rey, PR	Lat 18°24'34", long 66°04'10", on left downstream bridge on Avenida Piñero at Las Américas Expressway, and about 0.8 mi (1.3 km) southwest of Hato Rey.	15.2 (39.4)	1972-82, Discontinued.	May 4, 1981 Dec. 12, 1981	15.77 (4.807) 20.27 (6.178)	4,340 (123) 8,370 (237)
50049600	Quebrada Margarita at Caparra Heights, PR	Lat 18°24'33", long 66°06'18", at bridge on Franklin D. Roosevelt Avenue, near San Patricio Plaza, Ft. Buchanan and Highway 2 interchange, and 0.1 mi (0.2 km) south of Caparra Heights.	1.82 (4.71)	1972-82, discontinued.	May 4, 1981 Dec. 12, 1982	5.82 (1.774) 6.98 (2.128)	1,680 (47.6) 2,200 (62.3)
<u>Rio Herrera basin</u>							
50062500	Rio Herrera near Colonia Dolores, PR	Lat 18°21'02", long 65°52'00", on left downstream bridge on Highway 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)	1966-82, discontinued.	May 5, 1981 Sept. 13, 1982	12.30 (3.749) 13.37 (4.075)	2,170 (61.4) 2,720 (77.0)
<u>Rio Espiritu Santo basin</u>							
50064700	Quebrada Boneta at Rio Grande, PR	Lat 18°22'42", long 65°49'48", at bridge on Highway 3, 0.3 mi (0.5 km) south of Rio Grande Plaza, and 0.4 mi (0.6 km) upstream from Rio Grande.	0.77 (1.99)	1965, 1967-82, discontinued.	Dec. 7, 1980 Dec 14, 1981	18.82 (5.736) 20.53 (6.258)	1,330 (37.7) 1,650 (46.7)
<u>Rio Dagua basin</u>							
50073200	Rio Dagua at Dagua, PR	Lat 18°13'42", long 65°40'39", at railroad bridge, 0.1 mi (0.2 km) downstream from bridge on Highway 3, 0.3 mi (0.5 km) east of Dagua, and 2.8 mi (4.5 km) upstream from mouth.	2.26 (5.85)	1965, 1967-82, discontinued.	May 14, 1979 May 14, 1980 May 19, 1981 Dec. 27, 1981	12.47 (3.801) 10.26 (3.127) 13.98 (4.261) 12.36 (3.767)	b 3,200 (90.6) b 700 (19.8) a 7,500 (212) 3,000 (85.0)
<u>Rio Santiago basin</u>							
50074000	Rio Santiago at Naguabo, PR	Lat 18°12'57", long 65°43'41", at bridge on Highway 31, 0.3 mi (0.5 km) northeast of Naguabo, 0.4 mi (0.6 km) downstream from Quebrada Grande, and 2.2 mi (3.5 km) upstream from mouth.	4.99 (12.92)	1965-82, discontinued.	Apr. 16, 1981 Dec. 14, 1981	10.38 (3.164) 11.69 (3.563)	1,400 (39.6) 2,400 (68.0)
<u>Rio Blanco basin</u>							
50075500	Rio Blanco at Florida, PR	Lat 18°14'27", long 65°46'06", at bridge on Highway 191, 0.2 mi (0.3 km) northwest of Florida, 1.4 mi (2.2 km) upstream from Quebrada Peña Pobre, and 3.7 mi (6.0 km) northwest of Naguabo.	11.0 (28.5)	1975-82, discontinued.	May 19, 1981 May 9, 1982	75.97 (23.156) 78.34 (23.878)	6,850 (194) 12,400 (351)

DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS

Annual maximum discharge at crest-stage partial-record stations during water years 1981-82--Continued

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)
<u>Río Maunabo basin</u>							
50091000	Río Maunabo at Maunabo, PR	Lat 18°00'24", long 65°54'19", at bridge on Highway 3, 0.4 mi (0.6 km) southwest of Maunabo, and 1.3 mi (2.1 km) upstream from mouth.	12.4 (32.1)	1965-82, discontinued.	July 15, 1981	9.96 (3.036)	550 (15.6)
					Dec. 2, 1981	12.09 (3.685)	1,090 (30.9)
<u>Río Coamo basin</u>							
50106500	Río Coamo near Coamo, PR	Lat 18°03'52", long 66°22'10", on right downstream abutment, on Highway 153, 1.5 mi (2.4 km) south of Coamo.	46.0 (119.1)	1960, 1965-82, discontinued.	1981 Sept. 12, 1982	c 10.40 (3.170)	c a 4,600 (130)
<u>Río Descalabrado basin</u>							
50108000	Río Descalabrado near Los Llanos, PR	Lat 18°03'08", long 66°25'34", at bridge on Highway 14, 1.5 mi (2.4 km) west of Los Llanos.	12.9 (33.4)	1965-82, discontinued.	1981 Sept. 12, 1982	c 7.69 (2.344)	c 1,900 (53.8)
<u>Río Bucaná basin</u>							
50114400	Río Bucaná near Ponce, PR	Lat 18°02'18", long 66°35'12", on right bank at km 4.9, Highway 14, 2.5 mi (4.0 km) northeast of Degetau Plaza in Ponce.	25.6 (66.3)	1965-82, discontinued.	May 5, 1981	6.04 (1.841)	2,190 (62.0)
					1982	c	c
<u>Río Portugués basin</u>							
50115900	Río Portugués 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 Río Chiquito, and 0.6 mi (0.97 km) northeast of Degetau Plaza in Ponce.	18.6 (48.2)	1963-82, discontinued.	May 23, 1981	9.19 (2.801)	2,050 (58.1)
					Sept. 12, 1982	15.2 (4.633)	8,200 (232)
<u>Río Tallaboa basin</u>							
50121000	Río Tallaboa at Peñuelas, PR	Lat 18°03'02", long 66°43'19", on right bank, 350 ft (106.7 m) downstream from Highway 132 bridge, 0.6 mi (1.0 km) south of Peñuelas.	24.2 (62.7)	1959-82, discontinued.	May 5, 1981	4.70 (1.433)	a 1,400 (39.6)
					Sept. 12, 1982	10.57 (3.222)	20,300 (575)
<u>Río Guayanilla basin</u>							
50124500	Río Guayanilla at Guayanilla, PR	Lat 18°02'01", long 66°47'57", at bridge on Highway 114 (formerly Highway 2) 1.1 mi (1.8 km) northwest of Guayanilla Plaza, and 3.2 (5.1 km) from mouth.	20.8 (53.9)	1970-82, discontinued.	Sept. 25, 1981	9.56 (2.914)	7,800 (221)
					Sept. 12, 1982	14.10 (4.298)	18,500 (524)
<u>Río Culebrinas basin</u>							
50147000	Río Culebrinas at San Sebastián, PR	Lat 18°20'08", long 66°59'46", at bridge on Highway 109, 0.9 mi (1.4 km) upstream from Río Guatemala, and 0.4 mi (0.6 km) southwest of San Sebastián.	16.7 (43.3)	1960, 1966-82, discontinued.	May 27, 1980+	19.64 (5.986)	7,280 (206)
					Feb. 15, 1981	15.39 (4.691)	4,370 (124)
					July 6, 1982	15.03 (4.581)	4,300 (123)

+ Date revised.
a Approximately.
b Discharge revised.
c Unknown.

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 analysis. The data are collected less than quarterly; usually one to three times a year.

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

DATE	TIME	SAM- PLING DEPTH (FEET)	STREAM- FLOW, INSTAN- TANECUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	TRANS- PAR- ENCY (SECCHI DISK) (IN)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, UM-MF (COLS./ 100 ML)
50010720 - LAGO GUAJATACA NO.3 NR MOUTH NR QUEBRADILLAS,PR (LAT 18 22 05 LONG 066 54 36)												
DEC , 1980												
03...	1500	1.00	--	283	7.6	26.9	--	99.8	7.8	--	--	K1
APR , 1981												
03...	1255	1.00	--	307	8.3	26.9	--	59.0	9.0	--	--	K13
JUL												
07...	1320	1.00	--	203	8.3	29.5	--	78.7	10.6	140	--	>100
DEC												
02...	1010	1.00	--	253	7.9	25.0	--	55.4	7.0	85	--	540
FEB , 1982												
23...	1200	1.00	--	--	8.4	26.0	--	39.4	9.1	113	--	K2
JUN												
23...	1300	1.00	--	272	7.5	28.5	--	86.0	7.3	91	--	K2
50010790 - LAGO GUAJATACA NO.1 NR DAM NE QUEBRADILLAS,PR (LAT 18 23 56 LONG 066 55 23)												
DEC , 1980												
03...	1420	1.00	--	283	7.6	27.1	--	79.0	8.7	--	--	<1
03...	1430	62.5	--	347	6.8	24.2	--	--	.0	--	--	--
APR , 1981												
03...	1145	1.00	--	296	8.2	26.5	--	51.1	7.5	--	--	K10
03...	1155	55.8	--	314	7.5	23.8	--	--	2.6	--	--	--
JUL												
07...	1155	1.00	--	221	8.2	29.5	--	74.8	8.3	110	--	K70
07...	1205	66.0	--	282	7.2	24.0	--	--	.0	0	--	--
DEC												
02...	0910	1.00	--	249	7.7	25.5	--	92.3	7.4	91	--	K2
02...	0920	64.0	--	--	7.2	23.5	--	--	.3	--	--	--
FEB , 1982												
23...	1100	1.00	--	--	8.2	26.0	--	59.0	8.5	106	--	K3
23...	1110	55.0	--	--	7.8	24.0	--	--	.0	0	--	--
JUN												
23...	1145	1.00	--	261	7.8	28.0	--	78.0	8.4	105	--	K3
23...	1155	77.0	--	351	7.0	24.0	--	--	.0	0	--	--
STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)												
HARD- NESS (MG/L AS CACO3)												
HARD- NESS, MCMCAR- 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)												
ALKAL- INITY 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)												
DATE												
50010720 - LAGO GUAJATACA NO.3 NR MOUTH NR QUEBRADILLAS,PR (LAT 18 22 05 LONG 066 54 36)												
DEC , 1980												
03...	<1	--	--	--	--	--	--	--	110	--	--	--
APR , 1981												
03...	K2	--	--	--	--	--	--	--	125	--	--	--
JUL												
07...	<1	--	--	--	--	--	--	--	105	--	--	--
DEC												
02...	K130	--	--	--	--	--	--	--	115	--	--	--
FEB , 1982												
23...	K5	--	--	--	--	--	--	--	130	--	--	--
JUN												
23...	<1	--	--	--	--	--	--	--	130	--	--	--
50010790 - LAGO GUAJATACA NO.1 NR DAM NE QUEBRADILLAS,PR (LAT 18 23 56 LONG 066 55 23)												
DEC , 1980												
03...	K1	121	9	43	3.2	4.9	.2	1.3	112	7.8	8.0	.1
03...	--	127	4	46	2.9	5.8	.2	1.3	123	7.0	6.3	.1
APR , 1981												
03...	<1	121	0	43	3.4	5.3	.2	1.5	122	8.1	8.3	.1
03...	--	126	11	46	2.7	4.0	.2	1.7	115	8.8	7.4	.1
JUL												
07...	K3	124	8	44	3.4	5.7	.2	1.5	116	7.9	8.1	<.1
07...	--	155	6	57	3.1	4.8	.2	1.6	149	12	5.4	<.1
DEC												
02...	K1700	121	6	43	3.3	5.4	.2	1.5	115	8.5	6.6	.1
02...	--	115	8	42	2.5	3.4	.1	1.6	107	8.3	5.4	.1
FEB , 1982												
23...	K4	137	7	49	3.6	5.4	.2	1.5	130	7.3	6.9	.1
23...	--	141	1	51	3.2	4.8	.2	1.6	140	6.5	6.4	.1
JUN												
23...	K3	127	0	45	3.5	6.2	.3	1.3	130	11	8.0	.1
23...	--	151	1	55	3.2	5.1	.2	1.3	150	11	6.9	.1

K = non-ideal count.

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

DATE	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L AS SCGLD)	SOLIDS, DIS- SOLVED (TCMS 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 SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
------	---------------------------------------------------	------------------------------------------------------------------------------------	---------------------------------------------------	--------------------------------------------------------------------	------------------------------------------------------	------------------------------------------------------	-------------------------------------------------------	---------------------------------------------------------------	------------------------------------------------------	------------------------------------------------------	--------------------------------------------------------------------	-------------------------------------------

50010720 - LAGO GUAJATACA NO.3 NR MOUTH NR QUEBRADILLAS,PR (LAT 18 22 05 LONG 066 54 36)

[illegible]

50010790 - LAGO GUAJATACA NO.1 NR DAM NE QUEBRADILLAS.PR (LAT 18 23 56 LONG 066 55 23)

DATE	PRECIPITATION INCHES	TOTAL WATER IN CUBIC FEET	AVERAGE DAILY TEMPERATURE DEGREES F.	RELATIVE HUMIDITY PERCENT	WIND SPEED M.P.H.	DIRECTION OF WIND	CLOUD COVER PERCENT	SUNSHINE HOURS	MOON PHASE
DEC , 1980									
03...	5.9	141	--	8	.07	<.010	.07	--	.000
03...	6.7	150	--	--	--	--	--	--	.16
APR , 1981									
03...	6.1	149	--	15	.01	<.010	.02	--	.020
03...	5.0	145	--	--	--	--	--	--	.21
JUL									
07...	5.4	146	--	8	.01	<.010	.01	--	.020
07...	6.8	180	--	--	--	--	--	--	.36
DEC									
02...	6.2	144	--	5	.00	<.010	<.01	--	.020
02...	5.9	141	--	--	--	--	--	--	.32
FEB , 1982									
23...	5.8	158	--	11	.01	<.010	.02	--	<.010
23...	7.0	165	--	--	--	--	--	--	.38
JUN									
23...	4.6	155	--	3	--	<.010	<.10	--	.030
23...	6.1	176	--	--	--	--	--	--	.27

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, CRTHG, ARSENIC TOTAL (MG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	CADMIUM, TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)
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50010720 - LAGO GUAJATACA NO.3 NR MOUTH NR QUEBRADILLAS.PR (LAT 18 22 05 LONG 066 54 36)

[illegible]

50010790 - LAGO GUAJATACA NO.1 NR DAM NR QUEBRADILLAS,PR (LAT 18 23 56 LONG 066 55 23)

[illegible]

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

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TCTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)	PHYTO- 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)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
50010720 - LAGO GUAJATACA NO.3 NR MOUTH NR QUEBRADILLAS,PR (LAT 18 22 05 LONG 066 54 36)											
DEC , 1980											
03...	--	--	--	--	--	3700	1.10	1.82	.000	--	--
APR , 1981											
03...	--	--	--	--	--	6300	.37	8.05	.000	--	--
JUL											
07...	--	--	--	--	--	5600	.75	7.98	.000	--	--
DEC											
02...	--	--	--	--	--	21000	.16	18.4	4.47	--	--
FEB , 1982											
23...	--	--	--	--	--	12000	.12	16.4	1.63	--	--
JUN											
23...	--	--	--	--	--	13000	.00	4.80	<.100	--	--
50010790 - LAGO GUAJATACA NO.1 NR DAM NR QUEBRADILLAS,PR (LAT 18 23 56 LONG 066 55 23)											
DEC , 1980											
03...	--	--	--	--	--	24000	1.23	3.24	.000	--	--
APR , 1981											
03...	--	--	--	--	--	7300	.50	5.96	.000	--	--
JUL											
07...	--	--	--	--	--	7700	1.02	3.91	.000	--	--
DEC											
02...	--	--	--	--	--	970	.37	5.42	<.100	--	--
FEB , 1982											
23...	--	--	--	--	--	13000	.00	2.91	.440	--	--
JUN											
23...	--	--	--	--	--	230000	.00	3.30	<.100	--	--
50020050 - LAGO GARZAS NO.1 NR DAM NR ADJUNTAS,PR (LAT 18 08 21 LONG 066 44 35)											
DATE	TIME	SAM- PLING DEPTH (FEET)	STREAM- FLCW, INSTAN- TANECUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	TRANS- PAR- ENCY (SECCHI DISK) (IN)	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)
DEC , 1980											
04...	0845	1.00	--	158	7.2	22.3	--	83.0	7.3	--	K6
04...	0855	82.2	--	--	6.4	20.9	--	--	.0	--	--
APR , 1981											
08...	1230	1.00	--	184	7.6	21.8	--	31.4	6.3	--	300
08...	1240	64.6	--	--	7.0	20.4	--	--	.0	--	--
JUL											
06...	1320	1.00	--	137	7.7	26.0	--	78.7	8.8	117	K200
06...	1330	95.0	--	137	6.9	21.5	--	--	.0	0	--
NOV											
30...	1355	1.00	--	116	7.2	23.0	--	51.0	8.2	103	21
30...	1405	93.0	--	--	6.8	21.0	--	--	.0	0	--
FEB , 1982											
22...	1615	1.00	--	--	8.1	23.0	--	59.0	9.2	115	K13
22...	1625	81.0	--	--	7.2	21.0	--	--	.0	0	--
MAR											
22...	1615	--	--	--	--	--	--	--	--	--	--
JUN											
25...	0835	1.00	--	158	7.6	25.0	--	62.0	7.8	102	K5
25...	0840	95.0	--	172	6.5	20.5	--	--	.0	0	--

K = non-ideal count.

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

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

DATE	STREP- TOCOCCHI PECAL, 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- LITY FIELD 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)
50020050 - LAGO GARZAS NO.1 NR DAM NR ADJUNTAS,PR (LAT 18 08 21 LONG 066 44 35)												
DEC , 1980												
04...	K2	54	0	15	4.1	5.8	.4	1.0	59	3.5	5.4	.1
04...	--	64	0	18	4.6	6.0	.3	1.2	87	1.4	5.9	.1
APR , 1981												
08...	300	65	0	18	4.8	5.9	.3	1.0	74	3.1	5.7	<.1
08...	--	66	0	19	4.6	6.1	.3	1.2	89	3.1	5.8	<.1
JUL												
06...	K2	61	0	17	4.4	6.1	.4	1.3	62	2.9	5.6	<.1
06...	--	63	0	18	4.3	6.2	.4	1.6	75	1.3	5.1	<.1
NOV												
30...	35	51	0	14	3.8	6.3	.4	1.1	51	3.2	4.7	<.1
30...	--	58	0	16	4.5	7.2	.4	1.2	66	3.2	6.0	<.1
FEB , 1982												
22...	K10	63	4	18	4.5	6.6	.4	1.2	59	2.7	5.1	.1
22...	--	57	0	16	4.2	5.8	.3	1.1	69	3.0	5.0	<.1
MAR												
22...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
25...	<1	64	0	18	4.7	6.5	.4	.9	72	5.0	5.6	<.1
25...	--	63	0	18	4.3	6.0	.3	1.1	82	3.0	5.2	<.1
DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TCNS 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, 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)

50020050 - LAGO GARZAS NO.1 NR DAM NR ADJUNTAS,PR (LAT 18 08 21 LONG 066 44 35)

DEC , 1980												
04...	18	88	--	0	.05	<.010	.05	--	.000	.11	.11	.16
04...	21	110	--	--	--	--	--	--	--	--	--	--
APR , 1981												
08...	21	104	--	10	--	<.010	.15	--	.020	.14	.16	.31
08...	22	115	--	--	--	--	--	--	--	--	--	--
JUL												
06...	16	91	--	8	.01	<.010	.01	--	.060	.29	.35	.36
06...	18	100	--	--	--	--	--	--	--	--	--	--
NOV												
30...	16	80	--	5	--	<.010	1.2	--	.040	.10	.14	1.3
30...	20	96	--	--	--	--	--	--	--	--	--	--
FEB , 1982												
22...	18	93	--	4	.07	.010	.08	--	.010	.37	.38	.46
22...	16	84	--	--	--	--	--	--	--	--	--	--
MAR												
22...	--	--	--	--	--	--	--	--	--	--	.38	--
JUN												
25...	17	101	--	5	--	<.010	<.10	--	.110	.39	.50	--
25...	18	99	--	--	--	--	--	--	--	--	--	--

K = non-ideal count.

[illegible][illegible]

50020050 - LAGO GARZAS NO.1 NR DAM NR ADJUNTAS,PR (LAT 18 08 21 LONG 066 44 35)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2
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ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

50021000 RIO PELLEJAS AT CENTRAL PELLEJAS, PR (LAT 18°12'07", LONG 66°42'16")

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEE- CIFIC CCN- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MP (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PEF 100 ML)	HARD- NESS (MG/L AS CACO3)	
APR , 1982												
20...	1500	5.0	332	8.0	23.5	1.4	9.2	114	290	K160	130	
MAY												
25...	0830	6.9	275	8.0	22.0	--	9.0	103	K100	K100	110	
JUN												
08...	0945	7.1	272	8.6	23.5	--	9.2	114	290	K160	100	
JUL												
16...	1015	6.3	258	7.8	22.0	--	7.8	99	2700	4700	95	
AUG												
06...	0815	5.0	295	7.5	22.0	--	9.2	107	350	290	120	
SEP												
23...	0945	16	244	7.9	22.0	1.1	8.4	104	--	--	88	
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)
APR , 1982												
20...	55	35	10	14	.6	1.5	77	64	7.6	.1	36	
MAY												
25...	41	30	8.5	11	.5	1.5	69	52	7.2	.1	34	
JUN												
08...	28	28	8.4	12	.5	1.5	77	33	6.9	<.1	34	
JUL												
16...	31	26	7.3	11	.5	1.4	64	37	6.9	.1	32	
AUG												
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	42	35	8.5	12	.5	1.2	80	55	6.6	.1	35	
SEP												
23...	22	23	7.4	11	.6	1.7	66	35	7.1	.2	35	
DATE		SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CCNSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN DIS- SOLVED (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)
APR , 1982												
20...	223	213	3.0	--	.50	.30	.80	--	.140	--	.050	
MAY												
25...	--	189	3.5	--	.55	--	--	--	.040	--	.030	
JUN												
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	171	3.3	--	.37	--	--	--	.030	--	.030	
JUL												
16...	--	163	2.8	--	.63	--	--	--	--	--	.050	
AUG												
06...	--	200	2.7	--	.24	--	--	--	.030	--	.020	
SEP												
23...	176	153	7.6	.70	--	--	--	.040	--	.050	--	

K = non-ideal count.

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

50021000 RIO PELLEJAS AT CENTRAL PELLEJAS, PR (LAT 18°12'07", LONG 66°42'16")--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS EA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)
APR , 1982										
20...	1	1	<100	28	<1	<1	90	30	2	<1
MAY										
25...	--	--	--	--	--	--	--	--	--	--
JUN										
08...	--	--	--	--	--	--	1	--	--	--
JUL										
16...	--	--	--	--	--	--	--	--	--	--
AUG										
06...	--	--	--	--	--	--	<1	--	--	--
SEP										
23...	1	1	<100	23	<1	1	10	10	<1	<1
DATE	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)
APR , 1982										
20...	30	11	700	41	5	1	40	11	.2	<.1
MAY										
25...	--	--	--	44	--	--	--	10	--	--
JUN										
08...	--	--	--	50	--	--	--	10	--	--
JUL										
16...	--	--	--	42	--	--	--	12	--	--
AUG										
06...	--	--	--	42	--	--	--	21	--	--
SEP										
23...	26	12	160	28	2	<1	10	11	.6	.1

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

50021000 RIO PELLEJAS AT CENTRAL PELLEJAS, PR (LAT 18°12'07", LONG 66°42'16")--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L 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)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
APR , 1982										
20...	110	7	<1	<1	<1	<1	20	6	4	.05
MAY										
25...	--	--	--	--	--	--	--	--	5	.09
JUN										
08...	2	--	--	--	--	--	--	--	0	.00
JUL										
16...	--	--	--	--	--	--	--	--	45	.77
AUG										
06...	3	--	--	--	--	--	--	--	0	.00
SEP										
23...	3	<1	<1	<1	<1	1	40	4	1	.04

BENTHIC INVERTEBRATE ANALYSES, OCTOBER 1980 TO APRIL 1982

DATE APR 20, 82
TIME 1500

TOTAL COUNT 30

DIVERSITY: PHYLUM 0.0
CLASS 0.0
ORDER 1.0
FAMILY 2.0
GENUS 0.0
GENUS-INSECTA 0.0

ORGANISM COUNT

ARTHROPODA (ARTHROPODS)

INSECTA
DIPTERA
CHIRONOMIDAE
CONCHAPELOPIA, ARCTO, RHEO 10
CRICOTOPUS 4
TANYTARSUS 3
THIENEMANNIELLA 1
EMPIDIDAE
UNKNOWN GENUS 3
SIMULIIDAE
SIMULIUM 2
EPHEMEROPTERA
BAETIDAE
BAETIS 1
LEPTOPHLEBIIDAE
HERMANELLOPSIS 2
ODONATA
LIBELLULIDAE
PLATHEMIS 1
UNKNOWN 3

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

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

DATE	TIME	SAM- PLING DEPTH (FEET)	STREAM- FLCW, INSTAN- TANECUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	TRANS- PAR- ENCY (SECCHI DISK) (IN)	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-MP (COLS./ 100 ML)	
50021050 - RIO PELLEJAS BELOW CENTRAL PELLEJAS, PR (LAT 18 12 22 LONG 066 42 13)													
APR , 1982 20...	1115	--	20	365	8.0	24.0	--	--	9.2	114	--	K1600	
50021500 - RIO PELLEJAS NR UTUADO, PR (LAT 18 13 53 LONG 066 42 56)													
APR , 1982 21...	1115	--	.95	279	7.7	28.5	--	--	7.9	100	--	46000	
DATE	100 ML)	STREP- TOCOCCI FECAL, KP AGAR (COLS. PER AS CACO3)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NCNCAR- 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- LITY FIELD (MG/L AS CACO3)	CHLO- RIDE, DIS- SOLVED (MG/L AS SO4)	FLUO- RIDE, DIS- SOLVED (MG/L AS CL)	AS P)
50021050 - RIO PELLEJAS BELOW CENTRAL PELLEJAS, PR (LAT 18 12 22 LONG 066 42 13)													
APR , 1982 20...	K1130	114	16	30	9.5	22	.9	2.1	98	23	29	<.1	
50021500 - RIO PELLEJAS NR UTUADO, PR (LAT 18 13 53 LONG 066 42 56)													
APR , 1982 21...	2400	97	42	26	7.9	15	.7	2.2	55	55	9.4	.1	
DATE	SIO2)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TCNS 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, 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)
50021050 - RIO PELLEJAS BELOW CENTRAL PELLEJAS, PR (LAT 18 12 22 LONG 066 42 13)													
APR , 1982 20...	31	209	11.3	--	--	--	--	1.0	--	--	--	--	
50021500 - RIO PELLEJAS NR UTUADO, PR (LAT 18 13 53 LONG 066 42 56)													
APR , 1982 21...	34	187	.48	--	--	--	--	.51	--	--	--	--	

K = non-ideal count.

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

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

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, CRTHC, DIS- SOLVED (MG/L AS P)	ARSENIC TCTAL (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)
50021050 - RIO PELLEJAS BELOW CENTRAL PELLEJAS, PR (LAT 18 12 22 LONG 066 42 13)												
APR , 1982 20...	--	--	.130	.120	--	--	--	--	--	8	--	--
50021500 - RIO PELLEJAS NR UTUADO, PR (LAT 18 13 53 LONG 066 42 56)												
APR , 1982 21...	--	--	.090	.030	--	--	--	--	14	10	--	--
DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TCTAL (UG/L AS SE)	SILVER, TCTAL RECOV- ERABLE (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)	PHYTO- 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)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (T/DAY)	
50021050 - RIO PELLEJAS BELOW CENTRAL PELLEJAS, PR (LAT 18 12 22 LONG 066 42 13)												
APR , 1982 20...	70	--	--	--	--	--	--	--	--	87	4.7	
50021500 - RIO PELLEJAS NR UTUADO, PR (LAT 18 13 53 LONG 066 42 56)												
APR , 1982 21...	63	--	--	--	<4	--	--	--	--	38	.10	

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

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50023000 RIO VIVI NR CENTRAL PELLEJAS, PR (LAT 18°12'52", LONG 66°40'25")

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTANTANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MP (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (CCLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)
APR , 1982											
21...	1500	3.8	265	7.4	23.0	.80	8.2	100	63	440	100
MAY											
25...	1130	8.4	230	7.8	23.0	--	8.2	98	K100	K100	88
JUN											
08...	1350	5.9	227	8.2	26.5	--	8.1	106	210	K190	83
JUL											
16...	1430	6.0	210	7.8	24.0	--	8.0	100	5100	7400	76
AUG											
06...	1055	5.2	250	7.5	23.5	--	9.4	113	K190	250	96
SEP											
23...	1330	14	230	7.6	23.0	<1.0	8.2	101	--	--	79

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)
APR , 1982											
21...	59	27	9.0	13	.6	1.6	44	63	8.5	.1	32
MAY											
25...	42	23	7.4	9.6	.5	1.5	46	39	8.2	.1	31
JUN											
08...	32	21	7.5	11	.6	1.6	51	33	7.3	<.1	32
JUL											
16...	33	20	6.3	9.1	.5	1.5	43	36	7.6	.1	30
AUG											
06...	39	26	7.5	11	.5	1.4	57	41	7.2	.1	31
SEP											
23...	35	20	7.0	11	.6	1.6	44	40	7.6	.1	34

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN DIS- SOLVED (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHOPHOSPHATE, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHOPHOSPHATE, DIS- SOLVED (MG/L AS P)
APR , 1982											
21...	176	182	1.8	--	.57	.40	.97	--	.020	--	.020
MAY											
25...	--	154	3.5	--	1.0	--	--	--	.020	--	<.010
JUN											
08...	--	146	2.3	--	.61	--	--	--	.020	--	.010
JUL											
16...	--	140	2.3	--	.63	--	--	--	--	--	.100
AUG											
06...	--	158	2.2	--	.42	--	--	--	.020	--	<.010
SEP											
23...	164	149	6.2	1.0	1.1	--	--	.050	--	.020	--

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)
APR , 1982										
21...	1	1	<100	36	<1	<1	20	10	1	<1
MAY										
25...	--	--	--	--	--	--	--	--	--	--
JUN										
08...	--	--	--	--	--	--	1	--	--	--
JUL										
16...	--	--	--	--	--	--	--	--	--	--
AUG										
06...	--	--	--	--	--	--	<1	--	--	--
SEP										
23...	1	1	<100	24	<1	<1	<10	<10	<1	<1

K = non-ideal count.

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

50023000 RIO VIVI NR CENTRAL PELLEJAS, PR (LAT 18°12'52", LONG 66°40'25")--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)
APR , 1982										
21...	64	12	330	7	2	1	30	21	.2	<.1
MAY										
25...	--	--	--	11	--	--	--	18	--	--
JUN										
08...	--	--	--	17	--	--	--	16	--	--
JUL										
16...	--	--	--	32	--	--	--	18	--	--
AUG										
06...	--	--	--	<3	--	--	--	18	--	--
SEP										
23...	33	17	160	20	2	<1	20	19	.1	<.1

DATE	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L 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)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
APR , 1982										
21...	3	7	1	<1	<1	<1	10	<3	0	.00
MAY										
25...	--	--	--	--	--	--	--	--	2	.05
JUN										
08...	7	--	--	--	--	--	--	--	6	.10
JUL										
16...	--	--	--	--	--	--	--	--	69	1.1
AUG										
06...	4	--	--	--	--	--	--	--	0	.00
SEP										
23...	4	2	<1	<1	<1	1	50	4	4	.15

BENTHIC INVERTEBRATE ANALYSES, OCTOBER 1981 TO APRIL 1982

DATE APR 21, 82
TIME 1500

TOTAL COUNT 22

DIVERSITY: PHYLUM 0.0
CLASS 0.0
ORDER 0.6
FAMILY 0.6
GENUS 0.6
GENUS-INSECTA 0.6

ORGANISM COUNT

ARTHROPODA (ARTHROPODS)
INSECTA
DIPTERA
CHIRONOMIDAE
CONCHAPELOPIA 19
ODONATA
LIBELLULIDAE
LIBELLULA 3

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

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

DATE	TIME	SAM- PLING DEPTH (FEET)	STREAM- FLC- INSTAN- TANECUS (CFS)	SPE- CIFIC CCN- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (PTU)	TRANS- PAR- ENCY (SECCHI DISK) (IN)	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)
50025110 - LAGO DOS BOCAS NO.3 AT WEST BRANCH NR UTUADO,PR (LAT 18 19 15 LONG 066 40 11)												
DEC , 1980												
04...	1225	70.7	--	214	8.3	27.5	--	23.6	11.4	--	--	90
APR , 1981												
02...	1120	1.00	--	229	7.7	26.0	--	39.0	6.7	--	--	210
JUL												
08...	1115	1.00	--	180	8.7	29.5	--	23.6	9.6	127	--	K100
DEC												
01...	0950	1.00	--	175	7.4	25.0	--	16.5	5.8	70	--	570
FEB , 1982												
24...	1110	1.00	--	--	8.5	25.5	--	30.0	9.0	111	--	43
JUN												
24...	0930	1.00	--	227	7.5	28.0	--	45.5	8.2	104	--	K150
50027090 - LAGO DOS BOCAS NO.1 NR DAM NR UTUADO,PR (LAT 18 20 09 LONG 066 40 04)												
DEC , 1980												
04...	1320	1.00	--	207	7.9	27.0	--	39.4	10.0	--	--	37
04...	1330	92.1	--	--	6.8	24.9	--	--	.0	--	--	--
APR , 1981												
02...	1220	1.00	--	225	7.8	26.2	--	39.4	7.6	--	--	K78
02...	1245	89.0	--	196	7.1	24.0	--	--	1.4	--	--	--
JUL												
08...	1000	1.00	--	170	8.7	30.0	--	31.5	10.5	139	--	--
08...	1010	90.0	--	208	7.0	25.0	--	--	.0	0	--	--
DEC												
01...	1100	1.00	--	151	7.0	25.0	--	20.0	8.8	106	--	K98
01...	1110	84.0	--	--	7.0	24.0	--	--	2.3	--	--	--
FEB , 1982												
24...	1010	1.00	--	--	8.0	25.0	--	39.4	8.1	100	--	K10
24...	1015	88.0	--	--	7.9	24.0	--	--	.0	0	--	--
JUN												
24...	1050	1.00	--	219	7.4	29.0	--	65.0	5.7	74	--	26
24...	1055	85.0	--	214	6.8	25.0	--	--	.0	0	--	--
50025110 - LAGO DOS BOCAS NO.3 AT WEST BRANCH NR UTUADO,PR (LAT 18 19 15 LONG 066 40 11)												
DEC , 1980												
04...	K7	--	--	--	--	--	--	--	66	--	--	--
APR , 1981												
02...	K9	--	--	--	--	--	--	--	71	--	--	--
JUL												
08...	K1	--	--	--	--	--	--	--	74	--	--	--
DEC												
01...	470	--	--	--	--	--	--	--	51	--	--	--
FEB , 1982												
24...	K5	--	--	--	--	--	--	--	79	--	--	--
JUN												
24...	30	--	--	--	--	--	--	--	85	--	--	--
50027090 - LAGO DOS BOCAS NO.1 NR DAM NR UTUADO,PR (LAT 18 20 09 LONG 066 40 04)												
DEC , 1980												
04...	K3	63	2	16	5.7	11	.6	1.6	61	13	11	.1
04...	--	66	5	17	5.7	9.7	.5	1.8	61	9.3	9.4	.1
APR , 1981												
02...	K5	71	4	19	5.8	9.8	.5	1.9	67	15	10	.1
02...	--	56	4	15	4.6	7.8	.5	2.2	52	11	8.8	.1
JUL												
08...	--	76	5	21	5.7	9.5	.5	2.0	71	12	9.5	<.1
08...	--	69	0	19	5.3	7.6	.4	2.2	74	8.2	8.9	<.1
DEC												
01...	5500	55	0	15	4.3	7.2	.4	1.6	57	11	7.7	.1
01...	--	80	14	21	6.7	12	.6	2.0	66	16	9.4	.1
FEB , 1982												
24...	K5	75	1	20	6.2	11	.6	1.6	74	12	7.0	.1
24...	--	82	0	22	6.6	11	.5	1.9	90	10	9.6	.1
JUN												
24...	K4	80	0	22	6.2	12	.6	1.5	85	14	8.6	.1
24...	--	80	0	22	6.2	10	.5	1.8	90	10	9.8	.1

K = non-ideal count.

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

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SCLVED (MG/L)	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, DIS- AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AH- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)		
		50025110 - LAGO DOS BOCAS NO.3 AT WEST BRANCH NR UTUADO, PR (LAT 18 19 15 LONG 066 40 11)										
DEC , 1980												
04...	--	--	--	2	.32	.010	.33	--	.000	.36	.36	.69
APR , 1981												
02...	--	--	--	18	.31	.020	.33	--	.030	.47	.50	.83
JUL												
08...	--	--	--	16	--	<.010	.07	--	.010	.70	.71	.78
DEC												
01...	--	--	--	4	.80	.010	.81	--	.060	.22	.28	1.1
FEB , 1982												
24...	--	--	--	12	--	<.010	.20	--	<.010	--	.21	.41
JUN												
24...	--	--	--	6	--	<.010	<.10	--	.030	.57	.60	

[illegible]

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DTS- SOLVED (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	CADMIUM, TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	COPPER, DYS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)
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[illegible][illegible]

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	SAM- PLING DEPTH (FEET)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	TRANS- PAR- ENCY (SECCHI DISK (IN)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
50039650 - DRAINAGE DITCH BL WARNER LAMBERT LAB. NR SABANA (LAT 18 27 17 LONG 066 21 09)												
MAY , 1982												
25...	1000	--	12	376	6.4	27.5	5.0	--	.2	3	42	K10000
JUL												
09...	1320	--	1.6	680	7.2	29.0	19	--	2.6	34	31	K22000
SEP												
10...	0930	--	.78	641	6.8	27.0	4.2	--	.0	0	110	<100
50039700 - DRAINAGE DITCH AT RIO CIBUCO BL SAN VICENTE (LAT 18 27 44 LONG 066 21 52)												
MAY , 1982												
26...	1120	--	22	520	7.1	27.0	44	--	4.9	61	26	3500
JUL												
09...	1110	--	8.6	680	7.4	27.0	32	--	4.0	50	34	K7500
SEP												
10...	1140	--	3.3	763	7.5	27.0	6.0	--	4.2	52	43	K130000
50039750 - RIO CIBUCO BELOW CENTRAL SAN VICENTE (LAT 18 27 47 LONG 066 21 53)												
MAY , 1982												
25...	1310	--	100	426	7.3	27.0	42	--	8.6	108	37	5300
JUL												
09...	0955	--	39	490	7.6	26.0	4.6	--	6.0	75	15	K1500
SEP												
08...	1425	--	29	409	8.0	30.5	2.4	--	9.0	120	57	K500
<div> <div>STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)</div> <div>HARD- NESS, AS CACO3)</div> <div>HARD- NESS, MCNCAR- BONATE (MG/L AS CACO3)</div> <div>CALCIUM DIS- SOLVED (MG/L AS CA)</div> <div>MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)</div> <div>SODIUM, DIS- SOLVED (MG/L AS NA)</div> <div>SODIUM AD- SORP- TION RATIO</div> <div>POTAS- SIUM, DIS- SOLVED (MG/L AS K)</div> <div>ALKA- LINITY FIELD AS CACO3)</div> <div>SULFATE DIS- SOLVED (MG/L AS SO4)</div> <div>CHLO- RIDE, DIS- SOLVED (MG/L AS CL)</div> <div>FLUO- RIDE, DIS- SOLVED (MG/L AS F)</div> </div>												
50039650 - DRAINAGE DITCH BL WARNER LAMBERT LAB. NR SABANA (LAT 18 27 17 LONG 066 21 09)												
MAY , 1982												
25...	<1000	83	21	24	5.5	37	1.8	4.3	62	11	68	<.1
JUL												
09...	360	--	--	--	--	--	--	--	130	--	--	--
SEP												
10...	K1400	186	26	59	9.4	48	1.6	2.9	160	3.0	93	.1
50039700 - DRAINAGE DITCH AT RIO CIBUCO BL SAN VICENTE (LAT 18 27 44 LONG 066 21 52)												
MAY , 1982												
26...	220	151	41	47	8.2	36	1.3	3.0	110	11	75	.1
JUL												
09...	470	--	--	--	--	--	--	--	180	--	--	--
SEP												
10...	K1300	261	41	83	13	40	1.1	1.0	220	13	84	.2
50039750 - RIO CIBUCO BELOW CENTRAL SAN VICENTE (LAT 18 27 47 LONG 066 21 53)												
MAY , 1982												
25...	K1000	173	23	56	8.0	18	.6	2.6	150	19	33	.1
JUL												
09...	609	--	--	--	--	--	--	--	170	--	--	--
SEP												
08...	<100	165	5	52	8.5	18	.6	2.2	160	12	32	.2

K = non-ideal count.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TCNS 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, 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)
50039650 - DRAINAGE DITCH BL WARNER LAMBERT LAB. NR SABANA (LAT 18 27 17 LONG 066 21 09)												
MAY , 1982												
25...	8.8	198	6.6	11	--	<.010	.10	--	<.010	.80	.80	.90
JUL												
09...	--	--	--	26	.34	.020	.36	--	.020	1.5	1.50	1.9
SEP												
10...	8.4	318	.67	16	--	<.010	<.10	--	.020	1.6	1.60	--
50039700 - DRAINAGE DITCH AT RIO CIBUCO BL SAN VICENTE (LAT 18 27 44 LONG 066 21 52)												
MAY , 1982												
26...	12	259	15.7	96	--	.020	<.10	--	.650	.85	1.50	--
JUL												
09...	--	--	--	39	.25	.030	.28	--	.100	1.1	1.20	1.5
SEP												
10...	14	376	3.4	18	--	<.010	<.10	--	.070	.43	.50	--
50039750 - RIO CIBUCO BELOW CENTRAL SAN VICENTE (LAT 18 27 47 LONG 066 21 53)												
MAY , 1982												
25...	16	246	66.1	111	.84	.060	.90	--	.310	.69	1.00	1.9
JUL												
09...	--	--	--	12	1.2	.060	1.3	--	.080	.52	.60	1.9
SEP												
08...	19	234	18.3	7	.97	.030	1.0	--	.040	.46	.50	1.5
DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)
50039650 - DRAINAGE DITCH BL WARNER LAMBERT LAB. NR SABANA (LAT 18 27 17 LONG 066 21 09)												
MAY , 1982												
25...	4.0	.100	--	--	--	--	--	--	--	--	--	--
JUL												
09...	8.2	.130	--	--	--	--	--	--	--	--	--	--
SEP												
10...	--	.170	--	--	2	100	1	<1	--	--	3	--
50039700 - DRAINAGE DITCH AT RIO CIBUCO BL SAN VICENTE (LAT 18 27 44 LONG 066 21 52)												
MAY , 1982												
26...	--	.130	--	--	--	--	--	--	--	--	--	--
JUL												
09...	6.6	.090	--	--	--	--	--	--	--	--	--	--
SEP												
10...	--	.090	--	--	2	100	1	<1	--	--	3	--
50039750 - RIO CIBUCO BELOW CENTRAL SAN VICENTE (LAT 18 27 47 LONG 066 21 53)												
MAY , 1982												
25...	8.4	.150	--	--	--	--	--	--	--	--	--	--
JUL												
09...	8.4	.200	--	--	--	--	--	--	--	--	--	--
SEP												
08...	6.6	.240	--	--	2	100	1	<1	--	--	3	--

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)	PHYTO- 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)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
50039650	- DRAINAGE DITCH BL WARNER LAMBERT LAB. NR SABANA (LAT 18 27 17 LONG 066 21 09)										
MAY , 1982											
25...	--	--	--	--	--	--	--	--	--	--	--
JUL											
09...	--	--	--	--	--	--	--	--	--	--	--
SEP											
10...	--	<.1	<1	<1	--	--	--	--	--	--	--
50039700	- DRAINAGE DITCH AT RIO CIBUCO BL SAN VICENTE (LAT 18 27 44 LONG 066 21 52)										
MAY , 1982											
26...	--	--	--	--	--	--	--	--	--	--	--
JUL											
09...	--	--	--	--	--	--	--	--	--	--	--
SEP											
10...	--	.3	<1	<1	--	--	--	--	--	--	--
50039750	- RIO CIBUCO BELOW CENTRAL SAN VICENTE (LAT 18 27 47 LONG 066 21 53)										
MAY , 1982											
25...	--	--	--	--	--	--	--	--	--	--	--
JUL											
09...	--	--	--	--	--	--	--	--	--	--	--
SEP											
09...	--	<.1	<1	<1	--	--	--	--	--	--	--

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

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

DATE	TIME	SAM- PLING DEPTH (FEET)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHCS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	TRANS- PAR- ENCY (SECCHI DISK) (IN)	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)
59039970 - LAGO CARITE NO.3 CN RIO DE LA PLATA NR CAYEY,PR (LAT 18 05 04 LONG 066 06 03)												
DEC , 1980												
02...	1215	1.00	--	131	6.7	24.5	--	47.4	8.2	--	--	K17
MAR , 1981												
31...	1145	1.00	--	126	7.4	25.0	--	51.1	6.8	--	--	K110
JUN												
30...	1450	1.00	--	86	7.8	27.0	--	59.0	7.6	96	--	K100
DEC												
08...	1210	1.00	--	100	6.9	24.0	--	60.0	7.4	90	--	K32
FEB , 1982												
25...	1245	1.00	--	--	7.6	23.0	--	49.0	7.4	91	--	32
JUN												
28...	1100	1.00	--	102	7.4	27.0	--	108	8.6	115	--	K2

50039950 - LAGO CARITE NO.1 NR DAM NR CAYEY,PR (LAT 18 04 39 LONG 066 06 19)

DEC , 1980												
02...	1310	1.00	--	126	6.7	24.5	--	49.2	8.4	--	--	K3
02...	1320	62.5	--	234	5.6	21.8	--	--	.2	--	--	--
MAR , 1981												
31...	1240	1.00	--	128	7.6	25.2	--	51.1	7.6	--	--	25
31...	1255	56.0	--	204	6.5	22.0	--	--	.0	--	--	--
JUN												
30...	1340	1.00	--	84	7.7	27.0	--	49.2	7.7	97	--	40
30...	1400	66.0	--	90	6.6	22.5	--	--	.0	0	--	--
DEC												
08...	1120	1.00	--	98	7.0	24.0	--	59.1	6.9	83	--	K32
08...	1125	58.0	--	141	6.2	22.5	--	--	.0	0	--	--
FEB , 1982												
25...	1145	1.00	--	123	7.2	23.0	--	59.0	7.2	88	--	23
JUN												
28...	1145	1.00	--	104	7.4	27.0	--	111	8.4	112	--	<1
28...	1150	69.0	--	165	6.2	21.5	--	--	.0	0	--	--

K = non-ideal count.

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

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

DATE	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, MNCAR- 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- LITY DIS- 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)
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50039900 - LAGO CARITE NO.3 CN RIO DE LA PLATA NR CAYEY,PR (LAT 18 05 04 LONG 066 06 03)

DEC , 1980												
02...	<1	--	--	--	--	--	--	--	28	--	--	--
MAR , 1981												
31...	K2	--	--	--	--	--	--	--	34	--	--	--
JUN												
30...	K8	--	--	--	--	--	--	--	30	--	--	--
DEC												
08...	K3	--	--	--	--	--	--	--	34	--	--	--
FEB , 1982												
25...	K11	--	--	--	--	--	--	--	33	--	--	--
JUN												
28...	410	--	--	--	--	--	--	--	33	--	--	--

50039950 - LAGO CARITE NO.1 NR DAM NR CAYEY,PR (LAT 18 04 39 LONG 066 06 19)

DEC , 1980												
02...	<1	29	1	5.2	3.8	8.7	.7	.8	28	4.2	9.7	.1
02...	--	--	--	--	--	--	--	--	49	--	--	--
MAR , 1981												
31...	K1	31	0	5.7	4.1	9.8	.8	.7	38	3.2	9.8	<.1
31...	--	35	0	7.1	4.3	9.7	.7	.8	57	1.4	9.0	<.1
JUN												
30...	<1	3	0	.5	.4	.7	.2	.9	30	2.4	8.9	<.1
30...	--	27	0	5.2	3.3	7.5	.6	.9	33	1.9	8.3	<.1
DEC												
08...	K6	31	0	5.8	3.9	9.4	.8	.9	36	4.5	8.6	<.1
08...	--	30	0	6.4	3.3	7.3	.6	1.0	48	3.0	8.0	<.1
FEB , 1982												
25...	K5	28	0	5.6	3.4	7.6	.6	1.0	33	2.5	8.3	<.1
JUN												
28...	590	31	0	6.0	3.9	9.5	.8	.7	33	4.0	9.2	<.1
28...	--	34	0	7.1	4.0	9.0	.7	.8	56	5.0	9.5	<.1

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TCNS 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, 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)
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50039900 - LAGO CARITE NO.3 ON RIO DE LA PLATA NR CAYEY,PR (LAT 18 05 04 LONG 066 06 03)

DEC , 1980												
02...	--	--	--	--	.04	<.010	.04	--	.030	.20	.23	.27
MAR , 1981												
31...	--	--	--	8	.17	<.010	.18	--	.080	.40	.48	.66
JUN												
30...	--	--	--	6	.90	<.010	<.01	--	.010	.64	.65	.66
DEC												
08...	--	--	--	7	.93	<.010	.04	--	.130	.14	.27	.31
FEB , 1982												
25...	--	--	--	8	.14	<.010	.15	--	.040	.15	.19	.34
JUN												
28...	--	--	--	3	--	<.010	<.10	--	.030	2.3	2.30	--

50039950 - LAGO CARITE NO.1 NR DAM NR CAYEY,PR (LAT 18 04 39 LONG 066 06 19)

DEC , 1980												
02...	21	70	--	--	.00	.010	.01	--	.030	.24	.27	.28
02...	--	--	--	--	--	--	--	--	--	--	--	--
MAR , 1981												
31...	21	77	--	21	.01	<.010	.01	--	<.010	.60	.61	.62
31...	20	86	--	--	--	--	--	--	--	--	--	--
JUN												
30...	1.4	33	--	6	<.01	<.010	<.01	--	.010	.57	.58	.59
30...	1.9	49	--	--	--	--	--	--	--	--	--	--
DEC												
08...	16	71	--	6	.03	<.010	.04	--	.100	.00	.10	.14
08...	15	58	--	--	--	--	--	--	--	--	--	--
FEB , 1982												
25...	16	61	--	10	.15	<.010	.16	.06	.040	.29	.33	.49
JUN												
28...	18	72	--	3	--	<.010	<.10	--	.030	.37	.40	--
28...	21	79	--	--	--	--	--	<.10	--	--	--	--

K = non-ideal count.

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

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS F)	PHOS- PHORUS, CRTHO, DIS- SOLVED (MG/L AS P)	ARSENIC TCTAL (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)
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50039900 - LAGO CARITE NO.3 ON RIO DE LA PLATA NR CAYEY,PR (LAT 18 05 04 LONG 066 06 03)

DEC , 1980												
02...	1.2	--	.020	--	--	--	--	--	--	--	--	--
MAR , 1981												
31...	2.9	.020	--	--	--	--	--	--	--	--	--	--
JUN												
30...	2.9	.060	--	--	--	--	--	--	--	--	--	--
DEC												
08...	1.4	<.010	--	--	--	--	--	--	--	--	--	60
FEB , 1982												
25...	1.5	.030	--	--	--	--	--	--	--	--	--	--
JUN												
28...	--	.010	--	--	--	--	--	--	--	--	--	--

50039950 - LAGO CARITE NO.1 NR DAM NR CAYEY,PR (LAT 18 04 39 LONG 066 06 19)

DEC , 1980												
02...	1.2	.010	--	--	--	--	--	--	--	--	--	--
MAR , 1981												
31...	2.7	.010	--	--	--	--	--	--	--	--	--	--
JUN												
30...	2.6	.020	--	--	--	--	--	--	--	--	--	--
DEC												
08...	.62	<.010	--	--	--	--	--	--	--	--	--	--
FEB , 1982												
25...	2.2	.010	--	--	--	--	--	--	--	--	--	--
JUN												
28...	--	.010	--	--	--	--	--	--	--	--	--	--

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TCTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)	PHYTO- 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)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
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50039900 - LAGO CARITE NO.3 ON RIO DE LA PLATA NR CAYEY,PR (LAT 18 05 04 LONG 066 06 03)

DEC , 1980											
02...	--	--	--	--	--	22000	.80	13.7	2.57	--	--
MAR , 1981											
31...	--	--	--	--	--	59000	--	--	--	--	--
JUN											
30...	--	--	--	--	--	41000	.48	14.5	.000	--	--
DEC											
08...	--	--	--	--	--	44000	.29	6.85	.100	--	--
FEB , 1982											
25...	--	--	--	--	--	12000	.00	2.80	1.44	--	--
JUN											
28...	--	--	--	--	--	12000	.00	7.50	<.100	--	--

50039950 - LAGO CARITE NO.1 NR DAM NR CAYEY,PR (LAT 18 04 39 LONG 066 06 19)

DEC , 1980											
02...	--	--	--	--	--	19000	.61	9.86	2.58	--	--
MAR , 1981											
31...	--	--	--	--	--	120000	--	--	--	--	--
JUN											
30...	--	--	--	--	--	83000	.40	10.1	.290	--	--
DEC											
08...	--	--	--	--	--	80000	.24	4.26	.530	--	--
FEB , 1982											
25...	--	--	--	--	--	6800	.77	1.30	.710	--	--
JUN											
28...	--	--	--	--	--	8400	.00	3.70	<.100	--	--

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

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

DATE	TIME	SAM- PLING DEPTH (FEET)	STREAM- PLCW, INSTAN- TANECUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	TRANS- PAR- ENCY (SECCHI DISK) (IN)	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)
50044400 - LAGO LA PLATA NO.5 NR MOUTH NR NARANJITO, PR (LAT 18 19 33 LONG 066 12 28)												
DEC , 1980												
05...	1050	1.00	--	378	7.2	26.5	--	51.2	4.1	--	--	K16
APR , 1981												
01...	1320	1.00	--	388	7.8	26.8	--	31.2	7.2	--	--	K100
JUL												
02...	1115	1.00	--	289	8.2	28.0	--	39.4	11.6	147	--	K73
DEC												
04...	1330	1.00	--	316	7.4	26.0	--	39.4	4.1	50	--	40
MAR , 1982												
01...	1245	1.00	--	311	7.7	25.5	--	49.0	7.7	92	--	210
JUN												
22...	1445	1.00	--	314	7.2	28.5	--	58.0	5.5	71	--	K4

50044950 - LAGO LA PLATA NO.3 NR DAN NR NARANJITO, PR (LAT 18 20 18 LONG 066 14 01)												
DEC , 1980												
05...	0955	1.00	--	325	6.8	26.5	--	57.1	1.8	--	--	K120
05...	1005	72.4	--	363	6.6	24.0	--	--	.0	--	--	--
APR , 1981												
01...	1150	1.00	--	351	7.4	26.5	--	31.2	4.3	--	--	K90
01...	1210	73.0	--	345	7.0	24.0	--	--	.0	--	--	--
JUL												
02...	1090	1.00	--	275	7.4	28.5	--	59.0	7.4	95	--	--
02...	1015	76.0	--	195	6.8	24.0	--	--	.0	0	--	--
DEC												
04...	1220	1.00	--	268	6.8	26.0	--	75.4	2.6	31	--	K185
04...	1230	76.0	--	190	6.8	23.5	--	--	.0	0	--	--
MAR , 1982												
01...	1145	1.00	--	297	7.3	25.5	--	49.0	6.2	75	--	30
01...	1155	81.0	--	175	7.1	23.0	--	--	.0	0	--	--
JUN												
22...	1335	1.00	--	291	7.1	29.0	--	67.0	4.5	58	--	26
22...	1345	76.0	--	256	6.6	23.0	--	--	.0	0	--	--

DATE	100 HL	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 HL)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, MNCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SCDIUM, 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)
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50044400 - LAGO LA PLATA NO.5 NR MOUTH NR NARANJITO, PR (LAT 18 19 33 LONG 066 12 28)												
DEC , 1980												
05...	<1	--	--	--	--	--	--	--	128	--	--	--
APR , 1981												
01...	K3	--	--	--	--	--	--	--	131	--	--	--
JUL												
02...	K4	--	--	--	--	--	--	--	131	--	--	--
DEC												
04...	36	--	--	--	--	--	--	--	115	--	--	--
MAR , 1982												
01...	K17	--	--	--	--	--	--	--	120	--	--	--
JUN												
22...	K250	--	--	--	--	--	--	--	130	--	--	--

50044950 - LAGO LA PLATA NO.3 NR DAN NR NARANJITO, PR (LAT 18 20 18 LONG 066 14 01)												
DEC , 1980												
05...	K10	103	0	23	11	19	.8	2.4	110	13	22	.2
05...	--	110	0	26	11	15	.6	2.3	125	4.7	19	.1
APR , 1981												
01...	67	119	0	28	12	19	.8	1.7	120	14	22	.2
01...	--	108	0	25	11	15	.6	2.9	115	11	20	.2
JUL												
02...	--	124	6	30	12	16	.6	2.6	118	13	19	.1
02...	--	61	2	15	5.6	10	.6	2.5	59	7.3	11	.1
DEC												
04...	37	103	13	23	11	19	.8	2.7	90	14	17	.2
04...	--	72	6	16	7.8	14	.7	3.1	66	12	13	.2
MAR , 1982												
01...	K4	113	3	27	11	18	.8	2.1	110	12	18	.1
01...	--	65	0	16	6.1	12	.7	3.0	120	7.2	9.2	.1
JUN												
22...	34	119	0	28	12	21	.9	2.2	120	17	21	.2
22...	--	80	0	19	7.8	13	.7	3.1	87	9.0	11	.2

K = non-ideal count.

DATE	SILICA, DIS- SOLVED (MG/L AS STO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L 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, 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)
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DEC 05...	1980	--	--	--	0	.28	.080	.36	--	.010	.35	.36	.72
APR 01...	1981	--	--	--	21	.45	.030	.48	--	.020	.27	.29	.77
JUL 02...		--	--	--	10	.61	.020	.63	--	<.010	.57	.58	1.2
DEC 04...		--	--	--	17	.66	.060	.72	--	.090	.25	.34	1.1
MAR 01...	1982	--	--	--	10	.63	.020	.65	--	.040	.43	.47	1.1
JUN 22...		--	--	--	2	--	<.010	<.10	--	.060	.84	.90	--

TABLE 1									
Monthly precipitation totals, inches, by month and year									
Month	Year	Total	Normal	Deviation	Standard deviation	Coefficient of variation	Correlation coefficient	Pearson's product-moment correlation coefficient	Spearman's rank correlation coefficient
DEC.	1980								
05...	21	178	--	0	.01	<.010	.01	--	.20
05...	24	177	--	--	--	--	--	--	.23
APR.	1981								
01...	22	191	--	12	.00	<.010	.01	--	.24
01...	22	176	--	--	--	--	--	--	.27
JUL									
02...	21	185	--	6	.00	<.010	.01	--	.62
02...	1.3	88	--	--	--	--	--	--	.63
DEC									
04...	22	163	--	11	.10	.010	.11	--	.33
04...	20	126	--	--	--	--	--	--	.37
MAR.	1982								
01...	20	174	--	11	.30	.010	.31	--	.22
01...	16	106	--	--	--	--	--	--	.28
JUN									
22...	22	196	--	1	--	<.010	<.10	--	.60
22...	19	130	--	--	--	--	--	--	--

[illegible][illegible]

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

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

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)	PHYTO- 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)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
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50044400 - LAGO LA PLATA NO.5 NR MOUTH NR NARANJITO, PR (LAT 18 19 33 LONG 066 12 28)

DEC , 1980											
05...	--	--	--	--	--	24000	.25	19.8	6.05	--	--
APR , 1981											
01...	--	--	--	--	--	15000	.15	20.3	4.53	--	--
JUL											
02...	--	--	--	--	--	3000	--	--	--	--	--
DEC											
04...	--	--	--	--	--	34000	.12	8.29	2.65	--	--
MAR , 1982											
01...	--	--	--	--	--	61000	.08	12.9	2.90	--	--
JUN											
22...	--	--	--	--	--	29000	.00	16.0	3.20	--	--

50044950 - LAGO LA PLATA NO.3 NR DAM NR NARANJITO, PR (LAT 18 20 18 LONG 066 14 01)

DEC , 1980											
05...	--	--	--	--	--	11000	.22	9.31	4.08	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
APR , 1981											
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
JUL											
02...	--	--	--	--	--	25000	.74	9.46	.000	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
DEC											
04...	--	--	--	--	--	14000	.21	14.2	5.58	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
MAR , 1982											
01...	--	--	--	--	--	47000	.08	12.4	2.61	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
JUN											
22...	--	--	--	--	--	19000	.00	6.40	<.100	--	--
22...	--	--	--	--	--	--	--	--	--	--	--

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (IN)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
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50057500 - LAGO LOIZA NO.4 NR MOUTH NR CAGUAS, PR (LAT 18 16 51 LONG 066 00 35)

JUL , 1981									
01...	1400	1.00	175	7.2	27.0	30.0	5.9	74	
FEB , 1982									
26...	1000	1.00	--	7.1	24.5	27.0	1.8	22	
JUN									
21...	1315	1.00	245	6.5	27.5	10.5	1.6	20	
COLI- FORM, FECAL, 0.7 UM-MF (COLS. 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. 100 ML)	ALKA- LINEITY FIELD (MG L AS CAC03)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRATE 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)	

50057500 - LAGO LOIZA NO.4 NR MOUTH NR CAGUAS, PR (LAT 18 16 51 LONG 066 00 35)

JUL , 1981									
01...	3000	K30000	51	394	.40	.070	.47	.530	.97
FEB , 1982									
26...	K150	K18	87	18	.53	.070	.60	1.20	1.8
JUN									
21...	4000	K1500	72	28	.14	.050	.19	.390	.31

K = non-ideal count.

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

		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- PLANK- TON CHROMO FLUOROM (UG / L)	CHLOR-B PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)			
50057500 - LAGO LOIZA NO.4 NR MOUTH NR CAGUAS, PR (LAT 18 16 51 LONG 066 00 35)												
JUL , 1981												
01...		1.50	2.0	8.7	.450	2500	--	1.04	.000			
FEB , 1982												
26...		3.00	3.6	16	.370	6100	.00	3.59	.340			
JUN												
21...		.70	.89	3.9	.260	3600	--	--	--			
DATE	TIME	SAM- PLING DEPTH (FEET)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHGS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (FTU)	TRANS- PAR- ENCY (SECCHI DISK) (IN)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	
50058800 - LAGO LOIZA NO.7 NR DAM NR TRUJILLO ALTO, PR (LAT 18 19 29 LONG 066 00 47)												
JUL , 1981												
01... 1230		1.00	--	227	8.3	30.5	--	35.4	9.3	123	-- K17	
01... 1235		38.0	--	229	7.1	26.0	--	--	.0	0	--	
JUN , 1982												
21... 1200		1.00	--	237	6.6	29.0	--	40.0	1.2	16	-- 20	
21... 1210		26.0	--	159	6.3	26.0	--	--	.0	0	--	
DATE	100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	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)
50058800 - LAGO LOIZA NO.7 NR DAM NR TRUJILLO ALTO, PR (LAT 18 19 29 LONG 066 00 47)												
JUL , 1981												
01... K3		17	0	3.9	1.8	1.9	.2	2.6	84	14	19	.2
01... --		74	0	18	7.0	16	.8	3.0	74	10	15	.1
JUN , 1982												
21... 56		65	0	16	6.2	20	1.1	2.2	67	14	15	.2
21... --		55	0	13	5.4	16	1.0	3.0	61	11	12	.1
DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TCNS 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, 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)
50058800 - LAGO LOIZA NO.7 NR DAM NR TRUJILLO ALTO, PR (LAT 18 19 29 LONG 066 00 47)												
JUL , 1981												
01... 5.3		99	--	8	--	<.010	<.01	--	<.010	--	.75	--
01... 26		139	--	--	--	--	--	--	--	--	--	--
JUN , 1982												
21... 26		140	--	16	.17	.130	.30	--	.170	.33	.50	.80
21... 21		115	--	--	--	--	--	--	--	--	--	--

K = non-ideal count.

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

DATE	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)
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50058800 - LAGO LOIZA NO.7 NR DAM NR TRUJILLO ALTO, PR (LAT 18 19 29 LONG 066 00 47)

[illegible]

DATE	MANGANESE, DIS-SOLVED (UG/L) AS MN	MERCURY TOTAL RECOVERABLE (UG/L) AS HG	SELENIUM, TOTAL RECOVERABLE (UG/L) AS SE	SILVER, TOTAL RECOVERABLE (UG/L) AS AG	ZINC, DIS-SOLVED (UG/L) AS ZN	PHYTO- 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)	SEDIMENT, DIS- CHARGE, SUS- PENDED (MG/L)	SEDIMENT, DIS- CHARGE, SUS- PENDED (T/DAY)
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50058800 - LAGO LOIZA NO.7 NR DAM NR TRUJILLO ALTO, PR (LAT 18 19 29 LONG 066 00 47)

[illegible]

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

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDF, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)	DI- ELDRIN TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)
50010790 - LAGO GUAJATACA NO.1 NR DAM NR QUEBRADILLAS,PR (LAT 18 23 56 LONG 066 55 23)										
DEC , 1980										
03...	1420	--	--	--	--	--	--	--	--	--
JUL , 1981										
07...	1155	--	--	--	--	--	--	--	--	--
JUN , 1982										
23...	1145	<.10	<.01	<.10	<.01	<.01	<.01	.01	<.01	<.01
50020050 - LAGO GARZAS NO.1 NR DAM NR ADJUNTAS,PR (LAT 18 08 21 LONG 066 44 35)										
DEC , 1980										
04...	0845	--	--	--	--	--	--	--	--	--
JUL , 1981										
06...	1320	<.10	.01	<.10	.01	.01	<.01	<.01	<.01	<.01
JUN , 1982										
25...	0835	<.10	<.01	<.10	<.01	<.01	<.01	.01	<.01	<.10
50027090 - LAGO DOS BOCAS NO.1 NR DAM NR UTUADO,PR (LAT 18 20 09 LONG 066 40 04)										
DEC , 1980										
04...	1320	--	--	--	--	--	--	--	--	--
JUL , 1981										
08...	1000	<.10	<.01	<.10	<.01	<.01	<.01	<.01	.01	<.01
JUN , 1982										
24...	1050	<.10	<.01	<.10	<.01	<.01	<.01	.01	<.01	<.01

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

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)
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50010790 - LAGO GUAJATACA NO.1 NR DAM NR QUEBRADILLAS,PR (LAT 18 23 56 LONG 066 55 23)

DEC , 1980										
03...	--	--	--	--	--	--	--	--	--	--
JUL , 1981										
07...	--	--	--	--	--	--	--	--	--	--
JUN , 1982										
23...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01

50020050 - LAGO GARZAS NO.1 NR DAM NR ADJUNTAS,PR (LAT 18 08 21 LONG 066 44 35)

DEC , 1980										
04...	--	--	--	--	--	--	--	--	--	--
JUL , 1981										
06...	<.10	<.01	<.01	<.01	<.01	.01	.01	.01	<.01	<.01
JUN , 1982										
25...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01

50027090 - LAGO DOS BOCAS NO.1 NR DAM NR UTUADO,PR (LAT 18 20 09 LONG 066 40 04)

DEC , 1980										
04...	--	--	--	--	--	--	--	--	--	--
JUL , 1981										
08...	<.10	<.01	.01	<.10	.01	<.01	<.01	<.01	<.01	<.01
JUN , 1982										
24...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01

DATE	PARA- THION, TOTAL (UG/L)	NAPR- 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)
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50010790 - LAGO GUAJATACA NO.1 NR DAM NR QUEBRADILLAS,PR (LAT 18 23 56 LONG 066 55 23)

DEC , 1980									
03...	--	--	--	--	--	.06	<.01	<.01	<.01
JUL , 1981									
07...	--	--	--	--	--	.27	.01	<.01	<.01
JUN , 1982									
23...	<.01	<.10	<.10	<1	<.01	.04	<.01	<.01	<.01

50020050 - LAGO GARZAS NO.1 NR DAM NR ADJUNTAS,PR (LAT 18 08 21 LONG 066 44 35)

DEC , 1980									
04...	--	--	--	--	--	<.01	<.01	<.01	<.01
JUL , 1981									
06...	<.01	<.10	<.10	<1	<.01	<.01	<.01	<.01	<.01
JUN , 1982									
25...	<.01	<.10	<.10	<1	<.01	<.01	<.01	<.01	<.01

50027090 - LAGO DOS BOCAS NO.1 NR DAM NR UTUADO,PR (LAT 18 20 09 LONG 066 40 04)

DEC , 1980									
04...	--	--	--	--	--	<.01	<.01	<.01	<.01
JUL , 1981									
08...	<.01	<.10	<.10	<1	<.01	.03	.01	<.01	<.01
JUN , 1982									
24...	<.01	<.10	<.10	<1	<.01	.01	<.01	<.01	<.01

[illegible]

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

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

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)
50039950 - LAGO CARITE NO.1 NR DAM NR CAYEY,PR (LAT 18 04 39 LONG 066 06 19)									
DEC , 1980									
02...	--	--	--	--	--	.01	<.01	.01	<.01
JUN , 1981									
30...	<.01	<.10	<.10	<1	<.01	<.01	<.01	<.01	<.01
JUN , 1982									
28...	<.01	<.10	<.10	<1	<.01	<.01	<.01	<.01	<.01
50044950 - LAGO LA PLATA NO.3 NR DAM NR NARANJITO, PR (LAT 18 20 18 LONG 066 14 01)									
DEC , 1980									
05...	--	--	--	--	--	.01	<.01	.01	<.01
JUL , 1981									
02...	<.01	<.10	<.10	<1	<.01	<.01	.01	<.01	<.01
JUN , 1982									
22...	<.01	<.10	<.10	<1	<.01	<.01	<.01	<.01	<.01
50058800 - LAGO LOIZA NO.7 NR DAM NR TRUJILLO ALTO, PR (LAT 18 19 29 LONG 066 00 47)									
JUL , 1981									
01...	<.01	<.10	<.10	<1	<.01	.13	.02	<.01	<.01
JUN , 1982									
21...	<.01	<.10	<.10	<1	<.01	--	--	--	--

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

50010720 - LAGO GUAJATACA NO. 3 NR MOUTH NR QUEBRADILLAS, PR (LAT 18°22'05" LONG 066°54'36")

DATE TIME	APR 3, 81 1255	JUL 7, 81 1320	FEB 23, 82 1200	JUN 23, 82 1300				
TOTAL CELLS/ML	6300	5600	12000	13000				
DIVERSITY: DIVISION	1.7	2.3	1.4	1.5				
... CLASS	1.7	2.3	1.4	1.5				
... ORDER	2.4	3.1	2.1	2.6				
... FAMILY	2.7	3.3	2.2	3.2				
... GENUS	2.7	3.3	2.3	3.5				
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)								
..BACILLARIOPHYCEAE								
...ACHNANTHALES								
...ACHNANTHACEAE	--	-	49	1	420	4	810	6
..BACILLARIALES								
...NITZSCHIACEAE								
...NITZSCHIA	--	-	--	-	--	-	68	1
...EUPODISCALES								
...COSCINODISCAEAE								
...CYCLOTELLA	490	8	1000#	18	--	-	950	7
..NAVICULALES								
...NAVICULACEAE								
...NAVICULA*	1000#	16	190	3	100	1	140	1
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...CHLOROCOCCALES								
...CHLOROCOCCACEAE								
...SCHROEDERIA	--	-	49	1	--	-	--	-
...TETRAEDRON	--	-	49	1	--	-	--	-
...COCCOMYXACEAE								
...ELAKATOTHRIX	--	-	97	2	--	-	--	-
...MICRACTINIACEAE								
...MICRACTINIUM	--	-	--	-	--	-	410	3
...OOCYSTACEAE								
...ANKISTRODESMUS	2600#	42	970#	17	1000	9	3400#	27
...KIRCHNERIELLA	--	-	--	-	--	-	200	2
...SCENEDESMACEAE								
...CRUCIGENIA	--	-	--	-	420	4	540	4
...SCENEDESMUS	390	6	--	-	210	2	1400	11
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
...CARTERIA	--	-	--	-	--	-	68	1
...CHLAMYDOMONAS	140	2	290	5	6300#	54	1100	9
...CHLOROGONIUM	--	-	--	-	--	-	340	3
..ZYGEMATALES								
...DESMIDIACEAE								
...COSMARIIUM	--	-	150	3	210	2	1000	8
...EUASTRUM	--	-	49	1	--	-	--	-
...SPONDYLIOSIUM	580	9	--	-	--	-	--	-
CHRYSOPHYTA								
..CHRYSOPHYCEAE								
...OCHROMONADALES								
...DINOBRYACEAE								
...DINOBRYON	--	-	--	-	--	-	140	1
...OCHROMONADACEAE								
...OCHROMONAS	48	1	340	6	310	3	--	-
...SYNURACEAE								
...NALLONONAS	--	-	--	-	--	-	140	1
CRYPTOPHYTA (CRYPTOMONADS)								
..CRYPTOPHYCEAE								
...CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
...CHROOMONAS	--	-	--	-	100	1	--	-
...CRYPTOMONADACEAE								
...CRYPTOMONAS	340	5	240	4	2000#	17	470	4
CYANOPHYTA (BLUE-GREEN ALGAE)								
..CYANOPHYCEAE								
...CHROOCOCCALES								
...CHROOCOCCACEAE								
...ANACYSTIS	--	-	630	11	310	3	140	1
...OSCILLATORIALES								
...OSCILLATORIACEAE								
...OSCILLATORIA	430	7	730	13	--	-	1400	11
PYRRHOPHYTA (FIRE ALGAE)								
..DINOPHYCEAE								
...DINOKONTAE								
...PERIDINIACEAE								
...PERIDINIUM	240	4	730	13	210	2	68	1

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

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

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

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

50010790 - LAGO GUAJATACA NO. 1 NR DAM NR QUEBRADILLAS, PR (LAT 18°23'56" LONG 066°55'23")

DATE TIME	DEC 3,80 1420	APR 3,81 1145	JUL 7,81 1155	FEB 23,82 1100	JUN 23,82 1145					
TOTAL CELLS/ML	24000	7300	7700	13000	230000					
DIVERSITY: DIVISION	0.5	1.8	1.5	1.6	0.4					
...CLASS	0.5	1.8	1.5	1.6	0.4					
...ORDER	0.6	2.8	2.6	2.1	0.9					
...FAMILY	0.6	2.8	2.6	2.3	0.9					
...GENUS	0.6	2.8	3.0	2.4	0.9					
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)										
BACILLARIOPHYCEAE										
ACHNANTHALES										
ACHNANTHACEAE										
ACHNANTHES	--	-	--	-	* 0	240	2	--	-	
EUPODISCALES										
COSCINODISCAEAE										
CYCLOTELLA	760	3	920	13	780	10	1100	8	--	-
HELOSIRA	--	-	--	-	--	-	98	1	2700	1
NAVICULALES										
CYMBELLACEAE										
CYMBELLA	--	-	--	-	* 0	--	-	--	-	
NAVICULACEAE										
NAVICULA	--	-	16000	22	910	12	98	1	2300	1
CHLOROPHYTA (GREEN ALGAE)										
CHLOROPHYCEAE										
CHLOROCOCCALES										
CHLOROCOCCACEAE										
TETRAEDRON	550	2	--	-	--	-	--	-	--	-
DICTYOSPHAERIACEAE										
DICTYOSPHAERIUM	--	-	--	-	--	-	98	1	--	-
ODCYSTACEAE										
ANKISTRODESMUS	--	-	12000	16	200	3	540	4	4600	2
FRANCEIA	--	-	--	-	--	-	* 0	--	-	
KIRCHNERIELLA	140	1	--	-	67	1	--	-	--	-
ODCYSTIS	--	-	--	-	--	-	* 0	--	-	
SCENEDESMACEAE										
COELASTRUM	270	1	--	-	--	-	--	-	--	-
SCENEDESMUS	--	-	--	-	--	-	290	2	--	-
VOLVOCALES										
CHLAMYDOMONADACEAE										
CHLAMYDOMONAS	140	1	48	1	340	4	240	2	--	-
POLYBLEPHARIDACEAE										
SPERMATOZOOPSIS	--	-	--	-	--	-	98	1	--	-
ZYGNEMATALES										
DESMIDIACEAE										
COSMARUM	--	-	--	-	510	7	37000	28	--	-
SPONDYLIUM	--	-	17000	24	--	-	--	-	4800	2
STAUSTRUM	--	-	--	-	--	-	* 0	--	-	
CHRYSTOPHYTA										
CHRYSTOPHYCEAE										
OCHROMONADALES										
OCHROMONADACEAE										
OCHROMONAS	--	-	48	1	--	-	340	3	--	-
XANTHOPHYCEAE										
MISCHOCOCCALES										
SCIADACEAE										
OPHIOCYTIUM	--	-	--	-	--	-	--	-	* 0	
CRYPTOPHYTA (CRYPTOMONADS)										
CRYPTOPHYCEAE										
CRYPTOMONADALES										
CRYPTOCHRYSIDACEAE										
CHROOMONAS	--	-	--	-	67	1	* 0	--	-	
CRYPTOMONADACEAE										
CRYPTOMONAS	* 0		96	1	* 0		150	1	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
CYANOPHYCEAE										
CHROCOCCALES										
CHROCOCCACEAE										
ANACYSTIS	220000	92	--	-	740	10	60000	46	200000	84
NOSTOCALES										
NOSTOCACEAE										
APHANIZOMENON	--	-	530	7	28000	37	--	-	1800	1
CYLINDROSPERMUM	--	-	--	-	740	10	--	-	--	-
OSCILLATORIALES										
OSCILLATORIAEAE										
OSCILLATORIA	--	-	920	13	340	4	--	-	20000	9

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

CONTINUED...

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

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

50010790 LAGO GUAJATACA NO. 1 NR DAM NR QUEBRADILLAS, PR--Continued

DATE TIME	DEC 3,80 1420		APR 3,81 1145		JUL 7,81 1155		FEB 23,82 1100		JUN 23,82 1145	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
EUGLENOPHYTA (EUGLENOIDS)										
..EUGLENOPHYCEAE										
...EUGLENALES										
...EUGLENAEAE										
...TRACHELOMONAS	--	-	290	4	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)										
..DINOPHYCEAE										
...DINOKONTAE										
...PERIDINIACEAE										
...PERIDINIUM	*	0	--	-	67	1	--	-	--	-

50020050

LAGO GARZAS NO. 1 NR DAM NR ADJUNTAS, PR

DATE TIME	DEC 4,80 0845	APR 8,81 1230	JUL 6,81 1320	FEB 22,82 1615	JUN 25,82 0835
TOTAL CELLS EML	35000	6200	22000	30000	250000
DIVERSITY: DIVISION	0.8	1.4	1.6	1.1	0.3
..CLASS	0.8	1.4	1.6	1.1	0.3
...ORDER	1.3	2.2	2.4	1.2	0.7
...FAMILY	2.5	2.9	2.4	1.6	0.7
...GENUS	2.7	3.0	2.5	1.7	0.7

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)										
..BACILLARIOPHYCEAE										
...BACILLARIALES										
...NITZSCHIAEAE										
...NITZSCHIA	--	-	--	-	--	-	--	-	*	0
...EUPODISCALES										
...COSCINODISCAEAE										
...CYCLOTELLA	980	3	91	1	980	4	170	1	*	0
...FRAGILARIALES										
...FRAGILARIAEAE										
...SYNEDRA	--	-	640	10	43000	20	*	0	4100	2
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
...CHLOROCOCCALES										
...CHLOROCOCCACEAE										
...TETRAEDROM	--	-	--	-	--	-	1700	6	--	-
...COCCOMYXACEAE										
...ELAKATOTHRIX	250	1	--	-	--	-	1100	4	--	-
...DICTYOSPHAERIAEAE										
...DICTYOSPHAERIUM	3400	10	680	11	--	-	340	1	1400	1
...MICRACTINIACEAE										
...MICRACTINIUM	--	-	180	3	420	2	--	-	--	-
...ODCYSTACEAE										
...ANKISTRODESMUS	250	1	230	4	38000	17	--	-	3100	1
...KIRCHNERIELLA	250	1	91	1	140	1	--	-	*	0
...ODCYSTIS	--	-	46	1	140	1	--	-	--	-
...PALMELLACEAE										
...SPHAEROCYSTIS	140000	40	680	11	--	-	460	2	--	-
...SCENEDESMACEAE										
...COELASTRUM	79000	22	--	-	--	-	1000	3	--	-
...SCENEDESMUS	--	-	180	3	--	-	970	3	--	-
...TETRASTRUM	490	1	--	-	--	-	--	-	--	-
...TETRASPORALES										
...GLOEOCYSTACEAE										
...GLOEOCYSTIS	--	-	--	-	--	-	570	2	--	-
...VOLVOCALES										
...CHLAMYDOMONADACEAE										
...CARTERIA	--	-	--	-	--	-	*	0	--	-
...CHLAMYDOMONAS	--	-	--	-	560	3	--	-	*	0
...ZYGNEMATALES										

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

CONTINUED...

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

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

50020050 - LAGO GARZAS NO. 1 NR DAM NR ADJUNTAS, PR (LAT 18°08'21" LONG 066°44'35")--Continued

DATE TIME	DEC 4,80 0945	APR 8,81 1230	JUL 6,81 1320	FEB 22,82 1615	JUN 25,82 0835	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
...DESMIDIACEAE						
....COSMARIUM	3300	9	--	-	5200#	24
....EUASTRUM	1300	4	--	-	--	-
....SPONDYLIUM	--	-	2400#	39	--	-
....STAUSTRUM	--	-	46	1	--	-
CHRYSOPHYTA						
..CHRYSOPHYCEAE						
...OCHROMONADALES						
....DINOBRACEAE						
....DINOBRION	980	3	--	-	570	2
....OCHROMONADACEAE	--	-	--	-	--	-
....OCHROMONAS	--	-	280	1	--	-
....SYNURACEAE	--	-	46	1	--	-
....MALLONAS	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
..CRYPTOPHYCEAE						
...CRYPTOMONADALES						
....CRYPTOCHRYSIDACEAE						
....CHROMONAS	980	3	--	-	--	-
....CRYPTOMONADACEAE	--	-	140	2	*	0
....CRYPTOMONAS	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHROOCOCCALES						
....CHROOCOCCACEAE						
....ANACYSTIS	980	3	--	-	6000#	28
....OSCILLATORIALES	--	-	--	-	22000#	74
....OSCILLATORIA	--	-	370	6	--	-
....OSCILLATORIA	--	-	--	-	17000	7
EUGLENOPHYTA (EUGLENOIDS)						
..EUGLENOPHYCEAE						
...EUGLENALES						
....EUGLENACEAE	--	-	140	2	460	2
....TRACHELONAS	--	-	--	-	*	0
PYRRHOPHYTA (FIRE ALGAE)						
..DINOPHYCEAE						
...DINOKONTAE						
....PERIDINIACEAE						
....PERIDINIUM	*	0	230	4	*	0

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

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

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

50025110 - LAGO DOS BOCAS NO. 3 AT WEST BRANCH NR UTUADO, PR (LAT 18°19'15" LONG 066°40'11")

DATE TIME	DEC 4.80 1225	APR 2.81 1120	JUL 8.81 1115	FEB 24.82 1110	JUN 24.82 0930		
TOTAL CELLS/ML	220000	60000	45000	70000	130000		
DIVERSITY: DIVISION	0.6	0.7	1.2	1.3	0.6		
CLASS	0.6	0.7	1.2	1.3	0.6		
ORDER	1.5	1.2	1.5	2.0	1.3		
FAMILY	1.6	1.3	1.5	2.1	1.4		
GENUS	2.4	2.0	1.6	2.4	1.9		
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	
BACILLARIOPHYTA (DIATOMS)							
BACILLARIOPHYCEAE							
EUPODISCALES							
COSCINODISCAEAE							
CYCLOTELLA	--	--	510	1	--	--	
MELOSIRA	--	--	--	--	20000	28	
FRAGILARIALES							
FRAGILARIAEAE							
SYNEDRA	7100	3	*	0	30000	67	
				1800	3	4100	3
CHLOROPHYTA (GREEN ALGAE)							
CHLOROPHYCEAE							
CHLOROCOCCALES							
CHLOROCOCCAEAE							
SCHROEDERIA	--	--	*	0	--	--	
DICTYOSPHAERIACEAE							
DICTYOSPHAERIUM	4900	2	440	1	500	1	
MICRACTINIACEAE							
MICRACTINIUM	*	0	--	--	--	--	
ODCYSTACEAE							
ANKISTRODESMUS	*	0	1100	2	990	2	
CHODATELLA	--	--	*	0	--	--	
CLUSTERIOPSIS	--	--	--	--	--	--	
FRANCEIA	*	0	--	--	--	--	
KIRCHNERIELLA	--	--	1400	2	--	--	
ODCYSTIS	*	0	*	0	*	0	
SCENEDESMACEAE							
ACTINASTRUM	4300	2	--	--	--	--	
COELASTRUM	--	--	--	--	1300	2	
CRUCIGENIA	--	--	--	--	1300	2	
GLOEDACTINIUM	--	--	--	--	1900	3	
SCENEDESMUS	*	0	--	--	*	0	
VOLVOCALES							
CHLAMYDOMONADACEAE							
CHLAMYDOMONAS	*	0	*	0	420	1	
ZYGNEMATALES							
DESMIDIACEAE							
COSMARIVM	--	--	--	--	--	--	
STAUROSTRUM	--	--	*	0	*	0	
CHRYSOPHYTA							
CHRYSOPHYCEAE							
CHROMONADALES							
SYNURACEAE							
MALLOMONAS	--	--	*	0	--	--	
CRYPTOPHYTA (CRYPTOMONADS)							
CRYPTOPHYCEAE							
CRYPTOMONADALES							
CRYPTOCHRYSIDACEAE							
CHROMONAS	1500	1	1200	2	--	--	
CRYPTOMONADACEAE							
CRYPTOMONAS	1900	1	2000	3	990	2	
CYANOPHYTA (BLUE-GREEN ALGAE)							
CYANOPHYCEAE							
CHROOCOCCALES							
CHROOCOCCAEAE							
AGNEMELLUM	12000	5	--	--	1300	2	
ANACYSTIS	120000	54	14000	23	7600	17	
COMPHOSPHAERIA	23000	11	33000	55	--	--	
NOSTOCALES					10000	15	
NOSTOCAEAE							
APHANIZOMENON	21000	10	5400	9	4000	9	
CYLINDROSPERMUM	--	--	--	--	29000	42	
OSCILLATORIALES					--	--	
OSCILLATORIAEAE							
LYNGBYA	7700	4	--	--	--	--	
OSCILLATORIA	13000	6	--	--	--	--	
						3300	3
EUGLENOPHYTA (EUGLENOIDS)							
EUGLENOPHYCEAE							
EUGLENALES							
EUGLENACEAE							
TRACHELOMONAS	--	--	--	--	--	--	
						*	0
PYRRHOPHYTA (FIRE ALGAE)							
DINOPHYCEAE							
DINOKONTAE							
PERIDINIACEAE							
PERIDINIUM	--	--	--	--	660	1	
						*	0

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

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

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

50027090 - LAGO DOS BOCAS NO. 1 NR DAM NR UTUADO, PR (LAT 18°20'09" LONG 066°40'04")

DATE TIME	DEC 2,80 1320	APR 2,81 1220	JUL 8,81 1000	FEB 24,82 1010	JUN 24,82 1050	
TOTAL CELLS/ML	120000	37000	270000	100000	190000	
DIVERSITY: DIVISION	0.7	1.1	0.4	0.8	0.3	
...CLASS	0.7	1.1	0.4	0.8	0.3	
...ORDER	1.9	1.6	1.3	2.1	0.6	
...FAMILY	2.0	1.8	1.3	2.1	0.6	
...GENUS	2.5	2.6	2.2	2.8	1.0	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)						
...BACILLARIOPHYCEAE						
...BACILLARIALES						
...NITZSCHIACEAE						
...NITZSCHIA	--	-	* 0	--	-	* 0
...EUPODISCALES						
...COSCINODISCAEAE						
...CYCLOTELLA	--	-	440 1	* 0	--	-
...MELOSIRA	--	-	--	--	13000 13	--
...FRAGILARIALES						
...FRAGILARIACEAE						
...SYNEDRA	7600 6		360 1	21000 8	2500 2	3100 2
CHLOROPHYTA (GREEN ALGAE)						
...CHLOROPHYCEAE						
...CHLOROCOCCALES						
...CHLOROCOCCACEAE						
...SCHROEDERIA	--	-	290 1	--	-	--
...TETRAEDRON	--	-	--	--	* 0	--
...DICTYOSPHAERIACEAE						
...DICTYOSPHAERIUM	1800 1		3100 8	--	-	--
...HYDRODICTYACEAE						
...PEDIASTRUM	--	-	--	--	1500 1	--
...MICRACTINIACEAE						
...MICRACTINIUM	--	-	* 0	--	-	* 0
...ODCYSTACEAE						
...ANKISTRODESMEUS	900 1		500 2	* 0	* 0	* 0
...CLOSTERIOPSIS	--	-	--	--	-	* 0
...KIRCHNERIELLA	* 0		--	--	-	--
...ODCYSTIS	--	-	290 1	--	-	* 0
...SCENEDESMACEAE						
...ACTINASTRUM	4200 3		290 1	--	-	--
...SCENEDESMUS	1500 1		* 0	--	-	* 0
...VOLVOCALES						
...CHLAMYDOMONADACEAE						
...CHLAMYDOMONAS	* 0		--	* 0	* 0	* 0
...ZYGEMATALES						
...DESMIDIACEAE						
...COSMARIIUM	--	-	--	--	* 0	--
...STURASTRUM	--	-	360 1	--	-	* 0
CHRYSOPHYTA						
...CHRYSOPHYCEAE						
...CHROMONADALES						
...SYNURACEAE						
...MALLONONAS	--	-	* 0	--	-	--
CRYPTOPHYTA (CRYPTOMONADS)						
...CRYPTOPHYCEAE						
...CRYPTOMONADALES						
...CRYPTOCHRYSIDACEAE						
...CHROMONAS	--	-	* 0	--	-	--
...CRYPTOMONADACEAE						
...CRYPTOMONAS	--	-	1200 3	--	-	--
CYANOPHYTA (BLUE-GREEN ALGAE)						
...CYANOPHYCEAE						
...CHROCOCCALES						
...CHROCOCCACEAE						
...AGMENELLUM	2100 2		1200 3	--	-	6700 7
...ANACYSTIS	53000# 42		7300# 20	18000 7		15000# 15
...GOMPHOSPHAERIA	6300 5		16000# 44	76000# 29		21000# 21
...NOSTOCALES						
...NOSTOCACEAE						
...ANABAEANA	--	-	--	7600 3	--	--
...APHANIZOMENON	30000# 24		4300 12	97000# 36		8900 9
...CYLINDROSPERMUM	--	-	--	46000# 17	--	--
...OSCILLATORIALES						
...OSCILLATORIACEAE						
...LYNGBYA	7500 6		--	--	28000# 28	--
...OSCILLATORIA	10000 8		--	--	1200 1	--
EUGLENOPHYTA (EUGLENOIDS)						
...EUGLENOPHYCEAE						
...EUGLENALES						
...EUGLENACEAE						
...TRACHELONONAS	--	-	--	--	--	1000 1
PYRRHOPHYTA (FIRE ALGAE)						
...PYRRHOPHYCEAE						
...DINOIONTAE						
...GYMNODINIACEAE						
...GYMNODINIUM	* 0		--	--	--	--
...PERIDINIACEAE						
...PERIDINIUM	--	-	360 1	--	-	* 0

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

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

50039900 - LAGO CARITE NO. 3 ON RIO DE LA PLATA NR CAYEY, PR (LAT 18°05'04" LONG 066°06'03")

DATE TIME	DEC 2,80 1215	MAR 31,81 1145	JUN 30,81 1450	DEC 8,81 1210	JUN 28,82 1100					
TOTAL CELLS/ML	22000	59000	41000	44000	12000					
DIVERSITY: DIVISION	1.1	1.5	0.6	0.8	1.1					
...CLASS	1.1	1.5	0.6	0.8	1.1					
...ORDER	2.1	2.1	1.1	0.9	1.7					
...FAMILY	2.7	2.5	1.1	1.1	1.9					
...GENUS	3.3	2.5	1.1	1.2	2.2					
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)										
...BACILLARIOPHYCEAE										
...ACHNANTHALES										
...ACHNANTHACEAE										
...ACHNANTHES	--	-	* 0	--	--	-	--	-	--	-
...EUPODISCALES										
...COCCINODISCACEAE										
...CYCLOTELLA	1600	7	3400	6	730	2	690	2	290	2
...FRAGILARIALES										
...FRAGILARIACEAE										
...SYNEDRA	--	-	--	-	--	-	* 0	--	--	-
...NAVICULALES										
...CYMBELLACEAE										
...CYMBELLA	--	-	--	-	730	2	--	-	--	-
...NAVICULACEAE										
...NAVICULA	--	-	--	-	360	1	--	-	--	-
CHLOROPHYTA (GREEN ALGAE)										
...CHLOROPHYCEAE										
...CHLOROCOCCALES										
...CHLOROCOCCACEAE										
...SCHROEDERIA	--	-	--	-	--	-	570	1	--	-
...TETRAEDRON	140	1	* 0	--	--	-	--	-	97	1
...COCCONYXACEAE										
...ELAKATOTHRIX	290	1	--	-	--	-	--	-	--	-
...DICTYOSPHAERIACEAE										
...DICTYOSPHAERIUM	720	3	5200	9	--	-	690	2	190	2
...ODCYSTACEAE										
...ANKISTRUM	1300	6	20000	34	33000	81	860	2	5200	43
...KIRCHNERIELLA	290	1	--	-	--	-	* 0	--	240	2
...HEFHROCYTIUM	3000	13	--	-	--	-	1100	2	--	-
...DOCYSTITIS	--	-	--	-	--	-	* 0	--	--	-
...QUADRIGULA	1700	8	--	-	--	-	--	-	--	-
...PALMELLACEAE										
...SPHAEROCYSTIS	--	-	--	-	--	-	2000	5	--	-
...SCENEDESMACEAE										
...ACTINASTRUM	2300	10	--	-	--	-	--	-	--	-
...SCENEDESMUS	--	-	--	-	--	-	--	-	97	1
...VOLVOCALES										
...CHLAMYDOMONADACEAE										
...CHLAMYDOMONAS	290	1	1600	3	360	1	--	-	190	2
...ZYGNEMATALES										
...DESMIDIACEAE										
...COSMARUM	6600	29	1800	3	3600	9	970	2	830	7
...STAUSTRUM	140	1	--	-	--	-	--	-	920	8
CHRYSOPHYTA										
...CHRYSOPHYCEAE										
...OCHROMONADALES										
...OCHROMONADACEAE										
...OCHROMONAS	--	-	--	-	1100	3	* 0	--	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
...CRYPTOPHYCEAE										
...CRYPTOMONADALES										
...CRYPTOMONADACEAE										
...CRYPTOMONAS	--	-	--	-	360	1	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
...CYANOPHYCEAE										
...CHROCOCCALES										
...CHROCOCCACEAE										
...ANACYSTIS	1000	4	20000	34	--	-	37000	83	* 0	--
...COCCOCHLORIS	430	2	--	-	--	-	--	-	--	-
...NOSTOCALES										
...HAMMATOIDEACEAE										
...RAFIDIOPSIS	2100	10	--	-	--	-	--	-	--	-
...NOSTOCACEAE										
...APHANIZOENON	--	-	3900	7	--	-	--	-	--	-
...OSCILLATORIALES										
...OSCILLATOPIACEAE										
...OSCILLATORIA	--	-	--	-	--	-	--	-	3900	32
EUGLENOPHYTA (EUGLENIDS)										
...EUGLENOPHYCEAE										
...EUGLENALES										
...EUGLENACEAE										
...EUGLENA	--	-	520	1	--	-	--	-	--	-
...TRACHELONONAS	--	-	520	1	--	-	* 0	--	--	-
PYRRHOPHYTA (FIRE ALGAE)										
...DINOPHYCEAE										
...DINOKONTAE										
...GLENODINIACEAE										
...GLENODINIUM	--	-	--	-	--	-	* 0	--	--	-
...PERIDINIACEAE										
...PERIDINIUM	430	2	1600	3	360	1	* 0	--	--	-

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

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

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

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

50039950 - LAGO CARITE NO. 1 NR DAM NR CAYEY, PR (LAT 18°04'39" LONG 066°06'19")

DATE TIME	DEC 2,80 1310	MAR 31,81 1240	JUN 30,81 1340	DEC 8,81 1120	JUN 28,82 1145					
TOTAL CELLS/ML	19000	120000	83000	80000	8400					
DIVERSITY: DIVISION	1.2	1.3	0.6	0.9	0.5					
...CLASS	1.2	1.3	0.6	0.9	0.5					
...ORDER	1.9	1.4	1.0	0.0	1.2					
...FAMILY	2.3	1.6	1.0	0.0	1.3					
...GENUS	2.9	1.6	1.0	0.0	1.7					
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)										
...BACILLARIOPHYCEAE										
...EUPODISCALES										
...COSCINODISCACEAE										
...CYCLOTELLA	980	5	5800	5	2100	3	1300	2	240	3
...NAVICULALES										
...NAVICULACEAE										
...NAVICULA	--	--	--	--	2100	3	--	--	--	--
CHLOROPHYTA (GREEN ALGAE)										
...CHLOROPHYCEAE	--	--	--	--	--	--	610	1	--	--
...CHLOROCOCCALES										
...CHLOROCOCCACEAE										
...TETRAEDRON	--	--	--	--	--	--	*	0	150	2
...COCCOMYXACEAE										
...ELAKATOTHRIX	740	4	--	--	--	--	--	--	--	--
...DICTYOSPHAERIACEAE										
...DICTYOSPHAERIUM	--	--	4000	3	--	--	1800	2	--	--
...OOCYSTACEAE										
...ANKISTRODESMUS	1100	6	53000# 43		68000# 81		1100	1	6000# 71	
...KIRCHNERIELLA	--	--	--	--	--	--	*	0	340	4
...NEPHROCITYUM	3400# 18		--	--	--	--	1000	1	--	--
...OOCYSTIS	980	5	--	--	--	--	400	1	--	--
...PALMELLACEAE										
...SPHAEROCYSTIS	--	--	--	--	--	--	5100	6	--	--
...SCENEDESMACEAE										
...ACTINASTRUM	980	5	--	--	--	--	--	--	--	--
...COELASTRUM	--	--	--	--	--	--	810	1	--	--
...VOLVOCALES										
...CHLAMYDOMONADACEAE										
...CHLAMYDOMONAS	120	1	--	--	--	--	*	0	290	3
...ZYGNEMATALES										
...DESMIDIACEAE										
...CLOSTERIUM	--	--	--	--	--	--	*	0	--	--
...COSMARIUM	6300# 34		3600	3	7100	8	--	--	490	6
...SPONDYLIUM	--	--	--	--	--	--	1100	1	--	--
...STAUSTRUM	--	--	--	--	--	--	--	--	580	7
CHRYSOPHYTA										
...CHRYSOPHYCEAE										
...OCHROMONADALES										
...DINOBRYACEAE										
...DINOBRYON	120	1	--	--	--	--	--	--	--	--
...OCHROMONADACEAE										
...OCHROMONAS	--	--	--	--	4200	5	--	--	--	--
CRYPTOPHYTA (CRYPTOMONADS)										
...CRYPTOPHYCEAE										
...CRYPTOMONADALES										
...CRYPTOMONADACEAE										
...CRYPTOMONAS	120	1	--	--	--	--	--	--	--	--
CYANOPHYTA (BLUE-GREEN ALGAE)										
...CYANOPHYCEAE										
...CHROOCOCCALES										
...CHROOCOCCACEAE										
...ANACYSTIS	2800# 15		55000# 45		--	--	64000# 81		240	3
...COCCOCHLORIS	860	5	--	--	--	--	--	--	--	--
EUGLENOPHYTA (EUGLENOIDS)										
...EUGLENOPHYCEAE										
...EUGLENALES										
...EUGLENACEAE										
...EUGLENA	--	--	--	--	--	--	--	--	49	1
...TRACHELOMONAS	--	--	730	1	--	--	400	1	--	--
PYRRHOPHYTA (FIRE ALGAE)										
...DINOPHYCEAE										
...DINOKONTAE										
...PERIDINIACEAE										
...PERIDINIUM	120	1	--	--	--	--	910	1	49	1

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

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

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

50044400 - LAGO LA PLATA NO. 5 NR NARANJITO, PR (LAT 18°19'33" LONG 066°12'28")

DATE TIME	DEC 1050	APR 1320	JUL 1115	JUN 22,82 1445				
TOTAL CELLS/ML	24000	15000	3000	29000				
DIVERSITY: DIVISION	1.7	1.3	2.1	0.8				
..CLASS	1.7	1.3	2.1	0.8				
..ORDER	2.0	1.4	2.9	0.8				
..FAMILY	2.0	1.4	3.3	0.8				
..GENUS	2.1	1.5	3.9	1.5				
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)								
..BACILLARIOPHYCEAE								
..BACILLARIALES								
...NITZSCHIA	--	--	78	3	*	0		
...EUPODISCALES								
...COSCINODISCAEAE								
...CYCLOTELLA	69000	29	64000	43	310	10	69000	23
...MELOSIRA	--	--	210	1	4700	16	180000	61
...FRAGILARIALES								
...FRAGILARIACEAE								
...SYNEDRA	--	--			160	5	--	--
...NAVICULALES								
...NAVICULACEAE								
...GYROSIGMA	--	--	--	--	20	1	--	--
...NAVICULA	--	--	--	--	98	3	--	--
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHLOROCOCCACEAE								
...TETRAEDRON	--	--	--	--	20	1	--	--
...MICRACTINIACEAE								
...MICRACTINIUM	640	3	--	--	--	--	--	--
...OOCYSTACEAE								
...ANKISTRODESCHUS	660	4	--	--	98	3	--	--
...CHODATELLA	--	--	--	--	59	2	--	--
...KIRCHMERIELLA	--	--	--	--	78	3	--	--
...OOCYSTIS	--	--	--	--	78	3	--	--
...SELENASTRUM	--	--	--	--	39	1	--	--
...TREUBARIA	210	1	--	--	--	--	--	--
...SCENEDESMACEAE								
...SCENEDESMUS	--	--	210	1	200	6	--	--
...VOLVOCALES								
...CHLAMYDOMONADACEAE								
...CHLAMYDOMONAS	84000	35	73000	49	310	10	2000	7
CHRYSOPHYTA								
..CHRYSOPHYCEAE								
...OCHROMONADALES								
...OCHROMONADACEAE								
...OCHROMONAS	--	--	110	1	--	--	--	--
...SYNURACEAE								
...MALLONAS	--	--	--	--	330	11	--	--
CRYPTOPHYTA (CRYPTOMONADS)								
..CRYPTOPHYCEAE								
...CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
...CHROOMONAS	--	--	--	--	20	1	--	--
...CRYPTOMONADACEAE								
...CRYPTOMONAS	640	3	420	3	59	2	--	--
CYANOPHYTA (BLUE-GREEN ALGAE)								
..CYANOPHYCEAE								
...CHROOCOCCALES								
...CHROOCOCCACEAE								
...ANACYSTIS	64000	27	--	--	--	--	2300	8
EUGLENOPHYTA (EUGLENOIDS)								
..EUGLENOPHYCEAE								
...EUGLENALES								
...EUGLENACEAE								
...EUGLENA	--	--	320	2	20	1	--	--
...TRACHELONAS	--	--	--	--	59	2	--	--
PYRRHOPHYTA (FIRE ALGAE)								
..PYRRHOPHYCEAE								
...DINOKONTAE								
...GLENODINIACEAE								
...GLENODINIUM	--	--	--	--	240	8	--	--
...PERIDINIACEAE								
...PERIDINIUM	--	--	--	--	270	9	--	--

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

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

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

50044950 LAGO LA PLATA NO. 3 NEAR DAM NEAR NARANJITO, PR (LAT 18°20'18", LONG 66°14'01")

DATE TIME	DEC 5,80 0955	APR 1,81 1150	JUL 2,81 1000	JUN 22,82 1335				
TOTAL CELLS/ML	11000	19000	25000	19000				
DIVERSITY: DIVISION	1.8	0.9	0.5	1.3				
..CLASS	1.8	0.9	0.5	1.3				
...ORDER	2.0	0.9	0.8	1.8				
...FAMILY	2.0	0.9	0.8	1.8				
...GENUS	2.1	0.9	1.1	2.2				
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)								
.BACILLARIOPHYCEAE								
..EUPODISCALES								
...COSCINODISCACEAE								
....CYCLOTELLA	2300#	22	3500#	18	20000#	80	2000	11
....MELOSIRA	--	-	--	-	1500	6	3500#	19
..FRAGILARIALES								
...FRAGILARIACEAE								
....SYNEDRA	--	-	--	-	860	3	--	-
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...OOCYSTACEAE								
....ANKISTRODESMUS	880	8	--	-	--	-	730	4
....CHODATELLA	80	1	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	730	4
....TREUBARIA	80	1	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	2100#	19	--	-	--	-	180	1
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	80	1	320	2	--	-	--	-
...CRYPTOMONADACEAE								
....CRYPTOMONAS	160	1	160	1	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	4800#	45	15000#	79	640	3	9100#	49
..OSCILLATORIALES								
...OSCILLATORIACEAE								
....LYNGBYA	--	-	--	-	1900	8	--	-
....OSCILLATORIA	--	-	--	-	--	-	2100	11
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	160	1	--	-	--	-	--	-
....PHACUS	80	1	--	-	--	-	--	-
....TRACHELOMONAS	--	-	--	-	--	-	180	1

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

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

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

50058800 LAGO LOIZA NO. 7 NEAR DAM NEAR TRUJILLO ALTO, PR (LAT 18°19'29", LONG 66°00'47")

DATE TIME	JUL 1, 81 1230	JUN 21, 82 1200
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TOTAL CELLS/ML	130000	14000
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DIVERSITY: DIVISION	1.6	1.5
...CLASS	1.6	1.5
...ORDER	1.9	2.1
...FAMILY	2.1	2.7
...GENUS	2.3	3.1

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
----------	--------------	--------------	--------------	--------------

BACILLARIOPHYTA (DIATOMS)

.BACILLARIOPHYCEAE				
..BACILLARIALES				
...NITZSCHIACEAE				
....NITZSCHIA	940	1	*	0
..EUPODISCALES				
...COSCINODISCAEAE				
....CYCLOTELLA	21000#	17	2700#	20
....MELOSIRA	2800	2	630	5
....STEPHANODISCUS	2800	2	--	--
..NAVICULALES				
...NAVICULACEAE				
....NAVICULA	6900	5	--	--

CHLOROPHYTA (GREEN ALGAE)

.CHLOROPHYCEAE				
..CHLOROCOCCALES				
...CHLOROCOCCACEAE				
....TETRAEDRON	--	--	*	0
...DICTYOSPHAERIACEAE				
....DICTYOSPHAERIUM	--	--	1000	7
...MICRACTINIACEAE				
....MICRACTINIUM	5300	4	--	--
...OOCYSTACEAE				
....ANKISTRODESMUS	--	--	380	3
....KIRCHNERIELLA	*	0	--	--
....OOCYSTIS	1200	1	--	--
...PALMELLACEAE				
....SPHAEROCYSTIS	--	--	940	7
...SCENEDESMACEAE				
....ACTINASTRUM	--	--	760	6
....COELASTRUM	26000#	20	--	--
....CRYCIGENIA	--	--	250	2
...SCENEDESMUS	--	--	310	2
...VOLVOCALES				
...CHLAMYDOMONADACEAE				
....CHLAMYDOMONAS	--	--	250	2

CRYPTOPHYTA (CRYPTOMONADS)

.CRYPTOPHYCEAE				
..CRYPTOMONADALES				
...CRYPTOMONADACEAE				
....CRYPTOMONAS	940	1	--	--

CYANOPHYTA (BLUE-GREEN ALGAE)

.CYANOPHYCEAE				
..CHROCOCCALES				
...CHROCOCCACEAE				
....AGMENELLUM	--	--	250	2
....ANACYSTIS	59000#	46	3000#	22
...OSCILLATORIALES				
...OSCILLATORIAEAE				
....OSCILLATORIA	--	--	3100#	23

EUGLENOPHYTA (EUGLENIDS)

.EUGLENOPHYCEAE				
..EUGLENALES				
...EUGLENACEAE				
....TRACHELOMONAS	*	0	--	--

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

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

Ground-Water Records

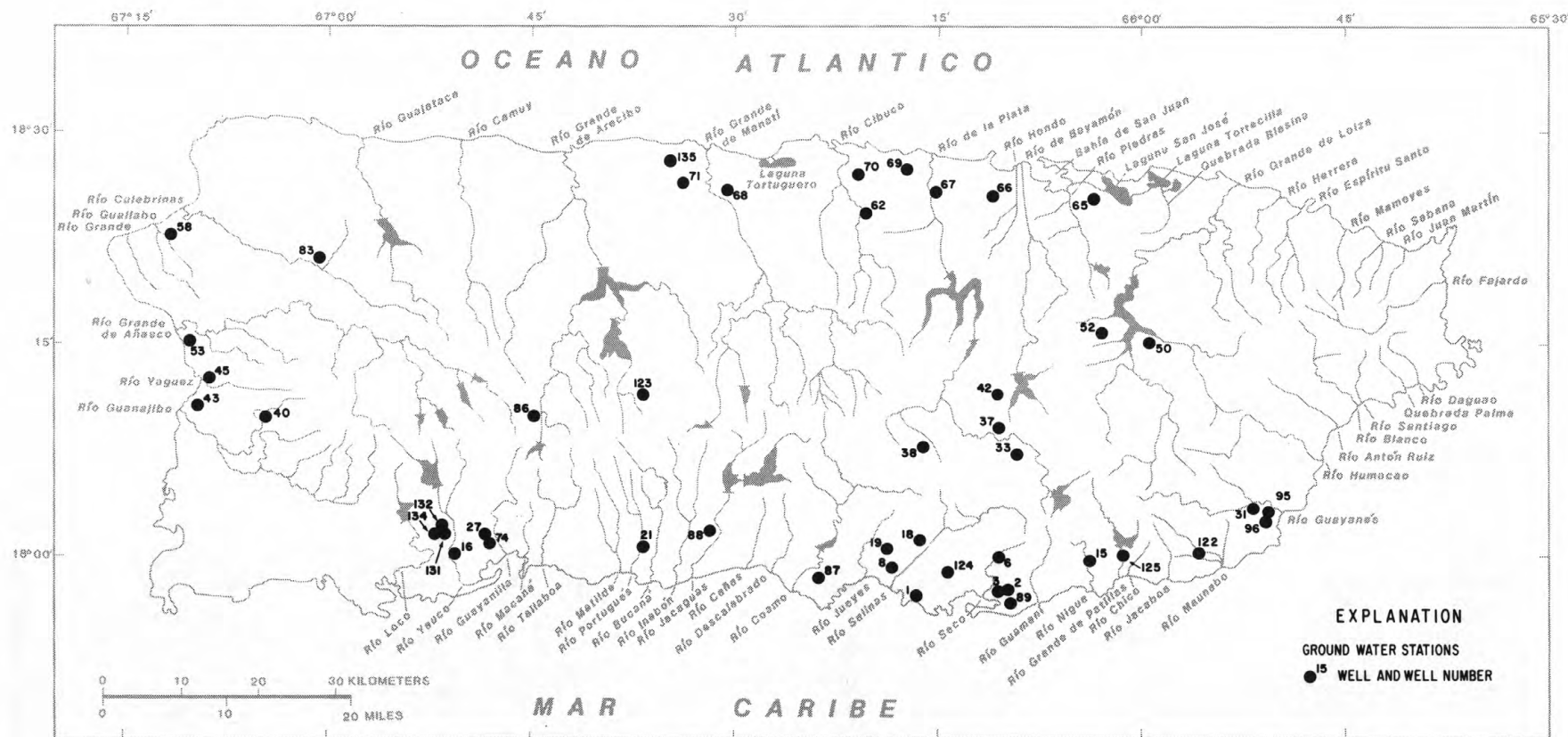


Figure 25.--Location of ground-water stations.

RIO GRANDE DE ARECIBO BASIN

181038066441201. Local number, 86.

LOCATION.--Lat 18°10'38", long 66°44'12".

Owner: Joaquin 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, 12.46 ft (3.80 m) below land-surface datum, Apr. 12, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 22, 1980	7.72	Apr. 13, 1981	10.99	Oct. 6, 1981	8.39	Apr. 12, 1982	12.46
Nov. 25	10.83	May 11	11.06	Nov. 9	9.30	May 25	10.40
Dec. 30	11.48	June 1	10.97	Nov. 30	10.88	June 14	11.54
Jan. 23, 1981	11.51	July 6	10.85	Jan. 6, 1982	10.37	July 19	11.27
Feb. 26	11.60	Aug. 4	10.04	Feb. 9	11.63	Aug. 16	10.41
Mar. 9	11.94	Sept. 8	11.10	Mar. 16	11.74	Sept. 7	8.88

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.--Jan. 15, 1976 to July 21, 1977, Jan. 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, a49.36 ft (a15.04 m) below land-surface datum, Apr. 21, 1976.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 11, 1980	14.52	Feb. 26, 1981	14.73	Aug. 4, 1981	14.82	Mar. 16, 1982	15.26
Oct. 23	13.74	Mar. 9	15.06	Sept. 8	14.35	Apr. 12	15.16
Nov. 25	16.00	Apr. 13	14.60	Oct. 5	14.55	May 25	13.70
Nov. 28	a23.78	May 11	13.54	Nov. 9	12.10	June 14	14.93
Dec. 30	14.74	June 1	13.58	Nov. 30	14.37	July 19	15.31
Jan. 28, 1981	14.86	July 6	13.80	Jan. 5, 1982	14.64	Aug. 16	14.12
				Feb. 19	16.02	Sept. 7	13.09

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 (all.34 m) below land-surface datum, Jan. 15, 1975.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 9, 1980	a29.38	June 8, 1981	a25.08	Dec. 8, 1981	a29.12	Apr. 16, 1982	a29.58
Nov. 24	a29.50	July 13	a28.50	Dec. 16	a23.80	May 21	a29.60
Dec. 17	a28.82	Aug. 10	a25.93	Jan. 14, 1982	a25.69	June 17	a29.40
Jan. 8, 1981	a29.09	Oct. 2	a29.19	Feb. 16	a28.30	July 26	a29.62
Feb. 25	a30.18	Nov. 13	a25.13	Mar. 17	a29.00	Aug. 19	a29.31
						Sept. 10	a29.28

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, a23.90 ft (a7.28 m) below land-surface datum, Apr. 15, 1982; lowest measured, 226.9 ft (69.2 m) below land-surface datum, Apr. 4, 1963.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 9, 1980	a200.36	July 9, 1981	a199.32	Dec. 16, 1981	a183.01	May 2, 1982	a 24.30
Nov. 24	a200.48	Aug. 10	a197.00	Jan. 8, 1982	a197.41	June 17	a 27.28
Dec. 17	a200.68	Sept. 22	a200.89	Feb. 18	a197.78	July 1	a 89.05
Jan. 8, 1981	a200.78	Oct. 15	a200.38	Mar. 17	a 25.40	July 26	a 23.50
Feb. 24	a200.90	Nov. 13	a200.28	Mar. 18	a 26.40	Aug. 19	a200.10
June 8	a198.48	Dec. 8	a200.00	Apr. 15	a 23.90	Sept. 10	a 24.75

a Pumping.

GROUND-WATER LEVELS

385

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.

LOWEST WATER LEVEL IN FEET BELOW LAND SURFACE DATUM,
ON 5TH, 10TH, 15TH, 20TH, 25TH AND LAST DAY OF MONTH.
WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	b282.9	282.9	283.0	b283.0	283.2	b283.2	b283.1	282.9	282.8	b282.9	b283.0	b283.1
10	282.8	283.0	283.1	283.0	283.1	b283.2	b283.1	283.0	282.9	b282.9	b283.0	b283.1
15	282.8	283.0	283.0	282.9	283.1	b283.2	b283.1	282.9	282.9	b283.0	b283.1	283.1
20	282.8	283.0	282.9	283.1	283.2	b283.2	b283.1	282.9	b282.9	b283.0	b283.1	283.2
25	282.9	283.0	283.1	283.0	b283.2	b283.2	b283.1	282.6	b282.9	b283.0	b283.1	283.2
EOM	283.0	283.0	283.0	283.2	b283.2	b283.1	283.1	282.7	b282.9	b283.0	b283.1	283.1

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	283.18	283.17	283.25	281.68	282.56	282.85	283.15	283.19	283.00	283.11	283.11	283.07
2	283.20	283.16	283.26	281.76	282.54	282.85	283.15	283.18	283.00	283.11	283.11	283.04
3	283.20	283.14	283.27	281.79	282.56	282.89	283.10	283.19	283.00	283.11	283.11	283.02
4	283.17	283.16	283.23	281.82	282.57	282.92	283.10	283.19	283.00	283.11	283.11	283.01
5	283.17	283.11	283.19	281.85	282.58	282.93	283.10	283.18	283.00	283.10	283.11	283.00
6	283.18	283.07	283.17	281.88	282.62	282.96	283.10	283.17	283.00	283.09	283.12	282.98
7	283.19	283.05	283.17	281.94	282.66	283.10	283.10	283.17	283.00	283.09	283.17	282.98
8	283.19	283.03	283.14	282.02	282.70	283.09	283.10	283.21	283.00	283.10	283.18	282.99
9	283.17	283.04	283.11	282.07	282.73	283.09	283.10	283.25	283.00	283.09	283.17	283.03
10	283.16	283.04	283.09	282.11	282.71	283.09	283.10	283.27	283.00	283.07	283.19	283.05
11	283.12	283.04	283.07	282.12	282.70	283.09	283.10	283.24	283.00	283.05	283.20	283.08
12	283.11	283.04	283.09	282.16	282.70	283.09	283.10	283.17	283.00	283.01	283.22	283.04
13	283.10	283.05	282.99	282.20	282.72	283.09	283.10	283.05	283.05	283.00	283.22	283.04
14	283.10	283.07	282.67	282.26	282.75	283.09	283.10	283.05	283.05	283.00	283.22	283.03
15	283.11	283.09	278.16	282.28	282.76	283.09	283.10	283.05	283.05	283.01	283.21	283.02
16	283.14	283.11	277.12	282.30	282.80	283.09	283.10	283.05	283.05	283.01	283.21	282.98
17	283.17	283.12	278.15	282.32	282.81	283.09	283.10	283.05	283.05	283.01	283.22	282.96
18	283.21	283.12	279.00	282.34	282.79	283.09	283.10	283.05	283.10	283.01	283.25	282.94
19	283.22	283.10	279.61	282.36	282.77	283.09	283.10	283.05	283.10	283.01	283.24	282.93
20	283.22	283.09	280.03	282.39	282.77	283.13	283.10	283.05	283.10	283.00	283.26	282.94
21	283.21	283.07	280.33	282.42	282.77	283.15	283.10	283.05	283.10	283.00	283.26	282.96
22	283.22	283.05	280.59	282.45	282.77	283.15	283.10	283.05	283.10	283.00	283.22	282.97
23	283.22	283.04	280.81	282.49	282.76	283.16	283.10	283.05	283.10	283.01	283.18	282.98
24	283.21	283.04	280.98	282.54	282.77	283.16	283.10	283.05	283.15	283.01	283.15	283.00
25	283.17	283.06	281.14	282.54	282.82	283.16	283.10	283.00	283.15	282.99	283.15	b283.00
26	283.12	283.12	281.26	282.53	282.86	283.16	283.10	283.00	283.17	282.99	283.15	b283.00
27	283.12	283.16	281.35	282.51	282.87	283.16	283.10	283.00	283.16	282.99	283.15	b283.00
28	283.13	283.21	281.42	282.52	282.87	283.15	283.20	283.00	283.11	283.01	283.15	b283.00
29	283.15	283.24	281.48	282.53	---	283.15	283.22	283.00	283.11	283.03	283.13	b283.00
30	283.16	283.24	281.57	282.55	---	283.15	283.21	283.00	283.11	283.09	283.08	b283.00
31	283.16	---	281.65	282.56	---	283.15	---	283.00	---	283.11	283.08	---
LOW	283.22	283.24	283.27	282.56	282.87	283.16	283.22	283.27	283.17	283.11	283.26	283.08
HIGH	283.10	283.03	277.12	281.68	282.54	282.85	283.10	283.00	283.00	282.99	283.08	282.93

WTR YR 1982 LOW 283.27 HIGH 277.12

b Estimated.

GROUND-WATER LEVELS

RIO CIRUCCO 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, 134.2 ft (40.9 m) below land-surface datum, Aug. 11, 1976.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
Oct. 14, 1980	a102.38	Mar. 31, 1981	a96.35	Sept. 24, 1981	a87.08	Apr. 15, 1982	a102.51
Dec. 2	a101.57	May 1	a97.38	Oct. 28	a92.36	May 21	a 82.60
Dec. 22	a 99.75	June 25	a84.25	Dec. 16	a86.32	June 16	a 92.60
Jan. 16, 1981	a100.86	July 13	a84.60	Jan. 13, 1982	a95.00	July 26	a 98.35
Feb. 25	a 98.28	Aug. 25	a84.97	Feb. 16	a92.21	Aug. 17	a102.55
				Mar. 17	a97.04	Sept. 10	a107.40

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.

LOWEST WATER LEVEL IN FEET BELOW LAND SURFACE DATUM,
ON 5TH, 10TH, 15TH, 20TH, 25TH AND LAST DAY OF MONTH.
WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	29.18	29.03	29.27	29.08	29.21	29.38	28.57	28.72	27.55	28.04	28.14	28.24
10	29.18	29.07	29.06	29.09	29.26	29.39	28.46	28.00	27.54	28.13	28.15	28.33
15	29.18	29.15	28.95	29.12	29.27	29.48	28.53	27.87	27.68	28.22	28.09	28.38
20	29.15	29.19	28.96	29.19	29.32	29.54	28.62	27.85	27.79	28.23	28.13	28.38
25	29.12	29.21	28.98	29.17	29.32	29.57	28.71	27.63	27.87	28.22	28.15	28.44
EOB	29.12	29.22	29.04	29.22	29.35	28.87	28.72	27.57	27.96	28.21	28.17	28.51

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28.53	28.60	28.20	24.73	26.36	26.89	27.60	28.07	26.95	27.74	27.97	28.30
2	28.56	28.55	28.22	24.81	26.34	26.90	27.60	28.06	26.97	27.76	27.98	28.31
3	28.57	28.40	28.24	24.87	26.35	26.91	27.61	28.06	27.02	27.78	27.96	28.29
4	28.58	28.21	28.26	24.92	26.35	26.93	27.62	28.08	27.04	27.81	27.97	28.28
5	28.58	28.02	28.28	24.99	26.35	26.98	27.63	28.08	27.07	27.83	27.97	28.28
6	28.61	27.86	28.30	25.06	26.37	27.01	27.65	28.07	27.09	27.85	27.99	28.27
7	28.63	27.78	28.32	25.13	26.38	27.04	27.65	28.06	27.12	27.85	28.02	28.27
8	28.65	27.76	28.32	25.19	26.40	27.06	27.68	28.08	27.16	27.87	28.04	28.29
9	28.65	27.75	28.33	25.25	26.41	27.08	27.72	28.10	27.20	27.89	28.07	28.29
10	28.66	27.73	28.33	25.31	26.42	27.12	27.75	28.08	27.22	27.90	28.08	28.30
11	28.67	27.72	28.34	25.37	26.43	27.16	27.77	27.95	27.24	27.92	28.09	28.30
12	28.69	27.72	28.24	25.43	26.45	27.19	27.78	27.31	27.27	27.93	28.11	28.30
13	28.70	27.73	26.90	25.51	26.47	27.20	27.78	27.10	27.30	27.94	28.12	28.27
14	28.70	27.75	24.97	25.56	26.50	27.22	27.78	26.86	27.32	27.94	28.13	28.22
15	28.72	27.78	22.78	25.61	26.54	27.25	27.80	26.66	27.35	27.95	28.15	28.18
16	28.73	27.81	22.08	25.66	26.55	27.28	27.81	26.51	27.38	27.96	28.17	28.19
17	28.75	27.84	21.93	25.71	26.56	27.29	27.82	26.44	27.41	27.97	28.20	28.19
18	28.77	27.87	22.01	25.79	26.58	27.31	27.82	26.44	27.43	27.97	28.22	28.19
19	28.79	27.90	22.26	25.84	26.60	27.33	27.85	26.50	27.45	27.98	28.23	28.20
20	28.78	27.92	22.59	25.88	26.62	27.34	27.88	26.56	27.47	28.01	28.25	28.21
21	28.75	27.95	22.92	25.93	26.65	27.37	27.92	26.60	27.49	28.03	28.26	28.23
22	28.71	27.98	23.21	25.98	26.70	27.42	27.94	26.63	27.54	28.03	28.27	28.25
23	28.70	28.00	23.49	26.04	26.72	27.44	27.94	26.67	27.55	28.01	28.28	28.26
24	28.69	28.03	23.73	26.07	26.76	27.48	27.94	26.71	27.58	28.00	28.28	28.26
25	28.67	28.06	23.91	26.10	26.78	27.51	27.96	26.76	27.60	27.99	28.28	28.27
26	28.66	28.09	24.07	26.15	26.81	27.54	27.96	26.80	27.64	27.99	28.30	28.27
27	28.65	28.12	24.23	26.19	26.85	27.54	28.00	26.84	27.67	28.00	28.31	28.28
28	28.63	28.14	24.35	26.23	26.89	27.53	28.00	26.88	27.68	27.99	28.31	28.30
29	28.62	28.16	24.46	26.28	---	27.53	28.02	26.88	27.70	27.99	28.32	28.31
30	28.62	28.18	24.57	26.32	---	27.56	28.05	26.90	27.73	27.98	28.33	28.32
31	28.61	---	24.67	26.34	---	27.58	---	26.92	---	27.96	28.32	---
LOW	28.79	28.60	28.34	26.34	26.89	27.58	28.05	28.10	27.73	28.03	28.33	28.32
HIGH	28.53	27.72	21.93	24.73	26.34	26.89	27.60	26.44	26.95	27.74	27.96	28.18

WTR YR 1982 LOW 28.79 HIGH 21.93

a Pumping.

GROUND-WATER LEVELS

387

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, a169.2 ft (a51.6 m) below land-surface datum, Dec. 10, 1976.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 15, 1980	a52.90	Mar. 26, 1981	9.90	Oct. 27, 1981	8.64	Apr. 8, 1982	a 93.90
Nov. 18	a58.00	Apr. 27	9.55	Nov. 19	a100.93	May 6	a 99.28
Dec. 23	a57.60	June 15	12.55	Dec. 23	a103.50	June 10	a105.60
Jan. 20, 1981	10.28	July 15	a50.33	Jan. 14, 1982	a102.29	July 8	a 89.19
Feb. 23	10.83	Sept. 15	8.17	Feb. 18	a 92.70	Aug. 11	a103.30
				Mar. 11	a 95.30	Sept. 9	a 96.65

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 3, 1980	23.43	Mar. 18, 1981	24.87	Oct. 27, 1981	23.62	Apr. 8, 1982	24.50
Nov. 12	24.09	Apr. 27	24.41	Nov. 20	23.84	May 6	24.91
Dec. 15	24.18	June 15	23.08	Dec. 11	24.01	June 10	23.46
Jan. 14, 1981	24.46	July 15	20.59	Jan. 14, 1982	22.20	July 6	24.46
Feb. 9	24.46	Sept. 2	22.76	Feb. 18	22.48	Aug. 11	24.33
				Mar. 11	23.52	Sept. 9	22.75

a Pumping.

GROUND-WATER LEVELS

RIO DE LA PLATA BASIN

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.--Recording observation well. Large fluctuations caused by pumping of nearby wells.

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.

LOWEST WATER LEVEL IN FEET BELOW LAND-SURFACE DATUM, on 5TH, 10TH, 15TH,
20TH, 25TH, AND LAST DAY OF MONTH.
WATER YEAR OCTOBER 1980 TO JULY 1981

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	26.34	b27.64	---	b13.30	30.30	28.99	30.39	24.45	13.10	21.47		
10	27.05	b27.22	---	18.20	30.50	29.01	27.87	21.69	21.37	21.42		
15	27.22	---	---	12.90	30.77	29.18	29.60	23.22	21.43	21.43		
20	27.30	27.64	---	29.50	29.96	29.58	23.95	21.65	21.86			
25	b27.83	26.10	---	30.30	29.27	29.99	27.08	14.90	22.02			
EOM	b27.81	26.77	---	30.10	29.20	30.29	26.95	19.10	21.85			

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS SEPTEMBER 1981 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Sept. 2, 1981	20.87	Dec. 11, 1981	18.24	Mar. 11, 1982	18.72	June 10, 1982	17.98
Oct. 27	8.46	Jan. 14, 1982	18.72	Apr. 8	18.55	July 6	17.47
Nov. 20	22.06	Feb. 18	16.66	May 6	18.95	Aug. 11	15.57
						Sept. 9	16.71

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 14, 1980	35.89	May 6, 1981	34.02	Dec. 9, 1981	33.91	Apr. 29, 1982	34.27
Dec. 2	33.98	June 22	33.24	Dec. 16	27.91	May 18	33.02
Dec. 23	34.85	July 13	34.15	Jan. 13, 1982	29.53	May 26	33.04
Jan. 16, 1981	35.11	Aug. 24	33.85	Jan. 14	29.42	June 17	33.60
Feb. 25	35.34	Sept. 24	33.77	Feb. 12	31.32	July 15	34.02
Mar. 31	33.90	Oct. 22	34.25	Feb. 16	31.68	Aug. 16	33.80
		Nov. 20	33.72	Mar. 15	32.64	Sept. 16	33.59

b Estimated.

GROUND-WATER LEVELS

389

RIO DE LA PLATA BASIN

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 14, 1980	a53.73	May 6, 1981	a52.22	Nov. 20, 1981	a52.29	Mar. 15, 1982	a52.19
Dec. 2	a52.88	June 22	a52.15	Dec. 9	a52.53	Apr. 29	a52.70
Dec. 23	a53.20	July 13	a52.26	Dec. 16	a49.21	May 18	a51.27
Jan. 6, 1981	a53.25	Aug. 24	a52.69	Jan. 13, 1982	a51.08	June 17	a52.80
Feb. 25	a53.33	Sept. 24	a53.30	Jan. 14	a51.04	July 15	a53.31
Mar. 31	a52.78	Oct. 22	a53.06	Feb. 12	a50.72	Aug. 25	a53.08
				Feb. 16	a51.90	Sept. 16	a52.08

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 3, 1980	18.37	Mar. 18, 1981	21.65	Oct. 27, 1981	14.40	Apr. 8, 1982	17.03
Nov. 12	19.67	Apr. 27	19.28	Nov. 20	14.98	May 6	18.10
Dec. 15	19.96	June 15	15.52	Jan. 14, 1982	15.00	June 10	18.90
Jan. 14, 1981	19.92	July 15	14.64	Feb. 18	14.30	July 6	20.01
Feb. 9	19.80	Sept. 2	14.68	Mar. 11	15.56	Aug. 11	18.82
						Sept. 9	18.15

a Pumping.

RIO DE BAYAMON AND RIO PIEDRAS BASINS

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 10, 1980	a33.14	Mar. 30, 1981	31.45	Oct. 6, 1981	39.30	May 10, 1982	30.28
Nov. 14	31.71	May 21	31.46	Dec. 18	30.02	June 7	30.05
Dec. 18	31.27	June 25	30.58	Jan. 19, 1982	30.68	July 7	31.21
Jan. 28, 1981	32.26	July 22	30.47	Feb. 10	30.29	July 15	a31.54
Feb. 11	31.58	Sept. 30	30.45	Mar. 11	30.63	Aug. 13	31.50
				Apr. 12	34.36	Sept. 10	31.26

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 14, 1980	a45.29	Mar. 31, 1981	a45.01	Oct. 22, 1981	a44.83	Apr. 29, 1982	44.53
Dec. 2	a44.87	June 22	a47.89	Nov. 20	a44.50	May 18	42.77
Dec. 23	a44.79	July 13	a48.38	Dec. 17	a39.23	June 17	43.62
Jan. 16, 1981	a44.94	Aug. 24	a44.05	Jan. 14, 1982	a42.44	July 15	43.78
Feb. 25	a44.82	Sept. 24	a44.70	Feb. 12	43.27	Aug. 25	43.58
				Mar. 15	43.95	Sept. 16	42.62

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 10, 1980	28.96	May 6, 1981	29.30	Oct. 27, 1981	27.94	Apr. 14, 1982	27.13
Nov. 14	35.29	May 12	30.59	Nov. 20	26.90	May 12	29.13
Dec. 9	29.68	June 15	29.28	Dec. 29	27.88	June 9	29.06
Jan. 16, 1981	30.36	July 15	28.68	Jan. 21, 1982	26.97	July 14	29.85
Feb. 12	31.28	Sept. 2	28.77	Feb. 10	27.01	Aug. 17	28.75
				Mar. 10	26.97	Sept. 30	28.64

a Pumping.

GROUND-WATER LEVELS

391

RIO GRANDE DE LOIZA BASIN

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 10, 1980	a81.62	Mar. 26, 1981	a80.12	Oct. 27, 1981	29.59	Apr. 14, 1982	a80.35
Nov. 14	a80.22	May 6	a84.45	Nov. 20	29.04	May 12	a77.19
Dec. 9	a81.13	June 15	a82.70	Dec. 29	27.71	June 9	a23.46
Jan. 16, 1981	a81.10	July 15	31.36	Jan. 21, 1982	28.58	July 14	a22.70
Feb. 12	a80.65	Sept. 2	24.74	Feb. 10	28.34	Aug. 18	a21.27
				Mar. 8	29.62	Sept. 30	a81.44

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 16, 1980	5.20	Apr. 22, 1981	6.64	Oct. 9, 1981	5.32	Apr. 8, 1982	5.66
Nov. 20	5.52	May 15	6.21	Nov. 13	5.25	May 10	4.46
Dec. 22	5.34	June 12	4.96	Dec. 4	5.68	June 15	4.87
Jan. 20, 1981	5.89	July 10	6.15	Jan. 21, 1982	5.62	July 12	5.75
Jan. 24	5.96	Aug. 7	5.85	Feb. 26	5.58	Aug. 9	5.36
Mar. 13	6.57	Sept. 11	5.96	Mar. 12	6.00	Sept. 15	5.42

175734066100401. Local number, 3.

LOCATION.--Lat 17°57'34", long 66°10'04".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Jobos.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Bored unused artesian well, diameter 4 in (10 cm). Depth 16 ft (4.9 m).

DATUM.--Altitude of land-surface datum is about 25 ft (7.6 m) above mean sea level. Measuring point: Top of 5 in (13 cm) fitting, 0.5 ft (0.15 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD.--November 1959 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.01 ft (0.003 m) below land-surface datum, Jan. 3, 1963; lowest measured, dry at 16 ft (4.9 m) below land-surface datum, many days during 1968 and 1969.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 16, 1980	1.79	Apr. 22, 1981	3.31	Oct. 9, 1981	2.28	Apr. 8, 1982	2.70
Nov. 20	2.07	May 15	3.04	Nov. 13	2.09	May 10	.15
Dec. 22	1.85	June 12	1.80	Dec. 4	2.50	June 15	.96
Jan. 20, 1981	2.09	July 10	2.74	Jan. 26, 1982	2.38	July 12	1.78
Feb. 24	2.45	Aug. 7	2.62	Feb. 26	2.04	Aug. 9	1.77
Mar. 13	2.94	Sept. 11	2.85	Mar. 12	2.55	Sept. 15	1.62

+ Above land-surface datum.

a Pumping.

GROUND-WATER LEVELS
RIO HUMACAO TO RIO SECO BASINS

175858066100201. Local number, 6.

LOCATION.--Lat 17°58'58", long 66°10'02".

Owner: Doctor Bruno.

Name: Juana 5.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 16 in (41 cm). Depth 173 ft (52.7 m) reported, 110 ft (33.5 m) measured.

DATUM.--Altitude of land-surface datum is about 127 ft (38.7 m) above mean sea level. Measuring point: Top of shelter floor, 3.0 ft (0.91 m) above land-surface datum.

REMARKS.--Recorder installed Jan. 25, 1962.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 26.20 ft (7.99 m) below land-surface datum, Dec. 10, 1979; lowest measured, 65.95 ft (20.10 m) below land-surface datum, June 2, 1968.

LOWEST WATER LEVEL IN FEET BELOW LAND SURFACE DATUM,
ON 5TH, 10TH, 15TH, 20TH, 25TH AND LAST DAY OF MONTH.
WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	48.69	45.75	47.82	48.45	49.87	50.47	53.18	54.27	52.43	51.75	51.89	55.16
10	49.03	45.84	49.02	48.82	49.94	51.02	53.66	53.94	52.28	52.05	53.70	55.37
15	48.85	45.65	50.17	48.60	50.28	51.45	53.98	53.32	52.51	51.63	54.19	55.70
20	447.75	45.86	51.16	49.69	50.29	51.80	54.32	53.07	52.66	51.18	54.37	55.76
25	446.45	45.81	51.26	50.57	49.97	52.22	54.74	53.00	52.15	51.09	54.63	55.08
EOM	45.95	46.88	49.25	50.20	49.96	52.74	54.64	52.58	51.50	51.41	54.96	54.94

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54.81	55.00	51.89	51.48	52.61	53.22	50.68	46.21	46.41	46.09	46.62	49.86
2	54.74	55.04	51.69	51.67	52.66	53.30	49.63	46.26	46.41	46.27	46.54	50.05
3	54.68	55.08	51.53	51.85	52.71	53.38	48.94	46.77	46.41	46.38	46.45	50.06
4	54.62	55.13	51.44	52.00	52.77	53.47	48.85	46.75	46.41	46.50	46.45	50.09
5	54.58	55.17	51.46	52.16	52.80	53.53	49.10	46.14	45.95	46.61	46.56	50.21
6	54.54	55.23	51.56	52.33	52.80	53.52	48.88	46.17	45.76	46.84	46.92	50.43
7	54.50	55.29	51.70	52.47	52.80	53.48	48.50	46.15	45.74	47.17	47.30	50.57
8	54.47	55.36	51.86	52.58	52.79	53.41	47.99	45.24	45.70	47.46	47.50	50.65
9	54.46	55.41	52.05	52.68	52.80	53.32	47.07	44.72	45.66	47.59	47.58	50.73
10	54.45	55.44	52.23	52.76	52.82	53.19	46.83	44.45	45.53	47.61	47.59	50.82
11	54.45	55.44	52.42	52.81	52.85	53.05	46.35	43.96	45.31	47.56	47.62	50.91
12	54.45	55.41	52.56	52.86	52.90	52.90	45.84	43.80	45.20	47.59	47.82	51.01
13	54.47	55.34	52.70	52.81	52.94	52.73	45.31	43.56	45.13	47.67	48.10	51.07
14	54.50	55.23	52.85	52.56	52.99	52.53	44.93	43.35	45.13	47.70	48.33	51.09
15	54.55	55.12	52.99	52.07	53.04	52.29	45.20	43.19	45.35	47.55	48.50	51.14
16	54.61	54.97	53.13	52.00	53.07	52.02	45.66	43.12	45.61	47.48	48.64	51.07
17	54.65	54.77	53.28	52.20	53.11	51.71	45.79	43.09	45.29	47.52	48.75	51.03
18	54.58	54.51	53.42	52.29	53.15	51.48	45.92	43.35	45.26	47.58	48.90	50.99
19	54.52	54.20	53.50	52.31	53.18	51.34	46.85	43.67	45.21	47.65	49.10	50.96
20	54.51	53.88	53.45	52.28	53.18	51.24	47.51	44.00	45.02	47.71	49.26	50.90
21	54.53	53.59	53.28	52.26	53.16	51.17	47.26	44.86	44.98	47.80	49.37	50.80
22	54.56	53.33	53.05	52.25	53.14	51.14	46.97	45.47	45.11	47.89	49.49	50.71
23	54.61	53.08	52.78	52.25	53.10	51.18	46.58	45.97	45.39	47.89	49.64	50.57
24	54.66	52.85	52.54	52.26	53.04	51.27	46.67	46.40	45.83	47.83	49.74	50.51
25	54.71	52.63	52.31	52.29	53.01	51.37	46.79	46.41	45.95	47.54	49.76	50.44
26	54.77	52.46	52.04	52.33	53.02	51.45	46.98	46.41	45.94	47.02	49.52	50.38
27	54.81	52.32	51.60	52.38	53.09	51.54	47.16	46.41	45.58	46.60	49.37	50.33
28	54.84	52.21	51.12	52.44	53.15	51.62	47.19	46.41	45.18	46.43	49.31	50.27
29	54.89	52.11	51.02	52.49	---	51.70	47.27	46.41	45.43	46.48	49.30	50.24
30	54.93	52.00	51.12	52.53	---	51.75	46.84	46.41	45.79	46.47	49.51	50.23
31	54.97	---	51.28	52.57	---	51.65	---	46.41	---	46.53	49.67	---
LOW	54.97	55.44	53.50	52.86	53.18	53.53	50.68	46.77	46.41	47.89	49.76	51.14
HIGH	54.45	52.00	51.02	51.48	52.61	51.14	44.93	43.09	44.98	46.09	46.45	49.86

WTR YR 1982 LOW 55.44 HIGH 43.09

b Estimated.

GROUND-WATER LEVELS

393

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.

LOWEST WATER LEVEL IN FEET BELOW LAND SURFACE DATUM,
ON 5TH, 10TH, 15TH, 20TH, 25TH AND LAST DAY OF MONTH.
WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	20.90	b11.53	21.56	12.10	b17.73	b20.50	24.69	b18.35	7.20	8.56	b9.07	11.72
10	8.57	10.70	21.30	16.90	b17.85	b21.62	25.16	b24.29	b7.90	b8.66	9.91	9.15
15	10.70	b13.50	21.12	17.98	b17.97	b22.73	25.31	11.64	b8.79	b8.73	9.34	8.63
20	13.20	18.32	b18.00	b17.36	b18.08	23.37	b25.60	12.32	9.52	b7.87	10.35	10.38
25	12.50	19.65	18.38	b17.48	b18.72	23.97	b23.98	8.99	10.59	7.63	8.53	11.09
EOM	11.20	20.80	12.09	b17.62	b19.40	24.34	b21.49	b8.53	11.18	8.43	10.67	12.51

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.68	11.80	18.87	7.89	15.19	10.15	18.98	23.27	8.05	17.19	7.70	8.70
2	13.02	12.10	19.04	7.98	14.58	9.23	19.23	23.31	8.10	17.83	7.82	8.95
3	12.73	12.40	19.23	8.08	13.93	9.33	19.49	23.36	8.18	18.39	7.95	9.08
4	12.52	12.70	19.45	8.16	12.35	9.57	19.74	23.43	8.42	18.92	8.13	9.39
5	12.49	13.00	19.47	8.28	10.93	9.90	19.97	23.49	8.51	19.42	8.33	9.74
6	12.66	13.20	19.34	8.44	9.05	10.26	20.21	23.34	9.84	19.83	8.54	10.13
7	12.57	13.50	19.15	8.61	8.52	10.57	20.41	12.96	9.90	19.04	8.76	10.49
8	12.55	13.80	19.12	8.77	8.38	10.96	20.61	9.77	9.90	17.62	9.02	10.79
9	12.75	14.10	19.07	8.93	8.41	11.32	20.76	9.07	10.00	17.20	9.29	11.11
10	13.05	14.40	18.96	9.07	8.48	11.64	20.92	8.92	10.00	17.21	9.59	11.46
11	13.42	14.70	18.75	9.19	8.68	11.90	21.09	8.69	10.00	16.79	9.76	11.78
12	13.84	15.00	12.69	9.28	8.87	12.17	21.15	8.73	10.10	15.99	9.96	12.14
13	14.50	15.30	11.10	9.43	9.09	12.40	21.29	8.84	10.10	15.68	10.27	8.82
14	15.45	15.60	10.96	9.60	9.37	12.75	21.47	8.80	10.20	15.78	10.44	7.46
15	16.14	15.80	11.16	9.75	9.54	13.17	21.64	8.86	10.20	16.10	10.56	7.41
16	16.67	16.10	11.38	9.94	9.78	13.71	21.77	9.19	10.19	16.47	10.35	7.52
17	17.06	16.39	11.59	10.14	10.04	14.36	21.78	9.59	10.60	16.92	10.44	7.64
18	16.04	16.69	11.83	10.38	10.27	15.38	21.79	9.95	10.97	17.49	10.75	7.75
19	12.10	17.03	11.39	10.65	10.55	16.22	21.80	10.26	11.36	15.89	10.94	7.86
20	9.14	17.31	11.00	10.91	10.86	16.80	21.78	10.58	11.76	9.69	11.16	7.98
21	8.67	17.66	11.13	11.14	11.18	17.24	21.70	10.72	11.98	8.66	11.47	8.12
22	8.73	17.80	11.46	11.46	11.42	17.75	21.69	10.45	12.19	8.24	11.81	8.19
23	9.26	17.91	11.71	11.77	11.13	18.16	21.91	10.63	12.49	7.55	10.37	8.02
24	9.58	17.97	11.98	12.09	9.46	18.58	22.14	10.82	12.92	7.60	8.58	8.12
25	9.80	18.21	12.37	12.45	9.48	18.98	22.32	11.04	13.33	7.66	8.07	8.18
26	10.20	18.53	12.72	12.83	9.74	19.28	22.55	11.34	13.60	7.73	7.97	7.99
27	10.40	18.80	9.99	13.22	10.12	19.41	22.73	11.69	13.96	7.71	8.02	7.88
28	10.70	18.95	8.56	13.61	10.54	19.22	22.87	10.24	14.79	7.78	8.12	7.95
29	11.00	18.88	7.87	13.98	---	18.94	23.02	8.69	15.87	7.89	8.26	8.06
30	11.20	18.80	7.79	14.50	---	18.81	23.14	8.19	16.55	7.65	8.26	8.18
31	11.50	---	7.82	15.22	---	18.82	---	8.05	---	7.59	8.46	---
LOW	17.06	18.95	19.47	15.22	15.19	19.41	23.14	23.49	16.55	19.83	11.81	12.14
HIGH	8.67	11.80	7.79	7.89	8.38	9.23	18.98	8.05	8.05	7.55	7.70	7.41

WTR YR 1982 TOTAL 4688.30 MEAN 12.84 LOW 23.49 HIGH 7.41

b Estimated.

GROUND-WATER LEVELS

RIO HUMACAO TO RIO SECO BASINS

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 m), 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, a50.57 ft (a15.41 m) below land-surface datum, July 7, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 15, 1980	a42.81	Mar. 13, 1981	a43.98	Oct. 19, 1981	a36.17	Apr. 12, 1982	a34.65
Nov. 20	a41.39	Apr. 15	a46.03	Nov. 20	a35.80	May 13	a35.24
Dec. 22	a44.99	May 12	a43.58	Dec. 28	a29.60	June 14	a30.90
Jan. 20, 1981	a44.29	June 16	a34.92	Jan. 22, 1982	a35.08	July 13	a36.55
Feb. 23	a40.99	July 17	a31.36	Feb. 19	a33.32	Aug. 17	23.07
		Aug. 12	a33.63	Mar. 11	a30.19	Sept. 17	a18.55
						Sept. 30	17.88

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.--Recording 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.

LOWEST WATER LEVEL IN FEET BELOW LAND SURFACE DATUM,
ON 5TH, 10TH, 15TH, 20TH, 25TH AND LAST DAY OF MONTH.
WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	1.74	1.80	1.75	2.17	1.90	2.16	2.38	3.07	4.32	2.57	2.10	2.25
10	1.74	1.80	1.85	2.18	1.78	2.16	2.56	3.06	2.50	2.56	1.88	2.21
15	1.73	1.77	2.06	2.01	1.95	2.18	2.67	3.05	2.47	2.65	2.20	2.26
20	1.89	1.70	2.21	2.00	1.93	2.22	2.84	3.05	2.49	2.97	2.22	2.01
25	1.88	1.72	2.20	2.03	1.90	2.32	3.02	3.42	2.32	2.90	2.35	1.82
EOM	1.77	1.55	2.17	1.99	1.89	2.33	2.95	3.43	2.55	2.25	2.31	1.67

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 1, 1981	1.66	Dec. 4, 1981	1.50	Mar. 12, 1982	1.66	June 15, 1982	.25
Oct. 9	1.74	Jan. 2, 1982	.96	Apr. 8	1.94	July 12	1.34
Nov. 13	1.33	Feb. 26	1.60	May 10	1.30	Aug. 9	1.21
						Sept. 15	1.54

+ Above land-surface datum.

a Pumping.

GROUND-WATER LEVELS

395

RIO HUMACAO TO RIO SECO BASINS

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.--Apr. 25, 1978 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 4.68 ft (1.43 m) above land-surface datum Aug. 31, 1979; lowest, 19.36 ft (5.90 m) above 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 1980 TO SEPTEMBER 1981

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	19.06	17.28	17.00	17.06	14.82	13.45	14.10	15.84	10.92	10.19	10.00	10.57
10	18.08	17.04	17.24	17.20	14.33	13.28	14.98	14.96	9.86	9.94	9.93	10.72
15	17.83	17.15	17.52	17.25	13.82	13.50	15.63	13.92	10.44	9.72	9.67	10.35
20	17.72	17.20	16.64	16.40	13.32	13.13	16.17	13.34	10.79	9.66	9.95	10.57
25	17.58	16.78	16.94	15.93	13.04	13.93	16.04	14.27	10.83	9.60	10.77	12.87
EOM	17.75	16.97	17.12	15.33	13.09	13.54	15.87	13.32	10.19	9.62	10.38	12.72

LOWEST WATER LEVEL IN FEET BELOW LAND SURFACE DATUM,
ON 5TH, 10TH, 15TH, 20TH, 25TH AND LAST DAY OF MONTH.
WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT
5	13.00	11.37	12.50	10.26	11.04	11.04	12.12	12.19	b10.20	12.07	10.57	b11.30
10	12.36	11.54	11.71	10.17	10.58	11.25	12.23	11.90	b10.60	11.94	11.21	b11.40
15	12.91	11.78	10.69	10.42	11.34	11.04	10.92	10.69	10.80	12.24	11.69	b10.50
20	12.15	12.87	10.49	10.63	11.28	11.07	10.73	10.16	10.98	11.90	11.66	10.40
25	11.72	11.92	10.71	10.76	11.98	11.56	11.05	9.19	11.77	10.77	11.01	10.75
EOM	b 12.02	12.75	9.84	10.94	12.04	11.98	11.35	9.70	12.28	10.49	b11.23	10.60

b Estimated.

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), cased 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.--Apr. 25, 1978 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 15.52 ft (4.73 m) above land-surface datum, Jan. 15, 1982; lowest, 28.29 ft (8.62 m) above land-surface datum Sept. 20, 1980.

LOWEST WATER LEVEL IN FEET BELOW LAND SURFACE DATUM,
ON 5TH, 10TH, 15TH, 20TH, 25TH AND LAST DAY OF MONTH.
WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	26.51	24.71	23.65	23.92	22.95	b21.65	23.18	25.74	21.01	18.90	b16.95	17.76
10	26.42	24.20	24.21	24.26	22.32	b22.55	23.00	25.23	20.72	18.00	b17.05	18.22
15	25.91	23.92	24.32	24.22	23.56	22.83	24.68	23.80	19.32	16.97	16.96	18.34
20	24.77	23.90	23.87	22.30	22.02	22.31	24.02	22.18	18.86	16.77	17.02	18.36
25	24.72	24.70	23.88	22.17	20.89	22.53	25.06	22.09	18.75	b16.70	17.28	18.41
DOM	25.00	24.28	23.99	21.76	20.84	22.81	25.11	22.03	18.27	b16.80	17.59	18.87

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.90	18.34	19.84	17.01	16.75	17.54	18.65	18.46	17.08	17.36	16.96	18.57
2	18.83	18.26	20.01	16.72	16.77	17.45	18.50	18.54	16.88	17.45	16.86	18.63
3	18.84	18.20	20.14	16.48	16.79	17.35	18.36	18.64	16.69	17.50	16.75	18.69
4	18.92	18.26	20.26	16.26	16.81	17.23	18.26	18.74	16.51	17.51	16.67	18.75
5	19.06	18.27	20.34	16.10	16.85	17.12	18.23	18.82	16.33	17.52	16.59	18.79
6	19.19	18.35	20.36	16.00	16.86	17.04	18.22	18.85	16.18	17.55	16.50	18.81
7	19.29	18.52	20.45	15.94	16.87	16.98	18.23	18.83	16.17	17.58	16.42	18.82
8	19.32	18.69	20.36	15.90	16.87	16.93	18.28	18.84	16.28	17.61	16.35	18.88
9	19.33	18.84	20.17	15.86	16.88	16.90	18.36	18.84	16.41	17.63	16.31	18.94
10	19.32	18.83	19.95	15.80	16.85	16.87	18.44	18.84	16.54	17.62	16.31	19.00
11	19.29	18.71	19.68	15.73	16.82	16.84	18.53	18.82	16.54	17.61	16.34	18.92
12	19.27	18.68	19.57	15.67	16.82	16.78	18.59	18.81	16.50	17.59	16.40	18.75
13	19.28	18.78	19.51	15.61	16.84	16.74	18.62	18.78	16.46	17.55	16.47	18.50
14	19.28	18.77	19.46	15.56	16.87	16.72	18.61	18.71	16.43	17.56	16.58	18.20
15	19.28	18.69	19.29	15.53	16.90	16.71	18.58	18.61	16.40	17.60	16.63	17.91
16	19.27	18.60	19.16	15.58	16.93	16.71	18.53	18.49	16.37	17.65	16.64	17.79
17	19.26	18.52	18.91	15.67	16.96	16.73	18.48	18.36	16.36	17.70	16.62	17.78
18	19.27	18.44	18.67	15.76	16.97	16.79	18.45	18.22	16.35	17.76	16.63	17.83
19	19.28	18.43	18.56	15.88	16.99	16.85	18.42	18.09	16.35	17.78	16.70	17.89
20	19.26	18.59	18.52	15.98	16.97	16.88	18.40	17.98	16.36	17.74	16.93	17.96
21	19.24	18.74	18.39	16.05	17.11	16.88	18.40	17.87	16.37	17.61	17.18	18.06
22	19.22	18.84	18.29	16.15	17.38	16.87	18.40	17.79	16.40	17.45	17.28	18.14
23	19.15	18.93	18.24	16.26	17.56	16.86	18.41	17.73	16.46	17.37	17.30	18.25
24	19.10	19.03	18.26	16.35	17.61	16.89	18.44	17.69	16.56	17.33	17.34	18.35
25	19.07	19.11	18.29	16.41	17.61	17.08	18.45	17.65	16.76	17.31	17.50	18.43
26	19.06	19.19	18.34	16.45	17.61	17.30	18.46	17.61	16.89	17.30	17.72	18.35
27	19.05	19.30	18.34	16.50	17.60	17.64	18.44	17.59	16.99	17.25	17.95	18.25
28	18.95	19.41	18.25	16.54	17.59	18.03	18.43	17.57	17.08	17.26	18.15	18.11
29	18.76	19.54	17.96	16.60	---	18.40	18.42	17.51	17.18	17.25	18.32	17.98
30	18.58	19.68	17.62	16.65	---	18.72	18.42	17.40	17.27	17.17	18.42	17.82
31	18.44	---	17.27	16.72	---	18.76	---	17.25	---	17.07	18.51	---
LOW	19.33	19.68	20.45	17.01	17.61	18.76	18.65	18.85	17.27	17.78	18.51	19.00
HIGH	18.44	18.20	17.27	15.53	16.75	16.71	18.22	17.25	16.17	17.07	16.31	17.78

WTR YR 1982 LOW 20.45 HIGH 15.53

b Estimated.

RIO HUMACAO TO RIO SECO BASINS

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 15, 1980	7.64	Apr. 21, 1981	11.13	Oct. 22, 1981	8.40	Apr. 12, 1982	9.02
Nov. 20	9.39	May 13	10.85	Nov. 16	8.65	May 14	8.37
Dec. 22	10.05	June 17	9.16	Dec. 28	5.90	June 14	8.38
Jan. 20, 1981	7.69	July 17	8.77	Jan. 25, 1982	8.08	July 13	9.47
Feb. 23	6.21	Aug. 12	8.70	Feb. 19	8.40	Aug. 17	10.50
Mar. 17	10.46	Sept. 21	8.20	Mar. 11	9.01	Sept. 17	9.50
						Sept. 30	8.53

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 15, 1980	a47.60	Apr. 21, 1981	a32.20	Oct. 22, 1981	a44.30	Apr. 12, 1982	a45.85
Nov. 20	a45.50	May 13	a43.19	Nov. 17	a44.03	May 14	a47.70
Dec. 22	a48.76	June 17	12.83	Dec. 18	a47.66	June 15	a48.82
Jan. 20, 1981	a46.34	July 17	a40.47	Jan. 22, 1982	a45.24	July 15	a49.05
Feb. 23	a30.77	Aug. 12	a43.32	Feb. 19	a45.64	Aug. 17	a48.59
Mar. 17	a32.97	Sept. 17	a42.12	Mar. 11	a46.38	Sept. 17	a47.96
						Sept. 30	a47.85

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 16, 1980	0.89	Apr. 22, 1981	2.38	Oct. 9, 1981	1.90	Apr. 8, 1982	1.35
Nov. 21	1.45	May 15	1.77	Nov. 13	.55	May 10	1.19
Dec. 23	1.40	June 12	.40	Dec. 4	1.40	June 15	.91
Jan. 21, 1981	1.90	July 10	1.91	Jan. 26, 1982	.63	July 12	.69
Feb. 24	1.43	Aug. 7	1.20	Feb. 26	.53	Aug. 9	.23
Mar. 13	2.29	Sept. 11	1.97	Mar. 12	1.84	Sept. 15	.38

+ Above land-surface datum.

a Pumping.

RIO SALINAS TO RIO JACAGUAS BASINS

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 16, 1980	a35.87	Mar. 13, 1981	a33.37	Sept. 11, 1981	a30.63	Apr. 8, 1982	a30.80
Nov. 21	a31.14	May 15	a32.83	Oct. 9	a32.53	May 10	a27.50
Dec. 23	a32.15	June 12	a29.00	Nov. 13	25.41	June 15	a26.20
Jan. 21, 1981	a36.88	July 10	a30.60	Dec. 4	a28.99	July 12	a31.22
Feb. 24	a33.84	Aug. 7	a29.45	Feb. 26	22.72	Aug. 9	a27.16
				Mar. 12	a29.61	Sept. 15	a29.19

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 (-16.2 m), perforated 32-53 (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 YEARS OCTOBER 1980 TO SEPTEMBER 1982.
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 16, 1980	29.41	Apr. 22, 1981	34.26	Oct. 9, 1981	24.64	Apr. 8, 1982	28.96
Nov. 20	28.32	May 15	34.11	Nov. 13	21.40	May 10	27.53
Dec. 23	29.96	June 12	20.87	Dec. 4	24.65	June 15	22.28
Jan. 21, 1981	31.65	July 10	20.85	Jan. 21, 1982	23.15	July 12	26.78
Feb. 24	32.48	Aug. 7	21.03	Feb. 26	25.82	Aug. 9	25.96
Mar. 13	33.93	Sept. 11	26.39	Mar. 12	26.74	Sept. 15	27.32

180023066175301. Local number, 19.

LOCATION.--Lat 18°00'23", long 66°17'53".

Owner: U.S. Army.

Name: Theater I.

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.

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 16, 1980	51.08	Apr. 22, 1981	53.44	Oct. 9, 1981	56.30	Apr. 8, 1982	56.79
Nov. 20	51.66	May 15	57.34	Nov. 13	50.60	May 10	56.33
Dec. 23	52.44	June 12	51.88	Dec. 4	56.01	June 15	53.56
Jan. 21, 1981	54.78	July 10	55.09	Jan. 21, 1982	56.02	July 12	51.85
Feb. 24	53.94	Aug. 7	54.07	Feb. 26	57.85	Aug. 9	52.40
Mar. 13	53.80	Sept. 11	56.25	Mar. 12	57.54	Sept. 15	53.30

a Pumping.

GROUND-WATER LEVELS

399

RIO SALINAS TO RIO JACAGUAS BASINS

175829066232201. Local number, 87.

LOCATION.--Lat 17°58'29", long 66°23'22".

Owner: Francisco Alomar.

Name: Alomar 1.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled unused water-table well. 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: 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.

LOWEST WATER LEVEL IN FEET BELOW LAND SURFACE DATUM,
ON 5TH, 10TH, 15TH, 20TH, 25TH AND LAST DAY OF MONTH.
WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	34.69	34.37	36.02	36.40	36.00	36.70	36.32	36.91	30.06	29.07	29.71	30.21
10	34.71	34.85	36.31	35.00	36.48	35.82	35.62	35.42	29.90	29.20	29.32	30.00
15	33.20	35.04	36.61	36.19	36.00	36.24	36.12	34.80	30.21	29.85	29.77	28.52
20	32.89	35.44	36.99	36.54	36.54	36.06	36.95	34.41	29.92	29.41	29.80	28.50
25	23.70	35.71	36.46	36.96	36.31	36.05	37.41	32.49	30.62	29.27	30.63	28.75
EOM	34.80	35.88	36.33	36.49	36.61	36.70	37.60	31.13	30.48	29.80	29.89	28.11

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28.13	25.38	26.03	23.70	24.81	24.60	26.98	28.78	25.66	26.67	27.36	28.88
2	27.90	25.33	26.10	23.63	24.88	24.82	27.04	28.82	25.65	26.74	27.29	28.91
3	27.87	25.21	26.10	23.59	24.79	25.11	26.99	28.71	25.65	26.78	27.35	28.90
4	27.70	25.05	26.21	23.59	24.49	25.38	26.85	29.18	25.68	26.83	27.52	29.25
5	27.53	24.91	26.33	23.48	24.20	24.94	26.68	30.29	25.67	26.90	27.64	29.15
6	27.97	24.79	26.02	23.44	24.44	24.95	27.12	28.70	25.66	26.88	27.81	29.02
7	27.87	24.66	25.73	23.38	24.53	24.92	27.11	28.30	25.75	26.86	27.89	28.97
8	27.82	24.61	25.97	23.36	24.46	24.87	27.14	27.98	26.05	26.97	27.90	29.25
9	27.74	24.47	26.64	23.34	24.48	25.23	26.97	27.76	25.87	27.10	27.93	29.34
10	27.68	24.47	26.47	23.34	24.49	25.65	27.06	27.66	26.11	27.28	28.09	29.54
11	27.64	24.43	25.97	23.28	24.45	25.83	26.73	27.30	25.96	27.25	28.16	29.59
12	27.67	24.43	25.38	23.40	24.39	25.91	27.01	27.09	25.74	26.97	28.26	29.35
13	27.72	24.47	25.03	24.12	24.44	25.44	27.31	26.92	25.70	26.86	28.29	29.19
14	27.38	24.49	24.90	24.37	24.42	25.45	27.91	26.68	25.77	26.71	28.27	29.06
15	27.41	24.56	24.91	24.60	24.39	25.60	28.85	26.51	25.84	26.75	28.12	29.02
16	27.60	24.64	24.88	24.03	24.08	26.14	28.99	26.39	26.23	26.89	27.76	29.00
17	27.33	24.88	24.85	24.04	24.55	26.36	28.34	26.33	26.46	27.01	28.18	28.98
18	26.91	25.32	24.70	24.07	24.64	26.43	27.87	26.24	26.38	27.08	28.34	29.11
19	26.84	25.61	24.63	24.57	24.50	26.49	27.71	26.19	26.47	27.08	28.53	29.20
20	27.14	25.52	24.67	24.82	24.26	26.18	27.84	26.17	26.12	27.14	28.65	28.99
21	27.12	25.04	24.56	24.94	24.23	26.10	28.09	26.12	25.99	27.25	28.73	29.08
22	27.71	24.95	24.75	25.10	24.36	26.17	28.30	26.01	26.00	27.20	28.64	29.26
23	27.03	24.93	25.02	25.08	24.28	26.22	28.46	25.94	26.05	27.07	28.42	29.26
24	26.51	25.40	25.16	25.09	24.53	26.53	28.31	25.87	26.05	26.73	28.38	29.23
25	26.41	25.98	24.70	25.46	24.96	26.79	28.16	25.83	26.05	26.81	28.56	29.18
26	26.34	25.45	24.51	25.46	24.91	26.42	28.16	25.87	26.05	26.68	28.61	29.06
27	26.24	25.53	24.31	24.87	24.66	26.61	28.53	25.88	26.06	26.69	28.58	28.93
28	26.11	25.08	23.99	25.69	24.91	26.36	28.60	25.80	26.10	26.71	28.60	28.96
29	25.96	25.09	23.87	25.72	---	26.32	28.75	25.74	26.46	26.82	28.61	29.22
30	25.82	25.35	23.76	25.13	---	26.87	28.86	25.73	26.49	26.97	28.64	29.36
31	25.63	---	23.73	24.94	---	26.78	---	25.68	---	27.35	28.77	---
LOW	28.13	25.98	26.64	25.72	24.96	26.87	28.99	30.29	26.49	27.35	28.77	29.59
HIGH	25.63	24.43	23.73	23.28	24.08	24.60	26.68	25.68	25.65	26.67	27.29	28.88

WTR YR 1982 LOW 30.29 HIGH 23.28

GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS

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. Reactivated, 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 JANUARY 1982 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Jan. 19, 1982	19.36	Apr. 20, 1982	24.48	June 15, 1982	21.71	Aug. 11, 1982	17.37
Feb. 25	14.37	May 11	17.95	July 13	25.11	Sept. 15	16.89

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 16, 1980	a13.24	Apr. 22, 1981	a34.06	Oct. 9, 1981	a29.14	May 10, 1982	a36.30
Nov. 21	a39.00	May 15	a41.55	Nov. 13	a27.46	June 15	a35.24
Dec. 23	a22.42	June 12	a19.01	Dec. 4	a24.99	July 12	a19.81
Jan. 21, 1981	a27.99	July 10	a25.10	Feb. 26, 1982	a19.88	Aug. 9	a22.50
Feb. 24	a38.31	Aug. 7	a23.01	Mar. 12	a39.18	Sept. 15	a20.55
Mar. 13	a38.54	Sept. 11	a30.13	Apr. 8	a39.22		

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 6, 1980	11.06	Apr. 16, 1981	10.19	Nov. 12, 1981	6.45	May 13, 1982	5.88
Nov. 25	11.06	May 13	11.67	Dec. 7	4.90	June 10	5.84
Dec. 17	13.03	June 4	7.10	Jan. 20, 1982	8.57	July 14	6.09
Jan. 20, 1981	13.09	July 8	13.41	Feb. 24	9.53	Aug. 12	6.98
Feb. 23	10.00	Sept. 15	5.67	Mar. 16	6.75	Sept. 16	3.47
Mar. 11	14.35	Oct. 14	4.60	Apr. 16	8.01		

a Pumping.

RIO INABON TO RIO LOCO BASINS

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 2, 1980	a44.81	Apr. 20, 1981	a41.82	Oct. 15, 1981	27.80	Apr. 20, 1982	a68.34
Nov. 13	a50.84	May 18	a41.48	Nov. 17	24.90	May 11	a69.44
Dec. 18	a54.17	June 8	a39.02	Dec. 7	25.05	June 10	a66.26
Jan. 12, 1981	a56.03	July 15	a36.46	Jan. 11, 1982	24.15	July 13	a70.68
Feb. 12	a55.87	Aug. 11	a36.87	Feb. 23	a69.65	Aug. 11	a72.84
Mar. 12	a39.58	Sept. 15	a38.24	Mar. 18	a61.78	Sept. 2	a71.91

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 6, 1980	a43.42	Apr. 16, 1981	a46.39	Oct. 8, 1981	a37.75	Apr. 19, 1982	a42.04
Nov. 26	a45.06	May 13	a48.73	Nov. 12	a38.36	May 13	a40.93
Dec. 17	a49.90	June 4	a47.29	Dec. 3	a36.08	June 10	a38.43
Jan. 20, 1981	a44.34	July 8	a47.77	Jan. 20, 1982	a36.74	July 13	a40.62
Feb. 23	a43.59	Aug. 10	a46.54	Feb. 24	a36.88	Aug. 12	a39.35
Mar. 12	a46.65	Sept. 15	a45.93	Mar. 16	a37.88	Sept. 16	a40.37

a Pumping.

GROUND-WATER LEVELS

RIO INABON TO RIO LOCO BASINS

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 6, 1980	a54.46	May 13, 1981	a70.35	Nov. 12, 1981	a15.60	May 13, 1982	a15.89
Nov. 26	a55.12	June 4	a56.69	Dec. 3	a15.70	June 10	a15.61
Dec. 17	a65.04	July 8	a58.54	Jan. 20, 1982	a15.42	July 14	a15.47
Jan. 20, 1981	a55.44	Aug. 10	a58.52	Feb. 24	a15.45	Aug. 12	a15.69
Feb. 23	a67.20	Sept. 15	a53.39	Mar. 16	a15.45	Sept. 16	a15.35
Apr. 20	a73.70	Oct. 8	a15.57	Apr. 19	a16.22		

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 6, 1980	13.20	Apr. 14, 1981	20.36	Oct. 8, 1981	9.07	Apr. 15, 1982	13.15
Nov. 25	12.77	May 13	21.56	Nov. 12	9.77	May 13	11.96
Dec. 17	14.27	June 4	20.78	Dec. 3	10.26	June 11	11.96
Jan. 20, 1981	15.91	July 8	21.59	Jan. 20, 1982	10.00	July 14	12.48
Feb. 23	17.88	Aug. 6	22.18	Feb. 24	11.64	Aug. 12	12.78
Mar. 11	19.26	Sept. 15	13.23	Mar. 16	12.60	Sept. 1	13.68

a Pumping.

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.

LOWEST WATER LEVEL IN FEET BELOW LAND SURFACE DATUM,
ON 5TH, 10TH, 15TH, 20TH, 25TH AND LAST DAY OF MONTH.
WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	b11.10	b9.70	b10.10	b12.20	b14.30	b16.90	18.89	20.49	17.13	16.57	17.78	b12.80
10	b10.70	b9.50	b10.50	b12.60	b14.60	b17.00	20.28	20.32	16.46	16.78	17.37	11.47
15	b10.50	b9.30	b10.80	b12.90	b15.00	b17.50	20.57	19.79	16.08	16.60	16.91	8.70
20	b10.30	b9.10	b11.20	b13.20	b15.30	b18.00	19.77	19.60	16.40	16.97	15.66	8.00
25	b10.10	b9.10	b11.50	b13.60	b15.80	18.55	20.02	18.99	16.44	18.00	15.60	7.77
EOM	b 9.80	b9.60	b11.90	b14.00	b16.20	19.03	20.18	18.19	16.39	18.23	b15.30	5.85

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.89	6.28	6.53	6.38	7.71	9.75	12.11	13.66	9.75	12.22	11.24	12.20
2	6.02	6.32	6.56	6.42	7.82	9.84	12.22	13.62	9.84	12.25	11.24	12.28
3	6.13	6.36	6.59	6.45	7.91	9.84	12.27	13.59	9.93	12.32	11.24	12.35
4	6.21	6.40	6.54	6.47	8.00	9.99	12.34	13.56	10.06	12.34	11.27	12.29
5	6.18	6.41	6.57	6.49	8.05	10.06	12.27	13.19	10.00	12.49	11.27	12.30
6	6.01	6.42	6.53	6.46	8.03	9.91	12.44	12.86	10.09	12.57	11.24	12.41
7	6.02	6.45	6.53	6.49	8.09	9.86	12.62	12.62	10.14	12.64	11.24	12.49
8	6.12	6.45	6.53	6.50	8.18	10.02	12.81	12.54	10.12	12.67	11.22	12.52
9	6.19	6.37	6.48	6.52	8.21	10.13	12.85	12.56	10.18	12.45	11.20	12.56
10	6.24	6.42	6.53	6.56	8.36	10.24	12.81	12.57	10.24	12.48	11.29	12.52
11	6.25	6.45	6.18	6.64	8.47	10.26	12.79	12.45	10.27	12.43	11.14	12.41
12	6.25	6.45	6.15	6.64	8.60	10.30	12.87	12.19	10.35	12.43	11.21	b11.40
13	6.28	6.41	6.19	6.66	8.61	10.27	12.99	12.03	10.45	12.43	11.23	b10.50
14	6.29	6.41	6.25	6.66	8.70	10.35	13.06	11.87	10.51	12.42	11.25	b 9.60
15	6.31	6.40	5.81	6.71	8.88	10.54	13.16	11.70	10.61	12.39	11.30	b 8.70
16	6.32	6.51	5.90	6.76	9.00	10.71	13.31	11.65	10.69	12.38	11.34	b 7.76
17	6.36	6.55	5.95	6.84	9.04	10.81	13.29	11.62	10.75	12.36	11.39	7.82
18	6.24	6.52	6.02	6.88	9.06	10.89	13.23	10.83	10.84	12.24	11.48	7.82
19	6.22	6.49	6.08	6.91	9.14	10.96	13.37	10.69	10.93	12.16	11.64	7.73
20	6.29	6.49	6.13	6.93	9.13	11.10	13.47	10.52	11.03	12.09	11.68	7.74
21	6.25	6.52	6.18	6.97	9.24	11.12	13.57	10.33	11.15	12.00	11.65	7.72
22	6.25	6.55	6.23	7.08	9.46	11.24	13.62	10.12	11.30	11.95	11.76	7.69
23	6.26	6.60	6.29	7.12	9.33	11.38	13.50	9.92	11.43	11.82	11.94	7.65
24	6.24	6.55	6.32	7.14	9.35	11.45	13.47	9.78	11.57	11.72	12.14	7.62
25	6.23	6.46	6.34	7.25	9.49	11.59	13.50	9.70	11.73	11.62	12.28	7.60
26	6.25	6.43	6.37	7.35	9.59	11.73	13.56	9.65	11.83	11.54	12.34	7.61
27	6.17	6.46	6.43	7.44	9.54	11.79	13.58	9.60	11.94	11.47	12.21	7.57
28	6.23	6.54	6.43	7.50	9.59	11.74	13.60	9.59	12.08	11.42	12.14	7.56
29	6.26	6.48	6.42	7.63	---	11.83	13.65	9.69	12.13	11.34	12.17	7.52
30	6.28	6.57	6.44	7.56	---	11.94	13.72	9.73	12.19	11.31	12.24	7.49
31	6.30	---	6.34	7.62	---	11.98	---	9.70	---	11.27	12.24	---
LOW	6.36	6.60	6.59	7.63	9.59	11.98	13.72	13.66	12.19	12.67	12.34	12.56
HIGH	5.89	6.28	5.21	6.38	7.71	9.75	12.11	9.59	9.75	11.27	11.14	7.49

WTR YR 1982 LOW 13.72 HIGH 5.81

+ Above land-surface datum.

b Estimated.

RIO INABON TO RIO LOCO BASINS

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 6, 1980	15.68	Apr. 16, 1981	21.58	Oct. 8, 1981	8.27	Apr. 15, 1982	15.00
Nov. 25	13.23	May 13	21.97	Nov. 12	10.81	May 13	13.74
Dec. 17	14.78	June 4	18.78	Dec. 3	11.09	June 11	12.50
Jan. 20, 1981	15.67	July 8	20.14	Jan. 20, 1982	11.23	July 14	14.78
Feb. 23	17.01	Aug. 6	21.44	Feb. 24	10.55	Aug. 12	14.21
Mar. 10	18.80	Sept. 15	10.94	Mar. 16	11.52	Sept. 1	14.96

175950066354201. 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.--Oct. 1981 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 15.97 ft (4.87 m) below land-surface datum, Nov. 18, 1981; lowest, 28.59 ft (8.714 m) below land-surface datum, July 9, 1982.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.08	25.74	18.27	17.46	17.12	18.45	23.95	23.33	21.72	28.05	20.99	27.94
2	22.74	25.74	17.96	17.29	17.03	18.86	21.97	23.06	21.89	28.21	24.50	28.19
3	27.95	25.50	18.52	16.98	20.42	18.99	21.70	23.46	21.35	23.38	26.37	28.33
4	28.58	24.99	20.03	16.81	20.92	19.06	21.41	23.10	21.29	22.62	27.36	24.51
5	23.47	25.06	23.76	16.82	22.59	19.11	21.26	23.03	21.06	22.35	27.92	23.02
6	23.78	24.99	24.96	16.77	18.35	18.76	21.23	22.76	20.94	25.49	28.42	22.52
7	24.41	24.85	25.62	16.72	17.91	18.35	21.23	22.65	21.19	27.55	23.71	25.66
8	23.10	24.78	22.50	16.90	17.76	18.19	21.67	22.52	21.08	28.37	23.02	25.34
9	22.40	24.73	25.39	17.21	17.75	18.11	21.31	22.51	21.24	28.59	25.65	25.87
10	21.62	20.92	26.00	17.33	21.06	18.11	21.27	22.18	21.31	23.73	27.15	25.88
11	21.55	20.28	22.55	17.42	22.92	18.09	21.32	21.99	21.43	22.48	27.70	22.10
12	21.46	19.31	20.28	17.68	23.32	18.10	21.41	21.90	21.57	25.36	27.73	22.46
13	21.23	19.27	19.51	22.60	23.52	18.11	21.29	21.82	21.47	27.47	27.65	21.60
14	20.82	22.76	19.03	24.89	23.63	18.12	21.29	21.70	21.51	28.07	22.80	21.06
15	20.40	22.46	18.75	25.57	18.77	18.10	21.31	21.65	22.22	28.37	22.14	20.66
16	20.00	19.16	18.55	20.82	21.63	18.18	21.36	21.53	22.02	28.54	25.29	20.64
17	19.79	16.90	18.41	20.36	23.21	18.22	21.34	21.41	22.13	23.72	26.72	20.59
18	19.92	15.97	18.36	23.72	24.10	21.28	21.25	21.38	22.36	23.25	27.28	20.42
19	23.29	19.82	18.27	20.41	24.49	23.47	21.27	21.35	22.41	22.36	27.62	20.30
20	21.80	17.08	18.15	22.08	19.27	25.77	19.97	21.37	21.74	25.34	27.84	20.74
21	20.33	20.68	18.05	23.91	18.54	21.22	21.73	21.40	21.74	23.27	23.13	21.18
22	19.65	21.28	18.07	24.45	19.27	21.01	21.75	21.40	21.75	24.32	21.79	21.17
23	20.57	18.17	18.22	19.16	18.17	21.03	21.86	21.33	22.27	21.39	24.86	21.64
24	24.11	16.64	18.25	18.27	18.69	24.89	21.99	21.24	22.20	21.08	26.87	21.71
25	24.44	16.29	18.07	17.82	18.84	26.29	21.83	21.50	22.70	20.81	27.45	21.84
26	21.07	21.05	17.91	20.99	18.94	25.41	21.83	21.58	22.45	20.63	27.79	21.82
27	24.43	21.86	18.18	22.65	19.01	21.73	22.08	21.71	22.65	20.49	27.85	21.93
28	25.04	22.83	18.21	18.09	18.87	21.38	22.46	21.78	25.80	23.96	23.30	22.08
29	25.20	23.43	17.78	22.63	---	25.97	22.71	21.61	27.36	26.09	22.63	22.19
30	25.29	19.92	17.61	17.97	---	23.70	23.39	21.36	27.77	26.15	25.56	22.26
31	25.29	---	17.55	17.38	---	26.40	---	21.30	---	21.50	27.50	---
LOW	28.58	25.74	26.00	25.57	24.49	26.40	23.95	23.46	27.77	28.59	28.42	28.33
HIGH	19.65	15.97	17.55	16.72	17.03	18.09	19.97	21.24	20.94	20.49	20.99	20.30

WTR YR 1982 LOW 28.59 HIGH 15.97

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 (30 cm) 10-60 ft (3.0-18.3 m). Depth 105 (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, 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, 3.40 ft (1.04 m) below land-surface datum, Mar. 18, 1982; lowest measured, 37.30 ft (11.37 m) below land-surface datum, May 7, 1973.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 7, 1980	a13.12	Apr. 15, 1981	a16.44	Oct. 8, 1981	a10.56	Apr. 15, 1982	a11.18
Nov. 18	a13.86	May 12	a15.86	Nov. 11	a 7.49	May 26	a11.26
Dec. 17	a14.53	June 3	12.84	Dec. 2	a 7.94	June 17	a13.65
Jan. 21, 1981	a11.40	July 7	12.29	Jan. 13, 1982	a20.97	July 20	a12.83
Feb. 24	a16.02	Aug. 5	a10.76	Feb. 10	a15.04	Aug. 19	a 6.62
Mar. 10	a18.28	Sept. 9	a12.30	Mar. 18	3.40	Sept. 8	a12.99

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Nov. 18, 1980	0.00	Apr. 14, 1981	0.04	Oct. 7, 1981	0.00	Apr. 14, 1982	0.16
Dec. 17	.00	May 12	.41	Nov. 12	.00	May 25	.00
Jan. 20, 1981	.00	June 2	+ .36	Dec. 2	.00	June 16	+ .13
Feb. 24	.00	July 7	.00	Jan. 7, 1982	.00	July 21	.00
Mar. 10	+ .16	Aug. 5	.00	Feb. 10	+ .05	Aug. 18	+ .50
		Sept. 9	.00	Mar. 19	+ .24	Sept. 8	+ .49

a Pumping.

+ Above land-surface datum.

GROUND-WATER LEVELS

RIO GUANAJIBO BASIN

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.--Dec. 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, 39.26 ft (11.97 m) below land-surface datum, Aug. 19, 1982.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			---	38.48	38.69	38.80	38.90	39.08	39.04	39.20	39.14	39.21
2			---	38.50	38.67	38.80	38.90	39.11	39.02	39.22	39.13	39.24
3			---	38.52	38.67	38.80	38.93	39.13	39.03	39.22	39.12	39.23
4			---	38.54	38.71	38.80	38.96	39.12	38.04	39.18	39.14	39.22
5			---	38.54	38.73	38.80	38.99	39.05	38.05	39.17	39.15	39.23
6			---	38.54	38.76	38.80	38.99	39.02	39.08	39.17	39.14	39.22
7			---	38.55	38.77	38.80	38.99	39.08	39.08	39.18	39.15	39.21
8			---	38.55	38.78	38.80	39.02	39.12	39.08	39.16	39.15	39.22
9			38.76	38.53	38.77	38.80	39.04	39.10	39.07	39.13	39.15	39.24
10			38.75	38.53	38.76	38.80	39.05	39.07	39.08	39.15	39.18	39.22
11			38.61	38.54	38.77	38.80	39.06	39.02	39.10	39.14	39.17	39.22
12			38.64	38.55	38.76	38.80	39.04	39.02	39.11	39.12	39.17	39.23
13			38.65	38.54	38.76	38.80	39.05	39.03	39.14	39.14	39.16	38.94
14			38.64	38.54	38.79	38.80	39.04	39.02	39.13	39.16	39.16	39.00
15			38.62	38.55	38.80	38.80	39.04	39.01	39.14	39.15	39.19	39.00
16			38.63	38.55	38.80	38.80	39.06	39.01	39.18	39.14	39.21	39.00
17			38.59	38.58	38.80	38.80	39.07	39.02	39.21	39.16	39.22	39.01
18			38.58	38.58	38.80	38.80	39.04	39.02	39.21	39.12	39.22	39.01
19			38.57	38.60	38.80	38.78	39.04	39.04	39.22	39.11	39.26	38.00
20			38.56	38.59	38.80	38.90	39.06	39.04	39.22	39.13	39.25	38.00
21			38.56	38.61	38.80	38.90	39.10	39.05	39.23	39.14	39.21	38.99
22			38.56	38.62	38.80	38.90	39.11	39.05	39.23	39.13	39.22	38.99
23			38.56	38.63	38.80	38.90	39.10	39.06	39.20	39.12	39.24	38.94
24			38.58	38.63	38.80	38.90	39.12	39.04	39.17	39.10	39.23	38.93
25			38.55	38.62	38.80	38.90	39.09	39.04	39.18	39.07	39.22	38.92
26			38.54	38.62	38.80	38.90	39.11	39.03	39.20	39.07	39.21	38.92
27			38.53	38.63	38.80	38.90	39.11	39.03	39.19	39.08	39.19	38.93
28			38.53	38.65	38.80	38.90	39.08	39.02	39.18	39.10	39.21	38.90
29			38.51	38.65	---	38.90	39.07	39.00	39.14	39.11	39.21	38.88
30			38.48	38.66	---	38.90	39.05	39.02	39.17	39.16	39.22	38.90
31			38.50	38.68	---	38.90	---	39.03	---	39.17	39.20	---
LOW			---	38.68	38.80	38.90	39.12	39.13	39.23	39.22	39.26	39.24
HIGH			---	38.48	38.67	38.78	38.90	39.00	38.04	39.07	39.12	38.00

GROUND-WATER LEVELS

407

RIO YAGUEZ AND RIO GRANDE DE AÑASCO BASINS

181233067083201. Local number, 45.
 LOCATION.--Lat 18°12'33", long 67°08'32".
 Owner: Cerveteria 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 YEARS OCTOBER 1980 TO SEPTEMBER 1982
 INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 1, 1980	12.82	Apr. 23, 1981	12.88	Sept. 3, 1981	14.58	Mar. 11, 1982	13.10
Nov. 20	12.94	May 21	12.00	Oct. 21	13.17	Apr. 7	13.58
Dec. 17	15.20	May 29	12.32	Nov. 24	13.90	May 12	12.78
Jan. 22, 1981	12.95	June 26	11.94	Jan. 18, 1982	14.05	July 21	14.22
Feb. 25	13.02	July 21	11.60	Jan. 26	14.48	Aug. 18	13.60
				Feb. 26	15.02	Sept. 8	11.37

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982
 INSTANTANEOUS OBSERVATION

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 1, 1980	1.45	Apr. 23, 1982	3.85	Sept. 3, 1981	2.07	Mar. 11, 1982	4.60
Nov. 20	2.58	May 21	3.05	Oct. 21	2.16	Apr. 7	6.60
Dec. 17	3.54	May 29	2.58	Nov. 24	2.23	May 12	5.25
Jan. 22, 1981	4.14	June 26	2.04	Jan. 18, 1982	2.81	July 20	5.69
Feb. 25	2.85	July 21	2.15	Jan. 26	4.19	Aug. 18	4.93
				Feb. 26	5.28	Sept. 8	4.38

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 0-40 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 YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Nov. 19, 1980	0.38	Apr. 14, 1981	2.29	Oct. 7, 1981	0.38	Apr. 14, 1982	2.35
Dec. 17	1.59	May 12	1.89	Nov. 11	+ .08	May 26	.49
Jan. 21, 1981	1.89	June 2	+ .23	Dec. 1	.34	June 16	.26
Feb. 25	1.61	July 7	.05	Jan. 7, 1982	.01	July 20	+ .09
Mar. 10	2.27	Aug. 5	.20	Feb. 18	.58	Aug. 18	.11
		Sept. 9	.40	Mar. 18	1.78	Sept. 1	+ .12

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 YEARS OCTOBER 1980 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 1, 1980	28.20	Apr. 14, 1981	28.69	Oct. 6, 1981	28.60	Apr. 13, 1982	30.20
Nov. 18	28.70	May 12	29.35	Nov. 10	27.42	May 25	27.83
Dec. 15	29.46	June 1	26.83	Dec. 1	28.18	June 15	27.24
Jan. 21, 1981	29.88	July 6	28.35	Jan. 7, 1982	29.05	July 19	27.22
Feb. 24	29.63	Aug. 4	28.69	Feb. 18	25.64	Aug. 17	26.47
Mar. 10	30.02	Sept. 8	28.80	Mar. 17	30.05	Sept. 1	28.31

+ Above land-surface datum.

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

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

- 1-D1. *Water temperature--influential factors, field measurement, and data presentation*, by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.
- 1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.
- 2-D1. *Application of surface geophysics to ground-water investigations*, by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.
- 2-E1. *Application of borehole geophysics to water-resources investigations*, by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.
- 3-A1. *General field and office procedures for indirect discharge measurements*, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.
- 3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.
- 3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.
- 3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.
- 3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.
- 3-A6. *General procedure for gaging streams*, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.
- 3-A7. *Stage measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.
- 3-A8. *Discharge measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.
- 3-A11. *Measurement of discharge by moving-boat method*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.
- 3-B1. *Aquifer-test design, observation, and data analysis*, by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.
- 3-B2. *Introduction to ground-water hydraulics, a programed text for self-instruction*, by G. D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.
- 3-C1. *Fluvial sediment concepts*, by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.
- 3-C2. *Field methods for measurement of fluvial sediment*, by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.
- 3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.
- 4-A1. *Some statistical tools in hydrology*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.
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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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