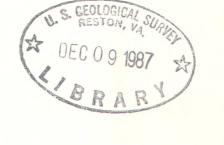


# Water Resources Data Puerto Rico and the U.S. Virgin Islands Water Year 1985



PUERTO RICO

Culebra, PR St. Thomas

St. John

Vieques, PR

U.S.

VIRGIN
ISLANDS

St. Croix

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT PR-85-1 Prepared in cooperation with the Commonwealth of Puerto Rico, the Government of the U.S. Virgin Islands, and other agencies

## CALENDAR FOR WATER YEAR 1985

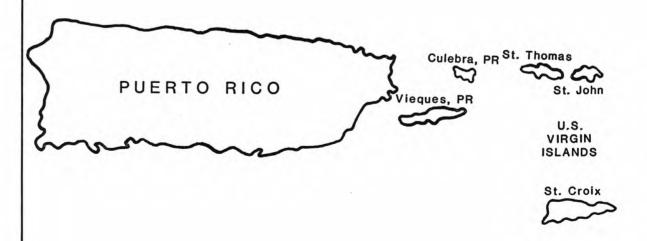
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# Water Resources Data Puerto Rico and the U.S. Virgin Islands

Water Year 1985

by Eloy Colon-Dieppa, Pedro L. Díaz, and René García



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT PR-85-1 Prepared in cooperation with the Commonwealth of Puerto Rico, the Government of the U.S. Virgin Islands, and other agencies

# UNITED STATES DEPARTMENT OF THE INTERIOR DONALD PAUL HODEL, Secretary

**GEOLOGICAL SURVEY** 

Dallas L. Peck, Director

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U.S. Geological Survey

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San Juan, PR 00936 (Telephone: (809) 753-4414)

#### PREFACE

This annual hydrologic data report of Puerto Rico and the U.S. Virgin Islands is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's surface- and ground-water data-collection networks in each state, Puerto Rico, the U.S. Virgin Islands, and the other Trust Territories. These records of streamflow, ground-water levels, and quality of water provide the hydrologic information needed by state, local and Federal agencies, and the private sector for developing and managing our Nation's land and water resources.

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

Zaida Aquino de Díaz George Arroyo Margarita Concepción Ralph González Felipe Hernández Rafael Peña-Cortes Luis Santiago-Rivera

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

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14.

#### 15. Supplementary Notes

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

#### 16. Abstract (Limit: 200 words)

Water-resources data for surface-water, quality-of-water, and ground-water records for the 1985 water year for Puerto Rico and the U.S. Virgin Islands, consists of records of discharge, water quality of streams, and water levels of wells. This report contains discharge records for 57 streamflow-gaging station, 131 partial-record or miscellaneous streamflow stations, and 1 crest-stage, partial-record streamflow station; stage and content records for 4 Takes and reservoirs; water quality records for 16 streamflow-gaging stations, 45 ungaged streamsites, 11 lake sites, 1 lagoon, and 1 bay; and water-level records for 94 observation wells. These data represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating local and federal agencies in Puerto Rico and the U.S. Virgin Islands.

#### 17. Document Analysis a. Descriptors

\*Surface water, \*Water quality, \*Ground water, Aquifers, Chemical analysis, Gaging Stations, Hydrologic data, Sediments, Streamflow, Water analysis, Water levels, Lakes.

#### b. Identifiers/Open-Ended Terms

Puerto Rico, U.S. Virgin Islands, Sampling sites.

#### c. COSATI Field/Group

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(Letter after station name designates type of data: (d) discharge, (c) water-quality, (e) elevation)

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#### INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with local and federal agencies obtains a large amount of data pertaining to the water resources of the Commonwealth of Puerto Rico and the Territory of the U.S. Virgin Islands each water year. These data, accumulated during many water years, constitute a valuable data base for developing an improved understanding of the water resources of the area. To make these data readily available to interested parties outside the Geological Survey, the data are published annually in this report series entitled "Water Resources Data for Puerto Rico and the U.S. Virgin Islands, 1985.

This report includes records on both surface and ground water. Specifically, it contains: (1) Discharge records for 57 streamflow-gaging stations, 131 partial-record or miscellaneous streamflow stations, and 1 crest-stage, partial-record streamflow station; (2) stage and content records for 4 lakes and reservoirs; (3) water-quality records for 16 streamflow-gaging stations, and for 45 ungaged streamsites, 11 lake sites, 1 lagoon, and 1 bay; and (4) water-level records for 94 observation wells.

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

Beginning with the 1968 calendar year, surface-water records for Puerto Rico were released separately on an annual basis. Ground-water level records and water-quality data for surface and ground water were released in companion reports covering periods of several years. Data for the 1973-74 reports were published under separate covers. Water-resources data reports for 1975-76, 1977, 1978, 1979-80, 1981-82, 1983, and 1984 water years consist of one volume each and contain data for streamflow, water quality and ground water.

Publications similar to this report are published annually by the Geological Survey for all States. These official Survey reports have an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this volume is identified as "U.S. Geological Survey Water-Data Report PR-85-1". These water-data reports are for sale in paper copy or in microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia, 22161.

Additional information, including current prices, for ordering specific reports may be obtained from the District Chief at the address given on back of title page or by telephone (809) 783-4660.

#### COOPERATION

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

Puerto Rico Environmental Quality Board

Puerto Rico Aqueduct and Sewer Authority

Puerto Rico Department of Agriculture

Puerto Rico Industrial Development Company

Puerto Rico Department of Public Works

Puerto Rico Highway Authority

Puerto Rico Department of Natural Resources

Puerto Rico Department of Health

Puerto Rico Electric and Power Authority

Puerto Rico Rice Corporation

Puerto Rico Administration for Agricultural Development

Puerto Rico Land Administration

Center for Energy and Environment Research, University of Puerto Rico

Water Resources Research Institute, University of Puerto Rico

Water Resources Research Institute, College of the Virgin Islands

Department of Public Works of the U.S. Virgin Islands

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

#### SUMMARY OF HYDROLOGIC CONDITIONS

The 1985 water year (October 1984-September 1985) was one of near normal precipitation. Precipitation averaged about 106 percent of normal, islandwide, with variations of 94 percent normal in the north; 109 percent normal in the south; 122 percent normal in the east; and 105 percent normal in the west. Unusual dry conditions prevailed during January and June, but May was abnormally wet. Monthly average precipitation islandwide for water year 1985 and the 30-year normal as reported by the National Oceanic and Atmospheric Administration are listed in table 1.

Table 1. Island-wide monthly precipitation averages for 1985 water year

| Water year 1985 | 30-year<br>normal  |
|-----------------|--|
| 8.17            | 7.74   |
| 10.58           | 5.95   |
| 4.12            | 4.32   |
| 1.42            | 3.08   |
| 2.86            | 2.29   |
| 5.12            | 2.62   |
| 4.36            | 4.63   |
| 10.44           | 6.48   |
| 2.08            | 5.58   |
| 4.52            | 4.48   |
| 5.47            | 7.28   |
| 7.72            | 7.78   |
| 66.86           | 63.23  |
|                 | 8.17<br>10.58<br>4.12<br>1.42<br>2.86<br>5.12<br>4.36<br>10.44<br>2.08<br>4.52<br>5.47<br>7.72 |

#### Surface Water

Streamflow in Puerto Rico during the 1985 water year was generally above normal. It increased during November and May, but remained about normal during the rest of the year at key index stations; throughout most of the island (fig. 1).

The first wet period of the water year was caused by the passage of tropical storm Klaus during the first week of November 1984 with above average precipitation and localized flooding on the north and south coasts. Streamflow increased two to three times normal in the north and east basins.

A stationary high pressure system over the Atlantic and northeastern Caribbean produced a short-term dry spell during January and February. Streamflow declined at all index stations. Monthly mean flows for February were from 20 to 28 percent below normal. This moderate drought ended during March and streamflow returned to normal.

A nearly stationary low-pressure center that moved over Puerto Rico from the north caused significant amounts of rain during May 17 to 18. Precipitation totals (5-days) averaging from 8 to 22 inches were recorded by the National Weather Service in north-central Puerto Rico. Severe floods occurred at several municipalities. Historical-peak flows were recorded at 14 gaging stations. The highest instantaneous peak (136,000 cubic feet per second) was recorded at the Río Grande de Manatí at highway 2 near Manatí. Recorded peak discharges are listed in table 2.

Streamflow decreased after the May floods, but remained in the normal range during the rest of the water year. An exception was in the east, where flow was about 40 percent of normal.

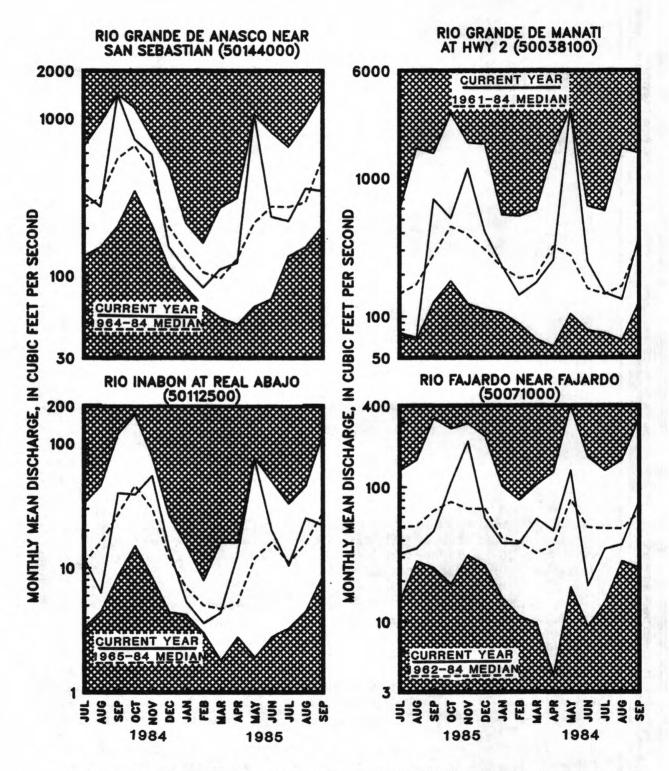


Figure 1. -- Monthly mean discharge of selected streams in Puerto Rico.

In the U.S. Virgin Islands, conditions were in general the same as in Puerto Rico. The passing of storm Klaus produced the worst floods since 1983, and caused millions of dollars in damages during the week of Nov. 4-10, 1984.

Table 2. Peak discharges during May 17-18, 1985 at selected U.S. Geological Survey streamflow gaging stations throughout Puerto Rico

|             | 1985 peak               | Previous p              | eak           |
|-------------|-------------------------|-------------------------|---------------|
| Station no. | (Cubic feet per second) | (Cubic feet per second) | Water<br>Year |
| 50010600    | 2,600                   | 1,900                   | 1984          |
| 50014800    | 3,510                   | 2,040                   | 1984          |
| 50015700    | 6,250                   | 3,000                   | 1984          |
| 50027750    | 45,800                  | 9,310                   | 1982          |
| 50028000    | 12,190                  | 8,950                   | 1963          |
| 50028400    | 15,000                  | 4,120                   | 1969          |
| 50031200    | 48,000                  | 35,000                  | 1970          |
| 50038100    | 136,000                 | 119,000                 | 1970          |
| 50051180    | 9,320                   | 6,300                   | 1984          |
| 50053050    | 11,600                  | 2,650                   | 1984          |
| 50055650    | 700                     | 220                     | 1984          |
| 50056400    | 25,700                  | 23,300                  | 1979          |
| 50056900    | 1,190                   | 1,050                   | 1984          |
| 50111500    | 12,700                  | 357                     | 1984          |

#### Ground Water

In general, most water levels in wells rose during the first quarter of 1985 water year and during May in response to above normal rainfall. New record-high water levels were observed at several wells in Puerto Rico and the U.S. Virgin Islands (Table 3).

Ground-water levels along the north coast limestone aquifers of Puerto Rico remained practically unchanged during water year 1985. A slight increase was recorded during October in response to above normal rainfall (fig. 2). The recovery was followed by a declining trend until the aquifer reached near-equilibrium conditions which is a typical response of the north coast limestone aquifers to normal rainfall.

Ground-water levels along the south coast alluvial aquifers followed a cyclic pattern; the results of both rainfall and ground-water withdrawals for public supply, industrial, and irrigation uses. Above normal rainfall along the southern slopes of Puerto Rico during the first quarter of 1985 water year caused a rise in the ground-water levels (fig. 2). At the Alomar well an increase of 7.5 feet in the ground-water levels was recorded from October to December. This trend was reversed during the rest of the year in response to below normal rainfall and the increasing water demand for irrigation.

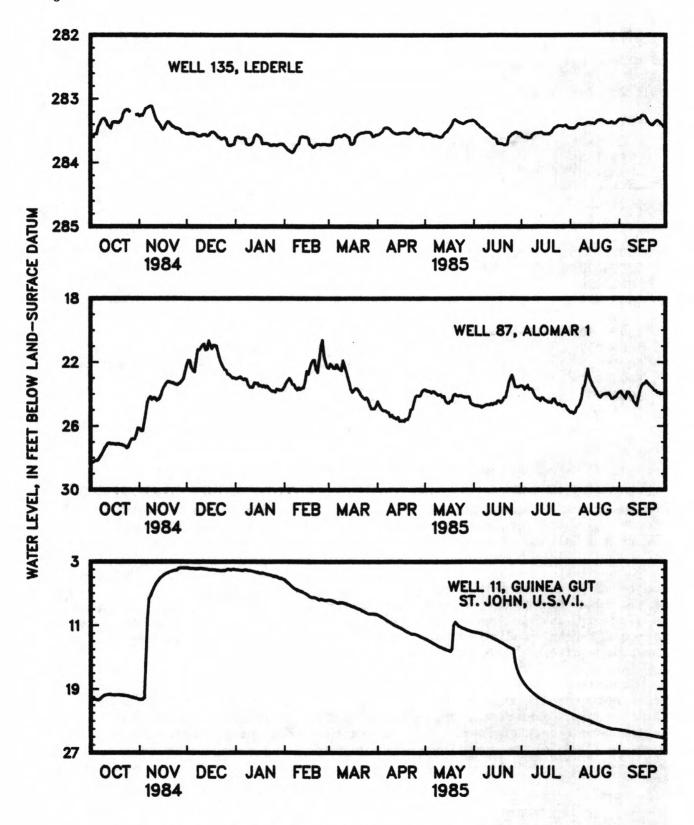


Figure 2.--Ground-water levels at selected wells in Puerto Rico and the U.S. Virgin Islands.

Ground-water levels in the U.S. Virgin Islands (St. Thomas, St. Croix, and St. John) followed a pattern similar to those within the south coast aquifers of Puerto Rico. Above normal rainfall early in November resulted in an increase of up to 16.5 feet in ground-water levels (fig. 2). Water levels declined throughout the rest of the water year due to below normal rainfall and ground-water withdrawals. In several areas of St. Thomas, St. Croix, and St. John, the ground-water levels declined about 22 feet.

Table 3. Highest water level (in feet below land-surface datum) recorded during 1985 water year at selected ground-water wells in Puerto Rico and the U.S. Virgin Islands

| Well<br>name       | Local no. | Location   | 1985<br>extreme | Date  | Previous extreme | Date |
|--------------------|-----------|------------|-----------------|-------|------------------|------|
| Arroyo #1          | 171       | PR         | 1.35            | 5-85  | 2.72             | 6-83 |
| Squibb #3          | 173       | PŖ         | 2.77            | 12-84 | 3.73             | 9-84 |
| Humacao GW<br>Sta  | 172       | PR         | 13.70           | 5-85  | 15.73            | 9-84 |
| Restaurada 8A      | 141       | PR         | 11.60           | 11-84 | 15.65            | 8-83 |
| Yabucoa #7         | 96        | PR         | 13.38           | 12-84 | 15.52            | 1-82 |
| Grade School<br>#3 | 6         | St. Thomas | 5.19            | 11-84 | 10.56            | 6-83 |
| DPW #6             | 5         | St. John   | 3.20            | 11-84 | 11.34            | 4-83 |

#### Water Quality

Water quality can be affected by any factors depending on its use and the parameters analyzed for. During the water-year 1985, nine new constituents were added to the regular surface water sampling program.

At fifty-five sites, water samples were collected twice during the year for determination of boron, copper, manganese, iron, zinc, cyanide, phenols, sulfide, and methylene blue active substances (MBAS). Maximum concentrations and sampling stations are summarized in table 4.

| Table 4. | Sites | with | maximum | concentration | of | selected | parameters |
|----------|-------|------|---------|---------------|----|----------|------------|
|          |       |      |         |               |    |          |            |

| <u>Site</u>    | Boron    | Copper   | Manganese | Iron     | Zinc     |
|----------------|----------|----------|-----------|----------|----------|
|                | B        | Cu       | Mn        | Fe       | Zn       |
|                | 50049920 | 50091800 | 50047990  | 50047990 | 50091800 |
| Maximum        |          |          |           |          |          |
| Concentrations | 3300     | 270      | 2400      | 4900     | 560      |
|                | ug/L     | ug/L     | ug/L      | ug/L     | ug/L     |
|                | Cyanide  | Phenols  | Sulfide   | MBAS     |          |
| Site           | 50044000 | 50071000 | 50091800  | 50091800 |          |
| Maximum        | 1.0      | 46       | 1.4       | 4.7      |          |
| Concentrations | mg/L     | mg/L     | mg/L      | mg/L     |          |

The presence of high concentrations of fecal coliform (FC) and fecal streptococci (FS) bacteria continue being the principal water quality problem in the water bodies of Puerto Rico. Bacteria concentrations exceeding one million colonies per one hundred milliliters of raw water were found at several stations including the Río Hondo at Flood Channel near Cataño (50047530), the Quebrada Blasina near Carolina (50050300), the Río Bairoa near Caguas (50055400), and the Río Chico at Central Providencia (50091800) (fig. 3 and 4). These sites are located close to urban zones, industrial parks and suburban zones not served by local sewage systems.

Two daily suspended sediment stations were operated during the year, one at the Río Tanamá near Utuado (50028000), located in the north central part of the island and the Río Fajardo near Fajardo (50071000), in the east, close to the El Yunque rain forest. Maximum sediment concentrations recorded were 11,200 milligrams per liter (mg/L) at 50028000 and 1,820 mg/L at 50071000. The maximum sediment loads were 167,000 tons per day at 50028000 and 13,700 tons per day at 50071000.

#### SPECIAL NETWORKS AND PROGRAMS

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 500 or so sites on NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting such that the data may be used for, (2) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and

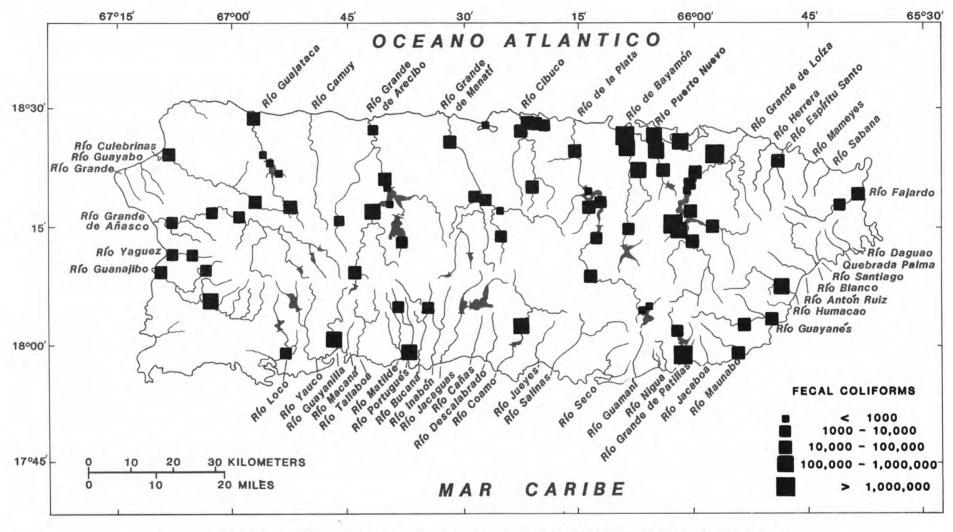


Figure 3.--Location of maximum concentration of fecal coliform bacteria at sampled sites.

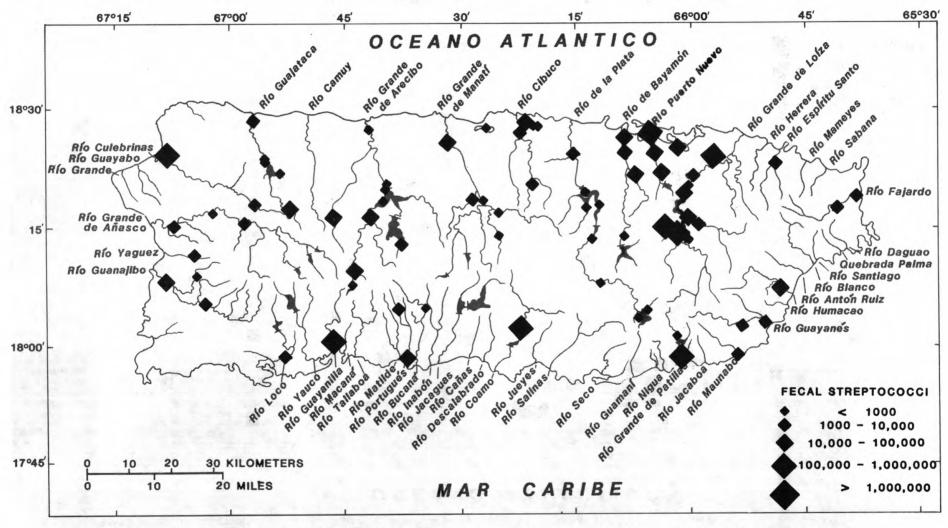


Figure 4.--Location of maximum concentration of fecal streptococci bacteria at sampled sites.

#### WATER RESOURCES DATA FOR PUERTO RICO AND THE U.S. VIRGIN ISLANDS, 1985

other programs, (3) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research.

#### EXPLANATION OF THE RECORDS

The surface-water and ground-water records published in this report are for the 1985 water year that began October 1, 1984 and ended September 30, 1985. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and content data for lakes and reservoirs, water-quality data for surface and ground water, and ground-water-level data. The locations of the stations and wells where the data were collected are shown in figures 5-11. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

#### Station Identification Numbers

Each data station, whether streamsite or well, in this report is assigned a unique identification number. This number is unique in that it applies specifically to a given station and to no other. The number usually is assigned when a station is first established and is retained for that station indefinitely. The systems used by the U.S. Geological Survey to assign identification numbers for surface-water stations and for ground-water well sites differ, but both are based on geographic location. The "downstream order" system is used for regular surface-water stations and the "latitude-longitude" system is used for wells.

#### Downstream order system

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 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."

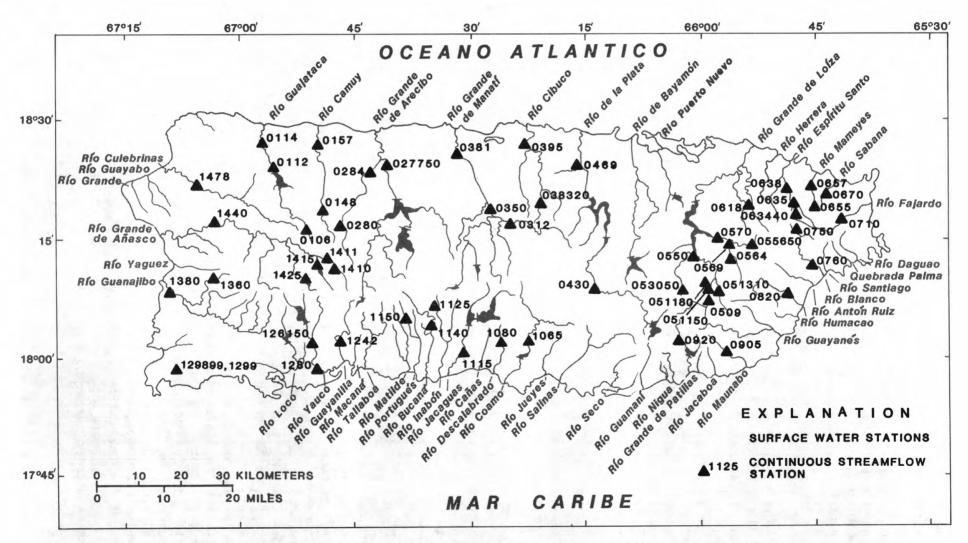


Figure 5.--Location of continuous surface-water stations in Puerto Rico.

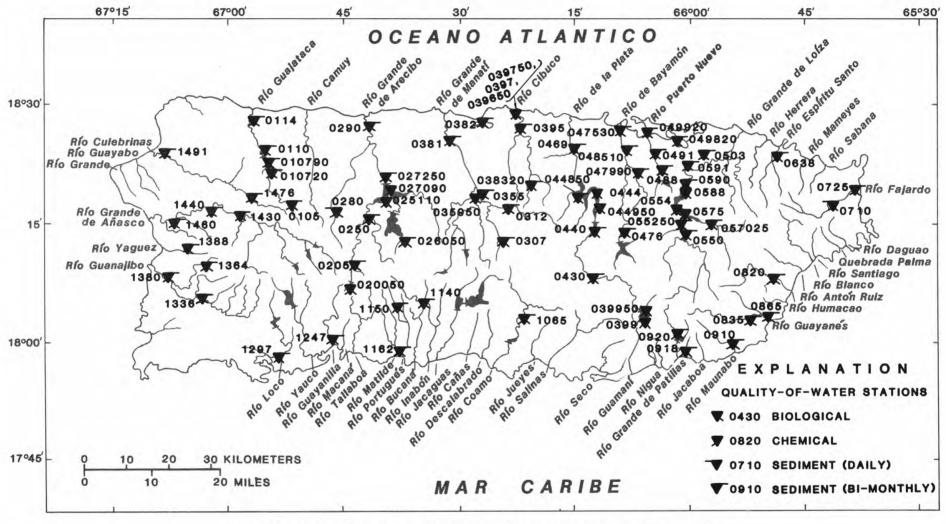


Figure 6.--Location of water-quality stations in Puerto Rico.

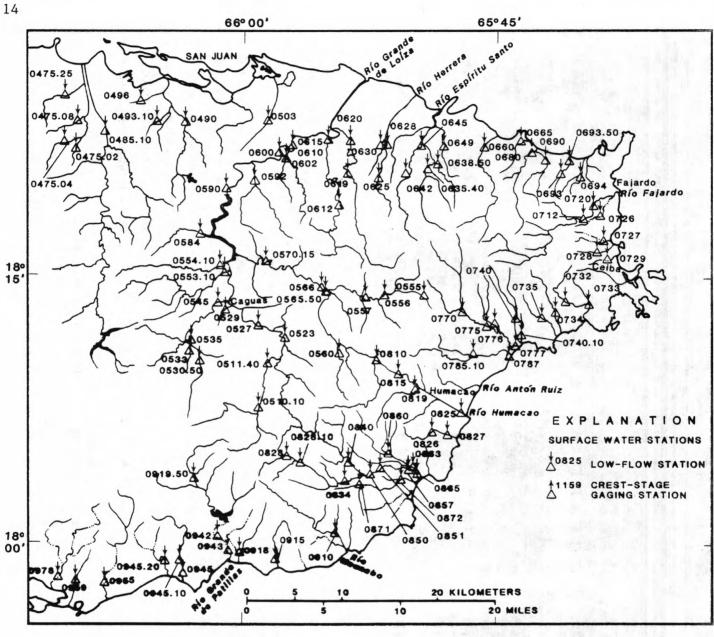


Figure 7.--Location of low-flow partial-record stations in Eastern Puerto Rico.

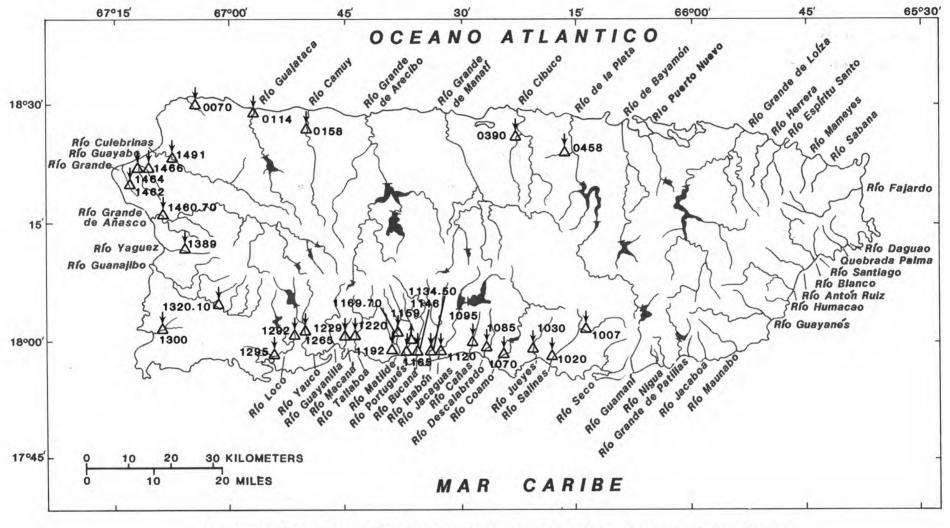


Figure 8.--Location of low-flow partial-record stations in Central and Western Puerto Rico.

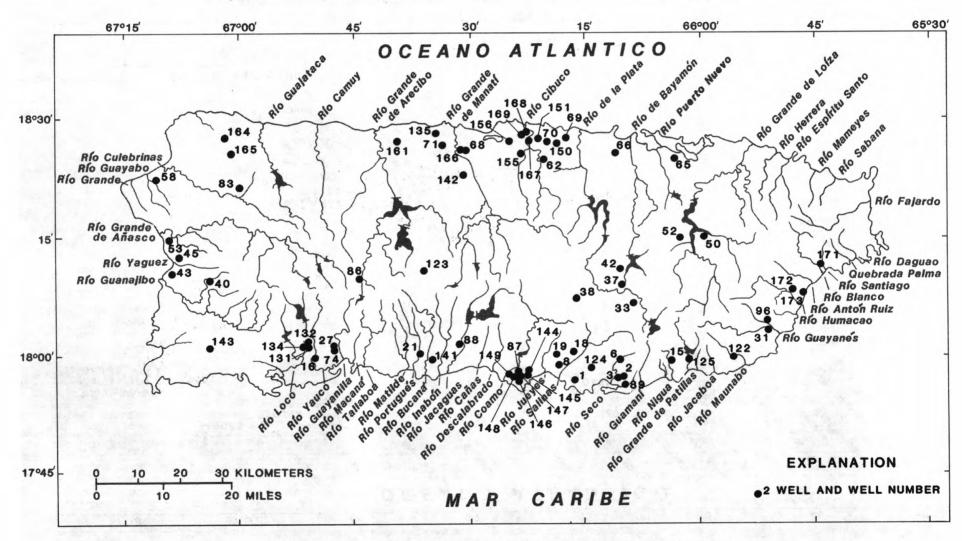


Figure 9.--Location of ground-water stations in Puerto Rico.



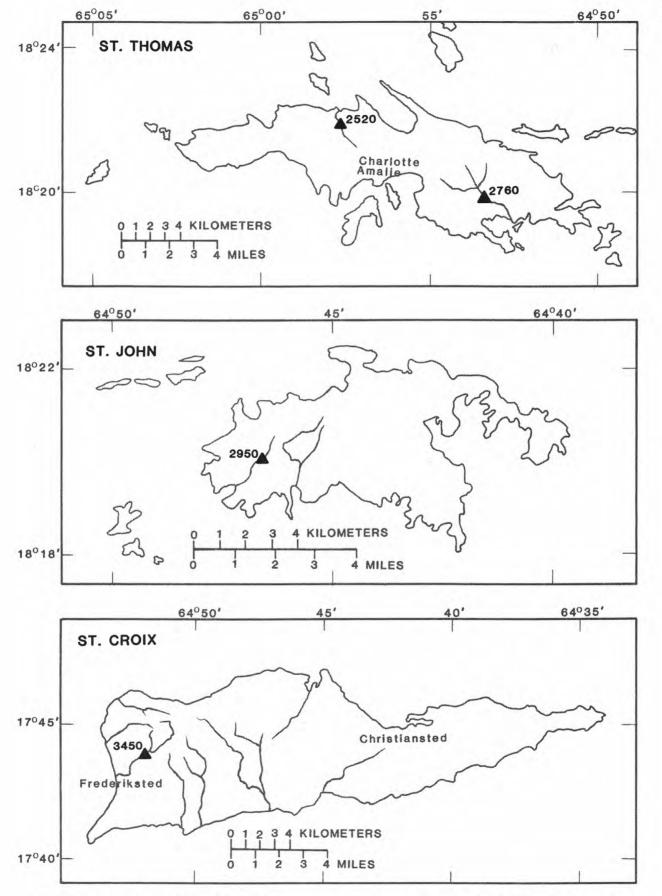


Figure 10.--Location of surface-water stations in the U.S. Virgin Islands.

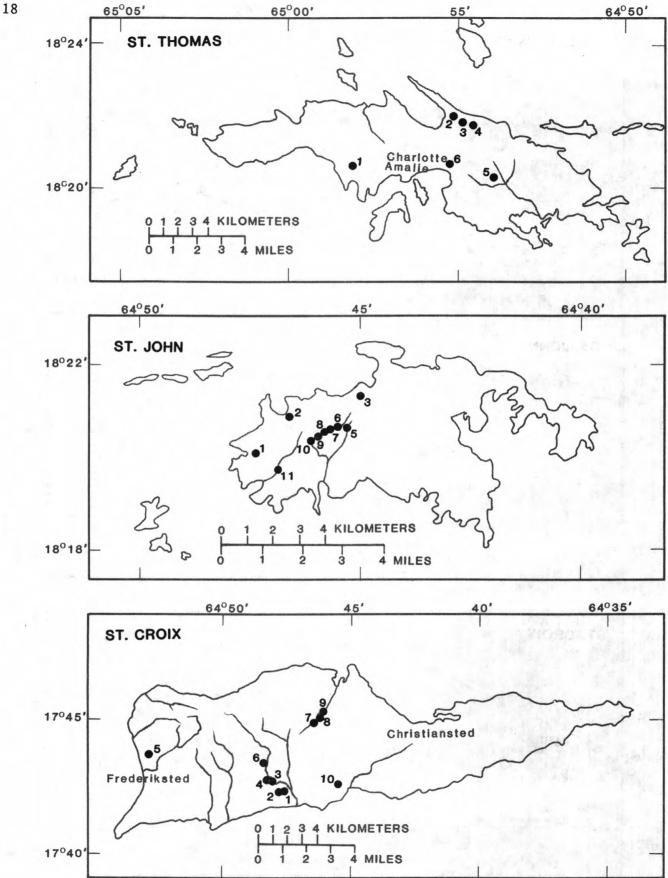


Figure 11.--Location of ground-water stations in the U.S. Virgin Islands.

#### Latitude-Longitude System

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. 12, below).

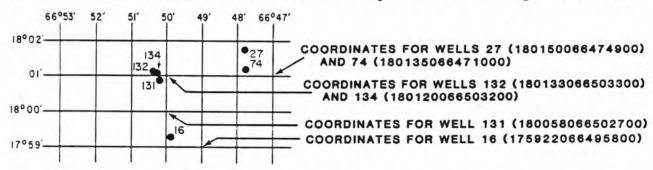


Figure 12.--Grid showing system for numbering wells and miscellaneous sites (latitude and longitude).

#### Records of Stage and Water Discharge

Records of stage and water discharge may be complete or partial. Complete records of discharge are those obtained using a continuous stage-recording device through which either instantaneous or mean daily discharges may be computed for any time, or any period of time, during the period of record. Complete records of lake or reservoir content, similarly, are those for which stage or content may be computed or estimated with reasonable accuracy for any time, or period of time. They may be obtained using a continuous stage-recording device, but need not be. Because daily mean discharges and end-of-day contents commonly are published for such stations, they are referred to as "daily stations."

By contrast, partial records are contained through discrete measurements without using a continuous stage-recording device and pertain only to a few flow characteristics, or perhaps only one. The nature of the partial record is indicated by table titles such as "Crest-stage partial records," or "Lowflow partial records." Records of miscellaneous discharge measurements or of measurements from special studies, such as low-flow seepage studies, may be considered as partial records, but they are presented separately in this report. Location of all complete-record and crest-stage partial-record stations for which data are given in this report are shown in figures 5,7,8, and 10.

Data Collection and Computation

The data obtained at a complete-record gaging station on a stream or canal consists of a continuous record of stage, individual measurements of discharge throughout a range of stages, and notations regarding factors that may affect the relationships between stage and discharge. These data, together with supplemental information, such as weather records, are used to compute daily discharges. The data obtained at a complete-record gaging station on a lake or reservoir consist of a record of stage and of notations regarding factors that may affect the relationship between stage and lake content. These data are used with stage-area and stage-capacity curves or tables to compute water-surface areas and lake storage.

Continuous records of stage are obtained with analog recorders that trace continuous graphs of stage or with digital recorders that punch stage values on paper tapes at selected time intervals. Measurements of discharge are made with current meters using methods adapted by the Geological Survey as a result of experience accumulated since 1880. 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.

In computing discharge records, results of individual measurements are plotted against the corresponding stages, and stage-discharge relation curves are then constructed. From these curves, rating tables indicating the approximate discharge for any stage within the range of the measurements are prepared. If it is necessary to define extremes of discharge outside the range of the current-meter measurements, the curves are extended using: (1) logarithmic plotting; (2) velocity-area studies; (3) results of indirect measurements of peak discharge, such as slope-area or contracted-opening measurements, and computations of flow-over-dams or weirs; or (4) step-backwater techniques.

Daily mean discharges are computed by applying the daily mean stages (gage heights) to the stage-discharge curves or tables. 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 determined by the shifting-control method, in which correction factors based on the individual discharge measurements and notes of the personnel making the measurements are applied to the gage heights before the discharges are determined from the curves or tables. This shifting-control method also is used if the stage-discharge relation is changed temporarily because of aquatic growth or debris on the control.

At some stream-gaging stations the stage-discharge relation is affected by the backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in computing discharge.

In computing records of lake or reservoir contents, it is necessary to have available from surveys, curves, or tables defining the relationship of stage and contents. The application of stage to the stage-content curves or tables gives the contents from which daily, monthly, or yearly changes then are determined. If the stage-content relationship changes because of deposition of sediment in a lake or reservoir, periodic resurveys may be necessary to redefine the relationship. Even when this is done, the contents computed may become increasingly in error as time since the last survey increases. Discharges over lake or reservoir spillways are computed from stage-discharge relationships much as other stream discharges are computed.

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 from the recorded range in stage, previous or following record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Likewise, daily contents may be estimated from operator's logs, previous or following record, inflowoutflow studies, and other information. Information explaining how estimated daily-discharge values are identified in station records is included in the next two sections, "Data Presentation" (REMARKS paragraph) and "Identifying Estimated Daily Discharge."

#### Data Presentation

The records published for each gaging station consist of two parts, the manuscript or station description and the data table for the current water year. The manuscript provides, under various headings, descriptive information, such as station location; period of record; average discharge; historical extremes; record accuracy; and other remarks pertinent to station operation and regulation. The following information, as appropriate, is provided with each continuous record of discharge or lake content. Comments to follow clarify information presented under the various headings of the station description.

LOCATION .-- Information on locations is obtained from the most accurate maps available. The location of the gage with respect to the cultural and physical features in the vicinity and with respect to the reference place mentioned in the station name is given.

DRAINAGE AREA. -- Drainage areas are measured using the most accurate maps available. Drainage areas are updated as better maps become available.

PERIOD OF RECORD. -- This indicates the period for which there are published records for the station or for an equivalent station. An equivalent station is one that was in operation at a time that the present station was not, and whose location was such that records from it can reasonable be considered equivalent with records from the present station.

REVISED RECORDS.--Published records, because of new information, occasionally are found to be incorrect, and revisions are printed in later reports. Listed under this heading are all the reports in which revisions have been published for the station and the water years to which the revisions apply. If a revision did not include daily, monthly, or annual figures of discharge, that fact is noted 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 most recently revised figure was first published is given.

GAGE.--The type of gage in current use, the datum of the current gage, and a condensed history of the types, locations, and datums of previous gages are given under this heading.

REMARKS.--All periods of estimated daily-discharge record will either be identified by date in this paragraph of the station description for water-discharge stations or flagged in the daily-discharge table. (See next section, "Identifying Estimated Daily Discharge.") If a remarks statement is used to identify estimated record, the paragraph will begin with this information presented as the first entry. The paragraph is also used to present information relative to the accuracy of the records, to special methods of computations, to conditions that affect natural flow at the station and, possibly, to other pertinent items. For reservoir stations, information is given on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir.

COOPERATION. -- Records provided by a cooperating organization or obtained for the Geological Survey by a cooperating organization are identified here.

AVERAGE DISCHARGE.--The discharge value given is the arithmetic mean of the water-year mean discharges. It is computed only for stations having at least 5 water years of complete record, and only water years of complete record are included in the computation. It is not computed for stations where diversions, storage, or other water-use practices cause the value to be meaningless. If water developments significantly altering flow at a station are put into use after the station has been in operation for a period of years, a new average is computed as soon as 5 water years of record have accumulated following the development. The median of yearly mean discharges also is given under this heading for stations having 10 or more water years of record, if the median differs from the average given by more than 10 percent.

EXTREMES FOR PERIOD OF RECORD. -- Extremes may include maximum and minimum stages and maximum and minimum discharges or content. Unless otherwise qualified, the maximum discharge or content is the instantaneous maximum corresponding to the highest stage that occurred. The highest stage may have been obtained from a graphic or digital recorder, a crest-stage gage, or by direct observation of a nonrecording gage. If the maximum stage did not occur on the same day as the maximum discharge or content, it is given separately. Similarly, the minimum is the instantaneous minimum discharge, unless otherwise qualified, and was determined and is reported in the same manner as the maximum.

EXTREMES OUTSIDE PERIOD OF RECORD.--Included here is information concerning major floods or unusually low flows that occurred outside the stated period of record. The information may or may not have been obtained by the U.S. Geological Survey.

EXTREMES FOR CURRENT YEAR.--Extremes given here are similar to those for the period of record, except the peak discharge listing may include secondary peaks. For stations meeting certain criteria, all peak discharges and stages occurring during the water year and greater than a selected base discharge are presented under this heading. The peaks greater than the base discharge, excluding the highest one, are referred to as secondary peaks. Peak discharges are not published for canals, ditches, drains, or streams for which the peaks are subject to substantial control by man. The time of occurrence for peaks is expressed in 24-hour local standard time. For example, 12:30 a.m. is 0030, and 1:30 p.m. is 1330. The minimum for the current water year appears below the table of peak data.

REVISIONS.--If a critical error in published records is discovered, a revision is included in the first report published following discovery of the error.

Although rare, occasionally the records of a discontinued gaging station may need revision. Because, for these stations, there would be no current or, possibly, future station manuscript published to document the revision in a "Revised Records" entry, users of data for these stations who obtained the record from previously published data reports may wish to contact the District office to determine if the published records were ever revised after the station was discontinued. Of course, if the data were obtained by computer retrieval, the data would be current and there would be no need to check because any published revision of data is always accompanied by revision of the corresponding data in computer storage.

Manuscript information for lake or reservoir stations differs from that for stream stations in the nature of the "Remarks" and in the inclusion of a skeleton stage-capacity table when daily contents are given.

The daily table for stream-gaging stations gives 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" given the sum of the daily figures. The line headed "MEAN" given 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 is usually 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 regulations or diversion or if the drainage area includes large noncontributing areas. In the yearly summary below the monthly summary, the figures shown are the appropriate discharges for the calendar and water years.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of annual maximum stage and discharge at crest-stage stations, and the second is a table of discharge measurements at low-flow partial-record stations.

# Identifying Estimated Daily Discharge

Estimated daily-discharge values published in the water-discharge tables of annual State data reports are identified either by flagging individual daily values with the letter symbol "e" and printing a table footnote, "e Estimated," or by listing the dates of the estimated record in the REMARKS paragraph of the station description.

# Accuracy of the Records

The accuracy of streamflow records 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 measurements of stage, measurements of discharge, and interpretation of records.

The accuracy attributed to the records is indicated under "REMARKS." "Excellent" means that about 95 percent of the daily discharges are within 5 percent of the true; "good," within 10 percent; and "fair," within 15 percent. Records that do not meet the criteria mentioned, are rated "poor." Different accuracies may be attributed to different parts of a given record.

Daily mean discharges in this report are given to the nearest hundredth of a cubic foot per second for values less than 1 ft3/s; to the nearest tenth between 1.0 and 10 ft3/s; to whole numbers between 10 and 1,000 ft3/s; and to 3 significant figures for more than 1,000 ft3/s. The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharges listed for partial-record stations and miscellaneous sites.

Information used in the preparation of the records in this publication, such as discharge-measurement notes, gage-height records, temperature measurements, and rating tables are on file in the Caribbean District office. Also, most of the daily mean discharges are in computer-readable form and have been analyzed statistically. Information on the availability of the unpublished information or on the results of statistical analyses of the published records may be obtained from the District office.

# Records of Surface-Water Quality

Records of surface-water quality ordinarily are obtained at or near stream-gaging stations because interpretation of records of surface-water quality nearly always requires corresponding discharge data. Records of surface-water quality in this report may involve a variety of types of data and measurement frequencies.

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#### Classification of Records

Water-quality data for surface-water sites are grouped into one of three classifications. A <u>continuing-record station</u> is a site where data are collected on a regularly scheduled basis. Frequency may be once or more times daily, weekly, monthly, or quarterly. A <u>partial-record station</u> is a site where limited water-quality data are collected systematically over a period of years. Frequency of sampling is usually less than quarterly. A <u>miscellaneous</u> sampling site is a location other than a continuing or partial-record station, where random samples are collected to give better areal coverage to define water-quality conditions in the river basin.

A careful distinction needs to be made between "continuing records" as used in this report and "continuous recordings," which refers to a continuous graph or a series of discrete values punched at short intervals on a paper tape. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently. Locations of stations for which records on the quality of surface water appear in this report are shown in figure 6.

# Arrangement of Records

Water-quality records collected at a surface-water daily record station are published immediately following that record, regardless of the frequency of sample collection. Station number and name are the same for both records. Where a surface-water daily record station is not available or where the water quality differs significantly from that at the nearby surface-water station, the continuing water-quality record is published with its own station number and name in the regular downstream-order sequence. Water-quality data for partial-record stations and for miscellaneous sampling sites appear in separate tables following the table of discharge measurement at miscellaneous sites.

# On-site Measurements and Sample Collection

In obtaining water-quality data, a major concern needs to be assuring that the data obtained represent the in situ quality of the water. To assure this, certain measurements, such as water temperature, pH, and dissolved oxygen, need to be made onsite when the samples are taken. To assure that measurements made in the laboratory also represent the in situ water, carefully prescribed procedures need to be followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Procedures for onsite measurements and for collecting, treating, and shipping samples are given in publications on "Techniques of Water-Resources Investigations," Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4. Detailed information on collecting, treating, and shipping samples may be obtained from the Geological Survey District office.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load. All samples obtained for the National Stream Quality Accounting Network (see definitions) are obtained from at least several verticals. Whether samples are obtained from the centroid of flow or from several verticals, depends on flow conditions and other factors which must be evaluated by the collector.

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 U.S.G.S. District office whose address is given on the back of the title page of this report.

# 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 diurnal temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published. Water temperatures measured at the time of water-discharge measurements are on file in the District office.

#### 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 discharges of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

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

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

# Laboratory Measurements

Sediment samples, samples for biochemical-oxygen demand (BOD), samples for indicator bacteria, and daily samples for specific conductance are analyzed locally. All other samples are analyzed in the Geological Survey laboratories in Doraville, Ga., or Denver, Co. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chap. Cl. Methods used by the Geological Survey laboratories are given in TWRI, Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4.

#### Data Presentation

For continuing-record stations, information pertinent to the history of station operation is provided in descriptive headings preceding the tabular data. These descriptive headings give details regarding location, drainage area, period of record, type of data available, instrumentation, general remarks, cooperation, and extremes for parameters currently measured daily. Tables of chemical, physical, biological, radiochemical data, and so forth, obtained at a frequency less than daily are presented first. Tables of "daily values" of specific conductance, pH, water temperature, dissolved oxygen, and suspended sediment then follow in sequence.

In the descriptive headings, if the location is identical to that of the discharge gaging station, neither the LOCATION nor the DRAINAGE AREA statements are repeated. The following information, as appropriate, is provided with each continuous-record station. Comments that follow clarify information presented under the various headings of the station description.

LOCATION. -- See Data Presentation under "Records of Stage and Water Discharge;" same comments apply.

DRAINAGE AREA. -- See Data Presentation under "Records of Stage and Water Discharge;" same comments apply.

PERIOD OF RECORD.--This indicates the periods for which there are published water-quality records for the station. The periods are shown separately for records of parameters measured daily or continuously and those measured less than daily. For those measured daily or continuously, periods of record are given for the parameters individually.

INSTRUMENTATION. -- Information on instrumentation is given only if a water-quality monitor temperature record, sediment pumping sampler, or other sampling device is in operation at a station.

REMARKS.--Remarks provide added information pertinent to the collection, analysis, or computation of the records.

COOPERATION. -- Records provided by a cooperating organization or obtained for the Geological Survey by a cooperating organization are identified here.

EXTREMES.--Maximums and minimums are given only for parameters measured daily or more frequently. None are given for parameters measured weekly or less frequently, because the true maximums or minimums may not have been sampled. Extremes, when given, are provided for both the period of record and for the current water year.

REVISIONS.--If errors in published water-quality records are discovered after publication, appropriate updates are made to the Water-Quality File in the U.S. Geological Survey's computerized data system, WATSTORE, and subsequently by monthly transfer of update transactions to the U.S. Environmental Protection Agency's STORET system. Because the usual volume of updates makes it impractical to document individual changes in the State data-report series or elsewhere, potential users of U.S. Geological Survey water-quality data are encouraged to obtain all required data from the appropriate computer file to insure the most recent updates.

The surface-water-quality records for partial-record stations and miscellaneous sampling sites are published in separate tables following the table of discharge measurements at miscellaneous sites. No descriptive statements are given for these records. Each station is published with its own station number and name in the regular downstream-order sequence.

#### Remark Codes

The following remark codes may appear with the water-quality data in this report:

| PRINTED OUTPUT | REMARK   |
|----------------|--|
| E              | Estimated value  |
| >              | Actual value is known to be greater than the value shown                                       |
| <              | Actual value is known to be less than the value shown  |
| K              | Results based on colony count outside the acceptance range (non-ideal colony count)            |
| L              | Biological organism count less than 0.5 percent (organism may be observed rather than counted) |
| D              | Biological organism count equal to or greater than 15 percent (dominant)                       |
| &              | Biological organism estimated as dominant  |

# Records of Ground-Water Levels

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.

# Data Collection and Computation

Measurements of water levels are made in many types of wells under varying conditions, but the methods of measurement are standardized to the extent possible. The equipment and measuring techniques used at each observation well ensure that measurements at each well are of consistent accuracy and reliability.

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 12.

Water-level records are obtained from direct measurements with a steel tape or from the graph or punched tape of a water-stage recorder. The water-level measurements in this report are given in feet with reference to land-surface datum (lsd). Land-surface datum is a datum plane that is approximately at land surface at each well. If known, the elevation of the land-surface datum is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every fifth day and the end of each month (eom).

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth to water of several hundred feet, the error of 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 reported to a hundredth of a foot, but some are given to a tenth of a foot or a larger unit.

#### Data Presentation

Each well record consists of two parts, the station description and the data table of water levels observed during the water year. The description of the well is presented first through use of descriptive headings preceding the tabular data. The comments to follow clarify information presented under the various headings.

LOCATION.--This paragraph follows the well-identification number and reports the latitude and longitude (given in degrees, minutes, and seconds); a landline location designation; the hydrologic-unit number; the distance and direction from a geographic point of reference; and the owner's name.

AQUIFER.--This entry designates by name (if a name exists) and geologic age the aquifer(s) open to the well.

WELL CHARACTERISTICS.--This entry describes the well in terms of depth, diameter, casing depth and/or screened interval, method of construction, use, and additional information such as casing breaks, collapsed screen, and other changes since construction.

INSTRUMENTATION. -- This paragraph provides information on both the frequency of measurement and the collection method used, allowing the user to better evaluate the reported water-level extremes by knowing whether they are based on weekly, monthly, or some other frequency of measurement.

DATUM.--This entry describes both the measuring point and the land-surface elevation at the well. The measuring point is described physically (such as top of collar, notch in top of casing, plug in pump base and so on), and in relation to land surface (such as 1.3 ft above land-surface datum). The elevation of the land-surface datum is described in feet above mean sea level datum, if available. It is reported with precision depending on the method of determination.

- REMARKS.--This entry describes factors that may influence the water level in a well or the measurement of the water level. It should identify wells that also are water-quality observation wells, and may be used to acknowledge the assistance of local (non-survey) observers.
- PERIOD OF RECORD.--This entry indicates the period for which there are published records for the well. It reports the month and year of the start of publication of water-level records by the U.S. Geological Survey and the words "to current year" if the records are to be continued into the following year. Periods for which water-level records are available, but are not published by the Geological Survey, may be noted.
- EXTREMES FOR PERIOD OF RECORD. -- This entry contains the highest and lowest water levels of the period of published record, with respect to land-surface datum, and the dates of their occurrence.

A table of water levels follows the station description for each well. Water levels are reported in feet below land-surface datum and all taped measurements of water level are listed. For wells equipped with recorders, only abbreviated tables are published; generally, only water-level lows are listed for every fifth day and at the end of the month (eom). The highest and lowest water levels of the water year and their dates of occurrence are shown on a line below the abbreviated table. Because all values are not published for wells with recorders, the extremes may be values that are not listed in the table. Missing records are indicated by dashes in place of the water level.

# Records of Ground-Water Quality

Records of ground-water quality in this report differ from other types of records in that for most sampling sites they consist of only one set of measurements for the water year. The quality of ground water ordinarily changes only slowly; therefore, for most general purposes one annual sampling, or only a few samples taken at infrequent intervals during the year, is sufficient. Frequent measurement of the same constituents is not necessary unless one is concerned with a particular problem, such as monitoring for trends in nitrate concentration. In the special cases where the quality of ground water may change more rapidly, more frequent measurements are made to identify the nature of the changes.

#### Data Collection and Computation

The records of ground-water quality in this report were obtained mostly as a part of special studies in specific areas. Consequently, a number of chemical analyses are presented for some counties but none are presented for others. As a result, the records for this year, by themselves, do not provide a balanced view of ground-water quality Statewide. Such a view can be attained only by considering records for this year in context with similar records obtained for these and other counties in earlier years.

Most methods for collecting and analyzing water samples are described in the "U.S. Geological Survey Techniques of Water-Resources Investigations" manuals listed on a following page. The values reported in this report represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. All samples were obtained by trained personnel. The wells sampled were pumped long enough to assure that the water collected came directly from the aquifer and had not stood for a long time in the well casing where it would have been exposed to the atmosphere and to the material, possibly metal, comprising the casings.

#### Data Presentation

The records of ground-water quality are published in a section titled QUALITY OF GROUND WATER immediately following the ground-water-level records. Data for quality of ground water are listed alphabetically by County, and are identified by well number. The prime identification number for wells sampled is the 15-digit number derived from the latitude-longitude locations. No descriptive statements are given for ground-water-quality records; however, the well number, depth of well, date of sampling, and other pertinent data are given in the table containing the chemical analyses of the ground water. The REMARK codes listed for surface-water-quality records are also applicable to ground-water-quality records.

# ACCESS TO WATSTORE DATA

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

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

General inquiries about WATSTORE may be directed to:

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

#### DEFINITION OF TERMS

Term's 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 equal to about 326,000 gallons or 1,233 cubic meters.

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

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

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

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

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

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C. In the laboratory these bacteria are defined as all the organisms which produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35°C + 1.0°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

<u>Fecal coliform bacteria</u> 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  $44.5^{\circ}\text{C} \pm 0.2^{\circ}\text{C}$  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 Gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink pink colonies within 48 hours at  $35^{\circ}\text{C} \pm 1.0^{\circ}\text{C}$  on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

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

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

Biomass is the amount of living matter present at any given time, expressed as the mass per unit area or volume of habitat.

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of  $500^{\circ}$ C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/m3), and periphyton and benthic organisms in grams per square meter (g/m2).

 $\underline{\text{Dry mass}}$  refers to the mass of residue present after drying in an oven at  $105\,^{\circ}\text{C}$  for zooplankton and periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry-mass values are expressed in the same units as ash mass.

 $\underline{\text{Organic mass}}$  or volatile mass of the living substance is the difference between the dry mass and the ash mass and represents the actual matter. The organic mass is expressed in the same units as for ash and dry mass.

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

Bottom material: See Bed material.

<u>Cells/volume</u> refers to the number of cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample, usually milliliters (mL) or liters (L).

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water, and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with natural water color or with carbonaceous organic pollution from sewage or industrial wastes.

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

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

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross section over a long reach of the channel.

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

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

Cubic foot per second-day (cfs-day) is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, about 646,000 gallons, or 2,445 cubic meters.

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.

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.

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

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

<u>Dissolved</u> refers to that material in a representative water sample which passes through a 0.45 um membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

<u>Dissolved-solids concentration</u> of water is determined either analytically by the "residue-on-evaporation" method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During the analytical determination of dissolved solids, the bicarbonate (generally a major dissolved component of water ) is converted to carbonate. Therefore, in the mathematical calculations of dissolved-solids concentration, the bicarbonate value, in milligrams per liter, is multiplied by 0.492 to reflect the change.

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

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

Where ni 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.

<u>Drainage area</u> of a stream at a specified location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the stream above the specified point. Figures of drainage area given herein include all closed basins, or noncontribution areas, within the area unless otherwise noted.

<u>Drainage basin</u> 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.

<u>Gage height</u> (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.

<u>Gaging station</u> 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.

<u>Hardness</u> of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate  $(CaCO_3)$ .

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

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an eight-digit number.

<u>Land-surface datum</u> (lsd) is a datum plane that is approximately at land surface at each ground-water observation well.

Measuring point (MP) is an arbitrary permanent reference point from which the distance to the water surface in a well is measured to obtain the water level.

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

Methylene blue active substances (MBAS) are apparent detergents. The determination depends on the formation of a blue color when methylene blue dye reacts with synthetic anionic detergent compounds.

 $\underline{\text{Micrograms per gram}}$  (ug/g) is a unit expressing the concentration of a chemical element as the mass (micrograms) of the element per unit mass (gram) of material analyzed.

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

<u>Milligrams per liter</u> (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 5.

TABLE 5.--Factors for conversion of chemical constituents in milligrams per liter to milliequivalents per liter.

| Ion                  | Multiply by | <u>Ion</u> <u>N</u> | Multiply by |
|----------------------|-------------|---------------------|-------------|
| Aluminum (A1+3)*     | 0.11119     | Iodide (I-1)        | 0.00788     |
| Ammonia as NH4+1     | .05544      | Iron (Fe+3)         | .05372      |
| Barium (Ba+2)        | .01456      | Lead (Pb+2)         | .00965      |
| Bicarbonate (HCO3-1) | .01639      | Lithium (Li+1)      | .14411      |
| Bromide (Br-1)       | .01251      | Magnesium (Mg+2)    | .08226      |
| Calcium (Ca+2)       | .04990      | Manganese (Mn+2)*   | .03640      |
| Carbonate (CO3-2)    | .03333      | Nickel (Ni+2)       | .03406      |
| Chloride (C1-1)      | .02821      | Nitrate (N03-1)     | .01613      |
| Chromium (Cr+6)*     | .11539      | Nitrite (NO2-1)     | .02174      |
| Cobalt (Co+2)*       | .03394      | Phosphate (PO4-3)   | .03159      |
| Copper (Cu+2)*       | .03148      | Potassium (K+1)     | .02557      |
| Cyanide (CN-1)       |             | Sodium (NA+1)       | .04350      |
| Fluoride (F-1)       |             | Strontium (Sr+2)    | .02283      |
| Hydrogen (H+1)       |             | Sulfate (SO4-2)     | .02082      |
| Hydroxide (OH-1)     |             | Zinc (Zn+2)*        | .03060      |

<sup>\*</sup>Constituent reported in micrograms per liter; multiply by factor and divide results by 1,000.

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 500 or so sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting such that the data may be used for, (2) description of the areal variability of water quality in the Nation's rivers through analysis of description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research.

<u>National Trends Network</u> (NTN) is a network for sampling atmospheric deposition in the United States. The purpose of the network is to determine the variability, both in location and in time, of the composition of atmospheric deposition, which includes snow, rain, dust particles, aerosols, and gases. The core from which the NTN was built was the already-existing deposition-monitoring network of the National Atmospheric Deposition Program (NADP).

Organism is any living entity.

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per unit area habitat, usually square meters (m2), acres, or hectare. 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.

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

<u>Partial-record station</u> 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.

<u>Particle-size</u> is the diameter, in millimeters (mm), of a particle 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).

<u>Particle-size classification</u> 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           | .004062         | 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 matter 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.

<u>Percent composition</u> 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.

<u>Periphyton</u> is the assemblage of microorganisms attached to and living upon submerged solid surfaces. While primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms.

<u>Pesticides</u> are chemical compounds used to control undesirable organisms. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides.

<u>Picocurie</u> (PC, pCi) is one trillionth  $(1 \times 10^{-12})$  of the amount of ratioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields 3.7 x 1010 radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

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

<u>Phytoplankton</u> 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.

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

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

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

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

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

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

Milligrams of oxygen per area or volume per unit time [mg0 / (m².time)] for periphyton and macrophytes and [mg0 / (m².time)] for phytoplankton are the units for expressing primary productivity. They define production and respiration rates as estimated from changes in the measured dissolved-oxygen concentration. The oxygen light and dark bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period.

 $\frac{\text{Polychlorinated biphenyls}}{\text{of chlorinated biphenyl compounds having various percentages of chlorine.}} \text{ They are similar in structure to organochlorine insecticides.}$ 

<u>Radiochemical program</u> is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotypes. The streams that are sampled represent major drainage basins in the conterminous United States.

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

Return period is the average time interval between occurrences of a hydrological event of a given or greater magnitude, usually expressed in years. May also be called recurrence interval.

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.

Bed load is the sediment that is transported in a stream by rolling, sliding, or skipping along the bed and very close to it. In this report, bed load is considered to consist of particles in transit within 0.25 ft of the streambed.

Bed load discharge (tons per day) is the quantity of bed load measured by dry weight that moves past a section as bed load in a given time.

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

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

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

<u>Suspended-sediment discharge</u> (tons/day) is the rate at which dry mass of sediment passes a section of a stream or is the quantity of sediment, as measured by dry mass or volume, that passes a section in a given time. It is calculated in units of tons per day as follows: concentrations (mg/L) x discharge  $ft^3/s$ ) x 0.0027.

<u>Suspended-sediment load</u> is a general term that refers to material in suspension. It is not synonymous with either discharge or concentration.

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 mass or volume, that passes a section during a given time.

Total-sediment load or total load is a term which refers to the total sediment (bed load plus suspended-sediment load) that is in transport. It is not synonymous with total-sediment discharge.

7-day 10-year low flow (7 Q10) is the discharge at the 10-year recurrence interval taken from a frequency curve of annual values of the lowest mean discharge for 7 consecutive days (the 7-day low flow).

Sodium-adsorption-ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions within soil and is an index of sodium or alkali hazard to the soil. Waters range in respect to sodium hazard from those which can be used for irrigation on almost all soils to those which are generally unsatisfactory for irrigation.

Solute is any substance 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 microsiemens per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in 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.

Substrate is the physical surface upon which an organism lives.

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

Artificial substrate is a device which is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multiplate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton.

Surface area of a lake is that area outlined on the latest U.S.G.S. topographic map as the boundary of the lake and measured by a planimeter in acres. In localities not covered by topographic maps, the areas are computed from the best maps available at the time planimetered. All areas shown are those for the stage when the planimetered map was made.

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

<u>Suspended</u> (as used in tables of chemical analyses) refers to the amount (concentration) of the total concentration in a water-sediment mixture. It is associated with the material retained on a 0.45-micrometer filter.

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

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

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

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

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchial 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, <a href="Hexagenia"><u>Hexagenia</u></a> limbata, is the following:

 Kingdom
 Animal

 Phylum
 Arthopoda

 Class
 Insecta

 Order
 Ephemeroptera

 Family
 Ephemeridae

 Genus
 Hexagenia

 Species
 Hexagenia limbata

Thermograph is an instrument that continuously records variations of temperature on a chart. The more general term "temperature recorder" is used in the table heading and refers to any instrument that records temperature whether on a chart, a tape, or any other medium.

<u>Time-weighted average</u> 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 of the constituent, in milligrams per liter by 0.00136.

Tons per day (T/DAY) is the quantity of a substance in solution or suspension that passes a stream section during a 24-hour period.

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

Total discharge is the total quantity of any individual constituent, as measured by dry mass or volume, that passes through a stream cross-section per unit of time. This term needs to be qualified, such as "total sediment discharge," "total chloride discharge," and so on.

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

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 precipitations stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

<u>Water year</u> 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 and which includes 9 of the 12 months. Thus, the year ending September 30, 1980, is called the "1980 water year."

<u>WDR</u> is used as an abbreviation for "Water-Data Report" in the REVISED RECORDS paragraph to refer to State annual hydrologic-data reports (WRD was used as an abbreviation for "Water-Resources Data" in reports published prior to 1976).

# WATER RESOURCES FOR PUERTO RICO AND THE U.S. VIRGIN ISLANDS, 1985

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of 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.

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

The U.S. Geological Survey publishes a series of manuals describing procedures for planning and conducting specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) pertains to surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits

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.

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- 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.
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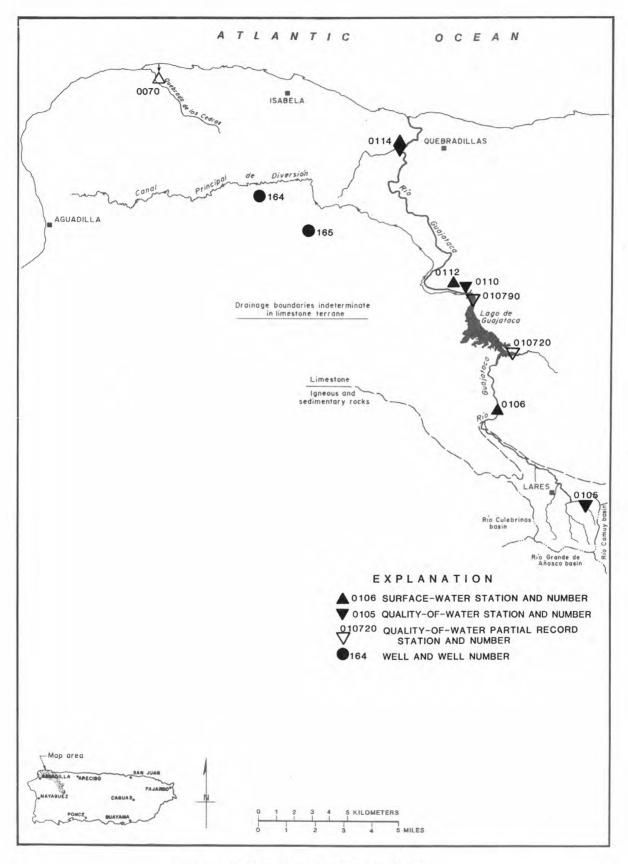


Figure 13.--Río Guajataca basin.

# 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 Anon, and 0.4 mi (0.6 km) northeast of Lares plaza.

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

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | TIME           | FLO<br>INST  | BAM- C<br>DW, C<br>TAN- D<br>BOUS A              | NCB                                       | PH<br>STAND-<br>ARD<br>NITS) | TEMP<br>ATU<br>(DEG                     | RE I  | UR-<br>ID-<br>FY<br>FU) | SOI  | GEN,<br>IS-<br>LVED<br>G/L)           | SOI<br>(PI<br>CI<br>SA' | GEN,<br>IS-<br>LVED<br>ER-<br>ENT<br>FUR-<br>ION) | CH  | AND,<br>BM-<br>AL<br>IGH<br>BL) | FOR<br>FEC<br>0.7<br>UM-<br>(COI<br>100         | CAL,<br>T-MF<br>LS./     | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) |
|----------------|----------------|--|--|---|------------------------------|---|---|-------------------------|--|---------------------------------------|-------------------------|---|---|---------------------------------|---|--------------------------|--|
| OCT 1984       |                |  |  |   |                              |   |   |                         |  |                                       |                         |   |   |                                 |   |                          |  |
| 31<br>FEB 1985 | 09:50          | •  | 1.3  | 245                                       | 8.1                          | 2                                       | 0.0   | 2.1                     |  | 8.3                                   |                         | 95  |   | 13                              | 1   | 2900                     | K1100  |
| 05<br>MAR      | 11:15          | 1  | 1.7  | 241                                       | 7.9                          | 2                                       | 1.0   | 1.0                     |  | 7.6                                   |                         | 87  |   | 27                              | 2   | 2800                     | 5400   |
| 13             | 12:15          | 1  | 1.1  | 239                                       | 7.3                          | 2                                       | 3.0   | 8.0                     |  | 6.1                                   |                         | 73  |   | 10                              | 3   | 3100                     | K1300  |
| 15<br>JUL      | 12:10          |  | .78  | 302                                       | 7.7                          | 2                                       | 4.5   | 8.0                     |  | 9.0                                   |                         | 111   |   | 24                              | 6   | 300                      | K1200  |
| 31             | 10:40          |  | 2.2  | 276                                       | 8.1                          | 2                                       | 3.5   | 2.8                     |  | 8.5                                   |                         | 103   |   | <10                             | 9   | 600                      | 1400   |
| DAT            | R              | HARD-<br>NESS<br>(MG/L<br>AS<br>CACOS)                           | CALCIUM<br>DIS-<br>SOLVE<br>(MG/L<br>AS CA       | DIS-<br>D SOLVE<br>(MG/I                  | , SOD<br>DI<br>SD SOL        |   | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO                             | 80<br>(1                | OTAS-<br>SIUM,<br>DIS-<br>OLVED<br>MG/L<br>S K)  | ALK<br>LINI<br>FIE<br>(MG             | TY<br>LD                | TO<br>(M  | FIDE<br>TAL<br>G/L<br>S)                  | D1<br>80<br>(M                  | FATE<br>8-<br>DLVED<br>IG/L<br>SO4)             | RII<br>DIS<br>SOI<br>(MC |  |
| OCT 198        |                | CACOS  | AB CA  | ) AS MC                                   | ) AS                         | NA)                                     |   | A                       | 5 K)   | CAL                                   | ,03)                    | AS  | 8)  | AS                              | 304)  | AS                       | CL)  |
| 31             |                | 92   | 27   | 6.0                                       | 1                            | 2                                       | 0.6   |                         | 1.8  |                                       | 97                      | _   | -   |                                 | 6.6   |                          | 3.9  |
| FEB 198        | b              | 92   | 26   | 6.5                                       | 1                            | 3                                       | 0.6   |                         | 2.1  |                                       | 98                      |   | <0.5                                      |                                 | 8.8   | 1:                       | 2  |
| MAR<br>13      |                |  |  |   | _                            | _                                       |   | ,                       |  |                                       | 93                      | _   | _   | -                               | _   | _                        |  |
| MAY<br>15      |                | 130  | 40   | 6.8                                       | 1                            | 4                                       | 0.6   |                         | 2.5  |                                       | 130                     |   | <0.5                                      |                                 | 15  | 1:                       | 2  |
| JUL<br>31      |                |  |  |   | _                            |   |   |                         |  |                                       | 107                     | _   | _   |                                 | _   |                          |  |
| DAT)           | 1<br>R         | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F)               | SILICA<br>DIS-<br>SOLVEI<br>(MG/L<br>AS<br>SIO2) | CONSTI                                    | SOL<br>SO<br>SO<br>TO        | IDS,<br>IS-<br>LVRD<br>ONS<br>ER<br>AY) | SOLIDS,<br>RESIDUE<br>AT 105<br>DEG. C,<br>SUS-<br>PENDED<br>(MG/L) | NITO                    | ITRO-<br>GEN,<br>TRATE<br>OTAL<br>MG/L<br>B N)   |                                       | AL<br>/L                | NO2<br>TO   | TRO-<br>EN,<br>+NO3<br>TAL<br>G/L<br>N)   | AMM<br>TO<br>(M                 | TRO-<br>EN,<br>IONIA<br>TAL<br>IG/L<br>N)       | ORGA<br>TO               | TAL<br>3/L   |
| 31             |                | <0.1   | 30   | 15  | 0                            | 1.8                                     | 3   |                         |  | <0.                                   | 01                      | 1   | .50                                       | <0                              | .01   |                          |  |
| FEB 1988       | •              | 0.3  | 30   | 16  | 0                            | 0.72                                    | 2   | (                       | 0.86   | 0.                                    | 04                      | 0   | .90                                       | 0                               | .11   | (                        | .39  |
| MAR<br>13      |                |  |  |   | _                            | _                                       | 6   |                         | 0.86   | 0.                                    | 04                      | 0   | .90                                       | 0                               | .07   | (                        | .83  |
| MAY<br>15      |                | 0.2  | 28   | 20  | 0                            | 0.41                                    | 5   | (                       | 0.75   | 0.                                    | 05                      | 0   | . 80                                      | 0                               | .08   | (                        | 0.02   |
| JUL<br>31      |                |  |  |   | -                            | -                                       | 16  | (                       | 0.96   | 0.                                    | 04                      | 1   | .00                                       | 0                               | .05   | (                        | .45  |
| DATE           | GE<br>MC<br>OF | NITRO-<br>SN, AM-<br>DNIA +<br>RGANIC<br>POTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS N)        | NITRO<br>GEN,<br>TOTAL<br>(MG/L<br>AS NO3 | PHO<br>TO                    | OS-<br>RUS,<br>TAL<br>G/L<br>P)         | ARSENIC<br>TOTAL<br>(UG/L<br>AS AS)                                 | RI<br>RI<br>(U          | RIUM,<br>OTAL<br>BCOV-<br>RABLE<br>UG/L<br>B BA) | BOR<br>TOT<br>REC<br>ERA<br>(UG<br>AS | AL<br>OV-<br>BLB<br>/L  | REG<br>BR   | MIUM<br>TAL<br>COV-<br>ABLE<br>G/L<br>CD) | TO<br>RE<br>ER<br>(U            | RO-<br>UM,<br>TAL<br>COV-<br>ABLE<br>G/L<br>CR) | ERA<br>(UC               |  |
| OCT 1984       |                | 0.2  | 1.7  | 7.5                                       | 0                            | .08                                     |   |                         | _  |                                       |                         |   |   | -                               |   |                          | 10   |
| FEB 1985       | i              | 0.5  | 1.4  | 6.2                                       |                              | . 15                                    | 2   |                         | <100   |                                       | <20                     |   | 1   |                                 | (1  |                          | <10  |
| MAR 13         |                | 0.9  | 1.8  | 8.0                                       |                              | .04                                     |   |                         | -  |                                       |                         |   |   |                                 |   |                          |  |
| MAY 15         |                | 0.1  | 0.9  | 4.0                                       |                              | .07                                     | 5   |                         | <100   |                                       | 20                      |   | 1   |                                 | 2   |                          | <10  |
| JUL 31         |                | 0.5  |  |   |                              |   |   |                         |  |                                       | 20                      |   |   |                                 |   |                          |  |
| 91             |                | 0.0  | 1.5  | 6.6                                       | 0                            | .08                                     |   | -                       |  |                                       |                         |   |   | -                               | -   |                          |  |

K = non-ideal count

# 53

# RIO GUAJATACA BASIN 50010500 RIO GUAJATACA AT LARES, PR--Continued WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE     | IRON,<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| OCT 1984 |   |   |   |   |  |   |   |                                     |                            |  |
| 31       |   |   |   |   |  |   |   |                                     |                            |  |
| FBB 1985 |   |   |   |   |  |   |   |                                     |                            |  |
| 05       | 170   | <1  | 40  | 0.2   | <1   | <1  | 30  | <0.01                               | 1                          | 0.03   |
| MAR      |   |   |   |   |  |   |   |                                     |                            |  |
| 13       |   |   |   | 0.1   |  |   |   |                                     |                            |  |
| MAY      |   |   |   |   |  |   |   |                                     |                            |  |
| 15       | 180   | 5   | 50  | <0.1  | <1   | <1  | 40  | <0.01                               | 3                          | 0.05   |
| JUL      |   |   |   |   |  |   |   |                                     |                            |  |
| 31       |   |   |   |   |  |   |   |                                     | 44                         |  |
|          |   |   |   |   |  |   |   |                                     |                            |  |

#### 50010600 RIO GUAJATACA ABOVE LAGO GUAJATACA, PR

LOCATION.--Lat 18°19'57", long 66°55'29", Hydrologic Unit 21010002, 125 ft (38 m) off road 451, 3 mi (5 km) south of Lago Guajataca, 1.0 mi (1.6 km) east of Eneas and 2.0 mi (3.2 km) west of Piletas.

DRAINAGE AREA . -- Indeterminate.

#### WATER-DISCHARGE RECORDS

PERIOD OF RECORD .-- July 1984 to current year.

GAGE .-- Water-stage recorder. Blevation of gage is 565 ft (172.5 m), from topographic map.

REMARKS .-- No estimated daily discharges during water year. Records fair.

EXTREMES FOR PERIOD OF RECORD. -- Maximum discharge, 2,600 cu ft/s (73.6 cu m/s), May 18, 1985, gage height, 12.03 ft (3.667 m), from rating curve extended above 100 cu ft/s (2.83 cu m/s) on the basis of step-backwater analysis; minimum discharge, 2.6 cu ft/s (0.074 cu m/s), Feb. 22, Aug. 5, 6, 1985.

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

|         |      | Disch     | arge     | Gage h | eight |      |    |      | Disch     | arge     | Gage t | eight |
|---------|------|-----------|----------|--------|-------|------|----|------|-----------|----------|--------|-------|
| Date    | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   | Date | •  | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   |
| Apr. 10 | 1715 | 1,720     | 48.7     | 10.45  | 3.185 | May  | 18 | 1145 | *2,600    | 73.6     | *12.03 | 3.667 |
| May 7   | 1615 | 1,680     | 47.6     | 10.38  | 3.164 | June | 25 | 1700 | 2.000     | 56.6     | 10.99  | 3.350 |

Minimum discharge, 2.6 cu ft/s (0.074 cu m/s), Feb. 22, Aug. 5, 6.

|        |         | DISCHARGE  | , IN C | CUBIC FEET P |       | ND, WATER<br>BAN VAL |       | OBER 198 | 4 TO SEPTE | MBER 1985 |       |        |
|--------|---------|------------|--------|--------------|-------|----------------------|-------|----------|------------|-----------|-------|--------|
| DAY    | OCT     | NOV        | DEC    | JAN          | FEB   | MAR                  | APR   | MAY      | JUN        | JUL       | AUG   | SEP    |
| 1      | 39      | 63         | 8.9    | 6.3          | 5.2   | 4.4                  | 7.0   | 7.4      | 11         | 18        | 4.4   | 8.3    |
| 2      | 32      | 22         | 8.5    | 5.7          | 4.8   | 8.9                  | 6.6   | 8.5      | 13         | 17        | 4.2   | 7.8    |
| 3      | 27      | 109        | 8.9    | 5.5          | 3.8   | 8.1                  | 5.6   | 45       | 12         | . 14      | 3.4   | 22     |
| 4      | 24      | 53         | 8.9    | 5.5          | 3.8   | 5.5                  | 5.5   | 21       | 12         | 12        | 3.9   | 12     |
| 5      | 209     | 33         | 8.5    | 6.3          | 3.7   | 4.2                  | 5.1   | 18       | 10         | 9.5       | 3.7   | 6.6    |
| 6      | 156     | 40         | 7.8    | 6.1          | 4.2   | 5.0                  | 4.9   | 36       | 9.0        | 9.2       | 130   | 35     |
| 7      | 78      | 55         | 7.5    | 8.3          | 4.1   | 5.4                  | 5.0   | 235      | 22         | 8.3       | 55    | 27     |
| 8      | 42      | 51         | 7.8    | 5.7          | 4.3   | 4.8                  | 4.9   | 80       | 16         | 9.4       | 35    | 12     |
| 9      | 37      | 66         | 7.5    | 5.2          | 4.7   | 4.7                  | 53    | 38       | 33         | 22        | 23    | 14     |
| 10     | 30      | 38         | 7.5    | 5.1          | 4.3   | 36                   | 265   | 24       | 39         | 23        | 17    | 18     |
| 11     | 24      | 33         | 8.5    | 5.2          | 4.3   | 23                   | 128   | 18       | 125        | 13        | 14    | 20     |
| 12     | 165     | 25         | 7.5    | 5.2          | 4.7   | 6.4                  | 106   | 16       | 60         | 8.6       | 16    | 13     |
| 13     | 83      | 22         | 7.1    | 5.0          | 4.3   | 5.4                  | 67    | 17       | 22         | 7.6       | 29    | 14     |
| 14     | 65      | 22         | 7.1    | 5.3          | 4.9   | 6.5                  | 28    | 18       | 24         | 6.6       | 54    | 14     |
| 15     | 160     | 25         | 6.8    | 5.3          | 4.9   | 4.6                  | 18    | 12       | 32         | 20        | 28    | 13     |
| 16     | 82      | 18         | 7.5    | 4.5          | 4.6   | 4.4                  | 14    | 9.8      | 44         | 37        | 12    | 12     |
| 17     | 45      | 16         | 11     | 4.7          | 4.3   | 4.5                  | 11    | 106      | 61         | 79        | 11    | 17     |
| 18     | 61      | 15         | 9.3    | 6.4          | 4.2   | 4.3                  | 14    | 792      | 79         | 233       | 9.2   | 88     |
| 19     | 232     | 15         | 7.5    | 6.1          | 4.1   | 4.5                  | 15    | 235      | 58         | 96        | 6.9   | 218    |
| 20     | 124     | 14         | 7.1    | 5.2          | 4.0   | 47                   | 13    | 107      | 42         | 35        | 5.8   | 79     |
| 21     | 83      | 13         | 6.2    | 4.5          | 3.5   | 55                   | 21    | 63       | 30         | 21        | 7.1   | 39     |
| 22     | 45      | 12         | 7.3    | 4.3          | 3.2   | 30                   | 37    | 46       | 20         | 15        | 6.3   | 27     |
| 23     | 36      | 12         | 6.7    | 4.5          | 3.9   | 16                   | 28    | 40       | 22         | 18        | 5.0   | 65     |
| 24     | 29      | 11         | 15     | 4.7          | 5.7   | 8.7                  | 19    | 34       | 26         | 13        | 4.3   | 66     |
| 25     | 24      | ii         | 7.6    | 4.5          | 4.0   | 7.8                  | 13    | 28       | 308        | 9.7       | 34    | 36     |
| 26     | 20      | 11         | 6.6    | 4.6          | 4.9   | 12                   | 13    | 24       | 108        | 8.5       | 18    | 20     |
| 27     | 17      | 10         | 8.8    | 4.5          | 4.7   | 24                   | 9.4   | 19       | 42         | 8.9       | 20    | 37     |
| 28     | 28      | 10         | 9.8    | 4.6          | 5.7   | 16                   | 8.7   | 17       | 28         | 7.3       | 9.6   | 23     |
| 29     | 22      | 11         | 6.4    | 4.1          |       | 12                   | 7.8   | 16       | 21         | 15        | 6.8   | 16     |
| 30     | 16      | 9.7        | 6.3    | 4.2          |       | 8.5                  | 7.7   | 14       | 18         | 8.6       | 36    | 23     |
| 31     | 100     |            | 6.7    | 4.3          |       | 7.2                  |       | 13       |            | 5.3       | 19    |        |
| TOTAL  | 2135    | 845.7      | 248.6  | 161.4        | 122.8 | 394.8                | 941.2 | 2157.7   | 1347.0     | 808.5     | 631.6 | 1002.7 |
| MBAN   | 68.9    | 28.2       | 8.02   | 5.21         | 4.39  | 12.7                 | 31.4  | 69.6     | 44.9       | 26.1      | 20.4  | 33.4   |
| MAX    | 232     | 109        | 15     | 8.3          | 5.7   | 55                   | 265   | 792      | 308        | 233       | 130   | 218    |
| MIN    | 16      | 9.7        | 6.2    | 4.1          | 3.2   | 4.2                  | 4.9   | 7.4      | 9.0        | 5.3       | 3.4   | 6.6    |
| CFSM   | .00     | .00        | .00    | .00          | .00   | .00                  | .00   | .00      | .00        | .00       | .00   | .00    |
| IN.    | .00     | .00        | .00    | .00          | .00   | .00                  | .00   | .00      | .00        | .00       | .00   | .00    |
| AC-FT  | 4230    | 1680       | 493    | 320          | 244   | 783                  | 1870  | 4280     | 2670       | 1600      | 1250  | 1990   |
| WTR YR | 1985 70 | TAL 10797. | 0      | MEAN 29.6    | MAX   | 792 MI               | N 3.2 | CFSM     | .00 11     | 00        | AC-FT | 21420  |

# 55

RIO GUAJATACA BASIN

# 50010600 RIO GUAJATACA ABOVE LAGO GUAJATACA, PR--Continued

# WATER QUALITY RECORDS

PERIOD OF RECORD .-- WATER YEARS AUGUST 1984 TO CURRENT YEAR

# WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE   | TIME   | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE   | TIME   | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|--------|--------|---------------------------------------|--------------------------------------|-----------------------------|--------|--------|---------------------------------------|--------------------------------------|-----------------------------|
| FEB, 2 | 0 1400 | 4.0                                   | 336                                  | 23.0                        | SEP, 1 | 2 1455 | 13.0                                  | 363                                  | 24.5                        |
| MAR. 0 | 6 1035 | 4.7                                   | 350                                  | 22.5                        |        |        |                                       |                                      |                             |

# 50011000 CANAL PRINCIPAL DE DIVERSIONES AT LAGO DE GUAJATACA, PR

#### WATER-QUALITY RECORDS

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

DRAINAGE AREA. -- Indeterminate.

K = non-ideal count

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | TIME        | FLO   | AM- CI<br>W, CC<br>AN- DU<br>OUS AN                    | ICT- (ST  | RD A   | EMPER-<br>ATURE<br>DEG C)           | TUR-<br>BID-<br>ITY<br>(NTU)             | DI<br>SOL  | SEN, (1<br>SEN, (1<br>SEN, (1                         | YGEN,<br>DIS-<br>OLVED<br>PER-<br>CENT<br>ATUR-<br>TION) | OXYG<br>DEMAI<br>CHE<br>ICAI<br>(HIC<br>LEVEI<br>(MG/I | ND, FOR<br>M- FRO<br>L 0.7<br>GH UM-<br>L) (COI                | RM, TO<br>CAL, I<br>KI<br>-MF (C<br>LS./            | BTREP-<br>DCOCCI<br>FECAL,<br>FAGAR<br>COLS.<br>PER<br>DO ML) |
|----------------|-------------|---|--|---|--|-------------------------------------|--|--|---|--|--|--|---|---|
| NOV 1984       | 11:30       |   |  | 310   | 7.6  | 25.0                                | 0.8                                      |  | 1.3   | 16   |  | 23   | K8  | 95  |
| JAN 1985<br>25 | 10:25       |   |  | 316   | 7.8  | 24.0                                |  | Lagrania (   | 3.6   | 43   |  | 17   | <1  | K1  |
| 1AR            |             |   |  |   |  |                                     |  |  |   |  |  |  |   |   |
| 29             | 09:15       |   |  | 307   | 7.6  | 25.0                                | 1.5                                      |  | 4.3   | 53   |  | 12   | 76  | 98  |
| 16             | 09:55       |   |  | 289   | 7.9  | 25.5                                | 1.0                                      |  | 3.6   | 45   |  | 16   | 37  | K12   |
| 02             | 12:30       |   |  | 310   | 7.7  | 26.5                                | 1.6                                      |  | 0.9   | 11   |  | 12 I   | (130  | K30   |
| DAT            | R           | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3)                            | HARD-<br>NESS,<br>NONCAR-<br>BONATE<br>(MG/L<br>CACO3) | SOLVED<br>(MG/L                                   | DIS-   | M, SOD<br>DIS<br>BD SOLV            | IUM,<br>3-<br>/ED                        | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO                        | POTAS-<br>SIUM<br>DIS-<br>SOLVEI<br>(MG/L<br>AS K)    | , LIN<br>FI<br>D (M                                      | RLD<br>G/L   | SULFIDE<br>TOTAL<br>(MG/L<br>AS S)                             | SULFAT<br>DIS-<br>SOLVI<br>(MG/I<br>AS SO4          | RD.   |
| NOV 198        |             | 150   |  |   |  |                                     |  |  |   |  | 140  |  |   |   |
| 20<br>JAN 198  | 5           | 150   | 3  |   | 3.0  |                                     | 1.4                                      | 0.2  | 1.4   |  | 149  |  | 9.  |   |
| 25<br>MAR      |             | 150   | 3  | 54  | 3.5  | •                                   | 5.3                                      | 0.2  | 1.6   |  | 146  | <0.5   | 9.  | . 2   |
| 29<br>MAY      |             |   |  |   |  |                                     |  | -  | 1-1   |  | 143  |  |   |   |
| AUG            |             | 140   | 4  | 48  | 3.1  | 7                                   | 5.7                                      | 0.2  | 1.6   |  | 131  | <del></del>  | 10  |   |
| 02             |             |   | - Lea  |   |  | -                                   |  |  | -   |  | 134  |  |   |   |
| DAT            | E           | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)               | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F)     | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | SOLIDS<br>SUM OF<br>CONSTITUENTS<br>DIS-<br>SOLVE<br>(MG/I | F SOL:<br>I - D:<br>B, SOI<br>- (TO | IDS, R<br>IS- A<br>LVED D<br>DNS<br>IR P | OLIDS,<br>ESIDUE<br>T 105<br>EG. C,<br>SUS-<br>ENDED<br>(MG/L) | NITRO-<br>GEN,<br>NITRITI<br>TOTAL<br>(MG/L<br>AS N)  | G<br>NO2<br>TO<br>(M                                     | TRO-<br>EN,<br>+NO3<br>TAL<br>G/L<br>N)                | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N)           | NITRO<br>GEN,<br>ORGANI<br>TOTAL<br>(MG/I<br>AS N)  | c   |
| 20             |             | 6.4   | 0.1  | 5.5   | 18   | 30                                  |  | 2  | <0.01   | 0  | .30  | 0.11   | d (s. <del></del> ) (                               |   |
| JAN 198        |             | 7.9   | 0.1  | 4.4   | 17   | 70 3:                               | 3  | <1   | <0.01   | 0  | .10  | 0.03   |   |   |
| MAR<br>29      |             |   |  |   |  |                                     |  | 3  | 0.03  | <0   | . 10   | <0.01  |   |   |
| MAY<br>16      |             | 8.9   | 0.1  | 4.6   | 16   | 30                                  |  | 2  | <0.01   | <0   | .10  | <0.01  |   |   |
| AUG<br>02      |             |   |  |   |  |                                     |  | 11   | <0.01   | <0   | . 10   | 0.02   | 0.3   | 18  |
| DAT            | G<br>M<br>O | NITRO-<br>EN, AM-<br>ONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS N)              | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS NO3)       | PHOS-<br>PHORUS<br>TOTAI<br>(MG/I<br>AS P)                 | ARSI<br>L TO                        | RNIC<br>FAL                              | ARIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS BA)         | BORON,<br>TOTAL<br>RECOV-<br>ERABLI<br>(UG/L<br>AS B) | TO<br>RE<br>RE<br>(U                                     | MIUM<br>TAL<br>COV-<br>ABLE<br>G/L<br>CD)              | CHRO-<br>MIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CR) | COPPER<br>TOTAL<br>RECOV<br>ERABL<br>(UG/L<br>AS CU | r_<br>.R  |
| NOV 198        |             | 0.1   | 0.4  | 1.8   | <0.01  |                                     |  |  |   | -  |  |  |   |   |
| JAN 198        | 5           | <0.1  |  |   | <0.01  |                                     | 2  | <100   | (20   | )  | 1  | 6  | <1  | 0   |
| MAR<br>29      |             | 0.6   |  |   | <0.01  |                                     |  |  |   |  |  | - <u>L</u>   |   |   |
| MAY            |             | 0.4   |  |   | 0.13   |                                     | 60.7                                     |  |   |  | 1  | <1   | <1  | •   |
| 16             |             |   |  |   |  | 3                                   | <1                                       | <100   | (20   | ,  |  | <b>(1</b>  | <b>1</b>  | U   |

RIO GUAJATACA BASIN 57 50011000 CANAL PRINCIPAL DE DIVERSIONES AT LAGO DE GUAJATACA, PR--Continued WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| NOV 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 20<br>JAN 1985 |   |   |   |   |  |   |   |                                     |                            |  |
| 25             | 210   | 1   | 80  | <0.1  | <1   | <1  | 20  | <0.01                               | <1                         | 0.03   |
| MAR            |   |   |   |   |  |   |   |                                     |                            |  |
| 29             |   |   |   | <0.1  |  |   |   |                                     |                            |  |
| MAY            |   |   |   |   |  |   |   |                                     |                            |  |
| 16             | 100   | 1   | 120   | 0.1   | <1   | <1  | 10  | <0.01                               | 9                          | 0.03   |
| AUG            |   |   |   |   |  |   |   |                                     |                            |  |
| 02             |   |   |   | 122   |  |   |   |                                     |                            |  |

#### 50011200 RIO GUAJATACA BELOW LAGO GUAJATACA, PR

LOCATION.--Lat 18°24'01", long 66°55'40", Hydrologic Unit 21010002, on left bank, 250 ft (76 m) downstream from bridge on Highway 476, 1,000 ft (305 m) downstream from outlet tunnel, and 5.2 mi (8.4 km) southeast of Quebradillas.

DRAINAGE AREA . -- Indeterminate.

#### WATER-DISCHARGE RECORDS

PERIOD OF RECORD .-- August 1969 to December 1970, April 1984 to current year.

GAGE .- - Water-stage recorder. Elevation of gage is 535 ft (163 m), from topographic map.

REMARKS.--Estimated daily discharges: Apr. 17 to May 15. Records fair except those for estimated daily discharges, which are poor. Flow regulated by Lago Guajataca Dam. Low flows are from seepage through and under dam and nearby springs.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 624 cu ft/s (17.7 cu m/s), Oct. 11, 1984, gage height, 10.06 ft (3.066 m), from rating curve extended above 400 cu ft/s (11.3 cu m/s) on basis of step-backwater analysis; minimum discharge, 0.53 cu ft/s (0.015 cu m/s), May 31, June 1, 1984.

EXTREMES FOR CURRENT YEAR. -- Maximum discharge, 624 cu ft/s (17.7 cu m/s), Oct. 11, gage height 10.06 ft (3.066 m); minimum discharge, 0.78 cu ft/s (0.022 cu m/s), Mar. 19, Apr. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 MRAN VALUES DAY OCT NOV DEC FEB APR JUN JUL AUG SEP JAN MAR MAY 122 1.9 1.0 2.1 453 1.8 1.2 .90 1.4 1.2 2 342 2.7 1.6 1.2 1.0 .87 1.2 2.0 352 1.7 341 2.3 1.5 1.2 .99 . 86 3.0 2.1 98 1.4 1.2 2.0 1.4 1.6 1.3 .94 .86 1.5 1.9 1.3 1.2 188 .82 1.0 6 164 1.9 1.6 .82 1.4 1.3 .94 1.0 2.5 1.6 1.6 1.2 504 2.4 1.6 1.4 1.3 .94 .82 2.0 2.1 1.5 2.0 1.2 501 2.0 1.3 .79 1.4 10 1.3 1.1 2.0 1.5 1.5 1.2 489 1.7 1.2 1.0 1.4 10 430 1.7 1.3 1.5 2.0 1.5 11 349 1.7 1.4 1.5 1.1 1.2 3.2 1.3 2.0 1.9 1.4 2.2 384 12 1.7 1.4 1.5 2.5 34 1.3 1.4 1.9 1.6 1.4 1.9 384 1.3 1.4 34 .98 1.4 1.8 1.4 1.5 1.6 1.7 14 387 1.0 .98 1.8 1.8 1.5 1.5 1.4 15 385 1.8 1.3 .99 16 384 1.7 1.2 1.3 1.1 .89 . 94 1.6 1.8 2.0 1.4 1 . 6 383 1.3 1.3 .92 1.1 .82 3.4 1.8 2.6 1.4 1.6 18 155 1.7 1.3 4.2 1.5 1.0 .82 1.1 1.7 3.0 1.4 1.9 1.3 19 3.0 1.7 1.0 1.5 2.2 1.1 20 4.3 1.7 1.4 1.3 2.9 1.0 2.1 21 3.3 1.3 1.1 1.4 1.2 2.0 2.9 1.5 2.9 1.5 247 1.6 1.6 1.4 .98 1.1 2.4 1.9 2.0 1.6 2.0 1.5 23 397 1.6 1.3 1.0 .95 1.4 1.9 1.7 1.9 1.3 236 24 142 1.5 1.4 .94 2.0 3.0 407 1.1 1.7 1.0 25 422 1.5 1.3 1.2 .94 1.0 2.0 2.4 1.5 1.0 392 387 26 1.5 1.5 1.3 . 94 78 1.3 1.0 2.0 1.5 125 27 326 1.5 1.6 1.2 1.1 1.3 1.0 2.0 378 1.5 1.2 1.4 28 326 1.5 1.7 1.2 1.1 1.1 1.0 2.1 462 1.4 1.1 1.3 29 151 1.4 1.5 1.4 1.0 1.4 30 1.4 1.4 1.3 ---1.0 1.0 2.0 456 1.4 2.5 2.2 2.3 31 .95 1.3 ------2.2 1.3 1.3 ---TOTAL 8647.0 53.0 44.3 43.3 45.4 99.57 34.81 68.7 1886.7 950.5 47.4 1206.6 MRAN 279 1.77 1.43 1.40 1.62 3.21 1.16 2.22 62.9 30.7 1.53 40.2 504 MAX 2.7 2.3 1.7 12 34 3.2 10 462 453 2.9 407 MIN 1.8 .79 1.4 1.2 1.2 1.0 . 80 1.0 1.7 1.3 1.0 CFSM .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 IN. 00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 AC-FT 17150 105 88 86 3740 197 69 136 1890 94 2390 WTR YR 1985 TOTAL 13127.28 MBAN 36.0 MAX 504 CFSM MIN .79 .00 IN. .00 AC-FT 26040

## RIO GUAJATACA BASIN

## 50011200 RIO GUAJATACA BELOW LAGO GUAJATACA, PR--Continued

## WATER QUALITY RECORDS

PERIOD OF RECORD .-- WATER YEARS APRIL 1984 TO CURRENT YEAR

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE         | TIME         | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE   | TIME   | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|--------------|--------------|---------------------------------------|--------------------------------------|-----------------------------|--------|--------|---------------------------------------|--------------------------------------|-----------------------------|
| FRB,<br>MAR, | 1111<br>0840 | 1.1                                   | 408<br>437                           | 25.0<br>24.5                | SEP, 1 | 2 1209 | 1.9                                   | 375                                  | 26.5                        |

### 50011400 RIO GUAJATACA ABOVE MOUTH NEAR QUEBRADILLAS, PR

LOCATION.--Lat 18°28'31", long 66°57'46", Hydrologic Unit 21010002, on left bank at ford 1.7 mi (2.7 km) upstream from bridge on Highway 2, 1.6 mi (2.6 km) west of Quebradillas plaza, 2.1 mi (3.4 km) upstream from the Atlantic Ocean, and 6.6 mi (10.6 km) downstream from Lago Guajataca.

DRAINAGE AREA. -- Indeterminate.

#### WATER-DISCHARGE RECORDS

PERIOD OF RECORD. -- February to May 1969 (monthly measurements only), July 1969 to December 1970, April 1984 to current year.

GAGE .- Water-stage recorder. Elevation of gage is 0.0 ft (0.0 m), from topographic map.

REMARKS.--Estimated daily discharges: Oct. 1-9; Nov. 12-18, 27, 30; Dec. 1, 15-31; Jan. 1, 7-31; Feb. 1-4, 7-18, 23-26; Mar. 2, 3, 6, 7, 27-29; Apr. 2-8, 20; May 2, 3, 7; Sept. 5-9, 13-25. Records fair except those for estimated daily discharges, which are poor. Flow regulated by Lago Guajataca 6.6 mi (10.6 km).

EXTREMES FOR PERIOD OF RECORD. -- Maximum discharge, 3,090 cu ft/s (87.5 cu m/s), Sept. 19, 1984; minimum discharge, 6.2 cu ft/s (0.176 cu m/s), Sept. 4, 9-12, 1984.

EXTREMES FOR CURRENT YEAR .-- Peak discharges greater than base discharge of 1,000 cu ft/s (28.3 cu m/s) and maximum (\*):

|         |      | Disch     | arge     | Gage h | eight |         |      | Disch     | arge     | Gage h | eight |
|---------|------|-----------|----------|--------|-------|---------|------|-----------|----------|--------|-------|
| Date    | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   | Date    | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   |
| Oct. 9  | 1545 | 1,350     | 38.2     | 5.43   | 1.655 | Oct. 14 | 1900 | *2,110    | 59.8     | *6.62  | 2.018 |
| Oct. 12 | 2245 | 1,040     | 29.5     | 4.83   | 1.472 | Oct. 22 | 2030 | 1,130     | 32.0     | 4.81   | 1.466 |
| Oct. 13 | 1515 | 1,450     | 41.1     | 5.61   | 1.710 | June 28 | 1015 | 1,500     | 42.5     | 5.69   | 1.734 |

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

Minimum daily discharge, 7.7 cu ft/s (0.218 cu m/s), Feb. 17.

|        |         | DISCHARUS, | IN   | OBIC PERI | ME.    |      | ALUES   | DBR 1904 | IO SEPTI | COCI MADRA |       |        |
|--------|---------|------------|------|-----------|--------|------|---------|----------|----------|------------|-------|--------|
| DAY    | OCT     | NOV        | DEC  | JAN       | FEB    | MAR  | APR     | MAY      | JUN      | JUL        | AUG   | SEP    |
| 1      | 700     | 20         | 17   | 13        | 8.8    | 10   | 13      | 16       | 19       | 1040       | 15    | 12     |
| 2      | 680     | 19         | 16   | 13        | 8.8    | 10   | 13      | 16       | 17       | 701        | 15    | 11     |
| 3      | 680     | 22         | 16   | 12        | 9.0    | 11   | 13      | 17       | 17       | 107        | 13    | 11     |
| 4      | 680     | 25         | 16   | 12        | 9.3    | 11   | 13      | 17       | 19       | 16         | 13    | 12     |
| 5      | 450     | 21         | 15   | 12        | 9.0    | 11   | 13      | 16       | 22       | 15         | 12    | 12     |
| 6      | 340     | 20         | 15   | 12        | 9.5    | 11   | 13      | 16       | 17       | 14         | 13    | 12     |
| 7      | 1100    | 22         | 16   | 11        | 9.3    | 11   | 14      | 18       | 19       | 14         | 14    | 12     |
| 8      | 1100    | 22         | 16   | 11        | 8.8    | 12   | 14      | 135      | 14       | 15         | 18    | 11     |
| 9      | 1200    | 23         | 16   | 10        | 8.6    | 12   | 14      | 19       | 14       | 15         | 12    | 11     |
| 10     | 1040    | 24         | 16   | 10        | 8.8    | 16   | 22      | 16       | 14       | 16         | 13    | 11     |
| 11     | 403     | 61         | 14   | 10        | 8.6    | 12   | 103     | 15       | 15       | 17         | 12    | 13     |
| 12     | 722     | 76         | 15   | 9.8       | 8.6    | 19   | 117     | 17       | 14       | 26         | 11    | 12     |
| 13     | 966     | 26         | 14   | 9.8       | 8.4    | 51   | 19      | 15       | 13       | 18         | 12    | 10     |
| 14     | 1260    | 25         | 14   | 9.5       | 8.4    | 26   | 14      | 26       | 14       | 18         | 12    | 9.8    |
| 15     | 1100    | 25         | 14   | 9.5       | 8.2    | 13   | 14      | 20       | 14       | 19         | 13    | 9.3    |
| 16     | 864     | 24         | 14   | 9.3       | 7.9    | 13   | 13      | 19       | 14       | 27         | 12    | 9.3    |
| 17     | 755     | 23         | 14   | 9.0       | 7.7    | 13   | 12      | 79       | 15       | 31         | 11    | 9.5    |
| 18     | 428     | 22         | 14   | 9.0       | 11     | 13   | 14      | 298      | 15       | 43         | 22    | 9.7    |
| 19     | 39      | 20         | 14   | 8.8       | 8.5    | 13   | 13      | 233      | 15       | 84         | 13    | 9.7    |
| 20     | 40      | 20         | 14   | 8.6       | 8.2    | 20   | 15      | 67       | 16       | 24         | 11    | 10     |
| 21     | 32      | 19         | 14   | 8.6       | 8.4    | 126  | 30      | 26       | 25       | 20         | 12    | 10     |
| 22     | 343     | 19         | 13   | 8.4       | 8.6    | 30   | 23      | 22       | 14       | 19         | 28    | 10     |
| 23     | 899     | 19         | 13   | 8.6       | 8.6    | 18   | 18      | 19       | 13       | 19         | 13    | 210    |
| 24     | 191     | 19         | 13   | 8.4       | 8.8    | 15   | 16      | 18       | 13       | 19         | 11    | 800    |
| 25     | 851     | 19         | 13   | 8.4       | 8.8    | 15   | 14      | 17       | 58       | 18         | 11    | 720    |
| 26     | 753     | 18         | 13   | 8.4       | 9.3    | 14   | 14      | 17       | 145      | 18         | 11    | 256    |
| 27     | 364     | 18         | 13   | 8.4       | 9.5    | 14   | 14      | 17       | 850      | 18         | 12    | 12     |
| 28     | 376     | 18         | 13   | 8.6       | 9.8    | 14   | 14      | 17       | 1460     | 17         | 17    | 8.9    |
| 29     | 282     | 17         | 13   | 8.4       |        | 24   | 14      | 17       | 1290     | 17         | 11    | 80     |
| 30     | 21      | 17         | 14   | 8.6       |        | 15   | 15      | 16       | 1110     | 16         | 17    | 105    |
| 31     | 19      |            | 13   | 8.8       |        | 14   |         | 19       |          | 15         | 15    |        |
| TOTAL  | 18678   | 723        | 445  | 302.9     | 247.2  | 607  | 648     | 1280     | 5295     | 2456       | 425   | 2429.2 |
| MEAN   | 603     |            | 14.4 | 9.77      | 8.83   | 19.6 | 21.6    | 41.3     | 177      | 79.2       | 13.7  | 81.0   |
| MAX    | 1260    | 76         | 17   | 13        | 11     | 126  | 117     | 298      | 1460     | 1040       | 28    | 800    |
| MIN    | 19      | 17         | 13   | 8.4       | 7.7    | 10   | 12      | 15       | 13       | 14         | 11    | 8.9    |
| CFSM   | .00     | .00        | .00  | .00       | .00    | .00  | .00     | .00      | .00      | .00        | .00   | .00    |
| IN.    | .00     | .00        | .00  | .00       | .00    | .00  | .00     | .00      | .00      | .00        | .00   | .00    |
| AC-FT  | 37050   | 1430       | 883  | 601       | 490    | 1200 | 1290    | 2540     | 10500    | 4870       | 843   | 4820   |
| WTR YR | 1985 TO | TAL 33536. | 3    | MBAN 91   | .9 MAX | 1460 | MIN 7.7 | CFSM     | .00      | IN00       | AC-FT | 66520  |

# 50011400 RIO GUAJATACA ABOVE MOUTH NEAR QUEBRADILLAS, PR--Continued WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | TIME                                   | STRBAM<br>FLOW,<br>INSTAN<br>TANEOU<br>(CFS)          | - DUC  | IC<br>- Pi<br>T- (ST/<br>B Ai                                       | AND- TE   | MPER-<br>TURE<br>DEG C)                 | B                         | JR-<br>ID-<br>TY  | OXYGI<br>DIS<br>SOLV<br>(MG/               | SH, (184)   | YGEN,<br>DIS-<br>DLVED<br>PER-<br>CENT<br>ATUR-<br>FION) | OXYGEI<br>DEMANI<br>CHEM-<br>ICAL<br>(HIGI<br>LEVEL)<br>(MG/L | D, FO<br>- FB<br>O.<br>H UM<br>) (CO                           | LI-<br>RM,<br>CAL,<br>7<br>-MF<br>LS./<br>ML) | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) |
|----------------|--|---|--|---|---|---|---------------------------|-------------------|--|---|--|---|--|---|--|
| NOV 1984       |  |   |  |   |   |   |                           |                   |  |   |  |   |  |   |  |
| 20<br>JAN 1985 | 18:20                                  | 20  |  | 480   | 7.9   | 25.0                                    | 1                         | .5                | 1  | 9.4   | 114  |   | 20   | K180  | 1000   |
| 25<br>MAR      | 15:10                                  | E0.0  |  | 497   | 7.7   | 25.0                                    | 16                        | 5                 |  | 3.7   | 105  | - 1   | 15   | K35   | K32  |
| 22             | 09:15                                  | 25  |  | 376   | 7.5   | 23.0                                    | 1                         | . 5               | (  | 5.7   | 78   | - 1   | 15 K1  | 1000  | 7200   |
| MAY 16         | 13:30                                  | 18  |  | 473   | 8.1   | 24.5                                    | 2                         | 0                 | 7  | 7.5   | 90   | <1  | 10   | K170  | 190  |
| AUG<br>03      | 09:45                                  | 12  |  | 460   | 7.8   | 25.5                                    |                           | . 2               |  | 3.7   | 81   |   | 10 -   |   | K110   |
| 00.1.          | 03.40                                  | 12  |  | 100   | 7.0   | 25.5                                    |                           | 4                 |  |   | 01   | ,   | .0   |   | 1110   |
| DATE           | HARD-<br>NESS<br>(MG/L<br>AS<br>CACOS) | HARD-<br>NESS,<br>NONCAR-<br>BONATE<br>(MG/L<br>CACO3 | SOL'   | TUM ST<br>- DI<br>VED SOI<br>/L (MC                                 | IS- D   | DIUM,<br>DIS-<br>DLVED<br>MG/L<br>S NA) | SOF                       | ON                | POTA<br>BIU<br>DIS<br>SOLV<br>(MG/<br>AS I | JM, LII<br>3- F:<br>/RD (1                            | LKA-<br>NITY<br>IBLD<br>IG/L<br>AS<br>ACO3)              | SULFII<br>TOTAI<br>(MG/I                                      | DE DI  | FATE<br>S-<br>LVED<br>G/L<br>BO4)             | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)                |
| NOV 1984       |  |   |  |   |   |   |                           |                   |  |   |  |   |  |   |  |
| 20<br>JAN 1985 | 220                                    | 1   | 4 74   | 1   | 7.8   | 17                                      |                           | 0.5               | 1.   | . 0   | 203  |   |  | 9.1   | 31   |
| 25<br>MAR      | 240                                    |   | 6 81   |   | 8.8   | 11                                      |                           | 0.3               | 0.   | . 6   | 233  | <0.   | . 5  | 4.6   | 20   |
| 22             |  |   |  |   | -   |   |                           |                   |  |   | 155  |   | -  | -   |  |
| MAY<br>16      | 200                                    | 1:  | 3 68   | 6   | 3.3   | 13                                      |                           | 0.4               | 1.   | . 8   | 183  | <0.   | . 5  | 13  | 23   |
| AUG<br>03      |  |   |  |   |   |   |                           |                   |  |   | 192  |   | _  |   |  |
| DA'            | RI<br>SC<br>TE (N                      | IDE, I<br>DIS- S<br>DLVED<br>4G/L                     | ILICA,<br>DIS-<br>BOLVED<br>(MG/L<br>AS<br>BIO2) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS<br>DIS-<br>SOLVE<br>(TONS<br>PER<br>DAY) | , RES<br>AT<br>D DEG<br>SU:<br>PEN      | . C,<br>s-                | NITI<br>TO'<br>(M | TRO-<br>EN,<br>RATE<br>TAL<br>G/L<br>N)    | NITRO-<br>GEN,<br>NITRITI<br>TOTAL<br>(MG/L<br>AS N)  | GI<br>NO2-<br>TO   | TRO-<br>EN,<br>+NO3 A<br>TAL<br>G/L<br>N)                     | NITRO-<br>GEN,<br>MMONIA<br>TOTAL<br>(MG/L<br>AS N)            | ORG<br>TO                                     | TRO-<br>EN,<br>ANIC<br>TAL<br>G/L<br>N)                            |
| NOV 19         |  |   |  |   |   |   |                           |                   |  | 2.1   |  |   | 4.12   |   |  |
| 20<br>JAN 198  |  | (0.1  | 6.3  | 270   | 14  |   | 2                         | 1                 | . 89                                       | 0.01  | 1  | .90   | 0.07   |   | 0.03   |
| 25<br>MAR      |  | 0.1   | 6.4  | 270   |   |   | 2                         | -                 | -  | <0.01   | 2  | . 20  | 0.03   |   | 2.4  |
| 22             |  |   |  |   |   |   | 11                        | -                 |  |   | -  | -   |  | -   | -  |
| MAY<br>16      |  | 0.1   | 6.2  | 240   | 12  |   | 5                         | 1                 | .79  | 0.01  | 1  | .80   | 0.04   |   | 0.46   |
| 03             |  | -   |  |   |   | -                                       |                           | -                 | -  | <0.01   | 1  | . 50  | 0.02   | V   | 0.28   |
| DAT            | GEN<br>MON<br>ORC<br>TC                | BANIC<br>TAL T<br>IG/L (                              | NITRO-<br>GEN,<br>FOTAL<br>(MG/L                 | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS NO3)                         | PHOS-<br>PHORUS<br>TOTAL<br>(MG/L<br>AS P)      | , ARSI                                  | ENIC<br>TAL<br>G/L<br>AS) | REG<br>ERA<br>(UC | IUM,<br>FAL<br>COV-<br>ABLR<br>G/L<br>BA)  | BORON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS B) | TOT<br>REC   | TAL<br>COV-<br>ABLE<br>3/L                                    | CHRO-<br>MIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CR) | REG<br>ER.                                    | PER,<br>TAL<br>COV-<br>ABLE<br>G/L<br>CU)                          |
| NOV 198        |  |   |  |   |   |   |                           |                   |  |   |  |   |  |   |  |
| 20<br>JAN 198  |  | 0.1   | 2.0  | 8.9   | <0.01   | -                                       | -                         |                   |  |   |  | -   |  | -   | -  |
| 25             |  | 2.4   | 4.6  | 20  | <0.01   |   | <1                        |                   | (100                                       | 30  | 1  | 1   | 8  |   | <10  |
| 22             | . 10                                   | -   |  | 12  |   |   | -                         |                   |  |   |  | -   | 34   | -   |  |
| MAY<br>16      |  | 0.5   | 2.3  | 10  | <0.01   |   | <1                        |                   | (100                                       | 20  |  | 1   | <1   |   | <10  |
| AUG<br>03      |  | 0.3   | 1.8  | 8.0   | <0.01   |   |                           |                   |  |   |  |   |  |   | 2,   |
|                |  |   |  |   |   |   |                           |                   |  |   |  |   |  |   |  |

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RIO QUAJATACA BASIN

50011400 RIO QUAJATACA ABOVE MOUTH NEAR QUEBRADILLAS, PR--Continued
WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| NOV 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 20<br>JAN 1985 |   |   |   |   |  |   |   |                                     |                            |  |
| 25             | 220   | 1.  | <10   | 0.2   | <1   | <1  | 20  | <0.01                               | 1                          | 0.03   |
| MAR            |   |   |   |   |  |   |   |                                     |                            |  |
| 22             |   |   |   | 0.1   |  |   |   |                                     |                            |  |
| MAY            |   |   |   |   |  |   |   |                                     |                            |  |
| 16             | 250   | 5   | 20  | (0.1  | <1   | <1  | 10  | <0.01                               | 3                          | 0.04   |
| AUG            |   |   |   |   |  |   |   |                                     |                            | The Law All  |
| 03             |   |   |   |   |  |   |   |                                     |                            |  |

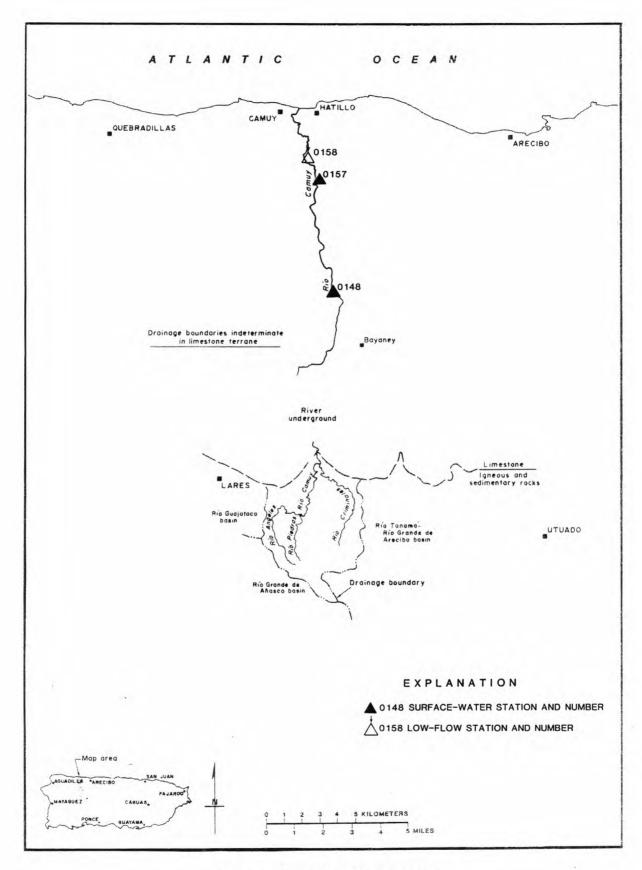


Figure 14.--Río Camuy basin.

64 RIO CAMUY BASIN

#### 50014800 RIO CAMUY NEAR BAYANEY, PR

LOCATION .--Lat 18°23'48", long 66°49'04", Hydrologic Unit 21010002, on left bank at Highway 488, 1.4 mi (2.2 km) southeast of school at Santiago, 0.9 mi (1.4 km) northwest from Escuela Manuel A. Rivera at Bayaney and 9.1 mi (14.6 km) upstream from Atlantic Ocean.

DRAINAGE AREA. -- Indeterminate.

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD .-- May 1984 to current year.

GAGE .-- Water-stage recorder. Elevation of gage is 341 ft (104 m), from topographic map.

REMARKS. -- Estimated daily discharges: Oct. 1, 2. Records fair except those for estimated daily discharges, which are poor.

EXTREMES FOR PERIOD OF RECORD. -- Maximum discharge, 3,510 cu ft/s (99.4 cu m/s), May 18, 1985, gage height, 14.42 ft (4.395 m), from rating curve extended above 300 cu ft/s (8.50 cu m/s) on basis of step-backwater analysis; minimum discharge, 30 cu ft/s (0.85 cu m/s), Mar. 1-4, 1985.

EXTREMES FOR CURRENT YEAR .-- Peak discharges greater than base discharge of 1,000 cu ft/s (28.3 cu m/s) and maximum (\*):

|         |      | Disch     | arge     | Gage h | eight |       |    |      | Disch     | arge     | Gage h | eight |
|---------|------|-----------|----------|--------|-------|-------|----|------|-----------|----------|--------|-------|
| Date    | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   | Date  |    | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   |
| Oct. 5  | 1500 | 1,200     | 34.0     | 9.24   | 2.816 | May   | 18 | 1800 | *3,510    | 99.4     | *14.42 | 4.395 |
| Oct. 6  | 1415 | 1,220     | 34.6     | 9.30   | 2.835 | July  | 18 | 2115 | 1,780     | 50.4     | 10.86  | 3.310 |
| Oct. 15 | 1515 | 1,220     | 34.6     | 9.28   | 2.829 | Sept. | 17 | 2130 | 1,220     | 34.6     | 9.29   | 2.832 |
| Oct. 31 | 2300 | 1.720     | 48.6     | 10.70  | 3.261 | Sept. | 18 | 2030 | 1.780     | 50.4     | 10.86  | 3.310 |
| Ann. 10 | 2015 | 1.160     | 32 9     | 9 11   | 2 777 |       |    |      | 4.777     |          |        |       |

Minimum discharge, 30 cu ft/s (0.85 cu m/s), Mar. 1-4.

|          |            | DISCHARGE   | , IN CUBIC | C FEET I | PER SECOND |          | YEAR | OCTOBER | 1984     | TO  | SEPTEMBER | 1985      |            |          |
|----------|------------|-------------|------------|----------|------------|----------|------|---------|----------|-----|-----------|-----------|------------|----------|
| DAY      | oct        | VON         | DEC        | JAN      | FEB        | MAR      |      | APR     | MAY      |     | JUN       | JUL       | AUG        | SEP      |
| 1        | 100        | 380         | 68         | 61       | 38         | 31       |      | 47      | 54       |     | 70        | 67        | 55         | 69       |
| 2        | 112        |             | 67         | 57       | 37         | 31       |      | 44      | 76       |     | 66        | 67        | 61         | 62       |
| 3        | 96         |             | 66         | 54       |            |          |      |         | 142      |     | 64        | 69        | 73         | 59       |
|          |            |             |            |          | 36         | 31       |      | 40      |          |     |           |           |            |          |
| 4        | 90         |             | 65         | 53       | 36         | 42       |      | 39      | 138      |     | 64        | 62        | 76         | 54       |
| 5        | 349        | 167         | 63         | 52       | 36         | 34       |      | 38      | 113      |     | 79        | 58        | 84         | 51       |
| 6        | 503        |             | 62         | 51       | 35         | 34       |      | 37      | 171      |     | 65        | 56        | 197        | 175      |
| 7        | 339        | 419         | 61         | 52       | 35         | 34       |      | 37      | 277      |     | 72        | 55        | 193        | 169      |
| 8        | 170        | 402         | 60         | 50       | 34         | 37       |      | 37      | 201      |     | 84        | 54        | 91         | 79       |
| 9        | 137        | 379         | 59         | 50       | 34         | 34       |      | 164     | 108      |     | 67        | 93        | 74         | 81       |
| 10       | 131        | 217         | 60         | 50       | 34         | 35       |      | 394     | 88       |     | 76        | 87        | 78         | 74       |
| 11       | 124        | 186         | 64         | 50       | 34         | 92       |      | 262     | 81       |     | 122       | 98        | 69         | 74       |
| 12       | 135        |             | 59         | 49       | 34         | 51       |      | 140     | 78       |     | 191       | 76        | 72         | 65       |
| 13       | 139        |             | 58         | 48       | 33         | 38       |      | 94      | 74       |     | 79        | 64        | 86         | 63       |
| 14       | 101        |             | 56         | 47       | 33         | 38       |      | 73      | 68       |     | 70        | 57        | 81         | 62       |
| 15       | 368        |             | 56         | 47       | 33         | 35       |      | 59      | 63       |     | 63        | 61        | 82         | 66       |
| 10       | 300        | 130         | 50         | "        | 33         | 33       |      | 33      | 0.5      |     | 0.5       | 01        | 02         | 00       |
| 16       | 270        | 114         | 57         | 46       | 33         | 35       |      | 53      | 101      |     | 59        | 128       | 67         | 59       |
| 17       | 132        | 109         | 63         | 44       | 32         | 34       |      | 49      | 279      |     | 58        | 156       | 61         | 211      |
| 18       | 177        | 103         | 59         | 44       | 31         | 34       |      | 46      | 1780     |     | 132       | 383       | 57         | 487      |
| 19       | 275        |             | 55         | 44       | 32         | 33       |      | 50      | 1030     |     | 132       | 352       | 54         | 298      |
| 20       | 287        | 92          | 54         | 43       | 32         | 119      |      | 45      | 375      |     | 193       | 163       | 51         | 246      |
| 21       | 314        | 89          | 53         | 42       | 32         | 208      |      | 87      | 238      |     | 190       | 96        | 55         | 192      |
| 22       | 168        |             | 55         | 40       | 32         | 87       |      | 260     | 175      |     | 87        | 80        | 67         | 127      |
| 23       | 131        |             | 53         | 39       | 33         | 62       |      | 288     | 145      |     | 91        | 75        | 52         | 156      |
| 24       | 116        |             | 70         | 38       | 34         | 47       |      | 173     | 129      |     | 106       | 75        | 48         | 179      |
| 25       | 102        |             | 63         | 38       | 33         | 42       |      | 94      | 115      |     | 206       | 70        | 67         | 118      |
| 26       | 94         | 79          | 55         | 38       | 32         | 41       |      |         | 105      |     | 209       |           | 79         | 93       |
|          | 88         |             |            |          |            |          |      | 91      |          |     |           | 66        | 69         |          |
| 27<br>28 | 100        |             | 56<br>65   | 38       | 31         | 62       |      | 74      | 97       |     | 104       | 61        | 66         | 92<br>96 |
|          |            |             |            | 38       | 32         | 76       |      | 63      | 90       |     | 80        |           |            |          |
| 29       | 117        |             | 59         | 38       |            | 68       |      | 58      | 84       |     | 72        | 62        | 56         | 81       |
| 30<br>31 | 102<br>293 |             | 56<br>69   | 37<br>37 |            | 69<br>55 |      | 56      | 77<br>73 |     | 70        | 7.5<br>62 | 136<br>114 | 75       |
|          |            |             |            |          |            |          |      |         |          |     |           |           |            |          |
| TOTAL    | 5660       |             | 1866       | 1415     | 941        | 1669     |      | 992     | 6625     |     |           | 2988      | 2471       | 3713     |
| MBAN     | 183        |             | 60.2       | 45.6     | 33.6       | 53.8     |      | 9.7     | 214      |     |           | 96.4      | 79.7       | 124      |
| MAX      | 503        |             | 70         | 61       | 38         | 208      | :    | 394     | 1780     |     | 209       | 383       | 197        | 487      |
| MIN      | 88         |             | 53         | 37       | 31         | 31       |      | 37      | 54       |     | 58        | 54        | 48         | 51       |
| CFSM     | .00        |             | .00        | .00      | .00        | .00      |      | .00     | .00      |     | .00       | .00       | .00        | .00      |
| IN.      | .00        | .00         | .00        | .00      | .00        | .00      |      | .00     | .00      |     | .00       | .00       | .00        | .00      |
| AC-FT    | 11230      | 9870        | 3700       | 2810     | 1870       | 3310     | 59   | 930 1   | 3140     |     | 5990      | 5930      | 4900       | 7360     |
| WTR YR   | 1985       | TOTAL 38336 | MEAN       | 105      | MAX 17     | 80 M     | IN   | 31 0    | FSM      | .00 | IN.       | .00       | AC-FT      | 76040    |

## RIO CAMUY BASIN

## 50014800 RIO CAMUY NEAR BAYANEY, PR--Continued

## WATER QUALITY RECORDS

PERIOD OF RECORD .-- WATER YEARS JUNE 1984 TO CURRENT YEAR

# WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE         | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE   | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|--------------|------|---------------------------------------|--------------------------------------|-----------------------------|--------|------|---------------------------------------|--------------------------------------|-----------------------------|
| FEB,<br>MAR, |      | 32<br>34                              | 296<br>326                           | 23.0<br>23.0                | SEP, 1 | 1246 | 73                                    | 290                                  | 24.5                        |

66 RIO CAMUY BASIN

### 50015700 RIO CAMUY NEAR HATILLO, PR

LOCATION.--Lat 18°27'44", long 66°49'56", Hydrologic Unit 21010002, 1.8 mi (2.9 km) southwest of Hatillo plaza, and 1.8 mi (2.9 km) southeast of Camuy plaza, 1.2 mi (1.9 km) south of Planta de Purificacion, and 3.3 mi (5.5 km) upstream from Atlantic Ocean.

DRAINAGE AREA . -- Indeterminate .

#### WATER-DISCHARGE RECORDS

PERIOD OF RECORD .-- June 1984 to current year.

GAGE .-- water-stage recorder. Blevation of gage is 13 ft (4 m), from topographic map.

REMARKS .-- No estimated daily discharges during water year. Records fair.

EXTREMES FOR PERIOD OF RECORD. --Maximum discharge, 6,250 cu ft/s (177 cu m/s), May 18, 1985, gage height, 20.67 ft (6.300 m), from rating curve extended above 200 cu ft/s (5.66 cu m/s) on basis of step-backwater analysis; minimum discharge, 36 cu ft/s (1.02 cu m/s), Mar. 19, 1985.

EXTREMES FOR CURRENT YEAR .-- Peak discharges greater than base discharge of 1,800 cu ft/s (51.0 cu m/s) and maximum (\*):

|         |      | Disch     | arge     | Gage h | eight |       |    |      | Disch     | arge     | Gage h | eight |
|---------|------|-----------|----------|--------|-------|-------|----|------|-----------|----------|--------|-------|
| Date    | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   | Date  |    | Time | (cu ft/s) | (cu =/s) | (ft)   | (m)   |
| Oct. 5  | 1945 | 2,270     | 64.3     | 14.27  | 4.349 | May   | 18 | 2045 | *6,250    | 177      | *20.67 | 6.300 |
| Oct. 6  | 1915 | 4,050     | 115      | 17.67  | 5.386 | July  | 19 | 0015 | 2,610     | 73.9     | 15.01  | 4.575 |
| Oct. 15 | 2100 | 2,410     | 68.3     | 14.58  | 4.444 | Sept. | 18 | 2330 | 2,740     | 77.6     | 15.28  | 4.657 |
| Mare 1  | 0015 | 2 240     | 00 9     | 14 49  | 4 900 |       |    |      |           |          |        |       |

Minimum discharge, 36 cu ft/s (1.02 cu m/s), Mar. 19.

|        |       | DISCH | ARGE, IN | CUBIC FER | T PER | SECOND,<br>MEAN |      | LUES | OCTOBE | R 1984 | TO SE | TEMBE | 1985 |       |        |  |
|--------|-------|-------|----------|-----------|-------|-----------------|------|------|--------|--------|-------|-------|------|-------|--------|--|
| DAY    | oc    | r nov | DEC      | JAN       |       | FEB             | MAR  |      | APR    | MAY    | JU    | IN    | JUL  | AUG   | SEP    |  |
| 1      | 16    | 1 669 | 83       | 95        |       | 46              | 40   |      | 84     | 73     |       | 7     | 67   | 65    | 83     |  |
| 2      | 200   | 202   | 81       | 78        |       | 46              | 40   |      | 76     | 74     | 7     | 5     | 68   | 70    | 76     |  |
| 3      | 128   | 8 624 | 80       |           |       | 45              | 41   |      | 69     | 174    |       | 2     | 78   | 79    | 72     |  |
| 4      | 116   | 498   | 78       | 69        |       | 44              | 50   |      | 65     | 162    | 1     | 1     | 67   | 104   | 65     |  |
| 5      | 61    | 5 236 | 76       |           |       | 44              | 42   |      | 63     | 152    |       | 12    | 59   | 108   | 61     |  |
| 6      | 1480  |       | 75       |           |       | 44              | 41   |      | 60     | 146    | 7     | 2     | 57   | 156   | 147    |  |
| 7      | 992   |       | 73       | 63        |       | 43              | 41   |      | 58     | 344    |       | 8     | 56   | 325   | 365    |  |
| 8      | 35    |       | 72       | 60        |       | 43              | 43   |      | 61     | 281    | 10    |       | 54   | 141   | 96     |  |
| 9      | 230   | 724   | 73       | 58        |       | 43              | 44   | 1    | 146    | 124    | 7     | 4     | 69   | 88    | 91     |  |
| 10     | 222   | 2 327 | 72       | 59        |       | 42              | 41   | (    | 331    | 93     |       | 11    | 101  | 88    | 79     |  |
| 11     | 204   | 4 265 | 76       | 5 59      |       | 42              | 95   |      | 140    | 84     |       | 8     | 92   | 80    | 95     |  |
| 12     | 200   |       | 73       |           |       | 42              | 60   |      | 252    | 81     | 25    | 7     | 72   | 81    | 77     |  |
| 13     | 235   |       | 69       |           |       | 41              | 44   |      | 118    | 79     |       | 8     | 61   | 98    | 73     |  |
| 14     | 167   |       | 67       |           |       | 42              | 43   |      | 90     | 73     | 1     | 6     | 53   | 98    | 71     |  |
| 15     | 639   | 9 196 | 70       | 55        |       | 43              | 41   |      | 72     | 69     | 1     | 1     | 61   | 94    | 73     |  |
| 16     | 593   |       | 71       |           |       | 42              | 40   |      | 63     | 105    |       | 7     | 112  | 78    | 66     |  |
| 17     | 214   |       | 81       | 51        |       | 41              | 40   |      | 56     | 241    | •     | 7     | 192  | 71    | 127    |  |
| 18     | 201   |       | 75       |           |       | 40              | 40   |      | 52     | 2650   | 10    |       | 353  | 66    | 665    |  |
| 19     | 386   |       | 69       |           |       | 41              | 39   |      | 55     | 2300   | 20    |       | 852  | 63    | 663    |  |
| 20     | 440   | 125   | 68       | 52        |       | 40              | 91   |      | 51     | 523    | 21    | 5     | 210  | 60    | 292    |  |
| 21     | 938   |       | 66       |           |       | 40              | 627  |      | 97     | 267    | 36    |       | 117  | 60    | 266    |  |
| 22     | 296   |       | 72       |           |       | 40              | 154  |      | 364    | 184    | 10    |       | 95   | 88    | 164    |  |
| 23     | 208   |       | 68       |           |       | 40              | 108  |      | 309    | 149    |       | 4     | 88   | 66    | 140    |  |
| 24     | 171   |       | 103      |           |       | 44              | 77   |      | 117    | 132    | 13    |       | 91   | 60    | 259    |  |
| 25     | 146   | 102   | 88       | 46        |       | 42              | 69   | 1    | 151    | 120    | 19    | 3     | 83   | 57    | 158    |  |
| 26     | 131   |       | 74       |           |       | 41              | 65   |      | 30     | 107    | 29    |       | 79   | 106   | 116    |  |
| 27     | 123   |       | 75       |           |       | 41              | 100  | .1   | 107    | 98     | 11    |       | 75   | 78    | 103    |  |
| 28     | 130   |       | 92       |           |       | 41              | 138  |      | 89     | 90     |       | 1     | 74   | 79    | 117    |  |
| 29     | 174   |       | 83       |           |       |                 | 120  |      | 81     | 85     |       | 3     | 69   | 67    | 96     |  |
| 30     | 150   |       | 75       |           |       |                 | 130  |      | 77     | 81     | 7     | 0     | 88   | 180   | 91     |  |
| 31     | 348   | 3     | 105      | 45        |       |                 | 101  | •    |        | 80     |       | -     | 72   | 198   |        |  |
| TOTAL  | 10595 |       | 2383     |           |       | 1183            | 2645 |      | 84     | 9221   | 352   |       | 3665 | 3052  | 4847   |  |
| MBAN   | 342   |       | 76.9     |           |       | 42.3            | 85.3 |      | 56     | 297    | 11    |       | 118  | 98.5  | 162    |  |
| MAX    | 1480  |       | 105      |           |       | 46              | 627  | •    | 31     | 2650   | 35    |       | 852  | 325   | 665    |  |
| MIN    | 116   |       | 66       |           |       | 40              | 39   |      | 51     | 69     |       | 7     | 53   | 57    | 61     |  |
| CFSM   | .00   |       | .00      |           |       | .00             | .00  |      | .00    | .00    | .0    |       | .00  | .00   | .00    |  |
| IN.    | .00   |       | .00      |           |       | .00             | .00  |      | .00    | .00    | .0    |       | .00  | .00   | .00    |  |
| AC-FT  | 21020 | 15120 | 4730     | 3450      |       | 2350            | 5250 | 92   | 290    | 18290  | 700   | 0     | 7270 | 6050  | 9610   |  |
| WTR YR | 1985  | TOTAL | 55165    | MBAN      | 151   | MAX             | 2650 | MIN  | 39     | CFSM   | .00   | IN.   | .00  | AC-FT | 109400 |  |

## RIO CAMUY BASIN

## 50015700 RIO CAMUY NEAR HATILLO, PR--Continued

## WATER QUALITY RECORDS

PERIOD OF RECORD .-- WATER YEARS AUGUST 1984 TO CURRENT YEAR

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE | TIME         | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE | TIME    | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|------|--------------|---------------------------------------|--------------------------------------|-----------------------------|------|---------|---------------------------------------|--------------------------------------|-----------------------------|
|      | 1115<br>1038 | 39<br>39                              | 308<br>343                           | 23.5<br>23.0                | SEP, | 11 0925 | 100                                   | 334                                  | 24.0                        |

67

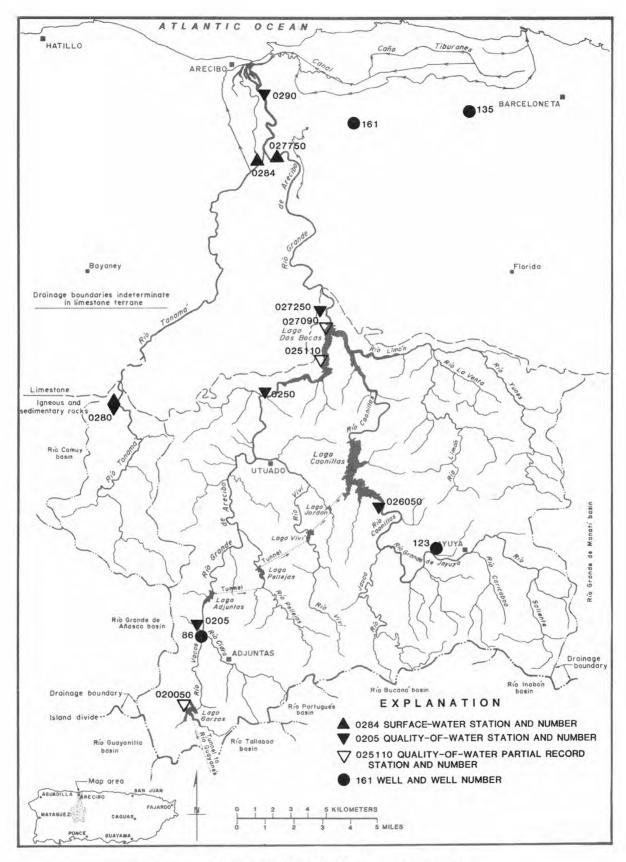


Figure 15.--Río Grande de Arecibo basin.

#### 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 plaza.

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

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

### WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

OXYGEN,

OXYGEN

COLI-

STREP-

| DATK           | TIME                                   | STREAM<br>FLOW,<br>INSTAN<br>TANKOU<br>(CFS)         | COI<br>I- DUG<br>IS ANG                          | FIC<br>N- P<br>CT- (ST  | RD A'   | MPER-<br>TURE<br>EG C)            | TUR-<br>BID-<br>ITY<br>(NTU)            | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L)                 | CENT<br>SATUR-                                    | DEMAND,<br>CHEM-<br>ICAL<br>(HIGH<br>LEVEL)<br>(MG/L) | FORM<br>FECA<br>0.7<br>UM-M<br>(COLS<br>100 M    | L, FECAL,<br>KF AGAR<br>F (COLS.                     |
|----------------|--|--|--|---|---|-----------------------------------|---|---|---|---|--|--|
| OCT 1984       | 72.30                                  |  |  |   |   |                                   |   |   |   |   |  |  |
| 30<br>FEB 1985 | 17:00                                  | 150  |  | 158   | 7.9   | 20.5                              | 55                                      | 8.5   |   |   |  |  |
| 07<br>APR      | 09:50                                  | 15   |  | 316   | 7.8   | 18.0                              | 35                                      | 10.4  | 109   | 13  | 60   | 00 5600  |
| 02<br>JUN      | 08:00                                  | 16   |  | 300   | 7.4   | 18.0                              | 1.0                                     | 8.2   | 91  | 17  | K10  | 00 K1300   |
| 05<br>JUL      | 09:25                                  | 33   |  | 280   | 8.2   | 21.5                              | 1.0                                     | 8.3   | 99  | 17  | 340  | 00 900   |
| 30             | 16:45                                  | 10   |  | 564   | 8.0   | 29.5                              | 5.2                                     | 7.4   | 102   | 11  | 560  | 00 3200  |
|                |  |  |  |   |   |                                   |   |   |   |   |  |  |
| DATE           | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | HARD-<br>NESS,<br>NONCAR<br>BONATE<br>(MG/L<br>CACO3 | CALC<br>DIS<br>SOI<br>(MC                        | CIUM S<br>B- D<br>LVRD SO<br>B/L (M                                 | IS- DI<br>LVED SOI<br>G/L (M                      | IUM,<br>IS- :                     | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LINITY<br>FIELD<br>(MG/L<br>AS<br>CACO3) | SULFIDE<br>TOTAL<br>(MG/L<br>AS S)                    | SULFA'<br>DIS-<br>SOLVI<br>(MG/I                 | DIS-<br>ED SOLVED<br>(MG/L                           |
| OCT 1984       |  |  |  |   |   |                                   |   |   |   |   |  |  |
| 30<br>FEB 1985 | 50                                     |  | 12   |   | 1.8   | 9.3                               | 0.6                                     | 1.5   | 52  | -   | 5.   |  |
| 07<br>APR      | 110                                    |  | 28   | 1 10  | 0 1   | 9                                 | 0.8                                     | 1.7   | 113   | <0.5  | 8.   | .5 27  |
| 02<br>JUN      |  |  |  | -   |   | -                                 |   |   | 114   | 17  |  | 11   |
| 05<br>JUL      | 100                                    |  | 2 25   | :   | 9.3 1   | 6                                 | 0.7                                     | 1.6   | 99  | <0.5  | 9.   | . 3 21   |
| 30             |  |  |  | -   |   | -                                 |   |   | 113   |   |  | , . <del></del> ) []                                 |
| DATE           | RI<br>D<br>SO                          | DE,<br>IS-<br>LVED<br>G/L                            | ILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | AT 105                            | JE NITO                                 | EN, C<br>RATK NIT<br>FAL TC<br>G/L (N               | GEN, C<br>PRITE NO.<br>OTAL TO<br>AG/L (N         | GEN,<br>2+NO3 AM<br>DTAL TO<br>MG/L (1                | ITRO-<br>GEN,<br>MONIA C<br>OTAL<br>MG/L<br>S N) | NITRO-<br>GEN,<br>DRGANIC<br>TOTAL<br>(MG/L<br>AS N) |
| OCT 1984       |  | 0.1  | 16   | 91  | 37  | 517                               | 1                                       | .05 (   | 0.05 1  | .10   | 0.13   | 0.97   |
| FRB 1985       | 5                                      | 0.1  | 27   | 190   | 7.7   | 59                                |   |   |   |   | 0.20   | 0.8  |
| APR 02         |  |  |  | 100   |   | 1                                 |   |   |   |   | 0.25   | 0.25   |
| JUN 05         |  | 0.1  | 26   | 170   | 15  | 8                                 |   |   |   |   | 0.18   | 0.42   |
| JUL 30         |  | 0.1  |  | 170   |   |                                   |   |   |   |   |  |  |
| 30             | -                                      |  |  |   |   |                                   | 0.                                      | .74 (   | 0.16  | 0.90  | 0.36   | 0.64   |
| DATE           | GEN<br>MONI<br>ORGA<br>TO:             | ANIC<br>FAL 7<br>G/L                                 | NITRO-<br>GEN,<br>FOTAL<br>(MG/L                 | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS NO3)                         | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P)       | ARSENI<br>TOTAL<br>(UG/L<br>AS AS | C REC                                   | TAL TO<br>COV- RE<br>ABLE ER<br>G/L (U              | OTAL TO<br>SCOV- RE<br>RABLE EN<br>JG/L (U        | MIUM MOTAL TO<br>COV- RI<br>BABLE EI                  | DTAL   | COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)             |
| OCT 1984       |  |  |  |   |   |                                   |   |   |   |   |  |  |
| 30<br>FEB 1985 | 1                                      | 1.1  | 2.2  | 9.7   | 0.31  |                                   |   | -   |   | -   |  |  |
| 07<br>APR      |  | 1.0  | 2.1  | 9.3   | 0.19  |                                   | 1 •                                     | (100  | <20   | <1  | 3  | 10   |
| 02<br>JUN      | (                                      | 0.5  | 1.6  | 7.1   | 0.16  |                                   |   | - 7   |   |   |  |  |
| 05<br>JUL      |  | 0.6  | 1.8  | 8.0   | 0.08  | <                                 | 1 •                                     | (100  | 40  | 1   | 5  | <10  |
| 30             | 1                                      | 1.0  | 1.9  | 8.4   | 0.26  |                                   |   |   |   | -   | -  |  |
|                |  |  |  |   |   |                                   |   |   |   |   |  |  |

RIO GRANDE DE ARECIBO BASIN

50020500 RIO GRANDE DE ARECIBO NR ADJUNTAS, PR--Continued
WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| OCT 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 30<br>FBB 1985 | **  |   |   |   |  |   |   |                                     |                            |  |
| 07<br>APR      | 2200  | 1   | 150   | 0.1   | <1   | <1  | 30  | <0.01                               | 3                          | 0.03   |
| 02             |   |   |   | 0.1   |  | 7.7   |   |                                     |                            |  |
| JUN            | 000   |   |   |   |  | 2.2   | 22  |                                     |                            |  |
| 05<br>JUL      | 220   | 3   | 40  | <0.1  | <1   | <1  |   | <0.01                               | 1                          | <0.01  |
| 30             |   |   |   |   |  |   |   |                                     |                            |  |

## 50025000 RIO GRANDE DE ARECIBO NEAR UTUADO, PR

#### WATER-QUALITY RECORDS

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

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

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

### WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE             | 1        | FIME                                | STREATING (CFS   | N,<br>AN-<br>OUS  | SPR<br>CIF<br>CON<br>DUC<br>ANC | IC<br>-<br>T- (:<br>R                                      | PH<br>BTAND-<br>ARD<br>NITS)                        | TEMP  | RE   |                 |                   | OXYGE<br>DIS<br>SOLV<br>(MG/               | /RD                                   | OXYGI<br>DIS<br>SOL'<br>(PEI<br>CEI<br>SATI | S-<br>/BD<br>R-<br>NT<br>JR-           | OXYGEN<br>DEMAND<br>CHEM-<br>ICAL<br>(HIGH<br>LEVEL)<br>(MG/L) | 0. PC  | CAL,<br>7<br>1-MF<br>LS./         | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) |
|------------------|----------|-------------------------------------|--|-------------------|---------------------------------|--|---|---|--|-----------------|-------------------|--|---------------------------------------|---|--|--|--|-----------------------------------|--|
| OCT 1984<br>23   |          | 1:20                                | 234  |                   |                                 | 243  | 8.0   |   |  |                 | .4                |  |                                       |   | 98                                     |  | 0 K16  | 0000                              | 45000  |
| FBB 1985         |          |                                     |  |                   |                                 |  |   |   | 3.5  |                 |                   |  | 3.2                                   |   |  |  |  |                                   |  |
| O6               | 13       | 3:00                                | 34   |                   |                                 | 276  | 8.0   | 2   | 6.0  | 1               | .0                | 8  | 3.3                                   |   | 114                                    | 1  | 0  | 3500                              | K1500  |
| 01<br>JUN        | 13       | 3:10                                | 32   |                   |                                 | 274  | 8.0   | 2   | 9.0  | 3               | .0                | 7  | 7.1                                   |   | 93                                     | 1  | 4  | K790                              | 960  |
| 03<br>JUL        | 16       | 5:45                                | 121  |                   |                                 | 255  | 8.2   | 3   | 1.0  | 37              |                   | 7  | 7.1                                   |   | 97                                     | 1  | 5 5  | 8000                              | 9000   |
| 25               | 16       | 3:25                                | 40   |                   |                                 | 271  | 8.4   | 3   | 2.0  | 13              |                   | 7  | 7.5                                   |   | 103                                    | 2  | 5 7  | 9000                              | 3000   |
|                  |          |                                     |  |                   |                                 |  |   |   |  |                 |                   |  |                                       |   |  |  |  |                                   |  |
| DATE             | NI<br>(N | ARD-<br>388<br>4G/I,<br>A8<br>ACO3) | HARI<br>NESS<br>NONCA<br>BONAT<br>(MGA<br>CACO           | AR-<br>FB<br>/L   | CALC<br>DIS<br>SOL<br>(MG<br>AS | IUM<br>VED :   | AGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODI<br>DIS<br>SOLV<br>(MG                    | RD   | SOR             | ON                | POTA<br>SIL<br>DIS<br>SOLV<br>(MG/<br>AS E | JM,<br>3-<br>/RD<br>/L                | ALKA<br>LINIT<br>FIBI<br>(MG,<br>AS<br>CACO | ry<br>LD<br>'L                         | SULFID<br>TOTAL<br>(MG/L<br>AS S)                              | E DI   | FATE<br>S-<br>LVED<br>G/L<br>SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)                |
| OCT 1984         |          |                                     |  |                   |                                 |  |   |   |  |                 |                   |  |                                       |   |  |  |  |                                   |  |
| 23<br>FRB 1985   |          | 88                                  |  | 10                | 23                              |  | 7.5   | 13  |  |                 | 0.6               | 2.   | . 0                                   |   | 78                                     |  |  | 20                                | 15   |
| 06               |          | 100                                 |  | 9                 | 27                              |  | 8.2   | 15  |  |                 | 0.7               | 2.   | . 0                                   |   | 92                                     | <0.  | 5  | 24                                | 14   |
| 01               | -        |                                     |  |                   |                                 |  |   |   |  |                 |                   |  |                                       |   | 93                                     |  | . 11 112   | -                                 |  |
| JUN<br>03<br>JUL |          | 100                                 |  | 11                | 26                              |  | 8.4   | 14  |  |                 | 0.6               | 2.   | 1                                     |   | 89                                     | <0.  | 5  | 20                                | 12   |
| 25               | -        |                                     |  |                   |                                 |  |   |   |  |                 |                   |  |                                       |   | 92                                     |  |  | -                                 |  |
|                  | ATE      | R:<br>1<br>S(                       | LUO-<br>IDR,<br>DIS-<br>DLVRD<br>MG/L<br>B F)            | DIS<br>SOI<br>(MC | LVED                            | SOLIDS<br>SUM OF<br>CONSTITUENTS<br>DIS-<br>SOLVE<br>(MG/I | 7 SO<br>1-<br>3, S<br>- (                           | LIDS,<br>DIS-<br>OLVED<br>TONS<br>PER<br>DAY) | SOLI<br>RESI<br>AT 1<br>DEG.<br>SUS<br>PEND<br>(MG | DUB<br>05<br>C, | NIT:<br>TO:<br>(M | TRO-<br>EN,<br>RATE<br>TAL<br>G/L<br>N)    | NIT<br>GE<br>NITR<br>TOT<br>(MG<br>AS | N,<br>ITE<br>AL<br>/L                       | NIT<br>GE<br>NO2+<br>TOT<br>(MG<br>AS  | N,<br>NO3 A<br>AL<br>/L  | NITRO-<br>GEN,<br>MMONIA<br>TOTAL<br>(MG/L<br>AS N)            | ORG<br>TO                         | TRO-<br>EN,<br>ANIC<br>TAL<br>G/L<br>N)                            |
| OCT 1            |          |                                     | 0.1  | :                 | 27                              | 15   | 50  | 98  | 5  | 8               | 1                 | . 26                                       | 0.                                    | 04  | 1.                                     | 30   | 0.06   |                                   | 0.54   |
| FEB 1:           |          |                                     | 0.1  |                   | 20                              | 11   | 70  | 15  |  | 6               | 1                 | . 09                                       | 0.                                    | 11  | 1.                                     | 20   | 0.16   |                                   | 0.64   |
| APR<br>01.       |          |                                     | -  |                   |                                 |  |   |   |  | 5               | 1                 | .22  | 0.                                    | 08  | 1.                                     | 30   | <0.01  |                                   |  |
| JUN<br>03.       |          |                                     | 0.1  |                   | 25                              | 10   | 30  | 53  | 5  | 2               | 0                 | .77  | 0.                                    | 03  | 0.                                     | 80   | 0.11   |                                   | 0.49   |
| JUL<br>25.       |          |                                     |  |                   |                                 |  |   |   | 1  | 3               | 0                 | . 86                                       | 0.                                    | 04  | 0.                                     | 90   | 0.04   |                                   | 0.46   |
| D                | ATE      | GEN<br>MON<br>ORG<br>TO             | ITRO-<br>N,AM-<br>NIA +<br>BANIC<br>DTAL<br>MG/L<br>B N) | TO                | TRO-<br>BN,<br>TAL<br>G/L<br>N) | NITRO<br>GEN<br>TOTAL<br>(MG/I<br>AS NO                    | PH  | HOS-<br>ORUS,<br>OTAL<br>MG/L<br>S P)         | ARSE<br>TOT<br>(UG                                 | AI.             | REG<br>RR.        | IUM,<br>FAL<br>COV-<br>ABLR<br>G/L<br>BA)  | BOR<br>TOT<br>REC<br>ERA<br>(UG       | AL<br>OV-<br>BLR<br>/L                      | CADM<br>TOT<br>REC<br>ERA<br>(UG<br>AS | IUM<br>AL<br>OV-<br>BLR<br>/L                                  | CHRO-<br>MIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CR) | TO<br>RE<br>ER<br>(U              | PER,<br>TAL<br>COV-<br>ABLE<br>G/L<br>CU)                          |
| OCT 1            |          |                                     | 0.6  |                   | 1.9                             | 8.4  |   | 0.10  |  |                 | 8.34              |  |                                       |   |  |  |  |                                   |  |
| FEB 1:           | 985      |                                     | 0.8  |                   | 2.0                             | 8.9  |   | 0.10  |  | <1              | -                 | (100                                       |                                       | 30  |  | <1   | <1   | 1                                 | 10   |
| APR              |          |                                     |  |                   |                                 |  |   |   |  | '1              |                   | .100                                       |                                       |   |  |  | ,,,  | THE PER                           |  |
| JUN              |          |                                     | 0.6  |                   | 1.9                             | 8.4  |   | 0.26  |  |                 | -                 | 48   |                                       |   |  | -1   |  |                                   |  |
| O3.<br>JUL       |          |                                     | 0.6  | 1                 | 1.4                             | 6.2  |   | 0.10  |  | <1              |                   | 100  |                                       | <20   |  | <1   | 25   |                                   | 30   |
| 25.              |          |                                     | 0.5  | 1                 | 1.4                             | 6.2  |   | 0.20  |  |                 |                   | -  |                                       |   |  |  |  | -                                 | -  |

RIO GRANDE DE ARECIBO BASIN

50025000 RIO GRANDE DE ARECIBO NEAR UTUADO, PR--Continued
WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>KRABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>KRABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| OCT 1984       |   |   |   |   | 1  |   |   |                                     |                            |  |
| 23<br>FEB 1985 |   |   |   |   |  |   |   |                                     |                            |  |
| 06             | 220   | 1   | 20  | <0.1  | <1   | <1  | 30  | <0.01                               | <1                         | 0.02   |
| APR            |   |   |   |   |  |   |   |                                     |                            |  |
| 01             |   |   |   | <0.1  |  |   |   |                                     |                            |  |
| JUN            |   |   |   |   |  |   |   |                                     |                            |  |
| 03             | 6900  | 8   | 300   | <0.1  | <1   | <1  | 50  | <0.01                               | 12                         | 0.01   |
| JUL            |   |   |   |   |  |   |   |                                     |                            |  |
| 25             |   |   |   |   | ~  |   |   |                                     |                            |  |

### 50026050 RIO CAONILLAS ABOVE LAGO CAONILLAS NEAR JAYUYA, PR

## WATER-QUALITY RECORDS

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

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

K = non-ideal count

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

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | TIME                         | STRE<br>FLO<br>INST<br>TANE<br>(CF | W,<br>AN-<br>OUS      | SPE<br>CON<br>DUC<br>AND | FIC<br>I- I<br>CT- (ST<br>CE A                 | PH<br>FAND-<br>ARD<br>(TS)   | TEME<br>ATU                          | JRE                |                   |                |                                 | EN, (S-                                    | YGEN,<br>DIS-<br>OLVED<br>PER-<br>CENT<br>ATUR-<br>TION) | ICA                             | MD,<br>M-<br>L<br>GH<br>KL) | 0.7                             | MF<br>S./   | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) |
|----------------|------------------------------|------------------------------------|-----------------------|--------------------------|--|------------------------------|--------------------------------------|--------------------|-------------------|----------------|---------------------------------|--|--|---------------------------------|-----------------------------|---------------------------------|-------------|--|
| OCT 1984       |                              |                                    |                       |                          |  |                              |                                      |                    |                   |                |                                 |  |  |                                 |                             |                                 |             |  |
| 30             | 11:10                        | 118                                |                       |                          | 182  | 8.2                          | 2                                    | 22.5               | 5                 | 0.0            |                                 | 8.6  | 102  |                                 | <10                         | K1                              | 400         | 1100   |
| FRB 1985       | 14:30                        | 32                                 |                       |                          | 218  | 8.9                          | ,                                    | 24.5               | 2                 | 0              |                                 | 9.8  | 119  |                                 | 17                          |                                 | K60         | K20  |
| APR            |                              |                                    |                       |                          |  |                              |                                      |                    |                   |                |                                 |  |  |                                 |                             |                                 |             |  |
| 01<br>JUN      | 17:20                        | 31                                 |                       |                          | 205  | 8.1                          | 2                                    | 25.0               | 2                 | .0             |                                 | 7.8  | 97   |                                 | 21                          | K                               | 140         | 420  |
| 04             | 14:30                        | 88                                 |                       |                          | 181  | 8.2                          | 2                                    | 26.0               | 25                | ;              |                                 | 7.5  | 95   |                                 | 15                          | K8                              | 000         | 690  |
| JUL<br>30      | 12:35                        | 62                                 |                       |                          | 183  | 8.2                          | 2                                    | 26.5               | 34                | 1              |                                 | 8.1  | 103  |                                 | <10                         | 4                               | 700         | 2100   |
|                |                              | HAR                                | n_                    |                          | MA   | GNB-                         |                                      |                    | 900               | NUI            | РОТ                             | A9_ A                                      | LKA-   |                                 |                             |                                 |             | CHLO-  |
| DATE           | HARD-<br>NESS<br>(MG/L<br>AS | NES:<br>NONC:<br>BONA<br>(MG       | S,<br>AR-<br>TE<br>/L | (MG                      | I UM S<br>I- I<br>LVED SC<br>I/L (M            | IUM,<br>DIS-<br>DLVED<br>G/L | SOLV<br>SOLV<br>(MC                  | B-<br>/ED          | SOR               | D-<br>P-<br>ON | SI<br>DI<br>SOL<br>(MG          | UM, LII<br>S- F:<br>VED (I                 | NITY<br>IELD<br>MG/L<br>AS                               | SULE<br>TOT<br>(MC              | AL<br>/L                    | (MG                             | VED         | RIDE,<br>DIS-<br>SOLVED<br>(MG/L                                   |
|                | CACO3)                       | CAC                                | 03)                   | AS                       | CA) AS   | MG)                          | AS                                   | NA)                |                   |                | BA                              | K) C                                       | ACO3)  | AS                              | 8)                          | AS S                            | 04)         | AS CL)   |
| OCT 1984       |                              |                                    |                       |                          |  |                              |                                      |                    |                   |                |                                 |  |  |                                 |                             |                                 |             |  |
| 30<br>FEB 1985 | 66                           |                                    | 4                     | 17                       |  | 5.6                          | 9                                    | .9                 |                   | 0.6            | 1                               | . 3  | 62   |                                 |                             | 1                               | 3           | 9.5  |
| 05             | 81                           |                                    | 2                     | 21                       |  | 7.0                          | 12                                   | 2                  |                   | 0.6            | 1                               | . 3  | 79   | (                               | 0.5                         | 1                               | 6           | 13   |
| APR<br>01      |                              |                                    |                       |                          |  | _                            |                                      |                    |                   |                |                                 |  | 71   |                                 | 2.30                        |                                 |             |  |
| JUN            | 66                           |                                    | 6                     | 17                       |  | 5.7                          |                                      |                    |                   |                |                                 |  | 60   | ,                               |                             |                                 |             | 10   |
| JUL JUL        | 00                           |                                    | 0                     | 17                       |  | 5.1                          | 8                                    | . 7                |                   | 0.5            | 1                               | . 4  | 60   | ,                               | 0.5                         | 1                               | 5           | 10   |
| 30             |                              |                                    |                       |                          | -  | -                            |                                      |                    |                   |                |                                 |  | 57   |                                 | 400                         |                                 |             |  |
|                | PI                           | .UO-                               | 811                   | ICA,                     | SOLIDS,  |                              | LIDS,                                |                    | IDS,              | NT.            | rro-                            | NITRO-                                     | . NT   | TRO-                            | NT.                         | TRO-                            | NT          | rro-   |
| DATE           | RI<br>E<br>SO                | DE,<br>DIS-<br>DLVED<br>IG/L<br>F) | DI<br>SO<br>(M        | S-<br>LVED<br>IG/L<br>S  | CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SC (7                        | DIS-<br>DLVED<br>TONS<br>PER<br>DAY) | DEG<br>SUS<br>PENI | 105<br>. C,<br>S- | NITI<br>TO:    | EN,<br>RATE<br>FAL<br>G/L<br>N) | GEN,<br>NITRITI<br>TOTAL<br>(MG/L<br>AS N) | G<br>NO2<br>TO<br>(M                                     | EN,<br>+NO3<br>TAL<br>G/L<br>N) | AMMO<br>TO:                 | BN,<br>ONIA<br>TAL<br>G/L<br>N) | ORGA<br>TO' | ANIC<br>FAL<br>J/L<br>N)   |
| OCT 1984       |                              |                                    |                       |                          |  |                              |                                      |                    |                   |                |                                 |  |  |                                 |                             |                                 |             |  |
| 30             | <                            | 0.1                                |                       | 24                       | 120  | :                            | 37                                   |                    | 4                 | 0              | .69                             | 0.01                                       | 0  | .70                             | <0                          | .01                             | 1 to        |  |
| FEB 1985<br>05 |                              | 0.1                                |                       | 9.8                      | 130  | 1                            | 11                                   |                    | 8                 | 0              | . 18                            | 0.02                                       | 0  | .20                             | 0                           | . 05                            |             | 0.25   |
| APR 01         |                              |                                    |                       |                          |  |                              |                                      |                    |                   |                |                                 | (0.01                                      |  | 40                              |                             | 01                              |             |  |
| JUN            |                              |                                    |                       | -                        |  |                              | -                                    |                    | 5                 |                |                                 | <0.01                                      | U  | .40                             | (0                          | .01                             |             | A-F  |
| 04<br>JUL      | <                            | 0.1                                |                       | 20                       | 110  | 2                            | 27                                   |                    | 54                |                | -                               | <0.01                                      | 0  | .60                             | 0                           | .02                             | (           | 0.68   |
| 30             | -                            | -                                  |                       | -                        |  | ,                            | -                                    |                    | 50                |                | -                               | <0.01                                      | 0  | .60                             | 0                           | .04                             | (           | 0.36   |
|                |                              |                                    |                       |                          |  |                              |                                      |                    |                   |                |                                 |  |  |                                 |                             |                                 |             |  |
|                |                              | mno                                |                       |                          |  |                              |                                      |                    |                   |                |                                 |  |  |                                 |                             |                                 |             |  |
|                | GEN                          | TRO-<br>,AM-<br>IA +<br>ANIC       |                       | TRO-                     | NITRO-<br>GEN,                                 |                              | IOS-<br>ORUS,                        | ARSI               | RNIC              | TO             | IUM,<br>PAL                     | BORON TOTAL RECOV-                         | TO   | MIUM<br>TAL<br>COV-             | TO                          | RO-<br>UM,<br>FAL               |             | PER,<br>PAL<br>COV-  |
| DATE           | TO<br>(M                     | TAL<br>IG/L<br>N)                  | TO<br>(M              | TAL<br>G/L<br>N)         | TOTAL<br>(MG/L<br>AS NO3)                      | TC (N                        | TAL<br>IG/L<br>P)                    | TOT                | TAL<br>G/L<br>AS) | BRA<br>(UC     | ABLE<br>G/L<br>BA)              | BRABLI<br>(UG/L<br>AS B)                   | RR.  | ABLE<br>G/L<br>CD)              | ERA<br>(UC                  | ABLE<br>G/L<br>CR)              | ER/         | CO)  |
| OCT 1984       |                              |                                    |                       |                          |  |                              |                                      |                    |                   |                |                                 |  |  |                                 |                             |                                 |             |  |
| 30             |                              | 0.3                                |                       | 1.0                      | 4.4  | (                            | 0.06                                 |                    | -                 |                |                                 |  | -  |                                 |                             | 1                               |             | 11   |
| FEB 1985<br>05 |                              | 0.3                                |                       | 0.5                      | 2.2  |                              | 0.06                                 |                    | <1                |                | (100                            | <20  |  | 2                               |                             | 6                               |             | <10  |
| APR 01         |                              | 0.4                                |                       | 0.8                      |  |                              |                                      |                    |                   |                |                                 |  |  | 2515                            | 3                           |                                 |             |  |
| JUN            |                              |                                    |                       |                          | 3.5  |                              | .08                                  |                    |                   |                |                                 |  |  |                                 | 100                         | 100                             | -           |  |
| 04<br>JUL      |                              | 0.7                                |                       | 1.3                      | 5.8  | 0                            | .04                                  |                    | <1                |                | (100                            | <20  | )  | 1                               |                             | 6                               |             |  |
| 30             |                              | 0.4                                |                       | 1.0                      | 4.4  |                              | .11                                  |                    |                   |                | - 1                             |  | -  | -                               |                             |                                 |             | 1, 3   |

RIO GRANDE DE ARECIBO BASIN

50026050 RIO CAONILLAS ABOVE LAGO CAONILLAS NEAR JAYUYA, PR--Continued
WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| OCT 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 30<br>FEB 1985 |   |   |   |   |  |   |   |                                     |                            |  |
| 05             | 220   | 1   | 20  | <0.1  | <1   | <1  | <10   | <0.01                               | 4                          | 0.04   |
| APR            |   |   |   |   |  |   |   |                                     |                            |  |
| 01             |   |   |   | <0.1  |  |   |   |                                     |                            |  |
| JUN            |   |   |   |   |  |   |   |                                     |                            |  |
| 04             | 2100  | 4   | 140   | <0.1  | <1   | <1  | 20  | <0.01                               | <1                         | 0.01   |
| JUL            |   |   |   |   |  |   |   |                                     |                            |  |
| 30             |   |   |   |   |  |   |   |                                     |                            |  |

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

## WATER-QUALITY RECORDS

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

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

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | TIME                                   | STRE<br>FLO<br>INST<br>TANE<br>(CF    | W,<br>AN-<br>OUS                           | SPR-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STA<br>AR<br>UNIT                                  | ND- TE   | MPER-<br>TURE<br>EG C)                | B1                 | JR-<br>ID-<br>IY         | OXYGRI<br>DIS-<br>SOLVI<br>(MG/I          | SON, (P<br>- C<br>ED SA                              | GEN,<br>IS-<br>LVED<br>ER-<br>ENT<br>TUR-<br>ION) | OXYGEN<br>DEMAND<br>CHEM-<br>ICAL<br>(HIGH<br>LEVEL) | PRO UM   | LI-<br>RM,<br>CAL,<br>7<br>-MF<br>LS./<br>ML) | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) |
|----------------|--|---------------------------------------|--|---|---|--|---------------------------------------|--------------------|--------------------------|---|--|---|--|--|---|--|
| OCT 1984       |  |                                       |  |   |   |  |                                       |                    |                          |   |  |   |  |  |   |  |
| 29<br>FKB 1985 | 15:55                                  | 167                                   |  | 194   |   | 7.7  | 24.5                                  | 10                 | )                        | 5   | . 8  | 70  | 1  | 9  | 94  | K22  |
| 06<br>APR      | 09:40                                  | 28                                    |  | 212   |   | 7.6  | 22.5                                  | 1                  | . 5                      | 8   | . 1  | 93  | <1   | 0  | K12   | 42   |
| 02             | 12:00                                  | 130                                   |  | 208   |   | 7.3  | 25.0                                  | 1                  | . 5                      | 5   | . 8  | 70  | 1  | 7  | 110   | 54   |
| JUN<br>04      | 09:50                                  | 17                                    |  | 120   |   | 7.5  | 23.0                                  | 230                | )                        | 6   | . 0  | 70  | 1  | 7  | K73   | 230  |
| JUL<br>25      | 12:25                                  | 18                                    |  | 185   |   | 7.7  | 27.5                                  | 15                 | 5                        | 7   | . 5  | 95  | 2  | 4 7  | 9000  |  |
|                |  | HARI                                  | n-   |   | MAG   | NR_  |                                       | 901                | IUM                      | POTAS                                     | S- AL  | KA-   |  |  |   | СНГО-  |
| DATE           | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | NESS<br>NONCA<br>BONA<br>(MG,         | B,<br>AR-<br>FR<br>/L                      | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA)      | SI  | UM, SOI<br>S- DI<br>VED SOI<br>/L (I             | DIUM,<br>IS-<br>LVED<br>MG/L<br>S NA) | SOR                | D-<br>P-<br>ON           | SIUN<br>DIS-<br>SOLVI<br>(MG/I            | H, LIN<br>FI<br>RD (M                                | ITY<br>BLD<br>G/L                                 | SULFID<br>TOTAL<br>(MG/L<br>AS S)                    | B DIS  | I/L   | RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)                         |
| OCT 1984       |  |                                       |  |   |   |  |                                       |                    |                          |   |  |   |  |  |   |  |
| 29<br>FEB 1985 | 64                                     |                                       | 2  | 17  | 5   | . 2  | 8.9                                   |                    | 0.5                      | 1.6                                       | 3  | 62  |  |  | 2   | 9.1  |
| 06             | 79                                     |                                       | 1  | 21  | 6   | . 4  | 10                                    |                    | 0.5                      | 1.7                                       | 7  | 78  | <0.  | 5  | 2   | 11   |
| 02             |  |                                       |  |   |   |  |                                       |                    |                          |   |  | 75  |  |  |   |  |
| JUN<br>04      | 46                                     |                                       | 5  | 12  | 3   | .8   | 6.9                                   |                    | 0.5                      | 1.6                                       | 3  | 41  | <0.  | 5  | 7.8   | 7.4  |
| JUL<br>25      |  |                                       |  |   |   |  |                                       |                    |                          |   |  | 64  |  |  |   | 45   |
| DAT            | R1<br>1<br>80<br>8 (N                  | LUO-<br>IDE,<br>DIS-<br>DLVED<br>IG/L | SILIC<br>DIS-<br>SOLI<br>(MG,<br>AS<br>SIO | CA, SUI<br>- COI<br>VED TUI<br>/L I               | LIDS,<br>M OF<br>NSTI-<br>ENTS,<br>DIS-<br>DLVED<br>MG/L) | SOLIDS<br>DIS-<br>SOLVEI<br>(TONS<br>PER<br>DAY) | AT<br>DEG<br>SU<br>PEN                | . c,<br>s-         | GI<br>NITI<br>TO:<br>(MC | TRO-<br>BN,<br>RATE N<br>TAL<br>G/L<br>N) | NITRO-<br>GEN,<br>NITRITE<br>TOTAL<br>(MG/L<br>AS N) | NO2<br>TO   | EN,<br>+NO3 A<br>TAL<br>G/L                          | NITRO-<br>GEN,<br>MMONIA<br>TOTAL<br>(MG/L<br>AS N)  | ORGA<br>TOT                                   | AL<br>I/L  |
| OCT 198-       |  | 0.1                                   | 15   | 9   | 110   | 50   |                                       | <1                 |                          |   | <0.01  | 0   | .70  | 0.07   |   | .53  |
| FRB 198        | 5                                      | 0.1                                   | 2  |   | 130   | 9.9  |                                       | 4                  |                          | _   | <0.01  |   |  | <0.01  | -   |  |
| APR<br>02      |  | _                                     |  |   |   |  |                                       | 1                  |                          |   | <0.01  |   |  | <0.01  |   |  |
| JUN 04         |  | 0.1                                   | 14   | 4   | 78  | 3.7  |                                       | 54                 |                          | .66                                       | 0.04   |   | .70  | 0.13   |   | .1   |
| JUL            |  | 0.1                                   |  | •   | 10  | 3.1  |                                       |                    | 0.                       | .00                                       |  |   |  |  |   |  |
| 25             |  | _                                     |  |   |   |  |                                       | 3                  |                          | •   | <0.01  | 0   | . 40   | 0.03   |   | .37  |
| DATI           | GEN<br>MON<br>ORG<br>TO                | TRO-<br>,AM-<br>IIA +<br>ANIC<br>TAL  | NITE<br>GEN<br>TOTA<br>(MG,                | AL TO   | TRO-<br>GEN,<br>OTAL                                      | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L               | TO                                    | BNIC<br>TAL<br>G/L | REC<br>BRA<br>(UC        | COV-<br>ABLE<br>D/L                       | BORON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L         | TO'REC  | MIUM I<br>FAL COV- I<br>ABLE I                       | CHRO-<br>MIUM,<br>FOTAL<br>RECOV-<br>ERABLE<br>(UG/L | ERA<br>(UC                                    | AL<br>BLK  |
|                |  | N)                                    | AS N                                       | AS  | NO3)  | AS P)  | AS                                    | AS)                | AS                       | BA)                                       | AS B)  | AS  | CD)  | AS CR)   | AS  | CU)  |
| OCT 1984<br>29 | 1                                      | 0.6                                   | 1.   | . 3   | 5.8   | 0.05   | _                                     | _                  |                          |   |  | -   |  |  |   |  |
| FEB 1985       | 5                                      | 0.3                                   | 0.   |   | 4.0   | 0.04   |                                       | <1                 |                          | (100                                      | 20   |   | <1   | <1   |   | 10   |
| APR 02         |  | 0.6                                   | 0.   |   | 4.0   | <0.01  | _                                     | _                  |                          |   | 1  |   |  |  |   |  |
| JUN            |  |                                       |  |   |   |  | -                                     | ,.                 |                          | 100                                       | 20   |   |  | 20   | - 15  | 50   |
| JUL_           |  | 1.2                                   | 1.   |   | 8.4   | 0.14   |                                       | <1                 |                          | 100                                       | 30   |   | 1  | 28   |   | 50   |
| 25             |  | 0.4                                   | 0.   | . 8   | 3.5   | 0.02   |                                       | -                  |                          |   |  | -   | -  |  |   |  |

RIO GRANDE DE ARECIBO BASIN 50027250 RIO GRANDE DE ARECIBO BELOW LAGO DOS BOCAS NEAR FLORIDA, PR--Continued WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELK-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| OCT 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 29<br>FEB 1985 |   | -   |   |   |  |   |   |                                     |                            |  |
| 06             | 150   | 2   | 70  | <0.1  | <1   | <1  | 10  | (0.01                               | 1                          | 0.04   |
| APR            |   |   |   |   |  |   |   |                                     |                            |  |
| 02             |   |   |   | <0.1  |  |   |   |                                     |                            |  |
| JUN            |   |   |   |   |  |   |   |                                     |                            |  |
| 04             | 12000   | 5   | 240   | <0.1  | <1   | <1  | 60  | <0.01                               | 5                          | <0.01  |
| JUL            |   |   |   |   |  |   |   |                                     |                            |  |
| 25             |   |   |   |   |  |   |   |                                     |                            |  |

#### 50027750 RIO GRANDE DE ARECIBO ABOVE ARECIBO, PR

LOCATION.--Lat 18°25'29", long 66°41'44", Hydrologic Unit 21010002, 0.8 mi (1.3 km) upstream from Rio Tanama, 4.0 mi (6.4 km) south of Arecibo and 6.7 mi (10.8 km) above mouth, and 10.2 mi (16.4 km) downstream from Lago Dos Bocas.

DRAINAGE AREA. -- 200 sq mi (520 sq km), approximately, of which an undetermined amount does not contribute directly to surface runoff.

#### WATER-DISCHARGE RECORDS

PERIOD OF RECORD .-- April 1982 to current year.

GAGE .-- water-stage recorder. Elevation of gage is 30 ft (9 m), from topographic map.

REMARKS.--Estimated daily discharges: May 18 to July 16. Records fair, except those for estimated daily discharges, which are poor. Flow regulated by Lago Dos Bocas Dam 10.2 mi (16.4 km) upstream.

EXTREMES FOR PERIOD OF RECORD. --Maximum discharge, 45,800 cu ft/s (1,300 cu m/s), May 18, 1985, gage height, 18.22 ft (5.553 m), from floodmark, from rating curve extended above 2,400 cu ft/s (68.0 cu m/s) on basis of slope-area measurement of peak flow; minimum discharge, 37 cu ft/s (1.05 cu m/s), May 15, 1984.

EXTREMES FOR CURRENT YEAR .-- Peak discharges greater than base discharge of 4,300 cu ft/s (122 cu m/s) and maximum (\*):

|        |      | Disch     | arge     | Gage h | eight |        |      | Disch     | arge     | Gage h | eight |
|--------|------|-----------|----------|--------|-------|--------|------|-----------|----------|--------|-------|
| Date   | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   | Date   | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   |
| May 17 | 1100 | 4,590     | 130      | 9.79   | 2.984 | May 18 | 1700 | *45,800   | 1,300    | *18.22 | 5.553 |

DISCHARGE IN CURTO PEUT DED SECOND WATER VEAD OCTORED 1984 TO SEPTEMBER 1986

Minimum discharge, 39 cu ft/s (1.10 cu m/s), Aug. 23, 24, 29, 30.

|        |       | DISC  | HARGE, | N CUBI | C FEE | r PER | SECOND, |       | YEAR | OCTO | BER 1 | 984  | ro si | RPTEMBE | R 1985 |                  |        |
|--------|-------|-------|--------|--------|-------|-------|---------|-------|------|------|-------|------|-------|---------|--------|------------------|--------|
| 200    |       | . 11. |        | 32     | 2012  |       |         |       |      |      |       |      |       |         |        | -                |        |
| DAY    | oct   | NO.   | v 1    | EC     | JAN   |       | FEB     | MAR   |      | APR  | M.    | AY   |       | UN      | JUL    | AUG              | SEP    |
| 1      | 630   |       |        | 83     | 657   |       | 60      | 342   |      | 394  |       | 28   |       | 000     | 180    | 53               | 159    |
| 2      | 631   |       |        | 79     | 284   |       | 56      | 429   |      | 473  |       | 93   |       | 390     | 110    | 116              | 220    |
| 3      | 780   |       |        | 144    | 67    |       | 67      | 201   |      | 450  |       | 47   |       | 140     | 270    | 130              | 241    |
| 4      | 757   |       |        | 81     | 568   |       | 189     | 317   |      | 244  |       | 93   |       | 10      | 160    | 56               | 365    |
| 5      | 938   | 165   | 0 7    | 86     | 162   |       | 114     | 124   |      | 322  | 2     | 27   | 1     | 00      | 140    | 47               | 113    |
| 6      | 1190  |       |        | 10     | 322   |       | 129     | 206   |      | 368  |       | 43   |       | 60      | 140    | 400              | 49     |
| 7      | 1340  |       |        | .09    | 244   |       | 152     | 160   |      | 130  | 1:    | 29   |       | 60      | 120    | 85               | 273    |
| 8      | 830   | 182   | ) 2    | 72     | 699   |       | 162     | 340   |      | 563  | 1     | 40   | 7     | 20      | 110    | 219              | 377    |
| 9      | 1340  | 199   | 0      | 90     | 636   |       | 471     | 161   |      | 686  |       | 86   | 6     | 60      | 169    | 290              | 480    |
| 10     | 1040  | 182   | ) 4    | 99     | 293   |       | 206     | 194   |      | 741  |       | 80   | 7     | 00      | 431    | 150              | 216    |
| 11     | 935   | 171   | ) 2    | 00     | 66    |       | 213     | 277   |      | 681  | 10    | 04   | 4     | 50      | 498    | 65               | 323    |
| 12     | 1320  |       |        | 78     | 72    |       | 409     | 390   |      | 513  |       | 73   |       | 00      | 311    | 351              | 342    |
| 13     | 1260  |       |        | 41     | 65    |       | 677     | 650   |      | 94   |       | 20   |       | 00      | 89     | 395              | 519    |
| 14     | 199   |       |        | 00     | 628   |       | 676     | 355   |      | 204  |       | 94   |       | 20      | 79     | 471              | 201    |
| 15     | 393   |       |        | 90     | 290   |       | 235     | 479   |      | 663  |       | 03   |       | 60      | 430    | 418              | 287    |
| 16     | 436   | 97    | . 2    | 37     | 205   |       | 69      | 87    |      | 256  | 91    | 67   | 1     | 10      | 453    | 434              | 541    |
| 17     | 798   |       |        | 62     | 174   |       | 52      | 79    |      | 657  | 26    |      |       | 30      | 131    | 94               | 113    |
| 18     | 323   |       |        | 18     | 83    |       | 50      | 357   |      | 685  | 148   |      |       | 80      | 98     | 51               | 664    |
| 19     | 371   |       |        | 74     | 105   |       | 50      | 511   |      | 743  | 78    |      |       | 90      | 172    | 300              | 693    |
| 20     | 1630  |       |        | 22     | 57    |       | 242     | 560   |      | 659  | 23    |      |       | 80      | 742    | 75               | 631    |
|        |       |       |        |        |       |       |         |       |      |      |       |      |       |         |        | and the state of |        |
| 21     | 1820  |       |        | 23     | 69    |       | 377     | 653   |      | 178  | 140   |      |       | 50      | 237    | 50               | 291    |
| 22     | 1140  |       |        | 69     | 167   |       | 76      | 438   |      | 751  | 140   |      |       | 20      | 368    | 70               | 1460   |
| 23     | 1480  |       |        | 73     | 615   |       | 237     | 66    |      | 719  | 280   |      |       | 10      | 107    | 40               | 1150   |
| 24     | 1560  |       |        | 82     | 537   |       | 99      | 284   |      | 420  | 200   |      |       | 50      | 60     | 46               | 517    |
| 25     | 987   | 8:    | 3 1    | 90     | 86    |       | 283     | 647   |      | 831  | 70    | 00   | 6     | 60      | 52     | 147              | 110    |
| 26     | 782   |       |        | 76     | 54    |       | 73      | 600   |      | 576  | 150   |      |       | 30      | 411    | 44               | 471    |
| 27     | 212   |       |        | 00     | 57    |       | 178     | 563   |      | 96   | 120   |      |       | 50      | 368    | 74               | 598    |
| 28     | 158   |       |        | 00     | 71    |       | 413     | 375   |      | 312  | 100   |      |       | 20      | 250    | 111              | 550    |
| 29     | 647   |       |        | 90     | 50    |       |         | 515   |      | 533  | 170   |      |       | 10      | 875    | 41               | 534    |
| 30     | 753   |       |        | 00     | 48    |       |         | 330   |      | 925  | 150   |      | 1     | 70      | 569    | 281              | 747    |
| 31     | 1010  |       | - 1    | 38     | 179   |       |         | 199   |      |      | 160   | 00   | -     |         | 96     | 784              |        |
| TOTAL  | 27690 |       | 115    | 16     | 7610  | (     | 6015    | 10889 | 15   | 867  | 507   | 55   | 148   | 30      | 8226   | 5888             | 13235  |
| MBAN   | 893   |       |        | 71     | 245   |       | 215     | 351   |      | 529  | 163   | 37   |       | 94      | 265    | 190              | 441    |
| MAX    | 1820  |       | 8 (    | 44     | 699   |       | 677     | 653   | 1    | 420  | 1480  | 00   | 40    | 00      | 875    | 784              | 1460   |
| MIN    | 158   |       |        | 69     | 48    |       | 50      | 66    |      | 94   | 1     | 36   |       | 00      | 52     | 40               | 49     |
| CFSM   | 4.46  | 5.29  | 1.     | 85     | 1.22  | 1     | 1.07    | 1.75  | 2    | . 64 | 8.    | 18   |       | 47      | 1.32   | .95              | 2.20   |
| IN.    | 5.15  | 5.91  |        | 14     | 1.42  |       | 1.12    | 2.03  | 2    | . 95 | 9.    |      | 2.    | 76      | 1.53   | 1.10             | 2.46   |
| AC-FT  | 54920 | 62980 | 228    | 40     | 5090  | 11    | 1930    | 21600 | 31   | 470  | 10070 | 00   | 294   | 20      | 16320  | 11680            | 26250  |
| CAL YR |       | TOTAL | 166235 | MEA    | AN    | 454   | MAX     | 2810  | MIN  | 37   | CF    |      | .27   | IN.     | 30.92  | AC-FT            | 329700 |
| WTR YR | 1985  | TOTAL | 204274 | MEA    | AN    | 560   | MAX 1   | 4800  | MIN  | 40   | CFS   | BM 2 | .80   | IN.     | 37.99  | AC-FT            | 405200 |

## RIO GRANDE DE ARECIBO BASIN

## 50027750 RIO GRANDE DE ARECIBO ABOVE ARECIBO, PR--Continued

## WATER QUALITY RECORDS

PERIOD OF RECORD .-- WATER YEARS APRIL 1982 TO CURRENT YEAR

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE   | TIME   | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|--------|--------|---------------------------------------|--------------------------------------|-----------------------------|------|------|---------------------------------------|--------------------------------------|-----------------------------|
| SEP, 1 | 7 1108 | 67                                    | 249                                  | 27.0                        |      |      |                                       |                                      |                             |

#### 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. Elevation of gage is 938.32 ft (286 m) above mean sea level. Datum of gage was lowered 3.00 ft (0.914 m) on Oct. 1978. Prior to Nov. 17, 1966, non-recording gage and Nov. 17, 1966 to Sept. 30, 1978 recording gage, both at present site.

REMARKS .-- No estimated daily discharges during water year. Records fair.

AVERAGE DISCHARGE.--25 years (1961-85), 48.3 cu ft/s (1.368 cu m/s), 35.65 in/yr (906 mm/yr), 34,990 acre-ft/yr (43.1 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, 12,190 cu ft/s (345 cu m/s), May 18, 1985, gage height, 17.45 ft (5.319 m) new datum in use, from floodmark and recorder, 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.

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

Discharge Gage height
Date Time (cu ft/s) (cu m/s) (ft) (m)

May 18 1030 \*12,200 346 \*17.45 5.319

Minimum discharge, 16 cu ft/s (0.453 cu m/s), Apr. 20, 21.

|          |           | DISCHARGE  | , IN CUB | IC FEET P | ER SECOND, |          | YEAR OC | TOBER 1984 | то зврт | EMBER 1 | 985            |         |
|----------|-----------|------------|----------|-----------|------------|----------|---------|------------|---------|---------|----------------|---------|
| DAY      | ост       | NOV        | DEC      | JAN       | FRB        | MAR      | APR     | MAY        | JUN     | JI      | UL AUG         | SEP     |
| 1        | 103       | 63         | 46       | 34        | 27         | 23       | 24      | 23         | 51      |         | 39 40          | 30      |
| 2        | 71        | 64         | 49       | 34        | 25         | 22       | 22      | 48         | 50      |         | 36 27          | 30      |
| 3        | 64        | 216        | 47       | 33        | 25         | 29       | 21      | 76         | 53      | - 4     | 27 23          | 26      |
| 4        | 60        | 109        | 44       | 32        | 25         | 31       | 21      | 40         | 62      |         | 25 55          | 25      |
| 5        | 155       | 91         | 43       | 32        | 25         | 22       | 20      | 32         | 49      |         | 25 26          | 25      |
| 6        | 72        | 74         | 43       | 35        | 24         | 23       | 20      | 37         | 48      |         | 25 78          | 62      |
| 7        | 58        | 194        | 42       | 32        | 23         | 23       | 20      | 35         | 61      |         | 25 43          | 94      |
| 8        | 51        | 157        | 42       | 30        | 24         | 25       | 19      | 29         | 41      |         | 30 32          | 59      |
| 9        | 51        | 149        | 42       | 30        | 23         | 24       | 34      | 27         | 41      |         | 27 27          | 35      |
| 10       | 48        | 109        | 55       | 30        | 23         | 51       | 71      | 27         | 41      |         | 29 31          | 29      |
| 11       | 45        | 101        | 45       | 30        | 25         | 33       | 29      | 45         | 69      |         | 40 34          |         |
| 12       | 44        | 87         | 42       | 29        | 23         | 29       | 24      | 35         | 43      |         | 30 26          | 30      |
| 13       | 43        | 78         | 39       | 28        | 23         | 21       | 21      | 28         | 35      |         | 25 31          | 34      |
| 14       | 41        | 97         | 38       | 27        | 24         | 21       | 20      |            | 34      |         | 23 100         | 40      |
| 15       | 48        | 86         | 39       | 28        | 24         | 19       | 19      | 71         | 33      |         | 35 46          | 32      |
| 16       | 47        | 74         | 49       | 27        | 23         | 19       | 18      | 98         | 39      |         | 33 41          | 28      |
| 17       | 47        | 71         | 57       | 27        | 21         | 18       | 17      | 223        | 54      |         | 42 31          | 174     |
| 18       | 116       | 66         | 43       | 26        | 21         | 19       | 18      | 1890       | 116     |         | 89 25          | 144     |
| 19       | 73        | 63         | 41       | 26        | 21         | 18       | 18      | 254        | 58      |         | 39 23          | 77      |
| 20       | 57        | 61         | 39       | 25        | 21         | 40       | 17      | 167        | 62      |         | 28 25          | 62      |
| 21       | 52        | 59         | 36       | 25        | 21         | 50       | 51      | 126        | 48      |         | 26 27          | 62      |
| 22       | 46        | 57         | 37       | 25        | 21         | 38       | 132     | 105        | 46      |         | 24 27          | 56      |
| 23       | 44        | 55         | 35       | 25        | 22         | 26       | 71      |            | 61      |         | 31 27          | 84      |
| 24       | 42        | 54         | 60       | 24        | 26         | 29       | 41      | 85         | 39      |         | 24 27          | 105     |
| 25       | 40        | 58         | 36       | 24        | 22         | 21       | 57      | 74         | 41      |         | 23 84          | 67      |
| 26       | 39        | 62         | 36       | 24        | 23         | 20       | 41      | 66         | 32      |         | 23 40          | 49      |
| 27       | 38        | 53         | 43       | 24        | 23         | 40       | 30      | 61         | 29      |         | 33 45          | 43      |
| 28       | 44        | 51         | 38       | 24        | 22         | 40       | 27      | 58         | 27      |         | 28 30          | 40      |
| 29       | 42        | 49         | 35       | 24        |            | 56       | 25      | 57         | 27      |         | 41 27          | 37      |
| 30<br>31 | 84<br>107 | 47         | 36<br>37 | 25<br>25  |            | 41<br>28 | 24      | 54<br>53   | 27      |         | 26 79<br>24 46 | 36      |
| TOTAL    | 1872      | 2555       | 1314     | 864       | 650        | 899      | 972     | 4042       | 1417    | 0.      | 75 1223        | 1642    |
| MBAN     | 60.4      | 85.2       | 42.4     | 27.9      | 23.2       | 29.0     | 32.4    | 130        | 47.2    |         |                | 54.7    |
| MAX      | 155       | 216        | 60       | 35        | 27         | 56       | 132     | 1890       | 116     |         | 89 100         | 174     |
| MIN      | 38        | 47         | 35       | 24        | 21         | 18       | 17      | 23         | 27      |         | 23 23          | 25      |
| CFSM     | 3.28      | 4.63       | 2.30     | 1.52      | 1.26       | 1.58     | 1.76    | 7.07       | 2.57    |         |                | 2.97    |
| IN.      | 3.78      | 5.17       | 2.66     | 1.75      | 1.31       | 1.82     | 1.97    | 8.17       | 2.86    |         |                | 3.32    |
| AC-FT    | 3710      | 5070       | 2610     | 1710      | 1290       | 1780     | 1930    | 8020       | 2810    |         |                | 3260    |
| CAL YR   | 1984 1    | OTAL 16825 | з м      | KAN 46.   | MAX 0      | 260      | MIN     | 6.5 CFSM   | 2.50    | IN. 34  | 4.02 AC-F      | r 33370 |
| WTR YR   |           | OTAL 184   |          | BAN 50.   |            | 1890     | MIN     |            | 2.74    |         | 7.25 AC-F      |         |

### 50028000 RIO TANAMA NEAR UTUADO, PR--Continued

#### WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD . --

SUSPENDED SEDIMENT DISCHARGE: January 1968 to current year.

REMARKS.--Sediment samples were collected by a local observer on a weekly basis and during high flow events. Estimates for period of missing daily record were made from a sediment transport curve developed from a period of record over 5 years.

EXTREMES FOR PERIOD OF DAILY RECORD . --

SEDIMENT CONCENTRATIONS: Maximum daily mean, 20,400 mg/L November 27, 1968; minimum daily mean, 0 mg/L during water year 1985.
SEDIMENT LOADS: Maximum daily, 167,000 tons (152,000 tonnes) May 18, 1985, minimum daily, 0.0 ton (0.0 tonne) during many years.

EXTREMES FOR CURRENT YEAR.-SEDIMENT CONCENTRATIONS: Maximum daily mean, 11,200 mg/L May 18, 1985; minimum daily mean, 1.0 mg/L several days during water year 1985.
SEDIMENT LOADS: Maximum daily, 167,000 tons (152,000 tonnes) May 18, 1985; minimum daily, 0.05 ton (0.04 tonne) several days during water year 1985.

WATER-QUALITY DATA, WATER YEARS OCTOBER 1984 TO SEPTEMBER 1985

| DATE       |      | TIME                                 | STRE<br>FLO<br>INST<br>TANE<br>(CF       | W,<br>AN-<br>OUS      | SPR-<br>CIFI<br>CON-<br>DUCT<br>ANCE<br>(US/C | C PI<br>- (STA  | AND-                                  | TEME<br>ATU                | JRE   |                 |                          | 301      | SEN,<br>IS-<br>LVED<br>B/L) | SO (P                             | GEN,<br>IS-<br>LVED<br>ER-<br>ENT<br>TUR-<br>ION) | OXYC<br>DEMA<br>CHE<br>ICA<br>(HI<br>LEVE<br>(MG/ | MD,<br>M-<br>L<br>GH<br>KL) | COL<br>FOR<br>FBC<br>0.7<br>UM-<br>(COL<br>100 | MF             | STREP<br>TOCOCC<br>FECAL<br>KF AGA<br>(COLS.<br>PER<br>100 ML | I<br>R |
|------------|------|--------------------------------------|--|-----------------------|---|---|---------------------------------------|----------------------------|---|-----------------|--------------------------|----------|-----------------------------|-----------------------------------|---|---|-----------------------------|--|----------------|---|--------|
| NOV 1984   |      |                                      |  |                       |   |   |                                       |                            |   |                 |                          |          |                             |                                   |   |   |                             |  |                |   |        |
| 01         | 1    | 0:00                                 | 61                                       |                       | 1   | 63  | 8.0                                   | ,                          | 20.5  | 34              |                          |          | 8.6                         |                                   | 99  |   | 17                          | 4  | 200            | K10000  | 0      |
| FBB 1985   |      |                                      | 100                                      |                       |   |   |                                       |                            |   |                 |                          |          |                             |                                   |   |   |                             |  |                |   | ٠.     |
| 05         | 1    | 6:30                                 | 25                                       |                       | 1   | 65  | 8.6                                   | 2                          | 22.0  | - 1             | . 5                      |          | 8.9                         |                                   | 105   |   | <10                         | K  | 180            | 22  | 0      |
| MAR        |      |                                      |  |                       |   |   |                                       |                            |   |                 |                          |          |                             |                                   |   |   |                             |  |                |   |        |
| 13         | 1    | 6:15                                 | 21                                       |                       | 1   | 63  | 7.6                                   | 2                          | 22.0  | 1               | .5                       |          | 8.2                         |                                   | 97  |   | 59                          |  | 380            | 47  | )      |
| MAY        |      |                                      |  |                       |   |   |                                       |                            |   |                 |                          |          |                             |                                   |   |   |                             |  |                |   |        |
| 15<br>AUG  |      | 5:25                                 | 27                                       |                       | ,   | 73  | 7.9                                   | 2                          | 25.0  | (               | .9                       |          | 8.2                         |                                   | 103   |   | 20                          | K  | 140            | 22  | ,      |
| 02         |      | 9:40                                 | 27                                       |                       | 1   | 77  | 7.0                                   | 2                          | 3.5   | 51              |                          |          | 7.9                         |                                   | 95  |   | (10                         | 4  | 900            | 270   | 0      |
|            |      |                                      | -  |                       |   |   |                                       |                            |   |                 |                          |          |                             |                                   | ••  |   |                             |  |                |   |        |
| DATE       | N (  | IARD-<br>IESS<br>MG/L<br>AS<br>ACO3) | HAR<br>NES<br>NONC<br>BONA<br>(MG<br>CAC | S,<br>AR-<br>TE<br>/L | CALCI<br>DIS-<br>SOLV<br>(MG/<br>AS C         | ED SOIL (MC   | NE-<br>UM,<br>S-<br>VED<br>I/L<br>MG) | SODI<br>DIS<br>SOLV<br>(MG | RD  | SOF             | ON                       | DI       |                             | LIN:<br>FII<br>(MC                | I/L   | SULF<br>TOT<br>(MG                                | AL<br>/L                    | SULF<br>DIS<br>SOL<br>(MG                      | -<br>VED<br>/L | CHLO-<br>RIDE,<br>DIS-<br>SOLVEI<br>(MG/L<br>AS CL            |        |
| NOV 1984   |      |                                      |  |                       |   |   |                                       |                            |   |                 |                          |          |                             |                                   |   |   |                             |  |                |   |        |
| 01         |      | 58                                   |  | 3                     | 15  |   | . 1                                   | 7                          | .6  |                 | 0.4                      | 1        | .7                          |                                   | 55  |   |                             | 1  | 1              | 7.6   |        |
| FRB 1985   |      | 36                                   |  | 3                     | 15  |   |                                       | - 1                        | . 0   |                 | 0.4                      |          |                             |                                   | 33  |   |                             |  |                | 1.0   |        |
| 05         |      | 62                                   |  |                       | 15  |   | . 9                                   | 8                          | . 4   |                 | 0.5                      | 1        | . 6                         |                                   | 62  | <   | 0.5                         | 1  | 2              | 7.9   |        |
| MAR        |      |                                      |  |                       |   |   |                                       |                            |   |                 |                          |          |                             |                                   |   |   |                             |  |                |   |        |
| 13         |      |                                      |  |                       |   |   |                                       |                            |   |                 |                          |          |                             |                                   | 57  |   |                             |  |                |   |        |
| MAY        |      |                                      |  |                       |   |   |                                       | _                          | 3.  |                 | 2016                     |          |                             |                                   |   |   | 2 2                         |  |                |   |        |
| 15         |      | 66                                   |  | 4                     | 17  |   | . 6                                   | 8                          | .0  |                 | 0.4                      | 1        | . 5                         |                                   | 62  | <   | 0.5                         | 1  | 4              | 7.8   |        |
| AUG<br>02  |      |                                      |  |                       |   |   |                                       |                            |   |                 |                          |          |                             |                                   | 100   |   |                             |  |                |   |        |
| 02         |      |                                      |  |                       | -   | -   |                                       | 7                          |   |                 |                          |          |                             |                                   | 100   | -   |                             |  |                |   |        |
| D          | DATE | R<br>S<br>(                          | LUO-<br>IDE,<br>DIS-<br>OLVED<br>MG/L    | SO<br>(M              | ICA,<br>S-<br>LVRD<br>G/L<br>S                | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED | 80<br>(T                              | IDS,<br>IS-<br>LVRD<br>ONS | SOLI<br>RESI<br>AT 1<br>DEG.<br>SUS<br>PEND | DUR<br>05<br>C, | GE<br>NITE<br>TOT<br>(MG | AL<br>/L | NIT<br>TO<br>(M             | TRO-<br>BN,<br>RITE<br>TAL<br>G/L | NO2<br>TO<br>(M                                   | TRO-<br>RN,<br>+NO3<br>TAL<br>G/L                 | AMMO<br>TO'                 | TRO-<br>BN,<br>ONIA<br>TAL<br>G/L              | ORGA<br>TO:    | TRO-<br>RN,<br>ANIC<br>FAL                                    |        |
|            |      | A                                    | SF)                                      | SI                    | 02)   | (MG/L)  | D                                     | AY)                        | (MG   | /L)             | AS                       | N)       | AS                          | N)                                | AS  | N)  | AS                          | N)   | AS             | N)  |        |
| NOV 1      | 984  |                                      |  |                       |   |   |                                       |                            |   |                 |                          |          |                             |                                   |   |   |                             |  |                |   |        |
| 01.        |      |                                      | <0.1                                     |                       | 22  | 100   | 1                                     | 7                          | 3   | 5               |                          |          | (0                          | .01                               | 0   | .80   | (0                          | .01  |                |   |        |
| FEB 1      |      |                                      | ,  |                       | -   | 100   | •                                     |                            |   |                 |                          |          |                             |                                   |   | .00   |                             |  |                |   |        |
| 05.        |      |                                      | <0.1                                     |                       | 25  | 110   |                                       | 7.6                        |   | 5               |                          |          | <0                          | .01                               | 0   | .50   | <0                          | .01  |                |   |        |
| MAR        |      |                                      |  |                       |   |   |                                       |                            |   |                 |                          |          |                             |                                   |   |   |                             |  |                |   |        |
| 13.<br>MAY |      |                                      |  | -                     | -   |   | -                                     | -                          | 1   | 5               | 0.                       | 67       | 0                           | .03                               | 0   | .70   | 0                           | .06  | (              | 0.54  |        |
| MAY<br>15. |      |                                      | <0.1                                     |                       | 24  | 120   |                                       | 8.3                        |   | 6               |                          |          | <0                          | .01                               | 0   | . 50  | 0                           | .03  | (              | 0.07  |        |
| 02.        |      |                                      |  |                       | _   |   | _                                     | _                          | 3   | 8               |                          |          | (n                          | .01                               | 0   | .70   | 0                           | .09  |                | 0.21  |        |
| 34.        | -    |                                      |  |                       |   |   |                                       |                            |   | -               | -                        |          |                             |                                   |   |   | •                           |  |                |   |        |

RIO GRANDE DE ARECIBO BASIN

# 50028000 RIO TANAMA NEAR UTUADO, PR--Continued

## WATER-QUALITY DATA, WATER YEARS OCTOBER 1984 TO SEPTEMBER 1985

| BRABLE BRABLE BRABLE BRABLE TOTAL BRABLE BRABLE (UG/L (UG/L)))))))))))))))))))))))))))))))  ********               | CYANIDE TOTAL PHENOLS (MG/L TOTAL AS CN) (UG/L)  (0.01 1                                | METHY-<br>LENE<br>BLUB<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|--|---|--|
| PEB 1985 05 0.6 1.1 4.9 0.03 <1 <100 <20  MAR 13 0.6 1.3 5.8 0.01  MAY 15 0.1 0.6 2.7 0.02 <1 <100 <20  AUG 02 0.3 1.0 4.4 0.05  IRON, LEAD, NESE, MERCURY SILVER, ZINC, TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL RECOV- RECOV- RECOV- NIUM, RECOV-                                | CYANIDE TOTAL PHENOLS (MG/L TOTAL AS CN) (UG/L)   | METHY-<br>LENE<br>BLUB<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
| MAR  | CYANIDE TOTAL PHENOLS (MG/L TOTAL AS CN) (UG/L)   | METHY-<br>LENE<br>BLUB<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
| 13   0.6   | CYANIDE TOTAL PHENOLS (MG/L TOTAL AS CN) (UG/L)   | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
| 15 0.1 0.6 2.7 0.02 <1 <100 <20 AUG 02 0.3 1.0 4.4 0.05  IRON, LEAD, NESE, MERCURY TOTAL TOTAL TOTAL SELE- TOTAL TOTAL RECOV- RECOV- RECOV- RECOV- NIUM, RECOV- RECOV- ERABLE ERABLE ERABLE ERABLE TOTAL ERABLE ERABLE DATE (UG/L (U                   | CYANIDE TOTAL PHENOLS (MG/L TOTAL AS CN) (UG/L)   | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
| IRON, LEAD, NESE, MERCURY SILVER, ZINC, TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL RECOV- REC | TOTAL PHENOLS (MG/L TOTAL AS CN) (UG/L)  <0.01 1  | LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L)           |
| IRON,  | TOTAL PHENOLS (MG/L TOTAL AS CN) (UG/L)  <0.01 1  | LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L)           |
| IRON,  | TOTAL PHENOLS (MG/L TOTAL AS CN) (UG/L)  <0.01 1  | LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L)           |
| O1 FEB 1985 O5 330 1 30 <0.1 <1 <1 30 MAR 13 MAY 15 430 3 40 <0.1 <1 <1 <1 30 AUG 02 SED. SED. SED. SED. SED. SED. SED. S  | <0.01 1<br>   | 0.04   |
| FEB 1985 05 330 1 30 <0.1 <1 <1 30  MAR 13 0.2  MAY 15 430 3 40 <0.1 <1 <1 30  AUG 02  SED. SED. SED. SED. SED. SED. SED. SUSP. SUSP. SUSP. SUSP. SUSP. SUSP. SED. SED. SED. SED. SED. SED. SED. SED.  | <0.01 1<br>   | 0.04   |
| 05 330 1 30 <0.1 <1 <1 30  MAR  13 0.2  MAY  15 430 3 40 <0.1 <1 <1 30  AUG  02  SED. SED. SED. SED. SED. SED.  SUSP. SUSP. SUSP. SUSP. SUSP. SUSP.  SEDI- FALL FALL FALL FALL FALL SIEVE  | - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1   | <u> -</u>  |
| 13 0.2  MAY  15 430 3 40 <0.1 <1 <1 30  AUG  02  SED. SED. SED. SED. SED. SED.  SUSP. SUSP. SUSP. SUSP. SUSP. SUSP.  SED. SED. SED. SED. SED. SED. SED.  SUSP. SUSP. SUSP. SUSP. SUSP. SUSP.   |   |  |
| 15 430 3 40 <0.1 <1 <1 30  AUG 02  SED. SED. SED. SED. SED. SED. SED.  SUSP. SUSP. SUSP. SUSP. SUSP. SUSP.  SEDI- FALL FALL FALL FALL FALL SIEVE   | (0.01 9   | 0.00   |
| SED. SED. SED. SED. SED. SED. SED. SED.  | 10.01   | 0.02   |
| SUSP.  |   | 1.03   |
| SUSP.  |   |  |
| DATE TIME PENDED THAN THAN THAN THAN THAN THAN   | SED. SED. SUSP. SUSP. SIEVE SIEVE DIAM. DIAM. % FINER % FINER THAN THAN .125 MM .250 MM | THAN THAN  |
| OCT 1984   |   |  |
| 05 14:55 4100 12 21 32 49 70 85  | 92 98   |  |
| 05 15:10 3960 11 21 32 46 64 73  | 87 96   |  |
| 05 15:25 3660 10 18 28 46 67 78 05 16:55 4280 10 20 31 48 67 77  | 91 97<br>86 90  | 99 99<br>94 97   |
| 05 16:55 4280 10 20 31 48 67 77 31 17:30 5120 12 21 30 42 57 69  | 76 83   |  |
| 31 17:35 3120 12 21 30 42 57 69 31 17:45 3270 16 26 39 58 73 82  | 89 94   | 97 98  |
| MAY 1985   |   | ***  |
| 18 08:50 14800 4 9 13 20 27 38   | 53 79   | 93 99  |
| 18 10:00 18300 4 7 13 18 24 42   | 59 83   | 95 99  |
| 18 10:15 25600 7 13 18 24 30 51  | 67 86   |  |

WATER-QUALITY DATA, WATER YEARS OCTOBER 1984 TO SEPTEMBER 1985

| DAY      | MEAN<br>DISCHARGE<br>(CFS) | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) | MEAN<br>DISCHARGE<br>(CFS) | MBAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) | MKAN<br>DISCHARGE<br>(CFS) | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) |
|----------|----------------------------|--------------------------------------|-------------------------------------|----------------------------|--------------------------------------|-------------------------------------|----------------------------|--------------------------------------|-------------------------------------|
|          |                            | OCTOBER                              |                                     |                            | NOVEMBER                             |                                     |                            | DECEMBER                             |                                     |
| 1        | 103                        | 342                                  | 210                                 | 63                         | 113                                  | 20                                  | 46                         | 3                                    | .37                                 |
| 2        | 71                         | 133                                  | 25                                  | 64                         | 100                                  | 19                                  | 49                         | 39                                   | 6.5                                 |
| 3        | 64<br>60                   | 109                                  | 19                                  | 216                        | 832                                  | 842                                 | 47                         | 55                                   | 7.2                                 |
| 5        | 155                        | 95<br>605                            | 15<br>1080                          | 109<br>91                  | 297<br>213                           | 97<br>73                            | 44                         | 42<br>39                             | 4.5                                 |
| 6        | 72                         | 137                                  | 27                                  | 74                         | 144                                  | 29                                  | 43                         | 39                                   | 4.5                                 |
| 7        | 58                         | 89                                   | 14                                  | 194                        | 717                                  | 509                                 | 42                         | 36                                   | 4.1                                 |
| 8        | . 51<br>51                 | 64<br>38                             | 8.8<br>5.2                          | 157<br>149                 | 553<br>483                           | 302<br>222                          | 42<br>42                   | 36<br>36                             | 4.1                                 |
| 10       | 48                         | 38                                   | 4.9                                 | 109                        | 158                                  | 50                                  | 55                         | 89                                   | 22                                  |
| 11       | 45                         | 38                                   | 4.6                                 | 101                        | 74                                   | 22                                  | 45                         | 45                                   | 5.5                                 |
| 12<br>13 | 44                         | 38<br>34                             | 4.5                                 | 87<br>78                   | 5<br>5                               | 1.2                                 | 42<br>39                   | 36<br>29                             | 4.1<br>3.1                          |
| 14       | 41                         | 34                                   | 3.8                                 | 97                         | 147                                  | 48                                  | 38                         | 27                                   | 2.8                                 |
| 15       | 48                         | 58                                   | 8.6                                 | 86                         | 50                                   | 12                                  | 39                         | 29                                   | 3.1                                 |
| 16       | 47                         | 52                                   | 6.6                                 | 74                         | 17                                   | 3.4                                 | 49                         | 64                                   | 11                                  |
| 17       | 47                         | 60                                   | 11                                  | 71                         | 16                                   | 3.1                                 | 57                         | 82                                   | 13                                  |
| 18<br>19 | 116<br>73                  | 456<br>204                           | 496<br>90                           | 66<br>63                   | 16<br>16                             | 2.9                                 | 43<br>41                   | 39<br>33                             | 4.5                                 |
| 20       | 57                         | 119                                  | 22                                  | 61                         | 16                                   | 2.6                                 | 39                         | 29                                   | 3.1                                 |
| 21       | 52                         | 67                                   | 9.4                                 | 59                         | 10                                   | 1.6                                 | 36                         | 23                                   | 2.2                                 |
| 22<br>23 | 46<br>44                   | 48                                   | 6.0<br>5.0                          | 57<br>55                   | 9                                    | 1.4                                 | 37<br>35                   | 25<br>21                             | 2.5                                 |
| 24       | 42                         | 36                                   | 4.1                                 | 54                         | 8                                    | 1.2                                 | 60                         | 101                                  | 27                                  |
| 25       | 40                         | 30                                   | 3.2                                 | 58                         | 32                                   | 7.4                                 | 36                         | 23                                   | 2.2                                 |
| 26       | 39                         | 28                                   | 2.9                                 | 62                         | 112                                  | 26                                  | 36                         | 23                                   | 2.2                                 |
| 27<br>28 | 38<br>44                   | 27<br>44                             | 2.8<br>5.7                          | 53<br>51                   | 25<br>5                              | 3.6<br>.69                          | 43<br>38                   | 55<br>27                             | 7.7                                 |
| 29       | 42                         | 36                                   | 4.1                                 | 49                         | 3                                    | .40                                 | 35                         | 22                                   | 2.1                                 |
| 30       | 84                         | 240                                  | 175                                 | 47                         | 3                                    | .38                                 | 36                         | 18                                   | 1.6                                 |
| 31       | 107                        | 403                                  | 679                                 |                            |                                      |                                     | 37                         | 25                                   | 2.5                                 |
| TOTAL    | 1872                       |                                      | 2957.1                              | 2555                       |                                      | 2305.87                             | 1314                       |                                      | 171.07                              |
| DAY      | MEAN<br>DISCHARGE<br>(CFS) | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) | MEAN<br>DISCHARGE<br>(CFS) | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) | MEAN<br>DISCHARGE<br>(CFS) | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) |
|          |                            | JANUARY                              |                                     |                            | FEBRUARY                             |                                     |                            | MARCH                                |                                     |
| 1        | 34                         | 20                                   | 1.8                                 | 27                         | 11                                   | .80                                 | 23                         | 18                                   | 1.8                                 |
| 2        | 34                         | 20                                   | 1.8                                 | 25                         | 9                                    | .61                                 | 22                         | 4                                    | .24                                 |
| 3        | 33                         | 19                                   | 1.7                                 | 25                         | 9                                    | .61                                 | 29                         | 38                                   | 5.2                                 |
| 5        | 32<br>32                   | 17<br>17                             | 1.5                                 | 25<br>25                   | 9                                    | .61<br>.61                          | 31<br>22                   | 15<br>4                              | 1.3                                 |
| 6        | 35                         | 33                                   | 4.0                                 | 24                         | 9                                    | .58                                 | 23                         | 5                                    | .31                                 |
| 7        | 32                         | 17                                   | 1.5                                 | 23                         | 8                                    | .50                                 | 23                         | 5                                    | .31                                 |
| 9        | 30<br>30                   | 14                                   | 1.1                                 | 24                         | 9                                    | .58                                 | 25<br>24                   | 8                                    | . 54                                |
| 10       | 30                         | 14                                   | 1.1                                 | 23                         | 8                                    | .50                                 | 51                         | 121                                  | .39<br>58                           |
| 11       | 30                         | 14                                   | 1.1                                 | 25                         | 10                                   | .68                                 | 33                         | 75                                   | 11                                  |
| 12       | 29                         | 13                                   | 1.0                                 | 23                         | 8                                    | .50                                 | 29                         | 27                                   | 3.2                                 |
| 13<br>14 | 28<br>27                   | 12<br>11                             | .91                                 | 23<br>24                   | 8                                    | .50                                 | 21<br>21                   | 3                                    | .17                                 |
| 15       | 28                         | 12                                   | .91                                 | 24                         | 9                                    | .58                                 | 19                         | i                                    | .05                                 |
| 16       | 27                         | 11                                   | .80                                 | 23                         | 8                                    | .50                                 | 19                         | 1                                    | .05                                 |
| 17<br>18 | 27<br>26                   | 11<br>10                             | .80<br>.70                          | 21<br>21                   | 5                                    | .28                                 | 18<br>19                   | 1<br>20                              | 1.0                                 |
| 19       | 26                         | 10                                   | .70                                 | 21                         | 5                                    | .28                                 | 18                         | 1                                    | .05                                 |
| 20       | 25                         | 9                                    | .61                                 | 21                         | 5                                    | .28                                 | 40                         | 67                                   | 18                                  |
| 21       | 25                         | 18                                   | 1.2                                 | 21                         | 5                                    | .28                                 | 50                         | 111                                  | 35                                  |
| 22<br>23 | 25<br>25                   | 9                                    | .61<br>.61                          | 21<br>22                   | 5<br>7                               | .28                                 | 38<br>26                   | 45<br>16                             | 8.1                                 |
| 24       | 24                         | 8                                    | .52                                 | 26                         | 10                                   | .70                                 | 29                         | 13                                   | 1.0                                 |
| 25       | 24                         | 8                                    | .52                                 | 22                         | 12                                   | .71                                 | 21                         | 2                                    | .11                                 |
| 26<br>27 | 24<br>24                   | 8                                    | .52                                 | 23<br>23                   | 7 7                                  | .43                                 | 20<br>40                   | 1<br>55                              | .05<br>8.6                          |
| 28       | 24                         | 8                                    | .52                                 | 22                         | 4                                    | .24                                 | 40                         | 72                                   | 13                                  |
| 29       | 24                         | 8                                    | .52                                 |                            |                                      |                                     | 56                         | 98                                   | 33                                  |
| 30<br>31 | 25<br>25                   | 9                                    | .61                                 |                            |                                      |                                     | 41<br>28                   | 33<br>25                             | 3.7<br>1.9                          |
| TOTAL    | 864                        |                                      | 32.19                               | 650                        |                                      | 13.85                               | 899                        |                                      | 208.53                              |

## 50028000 RIO TANAMA NEAR UTUADO, PR--Continued

WATER-QUALITY DATA, WATER YEARS OCTOBER 1984 TO SEPTEMBER 1985

| DAY                              | MEAN<br>DISCHARGE<br>(CFS)       | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) | MEAN<br>DISCHARGE<br>(CFS)       | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY)    | MEAN<br>DISCHARGE<br>(CFS)   | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) |
|----------------------------------|----------------------------------|--------------------------------------|-------------------------------------|----------------------------------|--------------------------------------|--|------------------------------|--------------------------------------|-------------------------------------|
|                                  |                                  | APRIL                                |                                     |                                  | MAY                                  |  |                              | JUNE                                 |                                     |
| 1<br>2<br>3<br>4<br>5            | 24<br>22<br>21<br>21<br>20       | 20<br>2<br>1<br>1                    | 1.3<br>.12<br>.06<br>.06            | 23<br>48<br>76<br>40<br>32       | 5<br>124<br>229<br>56<br>33          | .3<br>50<br>213<br>9.4<br>2.9          | 51<br>50<br>53<br>62<br>49   | 6<br>6<br>6<br>111<br>35             | .83<br>.81<br>.86<br>22<br>4.6      |
| 6<br>7<br>8<br>9                 | 20<br>20<br>19<br>34<br>71       | 1<br>1<br>12<br>54<br>292            | .05<br>.05<br>.62                   | 37<br>35<br>29<br>27<br>27       | 47<br>34<br>14<br>12<br>12           | 6.9<br>4.5<br>1.1<br>.9                | 48<br>61<br>41<br>41<br>41   | 13<br>106<br>33<br>29<br>18          | 1.7<br>26<br>3.7<br>3.2<br>2.0      |
| 11<br>12<br>13<br>14<br>15       | 29<br>24<br>21<br>20<br>19       | 15<br>6<br>2<br>1<br>20              | 1.2<br>.39<br>.11<br>.05            | 45<br>35<br>28<br>26<br>71       | 96<br>22<br>12<br>10<br>281          | 38<br>2.1<br>.9<br>.7                  | 69<br>43<br>35<br>34<br>33   | 158<br>39<br>22<br>20<br>19          | 90<br>4.5<br>2.1<br>1.8<br>1.7      |
| 16<br>17<br>18<br>19<br>20       | 18<br>17<br>18<br>18             | 19<br>1<br>1<br>1                    | .92<br>.05<br>.05<br>.05            | 98<br>223<br>1890<br>254<br>167  | 343<br>1120<br>11200<br>941<br>210   | 246<br>1620<br>167000<br>716<br>95     | 39<br>54<br>116<br>58<br>62  | 20<br>21<br>366<br>98<br>172         | 2.1<br>3.1<br>308<br>18<br>74       |
| 21<br>22<br>23<br>24<br>25       | 51<br>132<br>71<br>41<br>57      | 142<br>490<br>227<br>41<br>166       | 74<br>474<br>75<br>4.2              | 126<br>105<br>92<br>85<br>74     | 120<br>75<br>38<br>25<br>35          | 41<br>21<br>9.4<br>5.7<br>7.0          | 48<br>46<br>61<br>39<br>41   | 54<br>48<br>179<br>44<br>104         | 7.0<br>6.0<br>85<br>4.7             |
| 26<br>27<br>28<br>29<br>30<br>31 | 41<br>30<br>27<br>25<br>24       | 33<br>14<br>10<br>20<br>19           | 3.7<br>1.1<br>.73<br>1.4<br>1.2     | 66<br>61<br>58<br>57<br>54<br>53 | 23<br>20<br>15<br>11<br>8<br>6       | 4.1<br>3.3<br>2.3<br>1.7<br>1.2        | 32<br>29<br>27<br>27<br>27   | 17<br>10<br>10<br>10<br>10           | 1.5<br>.73<br>.73<br>.73<br>.73     |
| TOTAL                            | 972                              |                                      | 1050.51                             | 4042                             |                                      | 170482.2                               | 1417                         |                                      | 712.12                              |
| DAY                              | MEAN<br>DISCHARGE<br>(CFS)       | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) | MEAN<br>DISCHARGE<br>(CFS)       | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY)    | MEAN<br>DISCHARGE<br>(CFS)   | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) |
|                                  |                                  | JULY                                 |                                     |                                  | AUGUST                               |  |                              | SEPTEMBER                            |                                     |
| 1<br>2<br>3<br>4<br>5            | 39<br>36<br>27<br>25<br>25       | 53<br>46<br>10<br>8<br>8             | 11<br>6.4<br>.73<br>.54             | 40<br>27<br>23<br>55<br>26       | 107<br>10<br>5<br>131<br>9           | 46<br>.73<br>.31<br>83                 | 30<br>30<br>26<br>25<br>25   | 14<br>14<br>8<br>7<br>7              | 1.1<br>1.1<br>.56<br>.47<br>.47     |
| 6<br>7<br>8<br>9                 | 25<br>25<br>30<br>27<br>29       | 8<br>8<br>27<br>12<br>18             | .54<br>.54<br>2.6<br>.98<br>2.2     | 78<br>43<br>32<br>27<br>31       | 317<br>129<br>20<br>30<br>42         | 259<br>24<br>1.8<br>2.2<br>4.6         | 62<br>94<br>59<br>35<br>29   | 186<br>383<br>153<br>22<br>13        | 94<br>437<br>43<br>2.1<br>1.0       |
| 11<br>12<br>13<br>14<br>15       | 40<br>30<br>25<br>23<br>35       | 71<br>14<br>8<br>5<br>81             | 14<br>1.1<br>.54<br>.31             | 34<br>26<br>31<br>100<br>46      | 55<br>8<br>20<br>471<br>48           | 10<br>.56<br>2.3<br>821<br>6.0         | 27<br>30<br>34<br>40<br>32   | 11<br>14<br>17<br>74<br>17           | .80<br>1.1<br>1.6<br>18<br>1.5      |
| 16<br>17<br>18<br>19<br>20       | 33<br>42<br>89<br>39<br>28       | 27<br>103<br>443<br>30<br>10         | 3.1<br>30<br>602<br>3.2<br>.76      | 41<br>31<br>25<br>23<br>25       | 33<br>16<br>8<br>6<br>8              | 3.7<br>1.3<br>.54<br>.37<br>.54        | 28<br>174<br>144<br>77<br>62 | 12<br>980<br>444<br>156<br>222       | .91<br>4520<br>382<br>39<br>125     |
| 21<br>22<br>23<br>24<br>25       | 26<br>24<br>31<br>24<br>23       | 8<br>6<br>44<br>6<br>10              | .56<br>.39<br>9.8<br>.39<br>.62     | 27<br>27<br>27<br>27<br>27<br>84 | 10<br>10<br>10<br>10<br>269          | .73<br>.73<br>.73<br>.73               | 62<br>56<br>84<br>105<br>67  | 133<br>103<br>211<br>421<br>80       | 40<br>24<br>67<br>305<br>14         |
| 26<br>27<br>28<br>29<br>30<br>31 | 23<br>33<br>28<br>41<br>26<br>24 | 10<br>43<br>17<br>99<br>9            | .62<br>10<br>1.9<br>40<br>.63       | 40<br>45<br>30<br>27<br>79<br>46 | 42<br>45<br>14<br>10<br>357<br>48    | 6.5<br>5.5<br>1.1<br>.73<br>357<br>6.0 | 49<br>43<br>40<br>37<br>36   | 30<br>11<br>3<br>1                   | 4.0<br>1.3<br>.32<br>.10            |
| TOTAL<br>YEAR                    | 975<br>18425                     |                                      | 761.38<br>86725.68                  | 1223                             |                                      | 1904.33                                | 1642                         |                                      | 6126.53                             |

### 50028400 RIO TANAMA AT CHARCO HONDO, PR

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

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

#### WATER-DISCHARGE RECORDS

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

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

REMARKS.--Estimated daily discharges: May 18-20. Records fair, except those for estimated daily discharges, which are poor. Diversion 0.8 mi (1.3 km) upstream for municipal supply of Arecibo.

AVERAGE DISCHARGE.--5 years (1970,1982-85), 97.2 cu ft/s (2.753 cu m/s), 22.92 in/yr (582 mm/yr), 70,420 acre-ft/yr (86.8 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD. -- Maximum discharge, 15,000 cu ft/s (425 cu m/s), May 18, 1985, gage height, 17.95 ft (5.471 m), from floodmark, from rating curve extended above 1,000 cu ft/s (28.3 cu m/s) on basis of step-backwater analysis; minimum discharge, 21 cu ft/s (0.595 cu m/s), Apr. 27, 1984.

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

|        |      | Disch     | arge     | Gage h | eight |
|--------|------|-----------|----------|--------|-------|
| Date   | Time | (cu ft/s) | (cu m/s) | (ft)   | (=)   |
| May 18 | 1200 | *15,000   | 425      | *17.95 | 5.471 |

Minimum discharge, 30 cu ft/s (0.850 cu m/s), Mar. 18, Apr. 7.

|                  |      | DISCH          | ARGE, IN       | CUBIC F      | EET PE | R SECOND,<br>MEAN |             | YEAR OC | товв     | R 1984       | то зврт | EMBE | R 1985         |                |                |
|------------------|------|----------------|----------------|--------------|--------|-------------------|-------------|---------|----------|--------------|---------|------|----------------|----------------|----------------|
| DAY              | oc   | T NOV          | DEC            | J            | AN     | FEB               | MAR         | APR     |          | MAY          | JUN     |      | JUL            | AUG            | SEP            |
| 1                | 10   | 8 188          | 81             |              | 67     | 44                | 35          | 43      |          | 58           | 64      |      | 55             | 60             | 62             |
| 2                | 11   | 6 132          | 80             |              | 65     | 43                | 39          | 40      |          | 86           | 63      |      | 79             | 72             | 56             |
| 3                | 8    |                |                |              | 62     | 42                | 36          | 37      |          | 224          | 61      |      | 66             | 48             | 54             |
| 4                | 7    | 8 303          |                |              | 61     | 41                | 52          | 36      |          | 186          | 71      |      | 55             | 130            | 50             |
| 5                | 31   |                |                |              | 59     | 42                | 40          | 35      |          | 100          | 82      |      | 52             | 114            | 48             |
| 6                | 43   | 6 152          | 75             |              | 59     | 42                | 41          | 34      |          | 83           | 64      |      | 51             | 95             | 63             |
| 7                | 20   | 6 399          | 73             |              | 66     | 40                | 42          | 34      |          | 103          | 74      |      | 50             | 105            | 107            |
| 8                | 12   | 7 399          | 72             |              | 59     | 41                | 44          | 37      |          | 96           | 99      |      | 50             | 85             | 121            |
| 9                | 10   | 9 403          | 71             |              | 57     | 41                | 42          | 60      |          | 69           | 72      |      | 60             | 61             | 75             |
| 10               | 10   | 5 256          | 77             |              | 59     | 41                | 44          | 224     |          | 64           | 72      |      | 63             | 52             | 58             |
| 11               | 9    | 4 219          |                |              | 58     | 42                | 70          | 219     |          | 60           | 86      |      | 86             | 67             | 53             |
| 12               | 10   | 2 184          | 75             |              | 55     | 41                | 48          | 100     |          | 85           | 118     |      | 104            | 71             | 51             |
| 13               | 13   | 8 161          | 69             |              | 53     | 41                | 37          | 56      |          | 68           | 67      |      | 64             | 73             | 63             |
| 14               | 9    |                |                |              | 53     | 41                | 38          | 46      |          | 60           | 57      |      | 50             | 120            | 59             |
| 15               | 13   | 0 183          | 67             |              | 54     | 43                | 35          | 44      |          | 60           | 54      |      | 58             | 94             | 67             |
| 16               | 16   |                |                |              | 52     | 41                | 34          | 40      |          | 240          | 52      |      | 89             | 61             | 52             |
| 17               | 13:  |                |                |              | 51     | 39                | 34          | 39      |          | 291          | 52      |      | 153            | 54             | 150            |
| 18               | 21   | 3 130          | 82             |              | 50     | 38                | 34          | 38      |          | 2460         | 141     |      | 192            | 51             | 187            |
| 19               | 19   | 8 121          | 72             |              | 49     | 38                | 35          | 42      |          | 720          | 220     |      | 182            | 47             | 122            |
| 20               | 22   | 4 115          | 72             |              | 47     | 38                | 45          | 37      |          | 380          | 123     |      | 88             | 45             | 91             |
| 21               | 27   |                |                |              | 47     | 38                | 94          | 81      |          | 205          | 127     |      | 67             | 46             | 81             |
| 22               | 15   |                |                |              | 46     | 38                | 73          | 313     |          | 151          | 90      |      | 58             | 50             | 118            |
| 23               | 11'  |                |                |              | 46     | 38                | 44          | 384     |          | 123          | 85      |      | 62             | 46             | 119            |
| 24               | 10   |                |                |              | 46     | 44                | 48          | 224     |          | 111          | 103     |      | 69             | 43             | 146            |
| 25               | 9    | 1 96           | 74             |              | 45     | 39                | 38          | 132     |          | 100          | 101     |      | 52             | 75             | 124            |
| 26               | 86   |                |                |              | 44     | 40                | 36          | 114     |          | 91           | 81      |      | 49             | 98             | 83             |
| 27               | 8    |                |                |              | 44     | 38                | 50          | 80      |          | 84           | 65      |      | 49             | 97             | 70             |
| 28               | 90   |                |                |              | 44     | 38                | 71          | 69      |          | 79           | 59      |      | 65             | 72             | 66             |
| 29               | 11:  |                |                |              | 45     |                   | 66          | 63      |          | 73           | 57      |      | 60             | 55             | 63             |
| 30               | 15   |                |                |              | 43     |                   | 84          | 60      |          | 69           | 55      |      | 68             | 93             | 76             |
| 31               | 212  | 2              | 79             |              | 42     |                   | 53          |         |          | 66           |         |      | 47             | 113            |                |
| TOTAL            | 464  |                | 2360           | 16           | 28     | 1132              | 1482        | 2761    |          | 6645         | 2515    |      | 2293           | 2293           | 2535           |
| MEAN             | 150  |                | 76.1           | 52           |        | 40.4              | 47.8        | 92.0    |          | 214          | 83.8    |      | 74.0           | 74.0           | 84.5           |
| MAX              | 430  |                | 105            |              | 67     | 44                | 94          | 384     |          | 2460         | 220     |      | 192            | 130            | 187            |
| MIN              | 78   |                | 67             |              | 42     | 38                | 34          | 34      |          | 58           | 52      |      | 1 20           | 43             | 1 48           |
| CFSM             | 2.60 |                | 1.32           |              | 91     | .70               | .83         | 1.60    |          | 3.72         | 1.45    |      | 1.28           | 1.28           | 1.47           |
| IN.              | 3.00 |                | 1.52           | 1.           |        | .73               | .96         | 1.78    |          | 4.29         | 1.62    |      | 1.48           | 1.48           | 5030           |
| AC-FT            | 9210 | 10640          | 4680           | 32           | 30     | 2250              | 2940        | 5480    |          | 13180        | 4990    |      | 4550           | 4550           |                |
| CAL YR<br>WTR YR |      | TOTAL<br>TOTAL | 33522<br>35653 | MEAN<br>MEAN | 91.6   | MAX<br>MAX        | 621<br>2460 | MIN     | 22<br>34 | CFSM<br>CFSM | 1.59    | IN.  | 21.65<br>23.03 | AC-FT<br>AC-FT | 66490<br>70720 |

## RIO GRANDE DE ARECIBO BASIN

## 50028400 RIO TANAMA AT CHARCO HONDO, PR--Continued

## WATER QUALITY RECORDS

PERIOD OF RECORD .-- WATER YEARS MARCH 1983 TO CURRENT YEAR

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE    | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|---------|------|---------------------------------------|--------------------------------------|-----------------------------|------|------|---------------------------------------|--------------------------------------|-----------------------------|
| SEP, 16 | 1154 | 56                                    | 259                                  | 25.0                        |      |      |                                       |                                      |                             |

## 50029000 RIO GRANDE DE ARECIBO AT CENTRAL CAMBALACHE, PR

#### WATER-QUALITY RECORDS

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 Rio Tanama , and 1.6 mi (2.6 km) southeast of Arecibo.

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

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

### WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE             | TIME                                   | STREAM<br>FLOW,<br>INSTAM<br>TANEOU<br>(CFS)         | , COI<br>N- DUC<br>JS ANG                         | FIC<br>N- P<br>CT- (ST.   | AND- TEM  | IPKR-<br>PURB<br>(G C) (  | TUR-<br>BID-<br>ITY<br>NTU)  | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L)                 | CE<br>SAT                                       | S- D<br>VED<br>R-<br>NT<br>UR- L                   | OXYGEN<br>DEMAND,<br>CHEM-<br>ICAL<br>(HIGH<br>.EVEL)<br>MG/L) | COLI<br>FORM<br>FECA<br>0.7<br>UM-M<br>(COLS    | TOCOCCI L, FECAL, KF AGAR (COLS. PER                    |
|------------------|--|--|---|---|---|---|------------------------------|---|---|--|--|---|---|
| NOV 1984         |  | 9.16   |   | 222   |   | 22-15   |                              |   |   |  |  |   |   |
| 13<br>JAN 1985   | 16:55                                  | 2040   |   | 200   | 7.8   | 25.0  | 29                           | 7.7   |   | 93   | 15   | K7  | 10 K150   |
| 24<br>APR        | 15:20                                  | 182  |   | 252   | 8.2   | 25.0  |                              | 8.6   |   | 104  | 13   | КЗ  | 00 K460   |
| 03               | 11:10                                  | 145  |   | 252   | 8.1   | 25.0  | 2.5                          | 8.7   |   | 105  | 14   | 2   | 20 K30  |
| MAY 14           | 12:30                                  | 179  |   | 253   | 7.6   | 26.0  | 7.6                          | 8.0   | 1   | 98   | 22   | 4   | 70 K90  |
| AUG<br>05        | 15:15                                  | 175  |   | 285   | 8.2   | 29.0  | 27                           | 7.3   |   | 94   | <10  | 5.0   | 00 770  |
|                  |  |  |   | 200   |   | 20.0  |                              | ,,,   |   |  |  |   |   |
| DATE             | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | HARD-<br>NESS,<br>NONCAR<br>BONATE<br>(MG/I<br>CACOS | CALC<br>R- DIS<br>SOI<br>(MC                      | CIUM SI<br>B- DI<br>LVED SOI<br>E/L (MC                             | IS- DI<br>LVED SOL<br>G/L (M                      | IUM,<br>S- S<br>VED   | ODIUM<br>AD-<br>ORP-<br>TION | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | LINI  | ry<br>LD S<br>/L                                   | ULFIDE<br>TOTAL<br>(MG/L<br>AS S)                              | SULFA<br>DIS-<br>SOLV<br>(MG/<br>AS SO          | DIS-<br>ED SOLVED<br>L (MG/L                            |
| NOV 1984         |  |  |   |   |   |   |                              |   |   |  |  |   |   |
| 13<br>JAN 1985   | 75                                     |  | 5 22  | 2   | 1.9   | 8.6   | 0.4                          | 1.7   |   | 70   |  | 11  | 11  |
| 24               | 98                                     |  | 29  |   | 3.3 1   | 0   | 0.5                          | 1.7   |   | 100  | <0.5   | 13  | 12  |
| APR<br>03        |  |  |   |   |   | _   |                              | 22  |   | 106  |  |   |   |
| MAY<br>14        | 110                                    |  | 1 35  |   | 5.6   | 9.1   | 0.4                          | 1.7   | 5.  | 109  | (0.5   | 11  | 9.9   |
| AUG              |  |  |   |   |   |   |                              |   |   |  | ,,,,   |   |   |
| 05               |  |  | -   |   |   | -   |                              | 7.  |   | 143  |  |   | 8.7   |
| DATE<br>NOV 1984 | RI<br>D<br>SO<br>(M<br>AS              | DE,<br>IS-<br>LVED<br>G/L<br>F)                      | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | SOLIDS<br>RESIDU<br>AT 105<br>DEG. C<br>SUS-<br>PENDED<br>(MG/L | B NI' GI , NITI TO' (Me ) AS | BN, RATE NI FAL TO G/L (I N) A                      | ITRO-<br>GEN,<br>TRITE<br>OTAL<br>MG/L<br>S N)  | NITR<br>GEN<br>NO2+N<br>TOTA<br>(MG/<br>AS N       | O3 AMM<br>L TO<br>L (M   | OTAL<br>IG/L<br>I N)                            | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N)    |
| 13<br>JAN 1985   |  | 0.1  | 18  | 120   | 657   | 34  | -                            | - (   | 0.01  | 0.7  | 0 0  | .04   | 1.4   |
| 24<br>APR        |  | 0.1  | 20  | 150   | 75  | 141   |                              | - (   | 0.01  | 0.6  | 0 0  | .07   | 0.03  |
| 03               | -                                      | -  |   |   |   | 3   | 0.7                          | - (   | 0.01  | 0.3  | 0 <0   | .01   |   |
| 14               |  | 0.2  | 16  | 150   | 74  | 6   | 0                            | . 37  | 0.03  | 0.4  | 0 0  | .06   |   |
| AUG<br>05        | -                                      | - 1  |   |   |   | 46  | 0                            | . 59  | 0.01  | 0.6  | 0 0  | .04   | 0.36  |
| DATE             | GEN<br>MON<br>ORG.<br>TO               | ANIC<br>TAL<br>G/L                                   | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS N)         | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS NO3)                         | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P)       | ARSENI<br>TOTAL<br>(UG/L<br>AS AS                               | C REC                        | TAL TO<br>COV- RI<br>ABLE EI<br>I/L (I              | ORON,<br>OTAL<br>ECOV-<br>RABLE<br>UG/L<br>S B) | CADMII<br>TOTAL<br>RECO<br>ERABI<br>(UG/I<br>AS CI | UM MI<br>L TO<br>V- RE<br>LE ER<br>L (U                        | RO-<br>UM,<br>TAL<br>COV-<br>ABLE<br>G/L<br>CR) | COPPER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CU) |
| NOV 1984         |  |  |   |   | 0.00  |   |                              |   |   |  |  |   |   |
| 13<br>JAN 1985   |  | 1.4  | 2.1   | 9.3   | 0.08  |   |                              |   | -   |  |  | -   |   |
| 24<br>APR        |  | 0.1  | 0.7   | 3.1   | 0.08  |   |                              | 100   | <20   | 9  | <1   | 14  | 20  |
| 03               |  | 0.3  | 0.6   | 2.7   | <0.01   |   |                              |   |   |  | -  | -   |   |
| I'AI'            |  |  |   |   |   |   |                              |   |   |  |  |   |   |
| 14<br>AUG        | <                                      | 0.1  |   |   | 0.04  | <   | 1 .                          | 100   | <20   |  | 1  | 4   | 10  |

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RIO GRANDE DE ARECIBO BASIN

50029000 RIO GRANDE DE ARECIBO AT CENTRAL CAMBALACHE, PR--Continued
WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| NOV 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 13<br>JAN 1985 |   |   |   |   |  |   |   |                                     |                            |  |
| 24<br>APR      | 7000  | 4   | 260   | <0.1  |  | 1   | 30  | <0.01                               | 7                          | 0.02   |
| 03             |   |   |   |   |  |   |   |                                     |                            |  |
| MAY            |   |   |   |   |  |   |   |                                     |                            |  |
| 14             | 320   | 5   | 20  | <0.1  | <1   | <1  | 20  | <0.01                               | 2                          | 0.03   |
| AUG            |   |   |   |   |  |   |   |                                     |                            |  |
| 05             |   | -   |   |   |  |   |   |                                     | -                          |  |

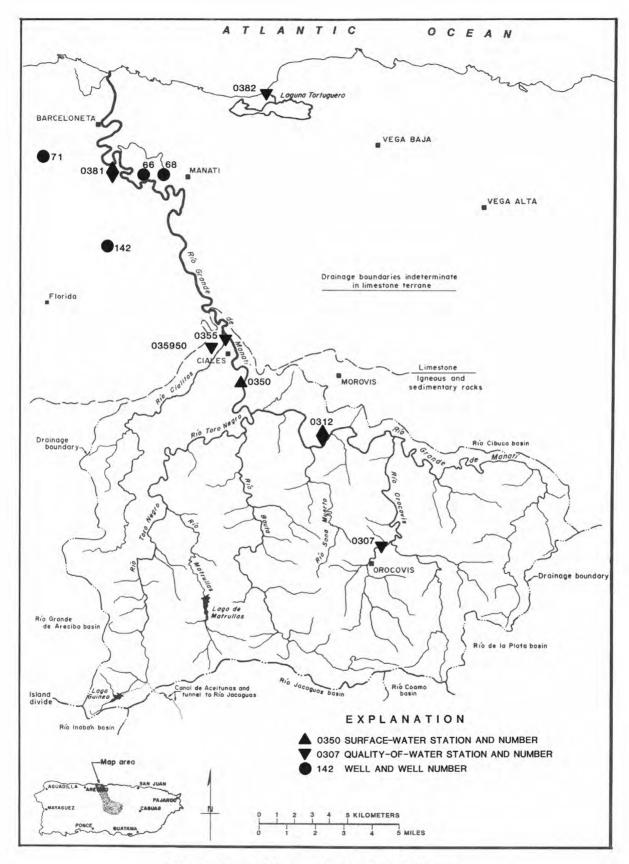


Figure 16.--Río Grande de Manatí basin.

## 50030700 RIO OROCOVIS NEAR OROCOVIS, PR

### WATER-QUALITY RECORDS

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

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

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

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | TIME                                   | STREA<br>FLOW<br>INSTA                         | AM- CI<br>AN- DUS AN                              | ict- (s<br>ick                              | PH<br>TAND-<br>ARD<br>ITS)                       | TEME<br>ATU                             | IRE  |                 |            | SOL                           | 8-                                    | SOI<br>(PE<br>CE<br>SAT         | S-<br>VED<br>R-                       | OXYG<br>DEMA<br>CHE<br>ICA<br>(HI<br>LEVE<br>(MG/ | ND,<br>M-<br>L<br>GH<br>L) | FOR<br>FRO<br>0.7<br>UM-<br>(COL<br>100 | MF         | STREET<br>TOCOCO<br>FECAL<br>KF AGA<br>(COLS<br>PER<br>100 MI | CI<br>L,<br>AR |
|----------------|--|--|---|---|--|---|--|-----------------|------------|-------------------------------|---------------------------------------|---------------------------------|---------------------------------------|---|----------------------------|---|------------|---|----------------|
| NOV 1984       |  |  |   |   |  |   |  |                 |            |                               |                                       |                                 |                                       |   |                            |   |            |   |                |
| 19<br>JAN 1985 | 18:35                                  | 25   |   | 223   | 8.2  | 2                                       | 4.0  | 3               | . 3        |                               | 7.8                                   |                                 | 97                                    |   | 16                         | K7                                      | 300        | 99  | 90             |
| 23<br>MAR      | 18:05                                  | 12   |   | 281   | 8.7  | 2                                       | 3.0  |                 |            |                               | 7.8                                   |                                 | 96                                    |   | 22                         | K6                                      | 300        | 7:  | 20             |
| 14             | 16:15                                  | 7.   | . 7   | 294   | 8.6  | 2                                       | 4.0  | 2               | .0         |                               | 9.0                                   |                                 | 113                                   |   | 11                         | K                                       | 970        | 6   | 10             |
| MAY 24         | 15:15                                  | 30   |   | 206   | 7.9  | 2                                       | 5.5  | 15              |            |                               | 7.9                                   |                                 | 101                                   |   | 13                         | 5                                       | 900        | 68  | 80             |
| AUG<br>19      | 13:45                                  | 6 .  | . 5   | 317   | 8.7  | 2                                       | 7.0  | 3               | . 6        |                               | 7.6                                   |                                 | 99                                    |   | <10                        | K1                                      | 100        | K   | 60             |
|                |  |  |   |   |  |   |  |                 |            |                               |                                       |                                 |                                       |   |                            |   |            |   |                |
| DATE           | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | HARI<br>NESS<br>NONCA<br>BONAT<br>(MG/<br>CACO | B, CAI<br>AR- DI<br>FE SC<br>'L (M                | CIUM<br>S-<br>DLVED S<br>IG/L (             | AGNE-<br>SIUM,<br>DIS-<br>OLVED<br>MG/L<br>S MG) | SODI<br>DIS<br>SOLV<br>(MG              | ED.  |                 | ON         | POT<br>SI<br>DI<br>SOL<br>(MG | UM,<br>8-<br>VED<br>/L                | ALK<br>LINI<br>FIE<br>(MG<br>AS | TY<br>LD<br>/L                        | SULF<br>TOT<br>(MG                                | AL<br>/L                   | SULF<br>DIS<br>SOL<br>(MG               | VED        | CHLO-<br>RIDE,<br>DIS-<br>SOLVI<br>(MG/I                      | ,<br>ED<br>L   |
| NOV 1984       |  |  |   |   |  |   |  |                 |            |                               |                                       |                                 |                                       |   |                            |   |            |   |                |
| 19<br>JAN 1985 | 92                                     |  | 0 2   | 2   | 9.1  | 9                                       | . 9  |                 | 0.5        | 1                             | . 5                                   |                                 | 92                                    |   |                            |   | 7.7        | 13  |                |
| 23<br>MAR      | 120                                    |  | 2   | 9   | 11   | 13                                      |  |                 | 0.5        | 3                             | . 0                                   |                                 | 121                                   | <   | 0.5                        |   | 8.1        | 16  |                |
| 14<br>MAY      |  |  | -   | -   |  |   |  |                 |            |                               |                                       |                                 | 127                                   |   |                            |   |            |   |                |
| 24<br>AUG      | 77                                     |  | 2 1   | 8   | 7.8  | 9                                       | . 9  |                 | 0.5        | 1                             | . 9                                   |                                 | 75                                    | <   | 0.5                        |   | 7.8        | 12  |                |
| 19             |  |  | -   | -   |  |   |  |                 |            |                               |                                       |                                 | 125                                   |   |                            |   |            |   |                |
| DATI           | RI<br>B<br>SC<br>K (M                  | LUO-<br>IDE,<br>DIS-<br>DLVED<br>IG/L<br>IF)   | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | CONSTI                                      | SOL<br>SO<br>SO<br>(T                            | IDS,<br>IS-<br>LVED<br>ONS<br>ER<br>AY) | SOLII<br>RESII<br>AT 10<br>DEG.<br>SUS-<br>PENDI<br>(MG, | DUB<br>D5<br>C, |            | AL<br>L                       | NIT<br>GE<br>NITR<br>TOT<br>(MG<br>AS | N,<br>ITE<br>AL<br>/L           | NIT<br>GK<br>NO2+<br>TOT<br>(MG<br>AS | N,<br>NO3<br>AL<br>/L                             |                            | AL<br>L                                 | ORGA<br>TO | TAL<br>3/L  |                |
| NOV 1984       | 1                                      | 0.1  | 31  | 150   | ) 1  | 0                                       |  | 6               | 0.         | 89                            | 0.                                    | 01                              | 0.                                    | 90  | 0.                         | 16                                      |            | 0.24  |                |
| JAN 1988<br>23 |  | 0.2  | 31  | 180   |  | 6.0                                     |  |                 |            | 77                            | 0.                                    |                                 | 0.                                    |   |                            | 23                                      |            | 0.57  |                |
| MAR 14         |  | 0.2  | 31  | 100   |  |   |  |                 |            |                               |                                       |                                 |                                       |   |                            |   |            |   |                |
| MAY            |  | _  |   |   |  |   |  |                 |            | 58                            | 0.                                    |                                 | 0.                                    |   |                            | 04                                      |            | 0.66  |                |
| 24<br>AUG      |  | 0.1  | 27  | 130   | ) 1  | 0                                       | 14   |                 |            |                               | <0.                                   |                                 | 1.                                    |   |                            | 07                                      |            | 0.43  |                |
| 19             | -                                      | -  |   |   | -  | -                                       | 1  | 1               |            |                               | <0.                                   | 01                              | 1.                                    | 00  | 0.                         | 02                                      | (          | .48   |                |
| DATE           | GEN<br>MON<br>ORG<br>TO                | TRO-<br>IA +<br>ANIC<br>TAL<br>IG/L<br>N)      | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS N)         | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS NO3) | PHO<br>TO  | OS-<br>RUS,<br>TAL<br>G/L<br>P)         | ARSEN<br>TOTA<br>(UG/<br>AS A                            | AL<br>/L        | ERA<br>(UG | AL<br>OV-<br>BLE              | BOR<br>TOT<br>REC<br>ERA<br>(UG       | AL<br>OV-<br>BLE<br>/L          | CADM<br>TOT<br>REC<br>BRA<br>(UG,     | AL<br>OV-<br>BLR<br>/L                            | ERA<br>(UC                 | M,<br>AL<br>OV-<br>BLB                  | BRA<br>(UC | COV-  |                |
| NOV 1984       |  |  |   |   |  |   |  |                 |            |                               |                                       |                                 |                                       |   |                            |   |            |   |                |
| 19<br>JAN 1985 |  | 0.4  | 1.3   | 5.8   | 0  | .02                                     |  |                 |            |                               |                                       |                                 |                                       |   |                            |   |            |   |                |
| 23<br>MAR      |  | 0.8  | 1.6   | 7.1   | 0  | .31                                     |  | <1              | <          | 100                           |                                       | <20                             |                                       | 1   |                            | 7                                       |            | <10   |                |
| 14<br>MAY      |  | 0.7  | 1.3   | 5.8   | 0  | .35                                     |  |                 | ·          |                               |                                       |                                 |                                       |   |                            |   |            |   |                |
| 24<br>AUG      |  | 0.5  | 1.5   | 6.6   | 0  | .03                                     |  | <1              | <          | 100                           |                                       | 20                              |                                       | <1  |                            | 4                                       |            | <10   |                |
| 19             |  | 0.5  | 1.5   | 6.6   | 0  | . 32                                    |  |                 |            |                               |                                       |                                 |                                       |   |                            |   |            |   |                |

RIO GRANDE DE MANATI BASIN

50030700 RIO OROCOVIS NEAR OROCOVIS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | I.KAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NKSE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|--|---|---|--|---|---|-------------------------------------|----------------------------|--|
| NOV 1984       |   |  |   |   |  |   |   |                                     |                            |  |
| 19<br>JAN 1985 |   |  |   |   |  |   |   |                                     |                            |  |
| 23             | 280   | 1  | 50  | <0.1  | <1   | <1  | 30  | <0.01                               | 5                          | 0.06   |
| MAR            |   |  |   |   |  |   |   |                                     |                            |  |
| 14             |   |  |   | 0.1   |  |   |   |                                     |                            |  |
| MAY            |   |  |   |   |  |   |   |                                     |                            |  |
| 24             | 1000  | 4  | 40  | 0.1   | <1   | <1  | 10  | <0.01                               | 1                          | 0.01   |
| AUG            |   |  |   |   |  |   |   |                                     |                            |  |
| 19             |   |  |   |   |  |   |   |                                     |                            |  |

#### 50031200 RIO GRANDE DE MANATI NEAR MOROVIS, PR

LOCATION.--Lat 18°17'45", long 66°24'47", Hydrologic Unit 21010001, on right bank (relocated), 0.1 mi (0.2 km) downstream from Quebrada Perchas, 0.8 mi (1.3 km) upstream from Rio 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. Elevation of gage is 440 ft (134 m), from topographic map. Feb. 2, 1966 to Apr. 27, 1967, staff gage read twice daily.

REMARKS .-- Estimated daily discharge: Mar. 14 to July 15. Records fair except those for estimated daily discharges, which are poor. Public water-supply pumpage, about 300 ft (91 m) above the station, influences low-flow discharges.

AVERAGE DISCHARGE.--20 years (1966-85), 106 cu ft/s (3.002 cu m/s), 26.08 in/yr (662 mm/yr), 76,800 acre-ft/yr (94.7 cu hm/yr); median of yearly mean discharges, 98 cu ft/s (2.78 cu m/s), 71,000 acre-ft/yr (88 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD. -- Maximum discharge, 48,000 cu ft/s (1,359 cu m/s), May 18, 1985, gage height, 17.89 ft (5.453 m), from floodmarks, from rating curve extended above 200 cu ft/s (5.66 cu m/s) on basis of computations of flow over broad-crested weir and step-backwater analysis; minimum discharges, 4.4 cu ft/s (0.125 cu m/s), Apr. 15, 1984.

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

|        |      | Discharge |          | Gage height |       |        |         | Disch     | arge     | Gage height |       |  |
|--------|------|-----------|----------|-------------|-------|--------|---------|-----------|----------|-------------|-------|--|
| Date   | Time | (cu ft/s) | (cu m/s) | (ft)        | (m)   | Date   | Time    | (ou ft/s) | (cu m/s) | (ft)        | (m)   |  |
| Nov. 3 | 1030 | 8,920     | 253      | 7.8         | 2.405 | May 18 | Unknown | *48,000   | 1,359    | *17.89      | 5.453 |  |

Minimum daily discharge, 19 cu ft/s (0.538 cu m/s), Aug. 18, 23.

|               |      | DISC  | HARGE, IN | CUBIC FRE | T PER SI | ECOND, W | ATER<br>VAL |     | остов | ER 1984      | TO SEPT   | EMBER | 1985     |          |             |  |
|---------------|------|-------|-----------|-----------|----------|----------|-------------|-----|-------|--------------|-----------|-------|----------|----------|-------------|--|
| DAY           | oc   | r no  | V DEC     | C JAN     | f FI     | BB .     | MAR         | A   | PR    | MAY          | JUN       |       | JUL      | AUG      | SEP         |  |
| 1             | 21   | 8 10  | 3 9:      | 1 145     | 5 (      | 50       | 60          |     | 73    | 32           | 74        |       | 37       | 27       | 29          |  |
| 2             | 2:   | 2 11  | 5 98      | 8 155     |          | 53       | 48          |     | 51    | 49           | 70        |       | 36       | 33       | 25          |  |
| 3             | 20   | 0 188 | 0 148     |           |          | 52       | 43          |     | 42    | 100          | 106       |       | 35       | 26       | 25          |  |
| 4             | 20   | 0 49  | 0 104     | 4 119     |          | 19       | 41          |     | 45    | 47           | 154       |       | 34       | 24       | 24          |  |
| 5             | 51   | 7 43  | 1 9:      | 1 103     | 3        | 18       | 44          |     | 37    | 37           | 96        |       | 32       | 27       | 23          |  |
| 6             | 150  | 6 39  | 4 86      | 98        |          | 17       | 48          |     | 32    | 44           | 73        |       | 32       | 39       | 24          |  |
| 7             | 9    | 5 112 | 0 82      | 2 96      | 3        | 17       | 53          |     | 30    | 61           | 68        |       | 31       | 26       | 23          |  |
| 8             | 59   | 9 78  | 0 79      | 9 86      |          | 16       | 60          |     | 29    | 36           | 64        |       | 80       | 24       | 27          |  |
| 9             | 45   | 9 76  | 2 86      | 8 82      |          | 16       | 51          |     | 28    | 29           | 61        |       | 78       | 23       | 30          |  |
| 10            | 69   | 9 32  | 8 149     | 9 90      | ) 4      | 15       | 51          |     | 29    | 27           | 58        |       | 41       | 21       | 24          |  |
| 11            | 40   | 6 24  | 6 180     | 0 87      |          | 18       | 42          |     | 46    | 26           | 56        |       | 34       | 21       | 24          |  |
| 12            | 3    | 5 19  | 5 150     | 78        | 1        | 17       | 42          |     | 27    | 28           | 54        |       | 32       | 23       | 24          |  |
| 13            | 2'   | 7 16  | 5 98      | 8 75      | ,        | 15       | 49          |     | 26    | 32           | 52        |       | 31       | 40       | 57          |  |
| 14            | 25   | 5 17  | 1 87      | 7 83      | 1        | 5        | 35          |     | 24    | 25           | 50        |       | 28       | 30       | 57          |  |
| 15            | 70   | 0 21  | 1 86      | 6 94      |          | 17       | 33          |     | 23    | 449          | 47        |       | 43       | 24       | 33          |  |
| 16            | 80   | 0 17  | 3 93      | 3 75      |          | 14       | 31          |     | 24    | 1040         | 44        |       | 57       | 22       | 27          |  |
| 17            | 469  |       |           | 3 70      | ) 4      | 11       | 31          |     | 24    | 5360         | 43        |       | 45       | 20       | 64          |  |
| 18            | 258  | 8 14  | 4 171     | 1 68      | 1        | 12       | 31          |     | 24    | 17100        | 51        |       | 40       | 19       | 125         |  |
| 19            | 131  |       |           | 5 65      |          | 12       | 39          |     | 24    | 1820         | 55        |       | 37       | 20       | 96          |  |
| 20            | 110  | 0 12  | 1 131     | 1 61      |          | 15       | 40          |     | 22    | 485          | 44        |       | 40       | 20       | 84          |  |
| 21            | 8:   | 1 11  | 1 110     | 0 61      |          | 12       | 35          |     | 22    | 309          | 42        |       | 40       | 22       | 195         |  |
| 22            | 71   |       |           |           |          | 1        | 32          |     | 40    | 213          | 40        |       | 35       | 21       | 105         |  |
| 23            | 63   |       |           |           |          | 16       | 30          | 2   | 33    | 169          | 71        |       | 41       | 19       | 188         |  |
| 24            | 58   |       |           |           |          | 31       | 29          | 1   | 96    | 144          | 70        |       | 43       | 20       | 131         |  |
| 25            | 4:   | 3 9   | 7 98      | 8 54      |          | 35       | 28          | 1   | 88    | 129          | 73        |       | 34       | 24       | 321         |  |
| 26            | 38   |       |           |           |          | 36       | 28          | 1   | 52    | 117          | 70        |       | 34       | 21       | 123         |  |
| 27            | 39   |       |           |           |          |          | 131         |     | 63    | 105          | 44        |       | 35       | 103      | 69          |  |
| 28            | 98   |       |           |           |          |          | 112         |     | 47    | 96           | 39        |       | 40       | 47       | 58          |  |
| 29            | 182  |       |           |           |          |          | 233         |     | 39    | 90           | 37        |       | 34       | 28       | 46          |  |
| 30<br>31      | 343  |       |           |           |          |          | 134         |     | 38    | 84<br>81     | 36        |       | 30<br>28 | 26<br>61 | 43          |  |
| MOMAT         | 204  | 7 000 | 0 007     |           |          |          |             |     |       | 00004        | 1040      |       | 1017     | 001      | 0104        |  |
| TOTAL<br>MEAN | 98.  |       |           |           |          |          | 810         | 16  |       | 28364<br>915 | 1842      |       | 1217     | 901      | 2124        |  |
|               |      |       |           |           |          |          | 8.4         | 55  |       |              | 61.4      |       |          | 29.1     | 70.8<br>321 |  |
| MAX           | 469  |       |           |           |          |          | 233         |     | 33    | 17100<br>25  | 154<br>36 |       | 80<br>28 | 103      | 23          |  |
| CFSM          | 1.78 |       |           |           |          | 11       | .06         | 1.  | 22    | 16.6         | 1.11      |       | .71      | .53      | 1.28        |  |
| IN.           | 2.00 |       |           |           |          |          | . 22        | 1.  |       | 19.11        | 1.24      |       | .82      | .61      | 1.43        |  |
| AC-FT         | 6040 |       |           |           |          |          | 590         | 33  |       | 56260        | 3650      |       | 2410     | 1790     | 4210        |  |
| CAL YR        | 1984 | TOTAL | 26847.7   | MBAN      | 73.4 N   | 1AX 18   | 80          | MIN | 5.7   | CFSM         | 1.33      | IN.   | 18.09    | AC-FT    | 53250       |  |
| WTR YR        |      | TOTAL | 58160     | MBAN      |          | 1AX 171  |             | MIN | 19    |              |           | IN.   | 39.19    |          | 115400      |  |

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

### WATER-QUALITY RECORDS

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

# WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | TIME                                   | STRKAN<br>FLOW<br>INSTAN<br>TANEOU<br>(CFS)                   | N- DUC<br>US AND                                  | FIC<br>N-<br>CT- (:<br>CB                                      | PH<br>BTAND-<br>ARD<br>NITS)              | TEMP                                       | JRE  | TUR-<br>BID-<br>ITY<br>(NTU)            | SOI                                 | GEN,<br>IS-<br>LVED                                | XYGEN,<br>DIS-<br>BOLVED<br>(PER-<br>CENT<br>BATUR-<br>ATION) | DEMA<br>CHE<br>ICA<br>(HI                 | ND,<br>M-<br>L<br>GH<br>L)                           | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./ | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) |
|----------------|--|---|---|--|---|--|--|---|-------------------------------------|--|---|---|--|---|--|
| NOV 1984       |  |   |   |  |   |  |  |   |                                     |  |   |   |  |   |  |
| 19<br>JAN 1985 | 1330                                   | 133   |   | 240  | 8.30                                      | 2  | 25.0   | 6.4                                     |                                     | 8.3  | 102   |   | 15   | K800  | К35  |
| 23<br>MAR      | 1325                                   | 57  |   | 263  | 9.10                                      | 2  | 23.5   |   | 1                                   | 10.2   | 122   |   | 20   | 78  | К37  |
| 14<br>MAY      | 1215                                   | 39  |   | 260  | 8.40                                      | 2  | 4.0  | 9.0                                     |                                     | 9.2  | 111   |   | 10   | K920  | 570  |
| 24<br>AUG      | 1515                                   | 139   |   | 219  | 8.40                                      | 2  | 6.0  | 7.1                                     |                                     | 7.9  | 99  |   | 17   | K560  | 96   |
| 13             | 1440                                   | 44  |   | 215  | 8.50                                      | 3  | 2.0  | 10                                      |                                     | 6.3  | 86  |   | 12   | 510   | 110  |
| DATE           | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | HARD-<br>NESS<br>NONCAF<br>WATER<br>TOT FI<br>MG/L A<br>CACOS | RB CALC<br>R DIS<br>LD SOI<br>AS (MC              | CIUM<br>3-<br>JVED S   | AGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L | SODI<br>DIS<br>SOLV<br>(MG                 | UM,<br>I-<br>'ED   | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | SI<br>DI                            | TAS- LIUM, VIS- IVED I                             | ALKA-<br>INITY<br>WATER<br>FOTAL<br>FIELD<br>E/L AS<br>CACO3  | SULF<br>TOT<br>(MG<br>AS                  | IDE<br>AL<br>/L                                      | BULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4)       | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)                |
| NOV 1984       |  |   |   |  |   |  |  |   |                                     |  |   |   |  |   |  |
| 19<br>JAN 1985 | 95                                     |   | 2 22  | 2  | 9.8                                       | 11   |  | 0.5                                     | 2                                   | .0   | 93  |   |  | 9.9   | 15   |
| 23             | 110                                    |   | 1 27  |  | 11  | 12   |  | 0.5                                     | 1                                   | .8   | 112   | <   | 0.5  | 8.2   | 16   |
| MAR<br>14      |  | -   | _   |  |   |  |  |   |                                     | 22   | 110   |   |  |   | - 22   |
| MAY 24         | 81                                     |   | - 19  |  | 8.2                                       | 10   |  | 0.5                                     |                                     | . 5  | 82  | ,   | 0.5  | 9.6   | 16   |
| AUG            | 0.1                                    | -   | 1:  |  | 0.4                                       | 10   |  | 0.5                                     | •                                   |  |   | ,   | 0.5  | 9.0   | 10   |
| 13             |  | -   | -   |  |   |  |  |   |                                     |  | 98  |   |  | 77.   | 35.5   |
| DAT            | RII<br>D<br>SO<br>K (M                 |   | BILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | SOLIDS<br>SUM OF<br>CONSTI<br>TUENTS<br>DIS-<br>SOLVE<br>(MG/I | - D<br>- D<br>- SO<br>- (T                | IDS,<br>IS-<br>LVED<br>CONS<br>PER<br>(AY) | SOLID<br>RESID<br>AT 10<br>DEG.<br>SUS-<br>PENDE<br>(MG/ | UR NI<br>5 G<br>C, NIT<br>TO<br>D (M    | TRO-<br>EN,<br>PRATE<br>TAL<br>IG/L | NITRO<br>GEN,<br>NITRIT<br>TOTAL<br>(MG/L<br>AS N) | E NO2   | TRO-<br>EN,<br>+NO3<br>TAL<br>G/L<br>N)   | NITE<br>GEN<br>AMMON<br>TOTA<br>(MG/<br>AS N         | IIA ORG   | TRO-<br>IEN,<br>GANIC<br>TTAL<br>IG/L                              |
| NOV 1984       |  | 0.1   | 26  | 15   |   | 4  | 6  |   |                                     | <0.01  |   | .00                                       | 0.1  | 0   | 0.2  |
| JAN 1989       | 5                                      | 0.2   | 17  | 16   |   | 5  | 3  |   |                                     | <0.01  |   | .30                                       | <0.0   |   |  |
| MAR<br>14      |  |   |   |  | -   |  | 18   | 0                                       | . 39                                | 0.01   | . 0   | . 40                                      | 0.0  | 8   | 0.42   |
| MAY 24         |  | 0.2   | 23  | 14   | 0 5                                       | 2  | 10   |   |                                     | <0.01  | . 1   | .10                                       | 0.0  | 4   | 0.26   |
| AUG<br>13      |  |   |   | -  | _   |  | 10   | 0                                       | .89                                 |  |   |   | _  | c   | . 26   |
| Dati           | GEN<br>MONI<br>ORGA<br>TO              | ANIC<br>FAL<br>G/L  | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS N)         | NITRO<br>GEN,<br>TOTAL<br>(MG/L<br>AS NO3                      | PHO<br>TO<br>(M                           | OS-<br>RUS,<br>TAL<br>G/L<br>P)            | ARSEN<br>TOTA<br>(UG/<br>AS A                            | TO REL ER                               | TAL<br>COV-<br>ABLE<br>G/L<br>BA)   | BORON<br>TOTAL<br>RECOV<br>BRABL<br>(UG/L<br>AS B) | TO<br>RE<br>RE<br>RR  | MIUM<br>TAL<br>COV-<br>ABLE<br>G/L<br>CD) | CHRO<br>MIUM<br>TOTA<br>RECO<br>ERAB<br>(UG/<br>AS C | I, COF<br>L TO<br>V- RE<br>LE ER<br>L (U            | PPER,<br>TTAL<br>COV-<br>ABLE<br>G/L<br>CU)                        |
| NOV 1984       | V                                      |   |   |  |   |  |  |   |                                     |  |   |   |  |   |  |
| 19<br>JAN 1986 | (                                      | 0.3   | 1.3   | 5.8  | <0  | .01  |  |   |                                     | 19   | -   |   |  |   |  |
| 23<br>MAR      |  | 0.3   | 0.6   | 2.7  | 0   | .05  |  | <1                                      | <100                                | <2   | 0   | 1   |  | 13  | <10  |
| 14<br>MAY      | (                                      | 0.5   | 0.9   | 4.0  | 0   | .05  |  |   |                                     | -  | -   |   |  |   |  |
| 24<br>AUG      | (                                      | 0.3   | 1.4   | 6.2  | <0  | .01  |  | <1                                      | <100                                | 2  | 0   | 1   |  | 4   | <10  |
| 13             |  |   | 1.2   | 5.3  |   |  | 4  | -                                       |                                     |  |   |   | -  | -   |  |

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RIO GRANDE DE MANATI BASIN

50031200 RIO GRANDE DE MANATI NEAR MOROVIS, PR--Continued
WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| NOV 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 19<br>JAN 1985 |   |   |   |   |  |   |   |                                     |                            |  |
| 23             | 440   | 3   | 60  | <0.1  | <1   | <1  | 20  | <0.01                               | 3                          | 0.01   |
| MAR<br>14      |   |   |   | <0.1  |  |   |   |                                     |                            |  |
| MAY            |   |   |   | 10.1  |  | 77  |   |                                     | A PART A                   |  |
| 24             | 820   | 4   | 40  | <0.1  | <1   | <1  | 60  | <0.01                               | <1                         | 0.02   |
| AUG            |   |   |   |   |  |   |   |                                     |                            |  |
| 13             |   |   |   |   |  |   |   |                                     |                            |  |

### 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 Vales, 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 Gubineo 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 Rio Grande de Manati 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. Elevation of gage is 140 ft (43 m), from topographic map. Prior to Apr. 1, 1962, staff gage, read twice daily, at site 100 ft (30 m) upstream at same datum. January 1971 to December 1972 at site 1.6 mi (2.6 km) downstream at different datum.

REMARKS .-- Estimated daily discharges: May 18-30. Records fair except those for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--25 years (1961-85), 262 ou ft/s (7.420 ou m/s), 27.80 in/yr (706 mm/yr), 189,800 acre-ft/yr (234 ou hm/yr); median of yearly mean discharges, 250 ou ft/s (7.08 ou m/s), 181,000 acre-ft/yr (220 ou hm/yr). The median figure published in the 1984 report was in error; the correct median of the yearly mean discharge was, 240 ou ft/s (6.80 ou m/s), 174,000 acre-ft/yr (210 ou 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 discharge, 20 cu ft/s (0.568 cu m/s), Apr. 20, 21, 1984.

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

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

|      |    |      | Disch     | arge     | Gage h | eight |            |      | Disch     | arge     | Gage h | eight |
|------|----|------|-----------|----------|--------|-------|------------|------|-----------|----------|--------|-------|
| Date | е  | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   | Date       | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   |
| Nov. | 3  | 1130 | 21,100    | 598      | 10.98  | 3.347 | May 17     | 1630 | 24,400    | 691      | 11.76  | 3.584 |
| May  | 15 | 2115 | 8,020     | 227      | 7.03   | 2.143 | May 18     | 1100 | *74,300   | 2,104    | *19.62 | 5.980 |
| May  | 17 | 0315 | 30.400    | 861      | 12.99  | 3.959 | - N. D. T. |      | 92,525    | 38.45%   |        |       |

Minimum daily discharge, 45 cu ft/s (1.27 cu m/s), Aug. 24.

|        |       | DISCE         | ARGE, IN | CURTO PRE | T DED | SECOND | WATED VI | AP O | TORRE  | 1984   | TO SEPT | PMBBI | 1985   |       |        |
|--------|-------|---------------|----------|-----------|-------|--------|----------|------|--------|--------|---------|-------|--------|-------|--------|
|        |       | <b>D150</b> 1 | muu, m   | JUDIO PER |       | MEAN   | VALUI    |      | JIODBA | . 1301 | 10 barr | ышы   | . 1000 |       |        |
| DAY    | oc    | T NOV         | DEC      | JAN       |       | FEB    | MAR      | API  | 2      | MAY    | JUN     |       | JUL    | AUG   | SEP    |
| 1      | 7     | 3 479         | 188      | 291       |       | 116    | 108      | 189  | )      | 88     | 191     |       | 99     | 65    | 134    |
| 2      | 6     | 1 420         | 192      | 266       |       | 120    | 95       | 138  | 5      | 130    | 183     |       | 98     | 104   | 97     |
| 3      | 5     | 8 5370        | 308      | 264       |       | 110    | 87       | 111  | 1      | 258    | 271     |       | 95     | 71    | 99     |
| 4      | 6     | 1 1610        | 212      | 231       |       | 105    | 85       | 119  | )      | 124    | 391     |       | 92     | 63    | 78     |
| 5      | 42    | 1 996         | 189      | 215       |       | 97     | 82       | 100  | )      | 99     | 248     |       | 89     | 60    | 68     |
| 6      | 75    |               |          | 185       |       | 95     | 93       | 86   |        | 118    | 190     |       | 87     | 83    | 72     |
| 7      | 58    |               |          | 195       |       | 92     | 107      | 82   | 2      | 160    | 177     |       | 85     | 68    | 124    |
| 8      | 28    |               |          | 186       |       | 91     | 135      | 80   |        | 96     | 166     |       | 207    | 61    | 96     |
| 9      | 47    |               |          | 173       |       | 87     | 115      | 77   |        | 80     | 160     |       | 203    | 57    | 85     |
| 10     | 39    | 0 907         | 372      | 161       |       | 86     | 103      | 80   | )      | 74     | 152     |       | 109    | 70    | 70     |
| 11     | 24    |               |          | 168       |       | 86     | 88       | 123  |        | 71     | 147     |       | 91     | 129   | 65     |
| 12     | 17    |               |          | 155       |       | 86     | 83       | 74   |        | 78     | 142     | 91    | 87     | 138   | 62     |
| 13     | 14    |               |          | 147       |       | 86     | 91       | 67   |        | 86     | 136     |       | 84     | 121   | 148    |
| 14     | 13    |               |          | 145       |       | 80     | 83       | 63   |        | 69     | 131     |       | 78     | 86    | 156    |
| 15     | 57    | 2 509         | 167      | 173       |       | 78     | 77       | 60   | )      | 1130   | 125     |       | 114    | 69    | 105    |
| 16     | 43    |               |          | 153       |       | 78     | 73       | 61   |        | 2620   | 118     |       | 164    | 61    | 84     |
| 17     | 126   |               |          | 136       |       | 78     | 71       | 63   |        | 3400   | 114     |       | 112    | 57    | 163    |
| 18     | 86    |               | 386      | 135       |       | 78     | 73       | 63   | 4      | 2700   | 135     |       | 100    | 54    | 285    |
| 19     | 64    |               |          | 132       |       | 78     | 92       | 61   |        | 4570   | 144     |       | 84     | 53    | 226    |
| 20     | 55    | 6 263         | 281      | 131       |       | 78     | 95       | 57   |        | 1220   | 116     |       | 83     | 53    | 162    |
| 21     | 37    |               |          | 131       |       | 76     | 81       | 57   |        | 779    | 112     |       | 81     | 52    | 1080   |
| 22     | 33    |               |          | 126       |       | 75     | 75       | 107  |        | 539    | 108     |       | 76     | 52    | 438    |
| 23     | 27    |               |          | 121       |       | 79     | 70       | 589  |        | 429    | 185     |       | 89     | 48    | 710    |
| 24     | 249   |               |          | 120       |       | 102    | 66       | 497  |        | 368    | 183     |       | 95     | 45    | 519    |
| 25     | 190   | 6 305         | 219      | 120       |       | 100    | 64       | 478  |        | 330    | 190     |       | 77     | 50    | 981    |
| 26     | 176   | 550           | 199      | 120       |       | 145    | 65       | 387  |        | 298    | 182     |       | 72     | 49    | 344    |
| 27     | 16    | 7 285         | 295      | 120       |       | 110    | 335      | 164  |        | 270    | 116     |       | 71     | 224   | 199    |
| 28     | 39    | 1 402         | 383      | 120       |       | 139    | 286      | 125  |        | 248    | 105     |       | 94     | 129   | 200    |
| 29     | 71:   | 3 237         | 313      | 116       |       |        | 590      | 105  |        | 233    | 100     |       | 77     | 72    | 150    |
| 30     | 1310  |               |          | 110       |       |        | 341      | 101  |        | 218    | 98      |       | 113    | 591   | 129    |
| 31     | 82    | 1             | 325      | 109       |       |        | 373      |      |        | 209    |         |       | 72     | 368   |        |
| TOTAL  | 13186 |               |          | 4955      |       | 631    | 4182     | 4361 |        | 1092   | 4816    |       | 3078   | 3203  | 7129   |
| MEAN   | 42    |               |          | 160       | 9     | 4.0    | 135      | 146  |        | 2293   | 161     |       | 99.3   | 103   | 238    |
| MAX    | 1310  |               |          | 291       |       | 145    | 590      | 589  |        | 2700   | 391     |       | 207    | 591   | 1080   |
| MIN    | 51    |               |          | 109       |       | 75     | 64       | 57   |        | 69     | 98      |       | 71     | 45    | 62     |
| CFSM   | 3.32  |               |          | 1.25      |       | .73    | 1.05     | 1.13 |        | 17.9   | 1.26    |       | .78    | .80   | 1.86   |
| IN.    | 3.8   |               |          | 1.44      |       | .76    | 1.22     | 1.27 |        | 0.66   | 1.40    |       | .89    | .93   | 2.07   |
| AC-FT  | 26150 | 50040         | 17070    | 9830      | 5     | 220    | 8290     | 8650 | 14     | 1000   | 9550    |       | 6110   | 6350  | 14140  |
| CAL YR |       | TOTAL         | 77518    | MBAN      | 212   |        | 5370 MI  |      |        | CFSM   | 1.66    | IN.   | 22.53  | AC-FT | 153800 |
| WTR YR | 1985  | TOTAL         | 152470   | MBAN      | 418   | MAX 4  | 2700 MI  | N    | 45     | CFSM   | 3.27    | IN.   | 44.31  | AC-FT | 302400 |

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# RIO GRANDE DE MANATI BASIN

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

# WATER QUALITY RECORDS

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

| DATE   | TIME   | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|--------|--------|---------------------------------------|--------------------------------------|-----------------------------|------|------|---------------------------------------|--------------------------------------|-----------------------------|
| SEP, O | 6 1212 | 64                                    | 220                                  | 30.5                        |      |      |                                       |                                      |                             |

# 50035500 RIO GRANDE DE MANATI AT HIGHWAY 149 AT CIALES, RP

### 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 Rio Cialitos, 0.5 mi (0.8 km) north of Ciales plaza.

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

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

### WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE   | TIME                                   | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS)                  | - DUC  | PIC<br>I- P<br>CT- (ST<br>CB A  | H<br>AND-<br>RD<br>TS)                    | TEMPER<br>ATURE<br>(DEG C                                | - B:   | UR-<br>ID-<br>FY<br>FU)        | OXYGE<br>DIS<br>SOLV<br>(MG/       | SN, (F  | GEN,<br>IS-<br>LVED<br>ER-<br>ENT<br>TUR-<br>ION) | OXYGEN<br>DEMAND,<br>CHEM-<br>ICAL<br>(HIGH<br>LEVEL)<br>(MG/L)   | FOR<br>FEC.<br>0.7<br>UM-1<br>(COL:                     | M, TOO<br>AL, FE<br>KF<br>MF (CO<br>B./ F                            | REP-<br>COCCI<br>CCAL,<br>AGAR<br>OLS.<br>PER |
|--|--|--|--|---|---|--|--|--------------------------------|------------------------------------|---|---|---|---|--|---|
| OCT 1984   | 1510                                   | 200  |  | 107   |   |  |  |                                |                                    |   | 106   | 10  |   | 000  | 880   |
| 22<br>JAN 1985                                     | 1510                                   | 308  |  |   | 7.90                                      | 24.  |  | 1                              |                                    | .8  |   |   |   |  |   |
| 22<br>MAR  | 1615                                   | 122  |  | 242   | 8.50                                      | 23.  | 5  |                                | 10                                 | . 2   | 120   | 22  |   | K82  | K30   |
| 15<br>MAY  | 1200                                   | 74   |  | 250   | 8.20                                      | 25.  | 0 :  | 3.0                            | 9                                  | . 6   | 116   | <10   | K   | 110  | K60   |
| 13   | 1345                                   | 95   |  | 235   | 8.00                                      | 27.  | 0 1  | 9.0                            | 9                                  | . 2   | 115   | 20  | K1  | 100  | 150   |
| JUL 24   | 1358                                   | 115  |  | 223   | 8.30                                      | 30.  | 0 18   | 3                              | 7                                  | .2  | 95  | 23  | 5   | 800  | 400   |
| DATE   | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | HARD-<br>NESS<br>NONCARE<br>WATER<br>TOT FLI<br>MG/L AS<br>CACO3 | DIS<br>SOL   | LUM S<br>VED SO<br>L/L (M   | GNK-<br>IUM,<br>IS-<br>LVED<br>G/L<br>MG) | SODIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA               | SOI<br>TI<br>RAT   | CON                            | POTA<br>SIU<br>DIS<br>SOLV<br>(MG/ | S- LIN<br>M, WA<br>- TO<br>ED FI<br>L MG/   | KA-<br>ITY<br>TER<br>TAL<br>BLD<br>L AS<br>CO3    | SULFIDE<br>TOTAL<br>(MG/L<br>AS S)  | SULFA<br>DIS-<br>SOLV<br>(MG,                           | TE RI<br>DI<br>ED SO   | LO-<br>DE,<br>S-<br>LVED<br>G/L<br>CL)        |
| 0.0T 1001  | onoco,                                 | 011000   | 7.0  | on, no  | ,   | AD NA  | ,  |                                |                                    | , 011   | 000   | no 0,   | 10 0  | , ,  | 02,   |
| OCT 1984<br>22                                     | 68                                     | 2  | 17   |   | 6.2                                       | 8.9  |  | 0.5                            | 1.                                 | 6   | 66  |   | 9   | 9.1 1  | 0   |
| JAN 1985<br>22                                     | 97                                     |  | 24   |   | 9.1                                       | 12   |  | 0.5                            | 1.                                 | 7   | 100   | <0.5  |   | 3.9 1  | 3   |
| MAR<br>15  |  |  |  |   |   |  |  |                                |                                    |   | 102   |   |   |  |   |
| MAY  |  |  |  |   |   |  |  |                                |                                    |   |   |   |   |  |   |
| JUL 13   | 93                                     | -  | 23   |   | 8.6                                       | 12   |  | 0.6                            | 1.                                 | 8   | 98  | <0.5  | 10  | , 1  | 3   |
| 24   |  |  |  |   |   | -  | •  |                                |                                    |   | 91  |   |   |  |   |
| DATE  OCT 1984 22 JAN 1985 22 MAR 15 MAY 13 JUL 24 | RI<br>D<br>SO<br>G<br>(M<br>AS         | DE, DE, DE SIS- SILVED (G/L                                      | LICA,<br>IIS-<br>OLVED<br>MG/L<br>AS<br>IO2)<br>22<br>13 | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L)<br>110<br>140 | SOL<br>(TO                                | IDS, RI<br>IS- A7<br>LVED DI<br>DINS SI<br>SIR PI<br>AY) | DI.IDS,<br>SSIDUB<br>T 105<br>SG. C,<br>SUS-<br>SNDED<br>(MG/L)<br>18<br>4<br>11 | GI<br>NITI<br>TO'<br>(MC<br>AS | TAL<br>G/L                         | NITRO-<br>GEN,<br>NITRITE<br>TOTAL<br>(MG/L<br>AS N)<br>0.02<br>0.01<br>0.01<br><0.01 | 0.<br>0.  | EN, 1003 AMI TO TAL TO TO TAL | ITRO- GEN, MONIA DTAL MG/L S N)  0.06  0.04  0.05       | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N)<br>0.54<br>0.26 |   |
| DATE   | GEN<br>MON<br>ORG.<br>TO               | ANIC<br>TAL T<br>G/L (   | ITRO-<br>GEN,<br>OTAL<br>MG/L<br>S N)                    | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS NO3)                                       | PHOR<br>PHOR<br>TOT<br>(MG                | RUS, AF  | RSENIC<br>POTAL<br>UG/L<br>US AS)  | BRA<br>(UC                     |                                    | BORON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS B)                                 | REC<br>ERA<br>(UC                                 | MIUM MI<br>TAL TO<br>COV- RI<br>ABLE EI<br>G/L (U   | HRO-<br>IUM,<br>DTAL<br>BCOV-<br>RABLE<br>JG/L<br>B CR) | COPPER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CU)              |   |
| OCT 1984   |  |  |  |   |   |  |  |                                |                                    |   |   |   |   |  |   |
| 22<br>JAN 1985                                     | 5                                      | 0.6  | 1.2  | 5.3   |   | 05   |  |                                |                                    |   |   |   |   |  |   |
| 22<br>MAR  |  | 0.3  | 0.5  | 2.2   | 0.  | 03   | <1   | •                              | (100                               | <20   |   | <1  | 1   | 10   |   |
| 15<br>MAY  |  | 0.9  | 1.1  | 4.9   | 0.  | 03   |  |                                |                                    |   |   |   |   |  |   |
| 13<br>JUL  | <(                                     | 0.1  |  | 24  | 0.  | 07   | <1   | •                              | 100                                | <20   |   | 1   | 3   | 10   |   |
| 24   |  | 0.9  | 1.1  | 4.9   | 0.  | 08   |  |                                |                                    |   |   |   |   |  |   |

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RIO GRANDE DE MANATI BASIN

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| OCT 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 22<br>JAN 1985 |   |   |   |   |  |   | 77  | - 5                                 |                            |  |
| 22<br>MAR      | 340   | 1   | 20  | <0.1  | <1   | <1  | 10  | <0.01                               | 1                          | 0.02   |
| 15             |   |   |   | 0.1   |  |   |   |                                     |                            | 115  |
| 13<br>JUL      | 800   | 3   | 60  | <0.1  | <1   | <1.   | 80  | <0.01                               | 4                          | 0.02   |
| 24             |   |   |   |   |  |   |   |                                     |                            |  |

### 50035950 RIO CIALITOS AT HIGHWAY 649 AT CIALES, PR

# WATER-QUALITY RECORDS

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

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

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

# WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | TIME                                   | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS)                  | SPR-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS)                       | TEMPER-<br>ATURE<br>(DEG C)                  | TUR-<br>BID-<br>ITY<br>(NTU)           | OXYGEN<br>DIS-<br>SOLVE<br>(MG/L                   | CENT<br>D SATUR                     | DEMAND CHEM- ICAL (HIGH LEVEL)              | FORM,<br>FECAL,<br>0.7                     | KF AGAR<br>(COLS.<br>PER                         |
|----------------|--|--|---|--|--|--|--|-------------------------------------|---|--|--|
| OCT 1984       |  |  |   |  |  |  |  |                                     |   |  |  |
| 26<br>JAN 1985 | 1355                                   | 23   | 232   | 8.50   | 24.5   | 5.3                                    | 8.   | 9 10                                | 7 (1  | 0 K1700                                    | 2500   |
| 22<br>MAR      | 1135                                   | 20   | 221   | 8.40   | 20.0   | -                                      | - 9.   | 7 10                                | 6 -   | - 370                                      | 390  |
| 15             | 1535                                   | 11   | 238   | 8.40   | 25.0   | 2.0                                    | 9.   | 3 11                                | 3 <1  | 0 к91                                      | K82  |
| MAY<br>13      | 1700                                   | 14   | 250   | 8.00   | 25.0   | 5.1                                    | 8.   | 2 10                                | 0 1   | 7 2400                                     | 2100   |
| JUL 24         | 1600                                   | 13   |   |  |  | _                                      |  |                                     | _   | - 8300                                     | 520  |
|                | 1717                                   |  |   |  |  |  |  |                                     |   |  | 2.31   |
| DATE           | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | HARD-<br>NESS<br>NONCARB<br>WATER<br>TOT FLD<br>MG/L AS<br>CACO3 | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA)      | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SODIU<br>AD-<br>SORP-<br>TION<br>RATIO | M POTAS<br>SIUM<br>DIS-<br>SOLVE<br>(MG/L<br>AS K) | , WATER TOTAL D FIELD MG/L A        | SULFID<br>TOTAL<br>S (MG/L                  | SOLVED                                     | DIS-<br>SOLVED<br>(MG/L                          |
| OCT 1984       |  |  |   |  |  |  |  |                                     |   |  |  |
| 26<br>JAN 1985 | 89                                     |  | 26  | 5.9  | 10   | 0.                                     | 5 1.5  | 9                                   | 1 -   | - 6.9                                      | 10   |
| 22<br>MAR      |  |  |   |  | 123  | -                                      |  | - 9                                 | 4 -   |  |  |
| 15             |  |  |   |  |  | -                                      |  | - 10                                | 2 -   |  |  |
| MAY<br>13      | 100                                    | 3  | 31  | 6.1  | 10   | 0.                                     | 4 1.6  | 10                                  | 0 (0.                                       | 5 6.9                                      | 10   |
| JUL 24         |  |  |   |  |  |  |  | _                                   |   |  | 22   |
| DAT            | RI<br>D<br>SO<br>E (M                  | DE, DI<br>IS- SC<br>LVED (N<br>G/L                               | LICA, SUNIS- CON<br>DLVED TUE<br>MG/L DAS SC      | STI- I<br>ENTS, SC<br>DIS- (T<br>DLVED I             | LIDS, RES                                    | 105<br>G. C, N.<br>JS- '               | GEN,<br>ITRATE N<br>POTAL<br>(MG/L                 | GEN,<br>ITRITE NO<br>TOTAL<br>(MG/L | GEN,<br>02+NO3 AI<br>TOTAL '<br>(MG/L       | GEN,<br>MMONIA OR<br>FOTAL T<br>(MG/L (    | ITRO-<br>GEN,<br>GANIC<br>OTAL<br>MG/L<br>S N)   |
| OCT 198        |  |  |   |  |  |  |  |                                     |   |  |  |
| 26<br>JAN 198  |  | 0.1  | 26  | 140  | 8.8  | 5                                      |  | <0.01                               | 0.70  | 0.03                                       | 0.17   |
| 22<br>MAR      |  |  |   |  |  |  | 0.89   | 0.01                                | 0.90  | 0.04                                       | 0.26   |
| 15             |  |  |   |  | 22   | 6                                      |  | <0.01                               | 0.60  | 0.02                                       | 0.38   |
| MAY<br>13      |  | 0.1  | 26  | 150  | 5.7  | 12                                     |  | <0.01                               | 0.50  | 0.02                                       |  |
| JUL<br>24      |  |  |   |  |  |  | 0.89   |                                     |   |  | 0.26   |
| DAT            | GEN<br>MON<br>ORG.<br>TO'<br>E (M      | ANIC C<br>TAL TO<br>G/L (M                                       | GEN, G<br>OTAL TO<br>IG/L (M                      | EN, PHO<br>TAL TO                                    | TAL TO                                       | BENIC I                                | RECOV-<br>RRABLE<br>(UG/L                          | TOTAL TRECOV- IN BRABLE IN (UG/L    | ADMIUM I<br>TOTAL :<br>RECOV- I<br>BRABLE I | TOTAL T<br>RECOV- R<br>BRABLE E<br>(UG/L ( | PPER,<br>OTAL<br>ECOV-<br>RABLE<br>UG/L<br>S CU) |
| OCT 198        |  |  |   |  |  |  |  |                                     |   |  |  |
| 26<br>JAN 198  | - 1                                    | 0.2  | 0.9   | 4.0 0  | .09  |  |  |                                     |   |  |  |
| 22<br>MAR      |  | 0.3  | 1.2   | 5.3 0  | .08  |  |  |                                     |   | -  | 77   |
| 15             | 3                                      | 0.4  | 1.0   | 4.4 0  | .07  |  |  |                                     | 44  |  |  |
| MAY<br>13      |  |  |   |  |  |  |  |                                     |   |  |  |
| JUL            | <(                                     | 0.1  |   | 0  | .06  | <1                                     | <100   | <20                                 | 2   | 1  | 10   |

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RIO GRANDE DE MANATI BASIN 50035950 RIO CIALITOS AT HIGHWAY 649 AT CIALES, PR--Continued WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| OCT 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 26<br>JAN 1985 |   |   |   |   |  |   | -   |                                     |                            |  |
| 22             |   |   |   |   |  |   |   |                                     |                            |  |
| MAR            |   |   |   |   |  |   |   |                                     |                            |  |
| 15             |   |   |   | 0.1   |  |   |   |                                     |                            |  |
| MAY            |   |   |   |   |  |   |   |                                     |                            |  |
| 13             | 460   | 5   | 20  | <0.1  | <1   | <1  | 30  | <0.01                               | 2                          | 0.04   |
| JUL            |   |   |   |   |  |   |   |                                     |                            |  |
| 24             |   |   |   |   |  |   |   |                                     |                            |  |

### 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. Elevation of gage is 14 ft (4 m), from topographic map. Prior to 1968 crest-stage gage at same site and datum 3.57 ft (1.088 m) lower.

REMARKS. -- Estimated daily discharges: Jan. 4-29 and Aug. 30 to Sept. 23. Records fair except those for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--15 years (1971-86), 377 cu ft/s (10.68 cu m/s), 25.99 in/yr (660 mm/yr), 273,100 acre-ft/yr (337 cu hm/yr); median of yearly mean discharges, 340 cu ft/s (9.63 cu m/s), 246,000 acre-ft/yr (300 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 136,000 cu ft/s (3,850 cu m/s), May 18, 1985, gage height, 33.54 ft (10.223 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 discharge, 33 cu ft/s (0.935 cu m/s), May 12, 1984.

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

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

|        |      | Disch     | arge     | Gage h | eight |        |      | Disch     | arge     | Gage   | height |
|--------|------|-----------|----------|--------|-------|--------|------|-----------|----------|--------|--------|
| Date   | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   | Date   | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)    |
| Nov. 3 | 1715 | 18,300    | 518      | 29.26  | 8.918 | May 18 | 1315 | *136,000  | 3,850    | *33.54 | 10.223 |
| May 17 | 2045 | 51,000    | 1,440    | 31.38  | 9.565 |        |      |           |          |        |        |

Minimum discharge, 76 cu ft/s (2.152 cu m/s), Apr. 20.

|                  |      | DISC  | CHARGE,          | IN C | CUBIC F      | BRT : | PBR | SECOND,<br>MEAN |              | YEAR | осто     | BER 19 | 984 T | O SEPT       | RMBRE | 1985           |                |                  |  |
|------------------|------|-------|------------------|------|--------------|-------|-----|-----------------|--------------|------|----------|--------|-------|--------------|-------|----------------|----------------|------------------|--|
| DAY              | oc   | T NO  | vc               | DEC  | J            | AN    |     | FEB             | MAR          | ,    | APR      | M/     | Y     | JUN          |       | JUL            | AUG            | SEP              |  |
| 1                | 17   | 2 64  | 14               | 303  | 4            | 51    |     | 172             | 144          |      | 336      | 30     | 8     | 288          | 1     | 154            | 109            | 206              |  |
| 2                | 15   |       |                  | 284  |              | 26    |     | 185             | 125          |      | 223      | 33     |       | 281          |       | 154            | 134            | 158              |  |
| 3                | 14   |       |                  | 403  |              | 01    |     | 169             | 113          |      | 172      |        | 8     | 275          |       | 147            | 125            | 160              |  |
| 4                | 13   |       |                  | 316  |              | 33    |     | 164             | 107          |      | 167      |        | 15    | 540          |       | 144            | 107            | 133              |  |
| 5                | 46   |       |                  | 276  |              | 12    |     | 155             | 105          |      | 51       | 20     |       | 442          |       | 138            | 102            | 120              |  |
| 6                | 115  | 0 120 | 00               | 256  | 2            | 73    |     | 150             | 123          | 1    | 133      | 17     | 70    | 294          |       | 135            | 120            | 125              |  |
| 7                | 103  | 0 319 | 90               | 243  | 2            | 86    |     | 145             | 121          | 1    | 25       | 46     | 57    | 278          | 1     | 133            | 118            | 193              |  |
| 8                | 49   | 7 364 | 10               | 235  |              | 74    |     | 141             | 209          |      | 124      | 23     |       | 260          | )     | 167            | 106            | 156              |  |
| 9                | 47   |       |                  | 243  |              | 57    |     | 137             | 157          |      | 21       | 17     | 17    | 249          | )     | 357            | 100            | 142              |  |
| 10               | 58   | 1 13: | 30               | 354  | 2            | 41    |     | 135             | 132          | 1    | 116      | 16     | 55    | 241          |       | 183            | 99             | 122              |  |
| 11               | 38   |       |                  | 771  | 2            | 50    |     | 136             | 118          | 1    | 65       | 14     | 14    | 228          | 1     | 145            | 145            | 116              |  |
| 12               | 29   | 4 7   | 18               | 851  | 2            | 34    |     | 136             | 107          | 1    | 18       | 13     | 39    | 222          |       | 135            | 184            | 112              |  |
| 13               | 25   | 1 62  | 25               | 391  | 2            | 23    |     | 131             | 109          | 1    | 06       | 16     | 64    | 214          | E.    | 131            | 220            | 224              |  |
| 14               | 23   |       | 72               | 317  | 2            | 20    |     | 131             | 106          | 1    | 00       | 13     | 37    | 20€          |       | 125            | 149            | 235              |  |
| 15               | 34   | 0 72  | 27               | 291  | 2            | 57    |     | 137             | 98           |      | 97       | 28     | 37    | 200          | ):    | 146            | 125            | 168              |  |
| 16               | 70   |       |                  | 298  |              | 31    |     | 131             | 93           |      | 94       | 294    |       | 191          |       | 203            | 110            | 141              |  |
| 17               | 71   |       |                  | 909  |              | 09    |     | 125             | 92           |      | 90       | 2300   |       | 182          |       | 206            | 102            | 244              |  |
| 18               | 156  |       | 08               | 649  | 2            | 07    |     | 122             | 93           |      | 87       | 5590   | 00    | 180          |       | 150            | 97             | 404              |  |
| 19               | 63   |       | 59               | 436  | 2            | 03    |     | 122             | 114          |      | 86       | 59€    | 0     | 236          | 1     | 136            | 95             | 326              |  |
| 20               | 79   | 7 42  | 23               | 442  | 2            | 02    |     | 123             | 127          |      | 80       | 158    | 30    | 186          |       | 131            | 94             | 243              |  |
| 21               | 53   |       |                  | 379  |              | 02    |     | 119             | 108          |      | 81       | 104    |       | 175          |       | 130            | 94             | 1440             |  |
| 22               | 46   |       |                  | 358  |              | 96    |     | 114             | 98           | 1    | 02       | 73     |       | 169          |       | 120            | 94             | 604              |  |
| 23               | 38   |       |                  | 331  |              | 39    |     | 121             | 91           |      | 91       | 58     |       | 185          |       | 124            | 92             | 959              |  |
| 24               | 36   |       |                  | 471  |              | 37    |     | 150             | 86           |      | 20       | 50     | 8     | 283          |       | 149            | 92             | 793              |  |
| 25               | 29   | 9 40  | 00               | 385  | 1            | 37    |     | 149             | 83           | 5    | 89       | 46     | 0     | 212          |       | 127            | 98             | 1320             |  |
| 26               | 26   |       |                  | 344  | 1            | 37    |     | 183             | 81           | 7    | 57       | 41     | 8     | 310          |       | 115            | 97             | 671              |  |
| 27               | 25   |       |                  | 400  |              | 37    |     | 143             | 250          | 3    | 167      | 38     |       | 187          |       | 114            | 250            | 375              |  |
| 28               | 28   |       |                  | 550  |              | 87    |     | 175             | 531          |      | 61       | 35     |       | 165          |       | 132            | 251            | 356              |  |
| 29               | 98   |       |                  | 487  |              | 32    |     |                 | 567          |      | 04       | 33     |       | 155          |       | 122            | 132            | 305              |  |
| 30               | 113  |       |                  | 426  |              | 84    |     |                 | 648          |      | 69       | 31     |       | 150          |       | 142            | 804            | 245              |  |
| 31               | 148  | 0     | -                | 502  | 1            | 51    |     |                 | 507          |      |          | 29     | 9     |              | - 3   | 127            | 512            |                  |  |
| TOTAL            | 1714 |       |                  | 901  | 75           |       | 4   | 1001            | 5443         |      | 32       | 9853   |       | 7184         |       | 4622           | 4957           | 10796            |  |
| MEAN             | 55   |       |                  | 416  |              | 13    |     | 143             | 176          |      | 48       | 317    |       | 239          |       | 149            | 160            | 360              |  |
| MAX              | 156  |       |                  | 909  |              | 51    |     | 185             | 648          | 14   | 20       | 5590   | 00    | 540          |       | 357            | 804            | 1440             |  |
| MIN              | 13'  | 7 33  |                  | 235  |              | 31    |     | 114             | 81           |      | 80       | 13     | 17    | 150          | 1     | 114            | 92             | 112              |  |
| CFSM             | 2.8  |       |                  | .11  | 1.:          |       |     | .73             | .89          |      | 26       | 16.    |       | 1.21         |       | .76            | .81            | 1.83             |  |
| IN.              | 3.2  |       |                  | . 44 | 1.           |       |     | .76             | 1.03         |      | 40       | 18.6   |       | 1.36         |       | .87            | .94            | 2.04             |  |
| AC-FT            | 3401 | 6920  | 00 25            | 590  | 149          | 10    | 7   | 7940            | 10800        | 147  | 40       | 19540  | 00    | 14250        |       | 9170           | 9830           | 21410            |  |
| CAL YR<br>WTR YR |      | TOTAL | 110796<br>215416 |      | MEAN<br>MEAN |       | 90  |                 | 5900<br>5900 | MIN  | 34<br>80 | CFS    |       | . 54<br>. 99 | IN.   | 20.92<br>40.68 | AC-FT<br>AC-FT | 219800<br>427300 |  |

RIO GRANDE DE MANATI BASIN

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

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### WATER-QUALITY RECORDS

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

K = non-ideal count

| DATE           | TIME   | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM)    | PH<br>(STAND-<br>ARD<br>UNITS)                     | TEMPER-<br>ATURE<br>(DEG C)                          | TUR-<br>BID-<br>ITY<br>(NTU)                        | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L)                            | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)       | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3)                             |
|----------------|--|---|--|--|--|---|--|--|---|--|--|--|
| OCT 1984       | 1215   | 430   | 232  | 7.60   | 26.5   | 35  | 3.8  | 47   | 10  | 6000   | 3500   | 96   |
| DEC            |  |   |  |  |  |   |  |  |   |  |  |  |
| 04<br>FRB 1985 | 1400   | 316   | 248  | 7.90   | 25.5   | 15  | 7.9  | 96   | 12  | K1000  | K10000   | 100  |
| 14<br>APR      | 1115   | 133   | 302  | 7.80   | 24.0   | 4.0   | 9.1  | 107  | 13  | 18000  | 30000  | 130  |
| 02<br>JUN      | 1130   | 216   | 256  | 7.60   | 24.5   | 30  | 7.7  | 91   | 14  | 3000   | K400   | 100  |
| 03             | 1225   | 272   | 272  | 7.80   | 28.0   | 7.5   | 8.1  | 102  | 20  | 3300   | 6000   | 120  |
| 01             | 1105   | 109   | 346  | 7.80   | 28.5   | 14  | 7.6  | 96   | <10   | 2500   | K1100  | 140  |
| DATE           | HARD-<br>NESS<br>NONCARB<br>WATER<br>TOT FLD<br>MG/L AS<br>CACO3 | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA)    | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA)       | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO              | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LINITY<br>WATER<br>TOTAL<br>FIELD<br>MG/L AS<br>CACO3 | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4)                  | CHLO-<br>RIDB,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) | FLUO-<br>RIDB,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F)             | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2)                  | SOLIDS,<br>RESIDUE<br>AT 180<br>DEG. C<br>DIS-<br>SOLVED<br>(MG/L) |
| OCT 1984       |  |   |  |  |  |   |  |  |   |  |  |  |
| 09             | 5  | 29  | 5.7  | 9.0  | 0.4  | 1.9   | 91   | 10   | 11  | 0.1  | 19   | 164  |
| 04<br>FBB 1985 | 1  | 29  | 7.4  | 9.6  | 0.4  | 1.6   | 102  | 7.9  | 12  | <0.1   | 22   | 154  |
| 14             | 2  | 38  | 8.5  | 12   | 0.5  | 1.8   | 128  | 8.7  | 13  | 0.1  | 13   | 181  |
| APR 02         | 10   | 30  | 7.3  | 10   | 0.4  | 2.0   | 96   | 25   | 16  | 0.1  | 21   | 180  |
| JUN<br>03      | 5  | 34  | 7.4  | 11   | 0.5  | 2.0   | 111  | 8.4  | 11  | 0.1  | 19   | 173  |
| AUG 01         | 12   | 42  | 8.5  | 12   | 0.5  | 2.0   | 128  | 10   | 13  | 0.1  | 21   | 193  |
| 01             | 12   | 14  | 0.5  | 12   | 0.5  | 2.0   | 120  | 10   | land the  |  |  | 133  |
| DATE           | 3 SOL  | OF SOLI   | S- AT 1<br>VED DEG.<br>NS SUS<br>R PEND              | DUR GEN<br>05 NO2+1<br>C, DIS<br>- SOLV<br>BD (MG) | N, GEN<br>NO3 AMMON<br>B- DIS<br>/ED SOLV<br>/L (MG/ | , GEN IA AMMON - DIS BD SOLV L (MG/                 | , GEN,<br>IA MONI<br>- ORGA<br>ED TOT<br>L (MG                 | A + PHO<br>NIC PHOP<br>CAL TOTAL<br>I/L (MC                    | RUS, PHO<br>TAL TOT<br>I/L (MG                      | RUS DI<br>AL SOL<br>/L (MG                                     | US, ORT<br>S- DIS<br>VED SOLV<br>/L (MG/                           | EUS,<br>PHO,<br>E<br>ED<br>L                                       |
| OCT 1984       |  | 140 190   | 7  |  |  |   |  |  | 15  | 0.   |  | 08   |
| DBC            |  |   |  |  |  |   |  |  |   |  |  |  |
| 04<br>FEB 1985 | a let all  | 150 131<br>170 65                               | 3  |  |  |   |  |  | 12  | 0.   |  | 07<br>22   |
| APR 02         |  | 170 105   | 13   |  |  |   |  |  | 13  | 0.   |  |  |
| JUN 03         |  | 160 127   |  |  |  |   |  |  |   | 0.   |  | 03   |
| AUG            |  |   |  |  |  |   |  |  | 01  |  |  |  |
| 01             |  | 190 57  |  | 0.4  | 0.0  | 3 0.  |  | 0.7 0.   | 14 0  | .43 0.   | 06 0.  | 06   |
| DATE           | SOL  | HO, INUI<br>S- DIS<br>VED SOL                   | M, ARSE<br>S- DI<br>VED SOL'<br>/L (UG               | S- DIS-<br>VED SOLVE<br>/L (UG/                    | DIS-<br>SD SOLV                                      | , CADMI<br>DIS<br>ED SOLV<br>L (UG/                 | CHR<br>UM MIU<br>- DIS<br>RD SOL<br>L (UG                      | O-<br>M, COBA<br>- DIS<br>VED SOLV                             | ED SOL  | - DI   | AP (AC<br>ARD SOF<br>AP DI   | S-<br>VRD<br>/L  |
| OCT 1984       |  | .25   | 30   | <1   | 46 0   |   | (1 (1  |  | ⟨3  | 7  | 18   | <b>(1</b>  |
| DEC 04         |  |   |  |  |  |   |  |  |   |  |  |  |
| FEB 1985       |  | .21   |  |  |  |   |  |  |   |  |  |  |
| 14<br>APR      | 0  | .67   | <10  | <1   | 45 0   | .7  | <1 <1  |  | <3  | 2  | 12   | 1  |
| 02<br>JUN      |  |   |  |  |  |   | +  |  |   |  |  | -  |
| 03             | 0  | .09   | 20   | <1   | 54 <0  | . 5   | <1 2   |  | <3  | 2  | 3  | 1  |
| AUG 01         | 0  | .18   | <10  | 1  | 57 <0  | . 5   | (1 (1  |  | <3  | 2  | 5  |  |
|                | n-ideal  |   |  |  |  |   |  |  |   |  |  |  |

SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)

# RIO GRANDE DE MANATI BASIN

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

| DATE           | LITHIUM<br>DIS-<br>SOLVED<br>(UG/L | MANGA-<br>NESE,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MN) |                            | S-<br>VED<br>/L | DEN<br>DI<br>SOI<br>(UC | YB-<br>IUM,<br>IS-<br>LVED<br>I/L<br>MO) | (UG                       | VED                                | SOL<br>(UG       | M,<br>S-<br>VED | SOL<br>(UG       | S-<br>VED          | STR<br>TI<br>DI<br>SOL<br>(UG<br>AS | UM,<br>S-<br>VED<br>/L | VAN<br>DIU<br>DI<br>SOL<br>(UG<br>AS | M,<br>S-<br>VED<br>/L | SEDI-<br>MENT,<br>SUS-<br>PENDED<br>(MG/L) |
|----------------|------------------------------------|--|----------------------------|-----------------|-------------------------|--|---------------------------|------------------------------------|------------------|-----------------|------------------|--------------------|-------------------------------------|------------------------|--------------------------------------|-----------------------|--|
| OCT 1984<br>09 | <4                                 | 17   | <                          | 0.1             |                         | <10                                      |                           | 1                                  |                  | <1              |                  | <1                 |                                     | 140                    |                                      | 9                     | 114  |
| 04<br>FEB 1985 |                                    |  |                            |                 |                         |  |                           |                                    |                  |                 |                  |                    |                                     |                        |                                      |                       | 69   |
| 14<br>APR      | <4                                 | 29   | <                          | 0.1             |                         | <10                                      |                           | <1                                 |                  | <1              |                  | <1                 |                                     | 190                    |                                      | 7                     | 24   |
| 02<br>JUN      |                                    |  |                            |                 |                         |  |                           |                                    |                  |                 |                  |                    |                                     |                        |                                      |                       | 94   |
| 03<br>AUG      | 6                                  | 38   | <                          | 0.1             |                         | <10                                      |                           | 2                                  |                  | <1              |                  | <1                 |                                     | 170                    |                                      | <6                    | 85   |
| 01             | <4                                 | 52   |                            |                 |                         | <10                                      |                           | <1                                 |                  | <1              |                  | <1                 |                                     | 210                    |                                      | 7                     | 65   |
|                | DATE                               | TIME   | PCB<br>TOT<br>(UG/         | AL              | ALDR<br>TOT<br>(UG      |  | CHL<br>DAN<br>TOT<br>(UG/ | E,<br>AL                           | DD<br>TOT<br>(UG | AL              | DD<br>TOT<br>(UG |                    | DD'<br>TOT.                         | AL                     | DI<br>AZIN<br>TOT                    | ON,<br>AL             | DI-<br>ELDRIN<br>TOTAL<br>(UG/L)           |
|                | JUN 1985<br>03                     | 1225   | <                          | 0.1             | <0.                     | 01                                       | <                         | 0.1                                | <0.              | 01              | <0.              | 01                 | <b>(0.</b>                          | 01                     | <0                                   | .01                   | <0.01                                      |
|                | DATE                               | SUL  | DO-<br>FAN,<br>TAL<br>G/L) | TO              | RIN,<br>TAL<br>G/L)     | TO                                       | ION,<br>TAL<br>G/L)       | CHL                                | TA-<br>OR,<br>AL | EPO)            |                  | LINE<br>TOT<br>(UC |                                     | TH                     | LA-<br>ION,<br>TAL<br>G/L)           | CHI                   | TH-<br>KY-<br>LOR,<br>TAL<br>G/L)          |
|                | JUN 1985<br>03                     |  | .01                        | ۲0              | .01                     | <  | 0.01                      | <0.                                | 01               | <0.             | 01               | <0.                | 01                                  | <                      | 0.01                                 | ((                    | 0.01                                       |
| ÷              | DATE                               | SUL  | DO-<br>FAN,<br>TAL<br>G/L) | TO              | RIN,<br>FAL<br>G/L)     | TO                                       | ION,<br>TAL<br>G/L)       | CHL                                |                  | KPOX<br>TOT     | IDE              | LINE<br>TOT<br>(UG |                                     | TH                     | LA-<br>ION,<br>FAL<br>G/L)           | CHI                   | TH-<br>CY-<br>LOR,<br>TAL<br>1/L)          |
|                | JUN 1985<br>03                     |  | .01                        | <0              | .01                     | <  | 0.01                      | <b>&lt;0.</b>                      | 01               | <0.             | 01               | <b>&lt;0.</b>      | 01                                  | <(                     | 0.01                                 | <0                    | 0.01                                       |
|                |                                    |  |                            | DAT             | LR                      | т  | IMR                       | STRE<br>FLO<br>INST<br>TANE<br>(CF | W,<br>AN-<br>BUO |                 | T,<br>DED        | SIE                | AM.<br>NER<br>AN                    |                        |                                      |                       |  |
|                |                                    |  |                            | 198             |                         | 1  | 215                       | 43                                 | 0                |                 | 114              |                    | 90                                  |                        |                                      |                       |  |
|                |                                    |  | DE                         | 04              |                         |  | 400                       | 31                                 |                  |                 | 69               |                    | 93                                  |                        |                                      |                       |  |
|                |                                    |  | 50                         | R 198           |                         | 1  | 130                       | 21                                 | 6                |                 | 94               |                    | 91                                  |                        |                                      |                       |  |
|                |                                    |  | AUG                        | 3               |                         | 1  | 225                       | 27                                 | 2                |                 | 85               |                    | 89                                  |                        |                                      |                       |  |
|                |                                    |  |                            |                 | •                       | 1  | 105                       | 10                                 | 9                |                 | 65               |                    | 95                                  |                        |                                      |                       |  |

### LAGUNA TORTUGUERO BASIN

# 50038200 LAGUNA TORTUGUERO OUTLET NEAR VEGA BAJA, PR

# WATER-QUALITY RECORDS

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

DRAINAGE AREA. -- Indeterminate.

K = non-ideal count

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

| DATE           |      | TIME            | STRE<br>FLO<br>INST<br>TANE<br>(CF    | W, COI<br>AN- DUG<br>OUS ANG  | FIC<br>N-<br>CT-<br>CB                | PH<br>(STAN<br>ARD<br>UNITS | ATI   | PER-<br>JRE<br>3 C)      | SOI  | GEN,<br>IS-<br>LVED<br>E/L) | SOI<br>(PI<br>CI<br>SAT                  | JEN,<br>IS-<br>LVED<br>IR-<br>INT<br>TUR-<br>ION) | OXYO<br>DEMA<br>CHE<br>ICA<br>(HI<br>LEVE<br>(MG/ | ND,<br>KM-<br>L<br>GH<br>KL)                    | FOR FROM UM-                  | MF                  | TOCO<br>FEC<br>KF A<br>(COL<br>PE | AL,<br>GAR<br>S. | ALK<br>LINI<br>WAT<br>TOT<br>FIE<br>MG/L<br>CAC | TY<br>ER<br>AL<br>LD |
|----------------|------|-----------------|---------------------------------------|---|---------------------------------------|-----------------------------|---|--------------------------|--|-----------------------------|--|---|---|---|-------------------------------|---------------------|-----------------------------------|------------------|---|----------------------|
| OCT 1984       |      |                 |                                       |   |                                       |                             |   |                          |  |                             |  |   |   |   |                               |                     |                                   |                  |   |                      |
| 26<br>JAN 1985 |      | 0920            | 16                                    |   | 1860                                  | 8.                          | 10  | 28.0                     |  | 7.7                         |  | 99  |   | 30  |                               | K13                 |                                   | 23               |   | 112                  |
| 21<br>APR      |      | 1455            | 18                                    | 1   | 600                                   | 8.                          | 20 2  | 28.0                     |  | 9.7                         |  | 124   |   | 44  |                               | <1                  |                                   | K7               |   | 121                  |
| 03             |      | 1615            | 15                                    | 1   | 1720                                  | 8.                          | 20 :  | 28.5                     |  | 8.4                         |  | 109   |   | 31  |                               | 21                  |                                   | 270              |   | 120                  |
| MAY 14         |      | 1630            | 13                                    | 1   | 670                                   | 8.                          | 00 :  | 28.5                     |  | 8.0                         |  | 103   |   | 45  |                               | 34                  |                                   | <1               |   | 98                   |
| AUG<br>19      |      | 1745            | 13                                    | 1   | 1890                                  | 8.                          | 30 :  | 31.0                     |  | 8.1                         |  | 108   |   | 40  |                               |                     |                                   |                  |   | 125                  |
|                |      |                 |                                       |   |                                       |                             |   |                          |  |                             |  |   |   |   |                               |                     |                                   |                  |   |                      |
|                | DATE | T(              | LFIDE<br>OTAL<br>MG/L<br>S S)         | SOLIDS,<br>RESIDUE<br>AT 105<br>DEG. C,<br>SUS-<br>PENDED<br>(MG/L) | NITE<br>GRE<br>NITE<br>TOTA<br>(MG,   | ATE I                       | NITRO-<br>GEN,<br>NITRITE<br>TOTAL<br>(MG/L<br>AS N)  | NO2-<br>TO               | TRO-<br>EN,<br>+NO3<br>TAL<br>G/L<br>N)        | AMMO<br>TO:                 | TRO-<br>EN,<br>ONIA<br>TAL<br>G/L<br>N)  | ORG.<br>TO  | FRO-<br>EN,<br>ANIC<br>FAL<br>G/L<br>N)           | NIT<br>GEN,<br>MONI<br>ORGA<br>TOT<br>(MG<br>AS | AM-<br>A +<br>NIC<br>AL<br>/L | TO                  | TRO-<br>RN,<br>TAL<br>G/L<br>N)   |                  | /L  |                      |
| OCT            | 1984 |                 |                                       |   |                                       |                             |   |                          |  |                             |  |   |   |   |                               |                     |                                   |                  |   |                      |
|                | 1985 |                 |                                       | 2   | 0.6                                   | 88                          | 0.02  | 0.                       | .70  | 0                           | . 21                                     |   | 0.79  | 1   | .0                            | 1                   | 1.7                               | 7                | . 5   |                      |
| APR            | 1    |                 | <0.5                                  | 3   | 0.7                                   | 78                          | 0.02  | 0.                       | .80  | 0                           | . 15                                     |   | 0.85  | 1   | .0                            | 1                   | 1.8                               | 8                | .0  |                      |
|                | 3    |                 |                                       | 4   | 0.7                                   | 79                          | 0.01  | 0.                       | .80  | <0.                         | .01                                      |   |   | 1   | . 3                           | 2                   | 2.1                               | 9                | .3  |                      |
|                | 1    |                 | <0.5                                  | 5   | 0.5                                   | 59                          | 0.01  | 0.                       | .60  | 0                           | . 12                                     |   | 0.48  | 0   | .6                            | 1                   | .2                                | 5                | . 3   |                      |
|                |      |                 |                                       | 8   | 0.8                                   | 39                          |   |                          |  |                             |  | 0   | . 26  |   |                               | 1.                  | 2                                 | 5                | . 3   |                      |
|                | DATE | PHO<br>TO<br>(1 | HOS-<br>ORUS,<br>OTAL<br>MG/L<br>S P) | BORON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS B)               | COPPE<br>TOTA<br>RECO<br>ERAF<br>(UG/ | L<br>OV-<br>BLR<br>'L       | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | TOT<br>REC<br>ERA<br>(UC | GA-<br>BE,<br>FAL<br>COV-<br>BLE<br>B/L<br>MN) | REC<br>ERA<br>(UC           | CURY<br>FAL<br>COV-<br>BLR<br>G/L<br>HG) | REG<br>ER/  | NC,<br>PAL<br>COV-<br>ABLE<br>3/L<br>ZN)          | CYAN<br>TOT.<br>(MG                             | AL<br>/L                      | PHEN<br>TOT<br>(UG/ | AL                                | ACT<br>SU<br>STA | HY-<br>NE<br>UR<br>IVE                          |                      |
|                | 1984 |                 |                                       |   |                                       |                             |   |                          |  |                             |  |   |   |   |                               |                     |                                   |                  |   |                      |
| JAN            | 1985 | •               | 0.01                                  |   |                                       |                             |   |                          |  |                             |  |   |   |   |                               |                     |                                   |                  |   |                      |
| 21<br>APR      |      | <(              | 0.01                                  | 80  |                                       | 10                          | 90  |                          | 20   |                             |  |   | 20  | <0.   | 01                            |                     | 3                                 | 0                | .07   |                      |
| O3<br>MAY      |      | <(              | 0.01                                  |   |                                       |                             |   |                          |  |                             | 1.1                                      |   |   |   |                               |                     |                                   |                  |   |                      |
|                |      | <(              | 0.01                                  |   | •                                     | 10                          | 70  |                          | <10  | <0                          | 1.1                                      |   | 30  | <0.   | 01                            |                     | 7                                 | 0                | . 1   |                      |
| 19             |      |                 |                                       |   |                                       |                             |   |                          |  |                             |  |   |   |   |                               |                     |                                   |                  |   |                      |
|                |      |                 |                                       |   |                                       |                             |   |                          |  |                             |  |   |   |   |                               |                     |                                   |                  |   |                      |

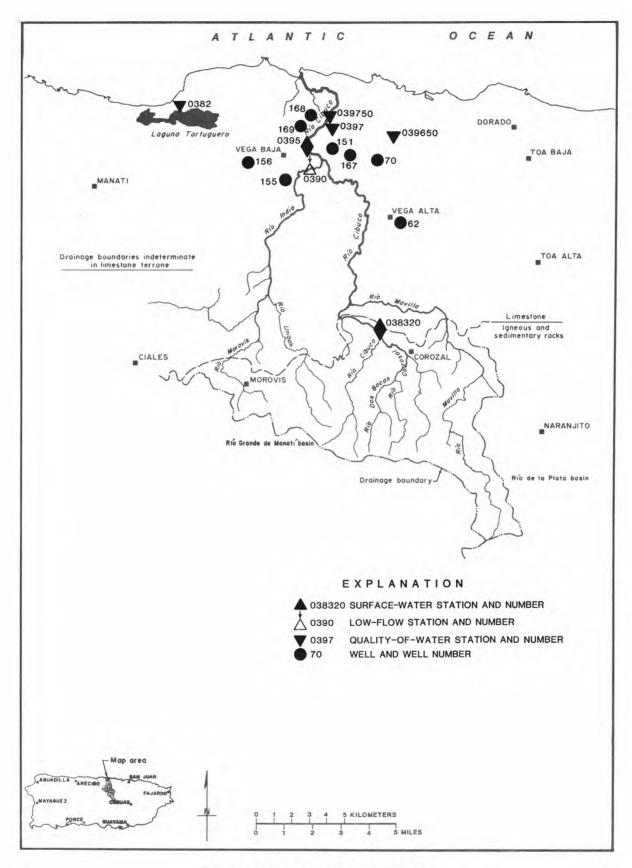


Figure 17.--Río Cibuco basin.

106 RIO CIBUCO BASIN

### 50038320 RIO CIBUCO BELOW COROZAL, PR

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

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

### WATER-DISCHARGE RECORDS

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

GAGE .- Water-stage recorder. Blevation of gage is 195 ft (59 m), from topographic map.

REMARKS .-- No estimated daily discharges during water year. Records fair.

AVERAGE DISCHARGE.--16 years (1970-85), 28.7 cu ft/s (0.813 cu m/s), 25.81 in/yr (656 mm/yr), 20,790 acre-ft/yr (25.6 cu hm/yr); median of yearly mean discharges, 31 cu ft/s (0.88 cu m/s), 22,500 acre-ft/yr (28 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD. --Maximum discharge, 13,600 cu ft/s (385 cu m/s), Nov. 7, 1979, gage height, 19.80 ft (6.035 m), from rating curve extended above 100 cu ft/s (2.83 cu m/s) on basis of float and slope-area measurements of peak flow; minimum daily discharge, 1.3 cu ft/s (0.037 cu m/s), July 24-26, 1977.

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

|                   |              | Discha         | arge        | Gage h | eight          |        |      | Disch     | arge     | Gage b | eight |
|-------------------|--------------|----------------|-------------|--------|----------------|--------|------|-----------|----------|--------|-------|
| Date              | Time         | (cu ft/s)      | (cu m/s)    | (ft)   | <b>(=)</b>     | Date   | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   |
| Apr. 23<br>May 17 | 1500<br>1500 | 2,510<br>7,740 | 71.1<br>219 |        | 3.289<br>4.965 | May 18 | 0900 | *10,800   | 306      | *18.55 | 5.654 |

Minimum discharge, 4.0 cu ft/s (0.113 cu m/s), Aug. 23, 24, Sept. 5, 6.

|                  |          | DIS            | CHARGE,           | IN CU    | BIC FEE  | r PRR | SECOND,<br>MEAN |             | YEAR | остоі | BER 1984 | TO SEPT | BMBE | R 1985 |                |                |
|------------------|----------|----------------|-------------------|----------|----------|-------|-----------------|-------------|------|-------|----------|---------|------|--------|----------------|----------------|
| DAY              | oct      | r N            | ov                | DEC      | JAN      |       | FBB             | MAR         | A    | PR    | MAY      | JUN     |      | JUL    | AUG            | SEP            |
| 1                | 8.7      | 7              | 43                | 14       | 52       |       | 16              | 12          | 35   |       | 73       | 18      |      | 14     | 7.0            | 6.7            |
| 2                | 7.5      | 5              | 30                | 17       | 72       |       | 12              | 10          | 22   |       | 43       | 17      |      | 12     | 6.8            | 10             |
| 3                | 7.6      | B 1            | 47                | 20       | 55       |       | 12              | 8.9         | 18   |       | 12       | 18      |      | 11     | 6.1            | 7.2            |
| 4                | 7.8      | В              | 76                | 15       | 42       |       | 12              | 8.8         | 16   |       | 8.6      | 50      |      | 9.4    | 6.4            | 5.3            |
| 5                | 22       |                | 80                | 13       | 32       |       | 12              | 11          | 14   |       | 6.8      | 29      |      | 9.1    | 7.3            | 4.9            |
| 6                | 23       |                | 58                | 13       | 30       |       | 11              | 29          | 14   |       | 6.5      | 45      |      | 9.0    | 19             | 4.9            |
| 7                | 13       | . 1            | 86                | 12       | 26       |       | 10              | 40          | 14   |       | 6.1      | 28      |      | 8.0    | 13             | 5.9            |
| 8                | 9.6      | 3 1            | 58                | 11       | 23       | 1     | 10              | 48          | 13   |       | 5.9      | 24      |      | 23     | 8.0            | 21             |
| 9                | 10       | 1              | 30                | 58       | 22       |       | 10              | 22          | 12   |       | 5.5      | 21      |      | 15     | 7.0            | 12             |
| 10               | 8.7      | 7              | 61                | 150      | 39       | 1     | 10              | 15          | 11   |       | 5.5      | 21      |      | 9.9    | 8.0            | 7.8            |
| 11               | 7.7      |                | 41                | 141      | 30       |       | 10              | 12          | 11   |       | 5.5      | 20      |      | 7.6    | 10             | 7.0            |
| 12               | 7.4      |                | 30                | 84       | 22       |       | 9.9             | 11          | 11   |       | 11       | 19      |      | 7.7    | 14             | 8.4            |
| 13               | 6.4      |                | 25                | 47       | 20       |       | 9.7             | 11          | 10   |       | 6.6      | 18      |      | 7.2    | 31             | 23             |
| 14               | 7.1      |                | 33                | 29       | 25       |       | 9.9             | 1,1         |      | . 5   | 5.9      | 17      |      | 6.3    | 21             | 13             |
| 15               | 40       |                | 37                | 27       | 24       |       | 9.6             | 9.9         | 9    | . 4   | 9.8      | 17      |      | 22     | 13             | 8.1            |
| 16               | 15       |                | 25                | 27       | 20       |       | 9.2             | 9.2         | 10   |       | 12       | 16      |      | 12     | 8.5            | 11             |
| 17               | 58       |                | 47                | 102      | 18       |       | 8.8             | 9.2         |      | . 9   | 918      | 16      |      | 8.6    | 7.3            | 41             |
| 18               | 27       | 3              | 27                | 46       | 16       |       | 9.0             | 9.2         |      | .0    | 2370     | 15      |      | 8.7    | 6.9            | 88             |
| 19               | 14       |                | 24                | 37       | 15       | 1     | 11              | 14          |      | . 7   | 277      | 14      |      | 10     | 6.0            | 112            |
| 20               | 28       |                | 20                | 32       | 14       |       | 9.4             | 10          | 8    | . 3   | 189      | 14      |      | 14     | 5.3            | 48             |
| 21               | 28       |                | 18                | 25       | 13       |       | 8.3             | 11          |      | .8    | 46       | 13      |      | 9.2    | 7.0            | 26             |
| 22               | 18       |                | 17                | 27       | 13       |       | 8.7             | 10          | 94   |       | 39       | 13      |      | 8.5    | 6.1            | 19             |
| 23               | 11       |                | 16                | 23       | 13       |       | 12              | 8.5         | 434  |       | 34       | 14      |      | 22     | 5.2            | 109            |
| 24               | 8.9      |                | 15                | 40       | 13       | 19    |                 | 8.1         | 68   |       | 30       | 14      |      | 15     | 9.2            | 40             |
| 25               | 7.4      |                | 14                | 22       | 13       | 1     | 17              | 8.2         | 21   |       | 28       | 13      |      | 10     | 12             | 31             |
| 26               | 28       |                | 31                | 28       | 13       |       | 17              | 8.5         | 14   |       | 26       | 12      |      | 8.5    | 9.1            | 23             |
| 27               | 11       |                | 29                | 66       | 13       |       | 15              | 55          |      | . 8   | 24       | 11      |      | 9.6    | 62             | 20             |
| 28               | 58       |                | 21                | 46       | 12       | 2     | 21              | 24          |      | . 7   | 23       | 9.5     |      | 9.4    | 16             | 59             |
| 29               | 64       |                | 15                | 34       | 12       |       |                 | 185         |      | . 4   | 22       | 9.6     |      | 8.9    | 10             | 93             |
| 30<br>31         | 32<br>20 |                | 14                | 79<br>69 | 11<br>11 |       |                 | 125<br>99   |      | .1    | 20<br>20 | 11      |      | 7.8    | 12<br>8.1      | 43             |
| TOTAL            | 614.8    | 14             | 68 1              | 354      | 734      | 91    | 29.5            | 853.5       | 939  | e     | 4289.7   | 556.1   |      | 341.0  | 368.3          | 908.2          |
| MEAN             | 19.8     |                |                   | 3.7      | 23.7     |       | 1.8             | 27.5        | 31   |       | 138      | 18.5    |      | 11.0   | 11.9           | 908.2          |
| MAX              | 64       |                |                   | 150      | 72       |       | 21              | 185         |      | 34    | 2370     | 50      |      | 23     | 62             | 112            |
| MIN              | 6.4      |                | 14                | 11       | 11       |       | 8.3             | 8.1         |      | .8    | 5.5      | 9.5     |      | 6.3    | 5.2            | 4.9            |
| CFSM             | 1.31     |                |                   | .89      | 1.57     |       | .78             | 1.82        | 2.   |       | 9.14     | 1.23    |      | .73    | .79            | 2.01           |
| IN.              | 1.51     |                |                   | . 34     | 1.81     |       | .81             | 2.10        | 2.   |       | 10.57    | 1.37    |      | .84    | .91            | 2.24           |
| AC-FT            | 1220     |                |                   | 690      | 1460     |       | 654             | 1690        | 18   |       | 8510     | 1100    |      | 676    | 731            | 1800           |
| CAL YR<br>WTR YR |          | TOTAL<br>TOTAL | 6219.8<br>12756.7 |          |          | 7.0   | MAX<br>MAX      | 641<br>2370 | MIN  | 2.3   |          | 1.13    | IN.  |        | AC-FT<br>AC-FT | 12340<br>25300 |

107 50038320 RIO CIBUCO BELOW COROZAL, PR--Continued

# WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | TIME                                   | STREAM<br>FLOW,<br>INSTAN<br>TANEOUS<br>(CFS)                    | CON-<br>DUC<br>B ANG                           | FIC<br>N-<br>CT-<br>CR                                  | PH<br>(STAND-<br>ARD<br>UNITS)                       | TEME  | JRE .  | TUI<br>BII<br>IT                  | D-<br>Y                        | OXYGI<br>DIS<br>BOLY<br>(MG,       | en,<br>8-<br>Ved                     | OXYGEN<br>DIS-<br>SOLVI<br>(PER-<br>CENT<br>SATUE<br>ATION | DEM<br>ID CH<br>IC<br>(H                               | GEN<br>AND,<br>EM-<br>AL<br>IGH<br>EL) | COL<br>FOR<br>FRC<br>0.7<br>UM-<br>(COL<br>100  | MF                                    | STRI<br>TOCOO<br>FEC.<br>KF AC<br>(COL:<br>PEI | CCI<br>AL,<br>GAR<br>S.<br>R |
|----------------|--|--|--|---|--|---|--|-----------------------------------|--------------------------------|------------------------------------|--------------------------------------|--|--|--|---|---------------------------------------|--|------------------------------|
| NOV 1984       |  |  |  |   |  |   |  |                                   |                                |                                    |                                      |  |  |  |   |                                       |  |                              |
| 14<br>JAN 1985 | 1030                                   | 35   |  | 347   | 7.80   |   | 23.0   | 16                                |                                |                                    | 8.2                                  |  | 5  | <10                                    |   | 000                                   |  | 700                          |
| APR            | 1040                                   | 20   |  | 363   | 7.80   |   | 21.0   |                                   | . 5                            |                                    | 9.3                                  | 10   |  | 20                                     |   | 000                                   |  | 550                          |
| 17<br>JUN      | 1040                                   | 9.9  |  | 394   | 7.60   | 2   | 4.5  | 2                                 | . 1                            | 1                                  | 8.7                                  | 10   | 14   | 10                                     | 2   | 900                                   |  | 310                          |
| 06<br>AUG      | 1010                                   | 23   |  | 340   | 7.80   | 2   | 6.0  | 1                                 | . 0                            | -1                                 | 7.8                                  | 5  | 6  | 17                                     | 56  | 000                                   | 6  | 600                          |
| 12             | 1045                                   | 9.0  |  | 348   | 7.90   | 2   | 7.5  | 12                                |                                | 1                                  | 7.8                                  | 9  | 8  | 14                                     | K7  | 600                                   |  | 340                          |
| DATE           | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | HARD-<br>NESS<br>NONCARI<br>WATER<br>TOT FLI<br>MG/L AS<br>CACO3 | DIS<br>SOI<br>S (MC                            |   | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODI<br>DIS<br>SOLV<br>(MC                    | BD   | SOD:<br>AI<br>SORI<br>TIC<br>RAT  | D-<br>P-<br>ON                 | POTA<br>SIU<br>DIS<br>SOLV<br>(MG/ | UM,<br>S-<br>VED<br>/L               | ALKA-<br>LINITY<br>WATER<br>TOTAL<br>FIRLE<br>MG/L A       | SUL<br>TO  | FIDE<br>TAL<br>G/L<br>S)               | SULF<br>DIS<br>SOL<br>(MG                       | VKD                                   | CHLO<br>RIDI<br>DIS-<br>SOLI<br>(MG,           | K,<br>VKD<br>/L              |
| NOV 1984       |  |  |  |   |  |   |  |                                   |                                |                                    |                                      |  |  |  |   |                                       |  |                              |
| 14<br>JAN 1985 | 130                                    | 18   | 3 34   |   | 12   | 16  |  | (                                 | 0.6                            | 2.                                 | . 6                                  | 11   | 6  |  | 2   | 1                                     | 23   |                              |
| 17             | 140                                    |  | 3 3 3  |   | 13   | 19  |  | (                                 | 0.7                            | 3.                                 | . 0                                  | 13   | 0  | <0.5                                   | 1   | 9                                     | 24   |                              |
| 17<br>JUN      |  |  |  |   |  |   |  |                                   |                                |                                    |                                      | 14   | 1  |  |   |                                       |  |                              |
| 06             | 130                                    | 13   | 3 34   | -   | 12   | 18  | 1  | (                                 | .7                             | 3.                                 | . 0                                  | 12   | 1  | <0.5                                   | 1   | 8                                     | 22   |                              |
| 12             |  | 12   |  |   |  |   |  |                                   |                                |                                    |                                      | 12   | 1  |  |   |                                       |  |                              |
| DAT<br>NOV 198 | RI<br>D<br>SO<br>E (M<br>AS            | DE, I<br>IS- 8<br>LVED (<br>G/L<br>F) 8                          | LICA,<br>DIS-<br>BOLVED<br>MG/L<br>AS<br>BIO2) | SOLII<br>SUM (<br>CONS'<br>TUEN'<br>DIS<br>SOL'<br>(MG, | OF SO<br>TI-<br>TS, S<br>S- (<br>VED<br>/L)          | LIDS,<br>DIS-<br>OLVED<br>TONS<br>PER<br>DAY) | SOLI<br>RESI<br>AT 1<br>DEG.<br>SUS<br>PEND<br>(MG | DUE<br>05<br>C,<br>-<br>ED<br>/L) | GE<br>NITE<br>TOT<br>(MG<br>AS | AL<br>I/L<br>N)                    | NITE<br>GRI<br>NITE<br>TOTA<br>(MG,  | N,<br>ITE N<br>AL<br>/L<br>N)                              | NITRO-<br>GEN,<br>O2+NO3<br>TOTAL<br>(MG/L<br>AS N)    | AMM<br>TO<br>(M                        | TRO-<br>EN,<br>ONIA<br>TAL<br>G/L<br>N)         | NIT<br>GB<br>ORGA<br>TOT<br>(MG<br>AS | N,<br>NIC<br>AL<br>/L<br>N)                    |                              |
| JAN 198        | 5                                      | 0.1  | 28   |   |  | 19  | 1  |                                   |                                | 39                                 | 0.                                   |  | 1.50   |  | . 44  |                                       | .06  |                              |
| 17<br>APR      |  | 0.2  | 29   |   |  | 12  | 1  |                                   |                                | 24                                 | 0.                                   |  | 1.40   |  | . 39  |                                       | . 3  |                              |
| 17<br>JUN      |  |  |  |   |  |   | 1  |                                   |                                | 79                                 | 0.:                                  |  | 1.00   |  | . 10  |                                       | .9   |                              |
| O6             |  | 0.2  | 26   |   | 210  | 13  | 1  |                                   | 1.                             | 02                                 | 0.0                                  | 08   | 1.10   | 0                                      | .70   | 0                                     | . 6  |                              |
| 12             |  |  |  |   |  |   | 1  | 3                                 |                                |                                    |                                      |  |  |  |   |                                       |  |                              |
| DAT            | GEN<br>MON<br>ORG<br>TO                | ANIC<br>TAL T<br>G/L (   | GEN,<br>OTAL<br>MG/L                           | NITE<br>GEN<br>TOTA<br>(MG,                             | N, PH<br>AL T<br>/L (                                | HOS-<br>ORUS,<br>OTAL<br>MG/L<br>S P)         | ARSK<br>TOT<br>(UG                                 | AL<br>/L                          | BRA<br>(UG                     | AL<br>OV-<br>BLE                   | BORG<br>TOTA<br>RECG<br>ERAN<br>(UG, | AL<br>OV-<br>BLB<br>/L                                     | ADMIUM<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CD) | TO'RE                                  | RO-<br>UM,<br>FAL<br>COV-<br>ABLE<br>G/L<br>CR) | COPP<br>TOT<br>REC<br>ERA<br>(UG      | AL<br>OV-<br>BLR<br>/L                         |                              |
| NOV 198        |  |  |  |   |  | 1 14  |  |                                   |                                |                                    |                                      |  |  |  |   |                                       |  |                              |
| JAN 198        | 5                                      | 0.5  | 2.0  |   |  | 0.28  |  |                                   |                                |                                    |                                      |  |  |  |   |                                       |  |                              |
| 17<br>APR      |  | 1.7  | 3.1  | 14  |  | 0.33  |  | 1                                 |                                | 100                                |                                      | 20   | 1  |  | <1  |                                       | <10  |                              |
| 17<br>JUN      |  | 2.0  | 3.0  | 13  |  | 0.80  |  |                                   |                                |                                    |                                      |  |  |  |   |                                       |  |                              |
| 06<br>AUG      |  | 1.3  | 2.4  | 11  |  | 0.15  |  | <1                                |                                | 100                                |                                      | 30   | 1  |  | 3   |                                       | <10  |                              |
| 12             |  |  |  | 5.  | . 3  |   |  | 77                                |                                |                                    |                                      |  |  |  |   |                                       |  |                              |

RIO CIBUCO BASIN

50038320 RIO CIBUCO BELOW COROZAL, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| NOV 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 14<br>JAN 1985 |   |   |   |   |  |   |   |                                     |                            |  |
| 17             | 460   | 1   | 90  | 0.2   | <1   | <1  | 30  | <0.01                               | 3                          | 0.04   |
| APR 17         |   |   |   | 0.1   |  |   |   |                                     |                            |  |
| JUN            |   |   |   |   |  |   |   |                                     |                            |  |
| 06             | 330   | 2   | 50  | <0.1  | <1   | <1  | 40  | <0.01                               | 8                          | 0.02   |
| 12             |   |   |   |   |  |   |   |                                     |                            |  |

109 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 Rio Indio, and 0.8 mi (1.3 km) east of Vega Baja.

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

#### WATER-DISCHARGE RECORDS

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

GAGE .-- Water-stage recorder. Elevation of gage is 7.79 ft (2.37 m) above mean sea level.

REMARKS .-- Estimated daily discharges: Dec. 1-4. Records fair except those for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--12 years (1974-85), 122 cu ft/s (3.455 cu m/s), 16.72 in/yr (425 mm/yr), 88,390 acre-ft/yr (109 cu hm/yr); median of yearly mean discharges, 120 cu ft/s (3.40 cu m/s), 86,900 acre-ft/yr (110 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 (85.0 cu m/s) on the basis of indirect measurements; minimum discharge, 6.1 cu ft/s (0.173 cu m/s), July 24, 25, 1977, gage height, 5.04 ft (1.536 m).

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

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

|         |      | Discha    | arge     | Gage h | eight |        |      | Disch     | arge     | Gage h | eight |
|---------|------|-----------|----------|--------|-------|--------|------|-----------|----------|--------|-------|
| Date    | Time | (cu ft/s) | (ou m/s) | (ft)   | (m)   | Date   | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   |
| Apr. 23 | 2045 | 8,290     | 235      | 16.76  | 5.108 | May 18 | 1230 | \$22,200  | 629      | *18.12 | 5.523 |
| May 17  | 2200 | 14 000    | 908      | 17 48  | 5 999 |        |      |           |          |        |       |

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1986

Minimum discharge, 31 cu ft/s (0.878 cu m/s), Mar. 25, 26, Aug. 23, 24.

|        |      | DI    | BCRARUB, | IN COBI | C FEEL |       |        | LUES  | IOBER 190 | marrae or Po | 00t 1300 |       |        |
|--------|------|-------|----------|---------|--------|-------|--------|-------|-----------|--------------|----------|-------|--------|
| DAY    | oc   | T I   | NOV      | DEC     | JAN    | FEB   | MAR    | APR   | MAY       | JUN          | JUL      | AUG   | SEP    |
| 1      | 7    | 6     | 146      | 90      | 226    | 62    | 66     | 195   | 96        | 97           | 50       | 38    | 50     |
| 2      | 4    | 7     | 190      | 110     | 250    | 61    | 59     | 119   | 420       |              | 55       | 37    | 53     |
| 3      | 4    |       | 485      | 114     | 227    | 57    | 49     | 91    | 340       |              | 52       | 37    | 62     |
| 4      | 4    | 2     | 439      | 97      | 160    | 54    | 45     | 79    | 228       |              | 50       | 36    | 44     |
| 5      | 9    |       | 334      | 70      | 127    | 52    | 45     | 68    | 121       |              | 47       | 36    | 38     |
| 6      | 21   | 5     | 256      | 70      | 111    | 50    | 64     | 62    | 97        | 116          | 47       | 42    | 36     |
| 7      | 22   |       | 464      | 67      | 102    | 48    | 99     | 59    | 108       |              | 46       | 74    | 38     |
| 8      | 8    | 5     | 619      | 64      | 92     | 47    | 150    | 60    | 103       | 93           | 50       | 46    | 44     |
| 9      | 6    | 8     | 523      | 88      | 84     | 46    | 136    | 53    | 87        | 84           | 93       | 39    | 115    |
| 10     | 6    | 3     | 322      | 184     | 146    | 46    | 69     | 49    | 84        | 79           | 65       | 37    | 54     |
| 11     | 5    |       | 232      | 503     | 257    | 46    | 56     | 46    | 69        |              | 51       | 36    | 55     |
| 12     | 4    |       | 174      | 336     | 121    | 46    | 50     | 46    | 76        |              | 50       | 44    | 44     |
| 13     |      |       | 142      | 196     | 99     | 43    | 47     | 44    | 111       |              | 48       | 125   | 76     |
| 14     | 4    |       | 247      | 113     | 95     | 42    | 45     | 42    | 85        |              | 47       | 62    | 100    |
| 15     | 4    | 5     | 276      | 95      | 125    | 44    | 42     | 41    | 108       | 64           | 57       | 95    | 60     |
| 16     | 10   |       | 175      | 91      | 91     | 42    | 39     | 41    | 327       |              | 89       | 48    | 47     |
| 17     | 8    |       | 235      | 314     | 89     | 40    | 38     | 41    | 3040      |              | 56       | 40    | 48     |
| 18     | 18   |       | 171      | 182     | 85     | 37    | 39     | 41    | 10800     |              | 50       | 38    | 107    |
| 19     | 6    |       | 147      | 126     | 81     | 41    | 40     | 40    | 1460      |              | 46       | 36    | 232    |
| 20     | 7    | 4     | 123      | 141     | 74     | 45    | 60     | 39    | 473       | 60           | 64       | 34    | 191    |
| 21     | 26   |       | 116      | 112     | 72     | 40    | 44     | 38    | 363       |              | 50       | 35    | 79     |
| 22     | 10   |       | 114      | 126     | 68     | 39    | 40     | 120   | 304       |              | 44       | 35    | 101    |
| 23     | 7    |       | 110      | 112     | 67     | 44    | 36     | 1780  | 249       |              | 49       | 33    | 242    |
| 24     | 6    |       | 97       | 265     | 65     | 64    | 33     | 1140  | 215       |              | 78       | 32    | 171    |
| 25     | 5    | 4     | 90       | 140     | 62     | 66    | 32     | 288   | 178       | 55           | 56       | 45    | 98     |
| 26     | 5    |       | 118      | 127     | 61     | 85    | 32     | 191   | 164       |              | 48       | 51    | 72     |
| 27     | 10   |       | 119      | 196     | 60     | 83    | 123    | 140   | 144       |              | 45       | 241   | 59     |
| 28     | 15   | 4     | 119      | 273     | 58     | 78    | 209    | 116   | 130       |              | 44       | 113   | 95     |
| 29     | 37   |       | 97       | 164     | 57     |       | 502    | 99    | 121       |              | 44       | 62    | 153    |
| 30     | 33   |       | 92       | 227     | 56     |       | 466    | 90    | 112       |              | 42       | 59    | 193    |
| 31     | 29   | ,     |          | 333     | 54     |       | 443    |       | 104       |              | 40       | 74    |        |
| TOTAL  | 358  |       | 772      | 5126    | 3322   | 1448  | 3198   | 5258  | 20317     |              | 1653     | 1760  | 2757   |
| MBAN   | 110  |       | 226      | 165     | 107    | 51.7  | 103    | 175   | 655       |              | 53.3     | 56.8  | 91.9   |
| MAX    | 37   |       | 619      | 503     | 257    | 85    | 502    | 1780  | 10800     |              | 93       | 241   | 242    |
| MIN    | 4:   |       | 90       | 64      | 54     | 37    | 32     | 38    | 69        |              | 40       | 32    | 36     |
| CFSM   | 1.1  |       |          | 1.66    | 1.08   | .52   | 1.04   | 1.77  | 6.61      |              | . 54     | .57   | .93    |
| IN.    | 1.3  |       |          | 1.92    | 1.25   | .54   | 1.20   | 1.97  | 7.63      |              | .62      | .66   | 1.03   |
| AC-FT  | 7110 | 0 134 | 430 1    | 0170    | 6590   | 2870  | 6340   | 10430 | 40300     | 4660         | 3280     | 3490  | 5470   |
| CAL YR |      | TOTAL | 30558    | MEAN    | 83.5   |       |        | IN 11 | CFSM      | .84 IN.      | 11.47    | AC-FT | 60610  |
| WTR YR | 1980 | TOTAL | 57545    | MEAN    | 158    | MAX 1 | 0800 M | IN 32 | CFSM 1    | .59 IN.      | 21.60    | AC-FT | 114100 |

# 50039500 RIO CIBUCO AT VEGA BAJA, PR--Continued

# WATER-QUALITY RECORDS

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

| DATE           | TIME TAI  | RBAM- CI<br>LOW, CO<br>STAN- DU<br>NBOUS AN       | JCT- (ST                                    | RD AT   | PKR- B  | ID- D   | GEN, (P<br>IS- C<br>LVED SA                             | LVED CH   | AND, FOI<br>EM- FEG<br>AL 0.1<br>IGH UM-<br>EL) (COI       | LI- STREP-<br>RM, TOCOCCI<br>CAL, FECAL,<br>FK AGAR<br>(COLS.<br>PER<br>ML) 100 ML) |
|----------------|---|---|---|---|---|---|---|---|--|---|
| NOV 1984       |   |   |   |   |   |   |   |   |  |   |
| 15<br>JAN 1985 | 1140 29   | 98  | 412   | 7.80  | 24.0 2  | 5   | 6.5   | 76  | 22 K   | 9100 K1100  |
| 16<br>APR      | 1030  | 90  | 423   | 7.60  | 21.5  | 1.0   | 7.7   | 86  | 15 K1  | 5000 K150   |
| 18<br>JUN      | 1110  | 11  | 441   | 7.60  | 26.0  | 3.0   | 4.0   | 49  | 20   | 1500 310  |
| 07             | 1120 1  | 10  | 293   | 7.60  | 25.0 7  | 5   | 7.1   | 85  | 20 1   | 8000 26000  |
| 09             | 1050  | 10  | 408   | 7.60  | 28.0  | 2.1   | 4.2   | 53  | 11   | 200 230   |
| DATE           | HARD- NON NESS WA (MG/L TOTAL AS MG/                                | ATER DI<br>F FLD SO<br>/L AS (M                   | CIUM S<br>S- D<br>LVED SO<br>IG/L (M        | IS- DI<br>LVED SOL<br>G/L (M                      | IUM,<br>S- SO<br>VED T  | AD- S<br>RP- D<br>ION SO<br>TIO (M                      | TAS- LIN<br>IUM, WA'<br>IS- TO'<br>LVED FII<br>G/L MG/I | TER TAL SULI ELD TO: L AS (MO                           | FIDE DIS   | LVED SOLVED<br>G/L (MG/L  |
| NOV 1984       |   |   |   | ,   | ,   |   | _,  |   |  |   |
| 15<br>JAN 1985 | 180   | 19 6  | 0   | 7.5 1   | 3   | 0.4   | 3.4   | 162   | 1  | 19 20   |
| 16             | 190   | 15 6  | 0   | 9.5 1   | 5   | 0.5   | 2.2   | 174   | 0.5  | 17 22   |
| APR<br>18      |   |   |   |   |   |   |   | 176   |  |   |
| JUN 07         | 130   | 12 4  | 0   | 6.3 1   | 0   | 0.4   | 2.5   | 114   | 0.5  | 14 14   |
| AUG<br>09      |   |   |   |   |   |   |   | 159   |  |   |
| DATI           | AS F)   | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | CONSTI-                                     | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | SOLIDS,<br>RESIDUR<br>AT 105<br>DEG. C,<br>SUS-<br>PENDED<br>(MG/L) | NITRO-<br>GEN,<br>NITRATE<br>TOTAL<br>(MG/L<br>AS N)    | NITRO-<br>GEN,<br>NITRITE<br>TOTAL<br>(MG/L<br>AS N)    | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N)    | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N)       | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N)                                |
| NOV 1984<br>15 | 0.1   | 17  | 240   | 191   | 60  | 1.26  | 0.04  | 1.30  | 0.31   | 0.59  |
| JAN 1988<br>16 | 0.2   | 20  | 250   | 61  | 12  | 1.15  | 0.05  | 1.20  | 0.08   | 0.82  |
| APR 18         |   |   |   |   | 8   | 0.91  | 0.09  | 1.00  | 0.43   | 0.07  |
| JUN 07         | 0.1   | 13  | 170   | 64  | 145   | 0.95  | 0.05  | 1.00  | 0.16   | 0.54  |
| AUG<br>09      |   |   |   |   | 7   | 0.85  | 0.05  | 0.90  | 0.24   | 0.46  |
| *****          |   |   |   |   |   |   |   |   |  |   |
| DATE           | NITRO-<br>GEN, AM-<br>MONIA 4<br>ORGANIO<br>TOTAL<br>(MG/L<br>AS N) | NITRO-  | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS NO3) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P)       | ARSENIC<br>TOTAL<br>(UG/L<br>AS AS)                                 | BARIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS BA) | BORON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS B)   | CADMIUM<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CD) | CHRO-MIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CR) | COPPER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CU)                             |
| NOV 1984       |   |   |   |   |   |   |   |   |  |   |
| 15<br>JAN 1985 | 0.9   | 2.2   | 9.7   | 0.21  |   |   |   |   |  |   |
| 16<br>APR      | 0.9   | 2.1   | 9.3   | 0.17  | 1   | 100   | <20   | 2   | 1  | <10   |
| 18<br>JUN      | 0.5   | 1.5   | 6.6   | 0.29  |   |   |   | 724   |  | 5 - 5 J   |
| 07             | 0.7   | 1.7   | 7.5   | 0.09  | <1  | 100   | 20  | <1  | 30   | 10  |
| 09             | 0.7   | 1.6   | 7.1   | 0.32  |   |   |   | 41.   |  |   |
| K = no         | on-ideal cou  | int   |   |   |   |   |   |   |  |   |

RIO CIBUCO BASIN

# 50039500 RIO CIBUCO AT VEGA BAJA, PR--Continued

# WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| NOV 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 15<br>JAN 1985 |   |   |   |   |  |   |   |                                     |                            |  |
| 16<br>APR      | 960   | 1   | 110   | 0.1   | <1   | <1  | 20  | <0.01                               | 4                          | 0.02   |
| 18             |   |   |   | <0.1  |  |   |   |                                     |                            |  |
| JUN<br>07      | 4700  | 4   | 170   | <0.1  | <1   | <1  | 10  | <0.01                               | 11                         | 0.01   |
| AUG<br>09      |   |   |   |   |  |   |   |                                     |                            |  |

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### RIO CIBUCO BASIN

# 50039650 DRAINAGE DITCH BELOW WARNER LAMBERT LABORATORY NR SABANA, PR

### WATER-QUALITY RECORDS

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

DRAINAGE AREA . -- Indeterminate.

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

# WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE                       |    | TIME   | STRBAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS)      | CON-<br>DUCT-  | PH<br>(STAND-<br>ARD<br>UNITS)                       | TEMPEI<br>ATURI<br>(DEG (                          | R ITY                      | SOLVED                                 | OXYGEN<br>DEMAND,<br>CHEM-<br>ICAL<br>(HIGH<br>LEVEL)<br>(MG/L) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3)                  | HARD-<br>NESS<br>NONCARB<br>WATER<br>TOT FLD<br>MG/L AS<br>CACO3    |
|----------------------------|----|--|--|--|--|--|----------------------------|--|---|--|--|---|---|
| NOV 1984<br>20<br>JAN 1985 |    | 0920   | 0.0  | 425  | 7.20   | 26   | .5 3.4                     | . 0                                    | 30  | 90   | 250  | 170   | 21  |
| 17                         |    | 1245   | 0.0  | 328  | 6.60   | 23   | .0 5.0                     | 0                                      | 74  | >6000  | 100  | 73  | 2   |
| APR 17                     |    | 1340   | 0.0  | 550  | 7.00   | 25   | .0 2.0                     | 0                                      | 20  | K9700  | 450  |   | 19  |
| DATE                       | c  | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA)                     | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-                                      | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO              | POTAS<br>SIUN<br>DIS-<br>SOLVI<br>(MG/I            | TOTAL  TOTAL  MG/L         | SULFIDE<br>TOTAL<br>MG/L               | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4)                   | CHLO-<br>RIDR,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)            | FLUO-<br>RIDR,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F)                 | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2)       | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) |
| NOV 1984                   |    |  |  |  |  |  |                            | 2000                                   |   |  |  |   |   |
| 20                         |    | 56   | 8.1  | 19   | 0.7  | 2.7  | 1 15                       | 52                                     | 19  | 35   | 0.1  | 16  | 250   |
| JAN 1985<br>17             |    | 20   | 5.5  | 35   | 2  | 4.6  | 3 1                        | 1 <0.5                                 | 4.4   | 53   | 0.1  | 9.0   | 170   |
| APR 17                     |    |  |  |  |  |  | - 17                       | _                                      |   |  |  |   |   |
| DATE                       | A  | OLIDS,<br>RESIDUE<br>T 105<br>EG. C,<br>SUS-<br>PENDED<br>(MG/L) | NITRO-<br>GEN,<br>NITRITE<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N) | NITRO<br>GEN,<br>ORGANI<br>TOTAL<br>(MG/I<br>AS N) | MONIA C ORGANI TOTAL (MG/L | + PHOS-<br>C PHORUS,<br>TOTAL<br>(MG/L | ARSENIC<br>TOTAL<br>(UG/L<br>AS AS)                             | BARIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS BA)        | BORON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS B)              | CADMIUM<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CD) | CHRO-<br>MIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CR)      |
| NOV 1001                   |    | (114, 11,  | AD A   | AD N   | AD N   | AD N   | AS N                       | AD F                                   | AU AU   | AU DA,   | AG 5,  | AB OD,  | AB OIL)   |
| NOV 1984<br>20<br>JAN 1985 |    | 4  | 0.01   | <0.10  | 0.17   | 0.4  | 3 0.6                      | <0.01                                  |   |  |  |   |   |
| 17<br>APR                  |    | 21   | 0.01   | <0.10  | <0.01  | -  | - 2.3                      | 0.18                                   | 2   | <100   | 40   | <1  | <1  |
| 17                         |    | 3  | <0.01  | <0.10  | 0.30   | 2.6  | 2.9                        | 0.09                                   |   |  |  |   | -   |
| DA                         | TE | COPP<br>TOT<br>REC<br>ERA<br>(UG                                 | AL TO<br>OV- RE<br>BLE ER<br>/L (U                   | COV- REC<br>ABLE ER/<br>G/L (UC                      | AD, NE<br>TAL TO<br>COV- RE<br>ABLE ER               | TAL T<br>COV- R<br>ABLR E<br>G/L (                 | RABLE T                    | BLR- TO' IUM, REG OTAL ER. UG/L (UG    | VER, ZIN FAL TOT COV- REC ABLE ERA G/L (UG AG) AS               | AL<br>OV- CYAN<br>BLE TOT<br>/L (MG                            | AL PHEN  | BL<br>ACT<br>OLS SU<br>AL STA                           | NE<br>UR<br>IVB<br>B-<br>NCB  |
| NOV 19                     | 84 |  |  |  |  |  |                            |  |   |  |  |   |   |
| 20<br>JAN 19               |    |  |  |  |  |  |                            |  |   |  |  |   |   |
| 17                         |    |  | <10  | 4500   | <1   | 200  | 0.1                        | <1                                     | <1  | 20 <0.   | 01   | 8 0   | .06   |
| 17                         |    |  |  |  |  |  | 0.1                        |  |   |  |  |   |   |

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

# WATER-QUALITY RECORDS

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

DRAINAGE AREA. -- Indeterminate.

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

# WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | TIME                                   | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS)                  | CON-   | IC<br>- Pi<br>T- (ST.<br>B Al                                       | AND- TE   | MPER-<br>TURE<br>EG C)                |                           |                    | OXYGE<br>DIS<br>SOLV<br>(MG/            | I<br>SO, (I<br>I- (I<br>VED SA                        | GEN,<br>DIS-<br>DLVED<br>PER-<br>CENT<br>ATUR-<br>CION) | OXYGEN<br>DEMAND,<br>CHEM-<br>ICAL<br>(HIGH<br>LEVEL)<br>(MG/L) | COL<br>FOR<br>FEC<br>0.7<br>UM-<br>(COL<br>100     | M,<br>AL,<br>MF<br>S./                | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) |  |
|----------------|--|--|--|---|---|---------------------------------------|---------------------------|--------------------|---|---|---|---|--|---------------------------------------|--|--|
| NOV 1984       |  |  |  |   |   |                                       |                           |                    |   |   |   |   |  |                                       |  |  |
| 16<br>JAN 1985 | 1015                                   | 8.8  |  | 436   | 7.20  | 24.5                                  | 11                        |                    | (                                       | 8.0   | 9   | 18  |  | 550                                   | K100   |  |
| 17             | 1415                                   | 11   |  | 431   | 7.00  | 23.5                                  | 1                         | . 5                | 1                                       | . 6   | 19  | 30  | 35   | 000                                   | K73  |  |
| APR<br>18      | 1415                                   | 5.7  |  | 442   | 7.30  | 28.0                                  | 3                         | .7                 | 6                                       | . 5   | 82  | 16  |  | <10                                   | K60  |  |
| JUN<br>06      | 1325                                   | R7.0   |  | 384   | 7.00  | 28.0                                  | 1                         | . 5                | 2                                       | . 7   | 74  | 34  | к10  | 000                                   | 250  |  |
| AUG 12         | 1430                                   | 3.6  |  |   | 7.80  |                                       | 11                        |                    |   |   | 90  | 10  |  | 210                                   | K160   |  |
| 12             | 1430                                   | 3.6  |  | 963   | .80   | 31.0                                  | 11                        |                    |   | .8  | 90  | 10  |  | 210                                   | AIGU   |  |
| DATE           | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | HARD-<br>NESS<br>NONCARI<br>WATER<br>TOT FLI<br>MG/L AS<br>CACO3 | DIS-   | TUM ST<br>- DI<br>VED SOI<br>/L (MC                                 | IS- DELVED SOI                                    | DIUM,<br>IS-<br>LVED<br>MG/L<br>B NA) |                           | ON                 | POTA<br>SIU<br>DIS<br>SOLV<br>(MG/      | S- LIN<br>M, WA<br>- TO<br>ED FI<br>L MG/             | KA-<br>ITY<br>TER<br>OTAL<br>ELD<br>L AS                | SULFIDE<br>TOTAL<br>(MG/L<br>AS S)                              | SULF<br>DIS<br>SOL<br>(MG                          | -<br>VBD<br>/L                        | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)                |  |
| NOV 1984       |  |  |  |   |   |                                       |                           |                    |   |   |   |   |  |                                       |  |  |
| 16<br>JAN 1985 | 170                                    | 21   | 56   |   | 7.8   | 19                                    |                           | 0.7                | 2.                                      | 1   | 151   |   | 2  | 0                                     | 35   |  |
| 17             | 170                                    | 16   | 5 53   |   | 3.9   | 23                                    |                           | 0.8                | 2.                                      | 2   | 154   | <0.5  | 1  | 7                                     | 36   |  |
| APR<br>18      |  |  |  |   |   |                                       |                           |                    |   |   | 166   |   |  |                                       |  |  |
| JUN<br>06      | 130                                    |  | 42   |   | 8.8   | 22                                    |                           | 0.9                | 3.                                      | 9   | 130   | <0.5  |  | 9.2                                   | 30   |  |
| AUG 12         |  |  |  |   |   |                                       |                           |                    |   |   | 181   |   |  |                                       |  |  |
| DA:            | RI<br>D<br>SO<br>TR (M                 | DE, I<br>IS- S<br>LVED (   | LICA,<br>DIS-<br>BOLVED<br>MG/L<br>AS<br>BIO2) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVEI<br>(TONS<br>PER<br>DAY) | RES<br>AT<br>DEG<br>SU:<br>PEN        | . C,<br>s-                | NITI<br>TOT<br>(MC | TRO-<br>BN,<br>RATE<br>TAL<br>G/L<br>N) | NITRO-<br>GEN,<br>NITRITE<br>TOTAL<br>(MG/L<br>AS N)  | NO2+  | N, O<br>NO3 AMM<br>TAL TO                                       | TRO-<br>GEN,<br>MONIA<br>OTAL<br>MG/L              | NITI<br>GEN<br>ORGAN<br>TOTA<br>(MG,  | N,<br>NIC<br>AL<br>/L  |  |
| NOV 198        | 84                                     |  |  |   |   |                                       |                           |                    |   |   |   |   |  |                                       |  |  |
| 16<br>JAN 198  |  | 0.1  | 13   | 240   | 5.8   |                                       | 9                         |                    |   | 0.01  | ⟨0⟩   | .10 0   | .21  | 0.                                    | .89  |  |
| 17             |  | 0.2  | 13   | 250   | 7.4   |                                       | 6                         |                    |   | 0.01  | <0.   | 10 0  | .01  | 0.                                    | .99  |  |
| APR<br>18      |  |  |  |   |   |                                       | 14                        | 0.                 | . 17                                    | 0.03  | 0.  | 20 0  | .27  | 0.                                    | .33  |  |
| JUN<br>06      |  | 0.2  | 14   | 210   |   |                                       | 18                        | 0.                 | . 89                                    | 0.02  | <0.   | 10 0  | .06  | 1.                                    | . 0  |  |
| AUG<br>12      |  | -  |  |   |   |                                       | 12                        | 0.                 | .89                                     |   |   |   |  |                                       | _  |  |
| DAT            | GEN<br>MON<br>ORG<br>TO<br>TE (M       | ANIC<br>TAL T<br>G/L (   | ITRO-<br>GEN,<br>OTAL<br>MG/L<br>S N)          | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS NO3)                         | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P)       | TO:                                   | ENIC<br>FAL<br>G/L<br>AS) | BRA<br>(UC         |   | BORON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS B) | BRA<br>(UC  | IIUM MI<br>PAL TO<br>COV- RE<br>BLE ER                          | IRO-<br>UM,<br>OTAL<br>COV-<br>ABLE<br>IG/L<br>CR) | COPPE<br>TOTA<br>RECO<br>ERAE<br>(UG/ | L<br>OV-<br>BLE<br>'L  |  |
| NOV 198        |  |  |  |   |   |                                       |                           |                    |   |   |   |   |  |                                       |  |  |
| 16<br>JAN 198  |  | 1.1  |  |   | 0.02  |                                       |                           |                    |   |   |   |   |  |                                       | 440  |  |
| 17<br>APR      |  | 1.0  |  |   | 0.06  |                                       | 1                         | <                  | 100                                     | 30  |   | 1   | <1   | (                                     | 10   |  |
| 18<br>JUN      |  | 0.6  | 0.8  | 3.5   | 0.08  |                                       |                           |                    |   |   |   |   |  |                                       |  |  |
| 06             |  | 1.1  | 1.2  |   | 0.05  |                                       | 2                         |                    | 100                                     | <20   |   | <1  | 4  | <                                     | 10   |  |
| AUG<br>12      |  |  | 5.3  |   |   |                                       |                           |                    |   |   |   |   |  |                                       |  |  |

RIO CIBUCO BASIN

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

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| DATE           | IRON,<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| NOV 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 16<br>JAN 1985 |   |   |   |   |  |   |   |                                     |                            |  |
| 17             | 610   | <1  | 270   | 2.1   | <1   | <1  | 20  | <0.01                               | 18                         | 0.03   |
| 18<br>JUN      |   |   |   | <0.1  |  |   |   |                                     |                            |  |
| 06             | 3300  | 3   | 290   | <0.1  | <1   | <1  | 30  | <0.01                               | 13                         | 0.03   |
| 12             |   |   |   |   |  |   |   |                                     |                            |  |

### WATER-QUALITY RECORDS

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

DRAINAGE AREA . -- Indeterminate.

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

### WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE                                    | TIME                                   | STREAM<br>FLOW,<br>INSTAN<br>TANEOU<br>(CFS)                  | CON<br>DUC<br>S AND                              | FIC<br>N-<br>CT- (<br>CB                  | PH<br>STAND-<br>ARD<br>NITS)                         | TKMP<br>ATU<br>(DEG                       | IRE   | TUR-<br>BID-<br>ITY<br>(NTU)            | SOL  |  | XYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | OXYGEN<br>DEMAND,<br>CHEM-<br>ICAL<br>(HIGH<br>LEVEL)<br>(MG/L) | FOI<br>FRO<br>O. 1  | MF<br>LS./         | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) |
|---|--|---|--|---|--|---|---|---|--|--|---|---|---|--------------------|--|
| JAN 1985                                | 2.32                                   |   |  |   |  |   |   |   |  |  |   |   |   |                    |  |
| 16<br>MAR                               | 1445                                   | 72  |  | 428                                       | 7.60   | 2   | 2.5   | 1.0                                     |  | 7.2  | 82  |   | - к68   | 8000               | 400  |
| 28<br>JUN                               | 1200                                   | 181   |  | 352                                       | 7.40   | 2   | 2.5   | 6.0                                     |  | 7.3  | 83  | 19  | 29  | 9000               | 21000  |
| 07<br>AUG                               | 1500                                   | 113   |  | 319                                       | 7.60   | 2   | 7.0   | 45                                      |  | 7.3  | 90  | 20  | 20  | 0000               | 9000   |
| 09                                      | 1340                                   | 16  |  | 423                                       | 7.90   | 2   | 9.5   | 11                                      |  | 8.1  | 104   | 13  | 1   | 320                | 250  |
| DATE                                    | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | HARD-<br>NESS<br>NONCAR<br>WATER<br>TOT FL<br>MG/L A<br>CACO3 | B CALC<br>DIS<br>D SOI<br>S (MC                  | S/L<br>CIUM<br>CIUM                       | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODI<br>DIS<br>SOLV<br>(MG                | UM,<br>I-<br>ED   | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | SI   | AS- L<br>UM,<br>S-<br>VRD                    | ALKA-<br>INITY<br>WATER<br>TOTAL<br>FIELD<br>G/L AS<br>CACO3  | SULFIDE<br>TOTAL<br>(MG/L<br>AS S)                              | DIS<br>SOI  | LVED               | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)                |
| JAN 1985                                |  |   |  |   |  |   |   |   |  |  |   |   |   |                    |  |
| 16<br>MAR                               | 190                                    | 1   | 5 59   | •   | 9.4  | 16  |   | 0.5                                     | 2  | . 2  | 171   | <0.5  | 1   | 17                 | 24   |
| 28<br>JUN                               |  | -   | -  |   |  |   |   |   |  |  | 128   |   |   |                    |  |
| 07<br>AUG                               | 130                                    | 1   | 4 43   | 3   | 6.6  | 12  |   | 0.5                                     | 2  | .7   | 121   | <0.5  | i 1   | 15                 | 16   |
| 09                                      |  | -   | -  |   |  |   |   |   |  |  | 172   |   |   |                    |  |
| JAN 198<br>16<br>MAR<br>28<br>JUN<br>07 | RI<br>D<br>SO<br>R (M<br>AS            | DR,<br>IS-<br>LVED<br>G/L                                     | ILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) |   | F SOL<br>1- D<br>3, SO<br>- (T<br>3D P<br>L) D       | IDS,<br>IIS-<br>DLVED<br>ONS<br>ER<br>AY) | SOLID: RESID AT 10: DEG. ( SUS- PENDE: (MG/)  12  101  98 | UE N<br>6<br>C, NI<br>T<br>D (<br>L) A  | ITRO-<br>GEN,<br>TRATE<br>OTAL<br>MG/L<br>S N)<br>0.87<br>1.04 | NITR<br>GEN<br>NITRI<br>TOTA<br>(MG/<br>AS N | , GTR NO2<br>L TO<br>L (M)<br>AS                              | EN,<br>+NO3 AM<br>TAL T<br>G/L (<br>N) A                        | IITRO-<br>GEN,<br>MONIA<br>OTAL<br>MG/L<br>S N)<br>0.06<br>0.12 | ORG.<br>TO'<br>(MG | TRO-<br>EN,<br>ANIC<br>TAL<br>G/L<br>N)<br>0.84                    |
| 09                                      |  |   |  |   |  |   | 17  |   | 0.85   | 0.0  | 5 0   | .90   | 0.83  |                    | 0.67   |
| DAT                                     | GEN<br>MON<br>ORG<br>TO<br>E (M        | ANIC<br>TAL<br>G/L  | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS N)        | NITRO<br>GEN,<br>TOTAL<br>(MG/I<br>AS NO: | PHO<br>TO  | OS-<br>RUS,<br>TAL<br>G/L<br>P)           | ARSENT<br>TOTAL<br>(UG/I                                  | IC R                                    | RIUM,<br>OTAL<br>BCOV-<br>RABLE<br>UG/L<br>S BA)               | BORO<br>TOTA<br>RECO<br>ERAB<br>(UG/<br>AS B | L TO<br>V- RE<br>LE ER<br>L (U                                | MIUM M TAL T COV- R ABLE E G/L (                                | HRO-<br>IUM,<br>OTAL<br>ECOV-<br>RABLE<br>UG/L<br>S CR)         | REG<br>BR          | PER,<br>FAL<br>COV-<br>ABLE<br>G/L<br>CU)                          |
| JAN 198                                 |  | 0.9   | 1.8  | 8.0                                       | 0  | . 16                                      |   | 1                                       | 100  | <  | 20  | 3   | <1  |                    | 10   |
| MAR<br>28                               |  | 0.8   | 1.9  | 8.4                                       |  | . 15                                      |   |   | 4-   |  |   | 144   |   |                    |  |
| JUN<br>07                               |  | 1.3   | 2.2  | 9.1                                       | 0  | .10                                       |   | (1                                      | 100  |  | 20  | <1  | 27  |                    | 10   |
| AUG<br>09                               |  | 1.5   | 2.4  | 11  |  | . 19                                      |   |   |  |  |   |   |   |                    |  |
|   |  |   |  |   |  |   |   |   |  |  |   |   |   |                    |  |

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE      | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG)       | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L)                 | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|-----------|---|---|---|---|--|---|---|-------------------------------------|--|--|
| JAN 1985  |   |   |   |   |  |   |   |                                     |  |  |
| 16        | 760   | 1   | 110   | 0.1   | <1   | <1  | 30  | <0.01                               | 10   | 0.03   |
| 28        |   |   |   | 0.2   |  |   |   |                                     |  |  |
| JUN<br>07 | 3800  | 4   | 160   | <0.1  | <1   | <1  | 50  | <0.01                               | 12   | 0.02   |
| AUG<br>09 |   |   |   |   |  |   |   |                                     | -  |  |
|           |   |   |   | DECETAT   | DD ANALVO                                  | P.O.  |   |                                     |  |  |
|           |   |   |   | PESTICI   | DE ANALYS                                  | o B S   |   |                                     |  |  |
|           |   |   |   |   |  |   |   |                                     |  |  |
| DATE      | TI  | PCE<br>ME TOT   | AL TOT  |   | E, DE                                      | DD, DD<br>CAL TOT   | AL TOT  |                                     | ION, ELDR                                  | IN<br>L  |
| AUG 1985  |   |   |   |   |  |   |   |                                     |  |  |
| 09        | 13  | 40 <  | 0.1 <0.   | 01 (  | 0.1 <0.                                    | 01 <0.  | 01 <0.  | 01 <0                               | .01 <0.0                                   | 1  |
|           | DATE  | ENDO-<br>SULFAN,<br>TOTAL<br>(UG/L)                   | ENDRIN,<br>TOTAL<br>(UG/L)                                      | ETHION,<br>TOTAL<br>(UG/L)                              | HEPTA-<br>CHLOR,<br>TOTAL<br>(UG/L)        | HEPTA-<br>CHLOR<br>EPOXIDE<br>TOTAL<br>(UG/L)                 | LINDANE<br>TOTAL<br>(UG/L)                            | MALA-<br>THION,<br>TOTAL<br>(UG/L)  | METH-<br>OXY-<br>CHLOR,<br>TOTAL<br>(UG/L) |  |
| AUG       | 1985  |   |   |   |  |   |   |                                     |  |  |
| 0:        | 9   | <0.01   | <0.01   | <0.01   | <0.01                                      | <0.01   | <0.01   | 0.02                                | <0.01                                      |  |
|           | DATE  | METHYL<br>PARA-<br>THION,<br>TOTAL<br>(UG/L)          | METHYL<br>TRI-<br>THION,<br>TOTAL<br>(UG/L)                     | MIREX,<br>TOTAL<br>(UG/L)                               | PARA-<br>THION,<br>TOTAL<br>(UG/L)         | NAPH-<br>THA-<br>LENES,<br>POLY-<br>CHLOR.<br>TOTAL<br>(UG/L) | PER-<br>THANE<br>TOTAL<br>(UG/L)                      | TOX-<br>APHENE,<br>TOTAL<br>(UG/L)  | TOTAL<br>TRI-<br>THION<br>(UG/L)           |  |
|           | 1985  | 10.01   | 10.61   |   |  |   |   |                                     | 40.04                                      |  |
| U:        | 9   | <0.01   | <0.01   | <0.01   | <0.01                                      | <0.1  | <0.1  | <1                                  | <0.01                                      |  |

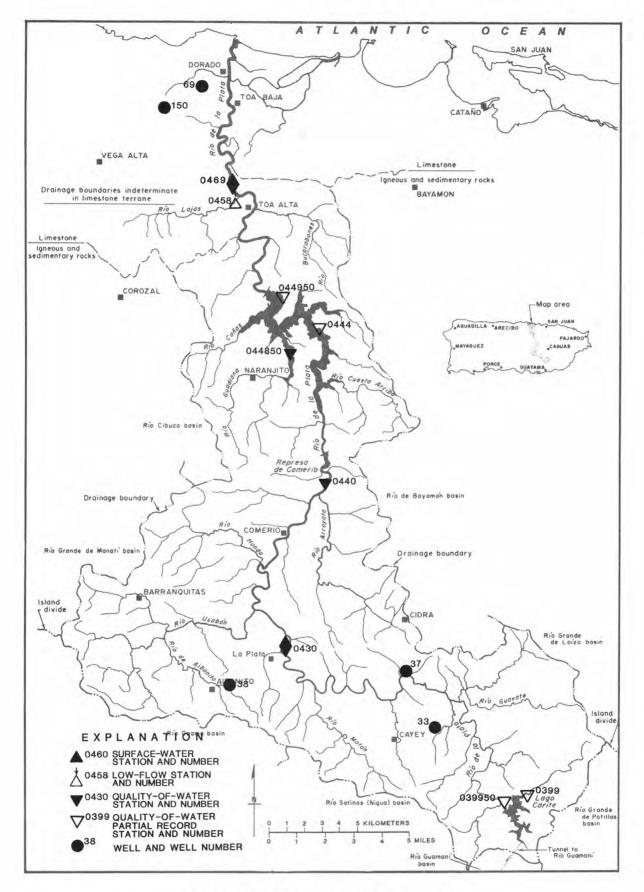


Figure 18.--Río de la Plata basin.

### 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 Rio Usabon.

DRAINAGE AREA.--54.8 sq mi (141.9 sq km), excludes 8.2 sq mi (21.1 sq km) upstream from Carite Reservoir, the flow of which is diverted to Rio Guamani.

### 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. Elevation 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.--Estimated daily discharges: Nov. 3-8 and May 19-22. Records fair except those for estimated daily discharges, which are 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 DISCHARGE.--25 years (1961-85), 113 cu ft/s (3.200 cu m/s), 28.00 in/yr (711 mm/yr), 81,870 acre-ft/yr (101 cu hm/yr); median of yearly mean discharges, 88 cu ft/s (2.49 cu m/s), 63,800 acre-ft/yr (79 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 59,600 cu ft/s (1,690 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 discharge, 2.6 cu ft/s (0.074 cu m/s), July 25, 1974.

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

|         |      | Disch     | arge     | Gage h | eight |        |      | Disch     | arge     | Gage h | eight |
|---------|------|-----------|----------|--------|-------|--------|------|-----------|----------|--------|-------|
| Date    | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   | Date   | Time | (ou ft/s) | (cu m/s) | (ft)   | (=)   |
| Nov. 3  | 0715 | 13,300    | 376      | 15.37  | 4.685 | May 17 | 1230 | *26,500   | 751      | *21.10 | 6.431 |
| Apr. 23 | 1900 | 6,460     | 183      | 11.52  | 3.511 | May 18 | 0830 | 6,290     | 178      | 11.42  | 3.481 |
| Apr. 24 | 1800 | 4,330     | 123      | 10.31  | 3.142 | May 19 | 1100 | 4,280     | 121      | 10.28  | 3.133 |
| May 16  | 0530 | 6 830     | 103      | 11 75  | 3 591 |        |      | 4.00      |          |        |       |

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

Minimum discharge, 7.4 cu ft/s (0.210 cu m/s), Apr. 11.

|                  |      | DIBORALGE                    | , 111 0 | OBIG         |             | ME         |              | ALUE | s          | , Dan 100    | 1 10 0011 |     | . 1000         |                |                 |
|------------------|------|------------------------------|---------|--------------|-------------|------------|--------------|------|------------|--------------|-----------|-----|----------------|----------------|-----------------|
| DAY              | OCT  | NOV                          | DEC     |              | JAN         | FEB        | MAR          | :    | APR        | MAY          | JUN       |     | JUL            | AUG            | SEP             |
| 1                | 13   | 116                          | 76      |              | 56          | 31         | 10           |      | 18         | 155          | 81        |     | 25             | 14             | 13              |
| 2                | 13   |                              | 270     |              | 61          | 32         | 9.9          |      | 12         | 153          |           |     | 24             | 14             | 13              |
| 3                | 10   |                              | 260     |              | 56          | 31         | 12           |      | 10         | 147          |           |     | 24             | 14             | 13              |
| 4                | 14   |                              | 133     |              | 59          | 30         | 11           |      | 9.8        | 152          |           |     | 23             | 14             | 12              |
| 5                | 14   |                              | 105     |              | 59          | 29         | 10           |      | 8.6        | 149          |           |     | 23             | 14             | 10              |
| 6                | 19   | 1270                         | 90      |              | 60          | 27         | 11           |      | 8.7        | 147          | 62        |     | 20             | 13             | 13              |
| 7                | 17   |                              | 82      |              | 55          | 26         | 15           |      | 11         | 145          |           |     | 18             | 13             | 13              |
| 8                | 17   |                              | 77      |              | 48          | 26         | 19           |      | 13         | 133          |           |     | 18             | 14             | 13              |
| 9                | 465  |                              | 81      |              | 43          | 26         | 14           |      | 9.3        | 121          |           |     | 18             | 15             | 22              |
| 10               | 366  |                              | 93      |              | 42          | 27         | 13           |      | 8.0        | 128          |           |     | 17             | 15             | 13              |
| 11               | 155  | 246                          | 78      |              | 43          | 26         | 12           |      | 8.1        | 138          | 46        |     | 16             | 14             | 10              |
| 12               | 64   | 202                          | 69      |              | 43          | 26         | 10           |      | 8.9        | 145          |           |     | 15             | 14             | 14              |
| 13               | 41   |                              | 74      |              | 42          | 24         | 8.6          |      | 9.8        | 162          |           |     | 16             | 22             | 479             |
| 14               | 82   |                              | 71      |              | 41          | 23         | 8.8          |      | 12         | 388          |           |     | 17             | 24             | 61              |
| 15               | 106  |                              | 69      |              | 40          | 23         | 9.7          |      | 11         | 1230         |           |     | 20             | 16             | 40              |
| 16               | 81   | 167                          | 70      |              | 38          | 25         | 9.7          |      | 11         | 2810         | 35        |     | 41             | 16             | 30              |
| 17               | 146  | 131                          | 89      |              | 37          | 22         | 9.8          |      | 13         | 4100         | 37        |     | 49             | 13             | 22              |
| 18               | 103  | 115                          | 74      |              | 36          | 20         | 30           |      | 14         | 3720         | 42        |     | 32             | 12             | 20              |
| 19               | 35   | 105                          | 66      |              | 35          | 20         | 21           |      | 11         | 1500         | 39        |     | 20             | 14             | 17              |
| 20               | 45   | 96                           | 69      |              | 36          | 20         | 12           |      | 9.4        | 800          |           |     | 22             | 12             | 15              |
| 21               | 39   | 88                           | 63      |              | 34          | 19         | 10           |      | 8.2        | 500          | 34        |     | 23             | 12             | 15              |
| 22               | 44   | 84                           | 60      |              | 37          | 18         | 8.9          |      | 13         | 320          | 33        |     | 17             | 12             | 16              |
| 23               | 43   | 81                           | 59      |              | 45          | 17         | 8.2          | 1    | 230        | 208          | 30        |     | 16             | 11             | 16              |
| 24               | 40   | 81                           | 59      |              | 43          | 18         | 8.7          | 1    | 630        | 172          | 31        |     | 16             | 11             | 39              |
| 25               | 48   | 142                          | 80      |              | 39          | 20         | 9.1          |      | 640        | 149          | 34        |     | 17             | 12             | 233             |
| 26               | 60   |                              | 74      |              | 41          | 19         | 9.3          |      | 457        | 135          | 33        |     | 17             | 13             | 80              |
| 27               | 66   |                              | 67      |              | 43          | 22         | 12           |      | 289        | 122          |           |     | 18             | 74             | 42              |
| 28               | 57   |                              | 86      |              | 41          | 16         | 9.4          |      | 230        | 110          |           |     | 15             | 54             | 33              |
| 29               | 125  |                              | 63      |              | 35          |            | 57           |      | 196        | 102          |           |     | 18             | 24             | 34              |
| 30               | 205  |                              | 62      |              | 33          |            | 26           |      | 173        | 94           | 26        |     | 15             | 17             | 29              |
| 31               | 187  |                              | 62      |              | 31          |            | 33           |      |            | 87           |           |     | 14             | 14             |                 |
| TOTAL            | 2720 |                              | 2731    |              | 352         | 663        | 448.1        |      | 082.8      | 18422        | 1384      |     | 644            | 551            | 1380            |
| MEAN             | 87.7 |                              | 88.1    |              | 3.6         | 23.7       | 14.5         |      | 169        | 594          | 46.1      |     | 20.8           | 17.8           | 46.0            |
| MAX              | 465  |                              | 270     |              | 61          | 32         | 57           |      | 1630       | 4100         | 103       |     | 49             | 74             | 479             |
| MIN              | 10   |                              | 59      |              | 31          | 16         | 8.2          |      | 8.0        | 87           | 26        |     | 14             | 11             | 10              |
| CFSM             | 1.60 |                              | 1.61    |              | .80         | .43        | .26          |      | 3.08       | 10.8         | .84       |     | . 38           | . 32           | .84             |
| IN.              | 1.85 |                              | 1.85    |              | .92         | .45        | .30          |      | 3.45       | 12.51        | .94       |     | .44            | .37            | .94             |
| AC-FT            | 5400 | 32700                        | 5420    | 2            | 680         | 1320       | 889          |      | 10080      | 36540        | 2750      |     | 1280           | 1090           | 2740            |
| CAL YR<br>WTR YR |      | TOTAL 34160.<br>TOTAL 51865. |         | MKAN<br>MBAN | 93.3<br>142 | MAX<br>MAX | 4280<br>4280 | MIN  | 6.2<br>8.0 | CFSM<br>CFSM | 1.70      | IN. | 23.19<br>35.21 | AC-FT<br>AC-FT | 67760<br>102900 |

119 50043000 RIO DE LA PLATA AT PROYECTO LA PLATA, PR--Continued

# WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | TIME                            | STREAM<br>FLOW,<br>INSTAN<br>TANBOU<br>(CFS) | COI<br>I- DUG<br>IS ANG                          | FIC<br>N-<br>CT-<br>CB                                | PH<br>(STAND-<br>ARD<br>UNITS)             | TEMP<br>ATU<br>(DEG                           | RE   | TUR-<br>BID-<br>ITY<br>(NTU) | 80   | GEN,<br>DIS-<br>DLVED             | OXYGI<br>SOLV<br>(PRI<br>CRI<br>SATI     | 3- D:<br>VRD  | XYGEN<br>EMAND,<br>CHEM-<br>ICAL<br>(HIGH<br>EVEL)<br>MG/L) | FORM<br>FEC.<br>0.7<br>UM-1<br>(COLS            | AL,<br>MF                             | STRE<br>TOCOC<br>FECA<br>KF AC<br>(COLS<br>PER<br>100 M | CCI<br>AL,<br>GAR<br>B. |
|----------------|---------------------------------|--|--|---|--|---|--|------------------------------|--|-----------------------------------|--|---|---|---|---------------------------------------|---|-------------------------|
| NOV 1984       |                                 |  |  |   |  |   |  |                              |  |                                   |  |   |   |   |                                       |   |                         |
| 08<br>JAN 1985 | 1430                            | 877  |  | 216   | 7.80                                       | 2   | 4.5  | 34                           |  | 7.7                               |  | 95  | <10   | 240   | 000                                   | 6   | 540                     |
| 15<br>MAR      | 1450                            | 36   |  | 428   | 8.40                                       | 2   | 5.0  | 4.5                          |  | 9.9                               |  | 122   | 25  | K   | 930                                   |   | K7                      |
| 14             | 1015                            | 8.6  |  | 459   | 8.20                                       | 2   | 4.0  | 2.0                          |  | 10.2                              | 3  | 124   | 18  |   | 40                                    |   | 32                      |
| MAY 30         | 1120                            | 94   |  | 379   | 8.40                                       | 2   | 8.0  | 1.0                          |  | 10.3                              |  | 34  | <10   | 30  | 000                                   | 1   | 116                     |
| AUG<br>07      | 1320                            | 7.1  |  | 516   | 8.40                                       | 2   | 0.0  | 1.1                          |  | 10.3                              |  | 138   | 11  |   | 92                                    |   | 590                     |
| · · · · ·      | 1320                            |  |  | 510   | 0.40                                       | 3   | 0.0  | 1.1                          |  | 10.3                              |  | . 30  | **  |   | 32                                    |   | ,,,,                    |
|                | HARD-                           | HARD-<br>NESS<br>NONCAR                      |  |   | MAGNE-                                     | gonz  |  | SODIU                        |  | TAS-                              | ALKA<br>LINIT                            | Y   |   | gur v   | me                                    | CHLC  |                         |
| DATE           | NESS<br>(MG/L<br>AS<br>CACO3)   | WATER<br>TOT FL<br>MG/L A<br>CACO3           | DIS<br>D SOI                                     |   | SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODI<br>DIS<br>SOLV<br>(MG<br>AS              | ED<br>/L   | SORP-<br>TION<br>RATIO       | SO (M  | IUM,<br>IS-<br>LVED<br>IG/L<br>K) | TOTA<br>FIRE<br>MG/L<br>CACO             | L SI<br>D S   | ULFIDE<br>TOTAL<br>(MG/L<br>AS S)                           | BULFA<br>DIS-<br>SOLV<br>(MG/<br>AS SC          | /RD                                   | BOLV<br>(MG/  | /RD                     |
| NOV 1984       | oncoo,                          | Oncoo  | no.  | On,   | AU IIU,                                    |   | ,  |                              | 7.0  | -,                                | onoc                                     |   |   | <i>n</i> o o                                    | ,                                     |   | ,                       |
| 08             | 160                             | 9  | 4 23   | 3   | 24   | 8   | .6   | 0.                           | 3  | 1.2                               |  | 62  |   | 14  |                                       | 10  |                         |
| JAN 1985<br>15 | 160                             | _  | - 40   | )   | 15   | 28  |  | 1                            |  | 1.5                               | - 0                                      | 62  | <0.5  | 18  | 3                                     | 27  |                         |
| MAR<br>14      |                                 |  | _  |   |  |   |  |                              | _  |                                   |  | 65  |   |   |                                       |   |                         |
| MAY            |                                 |  |  |   |  |   |  |                              |  |                                   |  |   |   |   |                                       | 0.5   |                         |
| 30             | 140                             |  | 1 36   | •   | 13   | 25  |  | 0.                           | 9  | 1.8                               |  | 42  | <0.5  | 19  |                                       | 25  |                         |
| 07             |                                 | -  | -  |   |  |   |  | _                            | -  |                                   |  | 66  |   |   |                                       |   |                         |
| DAT            | RI<br>D<br>SO<br>B (M           | DE,<br>18-<br>LVED<br>G/L                    | ILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | SOLI<br>SUM (<br>CONS'<br>TUEN'<br>DI:<br>SOL'<br>(MG | OF SOI<br>TI- I<br>TS, SO<br>S- ('         | LIDS,<br>DIS-<br>DLVED<br>TONS<br>PER<br>DAY) | SOLII<br>RESII<br>AT 10<br>DEG.<br>SUS-<br>PENDI<br>(MG/ | DUR<br>05<br>C, N<br>-<br>BD | NITRO-<br>GEN,<br>ITRATE<br>TOTAL<br>(MG/L<br>AS N)    | GI<br>NIT<br>TO<br>(M             | TRO-<br>EN,<br>RITE<br>TAL<br>G/L<br>N)  | NITRO<br>GEN,<br>NO2+NO<br>TOTAL<br>(MG/I<br>AS N)  | G AMM<br>L TO<br>L (M                                       | TRO-<br>EN,<br>ONIA<br>TAL<br>G/L<br>N)         | NIT<br>GE<br>ORGA<br>TOT<br>(MG<br>AS | NIC<br>AL   |                         |
| NOV 198        |                                 |  | 25   |   |  |   |  |                              | 0.55   |                                   |  | 0.00  |   |   |                                       |   |                         |
| 08<br>JAN 198  | 5                               | 0.1  |  |   |  | 39  | 82   |                              | 0.57   |                                   | .03                                      | 0.80  |   | . 15  |                                       | .65   |                         |
| 15<br>MAR      |                                 | 0.2  | 17   |   | 240  | 24  |  | 4                            | 1.35   | 0                                 | . 05                                     | 1.40  | 0   | .02   | 0                                     | .88   |                         |
| 14             |                                 |  |  |   |  |   | 4  | 4                            | 1.08   | 0                                 | .02                                      | 1.10  | 0   | .06   | 0                                     | . 54  |                         |
| 30             |                                 | 0.2  | 20   |   | 230  | 57  | 2  | 2                            | 0.37   | 0                                 | .03                                      | 0.40  | 0   | .02   | 0                                     | .18   |                         |
| 07             |                                 |  |  |   | 22   |   | 3  | 3                            | 0.78   | 0                                 | .02                                      | 0.80  | 0   | .07   | 0                                     | .73   |                         |
| DATI           | GEN<br>MON<br>ORG<br>TO<br>E (M | ANIC<br>TAL<br>G/L                           | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS N)        | NITI<br>GRI<br>TOTA<br>(MG,                           | AL TO                                      | HOS-<br>DRUS,<br>DTAL<br>HG/L<br>H P)         | ARSEN<br>TOTA<br>(UG/<br>AS A                            | NIC<br>AL<br>/L              | ARIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS BA) | TO' REC                           | RON,<br>FAL<br>COV-<br>ABLE<br>G/L<br>B) | CADMIU<br>TOTAL<br>RECOV<br>BRABL<br>(UG/L<br>AS CL | JM MI<br>J TO<br>J- RE<br>LE ER                             | RO-<br>UM,<br>TAL<br>COV-<br>ABLE<br>G/L<br>CR) | COPP<br>TOT<br>REC<br>ERA<br>(UG      | AL<br>OV-<br>BLE<br>/L                                  |                         |
| NOV 1984       |                                 | 0.6  |  | 5.  |  |   |  |                              |  |                                   |  |   |   |   |                                       |   |                         |
| 08<br>JAN 198  |                                 | 0.8  | 1.4  | 6   | .2 (                                       | 0.12  |  |                              |  |                                   |  |   | 7   |   |                                       |   |                         |
| 15<br>MAR      |                                 | 0.9  | 2.3  | 10  |  | .41   |  | 1                            | <100   |                                   | <20                                      |   | 1   | <1  |                                       | <10   |                         |
| 14             |                                 | 0.6  | 1.7  | 7.  | .5 (                                       | .52   |  |                              |  |                                   |  | -   | -   |   |                                       |   |                         |
| MAY<br>30      |                                 | 0.2  | 0.6  | 2.  | .7   | 0.11  |  | 1                            | <100   |                                   | 40                                       |   | 1   | <1  |                                       | <10   |                         |
| 07             |                                 | 0.8  | 1.6  | 7.  | 1 (  | 0.52  |  |                              |  |                                   |  | -   | -   |   |                                       |   |                         |

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BIO DE LA PLATA BASIN

50043000 RIO DE LA PLATA AT PROYECTO LA PLATA, PR--Continued
WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL,<br>RECOV-<br>BRABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|--|-------------------------------------|----------------------------|--|
| NOV 1984       |   |   |   |   |  |   |  |                                     |                            |  |
| 08<br>JAN 1985 |   |   |   |   |  |   |  |                                     |                            |  |
| 15<br>MAR      | 240   | 4   | 20  | 0.1   | <1   | <1  | 30   | <0.01                               | <1                         | 0.05   |
| 14             |   |   |   | 0.2   |  |   |  |                                     |                            |  |
| MAY            |   |   |   |   |  |   |  |                                     |                            | 0.04   |
| 30<br>AUG      | 60  | 2   | 20  | 0.1   | <1   | <1  | 20   | <0.01                               | 7                          | 0.04   |
| 07             |   |   |   |   |  |   |  |                                     |                            |  |

# 50044000 RIO DE LA PLATA NEAR COMERIO, PR

### WATER-QUALITY RECORDS

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

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

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

# WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE                  | TIME                                   | STRE<br>FLO<br>INST<br>TANE                         | W,<br>AN-<br>OUS                    | SPE-<br>CIFI<br>CON-<br>DUCT<br>ANCE | r- (  | PH<br>STAND-<br>ARD<br>NITS)                         | TEMF<br>ATU                                   | RE   |                              |                  | SOL                           | EN,<br>S-<br>VED<br>/L)         | OXYG<br>DI<br>SOL<br>(PE<br>CE<br>SAT                 | S-<br>VRD<br>R-<br>NT<br>UR-          | OXYGE<br>DEMAN<br>CHEM<br>ICAL<br>(HIG<br>LEVEL<br>(MG/L | ID,<br>i-<br>iH                              | FORI<br>FEC.<br>0.7<br>UM-1<br>(COL: | M,<br>AL,<br>MF<br>S./ | STR<br>TOCO<br>FEC<br>KF A<br>(COL<br>PE<br>100 | GAR<br>S.       |
|-----------------------|--|---|-------------------------------------|--------------------------------------|---|--|---|--|------------------------------|------------------|-------------------------------|---------------------------------|---|---------------------------------------|--|--|--------------------------------------|------------------------|---|-----------------|
| OCT 1984              |  |   |                                     |                                      |   |  |   |  |                              |                  |                               |                                 |   |                                       |  |  |                                      |                        |   |                 |
| 26                    | 1110                                   | 132   |                                     | 3                                    | 38  | 8.00   | 2   | 5.5  | 14                           |                  |                               | 8.4                             |   | 104                                   |  | 12   | 3                                    | 000                    |   | 580             |
| JAN 1985<br>28<br>APR | 1245                                   | 65  |                                     | 4                                    | 41  | 8.20   | 2   | 3.5  | 1                            | .0               |                               | 9.0                             |   | 107                                   |  | 20   | 5                                    | 200                    |   | K60             |
| 18                    | 1530                                   | 54  |                                     | 4                                    | 34  | 8.40   | 2   | 9.0  | 4                            | .0               |                               | 8.4                             |   | 111                                   | <  | 10   | K1                                   | 100                    | K   | 100             |
| 30                    | 1440                                   | 156   |                                     | 3                                    | 80  | 8.60   | 2   | 9.5  | 0                            | . 7              | 1                             | 0.6                             |   | 140                                   |  | 10   | 4                                    | 300                    | K   | 100             |
| JUL<br>30             | 1155                                   | 56  |                                     | 4                                    | 01  | 8.20   | 2   | 9.0  | 5                            | . 1              |                               | 9.5                             |   | 124                                   |  | 36   | к1                                   | 700                    |   | 230             |
| 22714                 |  |   |                                     |                                      |   | 0.20   |   |  |                              | • •              |                               |                                 |   |                                       |  |  |                                      |                        |   |                 |
| DATE                  | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | HARI<br>NESS<br>NONC<br>WAT<br>TOT I<br>MG/L<br>CAC | S<br>ARB (<br>ER<br>FLD<br>AS       | CALCI<br>DIS-<br>SOLV<br>(MG/        | ED L  | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODI<br>DIS<br>SOLV<br>(MG                    | ED .   | SOD<br>A<br>SOR<br>TI<br>RAT | D-<br>P-<br>ON   | POT<br>SI<br>DI<br>SOL<br>(MG | UM,<br>S-<br>VED<br>/L          | ALKA<br>LINIT<br>WATE<br>TOTA<br>FIRE<br>MG/L<br>CACC | TY<br>RR<br>AL<br>LD<br>AS            | SULFI<br>TOTA<br>(MG/                                    | DE<br>L                                      | SULFA<br>DIS-<br>SOLV<br>(MG,        | /L<br>/RD              | CHL<br>RID<br>DIS<br>SOL<br>(MG                 | E,<br>VED<br>/L |
| OCT 1984              |  |   |                                     |                                      |   |  |   |  |                              |                  |                               |                                 |   |                                       |  |  |                                      |                        |   |                 |
| 26                    | 140                                    |   | 2                                   | 33                                   |   | 13   | 26  |  |                              | 1                | 2                             | . 4                             | 13  | 134                                   |  |  | 18                                   | 3                      | 27  |                 |
| JAN 1985<br>28        | 170                                    |   | 1                                   | 41                                   |   | 16   | 27  |  |                              | 0.9              | 2                             | .7                              |   | 167                                   | 0  | . 5  | 19                                   | 9                      | 31  |                 |
| APR<br>18             |  |   |                                     |                                      |   |  |   |  |                              |                  |                               |                                 |   | 161                                   |  |  |                                      |                        |   |                 |
| MAY                   |  |   |                                     |                                      |   |  |   |  |                              |                  |                               |                                 |   |                                       |  |  |                                      |                        |   |                 |
| JUL                   | 160                                    |   | 7                                   | 38                                   |   | 15   | 23  |  |                              | 0.8              | Z                             | . 8                             |   | 150                                   |  |  | 19                                   | ,                      | 27  |                 |
| 30                    |  |   |                                     |                                      |   |  |   |  |                              |                  |                               |                                 |   | 148                                   |  |  |                                      |                        |   |                 |
| DATI                  | RI<br>D<br>SO<br>B (M                  | UO-<br>DE,<br>IS-<br>LVRD<br>G/L<br>F)              | SILIO<br>DIS-<br>SOLV<br>(MG)<br>AS | /L                                   | SOLID<br>SUM O<br>CONST<br>TUENT<br>DIS<br>SOLV<br>(MG/ | F SOI<br>I- I<br>S, SO<br>- (7<br>RD I               | LIDS,<br>DIS-<br>DLVED<br>TONS<br>PER<br>DAY) | SOLI<br>RESI<br>AT 1<br>DEG.<br>SUS<br>PEND<br>(MG | DUR<br>05<br>C,              | GI<br>NITE<br>TO | AL<br>J/L                     |                                 | AL<br>/L  | NIT<br>GB<br>NO2+<br>TOT<br>(MG<br>AS | N,<br>NO3<br>AL<br>/L                                    | NIT<br>GE<br>AMMO<br>TOT<br>(MG<br>AS        | NIA<br>AL<br>/L                      |                        | AL<br>L   |                 |
| OCT 1984              |  |   |                                     |                                      |   |  |   |  |                              |                  |                               |                                 |   |                                       |  |  |                                      |                        |   |                 |
| 26<br>JAN 198         |  | 0.2   | 25                                  | 5                                    | 2   | 20 8   | 30  | 2  | 4                            | 1.               | 28                            | 0.                              | 02  | 1.                                    | 30   | 0.   | 10                                   | C                      | . 3   |                 |
| 28<br>APR             |  | 0.2   | 23                                  | 3                                    | 2   | 60 4   | 16  | 2  | 6                            | 1.               | 18                            | 0.                              | 02  | 1.                                    | 20   | 0.   | 10                                   | C                      | . 3   |                 |
| 18                    |  |   |                                     |                                      |   |  |   |  | 8                            | 0.               | 66                            | 0.                              | 04  | 0.                                    | 70   | 0.   | 09                                   | 0                      | .71   |                 |
| MAY<br>30             |  | 0.2   | 22                                  | 2                                    | 2   | 40 10  | 00  |  | 2                            | 0.               | 08                            | 0.                              | 02  | 0.                                    | 10   | 0.   | 02                                   | 0                      | .18   |                 |
| JUL<br>30             |  |   |                                     |                                      |   |  |   |  | 2                            | 0.               | 49                            | 0.                              | 01  | 0.                                    | 50   | 0.   | 04                                   | 0                      | . 56  |                 |
|                       |  |   |                                     |                                      |   |  |   |  | -                            |                  |                               |                                 |   |                                       |  |  |                                      |                        |   |                 |
| DATE                  | GEN<br>MON<br>ORG<br>TO                | TRO-<br>,AM-<br>IA +<br>ANIC<br>TAL<br>G/L<br>N)    | NITE<br>GEN<br>TOTA<br>(MG/         | N,<br>AL<br>/L                       | NITR<br>GEN<br>TOTA<br>(MG/<br>AS NO                    | , PHO<br>L TO<br>L (M                                | IOS-<br>DRUS,<br>DTAL<br>IG/L<br>I P)         | ARSE<br>TOT<br>(UG<br>AS                           | AL<br>/L                     | ERA<br>(UC       | AL<br>OV-<br>BLR              | BOR<br>TOT<br>REC<br>ERA<br>(UG | AL<br>OV-<br>BLE<br>/L                                | CADM<br>TOT.<br>REC<br>ERA<br>(UG     | AL<br>OV-<br>BLR<br>/L                                   | CHR<br>MIU<br>TOT<br>REC<br>ERA<br>(UG<br>AS | M,<br>AL<br>OV-<br>BLE<br>/L         | ERA<br>(UC             | AL<br>OV-<br>BLE                                |                 |
| OCT 1984              |  |   |                                     |                                      |   |  |   |  |                              |                  |                               |                                 |   |                                       |  |  |                                      |                        |   |                 |
| 26<br>JAN 1985        |  | 0.4   | 1.                                  | 7                                    | 7.  | 5 0  | .43   |  |                              |                  |                               |                                 |   |                                       |  |  |                                      |                        |   |                 |
| 28                    |  | 0.4   | 1.                                  | 6                                    | 7.  | 1 0  | .24   |  | 1                            |                  | 100                           |                                 | 50  |                                       | 1  |  | 11                                   |                        | 10  |                 |
| APR<br>18             |  | 0.8   | 1.                                  | . 5                                  | 6.  | 6 0  | . 38  |  |                              |                  |                               |                                 |   |                                       |  |  |                                      |                        |   |                 |
| MAY<br>30<br>JUL      |  | 0.2   | 0.                                  | 3                                    | 1.  | 3 0  | .08   |  | 1                            | <                | 100                           |                                 | 50  |                                       | 1  |  | 2                                    |                        | <10   |                 |
| 30                    |  | 0.6   | 1.                                  | 1                                    | 4.  | 9 0  | .30   |  |                              |                  | 44                            |                                 |   |                                       |  |  |                                      |                        |   |                 |

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RIO DE LA PLATA BASIN

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENK<br>BLUR<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| OCT 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 26<br>JAN 1985 |   |   |   |   |  |   |   | Interior                            |                            |  |
| 28             | 1400  | 1   | 90  | 0.1   | 1  | 1   | 20  | 1.00                                | 5                          | 0.03   |
| APR            |   |   |   |   |  |   |   | Jan ne                              |                            |  |
| 18             |   |   |   | 0.1   |  |   |   |                                     |                            |  |
| 30<br>JUL      | 140   | 4   | 30  | <0.1  | <1   | <1  | 20  | <0.01                               | 14                         | 0.05   |
| 30             |   |   |   |   |  |   |   |                                     |                            |  |

# 50044850 RIO GUADIANA NEAR NARANJITO, PR

### WATER-QUALITY RECORDS

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

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

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| NOV 1984  1898 1998 1998 1998 1998 1999 1999  | DATE   | TIME                                  | STREAM<br>FLOW,<br>INSTAN<br>TANEOU<br>(CFS)  | COI<br>DUC<br>S ANG                                      | FIC<br>N-<br>CT-                        | PH<br>(STAN<br>ARD<br>UNITS                           | ) ATI   | PER-<br>JRE<br>3 C)                        |                     |                          | OXYGE<br>DIS<br>SOLV<br>(MG/                  | SO<br>SO<br>SO<br>SO<br>SO<br>SO<br>SO<br>SO<br>SO<br>SO<br>SO<br>SO<br>SO<br>S | GEN,<br>DIS-<br>LVED<br>ER-<br>ENT<br>TUR-<br>TON) | OXYGEN<br>DEMAND,<br>CHEM-<br>ICAL<br>(HIGH<br>LEVEL)<br>(MG/L) | FRO<br>O.7<br>UM-                                     | CAL,<br>CAL,<br>MF<br>LS./     | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) |
|---|--|---------------------------------------|---|--|---|---|---|--|---------------------|--------------------------|---|---|--|---|---|--------------------------------|--|
| JAN 1986 31 1300 7.9 330 8.20 21.5 3.6 9.9 111 26 K150 470 APP 81 1310 8.1 317 8.30 25.0 21.5 3.6 9.9 111 26 K150 470 APP 81 1310 8.1 317 8.30 25.0 2.0 9.4 116 (10 480 K120 JUN 14 1010 7.7 350 8.50 25.0 1.3 8.6 104 51 K110 370 JUN 14 1010 7.7 350 8.50 25.0 1.3 8.6 104 51 K110 370 JUN 190 0910 5.5 336 8.00 26.0 7.4 8.4 102 25 500 860    RESS  | NOV 1984   |                                       |   |  |   |   |   |  |                     |                          |   |   |  |   |   |                                |  |
| 31. 1300 7.9 330 8.20 21.5 3.6 9.9 111 26 K1500 470  18 1130 8.1 317 8.30 26.0 2.0 9.4 116 (10 480 K190  14 1010 7.7 350 8.50 25.0 1.3 8.6 104 51 K1100 370  JUL  30 0910 5.5 336 8.00 26.0 7.4 8.4 102 25 500 860    HARD  |  | 1345                                  | 28  |  | 297                                     | 8.  | 00 2  | 24.5                                       | 8                   | . 2                      | 7   | . 5   | 89   | 15  | 6 60  | 0000                           | K700   |
| 18.   | 31   | 1300                                  | 7.9   |  | 330                                     | 8.  | 20 2  | 21.5                                       | 3                   | . 5                      | 9   | . 9   | 111  | 26  | K 1   | 500                            | 470  |
| 14 1010 7.7 350 8.50 25.0 1.3 8.6 104 51 K1100 370  JUL  JUL  JUL  JUL  JUL  JUL  JUL  JU   | 18   | 1130                                  | 8.1   |  | 317                                     | 8.  | 30 2  | 26.0                                       | 2                   | . 0                      | 9   | .4  | 116  | <10   | )   | 480                            | K190   |
| 30   0910   5.5   336   8.00   26.0   7.4   8.4   102   25   500   860  | 14   | 1010                                  | 7.7   |  | 350                                     | 8.  | 50 2  | 25.0                                       | 1                   | . 3                      | 8   | .6  | 104  | 51  | KI  | 100                            | 370  |
| NESS  |  | 0910                                  | 5.5   |  | 336                                     | 8.  | 00 2  | 26.0                                       | 7                   | . 4                      | 8   | .4  | 102  | 25  | 5   | 500                            | 860  |
| NRSS  |  | HARD                                  | NESS  |  |   |   |   |  |                     |                          |   | S- LIN  | ITY  |   | OU I  | 2 4 (1912)                     |  |
| 16   110   20   24   13   14   0.6   1.8   93   19   20    JAN 1985   31   130   18   30   14   16   0.6   1.9   115   (0.5   16   23    APR 18   | DATE   | NESS<br>(MG/L<br>AS                   | WATER<br>TOT FL<br>MG/L A                     | DIS<br>D SOI<br>S (MC                                    | I/L<br>LVRD<br>3-                       | SOLV<br>(MG/  | RD SOLV   | 3-<br>/KD<br>3/L                           | SOR                 | P-<br>ON                 | DIS<br>SOLV<br>(MG/                           | - TO<br>BD FI<br>L MG/  | TAL<br>BLD<br>L AS                                 | TOTAL (MG/L   | BOI<br>SOI<br>(MC                                     | I-<br>LVED<br>I/L              | (MG/L<br>SOLVED<br>DIS-  |
| JAN 1985 31 130 18 30 14 16 0.6 1.9 115 <0.5 16 23 APR 18 123   |  | 110                                   |   |  |   | 10  |   |  |                     |                          |   |   | 0.9  |   |   | 0                              | 20   |
| 18  | JAN 1985   |                                       |   |  |   |   |   |  |                     |                          |   |   |  |   |   |                                |  |
| JUN 14 130 10 29 13 16 0.6 2.0 116 0.5 16 21  JUL 30 118  FLUO- SILICA, SUM OF SOLIDS, RESIDUE RIDE, DIS- SOLVED MG/L DIS- SOLVED MG/L DIS- SOLVED MG/L AS POLVED MG/L AS SOLVED MG/L DIS- SOLVED MG/L AS SOLVED MG/L AS SOLVED MG/L DIS- SOLVED MG/L AS SOLVED MG/L DIS- SOLVED MG/L AS SOLVED MG/L DIS- SOLVED MG/L MG/L MG/L MG/L MG/L MG/L MG/L MG/L  | APR  | 130                                   | 1   | 8 30   | )                                       | 14  | 16  | 5  |                     | 0.6                      | 1.  | 9   |  | <0.5  |   | 6                              | 23   |
| JUL.    FLUO  |  |                                       | -   | -  |   |   |   |  |                     |                          |   |   | 123  |   |   |                                |  |
| SOLIDS   SOLIDS   SOLIDS   SOLIDS   RESIDUE   NITRO   GEN   GEN |  | 130                                   | 1   | 0 29   | •                                       | 13  | 16  | 5  |                     | 0.6                      | 2.  | 0   | 116  | <0.5  | 1   | 6                              | 21   |
| FLUC  |  |                                       | -   | -  |   |   |   |  |                     |                          |   |   | 118  |   |   |                                |  |
| GEN, AM-   MONIA + NITRO-   NITRO-   PHOS-   TOTAL   TOTAL  | NOV 198<br>16<br>JAN 198<br>31<br>APR<br>18<br>JUN<br>14 | RI<br>D<br>SO<br>B (M<br>AS           | DE,<br>IS-<br>LVRD<br>G/L<br>F)<br>0.1<br>0.1 | DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2)<br>25<br>25<br>26 | SUM<br>CONS<br>TUEN<br>DI<br>SOL<br>(MG | OF<br>STI-<br>ITS,<br>S-<br>VED<br>I/L)<br>170<br>190 | DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY)<br>13<br>4.1 | RESI<br>AT 1<br>DEG.<br>SUS<br>PEND<br>(MG | DUB<br>05<br>C,<br> | NITI<br>TOT<br>(MC<br>AS | EN,<br>RATE<br>FAL<br>G/L<br>N)<br>.78<br>.18 | GEN,<br>NITRITE<br>TOTAL<br>(MG/L<br>AS N)<br>0.02<br>0.02                      | Gi<br>NO2<br>TO'<br>(Mc<br>AS                      | EN,<br>+NO3 AM<br>TAL T<br>G/L (N) A<br>.80 .20                 | GEN,<br>MONIA<br>OTAL<br>MG/L<br>S N)<br>0.41<br>0.04 | GI<br>ORGA<br>TOT<br>(MC<br>AS | EN,<br>ANIC<br>FAL<br>G/L<br>N)<br>1.2<br>0.56                     |
| 31 0.6 2.8 12 0.41 <1 100 <20 <1 4 <10 APR  18 0.3 1.6 7.1 0.30 JUN 14 <1 100 60 1 6 <10 JUL  | NOV 1984   | GEN<br>MON<br>ORG<br>TO<br>E (M<br>AS | ,AM-<br>IA + I<br>ANIC<br>TAL<br>G/L<br>N)    | GEN,<br>FOTAL<br>(MG/L<br>AS N)                          | TOT<br>(MC<br>AS N                      | N,<br>AL<br>I/L<br>IO3)                               | PHORUS,<br>TOTAL<br>(MG/L<br>AS P)                  | TOT<br>(UG                                 | AL<br>/L<br>AS)     | REC<br>BRA<br>(UC        | PAL<br>COV-<br>ABLE<br>D/L<br>BA)             | TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS B)                                     | REG<br>ER/   | MIUM M FAL T COV- R ABLR B G/L ( CD) A                          | IUM,<br>OTAL<br>ECOV-<br>RABLE<br>UG/L<br>S CR)       | REC<br>BRA<br>(UC              | COV-<br>ABLE<br>G/L<br>CU)   |
| 18 0.3 1.6 7.1 0.30 JUN 14 <1 100 60 1 6 <10 JUL  | 31   |                                       | 0.6   | 2.8  | 12                                      |   | 0.41  |  | <1                  |                          | 100   | <20   |  | <1  | 4   |                                | <10  |
| JUN<br>14 <1 100 60 1 6 <10<br>JUL  | 18   |                                       | 0.3   | 1.6  | 7                                       | . 1   | 0.30  |  |                     |                          |   |   |  |   |   |                                |  |
| JUL   |  |                                       |   |  |   |   |   |  |                     |                          | 100   | 60  |  | 1   | 6   |                                | <10  |
|   | JUL  | -6                                    |   | 1.6  | 7                                       |   |   |  |                     |                          |   |   |  |   |   |                                |  |

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RIO DE LA PLATA BASIN

50044850 RIO GUADIANA NEAR NARANJITO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>RRABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>RRABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| NOV 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 16<br>JAN 1985 |   |   |   |   |  |   |   |                                     | -                          |  |
| 31<br>APR      | 840   | 2   | 50  | (0.1  | <1   | . <1  | 20  | <0.01                               |                            | 0.04   |
| 18             |   |   |   | <0.1  |  |   |   |                                     |                            |  |
| JUN            | 100   |   |   |   |  |   |   |                                     |                            | 4.44   |
| JUL 14         | 440   | 3   | 30  | <0.1  | <1   | <1  | 10  | <0.01                               | <1                         | 0.03   |
| 30             |   |   |   |   |  |   |   |                                     |                            |  |

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

### WATER-QUALITY RECORDS

LOCATION. -- Samples collected at bridge on Highway 2, 1.2 mi (1.9 km) downstream from discharge station. PERIOD OF RECORD. -- Water years 1958 to current year

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | TIME   | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS)                     | SPR-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM)    | PH<br>(STAND-<br>ARD<br>UNITS)                                | TEMPER-<br>ATURE<br>(DEG C)                                   | TUR-<br>BID-<br>ITY<br>(NTU)                                    | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L)                                | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3)                          |
|----------------|--|---|--|---|---|---|--|--|--|--|---|
| OCT 1984       |  |   |  |   |   |   |  |  |  |  |   |
| 10             | 1155   | 125   | 376  | 7.40  | 28.5  | 3.0   | 6.4  | 82   | K13000   | 620  | 150   |
| DEC 03         | 1545   | 699   | 318  | 7.90  | 25.0  | 6.0   | 8.4  | 102  | K9100  | 820  | 120   |
| FEB 1985       |  |   |  |   |   |   |  |  |  |  |   |
| 19             | 1050   | 18  | 540  | 7.50  | 25.0  | 1.5   | 5.2  | 62   | K140   | 31   | 210   |
| 01             | 1245   | 279   | 398  | 7.80  | 25.5  | 10  | 7.3  | 88   | 2100   | 200  | 150   |
| JUN<br>05      | 1025   | 238   | 239  | 7.80  | 27.5  | 15  | 7.3  | 91   | 24000  | 2700   | 110   |
|                | 1023   | 430   | 235  | 7.80  | 27.5  | 10  | 1.5  |  | 21000  | 2100   | 110   |
| DATE           | HARD-<br>NESS<br>NONCARB<br>WATER<br>TOT FLD<br>MG/L AS<br>CACO3   | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA)                        | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA)                  | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO                       | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K)             | ALKA-<br>LINITY<br>WATER<br>TOTAL<br>FIELD<br>MG/L AS<br>CACO3     | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4)                  | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)            | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F)                 | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2)               |
| OCT 1984       |  |   |  |   | 0.0   |   |  |  |  |  |   |
| DEC 10         | 16   | - 40  | 12   | 21  | 0.8   | 3.6   | 134  | 19   | 28   | 0.1  | 19  |
| 03             | 5  | 31  | 11   | 17  | 0.7   | 2.1   | 118  | 16   | 21   | 0.1  | 20  |
| FEB 1985<br>19 | 12   | 64  | 13   | 23  | 0.7   | 2.5   | 202  | 19   | 35   | 0.2  | 19  |
| APR            |  |   |  | 40  |   |   |  |  |  |  |   |
| 01<br>JUN      | 1  | 39  | 13   | 20  | 0.7   | 2.0   | 150  | 18   | 26   | 0.2  | 18  |
| 05             | 9  | 29  | 8.8  | 15  | 0.6   | 2.3   | 100  | 17   | 20   | 0.1  | 17  |
| DATE           | SOLIDS,<br>RESIDUE<br>AT 180<br>DEG. C<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY)    | NITRO-<br>GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>DIS-<br>SOLVED<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>AMMONIA<br>DIS-<br>SOLVED<br>(MG/L<br>AS NH4) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P)                    | PHOS-<br>PHORUS,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P)           | PHOS-<br>PHORUS,<br>ORTHO,<br>DIS-<br>SOLVED<br>(MG/L<br>AS P)     | PHOS-<br>PHATE,<br>ORTHO,<br>DIS-<br>SOLVED<br>(MG/L<br>AS PO4) |
| OCT 1984       | 1000   | 2.2   | 2.2  |   |   |   |  |  | 4.3  | 45.00  | 4.724   |
| DRC            | 209  | 220   | 71   | 0.23  | 0.16  | 0.21  | 0.6  | 0.24   | 0.19   | 0.18   | 0.55  |
| 03             | 201  | 190   | 379  | 0.56  | 0.09  | 0.12  | 0.2  | 0.11   | 0.07   | 0.09   | 0.28  |
| FRB 1985       | 318  | 300   | 15   | 0.55  | 0.40  | 0.52  | 1.1  | 0.37   | 0.35   | 0.40   | 1.2   |
| APR            |  |   |  |   |   |   |  |  |  |  |   |
| 01<br>JUN      | 228  | 230   | 172  | 0.14  | <0.01   |   | 1.1  | 0.09   | 0.06   | 0.02   | 0.06  |
| 05             | 182  | 170   | 117  | 0.36  | 0.10  | 0.13  | 0.5  | 0.04   | <0.01  | 0.02   | 0.06  |
| DATE           | ALUM-<br>INUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS AL)                | ARSENIC<br>DIS-<br>SOLVED<br>(UG/L<br>AS AS)                        | BARIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS BA)         | BERYL-<br>LIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS BE)          | CADMIUM<br>DIS-<br>SOLVED<br>(UG/L<br>AS CD)                  | CHRO-<br>MIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CR)             | COBALT,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CO)                       | COPPER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS CU)                   | IRON,<br>DIS-<br>SOLVED<br>(UG/L<br>AS FE)                     | LEAD,<br>DIS-<br>SOLVED<br>(UG/L<br>AS PB)                         | LITHIUM<br>DIS-<br>SOLVED<br>(UG/L<br>AS LI)                    |
| OCT 1984       |  |   |  |   |   |   |  |  |  |  |   |
| DEC            | <10  | 2   | 48   | (0  | <1  | <1  | <3   | 6  | 10   | <1   | <4  |
| 03<br>FEB 1985 |  |   |  |   |   |   |  |  |  | 77   |   |
| 19             | <10  | 1   | 55   | 1   | <1  | 4   | <3   | 4  | 23   | 1  | 14  |
| APR 01         |  |   |  |   |   |   |  |  |  |  |   |
| JUN            | 00   |   | 0.5  |   |   | 10  |  |  | 4.4  | 14.1   |   |
| 05             | 80   | <1  | 37   | 3   | <1  | 10  | <3   | 2  | 11   | 1  | 5   |

# RIO DE LA PLATA BASIN

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

|                | DIS-            | MERCURY<br>DIS-<br>SOLVED | MOLYB-<br>DENUM,<br>DIS-<br>SOLVED | NICKEI<br>DIS-<br>SOLVI | D SO        | LE-<br>UM,<br>IS-<br>LVED | SILV<br>DI<br>SOL | ER,<br>S-<br>VED S | TRON-<br>TIUM,<br>DIS-<br>OLVED | VAN<br>DIU<br>DI<br>SOL | M,<br>S-<br>VED | ZINC,<br>DIS-<br>SOLVE |              | SEDI-<br>MENT,<br>DIS-<br>CHARGE,<br>SUS- |
|----------------|-----------------|---------------------------|------------------------------------|-------------------------|-------------|---------------------------|-------------------|--------------------|---------------------------------|-------------------------|-----------------|------------------------|--------------|---|
| DATE           | (UG/L<br>AS MN) | (UG/L<br>AS HG)           | (UG/L<br>AS MO)                    | AS N                    |             | G/L<br>SE)                | (UG               |                    | UG/L<br>S SR)                   | (UG<br>AS               |                 | (UG/L<br>AS ZN         |              | PENDED<br>(T/DAY)                         |
| OCT 1984       |                 |                           |                                    |                         |             |                           |                   |                    |                                 |                         |                 |                        |              |   |
| 10             | 92              | 0.3                       | <10                                |                         | 5           | <1                        |                   | <1                 | 200                             |                         | <6              | 15                     | 36           | 12  |
| DEC            |                 |                           |                                    |                         |             |                           |                   |                    |                                 |                         |                 |                        | 40.0         |   |
| 03<br>FEB 1985 |                 |                           |                                    |                         | -           |                           |                   |                    |                                 |                         |                 |                        | - 48         | 91  |
| 19             | 260             | 0.1                       | <10                                | 1                       | 0           | <1                        |                   | <1                 | 310                             |                         | <6              |                        | 7 11         | 0.53                                      |
| APR            |                 |                           |                                    |                         |             |                           |                   |                    |                                 |                         |                 |                        |              |   |
| 01<br>JUN      |                 |                           |                                    | -                       | -           |                           |                   |                    |                                 |                         |                 |                        | - 108        | 81  |
| 05             | 11              | <0.1                      | <10                                |                         | 2           | <1                        |                   | <1                 | 120                             |                         | 7               |                        | 9 55         | 35  |
|                |                 |                           | -                                  |                         |             |                           |                   |                    |                                 |                         | 3               | W.                     | 180          |   |
|                |                 |                           |                                    |                         |             | LOR-                      |                   |                    |                                 |                         |                 | DI-                    | DI-          |   |
|                |                 |                           | PCB,                               | ALDRIN                  |             | NE,                       | DD                |                    | DDE,                            | DD                      |                 | AZINON                 |              |   |
|                | DATE            | TIME                      | TOTAL (UG/L)                       | TOTAL<br>(UG/L          |             | TAL                       | TOT               |                    | OTAL<br>UG/L)                   | TOT.                    |                 | TOTAL (UG/L)           | TOTAL (UG/L) |   |
|                |                 |                           | (00,2)                             | ,00,2                   | , , , , , , | , 4,                      | 100               | , 2,               | 04, 2,                          | ,00                     | , .,            | (04, 4,                | (00,2)       |   |
|                | JUN 1985        |                           |                                    |                         |             |                           |                   |                    |                                 |                         |                 |                        |              |   |
|                | 05              | 1025                      | <0.1                               | <0.01                   |             | <0.1                      | <0.               | 01 (               | 0.01                            | (0.                     | 01              | 0.02                   | 2 <0.01      |   |
|                |                 |                           |                                    |                         |             |                           |                   |                    |                                 |                         |                 |                        |              |   |
|                |                 |                           |                                    |                         |             |                           |                   | нврта              |                                 |                         |                 | 1111                   | ARTH-        |   |
|                |                 | RNI                       | 00-                                |                         |             | HEP                       | TA-               | CHLOR              |                                 |                         | MA              | LA-                    | OXY-         |   |
|                |                 | SULF                      |                                    |                         | THION,      | CHL                       | OR,               | RPOXID             | R LIN                           | DANE                    | TH              | ION, C                 | CHLOR,       |   |
|                | DATI            |                           |                                    | TAL                     | TOTAL       | TOT                       |                   | TOTAL              |                                 | TAL                     |                 |                        | TOTAL        |   |
|                |                 | (00                       | 3/L) (U                            | G/L)                    | (UG/L)      | (UG                       | /L)               | (UG/L              | ) (U                            | G/L)                    | (0              | G/L) (                 | (UG/L)       |   |
|                | JUN 1986        | 5                         |                                    |                         |             |                           |                   |                    |                                 |                         |                 |                        |              |   |
|                | 05              | <0.                       | .01 <0                             | .01                     | <0.01       | <0.                       | 01                | <0.01              | <0                              | .01                     | <               | 0.01                   | <0.01        |   |
|                |                 |                           |                                    |                         |             |                           |                   |                    |                                 |                         |                 |                        |              |   |
|                |                 |                           |                                    |                         |             |                           |                   |                    |                                 |                         |                 |                        |              |   |
|                |                 |                           |                                    |                         |             |                           |                   | NAPH-              |                                 |                         |                 |                        |              |   |
|                |                 | MRT                       | HYL ME                             | THYL                    |             |                           |                   | THA-<br>LENES      |                                 |                         |                 |                        |              |   |
|                |                 | PAR                       |                                    | RI-                     |             | PAR                       | A-                | POLY-              |                                 | ER-                     | T               | OX- T                  | COTAL        |   |
|                |                 | THI                       | ON, TH                             |                         | MIREX,      | THI                       |                   | CHLOR              |                                 | ANE                     | APH             | ENE,                   | TRI-         |   |
|                | DATE            |                           |                                    | TAL                     | TOTAL       | TOT                       |                   | TOTAL              |                                 | TAL                     |                 |                        | MION         |   |
|                |                 | (UG                       | (U                                 | G/L)                    | (UG/L)      | (UG                       | /L)               | (UG/L)             | (U                              | G/L)                    | (00             | G/L) (                 | UG/L)        |   |
|                | JUN 1985        | 5                         |                                    |                         |             |                           |                   |                    |                                 |                         |                 |                        |              |   |
|                | 05              | <0                        | .01 <                              | 0.01                    | <0.01       | <0                        | .01               | <0.1               |                                 | <0.1                    |                 | <1                     | <0.01        |   |
|                |                 |                           |                                    |                         |             |                           |                   |                    |                                 |                         |                 |                        |              |   |
|                |                 |                           |                                    |                         |             |                           |                   |                    |                                 | BD.                     |                 |                        |              |   |
|                |                 |                           |                                    |                         |             | -                         |                   |                    |                                 | USP.                    |                 |                        |              |   |
|                |                 |                           |                                    |                         |             | STREA                     |                   | SEDI-              |                                 | EVE<br>LAM.             |                 |                        |              |   |
|                |                 |                           |                                    |                         |             | INST                      |                   | SUS-               |                                 | INER                    |                 |                        |              |   |
|                |                 |                           | DA                                 | TE                      | TIME        | TANE                      |                   | PENDE              |                                 | HAN                     |                 |                        |              |   |
|                |                 |                           |                                    |                         |             | (CFS                      |                   | (MG/L              |                                 | MM S                    |                 |                        |              |   |
|                |                 |                           | OCT 19                             | 9.4                     |             |                           |                   |                    |                                 |                         |                 |                        |              |   |
|                |                 |                           | 10                                 |                         | 1155        | 125                       |                   | 36                 | 3                               | 100                     |                 |                        |              |   |
|                |                 |                           | DEC                                |                         |             |                           |                   |                    |                                 |                         |                 |                        |              |   |
|                |                 |                           | 03                                 |                         | 1545        | 699                       |                   | 48                 | 3                               | 100                     |                 |                        |              |   |
|                |                 |                           | APR 19                             |                         | 1245        | 279                       |                   | 108                |                                 | 79                      |                 |                        |              |   |
|                |                 |                           | JUN                                | •                       | 1240        | 419                       |                   | 100                | •                               |                         |                 |                        |              |   |
|                |                 |                           | 05                                 |                         | 1025        | 238                       |                   | 58                 | 5                               | 81                      |                 |                        |              |   |
|                |                 |                           |                                    |                         |             |                           |                   |                    |                                 |                         |                 |                        |              |   |

# 50046900 RIO DE LA PLATA AT HIGHWAY 2 NEAR TOA ALTA, PR (Formerly published as Rio de la Plata at Toa Alta, PR)

LOCATION.--Lat 18°24'41", long 66°15'39", Hydrologic Unit 21010005, on left bank, at downstream side of bridge on Highway 2, 1.3 mi ( 2.1 km) downstream from Rio Lajas, and 1.6 mi (2.6 km) northwest of Toa Alta, 11.3 mi (18.2 km) downstream from Puerto Rico Aqueduct and Sewer Authority reservoir. Prior to September 25, 1984, at site about 1.0 mi (1.6 km) upstream.

DRAINAGE AREA.--208 sq mi (539 sq km), excludes 8.2 sq mi (21.2 sq km) upstream from Lago Carite, flow from which is diverted to Rio Guamani. (Area at site used prior to September 25, 1984, 200 sq mi (518 sq km).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD. --November 1959 (measurement only), January 1960 to current year. Prior to September 1984, published as Rio de la Plata at Toa Alta, P.R.

GAGE .-- Water-stage recorder. Elevation of gage is 0.0 ft (0.0 m), from topographic map.

REMARKS.--No estimated daily discharges during water year. Records fair. Regulation at all stages by Puerto Rico Aqueduct and Sewer Authority reservoir upstream from gage.

AVERAGE DISCHARGE.--25 years (1961-85), 274 cu ft/s (7.760 cu m/s), 18.60 in/yr (472 mm/yr), 198,500 acre-ft/yr (245 cu hm/yr); median of yearly mean discharges, 220 cu ft/s (6.23 cu m/s), 159,000 acre-ft/yr (200 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD. --Maximum discharge, 95,500 cu ft/s (2,700 cu m/s), Sept. 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 discharge, 2.2 cu ft/s (0.062 cu m/s), Apr. 25, 1984.

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 (11.40 m); June 16, 1943, 82,000 cu ft/s (2,320 cu m/s), gage height, 34.4 ft (10.48 m).

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

|      |   |    |      | Disch     | arge     | Gage h | eight |         |      | Discha    | rge      | Gage h | eight |
|------|---|----|------|-----------|----------|--------|-------|---------|------|-----------|----------|--------|-------|
| Dat  | e |    | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   | Date    | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   |
| Nov. |   | 3  | 1300 | *56,600   | 1,600    | *23.33 | 7.111 | Apr. 30 | 1615 | 9,870     | 280      | 15.25  | 4.648 |
| Nov. |   | 5  | 2130 | 17,400    | 493      | 18.05  | 5.502 | May 16  | 1330 | 6,410     | 182      | 12.96  | 3.950 |
| Nov. |   | 7  | 0415 | 11,200    | 317      | 15.89  | 4.843 | May 17  | 1845 | 29,200    | 827      | 20.44  | 6.230 |
| Apr. | 2 | 25 | 0015 | 6,990     | 198      | 13.42  | 4.090 | May 18  | 1430 | 38,700    | 1,100    | 21.61  | 6.587 |

Minimum discharge, 9.5 cu ft/s (0.269 cu m/s), July 10.

|          |            | DISCH   | ARGE, IN   | CUBIC FE | ET PE  | R SECOND,<br>MEAN |             | YEAR OC | rober 198     | TO SEPT | EMBER 1985 | -        |        |
|----------|------------|---------|------------|----------|--------|-------------------|-------------|---------|---------------|---------|------------|----------|--------|
| DAY      | oc         | r nov   | DEC        | JA       | N      | FEB               | MAR         | APR     | MAY           | JUN     | JUL        | AUG      | SEP    |
| 1        | 86         | 6 211   | 180        | 27       | 0      | 47                | 173         | 262     | 412           | 155     |            | 14       | 81     |
| 2        | 70         | 0 230   | 181        | 33       | 2      | 43                | 107         | 65      | 542           | 153     | 24         | 14       | 134    |
| 3        | 5          | 4 17800 | 585        | 31       | 1      | 43                | 73          | 43      | 296           | 151     | 23         | 11       | 94     |
| 4        | 50         | 5340    | 400        | 22       | 1      | 52                | 51          | 36      | 149           | 468     | 19         | 10       | 68     |
| 5        | 40         | 6 7330  | 287        | 19       | 0      | 45                | 37          | 31      | 113           | 237     | 18         | 11       | 64     |
| 6        | 7:         |         |            |          |        | 36                | 53          | 29      | 89            | 152     |            | 18       | 82     |
| 7        | 93         |         |            |          |        | 28                | 100         | 32      | 70            | 136     |            | 43       | 76     |
| 8        | 89         | 3280    | 206        | 15       | 7      | 25                | 117         | 39      | 60            | 124     |            | 16       | 59     |
| 9        | 84         | 4 2480  | 215        | 14       | 5      | 22                | 122         | 28      | 53            | 118     | 11         | 15       | 99     |
| 10       | 128        | 1240    | 364        | 51       | 2      | 22                | 97          | 23      | 51            | 107     | 11         | 13       | 41     |
| 11       | 19:        |         |            |          |        | 21                | 73          | 29      | 49            | 101     |            | 12       | 53     |
| 12       | 195        | 685     |            |          | 5      | 19                | 60          | 35      | 59            | 94      |            | 13       | 41     |
| 13       | 190        |         |            |          |        | 18                | 78          | 26      | 64            | 86      |            | 24       | 445    |
| 14       | 174        |         |            |          |        | 17                | 54          | 21      | 52            | 78      |            | 27       | 976    |
| 15       | 17         | 1 681   | 182        | 12       | 0      | 17                | 36          | 19      | 517           | 70      | 15         | 39       | 235    |
| 16       | 172        |         |            |          |        | 17                | 30          | 19      | 3960          | 63      |            | 20       | 134    |
| 17       | 160        |         |            |          |        | 17                | 26          | 17      | 15600         | 58      |            | 19       | 120    |
| 18       | 198        | 8 443   | 494        | 10       | 0      | 18                | 25          | 20      | 24400         | 53      |            | 20       | 206    |
| 19       | 302        |         |            |          | 5      | 19                | 26          | 15      | 8260          | 55      |            | 25       | 144    |
| 20       | 420        | 314     | 225        | 8        | 7      | 20                | 49          | 14      | 1510          | 56      | 61         | 28       | 97     |
| 21       | 420        | 266     | 195        |          | 0      | 15                | 47          | 15      | 844           | 53      |            | 28       | 60     |
| 22       | 221        |         |            |          | 5      | 16                | 38          | 38      | 613           | 49      |            | 28       | 43     |
| 23       | 198        |         | 171        |          | 0      | 21                | 29          | 602     | 458           | 46      |            | 38       | 83     |
| 24       | 172        |         |            |          | 5      | 32                | 21          | 1090    | 360           | 46      |            | 40       | 77     |
| 25       | 151        | 1 194   | 186        | 6        | 1      | 32                | 15          | 2340    | 319           | 45      | 39         | 111      | 109    |
| 26       | 135        |         | 192        |          | 0      | 28                | 15          | 86      | 258           | 43      |            | 84       | 547    |
| 27       | 131        |         | 222        |          | 8      | 63                | 30          | 57      | 218           | 39      |            | 234      | 217    |
| 28       | 234        |         | 337        |          | 6      | 149               | 39          | 48      | 212           | 36      |            | 96       | 275    |
| 29       | 228        |         | 308        |          | 2      |                   | 360         | 42      | 199           | 31      |            | 74       | 213    |
| 30<br>31 | 202<br>188 |         | 337<br>416 |          | 8<br>2 |                   | 643<br>638  | 2280    | 176<br>160    | 29      |            | 60<br>90 | 150    |
| TOTAL    | 5227       | 60444   | 9478       |          |        | 902               |             | 7401    |               | 2932    | 702        | 1275     | 5023   |
| MEAN     | 169        |         | 306        |          |        | 32.2              | 3262<br>105 | 247     | 60123<br>1939 | 97.7    |            | 41.1     | 167    |
| MAX      | 420        |         | 884        | 51       |        | 149               | 643         | 2340    | 24400         | 468     |            | 234      | 976    |
| MIN      | 46         |         | 171        | 4        |        | 15                | 15          | 14      | 49            | 29      |            | 10       | 41     |
| CFSM     | .84        |         | 1.53       | .7       |        | .16               | .52         | 1.23    | 9.69          | .49     |            | .21      | .83    |
| IN.      | .97        |         | 1.76       | .8       |        | .17               | .61         | 1.38    | 11.18         | .55     |            | .24      | .93    |
| AC-FT    | 10370      |         | 18800      | 884      |        | 1790              | 6470        | 14680   | 119300        | 5820    |            | 2530     | 9960   |
| CAL YR   | 1984       | TOTAL 9 | 3438.9     | MEAN     | 255    | MAX 1             | 7800        | MIN 2   | .7 CFSM       | 1.27    | IN. 17.3   | 8 AC-FT  | 185300 |
| WTR YR   |            |         | 161225     | MBAN     | 442    |                   |             | MIN     | 10 CFSM       |         | IN. 29.9   |          | 319800 |

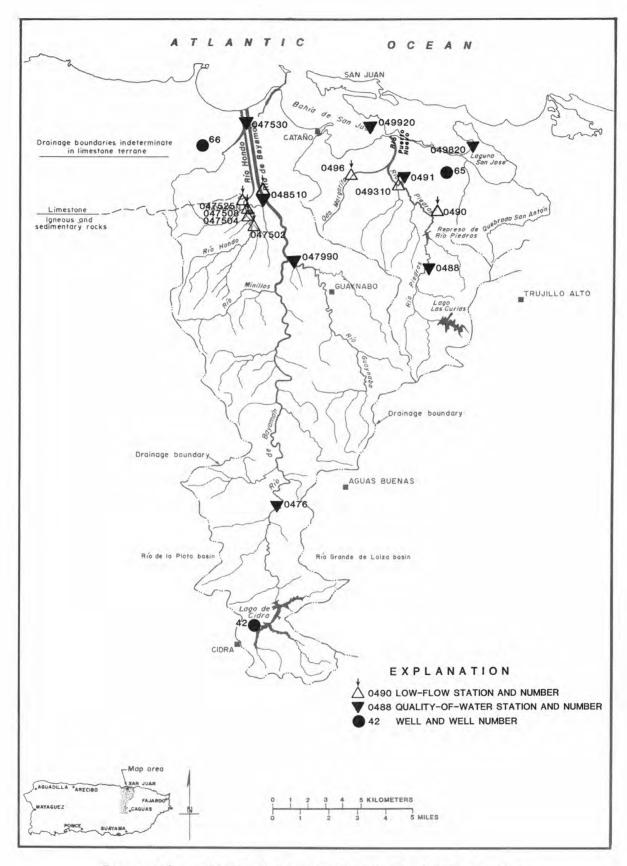


Figure 19.--Río Hondo to the Río Puerto Nuevo basins.

#### 50047530 RIO HONDO AT FLOOD CHANNEL NEAR CATANO, PR

## WATER-QUALITY RECORDS

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

DRAINAGE ARRA. -- Indeterminate.

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

| DATE NOV 1984    | TIME<br>0915  | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM)                | PH<br>(STAND-<br>ARD<br>UNITS)                    | TEMPER-<br>ATURE<br>(DEG C)   | TUR-<br>BID-<br>ITY<br>(NTU)  | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L)                     | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | OXYGEN<br>DEMAND,<br>CHEM-<br>ICAL<br>(HIGH<br>LEVEL)<br>(MG/L) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) |  |
|------------------|---|--|---|---|---|---|--|---|--|--|--|
| FEB 1985         | 0915  | 2600   | 7.20  | 26.5  | 50  | U   |  | 210   | 1400000  | 30000  |  |
| 01               | 1355  | 7600   | 7.60  | 28.0  | 4.5   | 0   |  |   | K1500000   | 63000  |  |
| 25<br>JUN        | 1510  | 2600   | 7.20  | 29.5  | 15  | 3.3   | 44   |   | 42000  | <1000  |  |
| 21               | 1330  | 17400  | 7.80  | 33.5  | 7.0   | 3.0   | 44   |   | 420000   | <10000   |  |
| AUG<br>28        | 0850  | 1720   | 7.60  | 26.5  | 40  | 1.2   | 15   | 35  | к830000  | 3700   |  |
| DATE             | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3)                              | HARD-<br>NESS<br>NONCARB<br>WATER<br>TOT FLD<br>MG/L AS<br>CACO3 | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA)      | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG)                | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA)                        | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO                 | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K)            | ALKA-<br>LINITY<br>WATER<br>TOTAL<br>FIELD<br>MG/L AS<br>CACO3  | SULFIDE<br>TOTAL<br>(MG/L<br>AS S)                             | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4)                      |  |
| NOV 1004         | 0.1000,   | 0.1000   | ,   | 110 1107  | ,   |   |  | 011000  | ,  | ,  |  |
| NOV 1984<br>27   | 290   | 200  | 37  | 49  | 390   | 10  | 19   | 91  |  | 110  |  |
| FEB 1985<br>01   | 820   | 610  | 82  | 150   | 1000  | 15  | 57   | 208   | 1.0  | 310  |  |
| APR 25           |   |  |   |   |   |   |  | 84  |  |  |  |
| JUN<br>21        | 2000  | 1800   | 140   | 390   | 3000  | 30  | 120  | 192   | 0.6  | 810  |  |
| AUG 28           |   | 1000   |   |   | 0000  |   |  | 85  | 0.0  | 0.0  |  |
| DATE             | CHLO-<br>RIDR,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)                 | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F)               | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>RESIDUE<br>AT 105<br>DEG. C,<br>SUS-<br>PENDED<br>(MG/L) | NITRO-<br>GEN,<br>NITRATE<br>TOTAL<br>(MG/L<br>AS N)    | NITRO-<br>GEN,<br>NITRITE<br>TOTAL<br>(MG/L<br>AS N)           | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N)            | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N)           | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N)               |  |
| NOV 1984<br>27   | 770   | 0.2  | 8.9   | 1400  | 66  |   | 0.10   | <0.10   | 3.50   | 2.5  |  |
| FKB 1985<br>01   | 2200  | 0.5  | 18  | 3900  | 19  | 0.06  | 0.04   | 0.10  | 15.0   | 1.0  |  |
| APR 25           |   |  |   |   | 28  | 0.14  | 0.06   | 0.20  | 1.50   | 0.5  |  |
| JUN<br>21        | 5900  | 0.7  | 13  | 10000   | 38  |   | 0.02   | <0.10   | 10.0   |  |  |
| AUG 28           |   |  |   |   | 39  | 0.16  | 0.04   | 0.20  | 1.10   | 0.9  |  |
| DATE<br>NOV 1984 | NITRO-<br>GEN, AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS N)                        | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS NO3)       | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P)                         | ARSENIC<br>TOTAL<br>(UG/L<br>AS AS)                                 | BARIUM,<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS BA) | BORON,<br>TOTAL<br>RECOV-<br>BRABLR<br>(UG/L<br>AS B)          | CADMIUM<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CD)         | CHRO-MIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CR)     | COPPER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CU)            |  |
| 27<br>FEB 1985   | 6.0   |  |   | 0.66  |   |   |  |   |  |  |  |
| 01               | 16  | 16   | 71  | 3.80  | 1   | 100   | 550  | 3   | 29   | 70   |  |
| APR 25           | 2.0   | 2.2  | 9.7   | 0.31  |   |   | 11   |   |  |  |  |
| JUN 21           | 3.0   |  |   | 2.90  | 3   | 100   | 1500   | 2   | 38   | 50   |  |
| AUG 28           | 2.0   | 2.2  | 9.7   | 0.25  |   |   |  |   |  |  |  |
|                  |   |  |   |   |   |   |  |   |  |  |  |

K = non-ideal count

RIO HONDO BASIN

50047530 RIO HONDO AT FLOOD CHANNEL NEAR CATANO, PR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| NOV 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 27<br>FEB 1985 |   |   |   |   |  | 77  |   |                                     |                            |  |
| 01             | 1000  | 10  | 500   | 0.9   | <1   | 1   | 90  | 0.06                                |                            | 1.8  |
| APR            |   |   |   |   |  |   |   |                                     |                            |  |
| 25             |   |   |   | <0.1  |  |   |   |                                     |                            |  |
| JUN            |   |   |   |   |  |   |   |                                     |                            |  |
| 21             | 810   | 8   | 440   | 1.6   | <1   | 1   | 80  | 0.06                                | <1                         |  |
| AUG            |   |   |   |   |  |   |   |                                     |                            |  |
| 28             |   |   |   |   |  |   |   |                                     |                            |  |

#### 50047600 RIO DE BAYAMON NEAR AGUAS BUENAS, PR

#### WATER-QUALITY RECORDS

LOCATION.--Lat 18°14'39", long 66°08'39", at bridge on Highway 156, and 2.9 mi (4.7 km) west of Aguas Buenas plaza. DRAINAGE AREA.--18.5 sq mi (47.9 sq km).

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

| DATE          | TIME                                   | STRE<br>FLO<br>INST<br>TANE<br>(CF                       | W,<br>AN-<br>OUS                            | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAN<br>ARE                                 | D- TEM  | PER-<br>URE<br>G C)                        | TUR-<br>BID-<br>ITY<br>(NTU)            | 801  | SEN,<br>(S-<br>LVED | OXYGEN DIS- SOLVE (PER- CENT SATUR ATION                      | DEM<br>D CH<br>IC<br>(H                                | AND,<br>EM-<br>AL<br>IGH<br>EL)        | COLI-<br>FORM,<br>FECAL<br>0.7<br>UM-MF<br>(COLS., | TOC<br>FR<br>KF<br>(CO                           | CAL<br>AGA<br>LS.<br>ER        |
|---------------|--|--|---|---|--|---|--|---|--|---------------------|---|--|--|--|--|--------------------------------|
| 1984          | 1020                                   | 46   |   | 231   | ,  | 80  |  | 20                                      |  | 8.4                 | 9   | 7  | 22                                     | K10000   |  | 40                             |
| 1985          |  |  |   |   |  |   | 21.5                                       | 28                                      |  |                     |   |  |  |  |  |                                |
| 5             | 1045                                   | 26   |   | 262   | 8.   | 00  | 20.0                                       | 4.5                                     | 1  | 10.6                | 11  | 8  | 17                                     | 580  | )  | 51                             |
| 4             | 1330                                   | 25   |   | 248   | 8.   | 00  | 22.0                                       | 4.5                                     |  | 9.4                 | 10  | 9  | 18                                     | 3600   | ) 1  | B33                            |
| 2             | 1130                                   | 42   |   | 205   | 7.   | 80  | 24.5                                       | -                                       | -  | 9.3                 | 11  | 3  |  | 230  | )  | 72                             |
| 7             | 1005                                   | 28   |   | 259   | 7.   | 90  | 25.5                                       | 7.0                                     |  | 8.1                 | 10  | 0  | 11                                     | 270  | )  | 34                             |
| DATE          | HARD-<br>NESS<br>(MG/L<br>AS<br>CACOS) | HAR<br>NES<br>NONC<br>WAT<br>TOT<br>MG/L<br>CAC          | S<br>ARB<br>ER<br>FLD<br>AS                 | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA)      | MAGN<br>SIU<br>DIS<br>SOLV<br>(MG/<br>AS M         | M, SODI<br>DIS<br>RD SOLV                         | 3-   | SODIUI<br>AD-<br>SORP-<br>TION<br>RATIO | SI   |                     | ALKA-<br>LINITY<br>WATER<br>TOTAL<br>FIELD<br>MG/L A<br>CACO3 | SUL:<br>TO'<br>S (M                                    | FIDE<br>TAL<br>G/L<br>S)               | SULFATI<br>DIS-<br>SOLVRI<br>(MG/L<br>AS SO4)      | RII<br>DII<br>SOI<br>(MC                         | LO-<br>DE,<br>S-<br>LVE<br>G/L |
| 1984          | 84                                     |  | 8   | 19  | 8.   | 8 1:  | ,  | 0.0                                     |  | . 5                 | 7   | R  |  | 12   | 10   | R                              |
| 1985          | 91                                     |  | 4   | 21  | 9.   |   |  | 0.0                                     |  | .7                  | 8   |  | <0.5                                   | 9.6  |  |                                |
|               | 100                                    |  |   | 21  | 8.   |   |  |   |  | .,                  | 9   |  |  |  |  | ,                              |
| 4             |  |  |   |   |  |   |  | -                                       |  |                     |   |  |  | -  |  |                                |
| .2<br>        |  |  |   |   |  |   |  | -                                       | •  |                     | 6   | 9  |  |  |  | •                              |
|               |  |  |   | 901   | The  |   | 901 1                                      | ne                                      |  |                     |   |  |  |  |  |                                |
| DAT           | R<br>B                                 | LUO-<br>IDE,<br>DIS-<br>OLVED<br>MG/L<br>S F)            | SILIO<br>DIS-<br>SOLV<br>(MG/<br>AS<br>SIO2 | CA, SUM<br>CON<br>VRD TUE<br>VL E                 | IDS,<br>OF<br>STI-<br>STS,<br>IS-<br>OLVED<br>G/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | RESI<br>AT 1<br>DEG.<br>SUS<br>PEND<br>(MG | DUR 1<br>05<br>C, N<br>ED               | GEN,<br>ITRATE<br>TOTAL<br>(MG/L                       |                     | RN,<br>RITE N<br>PAL  | NITRO-<br>GEN,<br>02+NO3<br>TOTAL<br>(MG/L<br>AS N)    |  | N,<br>ONIA OF<br>AL T                              | GEN,<br>GANIC<br>TOTAL<br>MG/L<br>S N)           |                                |
| NOV 198       |  | <b>40</b> 1  | 0.1   |   | 140  | 10  |  | _                                       |  | •                   | 00  | 0.00   |  | 00   |  |                                |
| 13<br>JAN 198 | 5                                      | <0.1   | 21  |   | 140  | 17  |  | 5                                       | 0.74   |                     | 06  | 0.80   |  | 09   | 1.3  |                                |
| 15<br>MAR     |  | 0.1  | 22  |   | 140  | 10  |  | 5                                       | 0.49   | 0.                  | 01  | 0.50   | 0.                                     | 01   | 1.2  |                                |
| 14<br>JUN     |  |  |   |   |  |   |  | 6                                       |  | <0.                 | 01  | 0.30   | 0.                                     | 02   | 0.38   |                                |
| 12<br>AUG     |  |  |   |   |  |   |  |   | 0.28   | 0.                  | 02  | 0.30   | 0.                                     | 06   | 0.34   |                                |
| 07            |  |  |   |   |  |   |  | 6                                       |  | <0.                 | 01  | 0.30   | 0.                                     | 03   | 0.37   |                                |
| DAT           | GR<br>MOI<br>OR:<br>T(                 | ITRO-<br>N,AM-<br>NIA +<br>GANIC<br>OTAL<br>MG/L<br>S N) | NITE<br>GEN<br>TOTA<br>(MG/                 | L TO  | TRO-<br>RN,<br>TAL<br>G/L<br>NO3)                  | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P)       | ARSEI<br>TOTA<br>(UG,                      | NIC H<br>AL H                           | ARIUM,<br>FOTAL<br>RECOV-<br>RRABLE<br>(UG/L<br>AS BA) | TOT                 | OV-   | ADMIUM<br>FOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CD) | CHR<br>MIU<br>TOT<br>REC<br>ERA<br>(UG | M, CO<br>AL T<br>OV- R<br>BLR E                    | PPER,<br>OTAL<br>ECOV-<br>RABLE<br>UG/L<br>S CU) |                                |
| NOV 198       | 4                                      |  |   |   |  |   |  |   |  |                     |   |  |  |  |  |                                |
| 13<br>JAN 198 | 5                                      | 1.4  | 2.  | 2   | 9.7  | <0.01   |  |   |  |                     |   |  |  |  |  |                                |
| 15<br>MAR     |  | 1.2  | 1.  | 7   | 7.5  | 0.05  |  | <1                                      | <100   |                     | <20   | 2  |  | 4  | <10  |                                |
| 14<br>JUN     |  | 0.4  | 0.  | 7   | 3.1  | <0.01   |  |   |  |                     |   |  |  |  |  |                                |
| 12            |  | 0.4  | 0.  | 7   | 3.1  | 0.02  |  |   |  |                     |   |  |  | -2 7   |  |                                |
| 07            |  | 0.4  | 0.  | 7   | 3.1  | 0.03  |  |   |  |                     |   |  |  |  |  |                                |

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RIO DE BAYAMON BASIN

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | BILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| NOV 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 13<br>JAN 1985 |   |   |   |   |  |   |   |                                     |                            |  |
| 15             | 620   | 7   | 60  | 0.1   | <1   | <1  | 40  | <0.01                               | 3                          | 0.02   |
| MAR            |   |   |   |   |  |   |   |                                     |                            |  |
| 14             |   |   |   | 0.2   |  |   |   |                                     |                            |  |
| JUN            |   |   |   |   |  |   |   |                                     |                            |  |
| 12             |   |   |   |   |  |   |   |                                     |                            |  |
| AUG            |   |   |   |   |  |   |   |                                     |                            |  |
| 07             |   |   |   |   |  |   |   |                                     |                            |  |

## 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 Rio de Bayamon, and 2.3 mi (3.7 km) southeast of Bayamon plaza.

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

K = non-ideal count

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

| DATE           | TIME   | STRE<br>FLO<br>INST<br>TANE<br>(CF                              | W, CO<br>AN- DU<br>OUS AN                         | FIC<br>N- PI<br>CT- (ST   | RD AT   | IPER-<br>TURE<br>EG C)        | TUR-<br>BID-<br>ITY<br>(NTU) | DI<br>SOL  | SEN, (<br>S-<br>LVED S  | YGEN,<br>DIS-<br>OLVED<br>PER-<br>CENT<br>ATUR-<br>TION) | OXYO<br>DEMA<br>CHE<br>ICA<br>(HI<br>LBVE<br>(MG/ | ND, FOR<br>M- FEC<br>L 0.7<br>GH UM-<br>L) (COL            | CAL,<br>K-MF (                               | STREP-<br>OCOCCI<br>FECAL,<br>F AGAR<br>COLS.<br>PER<br>00 ML) |
|----------------|--------|---|---|---|---|-------------------------------|------------------------------|--|---|--|---|--|--|--|
| OCT 1984       | 1410   | 47  |   | 240   |   | 07.5                          |                              |  | 4.0   | 60   |   | voer   | 2000   | 42000  |
| 29<br>JAN 1985 | 1410   | 47  |   | 349   | 7.40  | 27.5                          |                              |  | 4.8   | 60   |   | K860   | ,000   | 43000  |
| 29<br>APR      | 1235   | 21  |   | 444   | 7.60  | 24.5                          | 4.0                          |  | 4.9   | 58   |   | 33 60  | 0000   | 300  |
| 16             | 1530   | 20  |   | 552   | 7.50  | 29.0                          | 5.0                          |  | 2.9   | 38   |   | 23 K16   | 8000   | 3100   |
| JUN 13         | 1210   | 23  |   | 442   | 7.60  | 29.0                          | 15                           |  | 2.9   | 37   |   | 62 5   | 200  | K1600  |
| JUL            |        |   |   |   |   |                               |                              |  |   |  |   |  |  |  |
| 31             | 1235   | . 19  |   | 495   | 7.70  | 30.0                          | 14                           |  | 7.6   | 99   |   | 23 580   | 0000   | K12000   |
| DATE           |        | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3)                          | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA)      | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG)                | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA)      | SORP<br>TIO<br>RATI           | -<br>N S                     | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>MG/L        | ALKA-<br>LINITY<br>WATER<br>TOTAL<br>FIELD<br>MG/L A<br>CACO3 | 3U:  | LFIDE<br>OTAL<br>MG/L<br>S S)                     | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4)              | CHLO<br>RIDB<br>DIS-<br>SOLV<br>(MG/<br>AS C | RD<br>L  |
| OCT 1984       |        |   |   |   |   |                               |                              |  |   |  |   |  |  |  |
| 29<br>JAN 1985 |        |   |   |   |   |                               |                              |  | 12  | 8  |   |  | 76   |  |
| 29             |        | 160   | 41  | 13  | 29  | 1                             |                              | 3.6  | 15  | 6  | (0.5  | 15   | 38   |  |
| APR<br>16      |        |   | ***   |   |   |                               |                              |  | 18  | 4  |   |  | 1  | 411  |
| JUN<br>13      |        | 150   | 40  | 11  | 29  | 1                             |                              | 4.1  | 15  |  | <0.5  | 25   | 39   |  |
| JUL            |        | 150   | 40  | 11  | 29  |                               |                              | 4.1  |   |  | 10.5  | 25   | 38   |  |
| 31             |        |   |   |   |   |                               |                              | -  | 15  | •  |   |  |  |  |
| DATE           |        | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F)              | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | AT 10                         | UE N<br>5<br>C, NI<br>D (    | GEN,<br>TRATE<br>OTAL<br>MG/L<br>S N)            | NITRO<br>GEN,<br>NITRIT<br>TOTAL<br>(MG/L<br>AS N)            | B NO:  | TRO-<br>GEN,<br>2+NO3<br>OTAL<br>MG/L<br>B N)     | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N)       | NITEGEN ORGANITOTAL (MG/)                    | ic<br>L  |
| 1001           |        | <i>no 1</i> ,   | 51027   | (110, 11)   | DAI,  | (114)                         | L, A                         |  | AD 11,  | ***  | ,   |  |  |  |
| OCT 1984<br>29 |        |   |   |   |   |                               |                              | 0.50   | 0.10  |  | 0.60  | 2.80   | 1.   | В  |
| JAN 1985<br>29 |        | 0.1   | 27  | 260   | 15  | 13                            |                              | 0.26   | 0.04  |  | 0.30  | 1.80   | 0.   |  |
| APR            |        | 0.1   | 21  | 200   | 19  |                               |                              | 0.20   |   |  |   |  |  |  |
| 16<br>JUN      |        |   |   |   |   | 8                             |                              |  | 0.03  | <(   | 0.10  | 5.10   | 1.:  | 2  |
| 13<br>JUL      |        | 0.3   | 17  | 260   | 16  | 6                             |                              | 0.17   | 0.03  |  | 0.20  | 2.00   | 5.0  | 0  |
| 31             |        |   |   |   |   |                               |                              | 0.07   | 0.03  |  | 0.10  | 2.40   | 1.0  | 0  |
| DATE           | M<br>O | NITRO-<br>EN,AM-<br>ONIA +<br>RGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS N)         | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS NO3)                         | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P)       | ARSEN<br>TOTA<br>(UG/<br>AS A | IC R<br>L R<br>L (           | RIUM,<br>OTAL<br>ECOV-<br>RABLE<br>UG/L<br>S BA) | BORON<br>TOTAL<br>RECOVERABLE<br>(UG/L<br>AS B)               | TO RI  | OMIUM<br>OTAL<br>BCOV-<br>RABLE<br>JG/L<br>B CD)  | CHRO-MIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CR) | COPPEI<br>TOTAL<br>RECOVERABLE<br>(UG/I      | V-<br>LR   |
| OCT 1984       |        |   |   |   |   |                               |                              |  |   |  |   |  |  |  |
| 29             |        | 4.6   | 5.2   | 23  | 0.61  |                               |                              |  | -   | 150  |   |  | 14 -1 -                                      | -  |
| JAN 1985<br>29 |        | 2.3   | 2.6   | 12  | 0.68  |                               |                              | 100  | 30  | 0  | 1   | <1   | <:   | 10   |
| APR<br>16      |        | 6.3   |   |   | 0.99  |                               |                              | 1_,  |   |  |   |  |  |  |
| JUN 13         |        | 7.0   | 7.2   | 22  |   |                               |                              | 200  | 20  |  | 1   | 4  |  | 90   |
| JUL            |        |   |   | 32  | 0.36  |                               | 3                            | 200  |   |  |   |  |  |  |
| 31             |        | 3.4   | 3.5   | 15  | 0.97  |                               |                              |  | -   | 2  |   |  |  |  |

RIO DE BAYAMON BASIN

# 50047990 RIO GUAYNABO NEAR BAYAMON, PR--Continued WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| OCT 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 29<br>JAN 1985 |   |   |   |   | 122  |   |   |                                     |                            |  |
| 29             | 1100  | 3   | 350   | <0.1  |  | <1  | 10  | <0.01                               | 10                         | 0.36   |
| APR            |   |   |   |   |  |   |   |                                     |                            |  |
| 16             |   |   |   | 0.1   |  |   |   |                                     |                            |  |
| JUN            |   |   |   |   |  |   |   |                                     |                            |  |
| 13             | 49000   | 23  | 2400  | 0.3   | <1   | <1  | 130   | <0.01                               | 4                          | 0.24   |
| JUL            |   |   |   |   |  |   |   |                                     |                            |  |
| 31             |   |   |   |   |  |   |   |                                     |                            |  |

#### WATER-QUALITY RECORDS

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

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

K = non-ideal count

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

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

|                  |                         |  |                                       |  |                       |                            |   |                   |                           | OXYGEN   | N. OXYO  | IRN C  | OLI-                                 | STRKP-  |
|------------------|-------------------------|--|---------------------------------------|--|-----------------------|----------------------------|---|-------------------|---------------------------|--|--|--|--------------------------------------|---|
| DATE             | TIME                    | STREAM-<br>FLOW,<br>INSTAN-<br>TANBOUS | CON<br>DUC<br>ANC                     | IC<br>-<br>T- (S   | PH<br>TAND-<br>ARD    | TEMPE                      | R- B  | UR-<br>ID-<br>TY  | OXYGEN,<br>DIS-<br>SOLVED | DIS-<br>SOLVE<br>(PER-<br>CENT<br>SATUE          | DEMARD CHE   | AND, F<br>AL O<br>CGH U<br>KL) (C                    | ORM,<br>BCAL,<br>.7<br>M-MF<br>OLS./ | TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER |
| 1004             |                         | (CFS)                                  | (US/                                  | CM) UN   | ITS)                  | (DEG                       | C) (N   | TU)               | (MG/L)                    | ATION  | (MG/   | L) 10  | 0 ML)                                | 100 ML)                                       |
| NOV 1984         | 1410                    | 102                                    |                                       | 370  | 7.60                  | 26                         | .0 1  | 4                 | 4.8                       |  | 8  | 25   | K6900                                | K500  |
| JAN 1985<br>29   | 0930                    | 64                                     |                                       | 435  | 7.50                  | 22                         | .0  | 3.0               | 4.8                       |  | 54   | 26 4   | 00000                                | 2500  |
| APR<br>16        | 1130                    | 46                                     |                                       | 430  | 7.30                  | 25                         | .0  | 7.5               | 4.5                       |  | 54   | 16   | 53000                                | K1800   |
| JUN<br>18        | 1145                    | 38                                     |                                       | 442  | 7.60                  | 28                         | .0  | 5.0               | 5.2                       |  | 66   | 28   | K1000                                | K450  |
| JUL<br>31        | 0935                    | 32                                     |                                       | 463  | 7.40                  | 27                         | .0 1  | 3                 | 3.3                       |  | 11   | 17 2   | 40000                                | 9600  |
|                  |                         |  |                                       |  |                       |                            |   |                   |                           |  |  |  |                                      |   |
|                  | HARD-                   | HARD-<br>NESS<br>NONCARE               | CALC                                  |  | AGNE-                 | SODIU                      |   | DIUM<br>AD-       | POTAS-<br>SIUM,           | ALKA-<br>LINITY<br>WATER                         | 7  | su   | LFATE                                | CHLO-<br>RIDE,                                |
| DATE             | NESS<br>(MG/L<br>AS     | WATER<br>TOT FLI<br>MG/L AS            | (MG                                   | VED SO   | DIS-<br>DLVED<br>MG/L | DIS-<br>SOLVE<br>(MG/      | D T   | RP-<br>ION<br>FIO | DIS-<br>SOLVED<br>(MG/L   | FIRLE<br>MG/L A                                  | TOT  | AL S   | IS-<br>OLVED<br>MG/L                 | DIS-<br>SOLVED<br>(MG/L                       |
| NOV 1984         | CACO3)                  | CACO3                                  | AS                                    | CA) A  | B MG)                 | AS N                       | A)  |                   | AS K)                     | CACOS  | AS AS  | S) AS  | 304)                                 | AS CL)  |
| 20<br>JAN 1985   | 140                     | 8                                      | 37                                    |  | 12                    | 21                         |   | 0.8               | 2.8                       | 13   | 14   |  | 18                                   | 28  |
| 29               | 160                     | 1                                      | 40                                    |  | 14                    | 27                         |   | 1                 | 3.3                       | 15   | 7 <  | 0.5  | 17                                   | 34  |
| 16               |                         |  |                                       |  |                       |                            |   |                   |                           | 15   | 57   |  |                                      |   |
| JUN<br>18<br>JUL | 160                     | 14                                     | 42                                    |  | 13                    | 27                         |   | 1                 | 3.4                       | 14   | 4 (  | 0.5  | 26                                   | 35  |
| 31               |                         |  |                                       |  |                       |                            |   |                   |                           | 15   | 9  |  |                                      |   |
| DAT              | RI<br>D<br>SO<br>'E (M  | DE, DE, DE SIS- SILVED (G/L            | LICA,<br>DIS-<br>SOLVED<br>MG/L<br>AS | SOLIDS<br>SUM OF<br>CONSTI-<br>TURNIS<br>DIS-<br>SOLVEI<br>(MG/L | SOL<br>SO<br>SO<br>(T | IDS,<br>IS-<br>LVED<br>ONS | SOLIDS,<br>RESIDUE<br>AT 105<br>DEG. C,<br>SUS-<br>PENDED<br>(MG/L) |                   | RATE NIT                  | ITRO-<br>JEN,<br>FRITE N<br>DTAL<br>4G/L<br>B N) | NITRO-<br>GEN,<br>IO2+NO3<br>TOTAL<br>(MG/L<br>AS N) | NITRO<br>GEN,<br>AMMONI<br>TOTAL<br>(MG/L<br>AS N)   | A ORG                                | TRO-<br>EN,<br>ANIC<br>TAL<br>G/L<br>N)       |
| NOV 198<br>20    |                         | 0.1                                    | 27                                    | 230  | ) 6                   | 2                          | 39  | 0.                | 94                        | 0.16   | 1.10   | 0.55   | p 5                                  | 0.35  |
| JAN 198<br>29    |                         | 0.1                                    | 26                                    | 260  | ) 4                   | 4                          | 12  | 0.                | 40                        | 0.10   | 0.50   | 1.70   |                                      | 0.4   |
| APR<br>16        |                         |  |                                       |  |                       |                            | 25  | 0.                | 21 (                      | 0.09   | 0.30   | 1.40   |                                      | 3.3   |
| JUN 18           |                         | 0.2                                    | 26                                    | 260  | ) 2                   | 7                          | 14  |                   |                           | 0.15   | 1.20   | 1.50   |                                      | 1.9   |
| JUL<br>31        |                         |  |                                       |  |                       |                            |   |                   |                           | 0.12   | 0.40   | 2.50   |                                      | 0.8   |
|                  |                         |  |                                       |  |                       |                            |   |                   |                           |  |  |  |                                      |   |
| DAT              | GEN<br>MON<br>ORG<br>TO | ANIC<br>TAL T<br>G/L (                 | ITRO-<br>GEN,<br>OTAL<br>MG/L         | NITRO-<br>GEN,<br>TOTAL<br>(MG/L                                 | PHO<br>TO<br>(M       | TAL<br>G/L                 | ARSENIC<br>TOTAL<br>(UG/L   |                   | OV- REBLE                 | OTAL<br>SCOV-<br>RABLE<br>JG/L                   | ADMIUM<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L         | CHRO-<br>MIUM,<br>TOTAL<br>RECOV-<br>BRABLI<br>(UG/L | TO' REG                              | PER,<br>TAL<br>COV-<br>ABLE<br>G/L            |
|                  |                         | N) A                                   | S N)                                  | AS NO3   | AS                    | P)                         | AS AS)  | AS                | BA) AS                    | 3 B)   | AS CD)   | AS CR  | ) AS                                 | CU)   |
| NOV 198<br>20    |                         | 0.9                                    | 2.0                                   | 8.9  | 0                     | . 28                       |   |                   |                           |  |  | 1  | -                                    |   |
| JAN 198<br>29    |                         | 2.1                                    | 2.6                                   | 12   | 0                     | .72                        |   |                   | 100                       | 40   | 1  | <  | 1                                    | <10   |
| APR<br>16        |                         | 4.7                                    | 5.0                                   | 22   | 0                     | .53                        |   |                   |                           |  |  |  | -15                                  |   |
| JUN<br>18        |                         | 3.4                                    | 4.6                                   | 20   |                       | .89                        | 1   |                   | 100                       | 30   | 1  | 10   | 6                                    | <10   |
| JUL<br>31        |                         | 3.3                                    | 3.7                                   | 16   | 1                     | .00                        |   |                   |                           |  |  | <u>.</u>   | _                                    |   |
|                  |                         |  |                                       |  |                       |                            |   |                   |                           |  |  |  |                                      |   |

## 50048510 RIO DE BAYAMON AT FLOOD CHANNEL AT BAYAMON, PR--Continued WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG)       | ZINC,<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L)                 | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|--|--|
| NOV 1984       |   |   |   |   |  |   |   |                                     |  |  |
| 20             |   | (   |   |   |  |   |   |                                     |  |  |
| JAN 1985<br>29 | 1100  | 2   | 380   | (0.1  |  | (1  | <10   | <0.01                               | 10   | 0.09   |
| APR            |   |   |   |   |  |   |   |                                     | 7.7  | 3.55   |
| 16<br>JUN      |   |   |   | 0.2   |  |   |   |                                     |  |  |
| 18             | 810   | <1  | 480   | <0.1  | <1   | <1  | 30  | <0.01                               | 11   | 0.54   |
| JUL<br>31      |   |   |   |   |  |   |   |                                     |  |  |
| 31             | -   | -   |   | 25  |  |   |   |                                     |  | -  |
| DATE           | TI  | PCB<br>ME TOT<br>(UG/                                 | AL TOT  |   | L TOT                                      | AL TOT  | AL TOT  |                                     | ON, ELDI                                   | RIN<br>AL  |
| JUL 1985<br>31 | 09  | 35 <.   | 1 (.  | 01 <.1  | ⟨.   | 01 <.   | 01 <.   | 01 (.                               | 19 <                                       | 01   |
|                | DATE  | ENDO-<br>SULFAN,<br>TOTAL<br>(UG/L)                   | BNDRIN,<br>TOTAL<br>(UG/L)                                      | BTHION,<br>TOTAL<br>(UG/L)                              | HEPTA-<br>CHLOR,<br>TOTAL<br>(UG/L)        | HEPTA-<br>CHLOR<br>BPOXIDE<br>TOTAL<br>(UG/L)                 | LINDANE<br>TOTAL<br>(UG/L)                            | MALA-<br>THION,<br>TOTAL<br>(UG/L)  | METH-<br>OXY-<br>CHLOR,<br>TOTAL<br>(UG/L) |  |
|                | 1985  |   |   |   |  |   |   |                                     |  |  |
| 31             | 1   | <.01  | <.01  | ₹.01  | <.01                                       | <.01  | <.01  | ₹,11                                | ₹.01                                       |  |
|                | DATE  | METHYL<br>PARA-<br>THION,<br>TOTAL<br>(UG/L)          | METHYL<br>TRI-<br>THION,<br>TOTAL<br>(UG/L)                     | MIRKX,<br>TOTAL<br>(UG/L)                               | PARA-<br>THION,<br>TOTAL<br>(UG/L)         | NAPH-<br>THA-<br>LENES,<br>POLY-<br>CHLOR.<br>TOTAL<br>(UG/L) | PER-<br>THANE<br>TOTAL<br>(UG/L)                      | TOX-<br>APHENE,<br>TOTAL<br>(UG/L)  | TOTAL TRI- THION (UG/L)                    |  |
| JUL            | 1985  |   |   |   |  |   |   |                                     |  |  |
| 3 1            | 1   | <.01  | . <.01  | <.01  | <.01                                       | <.1   | <.1   | < 1                                 | <.01                                       |  |

## 50048800 RIO PIEDRAS NEAR RIO PIEDRAS, PR

#### WATER-QUALITY RECORDS

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

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

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

| DATE           | TIME                                   | STREA<br>FLOW<br>INSTA<br>TANEO<br>(CFS                | M- C<br>I, C<br>N- D<br>OUS A                   | PR-<br>IFIC<br>ON-<br>UCT-<br>NCE<br>8/CM) | PI<br>(ST/<br>AI<br>UNI                         | SD<br>D                 | TEMP<br>ATU                                 | IRE  | TU<br>BI<br>IT<br>(NT       | D-<br>Y        | SOL              |                                      | SOL<br>(PE<br>CE<br>SAT                  | S-<br>VED<br>R-            | OXYO<br>DEMA<br>CHE<br>ICA<br>(HI<br>LEVE<br>(MG/ | MD,<br>M-<br>L<br>GH<br>KL) | UM-                                     | M,         | STREP<br>TOCOCC<br>FECAL<br>KF AGA<br>(COLS.<br>PER<br>100 ML | I , R |
|----------------|--|--|---|--|---|-------------------------|---|--|-----------------------------|----------------|------------------|--------------------------------------|--|----------------------------|---|-----------------------------|---|------------|---|-------|
| OCT 1984       |  |  |   |  |   |                         |   |  |                             |                |                  |                                      |  |                            |   |                             |   |            |   |       |
| 22             | 1310                                   | 14   |   | 349  | 7   | 7.70                    | 2   | 5.0  | 14                          |                |                  | 7.8                                  |  | 94                         |   | 12                          | K66                                     | 000        | 850   | 0     |
| JAN 1985<br>21 | 1330                                   | 8.   | 5   | 381  |   | 3.00                    | 2   | 4.0  | 1                           | . 5            | 1                | 1.1                                  |  | 131                        |   | 18                          | 3                                       | 000        | 85  | 0     |
| APR<br>17      | 1030                                   | 6.   |   | 381  |   | 7.70                    |   | 3.5  | 10                          |                |                  | 7.2                                  |  | 85                         |   | 10                          |   | 000        | 2400  |       |
| JUL<br>25      | 1120                                   | 6.   | 9   | 403  | ,   | .60                     | ,   | 7.0  | 17                          |                | 1                | 1.4                                  |  | 141                        |   | 26                          | 56                                      | 000        | 940   | 0     |
| 20             |  |  |   | 100  |   | .00                     | •   |  | 11                          |                | •                |                                      |  | •                          |   | 20                          |   |            | 340   |       |
| DATE           | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | HARD<br>NESS<br>NONCA<br>WATE<br>TOT F<br>MG/L<br>CACO | RB CARB CARB DELD SCAS (1                       | LCIUM<br>IS-<br>OLVED<br>MG/L<br>S CA)     | SI<br>SOL<br>(MC                                | NE-<br>UM,<br>S-<br>VED | SODI<br>DIS<br>SOLV<br>(MG                  | BD -   | SOD:<br>SOR!<br>TIC<br>RAT: | D-<br>P-<br>ON | BI               | UM,<br>S-<br>VED<br>/L               | ALK<br>LINI<br>WAT<br>TOT<br>FIR<br>MG/L | TY<br>ER<br>AL<br>LD<br>AS | SULF<br>TOT<br>(MG                                | AL<br>/L                    | SULF<br>DIS<br>SOI<br>(MG               | VRD        | CHLO-<br>RIDE,<br>DIS-<br>SOLVE<br>(MG/L<br>AS CL             | D     |
| OCT 1984       |  |  |   |  |   |                         |   |  |                             |                |                  |                                      |  |                            |   |                             |   |            |   |       |
| 22             | 120                                    |  | 10  | 31   | 11  |                         | 22  |  |                             | 0.9            | 2                | . 6                                  |  | 113                        |   |                             | 2                                       | 2          | 26  |       |
| JAN 1985<br>21 | 140                                    |  | 3   | 36   | 12  |                         | 25  |  |                             | 1              | 2                | .0                                   |  | 136                        | <   | 0.5                         | 1                                       | 7          | 28  |       |
| APR 17         |  |  |   |  |   |                         |   |  |                             |                |                  |                                      |  |                            |   |                             |   |            |   |       |
| JUL            |  |  |   |  |   |                         |   |  |                             |                |                  |                                      |  | 147                        |   |                             |   |            |   | Ī     |
| 25             |  |  |   |  |   |                         |   |  |                             |                |                  |                                      |  | 141                        |   |                             |   |            | 14.   | -     |
| DAT            | RII<br>D<br>SOI<br>B (M                | UO-<br>DE,<br>IS-<br>LVED<br>G/L<br>F)                 | SILICA<br>DIS-<br>SOLVE<br>(MG/L<br>AS<br>SIO2) | CON<br>TUE                                 | IDS,<br>f OF<br>ISTI-<br>INTS,<br>DIS-<br>DLVED | SO (T                   | IDS,<br>IS-<br>OLVED<br>CONS<br>PER<br>OAY) | SOLIE<br>RESIE<br>AT 10<br>DEG.<br>SUS-<br>PENDE<br>(MG/ | OUR<br>OS<br>C,             |                | AL<br>I/L        | NITT<br>GEI<br>NITR:<br>TOTA<br>(MG, | TE<br>AL<br>/L                           | NO2                        | TAL<br>3/L  | AMMO<br>TO'<br>(MO          | FRO-<br>EN,<br>ONIA<br>FAL<br>3/L<br>N) | ORGA<br>TO | CAL<br>G/L  |       |
| OCT 198        | 4                                      |  |   |  |   |                         |   |  |                             |                |                  |                                      |  |                            |   |                             |   |            |   |       |
| 22<br>JAN 198  | 5                                      | 0.1  | 28  |  | 210   |                         | 8.0   | 16   | •                           | 0.             | 78               | 0.0                                  | )2                                       | 0.                         | 80  | 0                           | . 09                                    | (          | 0.61  |       |
| 21<br>APR      |  | 0.2  | 35  |  | 240   |                         | 5.4   | 46   |                             | 0.             | 98               | 0.0                                  | )2                                       | 1.                         | 00  | <0                          | .01                                     |            |   |       |
| 17<br>JUL      |  |  | -   | -,-  |   |                         |   | 16   | 3                           | 0.             | 88               | 0.1                                  | 2  | 1.                         | 00  | 0                           | .80                                     | 2          | 2.2   |       |
| 25             |  |  | -   | -  |   |                         |   | 19   |                             | 0.             | 75               | 0.0                                  | )5                                       | 0.                         | 80  | 0                           | 41                                      | (          | .39   |       |
| DAT            | GEN<br>MON<br>ORGA<br>TO'              | TRO-<br>,AM-<br>IA +<br>ANIC<br>TAL<br>G/L<br>N)       | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS N)       | TO<br>(M                                   | TRO-<br>EN,<br>TAL<br>IG/L<br>NO3)              | PHO<br>TO<br>(M         | OS-<br>RUS,<br>TAL<br>IG/L<br>P)            | ARSEN<br>TOTA<br>(UG/<br>AS A                            | L                           | ERA<br>(UC     | AL<br>OV-<br>BLE | BORG<br>TOTA<br>RECG<br>ERAL<br>(UG, | L<br>OV-<br>BLE<br>'L                    | BRA<br>(UC                 |   | RRA<br>(UC                  | JM,                                     | BRA<br>(UC | AL<br>COV-<br>BLR   |       |
| OCT 198        | 4                                      |  |   |  |   |                         |   |  |                             |                |                  |                                      |  |                            |   |                             |   |            |   |       |
| 22<br>JAN 198  | 5                                      | 0.7  | 1.5   |  | 6.6   |                         | .10   |  |                             |                |                  |                                      |  |                            |   |                             |   |            |   |       |
| 21<br>APR      |  | 0.7  | 1.7   |  | 7.5   |                         | .20   |  | 1                           |                | 100              | •                                    | 20                                       |                            | 1   |                             | <1                                      |            | <10   |       |
| 17<br>JUL      |  | 3.0  | 4.0   | 1  | 8   | 0                       | . 22  |  |                             |                |                  |                                      |  |                            |   |                             |   |            |   |       |
| 25             | (                                      | 8.0  | 1.6   |  | 7.1   | 0                       | .17   |  |                             |                |                  |                                      |  |                            |   |                             |   |            |   |       |
|                | on-ideal                               | count.   |   |  |   |                         |   |  |                             |                |                  |                                      |  |                            |   |                             |   |            |   |       |

RIO PUERTO NUEVO BASIN

50048800 RIO PIEDRAS NEAR RIO PIEDRAS, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD, N<br>TOTAL T<br>RECOV- R<br>ERABLE E<br>(UG/L ( | COTAL CECOV- IN RABLE IN UG/L | ERCURY<br>FOTAL<br>RECOV-<br>SRABLE<br>(UG/L<br>AS HG) | SKLE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|-------------------------------|--|--|---|---|-------------------------------------|----------------------------|--|
| OCT 1984       |   |   |                               |  |  |   |   |                                     |                            |  |
| 22<br>JAN 1985 |   |   |                               |  |  |   |   |                                     |                            |  |
| 21             | 3300  | 2   | 210                           | 0.1  | <1   | <1  | 20  | <0.01                               | 3                          | 0.01   |
| APR 17         | 4   |   |                               |  |  |   |   |                                     |                            |  |
| JUL            |   |   |                               | 0.1  |  |   |   |                                     |                            |  |
| 25             |   |   |                               |  |  |   |   |                                     |                            |  |
|                |   |   |                               | CHLO   | R-   |   |   | DI-                                 | DI-                        |  |
| 2144           |   | PCB,  | ALDRIN,                       | DANE   | , DDD                                      |   |   | , AZINO                             | N, BLDR                    |  |
| DATE           | TIME  | (UG/L)  | TOTAL (UG/L)                  | TOTAL  |  |   |   |                                     |                            |  |
| JUL 1985       |   |   |                               |  |  |   |   |                                     |                            |  |
| 25             | 1120  | <0.1  | <0.01                         | <0   | .1 <0.0                                    | 1 <0.0  | 1 <0.0  | 1 0.                                | 04 <0.0                    | 1  |

|          | ENDO-  |   |                           | нврта-                             | HEPTA-<br>CHLOR   |                                  | MALA-                              | METH-<br>OXY-           |
|----------|--|---|---------------------------|------------------------------------|---|----------------------------------|------------------------------------|-------------------------|
|          | SULFAN.                                      | ENDRIN.                                     | BTHION,                   | CHLOR.                             | RPOXIDE   | LINDANE                          | THION,                             | CHLOR,                  |
| DATE     | TOTAL  | TOTAL                                       | TOTAL                     | TOTAL                              | TOTAL   | TOTAL                            | TOTAL                              | TOTAL                   |
|          | (UG/L)                                       | (UG/L)                                      | (UG/L)                    | (UG/L)                             | (UG/L)  | (UG/L)                           | (UG/L)                             | (UG/L)                  |
| JUL 1985 |  |   |                           |                                    |   |                                  |                                    |                         |
| 25       | <0.01  | <0.01                                       | <0.01                     | <0.01                              | <0.01   | <0.01                            | <0.01                              | <0.01                   |
| DATE     | METHYL<br>PARA-<br>THION,<br>TOTAL<br>(UG/L) | METHYL<br>TRI-<br>THION,<br>TOTAL<br>(UG/L) | MIREX,<br>TOTAL<br>(UG/L) | PARA-<br>THION,<br>TOTAL<br>(UG/L) | NAPH-<br>THA-<br>LENES,<br>POLY-<br>CHLOR.<br>TOTAL<br>(UG/L) | PER-<br>THANE<br>TOTAL<br>(UG/L) | TOX-<br>APHENE,<br>TOTAL<br>(UG/L) | TOTAL TRI- THION (UG/L) |
| JUL 1985 | 40 A1  | 40.01                                       | (0.01                     | 40.01                              | 40.1  | 40.1                             |                                    | 40.01                   |
| 25       | <0.01  | <0.01                                       | <0.01                     | <0.01                              | <0.1  | <0.1                             | <1                                 | <0.01                   |

## 50049100 RIO PIEDRAS AT HATO REY, PR

#### WATER-QUALITY RECORDS

LOCATION.--Lat 18°24'34", long 66°04'10", at bridge on Avenida Piniero at Expreso Las Americas, 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.

| DATE            |                                    | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS)                  | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS)                     | - TEMPE<br>ATUR<br>(DEG          | R- B1   | D- D   | GEN, (I  | DIS- 1<br>DLVBD<br>PRR-<br>CENT<br>ATUR- 1              | OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) | FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./    | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) |
|-----------------|------------------------------------|--|---|--|----------------------------------|---|--|--|---|---|---|--|
| OCT 1984        | 1025                               | 26   | 300   | 7.6  | 25                               | .5 12   |  | 7.4  | 89  | 15  | 320000  | 3500   |
| IAN 1985        |                                    |  |   |  |                                  |   |  |  | 80  | 27  | 250000  | 4800   |
| 21<br>PR        | 1105                               | 17   | 445   | 7.60   |                                  |   | .0   | 6.9  |   |   |   |  |
| 17              | 1430                               | 47   | 327   | 7.50   | 27                               | .0 15   | •  | 5.3  | 66  | 30  | K900000                                       | 94000  |
| 11              | 1230<br>1425                       | 18   | 414   | 8.20   |                                  |   | .1   | 8.5  | 112<br>119  | 20  | 210000  | 4100   |
| UL              |                                    |  |   |  |                                  |   |  |  |   |   | 22222   |  |
| 25              | 1400                               | 15   | 427   | 7.8  | 31                               | .0 14   |  | 10.6   | 140   | 30  | 320000  | 3500   |
| DATE            | NESS<br>(MG/L                      | HARD-<br>NESS<br>NONCARB<br>WATER<br>TOT FLD<br>MG/L AS<br>CACO3 | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA)      | MAGNE-<br>SIUM<br>DIS-<br>SOLVEI<br>(MG/L<br>AS MG | SODIU<br>DIS-<br>SOLVE<br>(MG/   | M, A<br>SOE<br>D TI<br>L RAT  | D- S<br>P- D<br>ON SO<br>'10 (M                      | TAS- LII IUM, WA IS- TO LVED FI G/L MG               | LKA-<br>NITY<br>ATER<br>OTAL S<br>IELD<br>/L AS<br>ACO3 | SULFIDE<br>TOTAL<br>(MG/L<br>AS S)            | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)                |
| OCT 1984        | 140                                | 7  | 40  | 10   | 23                               |   | 0.9  | 3.3  | 134   |   | 25  | 24   |
| AN 1985         |                                    | ,  |   |  |                                  |   |  |  |   |   |   |  |
| 21<br>PR        | 160                                |  | 44  | 12   | 30                               |   | 1  | 2.9  | 162   | <0.5  | 17  | 32   |
| 17              |                                    |  |   |  |                                  |   |  |  | 130   |   |   |  |
| 11              | 140                                |  | 40  | 10   | 26                               |   | -  | 3.3  | 150   | <0.5  | 19  | 28   |
| UL 11           |                                    |  |   |  |                                  |   | -  |  | 92  |   | 1127  |  |
| 25              | ***                                |  |   | -  |                                  |   |  |  | 153   | 1. 7  | -   | w  |
| DAT             | FLU<br>RIDI<br>SOL<br>SOL<br>K (MG | R, DI:<br>8- 80<br>VED (M:<br>/L A:                              | ICA, SU<br>S- CO<br>LVED TU<br>G/L<br>S S         | NSTI-<br>BNTS, S                                   | DLIDS,<br>DIS-<br>BOLVED<br>TONS | SOLIDS,<br>RESIDUE<br>AT 105<br>DEG. C,<br>SUS-<br>PENDED<br>(MG/L) | NITRO-<br>GEN,<br>NITRATE<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>NITRITI<br>TOTAL<br>(MG/L<br>AS N) | GE  | N, G<br>NO3 AMM<br>AL TO<br>/L (M             | EN, G<br>ONIA ORG<br>TAL TO<br>G/L (M         | TRO-<br>EN,<br>ANIC<br>TAL<br>G/L<br>N)                            |
| OCT 198         |                                    | . 2  | 24  | 230  | 16                               | 16  | 0.75   | 0.05   | 0.8   | 80 0  | .10   | 0.7  |
| JAN 198         |                                    | . 2  | 32  | 270  | 12                               | 5   | 1.14   | 0.26   | 1.4   | 40 1  | .10   | 1.2  |
| APR 17          |                                    |  |   |  |                                  | 68  | 0.51   | 0.09   | 0.0   |   |   | 3.4  |
| JUN             |                                    |  |   |  |                                  |   | 0.01   | 0.00   |   |   |   |  |
| 11<br>11<br>JUL | 0                                  | .1   | 27<br>  | 240  | 12                               | 13  | 0.67   | 0.13   | 0.8   | 80 0  | .75   | 0.45   |
|                 |                                    |  |   |  |                                  |   |  |  |   |   |   |  |

## 50049100 RIO PIEDRAS AT HATO REY, PR--Continued

| DATE      | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS NO3) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) | ARSENIC<br>TOTAL<br>(UG/L<br>AS AS) | BARIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS BA) | BORON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS B) | CADMIUM<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CD) | CHRO-<br>MIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CR) | COPPER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CU) |
|-----------|--|---|---|---|-------------------------------------|---|---|---|--|---|
| OCT 1984  |  |   |   |   |                                     |   |   |   |  |   |
| 22        | 0.8  | 1.6                                       | 7.1   | 0.19  |                                     |   |   |   |  |   |
| JAN 1985  |  |   | 100   |   |                                     | F7.80   | -   | 5.5   |  | 5.0   |
| 21<br>APR | 2.3  | 3.7                                       | 16  | 0.52  | 2                                   | 100   | 30  | <1  | <1   | <10   |
| 17<br>JUN | 4.7  | 5.3                                       | 23  | 0.49  |                                     |   |   |   |  |   |
| 11        |  |   |   |   | 1                                   | 100   | 110   | <1  | <1   | <10   |
| 11        | 1.2  | 2.0                                       | 8.9   | 0.48  |                                     |   |   |   |  |   |
| JUL 25    | 1.1  | 2.4                                       | 11  | 0.51  |                                     |   |   |   | 20   |   |
|           | IRON,  | LEAD,                                     | MANGA-<br>NESE,                             | MERCURY                                     |                                     | SILVER,   | ZINC,   |   |  | METHY-<br>LENE  |
|           | RECOV-<br>ERABLE   | RECOV-<br>BRABLE                          | TOTAL<br>RECOV-<br>ERABLE                   | TOTAL<br>RECOV-<br>ERABLE                   | SKLE-<br>NIUM,<br>TOTAL             | TOTAL<br>RECOV-<br>ERABLE                               | TOTAL<br>RECOV-<br>ERABLE                             | CYANIDE   | PHENOLS  | BLUE<br>ACTIVE<br>SUB-                                  |
| DATE      | (UG/L  | (UG/L                                     | (UG/L                                       | (UG/L                                       | (UG/L                               | (UG/L   | (UG/L   | (MG/L   | TOTAL  | STANCE  |
|           | AS FE)   | AS PB)                                    | AS MN)                                      | AS HG)                                      | AS SE)                              | AS AG)  | AS ZN)  | AS CN)  | (UG/L)   | (MG/L)  |
| OCT 1984  |  |   |   |   |                                     |   |   |   |  |   |
| 22        |  | 22  |   |   |                                     |   |   |   |  |   |
| JAN 1985  |  |   |   |   |                                     |   |   |   |  |   |
| 21        | 530  | 1   | 230   | 0.2   | <1                                  | <1  | 10  | <0.01   | 3  | 0.06  |
| APR       |  |   |   |   |                                     |   |   |   |  |   |
| 17<br>JUN |  |   |   | 0.3   |                                     |   |   |   |  |   |
| 11        | 590  | 2   | 190   | 0.1   | <1                                  | <1  | 30  | <0.01   | 8  | 0.1   |
| 11        |  |   | - 22  |   |                                     | 22  |   |   |  |   |
| JUL       |  |   |   |   |                                     |   |   |   |  |   |
| 25        |  |   |   |   |                                     |   |   |   |  |   |

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

#### WATER-QUALITY RECORDS

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

DRAINAGE AREA . -- Indeterminate.

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

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE             | TIME              | SAM-<br>PLING<br>DEPTH<br>(FEET)                | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS)     | TEMPER-<br>ATURE<br>(DEG C)               | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) | ALKA-<br>LINITY<br>WATER<br>TOTAL<br>FIELD<br>MG/L AS<br>CACO3 |
|------------------|-------------------|---|---|------------------------------------|---|-------------------------------------|--|--|--|--|
| NOV 1984         | 1022              |   | 75.00.00  |                                    |   |                                     |  |  |  |  |
| 21<br>FEB 1985   | 1015              | 1.00  | 14100   | 8.10                               | 27.5                                      | 2.2                                 | 29   | 600000   | 6100   | 146  |
| O1               | 1015              | 1.00  | 17200   | 8.30                               | 24.5                                      | 1.8                                 | 23   | 3330000  | 48000  | 121  |
| 25               | 1030              | 1.00  | 26000   | 8.80                               | 28.5                                      | 11.0                                | 155  | K13000   | 3600   | 144  |
| JUN<br>21<br>AUG | 0930              | 1.00  | 27700   | 8.00                               | 28.5                                      | 0.3                                 | 4  | 42000  | K5500  | 144  |
| 20               | 1000              | 1.00  | 22100   | 9.00                               | 28.0                                      | 4.3                                 | 58   | 120000   | 36000  | 103  |
|                  | SULFIDE<br>TOTAL  | SOLIDS,<br>RESIDUE<br>AT 105<br>DEG. C,<br>SUS- | NITRO-<br>GEN,<br>NITRATE<br>TOTAL                | NITRO-<br>GEN,<br>NITRITE<br>TOTAL | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL        | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL  | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL                             | NITRO-<br>GEN, AM-<br>MONIA +<br>ORGANIC<br>TOTAL              | NITRO-<br>GEN,<br>TOTAL  | NITRO-<br>GEN,<br>TOTAL  |
| DATE             | (MG/L<br>AS S)    | PENDED<br>(MG/L)                                | (MG/L<br>AS N)                                    | (MG/L<br>AS N)                     | (MG/L<br>AS N)                            | (MG/L<br>AS N)                      | (MG/L<br>AS N)   | (MG/L<br>AS N)   | (MG/L<br>AS N)   | (MG/L<br>AS NO3)   |
| NOV 1984         |                   |   |   |                                    |   |                                     |  |  |  |  |
| 21<br>FKB 1985   | -                 | 10  |   | <0.01                              | <0.10                                     | 1.20                                | 4.5  | 5.7  |  |  |
| 01               |                   |   | 0.05  | 0.05                               | 0.10                                      | 0.84                                | 3.3  | 4.1  | 4.2  | 19   |
| APR 25           |                   | 61  |   | <0.01                              | <0.10                                     | 0.03                                | 2.2  | 2.2  |  |  |
| JUN              |                   | 0.1   |   | (0.01                              | (0.10                                     | 0.03                                | 2.2  | 2.2  |  |  |
| 21<br>AUG        | <0.5              | 66  |   | 0.02                               | <0.10                                     | 2.50                                | 5.4  | 7.9  |  |  |
| 20               |                   | 55  |   | 0.03                               | <0.01                                     | 0.36                                | 6.3  | 6.7  |  |  |
| DATE             | PHOR PHOR TOT (MG | US, REC<br>AL ERA<br>/L (UG                     | AL TOTO OV- REC BLE ERA /L (UC                    | CAL TOT<br>COV- REC<br>BLE ERA     | ON, NES<br>CAL TOT<br>COV- REC<br>BLE BRA | COV- REC<br>BLE BRA                 |  | NIC<br>AL PHEN<br>/L TOT                                       | ACT OLS SU AL STA  | HY-<br>NE<br>UB<br>IVE<br>B-<br>NCE<br>/L)                     |
| NOV 1984         |                   |   |   |                                    |   |                                     |  |  |  |  |
| 21<br>FKB 1985   | 0.                | 66  |   |                                    |   |                                     | 13   |  | 574  |  |
| 01<br>APR        |                   | 68 1  | 400   | 30                                 | 610                                       | 160                                 | 40 15  |  | 0  | .44  |
| 25<br>JUN        | 0.                | 51  |   |                                    |   |                                     | 8  | . 5  |  |  |
| 21<br>AUG        | 0.                | 69  |   | 30                                 | 280                                       | 190                                 | 20 12  |  | 7 0  | .75  |
| 20               | 0.                | 82  |   |                                    |   |                                     |  |  |  |  |

K = non-ideal count

#### RIO PUERTO NUEVO BASIN

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

#### WATER-QUALITY RECORDS

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

DRAINAGE -- Indeterminate.

PERIOD OF RECORD -- Water years 1974 to present.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

|                |                                   | SAM-<br>PLING                           | SPE-<br>CIFIC<br>CON-<br>DUCT- | PH<br>(STAND-                | TEMPER-                   | OXYGEN,<br>DIS-           | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT               | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS. | ALKA-<br>LINITY<br>WATER<br>TOTAL<br>FIELD |
|----------------|-----------------------------------|---|--------------------------------|------------------------------|---------------------------|---------------------------|--|--|--|--|
| DATE           | TIME                              | DEPTH<br>(FEET)                         | (US/CM)                        | ARD<br>UNITS)                | (DEG C)                   | SOLVED (MG/L)             | SATUR-<br>ATION)   | (COLS./<br>100 ML)                       | PER<br>100 ML)                                   | MG/L AS<br>CACO3                           |
| NOV 1984       |                                   |   |                                |                              |                           |                           |  |  |  |  |
| 21<br>FEB 1985 | 1310                              | 1.00                                    | 21100                          | 7.60                         | 28.0                      | 1.9                       | 26   | K120000                                  | 3500   | 144  |
| 01             | 1210                              | 1.00                                    | 19000                          | 7.70                         | 25.5                      | 2.2                       | 28   | K830000                                  | 54000  | 130  |
| APR            |                                   |   |                                |                              |                           |                           |  |  |  |  |
| 25<br>JUN      | 1300                              | 1.00                                    | 37000                          | 7.20                         | 29.0                      | . 0                       |  | 210000                                   | 28000  | 148  |
| 21<br>AUG      | 1110                              | 1.00                                    | 31000                          | 7.80                         | 28.5                      | 5.3                       | 74   | 42000                                    | K730   | 142  |
| 27             | 1300                              | 1.00                                    | 5690                           | 7.60                         | 27.0                      | 0.8                       | 10   | 980000                                   | 300000   | 75   |
|                | SULFIDE                           | SOLIDS,<br>RESIDUE<br>AT 105<br>DEG. C, | NITRO-<br>GEN,<br>NITRATE      | NITRO-<br>GEN,<br>NITRITE    | NITRO-<br>GEN,<br>NO2+NO3 | NITRO-<br>GEN,<br>AMMONIA | NITRO-<br>GEN,<br>ORGANIC                                | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC  | NITRO-<br>GEN,                                   | NITRO-<br>GEN,                             |
| DATE           | TOTAL<br>(MG/L<br>AS S)           | PENDED<br>(MG/L)                        | TOTAL<br>(MG/L<br>AS N)        | TOTAL<br>(MG/L<br>AS N)      | TOTAL<br>(MG/L<br>AS N)   | TOTAL<br>(MG/L<br>AS N)   | TOTAL<br>(MG/L<br>AS N)                                  | TOTAL<br>(MG/L<br>AS N)                  | TOTAL<br>(MG/L<br>AS N)                          | TOTAL<br>(MG/L<br>AS NO3)                  |
| NOV 1984       |                                   |   |                                |                              |                           |                           |  |  |  |  |
| 21             |                                   | 10                                      | 0.14                           | 0.06                         | 0.20                      | 1.30                      | 0.4  | 1.7                                      | 1.9  | 8.4  |
| FEB 1985<br>01 | <0.5                              | 19                                      | 0.21                           | 0.09                         | 0.30                      | 1.10                      | 2.0  | 3.1                                      | 3.4  | 15   |
| APR            | 14.14                             | 197                                     |                                |                              |                           |                           |  |  |  |  |
| 25<br>JUN      |                                   |   | 0.15                           | 0.05                         | 0.20                      | 1.70                      | 1.4  | 3.1                                      | 3.3  | 15   |
| 21<br>AUG      | 0.6                               | 14                                      |                                | <0.01                        | <0.10                     | 0.53                      | 1.2  | 1.7                                      |  |  |
| 27             |                                   | 222                                     | 0.17                           | 0.03                         | 0.20                      | 1.20                      | 1.2  | 2.4                                      | 2.6  | 12   |
|                |                                   | BORG                                    |                                |                              | N, NES                    |                           |  |  | LE   | HY-  |
| DAT            | PHO<br>PHOR<br>TOT<br>K (MG<br>AS | RUS, RECO<br>PAL ERAF                   | OV- REC<br>BLE ERA<br>L (UG    | OV- REC<br>BLE ERA<br>/L (UG | COV- REC                  | BLE ERA                   | CAL CARBO<br>COV- ORGAL<br>BLE TOT.<br>C/L (MG<br>ZN) AS | NIC<br>AL PHENO<br>/L TOT.               | ACT<br>OLS SU<br>AL STA                          | UB<br>PIVE<br>B-<br>NCE<br>(/L)            |
| NOV 198        | 4                                 |   |                                |                              |                           |                           |  |  |  |  |
| 21             | 0.                                | 37                                      |                                |                              | 22                        |                           | 5  | . 8                                      |  |  |
| FEB 198<br>01  | 7                                 | 59 16                                   | 300                            | 40                           | 710                       | 350                       | 50 9   | . 2                                      | 3 0  | .53  |
| 25             | 0.                                | 50                                      |                                |                              |                           |                           | 4  | . 2                                      |  |  |
| JUN 21         |                                   |   | 100                            | 40 8                         | 800                       | 160                       |  | . 6                                      | <1   | 4-   |
| AUG 27         | 0.                                | 37                                      |                                |                              |                           |                           | 9  | . 5                                      |  |  |
| 1000           | on-ideal                          | 24                                      |                                |                              |                           |                           |  |  |  |  |

K = non-ideal count

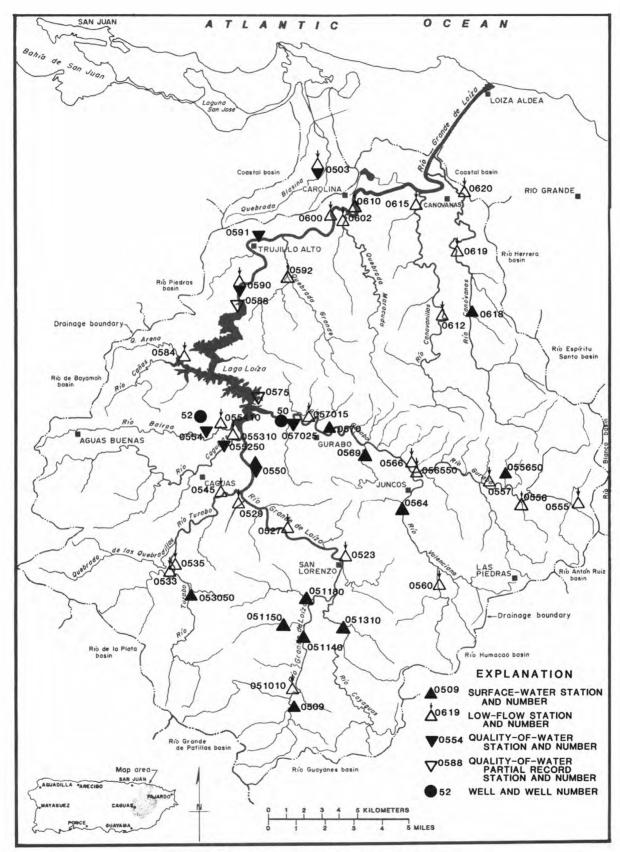


Figure 20. -- Río Grande de Loíza basin.

#### 50050300 QUEBRADA BLASINA NEAR CAROLINA, PR

## WATER-QUALITY RECORDS

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

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

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

| DATE           | TIME | STRE<br>FLC<br>INST<br>TANE<br>(CF     | RAM- CI<br>OW, CO<br>PAN- DU<br>ROUS AN      | PK-<br>IFIC<br>ON-<br>ICT-<br>ICB<br>8/CM) | PH<br>(STA<br>AR<br>UNIT                  | ND-                        | TEMPE<br>ATUR<br>(DEG  | EE                                  | TUR-<br>BID-<br>ITY<br>(NTU) | - D<br>SO   | GEN,<br>IS-<br>LVED<br>G/L)  | SOI<br>(PI<br>CI<br>SAT                        | GEN,<br>LS-<br>LVED<br>GR-<br>GNT<br>TUR-<br>LON) | OXYC<br>DEMA<br>CHE<br>ICA<br>(HI<br>LEVE<br>(MG/ | AND,<br>BM-<br>AL<br>EGH<br>BL) | COL<br>FOR<br>FRO<br>0.7<br>UM-<br>(COL<br>100 | MF                | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) |
|----------------|------|--|--|--|---|----------------------------|------------------------|-------------------------------------|------------------------------|---|------------------------------|--|---|---|---------------------------------|--|-------------------|--|
| CT 1984        |      |  |  |  |   |                            |                        |                                     |                              |   |                              |  |   |   |                                 |  |                   |  |
| 24<br>AN 1985  | 0930 | 6                                      | 5.5  | 559  | 7   | .40                        | 26                     | . 5                                 | 5.                           | 5   | 3.2                          |  | 40  |   | 57                              | 1700   | 000               | 610000   |
| 26             | 0945 | 11                                     |  | 428  | 7   | .50                        | 23                     | . 5                                 | 10                           |   | 3.2                          |  | 37  |   | 43                              | 150  | 000               | 730000   |
| 12             | 0945 | , 9                                    | .9   | 566  | 7   | .30                        | 24                     | . 5                                 | 1.6                          | 5   | 0                            |  |   |   | 67                              | 260  | 000               | 500000   |
| AY<br>17       | 1355 | 11                                     |  | 428  | 7   | . 30                       | 26                     | .0                                  | 5.0                          | )   | 2.8                          |  | 34  |   | 55                              | 300  | 000               | 300000   |
| UQ<br>23       | 1145 | . 9                                    | .8   | 592  | 7   | .80                        | 8                      | .0                                  | 3.0                          | )   | 0.9                          |  | 8   |   | 81                              |  |                   | 56000  |
|                |      |  |  |  |   |                            |                        |                                     | •••                          |   | 0.0                          |  |   |   | ••                              |  |                   | E V  |
| DATE           |      | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | CALCIUM<br>DIS-<br>SOLVEI<br>(MG/L<br>AS CA) | DI<br>DI<br>SOI<br>(MC                     | GNE-<br>IUM,<br>IS-<br>LVED<br>G/L<br>MG) | SODI<br>DIS<br>SOLV<br>(MG | ED.                    | SOR                                 | ON                           | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | LIN<br>WA<br>TO<br>FI<br>MG/ | KA-<br>ITY<br>TER<br>TAL<br>ELD<br>L AS<br>CO3 | TO'   | FIDE<br>TAL<br>G/L<br>S)                          | DI<br>SO<br>(M                  | FATE<br>S-<br>DLVED<br>IG/L<br>SO4)            | DIS<br>SOI<br>(MC |  |
| OCT 1984       |      |  |  |  |   |                            |                        |                                     |                              |   |                              |  |   |   |                                 |  |                   |  |
| 24<br>JAN 1985 |      | 160                                    | 50   | 1  | 7.5                                       | 41                         |                        |                                     | 1                            | 5.3   |                              | 171  |   |   |                                 | 36   | 40                | 3  |
| 26<br>MAR      |      | 150                                    | 45   | 10   | )   | 29                         | )                      |                                     | 1                            | 4.0   |                              | 172  |   | <0.5  |                                 | 18   | 30                | 3  |
| 12             |      |  |  |  |   |                            |                        |                                     |                              |   |                              | 198  |   |   |                                 |  |                   |  |
| 17             |      | 130                                    | 41   | •  | 3.5                                       | 28                         | 1                      |                                     | 1                            | 4.5   |                              | 134  |   | <0.5  |                                 | 31   | 21                | 3  |
| AUG 23         |      |  |  |  |   |                            |                        |                                     |                              |   |                              | 189  |   |   |                                 |  |                   |  |
|                |      |  |  |  |   |                            |                        |                                     |                              |   |                              |  |   |   |                                 |  |                   |  |
|                |      | FLUO-<br>RIDE,<br>DIS-<br>SOLVED       | SILICA,<br>DIS-<br>SOLVEI<br>(MG/L           | CONS<br>TUEN                               | OF<br>STI-<br>STS,                        | SOL<br>(TO                 | DS,<br>S-<br>VED<br>NS | SOLI<br>RESI<br>AT 1<br>DEG.<br>SUS | DUB<br>05<br>C, N            | NITRO-<br>GEN,<br>ITRATE<br>TOTAL                   | NIT<br>TO                    | TRO-<br>EN,<br>RITE<br>TAL                     | NO2-  | TRO-<br>EN,<br>+NO3                               | AMM<br>TO                       | TRO-<br>EN,<br>ONIA                            | ORGA<br>TO        | TAL  |
| DATE           |      | (MG/L<br>AS F)                         | AS<br>SIO2)                                  |  | LVED                                      | PE<br>DA                   | R<br>Y)                | PEND<br>(MG                         | ED<br>/L)                    | (MG/L<br>AS N)                                      |                              | G/L<br>N)                                      |   | G/L<br>N)   |                                 | G/L<br>N)                                      | (MC               | N)   |
| OCT 1984       |      |  |  |  |   |                            |                        |                                     |                              |   |                              |  |   |   |                                 |  |                   |  |
| 24<br>JAN 1985 |      | 0.2                                    | 19   |  | 310                                       | 5                          | . 4                    | <                                   | 1                            | 0.09  | 0                            | .11  | 0   | . 20  | 5                               | .00  |                   | 1.2  |
| 26<br>MAR      |      | 0.2                                    | 25   |  | 270                                       | 8                          | .0                     | 1                                   | 6                            | 0.31  | 0                            | .09  | 0   | .40   | 2                               | .70  | - (               | 0.3  |
| 12             |      |  |  |  |   |                            |                        | 1                                   | 3 .                          |   | 0                            | .04  | <0  | . 10  | 3                               | .60  | :                 | 3.4  |
| MAY<br>17      |      | 0.1                                    | 15   |  | 230                                       | 7                          | .0                     | 5                                   | 2                            | 0.44  | 0                            | . 16   | 0   | .60   | 2                               | .70  |                   | 3.2  |
| AUG<br>23      |      |  |  |  |   |                            |                        | 1                                   | 1                            |   | 0                            | . 02   | <0  | . 10  | 8                               | .80  |                   | 5.2  |

RIO GRANDE DE LOIZA BASIN

50050300 QUEBRADA BLASINA NEAR CAROLINA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| GEN, AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS N)   | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS NO3)                            | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P)   | ARSENIC<br>TOTAL<br>(UG/L<br>AS AS)  | BARIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS BA)  | BORON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS B)  | CADMIUM<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CD)   | CHRO-<br>MIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CR)   | COPPER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CU)  |
|---|---|--|---|--|--|--|---|--|--|
|   |   |  |   |  |  |  |   |  |  |
| 9.2   | 9.4   | 42   | 1.50  |  |  |  |   |  |  |
| 3.0   | 3.4   | 15   | 0.92  | 2  | 100  | 30   | <1  | 5  | 20   |
| 7.0   |   |  | 1.40  |  |  |  |   |  |  |
| 5.9   | 6.5   | 29   | 1.10  | 1  | 100  | 50   | 1   | <1   | 10   |
| 14  |   |  | 1.90  |  |  |  |   |  |  |
| IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FR)     | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB)                             | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN)        | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG)   | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE)   | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG)  | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN)  | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN)   | PHENOLS<br>TOTAL<br>(UG/L)   | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L)   |
|   |   |  |   |  |  |  |   |  |  |
|   |   |  |   |  |  |  |   |  |  |
|   |   |  |   |  |  |  |   |  |  |
| 750   | 1   | 390  | <0.1  | <1   | <1   | 20   | <0.01   | 5  | 0.28   |
| 750   | 1   | 390  | 0.1   | <1<br>   | <1<br>   | 20<br>   | <0.01<br>   | 5  | 0.28   |
|   |   |  |   |  |  |  | <0.01<br><br><0.01  | 5<br><br>13  | 0.28   |
|   | ORGANIC TOTAL (MG/L AS N)  9.2  3.0  7.0  5.9  14  IRON, TOTAL RECOV-BRABLE (UG/L | ORGANIC TOTAL (MG/L AS N) TOTAL (MG/L AS N)    9.2 9.4   3.0 3.4   7.0 | ORGANIC TOTAL TOTAL (MG/L (MG/L (MG/L (MG/L AS N) AS N) AS NO3)  9.2 9.4 42  3.0 3.4 15  7.0  5.9 6.5 29  14  IRON, LEAD, TOTAL TOTAL (RECOV-REABLE REABLE (UG/L (UG/L (UG/L) | ORGANIC TOTAL TOTAL TOTAL TOTAL TOTAL (MG/L (MG/L (MG/L (MG/L (MG/L AS N) AS N) AS NO3) AS P)  9.2 9.4 42 1.50  3.0 3.4 15 0.92  7.0 1.40  5.9 6.5 29 1.10  14 1.90  IRON, LEAD, MANGA-MESE, MERCURY TOTAL TOTAL RECOV-REABLE REABLE (UG/L | ORGANIC TOTAL (MG/L (MG/ | ORGANIC TOTAL TOTAL TOTAL TOTAL TOTAL ERABLE TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL ERABLE TOTAL TOTAL TOTAL TOTAL ERABLE TOTAL ERABLE TOTAL TOTAL TOTAL ERABLE ERABLE ERABLE ERABLE TOTAL TOTA | ORGANIC TOTAL TOTAL TOTAL TOTAL TOTAL (MG/L (MG/L (MG/L (MG/L (MG/L (UG/L | ORGANIC GEN, TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL ERABLE ERABLE ERABLE (MG/L (MG/L (MG/L (MG/L (UG/L (U | ORGANIC GEN, GEN, TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL ERABLE TOTAL PHENOLS (UG/L ( |

#### 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) upstream from confluence with Rio 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. Blevation of gage is 175 ft (53 m), from topographic map.

REMARKS .-- No estimated daily discharges during water year. Records fair.

AVERAGE DISCHARGE.--8 years (1978-85), 31.1 cu ft/s (0.881 cu m/s), 70.39 in/yr (1,788 mm/yr), 22,530 acre-ft/yr (27.8 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,700 cu ft/s (331 cu m/s), Nov. 5, 1983, gage height, 14.78 ft (4.505 m), from rating curve extended above 500 cu ft/s (14.2 cu m/s) on basis of step-backwater analysis; minimum discharge, 2.8 cu ft/s (0.079 cu m/s), May 5, 6, 1979.

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

|      |    |      | Disch     | arge     | Gage height |       |       |    | Disch | arge      | Gage height |        |       |  |
|------|----|------|-----------|----------|-------------|-------|-------|----|-------|-----------|-------------|--------|-------|--|
| Dat  | e  | Time | (cu ft/s) | (cu m/s) | (ft)        | (m)   | Date  |    | Time  | (cu ft/s) | (cu m/s)    | (ft)   | (m)   |  |
| Oct. | 9  | 1400 | 2,920     | 82.7     | 9.18        | 2.798 | May   | 18 | 0715  | *4.290    | 121         | *10.37 | 3.161 |  |
| Nov. | 3  | 0800 | 3,380     | 95.7     | 9.61        | 2.929 | July  | 17 | 0700  | 2,860     | 81.0        | 9.12   | 2.780 |  |
| Nov. | 5  | 1145 | 2,650     | 75.0     | 8.91        | 2.716 | Sept. | 25 | 0100  | 3,030     | 85.8        | 9.29   | 2.832 |  |
| Apr. | 23 | 1600 | 2.950     | 83.5     | 9.21        | 2.807 | 2.7   |    |       |           |             |        |       |  |

Minimum discharge, 7.2 cu ft/s (0.204 cu m/s), Feb. 13, 14.

|        |         | DISCHARGE  | IN CU | BIC FEET | PER SECOND,<br>MEAN |        |       | BER 198 | 4 TO SEPTEME | BER 1985 |       |       |
|--------|---------|------------|-------|----------|---------------------|--------|-------|---------|--------------|----------|-------|-------|
| DAY    | OCT     | NOV        | DEC   | JAN      | FRB                 | MAR    | APR   | MAY     | JUN          | JUL      | AUG   | SEP   |
| 1      | 21      | 147        | 20    | 11       | 8.6                 | 17     | 12    | 12      | 15           | 10       | 13    | 18    |
| 2      | 25      | 126        | 61    | 16       | 8.1                 | 14     | 11    | 11      | 15           | 10       | 16    | 15    |
| 3      | 28      | 648        | 26    | 12       | 8.0                 | 16     | 11    | 11      | 14           | 10       | 13    | 13    |
| 4      | 22      | 227        | 21    | 25       | 7.7                 | 13     | 9.5   | 11      | 14           | 10       | 12    | 12    |
| 5      | 49      | 463        | 20    | 13       | 7.8                 | 12     | 9.5   | 12      | 14           | 9.1      | 11    | 12    |
| 6      | 29      | 449        | 19    | 15       | 7.8                 | 21     | 9.6   | 11      | 13           | 8.9      | 12    | 11    |
| 7      | 34      | 212        | 18    | 12       | 8.0                 | 53     | 9.5   | 11      | 13           | 8.6      | 12    | 10    |
| 8      | 26      | 105        | 18    | 11       | 8.0                 | 32     | 8.8   | 11      | 13           | 8.6      | 12    | 22    |
| 9      | 245     | 82         | 19    | 10       | 7.8                 | 20     | 8.3   | 11      | 13           | 8.6      | 11    | 15    |
| 10     | 71      | 66         | 17    | 11       | 7.8                 | 16     | 8.0   | 11      | 13           | 8.1      | 11    | 12    |
| 11     | 35      | 55         | 17    | 11       | 7.8                 | 15     | 8.3   | 16      | 12           | 8.6      | 10    | 13    |
| 12     | 27      | 47         | 17    | 9.8      | 7.8                 | 15     | 8.7   | 17      | 12           | 8.1      | 10    | 170   |
| 13     | 50      | 44         | 16    | 9.3      | 8.3                 | 14     | 11    | 14      | 13           | 7.9      | 22    | 158   |
| 14     | 114     | 60         | 15    | 9.3      | 8.5                 | 14     | 8.2   | 156     | 12           | 8.5      | 15    | 72    |
| 15     | 50      | 46         | 15    | 9.2      | 11                  | 13     | 8.2   | 282     | 12           | 51       | 14    | 38    |
| 16     | 35      | 37         | 15    | 9.0      | 9.4                 | 13     | 15    | 95      | 11           | 136      | 11    | 25    |
| 17     | 28      | 34         | 15    | 8.9      | 8.3                 | 13     | 27    | 205     | 10           | 261      | 10    | 21    |
| 18     | 26      | 31         | 14    | 8.7      | 8.4                 | 76     | 24    | 1110    | 9.8          | 26       | 12    | 19    |
| 19     | 25      | 30         | 14    | 8.6      | 11                  | 19     | 13    | 84      | 10           | 17       | 11    | 18    |
| 20     | 23      | 28         | 14    | 8.4      | 12                  | 16     | 11    | 54      | 9.5          | 27       | 10    | 17    |
| 21     | 23      | 28         | 12    | 8.3      | 9.7                 | 15     | 23    | 39      | 9.3          | 25       | 11    | 16    |
| 22     | 22      | 28         | 12    | 8.3      | 9.0                 | 14     | 43    | 31      | 9.3          | 16       | 10    | 16    |
| 23     | 21      | 32         | 12    | 7.8      | 8.1                 | 14     | 264   | 27      | 9.3          | 16       | 9.4   | 15    |
| 24     | 20      | 29         | 14    | 7.8      | 8.4                 | 13     | 111   | 25      | 9.2          | 48       | 9.9   | 61    |
| 25     | 40      | 52         | 18    | 7.9      | 7.9                 | 12     | 53    | 26      | 9.8          | 29       | 10    | 263   |
| 26     | 72      | 46         | 13    | 9.4      | 12                  | 12     | 25    | 22      | 9.5          | 47       | 9.9   | 75    |
| 27     | 32      | 25         | 14    | 8.4      | 80                  | 13     | 18    | 19      | 9.5          | 20       | 146   | 32    |
| 28     | 32      | 23         | 13    | 8.2      | 21                  | 12     | 16    | 18      | 8.7          | 33       | 98    | 67    |
| 29     | 29      | 22         | 12    | 7.5      |                     | 122    | 14    | 18      | 8.6          | 22       | 23    | 31    |
| 30     | 23      | 21         | 15    | 7.8      |                     | 22     | 13    | 17      | 8.6          | 17       | 17    | 28    |
| 31     | 21      |            | 12    | 7.8      |                     | 21     |       | 16      |              | 15       | 15    |       |
| TOTAL  | 1298    | 3243       | 538   | 317.4    | 328.2               | 692    | 811.6 | 2403    | 340.1        | 931.0    | 607.2 | 1295  |
| MBAN   | 41.9    |            | 17.4  | 10.2     | 11.7                | 22.3   | 27.1  | 77.5    | 11.3         | 30.0     | 19.6  | 43.2  |
| MAX    | 245     | 648        | 61    | 25       | 80                  | 122    | 264   | 1110    | 15           | 261      | 146   | 263   |
| MIN    | 20      | 21         | 12    | 7.5      | 7.7                 | 12     | 8.0   | 11      | 8.6          | 7.9      | 9.4   | 10    |
| CFSM   | 6.98    |            | 2.90  | 1.70     | 1.95                | 3.72   | 4.52  | 12.9    | 1.88         | 5.00     | 3.27  | 7.20  |
| IN.    | 8.05    | 20.11      | 3.34  | 1.97     | 2.03                | 4.29   | 5.03  | 14.90   | 2.11         | 5.77     | 3.76  | 8.03  |
| AC-FT  | 2570    | 6430       | 1070  | 630      | 651                 | 1370   | 1610  | 4770    | 675          | 1850     | 1200  | 2570  |
| CAL YR |         | TAL 11512. |       |          |                     | 48 MIN |       | CFSM    | 5.25 IN.     | 71.37    | AC-FT | 22830 |
| WTR YR | 1985 TO | TAL 12804. | 5 ME  | AN 35.1  | MAX 11              | 10 MIN | 7.5   | CFSM    | 5.85 IN.     | 79.39    | AC-FT | 25400 |

## RIO GRANDE DE LOIZA BASIN

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

#### WATER QUALITY RECORDS

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

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE   | TIME   | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE |    | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|--------|--------|---------------------------------------|--------------------------------------|-----------------------------|------|----|------|---------------------------------------|--------------------------------------|-----------------------------|
| JAN, 1 | 7 1359 | 8.5                                   | 146                                  | 23.0                        | APR. | 80 | 1413 | 8.8                                   | 160                                  | 28.5                        |
| FEB, 1 | 9 1430 | 14                                    | 141                                  | 25.0                        | SEP. | 05 | 0942 | 12                                    | 149                                  | 26.0                        |
| MAR, 0 | 7 1156 | 33                                    | 139                                  | 22.5                        |      |    |      |                                       |                                      |                             |

#### 50051150 QUEBRADA BLANCA AT EL JAGUAL, PR

LOCATION.--Lat 18°09'40", long 65°58'58", Hydrologic Unit 21010005, 0.1 mi (0.2 km) upstream from bridge on Highway 181, and 2.8 mi (4.5 km) southwest of San Lorenzo.

DRAINAGE AREA. -- 3.25 sq mi (8.42 sq km).

#### WATER-DISCHARGE RECORDS

PERIOD OF RECORD .-- October 1984 to current year.

GAGE .-- Water-stage recorder. Elevation of gage is 459 ft (140 m), from topographic map.

REMARKS.--Estimated daily discharges: Oct. 1-24 and Nov. 4, 7-9. Records fair except those for estimated daily discharges, which are poor.

EXTREMES FOR CURRENT YEAR .-- Peak discharges greater than base discharge of 1,000 cu ft/s (28.3 cu m/s) and maximum (\*):

|        |      | Disch     | arge     | Gage height |       |          |      | Disch     | arge     | Gage h | eight |
|--------|------|-----------|----------|-------------|-------|----------|------|-----------|----------|--------|-------|
| Date   | Time | (cu ft/s) | (cu m/s) | (ft)        | (m)   | Date     | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   |
| Nov. 3 | 0515 | 1,580     | 44.7     | 9.10        | 2.774 | Sept. 12 | 1845 | 1,430     | 40.5     | 8.90   | 2.713 |
| May 17 | 1115 | \$7,400   | 210      | *14.58      | 4.444 | Sept. 25 | 0115 | 1,080     | 30.6     | 8.37   | 2.551 |
| May 18 | 0600 | 2.190     | 62.0     | 9.86        | 3.005 | 200      |      |           |          |        |       |

Minimum discharge, 0.46 cu ft/s (0.013 cu m/s), May 8.

|        |        | DISCHARGE  | , IN  | CUBIC FEET | PER SECOND,<br>MEAN |       | R YEAR OC | TOBER 1984 | TO SEPTE | MBER 1985 |       |       |
|--------|--------|------------|-------|------------|---------------------|-------|-----------|------------|----------|-----------|-------|-------|
| DAY    | OCT    | NOV        | DEC   | JAN        | FEB                 | MAR   | APR       | MAY        | JUN      | JUL       | AUG   | SEP   |
| 1      | 9.0    | 26         | 2.4   |            | 1.1                 | 1.7   | 1.5       | .79        | 3.9      | 1.8       | 1.6   | 3.0   |
| 2      | 8.0    | 69         | 15    | 4.7        | 1.0                 | 1.5   | 1.6       | .69        | 3.6      | 1.7       | 1.7   | 9.8   |
| 3      | 16     | 265        | 4.1   |            | .96                 | 1.6   | 1.7       | .67        | 4.1      | 1.8       | 1.7   | 3.8   |
| 4      | 7.4    | 82         | 2.8   | 2.3        | .92                 | 1.6   | 1.7       | .61        | 9.6      | 1.9       | 1.5   | 2.6   |
| 5      | 10     | 169        | 2.4   | 1.8        | .92                 | 2.1   | 1.6       | .60        | 5.4      | 1.6       | 1.5   | 2.2   |
| 6      | 7.0    | 160        | 2.3   | 1.8        | .90                 | 3.3   | 1.6       | .58        | 3.1      | 1.4       | 1.6   | 2.1   |
| 7      | 8.0    | 105        | 2.5   | 1.7        | . 85                | 5.2   | 1.5       | .55        | 3.0      | 1.4       | 1.6   | 1.9   |
| 8      | 6.0    | 55         | 3.5   | 1.5        | . 89                | 2.3   | 1.2       | .51        | 3.0      | 1.4       | 1.5   | 8.0   |
| 9      | 55     | 35         | 3.9   | 1.4        | . 99                | 1.6   | 1.0       | .63        | 2.8      | 1.3       | 1.5   | 4.5   |
| 10     | 10     | 21         | 4.1   |            | 1.1                 | 1.2   | .91       | .53        | 2.8      | 1.2       | 1.5   | 2.7   |
| 11     | 8.0    | 11         | 14    | 1.7        | 1.2                 | 1.1   | .86       | . 56       | 2.9      | 1.4       | 1.5   | 2.8   |
| 12     | 7.0    | 8.2        | 4.5   | 1.8        | 1.3                 | 1.0   | .81       | 1.5        | 2.8      | 1.3       | 1.6   | 97    |
| 13     | 22     | 7.2        | 3.1   | 2.2        | 1.5                 | .94   | .94       | 1.6        | 2.5      | 1.3       | 3.0   | 69    |
| 14     | 95     | 14         | 2.6   | 2.5        | 1.8                 | .87   | .81       | 12         | 2.4      | 1.2       | 1.9   | 25    |
| 15     | 8.1    | 13         | 2.4   | 2.8        | 2.0                 | .81   | .83       | 111        | 2.3      | 7.4       | 1.7   | 14    |
| 16     | 20     | 8.0        | 2.2   | 2.4        | 1.9                 | .78   | .98       | 16         | 2.1      | 5.9       | 1.5   | 7.5   |
| 17     | 14     | 7.0        | 2.0   | 2.2        | 1.7                 | .79   | .87       | 308        | 2.0      | 7.5       | 1.4   | 5.8   |
| 18     | 5.0    | 6.1        | 1.6   | 1.8        | 1.6                 | 2.5   | 1.0       | 382        | 2.0      | 2.4       | 1.5   | 4.6   |
| 19     | 4.5    | 5.6        | 1.7   | 1.6        | 1.7                 | 1.1   | .94       | 40         | 2.0      | 2.3       | 1.4   | 4.1   |
| 20     | 4.3    | 5.0        | 1.6   | 1.4        | 1.5                 | .86   | .68       | 19         | 2.2      | 12        | 1.4   | 3.6   |
| 21     | 4.2    | 4.5        | 1.6   | 1.2        | 1.1                 | .84   | .82       | 12         | 2.2      | 4.0       | 1.5   | 3.4   |
| 22     | 4.5    | 4.3        | 1.5   | 1.0        | .94                 | .83   | .73       | 12         | 2.0      | 2.4       | 1.4   | 3.2   |
| 23     | 5.0    | 4.5        | 1.4   | 1.1        | 1.0                 | .81   | 48        | 11         | 2.0      | 2.3       | 1.4   | 3.4   |
| 24     | 4.4    | 3.8        | 1.9   | 1.1        | 1.1                 | .80   | 11        | 9.0        | 2.0      | 3.0       | 1.3   | 16    |
| 25     | 9.0    | 3.7        | 3.4   | .89        | 1.1                 | .77   | 35        | 6.3        | 1.8      | 2.2       | 1.4   | 87    |
| 26     | 5.9    | 4.4        | 2.6   | 1.0        | 1.2                 | .78   | 4.4       | 5.6        | 1.8      | 2.7       | 1.5   | 14    |
| 27     | 5.5    | 3.1        | 2.9   | .96        | 2.4                 | .80   | 1.5       | 5.1        | 1.7      | 2.0       | 16    | 7.7   |
| 28     | 5.9    | 2.8        | 3.1   | 1.0        | 2.2                 | .76   | 1.0       | 4.9        | 1.7      | 2.9       | 4.3   | 9.9   |
| 29     | 5.6    | 2.6        | 2.0   | .97        |                     | 33    | .97       | 4.6        | 1.7      | 2.3       | 2.6   | 6.3   |
| 30     | 8.2    | 2.5        | 2.4   | .99        |                     | 2.5   | .89       | 4.3        | 1.6      | 1.9       | 2.1   | 5.4   |
| 31     | 6.4    |            | 1.9   | 1.0        |                     | 2.1   |           | 4.1        |          | 1.7       | 2.4   |       |
| TOTAL  | 388.9  | 1108.3     | 103.4 | 56.81      | 36.87               | 76.84 | 127.34    | 976.72     | 83.0     | 85.6      | 68.5  | 430.3 |
| MBAN   | 12.5   | 36.9       | 3.34  |            | 1.32                | 2.48  | 4.24      | 31.5       | 2.77     | 2.76      | 2.21  | 14.3  |
| MAX    | 95     | 265        | 15    |            | 2.4                 | 33    | 48        | 382        | 9.6      | 12        | 16    | 97    |
| MIN    | 4.2    | 2.5        | 1.4   | .89        | .85                 | .76   | .68       | .51        | 1.6      | 1.2       | 1.3   | 1.9   |
| CFSM   | 3.85   | 11.4       | 1.03  |            | .41                 | .76   | 1.30      | 9.69       | .85      | .85       | .68   | 4.40  |
| IN.    | 4.45   | 12.69      | 1.18  |            | .42                 | .88   | 1.46      | 11.18      | .95      | .98       | .78   | 4.93  |
| AC-FT  | 771    | 2200       | 205   |            | 73                  | 152   | 253       | 1940       | 165      | 170       | 136   | 854   |
| WTR YR | 1985 T | OTAL 3542. | 58    | MBAN 9     | .71 MAX             | 382   | MIN       | .51 CFSM   | 2.99     | IN. 40.55 | AC-FT | 7030  |

## RIO GRANDE DE LOIZA BASIN

50051150 QUEBRADA BLANCA AT EL JAGUAL, PR--Continued

## WATER QUALITY RECORDS

PERIOD OF RECORD .-- JANUARY 1985 TO SEPTEMBER 1985

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE |    | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE | TIME    | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|------|----|------|---------------------------------------|--------------------------------------|-----------------------------|------|---------|---------------------------------------|--------------------------------------|-----------------------------|
| JAN, | 15 | 1403 | 2.7                                   | 264                                  | 25.5                        | MAR. | 06 1056 | 2.0                                   | 326                                  | 24.0                        |
| FRB, | 14 | 1115 | 1.7                                   | 323                                  | 23.0                        |      | 03 1151 |                                       | 293                                  | 27.5                        |

#### 50051180 QUEBRADA SALVATIERRA NEAR SAN LORENZO, PR

LOCATION.--Lat 18°10'24", long 65°58'38", Hydrologic Unit 21010005, on left downstream side of bridge on Highway 181, 0.2 mi (0.3 km) upstream from Rio Grande de Loiza, and 1.5 mi (2.4 km) southwest of San Lorenzo.

DRAINAGE AREA. -- 3.74 sq mi (9.69 sq km).

#### WATER-DISCHARGE RECORDS

PERIOD OF RECORD .-- January 1984 to current year.

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

REMARKS. -- Estimated daily discharges: Oct. 31 to Nov. 5. Records fair except those for estimated daily dicharges, which are poor.

EXTREMES FOR PERIOD OF RECORD. --Maximum discharge, 9,320 cu ft/s (264 cu m/s), May 17, 1985, gage height, 17.10 ft (5.212 m), from floodmark, from rating curve extended above 200 cu ft/s (5.66 cu m/s) on basis of step-backwater analysis and slope-area measurement; minimum discharge, 0.69 cu ft/s (0.020 cu m/s), Apr. 9-13, 15, 16, 1984.

EXTREMES FOR CURRENT YEAR .-- Peak discharges greater than base discharge of 1,000 cu ft/s (28.3 cu m/s) and maximum (\*):

|        |      | Disch     | arge     | Gage h | eight |        |      | Disch     | arge     | Gage I | height |
|--------|------|-----------|----------|--------|-------|--------|------|-----------|----------|--------|--------|
| Date   | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   | Date   | Time | (cu ft/s) | (ou m/s) | (ft)   | (m)    |
| May 17 | 1130 | *9.320    | 264      | ¥17.10 | 5.212 | May 18 | 0800 | 1.660     | 47.0     | 9.79   | 2.984  |

Minimum discharge, 0.82 cu ft/s (0.023 cu m/s), July 14, 15.

REVISIONS.--The maximum discharge for 1984 water year has been revised to 8,000 cu ft/s, June 10, 1984, gage height, 15.12 ft.

|                  |      | DIS   | CHARGE,          | , IN | CUBIC        | FEET | PER | SECOND,<br>MEAN |            | R YEAR     | R OCTO | BER 1984     | TO SE | PTEM | IBER 1985            |                |              |
|------------------|------|-------|------------------|------|--------------|------|-----|-----------------|------------|------------|--------|--------------|-------|------|----------------------|----------------|--------------|
| DAY              | oc   | T NO  | v                | DEC  |              | JAN  |     | FEB             | MAR        |            | APR    | MAY          | J     | UN   | JUL                  | AUG            | SEP          |
| 1                | 3.   | 5 6   | . 2              | 3.0  |              | 6.7  |     | 1.6             | 1.8        |            | 3.1    | 1.4          | 2     | .7   | 1.3                  | 1.4            | 2.7          |
| 2                | 3.   | 0 12  |                  | 28   |              | 5.4  |     | 1.5             | 1.5        |            | 2.1    | 1.3          | 2     | . 7  | 1.2                  | 1.9            | 6.2          |
| 3                | 4 .  | 3 60  |                  | 7.0  |              | 3.3  |     | 1.5             | 1.4        |            | 1.7    | 1.3          |       | . 7  | 1.4                  | 1.4            | 4.0          |
| 4                | 3.   |       |                  | 4.3  |              | 3.6  |     | 1.4             | 1.4        |            | 1.5    | 1.2          |       | .7   | 1.4                  | 1.4            | 2.5          |
| 5                | 3.   |       |                  | 3.7  |              | 3.4  |     | 1.4             | 1.8        |            | 1.4    | 1.3          |       | . 6  | 1.2                  | 1.3            | 2.2          |
| 6                | 3.   | 5 158 |                  | 3.4  |              | 3.3  |     | 1.4             | 2.2        |            | 1.4    | 1.2          | 2     | .6   | 1.1                  | 1.3            | 2.6          |
| 7                | 2.   | 7 102 |                  | 3.2  |              | 2.7  |     | 1.4             | 3.9        |            | 1.8    | 1.1          | 2     | . 6  | . 99                 | 1.3            | 2.1          |
| 8                | 2.   |       |                  | 14   |              | 2.5  |     | 1.4             | 2.4        |            | 1.4    | 1.1          |       | . 7  | 1.0                  | 1.3            | 8.1          |
| 9                | 28   | 26    |                  | 4.4  |              | 2.3  |     | 1.3             | 1.8        |            | 1.2    | 1.3          |       | . 6  | . 99                 | 1.3            | 6.3          |
| 10               | 7.   |       |                  | 3.5  |              | 2.4  |     | 1.2             | 1.6        |            | 1.1    | 1.2          |       | . 6  | .93                  | 1.2            | 3.1          |
| 11               | 4.   | 3 6   | . 1              | 22   |              | 2.2  |     | 1.3             | 1.5        |            | 1.2    | 1.4          | 2     | . 5  | 1.1                  | 1.1            | 2.8          |
| 12               | 3.   | 4 4   | . 1              | 4.2  |              | 2.1  |     | 1.3             | 1.6        |            | 1.2    | 2.1          | 2     | . 4  | 1.1                  | 1.2            | 82           |
| 13               | 22   | 3     | . 1              | 3.3  |              | 2.0  |     | 1.2             | 1.6        |            | 1.3    | 1.5          | 2     | . 1  | .93                  | 2.8            | 91           |
| 14               | 98   | 7     | . 3              | 3.3  |              | 2.0  |     | 1.4             | 1.5        |            | 1.2    | 15           | 2     | .0   | .89                  | 1.6            | 23           |
| 15               | 12   | 12    |                  | 3.1  |              | 2.1  |     | 1.4             | 1.5        |            | 1.3    | 172          | 2     | .0   | 6.5                  | 1.5            | 12           |
| 16               | 7.   |       | . 1              | 3.3  |              | 2.0  |     | 1.4             | 1.5        |            | 1.9    | 62           | 2     | .0   | 9.6                  | 1.3            | 7.2          |
| 17               | 7.   |       |                  | 2.9  |              | 2.0  |     | 1.4             | 1.5        |            | 1.4    | 400          |       | . 9  | 7.1                  | 1.3            | 5.5          |
| 18               | 4.   | 5 3   | . 2              | 2.5  |              | 2.0  |     | 1.3             | 2.7        |            | 1.4    | 356          | 1     | . 9  | 2.0                  | 1.3            | 4.7          |
| 19               | 3.:  | 3 2.  | . 9              | 2.7  |              | 2.0  |     | 1.5             | 1.7        |            | 1.8    | 29           | 1     | .8   | 1.4                  | 1.3            | 4.2          |
| 20               | 3.   | 2 2.  | . 6              | 2.7  |              | 1.8  |     | 1.8             | 1.5        |            | 1.2    | 9.6          | 1     | . 9  | 6.8                  | 1.2            | 3.9          |
| 21               | 3.   |       |                  | 2.5  |              | 1.7  |     | 1.6             | 1.5        |            | 1.4    | 7.9          |       | . 9  | 2.4                  | 1.2            | 3.7          |
| 22               | 3.   |       | . 7              | 2.4  |              | 1.7  |     | 1.5             | 1.4        |            | 1.2    | 6.3          | 1     | . 7  | 1.6                  | 1.2            | 3.5          |
| 23               | 2.   |       |                  | 2.4  |              | 1.7  |     | 1.5             | 1.4        | 7          | 18     | 4.9          |       | .7   | 1.5                  | 1.1            | 3.8          |
| 24               | 2.   |       | . 8              | 3.0  |              | 1.7  |     | 1.6             | 1.4        |            | 33     | 4.5          | 1     | . 6  | 2.2                  | 1.1            | 11           |
| 25               | 7.3  | 2 2   | . 9              | 4.7  |              | 1.7  |     | 1.7             | 1.4        | :          | 36     | 4.4          | 1     | .4   | 1.6                  | 1.2            | 87           |
| 26               | 2.   |       |                  | 4.2  |              | 1.8  |     | 1.7             | 1.4        |            | 9.1    | 4.1          | 1     | .6   | 2.3                  | 1.4            | 10           |
| 27               | 2.   | 1 3   | . 2              | 4.0  |              | 1.7  |     | 2.8             | 1.5        |            | 3.3    | 3.9          | 1     | . 4  | 1.6                  | 13             | 5.9          |
| 28               | 2.   | 0 3.  | . 0              | 3.7  |              | 1.7  |     | 2.7             | 1.5        |            | 2.1    | 3.3          | 1     | . 4  | 2.8                  | 5.3            | 9.8          |
| 29               | 1.5  | 9 3.  | .0               | 2.8  |              | 1.6  |     |                 | 83         |            | 1.7    | 3.1          | 1     | . 4  | 2.0                  | 2.6            | 6.1          |
| 30               | 14   | 3.    | . 0              | 3.5  |              | 1.6  |     |                 | 13         |            | 1.6    | 2.9          | 1     | . 3  | 1.7                  | 2.0            | 4.8          |
| 31               | 2.3  | 2     |                  | 3.0  |              | 1.5  |     |                 | 12         |            |        | 2.7          | -     |      | 1.4                  | 2.0            |              |
| TOTAL            | 270. |       |                  | 60.7 |              | 4.2  |     |                 | 155.9      |            | 8.0    | 1109.0       |       | . 4  | 70.03                | 60.5           | 421.7        |
| MBAN             | 8.7  | 2 25. | 9                | 5.18 | 2            | 2.39 | 1   | 1.54            | 5.03       |            | .60    | 35.8         | 2.    | 80   | 2.26                 | 1.95           | 14.1         |
| MAX              | 98   |       |                  | 28   |              | 6.7  |     | 2.8             | 83         |            | 78     | 400          | 2     | . 7  | 9.6                  | 13             | 91           |
| MIN              | 1.5  | 9 2.  | . 5              | 2.4  |              | 1.5  |     | 1.2             | 1.4        |            | 1.1    | 1.1          | 1     | . 3  | .89                  | 1.1            | 2.1          |
| CFSM             | 2.3  |       | 93               | 1.39 |              | .64  |     | .41             | 1.34       | 1          | .76    | 9.57         |       | 56   | .60                  | . 52           | 3.77         |
| IN.              | 2.69 |       |                  | 1.60 |              | .74  |     | . 43            | 1.55       |            | .97    | 11.03        |       | 62   | .70                  | .60            | 4.19         |
| AC-FT            | 530  |       |                  | 319  |              | 147  |     | 86              | 309        |            | 393    | 2200         |       | 24   | 139                  | 120            | 836          |
| CAL YR<br>WTR YR |      | TOTAL | 2866.7<br>3401.6 |      | MBAN<br>MBAN | 7.8  |     |                 | 295<br>100 | MIN<br>MIN | .71    | CFSM<br>CFSM | 2.09  |      | N. 28.51<br>N. 33.83 | AC-FT<br>AC-FT | 5690<br>6750 |

## RIO GRANDE DE LOIZA BASIN

## 50051180 QUEBRADA SALVATIERRA NEAR SAN LORENZO, PR--Continued

## WATER QUALITY RECORDS

PERIOD OF RECORD .-- WATER YEARS FEBRUARY 1984 TO CURRENT YEAR

| DATE |    | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMBOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE |    | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|------|----|------|---------------------------------------|--------------------------------------|-----------------------------|------|----|------|---------------------------------------|--------------------------------------|-----------------------------|
| JAN, | 15 | 1158 | 2.2                                   | 392                                  | 22.0                        | MAR. | 06 | 0935 | 1.7                                   | 452                                  | 22.5                        |
| FEB, | 14 | 0937 | 1.2                                   | 467                                  | 21.0                        | APR, |    |      | 1.3                                   | 421                                  | 26.0                        |

#### 50051310 RIO CAYAGUAS AT CERRO GORDO, PR

LOCATION.--Lat 18°09'13", long 65°57'20", Hydrologic Unit 21010005, at downstream side on bridge on Highway 912, at Barrio Cerro Gordo, 2.8 mi (4.5 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. Elevation of gage is 490 ft (150 m), from topographic map. Prior to Oct. 1, 1983, at site 2,000 ft (610 m) downstream at different datum.

REMARKS .-- No estimated daily discharges during water year. Records fair.

AVERAGE DISCHARGE.--8 years (1978-85), 49.3 cu ft/s (1.396 cu m/s), 65.64 in/yr (1,667 mm/yr), 35,720 acre-ft/yr (44.0 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), site and datum then in use, from rating curve extended above 1,000 cu ft/s (28.3 cu m/s) on the basis of slope-area measurement; minimum discharge, 7.1 cu ft/s (0.201 cu m/s), Feb. 4, May 3, 1981, Apr. 12, 13, 16, 17, 1983.

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

|        |      | Discha    | arge     | Gage h | eight        |       |    |      | Dische    | arge     | Gage h | eight |
|--------|------|-----------|----------|--------|--------------|-------|----|------|-----------|----------|--------|-------|
| Date   | Time | (cu ft/s) | (cu m/s) | (ft)   | ( <b>=</b> ) | Date  |    | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   |
| Nov. 3 | 1115 | 2,980     | 84.4     | 13.89  | 4.234        | May   | 18 | 0630 | *8,180    | 232      | *19.71 | 6.008 |
| May 15 | 1415 | 3,460     | 98.0     | 14.60  | 4.450        | Sept. | 12 | 1900 | 2,630     | 74.5     | 13.33  | 4.063 |

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

Minimum discharge, 13 cu ft/s (0.368 cu m/s), Mar. 5.

|          |        | 3.77  |       |          |          | M    | BAN V    | ALUB | S    |          |      |     |          |          |       |
|----------|--------|-------|-------|----------|----------|------|----------|------|------|----------|------|-----|----------|----------|-------|
| DAY      | OCT    |       | VOV   | DRC      | JAN      | FEB  | MAR      |      | APR  | MAY      | JUN  | Mr. | JUL      | AUG      | SEP   |
| 1        | 33     | 1     | 42    | 36       | 29       | 20   | 21       |      | 23   | 17       | 44   |     | 26       | 24       | 27    |
| 2        | 33     |       | 243   | 74       | 33       | 19   | 19       |      | 19   | 18       | 42   |     | 28       | 24       | 26    |
| 3        | 39     |       | 10    | 45       | 29       | 17   | 26       |      | 19   | 20       | 41   |     | 28       | 22       | 23    |
| 4        | 33     |       | 48    | 37       | 42       | 16   | 18       |      | 18   | 19       | 39   |     | 28       | 20       | 22    |
| 5        | 32     |       | 50    | 39       | 28       | 16   | 15       |      | 19   | 20       | 38   |     | 25       | 17       | 23    |
| 6        | 36     |       | 94    | 37       | 29       | 16   | 18       |      | 19   | 20       | 37   |     | 23       | 21       | 25    |
| 7        | 45     |       | 155   | 37       | 26       | 15   | 48       |      | 20   | 21       | 35   |     | 23       | 22       | 25    |
| 8        | 51     |       | 23    | 37       | 26       | 16   | 42       |      | 21   | 21       | 35   |     | 22       | 22       | 39    |
| 9        | 272    |       | 84    | 44       | 25       | 15   | 25       |      |      |          | 34   |     | 23       | 20       | 40    |
|          |        |       |       |          |          |      |          |      | 18   | 24       |      |     |          |          |       |
| 10       | 90     |       | 74    | 38       | 26       | 15   | 22       |      | 18   | 23       | 34   |     | 23       | 24       | 30    |
| 11       | 53     |       | 62    | 47       | 26       | 15   | 20       |      | 20   | 31       | 34   |     | 24       | 21       | 35    |
| 12       | 40     |       | 55    | 39       | 26       | 16   | 20       |      | 19   | 40       | 32   |     | 23       | 23       | 393   |
| 13       | 63     |       | 52    | 36       | 26       | 18   | 19       |      | 26   | 32       | 30   |     | 22       | 32       | 286   |
| 14       | 350    |       | 74    | 35       | 25       | 18   | 22       |      | 21   | 199      | 29   |     | 22       | 29       | 72    |
| 15       | 71     |       | 62    | 34       | 25       | 23   | 19       |      | 20   | 958      | 28   |     | 66       | 28       | 42    |
| 16       | 69     |       | 47    | 38       | 25       | 20   | 19       |      | 36   | 240      | 26   |     | 90       | 26       | 31    |
| 17       | 76     |       | 46    | 39       | 27       | 17   | 20       |      | 28   | 396      | 25   |     | 212      | 23       | 28    |
| 18       | 43     |       | 44    | 33       | 27       | 19   | 46       |      | 36   | 1890     | 24   |     | 38       | 23       | 25    |
| 19       | 41     |       | 43    | 34       | 26       | 30   | 22       |      | 26   | 134      | 24   |     | 25       | 22       | 27    |
| 20       | 40     |       | 42    | 34       | 25       | 30   | 19       |      | 23   | 83       | 25   |     | 62       | 24       | 26    |
| 21       | 40     |       | 41    | 32       | 25       | 22   | 21       |      | 29   | 64       | 25   |     | 27       | 23       | 25    |
| 22       | 41     |       | 43    | 31       | 26       | 22   | 19       |      | 40   | 60       | 24   |     | 22       | 21       | 24    |
| 23       | 38     |       | 45    | 30       | 25       | 20   | 19       |      | 454  | 59       | 25   |     | 21       | 22       | 24    |
| 24       | 37     |       | 40    | 35       | 24       | 21   | 21       |      | 191  | 57       | 26   |     | 32       | 25       | 35    |
| 25       | 56     |       | 42    | 44       | 22       | 20   | 16       |      | 95   | 57       | 26   |     | 26       | 31       | 390   |
| 26       | 114    |       | 68    | 34       | 22       | 21   | 18       |      | 41   | 55       | 27   |     | 47       | 26       | 64    |
| 27       | 65     |       | 39    | 34       | 20       | 68   | 22       |      | 23   | 52       | 24   |     | 28       | 139      | 40    |
| 28       | 52     |       | 38    | 32       | 20       | 28   | 19       |      | 20   | 50       | 24   |     | 29       | 143      | 73    |
| 29       | 51     |       |       |          |          |      |          |      |      |          |      |     |          |          |       |
|          |        |       | 37    | 30       | 19       |      | 332      |      | 19   | 49       | 24   |     | 29       | 28       | 41    |
| 30<br>31 | 47     | _     | 37    | 34<br>29 | 19<br>19 |      | 44<br>39 |      | 18   | 47<br>45 | 23   |     | 27<br>26 | 23<br>22 | 40    |
| TOTAL    | 2092   | 45    | 80    | 1158     | 792      | 593  | 1050     |      | 1379 | 4801     | 904  |     | 1147     | 970      | 2001  |
|          | 67.5   |       |       |          |          |      |          |      |      |          |      |     |          |          |       |
| MEAN     |        |       | 53    | 37.4     | 25.5     | 21.2 | 33.9     |      | 46.0 | 155      | 30.1 |     | 37.0     | 31.3     | 66.7  |
| MAX      | 350    |       | 10    | 74       | 42       | 68   | 332      |      | 454  | 1890     | 44   |     | 212      | 143      | 393   |
| MIN      | 32     |       | 37    | 29       | 19       | 15   | 15       |      | 18   | 17       | 23   |     | 21       | 17       | 22    |
| CFSM     | 6.62   |       | .0    | 3.67     | 2.50     | 2.08 | 3.32     |      | 4.51 | 15.2     | 2.95 |     | 3.63     | 3.07     | 6.54  |
| IN.      | 7.63   | 16.   |       | 4.22     | 2.89     | 2.16 | 3.83     |      | 5.03 | 17.51    | 3.30 |     | 4.18     | 3.54     | 7.30  |
| AC-FT    | 4150   | 90    | 080   | 2300     | 1570     | 1180 | 2080     |      | 2740 | 9520     | 1790 |     | 2280     | 1920     | 3970  |
| CAL YR   |        | TOTAL | 17944 | MBAN     | 49.0     | MAX  | 1010     | MIN  | 11   | CFSM     | 4.80 | IN. | 65.44    | AC-FT    | 35590 |
| WTR YR   | 1985 7 | TOTAL | 21467 | MEAN     | 58.8     | MAX  | 1890     | MIN  | 15   | CFSM     | 5.76 | IN. | 78.29    | AC-FT    | 42580 |

## RIO GRANDE DE LOIZA BASIN

## 50051310 RIO CAYAGUAS AT CERRO GORDO, PR--Continued

## WATER QUALITY RECORDS

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

| DATE |    | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE |    | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|------|----|------|---------------------------------------|--------------------------------------|-----------------------------|------|----|------|---------------------------------------|--------------------------------------|-----------------------------|
| JAN, | 17 | 1025 | 24                                    | 129                                  | 20.5                        | APR. | 08 | 1056 | 23                                    | 145                                  | 25.0                        |
| FEB, | 19 | 1140 | 22                                    | 146                                  | 24.0                        | SEP. | 05 | 1223 | 21                                    | 134.4                                | 29.0                        |
| MAR, | 07 | 0954 | 45                                    | 127                                  | 22.0                        |      |    | 2000 |                                       |                                      |                             |

#### 50053050 RIO TURABO AT BORINQUEN, PR

LOCATION.--Lat 18°10'10", long 66°02'37", Hydrologic Unit 21010005, at right upstream end of bridge on Highway 765, 0.5 mi (0.8 km) south of Villa Borinquen, and 7.3 mi (11.7 km) upstream from Rio Grande de Loiza.

DRAINAGE AREA. -- 7.89 sq mi (20.44 sq km).

#### WATER-DISCHARGE RECORDS

PERIOD OF RECORD .-- December 1983 to current year.

GAGE .-- Water-stage recorder. Elevation of gage is 430 ft (131 m), from topographic map.

REMARKS.--Estimated daily discharges: Nov. 9-15, April 13-15, and May 17-20. Records fair except those for estimated daily discharges, which are poor.

EXTREMES FOR PERIOD OF RECORD. -- Maximum discharge, 11,600 cu ft/s (328 cu m/s), May 18, 1985, gage height, 17.06 ft (5.200 m), from floodmark, from rating curve extended above 200 cu ft/s (5.66 cu m/s) on basis of step-backwater analysis and slope-area measurement; minimum discharge, 4.0 cu ft/s (0.113 cu m/s), May 6, 1985, gage height, 3.75 ft (1.143 m).

EXTREMES FOR CURRENT PERIOD .-- Peak discharges greater than base discharge of 1,500 cu ft/s (42.5 cu m/s) and maximum (\*)

| Date    | Time | Discha<br>(cu ft/s) |      | Gage h | eight (m) | Date   | Time    | Disch<br>(ou ft/s) |     | Gage h | eight (m) |  |
|---------|------|---------------------|------|--------|-----------|--------|---------|--------------------|-----|--------|-----------|--|
| Nov. 3  | 0530 | 4,990               | 141  | 12.25  | 3.734     | May 17 | 1215    | 8,950              | 253 | 15.74  | 4.798     |  |
| Apr. 23 | 1745 | 1,710               | 48.4 | 8.53   | 2.600     | May 18 | Unknown | *11,600            | 328 | *17.06 | 5.200     |  |

DISCHARGE. IN CUBIC FERT PER SECOND. WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

Minimum discharge, 4.0 cu ft/s (0.113 cu m/s), May 6.

|        |      | DI    | SCHARGE        | , IN  | CUBIC FRI    | T PE         | R SECOND<br>MEA |             | ALUBS | СТОВ | KR 1984 | TO SEPT | KMBI | R 1985         |                |                |
|--------|------|-------|----------------|-------|--------------|--------------|-----------------|-------------|-------|------|---------|---------|------|----------------|----------------|----------------|
| DAY    | oc   | T I   | VOV            | DEC   | JAN          |              | FEB             | MAR         | AF    | R    | MAY     | JUN     |      | JUL            | AUG            | SEP            |
| 1      | 1    | 4     | 62             | 14    | 17           |              | 10              | 20          | 14    |      | 6.0     | 11      |      | 13             | 12             | 12             |
| 2      | 1    | 3     | 123            | 54    | 17           |              | 9.6             | 18          | 12    |      | 5.7     | 11      |      | 12             | 12             | 12             |
| 3      | 1    | 4     | 511            | 27    | 13           |              | 9.4             | 19          | 11    |      | 5.6     | 11      |      | 12             | 11             | 12             |
| 4      | 1    | 2     | 182            | 19    | 18           |              | 9.7             | 17          | 11    |      | 5.2     | 11      |      | 12             | 11             | 11             |
| 5      | 1    |       | 335            | 18    | 12           |              | 9.1             | 18          | 11    |      | 5.3     | 10      |      | 11             | 11             | 15             |
| 6      | 1    | 3     | 279            | 16    | 17           |              | 8.9             | 29          | 11    |      | 5.1     | 10      |      | 10             | 11             | 13             |
| 7      | 1    | 2     | 196            | 16    | 12           |              | 7.6             | 38          | 12    |      | 5.3     | 9.7     |      | 9.2            | 10             | 11             |
| 8      | 1    | 2     | 114            | 20    | 11           |              | 7.6             | 30          | 12    |      | 4.8     | 9.8     |      | 9.3            | 10             | 18             |
| 9      | 5    | 1     | 80             | 19    | 11           |              | 7.7             | 22          | 9.    | 3    | 5.3     | 9.2     |      | 9.3            | 9.5            | 18             |
| 10     | 1    | 6     | 64             | 19    | 12           |              | 8.0             | 18          | 8.    |      | 4.8     | 10      |      | 9.3            | 9.3            | 14             |
| 11     | 1    | 3     | 54             | 17    | 10           |              | 8.7             | 16          | 8.    | 7    | 5.5     | 11      |      | 10             | 10             | 12             |
| 12     | 1:   | 2     | 46             | 16    | 9.4          |              | 8.9             | 17          | 8.    | 3    | 8.2     | 12      |      | 9.7            | 12             | 49             |
| 13     | 1    | 2     | 43             | 15    | 9.3          |              | 8.6             | 15          | 11    |      | 6.8     | 14      |      | 9.1            | 17             | 53             |
| 14     | 2    |       | 51             | 15    | 9.9          |              | 10              | 14          | 9.    | 0    | 202     | 13      |      | 9.3            | 14             | 22             |
| 15     | 1.   | 4     | 34             | 16    | 11           |              | 9.6             | 13          | 8.    | 0    | 205     | 13      |      | 19             | 13             | 17             |
| 16     | 1    |       | 28             | 22    | 11           |              | 9.0             | 13          | 14    |      | 146     | 12      |      | 18             | 12             | 14             |
| 17     | 1    |       | 24             | 14    | 11           |              | 8.6             | 13          | 12    |      | 1300    | 11      |      | 29             | 12             | 12             |
| 18     | 1    | 4     | 22             | 12    | 11           |              | 8.4             | 55          | 15    |      | 900     | 11      |      | 13             | 13             | 11             |
| 19     | 1:   |       | 21             | 12    | 10           |              | 22              | 23          | 11    |      | 50      | 11      |      | 12             | 12             | 11             |
| 20     | 1    | 3     | 19             | 11    | 10           |              | 20              | 17          | 9.    | 1    | 16      | 12      |      | 11             | 11             | 9.7            |
| 21     | 1    |       | 18             | 9.0   |              |              | 17              | 16          | 18    |      | 10      | 11      |      | 9.7            | 12             | 9.7            |
| 22     | 10   |       | 17             | 8.5   |              |              | 14              | 15          | 10    |      | 9.4     | 12      |      | 11             | 13             | 9.7            |
| 23     | 1    |       | 18             | 8.4   | 9.4          |              | 13              | 15          | 228   |      | 9.1     | 12      |      | 12             | 12             | 10             |
| 24     | 1:   |       | 16             | 9.7   |              |              | 15              | 13          | 52    |      | 9.0     | 12      |      | 13             | 12             | 16             |
| 25     | 2:   | 3     | 16             | 21    | 9.7          |              | 15              | 13          | 109   |      | 9.9     | 12      |      | 11             | 14             | 31             |
| 26     | 1    |       | 31             | 12    | 10           |              | 16              | 12          | 31    |      | 10      | 11      |      | 14             | 13             | 14             |
| 27     | 10   |       | 19             | 12    | 9.2          |              | 42              | 12          | 11    |      | 11      | 11      |      | 12             | 30             | 12             |
| 28     | 19   |       | 15             | 11    | 9.3          |              | 25              | 12          | 8.    |      | 11      | 11      |      | 13             | 23             | 12             |
| 29     | 1    |       | 15             | 9.2   | 8.9          |              |                 | 67          | 7.    |      | 11      | 12      |      | 14             | 14             | 11             |
| 30     | 51   |       | 15             | 12    | 8.9          |              |                 | 24          | 6.    | 4    | 11      | 11      |      | 13             | 13             | 10             |
| 31     | 1'   | 7 -   |                | 10    | 9.2          |              |                 | 24          |       | -    | 11      |         |      | 12             | 13             |                |
| TOTAL  | 54   |       |                | 494.8 |              |              | 358.4           | 648         | 698.  |      | 3005.0  | 337.7   |      | 381.9          | 401.8          | 482.1          |
| MBAN   | 17.0 | 8 8   | 6.6            | 16.0  |              |              | 12.8            | 20.9        | 23.   | 3    | 96.9    | 11.3    |      | 12.3           | 13.0           | 16.1           |
| MAX    | 51   |       | 311            | 54    |              |              | 42              | 67          | 22    |      | 1300    | 14      |      | 29             | 30             | 53             |
| MIN    | 1:   |       | 15             | 8.4   | 8.9          |              | 7.6             | 12          | 6.    |      | 4.8     | 9.2     |      | 9.1            | 9.3            | 9.7            |
| CFSM   | 2.2  |       | 8.0            | 2.03  | 1.42         |              | 1.62            | 2.65        | 2.9   |      | 12.3    | 1.43    |      | 1.56           | 1.65           | 2.04           |
| IN.    | 2.58 |       |                | 2.33  | 1.63         |              | 1.69            | 3.06        | 3.2   |      | 14.17   | 1.59    |      | 1.80           | 1.89           | 2.27           |
| AC-FT  | 1086 | 50    | 90             | 981   | 686          |              | 711             | 1290        | 139   | 0    | 5960    | 670     |      | 757            | 797            | 956            |
| CAL YR |      | TOTAL | 10190<br>10269 |       | MBAN<br>MBAN | 27.8<br>28.1 |                 | 611<br>1300 | MIN   | 6.3  | CFSM    | 3.52    | IN.  | 48.05<br>48.42 | AC-FT<br>AC-FT | 20210<br>20370 |

## RIO GRANDE DE LOIZA BASIN

50053050 RIO TURABO AT BORINQUEN, PR--Continued

## WATER QUALITY RECORDS

PERIOD OF RECORD. -- JANUARY TO SEPTEMBER 1985

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE |    | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE   |    | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|------|----|------|---------------------------------------|--------------------------------------|-----------------------------|--------|----|------|---------------------------------------|--------------------------------------|-----------------------------|
| JAN, | 16 | 1250 | 11                                    | 163                                  | 24.0                        | APR,   | 03 | 0919 | 11                                    | 182                                  | 23.0                        |
| FEB, | 14 | 1516 | 13                                    | 180                                  | 24.5                        | SEP.   | 06 | 1242 | 13                                    | 152.5                                | 29.5                        |
| MAR, | 06 | 1356 | 56                                    | 158                                  | 23.0                        | 0.0000 |    |      |                                       |                                      |                             |

#### 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 Rio Turabo, and 1.8 mi (2.9 km) east of Plaza de Caguas.

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

#### WATER-DISCHARGE RECORDS

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

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

REMARKS .-- No estimated daily discharges during water year. Records fair.

AVERAGE DISCHARGES.--25 years (1961-85), 221 ou ft/s (6.259 ou m/s), 33.42 in/yr (849 mm/yr), 160,100 acre-ft/yr (197 ou hm/yr); median of yearly mean discharges, 210 ou ft/s (5.95 ou m/s), 152,000 acre-ft/yr (190 ou hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 71,500 cu ft/s (2,020 cu m/s), Sept. 6, 1960, gage height, 31.17 ft (9.501 m), from rating curve extended above 6,000 cu ft/s (170 cu m/s) on basis of slope-area measurement; minimum daily discharge, 10 cu ft/s (0.283 cu m/s), Apr. 5, 10, 29, 1968.

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

|         |      | Disch     | arge     | Gage h | eight      |       |    |      | Disch     | arge     | Gage h | eight |
|---------|------|-----------|----------|--------|------------|-------|----|------|-----------|----------|--------|-------|
| Date    | Time | (cu ft/s) | (cu m/s) | (ft)   | <b>(=)</b> | Date  |    | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   |
| Nov. 3  | 0715 | 16,400    | 464      | 17.52  | 5.340      | May   | 17 | 1230 | 24,800    | 702      | 20.43  | 6.227 |
| Nov. 5  | 1345 | 10,500    | 297      | 15.01  | 4.575      | May   | 18 | 0845 | *28,000   | 793      | *21.40 | 6.523 |
| Apr. 23 | 1800 | 8,540     | 242      | 14.04  | 4.279      | Sept. | 12 | 2015 | 9,380     | 266      | 14.47  | 4.410 |
| May 15  | 1530 | 11 900    | 337      | 15 66  | 4 772      | •     |    |      |           |          |        |       |

Minimum discharge, 16 cu ft/s (0.453 cu m/s), July 10.

|              |               | DIS   | CHARGE, | IN CUBIC   | FRET      | PER SE | COND, |              | YEAR<br>LUES | осто | BER 198        | 4 TO | SEPTEMBE     | R 1985       |           |        |
|--------------|---------------|-------|---------|------------|-----------|--------|-------|--------------|--------------|------|----------------|------|--------------|--------------|-----------|--------|
| DAY          | oct           | r N   | ov      | DEC        | JAN       | FR     | В     | MAR          |              | APR  | MAY            |      | JUN          | JUL          | AUG       | SEP    |
| 1            | 152           | 4     | 56      | 166        | 129       | 6      | 8     | 100          |              | 127  | 132            |      | 155          | 56           | 90        | 122    |
| 2            | 132           | 11    | 80      | 423        | 224       | 7      | 1     | 75           |              | 93   | 124            |      | 147          | 80           | 108       | 125    |
| 3            | 158           | 5 59  | 50      | 287        | 146       | 6      | 5     | 77           |              | 83   | 124            |      | 142          | 72           | 94        | 125    |
| 4            | 155           | 19    | 60      | 193        | 174       | 5      | 9     | 68           |              | 76   | 126            |      | 136          | 84           | 82        | 81     |
| 5            | 143           | 41    | 20      | 176        | 143       | 5      | 9     | 66           |              | 74   | 123            |      | 131          | 62           | 74        | 119    |
| 6            | 207           |       | 90      | 168        | 141       | 6      |       | 91           |              | 76   | 121            |      | 127          | 49           | 73        | 99     |
| 7            | 145           |       | 00      | 159        | 128       | 5      | 5     | 208          |              | 83   | 117            |      | 125          | 43           | 87        | 64     |
| 8            | 151           |       | 50      | 165        | 115       | 5      | В     | 220          |              | 81   | 118            |      | 127          | 39           | 75        | 147    |
| 9            | 930           | 8     | 90      | 209        | 110       | 5      | 5     | 107          |              | 70   | 119            |      | 124          | 39           | 72        | 235    |
| 10           | 392           | 6     | 21      | 189        | 113       | 5      | 4     | 81           |              | 63   | 132            |      | 120          | 26           | 63        | 92     |
| 11           | 243           |       | 34      | 334        | 109       | 5      |       | 68           |              | 67   | 142            |      | 111          | 37           | 59        | 85     |
| 12           | 179           |       | 63      | 225        | 101       | 5      | 6     | 65           |              | 72   | 178            |      | 114          | 30           | 55        | 1270   |
| 13           | 265           | 3     | 20      | 167        | 97        | 5      | 4     | 69           |              | 79   | 189            |      | 97           | 30           | 167       | 1970   |
| 14           | 1180          |       | 34      | 144        | 92        | 6      | 2     | 61           |              | 76   | 1070           |      | 92           | 23           | 130       | 707    |
| 15           | 331           | 4     | 83      | 141        | 94        | 7      | 6     | 58           |              | 68   | 3280           |      | 88           | 270          | 99        | 492    |
| 16           | 254           | 3     | 08      | 158        | 87        | 7      | 5     | 58           |              | 111  | 1500           |      | 87           | 531          | 75        | 318    |
| 17           | 336           |       | 90      | 165        | 86        | 6      | 0     | 58           |              | 103  | 5620           |      | 84           | 787          | 62        | 264    |
| 18           | 195           |       | 67      | 140        | 84        | 5      | 7     | 219          |              | 150  | 10400          |      | 83           | 224          | 62        | 237    |
| 19           | 169           |       | 41      | 135        | 88        | 7      | 3     | 105          |              | 109  | 3170           |      | 78           | 139          | 69        | 220    |
| 20           | 161           | . 2   | 26      | 146        | 82        | 10     | 7     | 69           |              | 84   | 518            |      | 75           | 375          | 54        | 209    |
| 21           | 184           |       | 14      | 126        | 80        | 7      | 5     | 60           |              | 119  | 374            |      | 76           | 189          | 63        | 197    |
| 22           | 177           | 2     | 11      | 121        | 75        | 6      | 6     | 59           |              | 131  | 303            |      | 71           | 135          | 61        | 188    |
| 23           | 143           |       | 37      | 118        | 76        | 6:     |       | 57           |              | 088  | 262            |      | 70           | 117          | 51        | 193    |
| 24           | 129           |       | 14      | 137        | 77        | 6      | 6     | 54           |              | 100  | 237            |      | 69           | 180          | 48        | 312    |
| 25           | 221           | 1     | 95      | 183        | 73        | 6      | 6     | 51           | - 1          | 364  | 225            |      | 67           | 155          | 56        | 1650   |
| 26           | 236           |       | 27      | 167        | 85        | 6      | 8     | 51           |              | 133  | 207            |      | 66           | 217          | 79        | 465    |
| 27           | 221           |       | 00      | 159        | 80        | 22     | 9     | 53           |              | 238  | 192            |      | 63           | 141          | 502       | 368    |
| 28           | 217           |       | 87      | 162        | 74        | 16     | 8     | 60           |              | 184  | 184            |      | 56           | 147          | 525       | 392    |
| 29           | 193           |       | 80      | 132        | 69        |        | -     | 1410         |              | 155  | 173            |      | 57           | 153          | 167       | 305    |
| 30<br>31     | 473<br>220    |       | 72      | 152<br>144 | 66<br>65  |        |       | 236<br>315   |              | 44   | 163<br>157     |      | 52           | 116<br>97    | 112<br>98 | 261    |
| mom          |               |       |         |            |           |        |       |              |              |      |                |      |              |              |           |        |
| TOTAL        | 8288<br>267   |       |         |            | 3163      | 207    |       | 4329         |              | 793  | 29780          |      | 2890         | 4643         | 3412      | 11312  |
| MBAN         |               |       | 44      | 177        | 102       | 74.    |       | 140          |              | 226  | 961            |      | 96.3         | 150          | 110       | 377    |
| MAX          | 1180          |       |         | 423        | 224       | 229    |       | 1410         | 16           | 880  | 10400          |      | 155          | 787          | 525       | 1970   |
| MIN          | 129           |       | 72      | 118        | 65        | 5      |       | 51           |              | 63   | 117            |      | 52           | 23           | 48        | 4.20   |
| CFSM         | 2.97          |       |         |            | 1.14      | . 8    |       | 1.56         |              | 52   | 10.7           |      | 1.07         | 1.67         | 1.22      | 4.69   |
| IN.<br>AC-FT | 3.43<br>16440 |       |         |            | 1.31 6270 | 4110   |       | 1.79<br>8590 | 134          | 81   | 12.34<br>59070 |      | 1.20<br>5730 | 1.92<br>9210 | 6770      | 22440  |
| CAL YR       |               | TOTAL | 88768   | MEAN       | 243       | MAX    | 598   |              | N ·          | 30   | CFSM           |      | IN.          | 36.77        | AC-FT     | 176100 |
|              |               |       | 110493  | MBAN       | 303       |        | 1040  |              | N            | 23   | CFSM           |      | IN.          | 45.77        |           | 219200 |

## WATER-QUALITY RECORDS

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

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | TIME           | STRE.<br>FLO<br>INST.<br>TANE                                    | W, COI<br>AN- DUO<br>OUS ANO                      | FIC<br>N- PI<br>CT- (ST   | AND- TI   | EMPER-<br>ATURE<br>DEG C)               | TUE<br>BII<br>IT)<br>(NTC            | )- D:   | GEN,<br>IS-<br>LVED<br>G/L)                           | DXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | OXYO<br>DEMA<br>CHI<br>ICA<br>(HI<br>LEVI<br>(MG | AND, FO<br>RM- FE<br>AL O.<br>IGH UM<br>RL) (CO                | RM, TOO<br>CAL, FE<br>7 KF<br>-MF (CO<br>LS./ F         | REP-<br>COCCI<br>CAL,<br>AGAR<br>OLS.<br>PER |
|----------------|----------------|--|---|---|---|---|--------------------------------------|---|---|--|--|--|---|--|
| 1984           | 1520           | 0100   |   | 90  |   |   |                                      |   |   |  |  |  | F400  | ven  |
| 05<br>JAN 1985 | 1530           |  |   |   | 6.60  | 24.0                                    | 140                                  |   | 8.5   | 101  |  |  | 5400  | K60  |
| 14<br>1AR      | 1245           | 92   |   | 272   | 7.50  | 23.0                                    | 9.                                   | . 0   | 9.0   | 104  |  | <10 K2   | 5000  | 150  |
| 27<br>JUN      | 1355           | 52   |   | 271   | 7.40  | 24.5                                    | 8.                                   | . 5   | 7.2   | 86   |  | 12 3   | 5000  | 220  |
| 10             | 1415           | 124  |   | 252   | 7.80  | 29.5                                    | 2.                                   | . 6   | 8.8   | 114  |  | 10   | 3400  | K60  |
| 08             | 1105           | 72   |   | 248   | 7.60  | 30.0                                    | 14                                   |   | 7.7   | 101  |  | 10   | 5400  | K60  |
| DATI           |                | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3)                           | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA)      | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG)                | SODIUM<br>DIS-<br>SOLVEI<br>(MG/I               | M,<br>BC<br>D T<br>L RA                 | DDIUM<br>AD-<br>DRP-<br>PION<br>ATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K)     | ALKA<br>LINIT<br>WATE<br>TOTA<br>FIRL<br>MG/L<br>CACO | Y<br>R<br>L SUI<br>D TO<br>AS (!                               | LFIDE<br>OTAL<br>MG/L<br>B S)                    | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4)                  | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)     |  |
| NOV 1984       |                | oncoo,   | no on,  | ab na,  | AD N  | .,                                      |                                      | AU A,   | Onoc  |  | ,  | no 501)  | ND 02,  |  |
| 05<br>JAN 1985 |                | 15   | 3.6   | 1.5   | 6.0   | 0                                       | 0.7                                  | 1.5   |   | 16   |  | 5.9  | 5.0   |  |
| 14             |                | 80   | 20  | 7.2   | 23  |   | 1                                    | 1.3   |   | 83   | <0.5   | 16   | 18  |  |
| MAR 27         |                |  |   |   |   |   |                                      |   |   | 82   |  |  |   |  |
| JUN<br>10      |                | 71   | 18  | 6.3   | 20  |   | 1                                    | 1.8   |   | 76   | <0.5   | 15   | 19  |  |
| AUG<br>08      |                |  |   |   |   |   |                                      |   |   | 74   |  |  |   |  |
| DATE           |                | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F)               | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS<br>DIS-<br>SOLVE<br>(TONS<br>PER<br>DAY) | S, RES<br>- AT<br>ED DEG<br>B SU<br>PEN | 8-                                   | NITRO-<br>GEN,<br>NITRATE<br>TOTAL<br>(MG/L<br>AS N)    | NITE<br>GEN<br>NITEI<br>TOTA<br>(MG/                  | TE NOS   | TRO-<br>GEN,<br>2+NO3<br>OTAL<br>GG/L<br>B N)    | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N)           | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N)    |  |
| NOV 1984       |                |  |   |   |   |   |                                      |   |   |  |  |  |   |  |
| 05<br>JAN 1985 |                | <0.1   | 10  | 43  | 942   | 20                                      | 90                                   | 0.25  | 0.0   | 5 (  | .30  | 0.18   | 7.2   |  |
| 14<br>MAR      |                | 0.2  | 29  | 160   | 41  |   | 18                                   | 0.54  | 0.0   | 6 (  | 0.60   | 0.28   | 0.82  |  |
| 27             |                |  |   |   | -   | -                                       | 16                                   | 0.51  | 0.0   | 9 (  | 0.60   | 0.31   | 0.29  |  |
| JUN<br>10      |                | 0.2  | 30  | 160   | 52  |   | 21                                   | 0.36  | 0.0   | 4 (  | .40  | 0.10   | 0.3   |  |
| AUG<br>08      |                |  |   |   |   |   | 19                                   | 0.51  | 0.0   | 9 (  | .60  | 0.20   | 0.6   |  |
| DATE           | GI<br>MC<br>OI | NITRO-<br>EN, AM-<br>DNIA +<br>RGANIC<br>FOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS N)         | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS NO3)                         | PHOS-<br>PHORUS<br>TOTAL<br>(MG/L<br>AS P)      | ARS<br>TO                               | ENIC<br>TAL<br>G/L<br>AS)            | BARIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS BA) | BORO<br>TOTA<br>RECO<br>ERAB<br>(UG/<br>AS B          | L TO<br>V- RE<br>LE ER<br>L (U                                 | OMIUM<br>OTAL<br>CCOV-<br>ABLE<br>IG/L<br>I CD)  | CHRO-<br>MIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CR) | COPPER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CU) |  |
| NOV 1984       |                |  |   |   | 2   |   |                                      |   |   |  |  |  |   |  |
| 05<br>JAN 1985 |                | 7.4  | 7.7   | 34  | 0.16  | 5                                       |                                      |   |   |  |  |  |   |  |
| 14<br>MAR      |                | 1.1  | 1.7   | 7.5   | 0.29  | )                                       | 1                                    | <100  | <   | 20   | <1   | <1   | <10   |  |
| 27<br>JUN      |                | 0.6  | 1.2   | 5.3   | 0.17  | •                                       |                                      |   |   |  |  |  |   |  |
| 10             |                | 0.4  | 0.8   | 3.5   | 0.09  | )                                       | <1                                   | <100  | 1   | 20   | <1   | 4  | <10   |  |
| 08             |                | 0.8  | 1.4   | 6.2   | 0.18  | 3                                       | 144                                  |   |   |  |  |  | 44  |  |

K = non-ideal count

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RIO GRANDE DE LOIZA BASIN

50055000 RIO GRANDE DE LOIZA AT CAGUAS, PR--Continued
WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| NOV 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 05<br>JAN 1985 |   |   |   |   |  |   |   |                                     |                            |  |
| 14             | 1100  | <1  | 200   |   |  |   | 30  | <0.01                               | 4                          |  |
| MAR            |   |   |   |   |  |   |   |                                     |                            |  |
| 27             |   |   |   | <0.1  |  |   |   |                                     |                            |  |
| JUN            |   |   |   |   |  |   |   |                                     |                            |  |
| 10             | 660   | 1   | 150   | 0.1   | <1   | <1  | 10  | <0.01                               | <1                         | 0.02   |
| 08             |   |   |   |   |  |   |   |                                     |                            |  |

## 50055250 RIO CAGUITAS AT HIGHWAY 30 AT CAGUAS, PR

## WATER-QUALITY RECORDS

LOCATION.--Lat 18°15'11", long 66°01'26", at Highway 30 bridge, and 0.8 mi (1.3 km) east of Caguas plaza. DRAINAGE AREA.--14.1 sq mi (36.5 sq km).

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

| DATE           | TIME                               | STREAM<br>FLOW<br>INSTANTANEOU<br>(CFS)            | N- DUG  | FIC<br>N-<br>CT-  | PH<br>(STAN<br>ARD<br>UNITS        | ATI   | PER-<br>URE<br>G C)                         |                 |                   | OXYGI<br>DI:<br>SOL'<br>(MG,            | S-<br>VRD              | SOL<br>(PE<br>CE<br>SAT                  | S-                         | OXYGE<br>DEMAN<br>CHEN<br>ICAL<br>(HIC<br>LEVEL<br>(MG/I | ND ,<br>1-<br>3H | FOR<br>FEC<br>0.7<br>UM-<br>(COL<br>100 | M,<br>AL,<br>MF<br>S./ | FEC<br>KF A<br>(COL                     | CAL,<br>AGAR<br>LS.<br>ER |
|----------------|------------------------------------|--|---|-------------------|------------------------------------|---|---|-----------------|-------------------|---|------------------------|--|----------------------------|--|------------------|---|------------------------|---|---------------------------|
| NOV 1984       |                                    |  |   |                   |                                    |   |   |                 |                   |   |                        |  |                            |  |                  |   |                        |   |                           |
| 13<br>JAN 1985 | 1335                               | 49   |   | 428               | 7.                                 | 60  | 25.0  | 6               | . 4               |   | 6.6                    |  | 79                         |  | 13               | 460                                     | 000                    |   |                           |
| 22<br>APR      | 1305                               | 13   |   | 566               | 7.                                 | 60  | 24.5  |                 |                   |   | 4.9                    |  | 58                         |  | 52               | 270                                     | 000                    | 21                                      | 1000                      |
| 23<br>JUN      | 1250                               | 38   |   | 270               | 7.                                 | 20  | 26.0  | 15              |                   |   | 4.4                    |  | 54                         |  | 39               | 350                                     | 000                    | 400                                     | 0000                      |
| 13             | 1525                               | 25   |   | 623               | 7.                                 | 50  | 30.5  | 3               | .0                | 4                                       | B.4                    |  | 110                        |  | 51               | 54                                      | 000                    | 12                                      | 2000                      |
| AUG<br>08      | 1410                               | 22   |   | 619               | 7.                                 | 40  | 30.5  | 6               | .0                |   | 4.0                    |  | 53                         |  | 52               | 20                                      | 000                    | 1                                       | 000                       |
| DATE           | HARD-<br>NESS<br>(MG/L<br>AS       | HARD-<br>NESS<br>NONCAL<br>WATER<br>TOT FI<br>MG/L | RB CALC<br>R DIS<br>LD SOI<br>AS (MC              | S-<br>LVED<br>S/L | MAGN<br>SIU<br>DIS<br>SOLV<br>(MG/ | M, SODI<br>- DIS<br>ED SOLV                       | 3-<br>/KD<br>3-L                            | SOR             | ON                | DIS<br>SOLV<br>(MG)                     | UM,<br>B-<br>VED<br>/L | ALK<br>LINI<br>WAT<br>TOT<br>FIE<br>MG/L | TY<br>ER<br>AL<br>LD<br>AS | SULFI<br>TOTA<br>(MG/                                    | L                | SULF<br>DIS<br>SOL<br>(MG               | -<br>VED<br>/L         | (MC                                     | OR,<br>S-<br>LVBD<br>S/L  |
|                | CACO3)                             | CACO   | B AS  | CA)               | AS M                               | G) AS   | NA)   |                 |                   | AS I                                    | K)                     | CAC                                      | 03                         | AS S   | 1)               | AS S                                    | 04)                    | AS                                      | CL)                       |
| NOV 1984<br>13 | 160                                |  | 31 40   | ,                 | 14                                 | 25  |   |                 | 0.9               | 2                                       | . 7                    |  | 127                        |  |                  | 4                                       | 0                      | 32                                      |                           |
| JAN 1985<br>22 | 190                                |  | 6 50  |                   | 15                                 | 32  |   |                 | 1                 |   | . 8                    |  | 151                        |  | . 5              |   | 9                      | 38                                      |                           |
| APR 23         |                                    |  |   |                   | 10                                 | 3.  | •   |                 |                   | 4.                                      |                        |  |                            | ,,,  |                  |   |                        | 36                                      |                           |
| JUN            |                                    |  | -   |                   |                                    |   |   |                 |                   |   |                        |  | 66                         |  |                  |   |                        |   |                           |
| 13<br>AUG      | 150                                |  | 38  | 3                 | 13                                 | 51  |   |                 | 2                 | 7.                                      | . 2                    |  | 157                        | <0   | .5               | 5                                       | 4                      | 50                                      | (                         |
| 08             |                                    |  | -   |                   |                                    |   |   |                 |                   |   |                        |  | 153                        |  |                  |   |                        |   |                           |
| DATE           | RII<br>Di<br>SOI                   | UO- S<br>DR,<br>IS-<br>LVED<br>G/L<br>F)           | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | TUEN<br>DI<br>SOI | OF STI-                            | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | SOLI<br>RESI<br>AT 1<br>DEG.<br>SUS<br>PEND | DUR<br>05<br>C, | GI<br>NITI<br>TO: | TRO-<br>BN,<br>RATB<br>TAL<br>G/L<br>N) |                        | AL<br>L                                  |                            | AL<br>/L   | AMMO<br>TO       | TRO-<br>EN,<br>ONIA<br>TAL<br>G/L<br>N) | ORG.<br>TO             | TRO-<br>BN,<br>ANIC<br>TAL<br>3/L<br>N) |                           |
| NOV 1984       |                                    |  | -20   |                   | 220                                |   |   | 2               | -                 |   |                        |  |                            |  |                  | -                                       |                        |   |                           |
| 13<br>JAN 1985 | 5                                  | 0.1  | 29  |                   | 260                                | 34  |   | 2               |                   | . 23                                    |                        | 07                                       |                            | 30   |                  | . 52                                    |                        | 0.68                                    |                           |
| 22<br>APR      |                                    | 0.3  | 32  |                   | 320                                | 11  | 1   | 2               | 0.                | . 80                                    | 0.                     | 10                                       | 0.                         | 90   | 1.               | . 50                                    |                        | 0.9                                     |                           |
| 23<br>JUN      |                                    |  |   |                   |                                    |   | 39  | 9               | 0.                | . 33                                    | 0.                     | 07                                       | 0.                         | 40   | 1.               | .50                                     | 18                     | 3                                       |                           |
| 13<br>AUG      |                                    | 0.6  | 30  |                   | 340                                | 23  | 1   | 2               | 0.                | . 45                                    | 0.                     | 15                                       | 0.                         | 60   | 9                | . 30                                    |                        | 2.7                                     |                           |
| 08             |                                    |  |   |                   |                                    |   | 1   | 9               | 0.                | .74                                     | 0.                     | 16                                       | 0.                         | 90   | 8                | . 50                                    |                        | 1.5                                     |                           |
| DATE           | GEN<br>MONI<br>ORGA<br>TOTA<br>(MO | ANIC   | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS N)         |                   | AL<br>L                            | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P)       | ARSE<br>TOT<br>(UG                          | AL<br>/L        | ERA<br>(UC        |   | TOT                    | OV-                                      |                            | AL<br>OV-<br>BLE<br>/L                                   | ERA<br>(UC       | JM,                                     | ERA<br>(UC             |   |                           |
| NOV 1984       |                                    |  |   |                   |                                    |   |   |                 |                   |   |                        |  |                            |  |                  |   |                        | 11.0                                    |                           |
| 13<br>JAN 1985 |                                    | 1.2  | 2.5   | 11                |                                    | 0.09  |   |                 |                   |   |                        |  |                            |  |                  |   |                        |   |                           |
| 22<br>APR      | 2                                  | 2.4  | 3.3   | 15                |                                    | 0.66  |   | 2               | •                 | 100                                     |                        | 50                                       |                            | 1  |                  | <1                                      |                        | <10                                     |                           |
| 23<br>JUN      | 20                                 | )  | 20  | 90                |                                    | 0.44  |   |                 |                   |   |                        |  |                            |  |                  |   |                        |   |                           |
| 13<br>AUG      | 12                                 | 2  | 13  | 56                |                                    | 3.40  |   | 1               | <                 | 100                                     |                        | 80                                       |                            | 6  |                  | 31                                      |                        | <10                                     |                           |
| 08             | 10                                 | )  | 11  | 48                |                                    | <0.01   |   |                 |                   |   |                        |  |                            |  |                  |   |                        |   |                           |

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RIO GRANDE DE LOIZA BASIN 50055250 RIO CAGUITAS AT HIGHWAY 30 AT CAGUAS, PR--Continued WATER-QUALITY DATA, WATER YRAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| NOV 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 13<br>JAN 1985 |   |   |   |   |  |   |   |                                     | -                          |  |
| 22<br>APR      | 1100  | 4   | 240   | 0.2   | <1   | 2   | 50  | <0.01                               | 9                          | 0.07   |
| 23             |   |   |   | 0.2   |  |   |   |                                     |                            |  |
| 13             | 660   | <1  | 180   | 0.4   | <1   | 2   | 250   | 0.63                                | 7                          | 1.1  |
| 08             |   |   |   |   |  |   |   |                                     |                            |  |

## RIO GRANDE DE LOIZA BASIN

## 50055400 RIO BAIROA NEAR CAGUAS, PR

## WATER-QUALITY RECORDS

|                  |      |  |  |                             |                                |                        |   |                        |                                |  |  | 07.   |  |  |                                    |   |           |                                      |           |   |
|------------------|------|--|--|-----------------------------|--------------------------------|------------------------|---|------------------------|--------------------------------|--|--|---|--|--|------------------------------------|---|-----------|--------------------------------------|-----------|---|
| DATE             |      | TIME                                   | FLO<br>INST<br>TANE<br>(CF:                            | AN-<br>OUS                  | CON<br>DUC<br>AND<br>(US/      | T-<br>E                | PH<br>(STA<br>AR<br>UNIT                          | ND-                    | TEMPI<br>ATUI<br>(DEG          | RR-  | CHEM-<br>TUR-<br>BID-<br>ITY<br>(NTU)  | OXY<br>D<br>SO                                      | CAL,<br>GEN,<br>IS-<br>LVED<br>G/L)      | (PI<br>CI<br>SAT                         | CAL,<br>CR-<br>CNT<br>CUR-<br>CON) | ICA<br>(HI<br>LEVE<br>(MG/              | GH<br>L)  | 0.7<br>UM-<br>(COL<br>100            | MF<br>S./ | KF AGAI<br>(COLS.<br>PER<br>100 ML)                 |
| OCT 1984         |      |  |  |                             |                                |                        |   |                        |                                |  |  |   |  |  |                                    |   |           |                                      |           |   |
| 25<br>JAN 1985   |      | 1300                                   | 7  | . 8                         |                                | 538                    | 7   | .40                    | 27                             | 7.0  |  | -   | 6.2                                      |  | 78                                 |   | 81        | 2000                                 | 000       | K130000   |
| 22<br>APR        |      | 1000                                   | 4  | . 1                         |                                | 444                    | 7   | .70                    | 19                             | 9.5  | 1.5                                    | i   | 8.5                                      |  | 92                                 |   | 32        | K6                                   | 400       | 990   |
| 19<br>JUN        |      | 1140                                   | 3  | . 0                         |                                | 481                    | 7   | .60                    | 25                             | 5.5  | 2.5                                    | i -   | 7.5                                      |  | 91                                 |   | 10        | 6                                    | 000       | K1000   |
| 13<br>JUL        |      | 1245                                   | 3  | . 0                         |                                | 419                    | 7   | .80                    | 27                             | 7.5  | 1.5                                    |   | 9.3                                      |  | 116                                |   | 10        |                                      | 440       | K500  |
| 29               |      | 1610                                   | 4  | . 9                         |                                | 512                    | 7   | . 30                   | 28                             | 3.5  | 22                                     |   | 2.2                                      |  | 28                                 |   | 110       | K2800                                | 000       | 280000  |
| DATE             |      | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | HARI<br>NESS<br>NONCA<br>WATI<br>TOT I<br>MG/L<br>CACC | S<br>ARB<br>ER<br>FLD<br>AS | CALC<br>DIS<br>SOL<br>(MG      | -<br>VED<br>/L         | MAG<br>SI<br>DI<br>SOL<br>(MG                     | UM,<br>S-<br>VED<br>/L | SODIU<br>DIS-<br>SOLVE<br>(MG/ | JM,<br>RD<br>L   | SODIU<br>AD-<br>SORP-<br>TION<br>RATIC | SO (M   | TAS-<br>IUM,<br>IS-<br>LVRD<br>G/L<br>K) | ALE<br>LINI<br>WAT<br>TOT<br>FIE<br>MG/L | TY<br>ER<br>AL<br>LD               | SULF<br>TOT<br>(MG<br>AS                | AL<br>/L  | SULF<br>DIS<br>SOL<br>(MG            | VED<br>/L | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL) |
| OCT 1984         |      |  |  |                             |                                |                        |   |                        |                                |  |  |   |  |  |                                    |   |           |                                      |           |   |
| 25<br>JAN 1985   |      | 150                                    |  | 6                           | 36                             |                        | 15  |                        | 37                             |  | 1                                      | 9   | 8.3                                      |  | 146                                |   |           | 2                                    | 8         | 48  |
| 22<br>APR        |      | 160                                    |  | 15                          | 38                             |                        | 16  |                        | 28                             |  | 1                                      |   | 4.0                                      |  | 146                                | <                                       | 0.5       | 1                                    | 8         | 42  |
| 19<br>JUN        |      |  |  |                             |                                |                        |   |                        |                                |  | -                                      | -   |  |  | 140                                |   |           |                                      |           |   |
| 13<br>JUL        |      | 150                                    |  | 14                          | 36                             |                        | 14  |                        | 26                             |  | 1                                      | - 4   | 1.2                                      |  | 134                                | <                                       | 0.5       | 1                                    | 8         | 41  |
| 29               |      |  |  |                             |                                |                        |   | +-                     |                                |  | D-                                     | -   |  |  | 151                                |   |           |                                      |           |   |
|                  | DATE | RI<br>D<br>SO<br>(M                    | UO-<br>DE,<br>IS-<br>LVED<br>G/L<br>F)                 | BOI<br>SOI<br>(MC           | ICA,<br>S-<br>LVKD<br>G/L<br>S | CON:<br>TUE<br>D<br>SO | IDS,<br>OF<br>STI-<br>NTS,<br>IS-<br>LVED<br>G/L) | 90<br>(T               | IDS,<br>IS-<br>LVED<br>ONS     | SOLID<br>RESID<br>AT 10<br>DEG.<br>SUS-<br>PENDE<br>(MG/ | UR<br>5<br>C, N                        | NITRO-<br>GEN,<br>ITRATE<br>TOTAL<br>(MG/L<br>AS N) | G<br>NIT<br>TO<br>(M                     | TRO-<br>EN,<br>RITE<br>TAL<br>G/L<br>N)  | NO2-<br>TO                         | TRO-<br>BN,<br>+NO3<br>FAL<br>G/L<br>N) | AMM<br>TO | TRO-<br>BN,<br>BONIA<br>OTAL<br>BG/L | ORG       | TRO-<br>3N,<br>ANIC<br>FAL<br>3/L<br>N)             |
| OCT              | 1984 |  |  |                             |                                |                        |   |                        |                                |  |  |   |  |  |                                    |   |           |                                      |           |   |
| 2                | 1985 |  | 0.2  |                             | 28                             |                        | 290   |                        | 6.0                            | 6  |  | 1.50  | 0  | .10                                      | 1                                  | .60                                     | 2         | .20                                  | ;         | 3.6   |
| 2:               | 2    |  | 0.3  | ,                           | 33                             |                        | 270   |                        | 3.0                            | 4  |  | 2.17  | 0  | .03                                      | 2                                  | . 20                                    | 0         | .12                                  | (         | .78   |
| APR<br>19<br>JUN | 9    |  |  |                             |                                |                        |   |                        |                                | 8  |  | 1.54  | 0  | .06                                      | 1                                  | .60                                     | 0         | .14                                  | (         | .26   |
|                  | 3    |  | 0.3  |                             | 29                             |                        | 250   |                        | 2.0                            | 4  |  | 1.28  | 0  | .02                                      | 1                                  | .30                                     | 0         | .08                                  | (         | 0.92  |
|                  | 9    |  |  |                             |                                |                        |   |                        |                                | 20   |  | 0.89  | 0  | .11                                      | 1.                                 | .00                                     | 3         | . 20                                 | :         | 3.3   |
|                  |      |  |  |                             |                                |                        |   |                        |                                |  |  |   |  |  |                                    |   |           |                                      |           |   |

K = non-ideal count

RIO GRANDE DE LOIZA BASIN

50055400 RIO BAIROA NEAR CAGUAS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | NITRO-<br>GEN, AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS N)             | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS NO3)                     | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P)             | ARSENIC<br>TOTAL<br>(UG/L<br>AS AS)        | BARIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS BA) | BORON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS B) | CADMIUM<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CD) | CHRO-<br>MIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CR) | COPPER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CU)      |
|----------------|---|---|---|---|--|---|---|---|--|--|
| OCT 1984       |   |   |   |   |  |   |   |   |  |  |
| 25<br>JAN 1985 | 5.8   | 7.4   | 33  | 2.20  |  |   |   |   |  | -  |
| 22<br>APR      | 0.9   | 3.1   | 14  | 0.69  | 3  | 100   | 30  | 1   | <1   | <10  |
| 19<br>JUN      | 0.4   | 2.0   | 8.9   | 0.65  |  |   |   |   |  |  |
| JUL 13         | 1.0   | 2.3   | 10  | 0.51  | 3  | 100   | 30  | <1  | 3  | <10  |
| 29             | 6.5   | 7.5   | 33  | <0.01   |  |   |   |   |  |  |
| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE)               | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN)                     | PHENOLS<br>TOTAL<br>(UG/L)                                     | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
| OCT 1984<br>14 |   |   |   |   |  |   |   |   |  |  |
| 25<br>JAN 1985 |   |   |   |   |  |   |   |   |  |  |
| 22<br>APR      | 380   | <1  | 150   | <0.1  | <1   | <1  | 30  | <0.01   | 8  | 0.05   |
| 19<br>JUN      |   |   |   | <0.1  |  |   |   |   |  |  |
| 13<br>JUL      | 400   | 4   | 100   | 0.1   | <1   | <1  | 20  | <0.01   | 2  | 0.05   |
| 29             |   |   |   |   |  |   |   |   |  |  |
|                |   |   |   |   |  |   |   |   |  |  |

#### 50055650 QUEBRADA CAIMITO NEAR JUNCOS, PR

LOCATION.--Lat 18°14'08", long 65°52'12", Hydrologic Unit 21010005, at upstream side of bridge on Highway 31, 0.5 mi (0.8 km) upstream from Rio Gurabo, and 3.5 mi (5.6 km) east of Juncos.

DRAINAGE AREA. -- 0.82 sq mi (2.12 sq km).

#### WATER-DISCHARGE RECORDS

PERIOD OF RECORD .-- January 1984 to current year.

GAGE .-- Water-stage recorder. Elevation of gage is 310 ft (95 m), from topographic map.

REMARKS .-- No estimated daily discharges during water year. Records poor.

EXTREMES FOR PERIOD OF RECORD. -- Maximum discharge, 678 cu ft/s (19.2 cu m/s), May 18, 1985, gage height, 12.07 ft (3.679 m), from floodmark, from rating curve extended above 100 cu ft/s (2.83 cu m/s) on basis of step-backwater analysis; minimum discharge, no flow many days in each year.

EXTREMES FOR CURRENT YEAR .-- Peak discharges greater than base discharge of 150 cu ft/s (4.25 cu m/s) and maximum (\*):

|         |      | Discha    | rge      | Gage h | eight |             |      | Disch     | arge     | Gage h | eight |
|---------|------|-----------|----------|--------|-------|-------------|------|-----------|----------|--------|-------|
| Date    | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   | Date        | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   |
| Oct. 14 | 0515 | 228       | 6.46     | 9.79   | 2.984 | May 17      | 2145 | 200       | 5.66     | 9.60   | 2.926 |
| Nov. 6  | 0415 | 178       | 5.04     | 9.48   | 2.890 | May 18      | 0530 | *678      | 19.2     | *12.07 | 3.679 |
| May 15  | 1415 | 344       | 9.74     | 10.48  | 3.194 | - ALDER 124 |      |           |          |        |       |

DISCHARGE. IN CUBIC FERT PER SECOND. WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

No flow many days.

|        |        | DISCHARGE,  | IN CUBIC | FRET PER | MEAN |         |      | KR 1984 | TO SEPTEMBE | R 1985 |       |       |  |
|--------|--------|-------------|----------|----------|------|---------|------|---------|-------------|--------|-------|-------|--|
| DAY    | OCT    | NOV         | DEC      | JAN      | FEB  | MAR     | APR  | MAY     | JUN         | JUL    | AUG   | SEP   |  |
| 1      | .33    | .48         | .43      | .56      | .10  | .15     | .14  | .06     | .25         | .00    | .01   | .00   |  |
| 2      | .50    | 1.0         | 1.4      | 2.1      | .07  | .04     | .10  | .12     | .22         | .00    | 1.9   | .00   |  |
| 3      | 1.1    | 12          | .54      | .00      | .05  | .00     | .06  | .10     | .20         | .00    | 1.8   | .00   |  |
| 4      | .51    | 12          | .42      | .05      | .04  | .00     | .03  | .08     | .19         | .00    | .00   | .00   |  |
| 5      | .44    | 31          | .38      | .04      | .02  | .07     | .00  | .07     | .17         | .00    | .00   | .00   |  |
|        |        |             |          |          |      |         |      |         |             |        |       |       |  |
| 6      | . 45   | 68          | .33      | .04      | .01  | .05     | .00  | .07     | . 15        | .00    | .00   | .00   |  |
| 7      | . 33   | 41          | .33      | .07      | .00  | .14     | .01  | .05     | .13         | .00    | .00   | .00   |  |
| 8      | . 29   | 17          | . 33     | .09      | .00  | . 21    | .00  | .04     | . 12        | .00    | .00   | .00   |  |
| 9      | 1.8    | 12          | .34      | .11      | .00  | . 16    | .01  | .03     | .11         | .00    | .00   | .86   |  |
| 10     | 1.6    | 6.3         | .33      | .16      | .00  | .06     | .00  | .02     | .09         | .00    | .00   | 1.3   |  |
| 11     | 1.2    | 3.4         | .31      | .23      | .00  | .00     | .00  | .02     | .08         | .00    | .00   | 1.1   |  |
| 12     | .86    | 1.8         | .29      | .23      | .00  | .00     | .00  | .08     | .05         | .00    | .00   | 4.2   |  |
| 13     | .64    | 1.1         | .25      | .21      | .00  | .00     | .01  | .04     | .03         | .00    | .00   | 18    |  |
| 14     | 16     | 2.6         | .23      | .21      | .00  | .00     | .00  | .64     | .00         | .00    | .00   | 5.8   |  |
|        |        |             |          |          |      |         |      |         |             | .28    | .00   | 2.4   |  |
| 15     | 2.8    | 2.8         | . 24     | .20      | .00  | .00     | .01  | 57      | .00         | .40    | .00   | 4.4   |  |
| 16     | 1.1    | 1.7         | .33      | .20      | .00  | .00     | .20  | 15      | .00         | 1.2    | .00   | 1.3   |  |
| 17     | .80    | 1.7         | . 46     | .20      | .00  | .00     | .12  | 28      | .00         | 1.4    | .00   | .70   |  |
| 18     | .64    | 1.2         | .28      | .20      | .01  | .03     | .06  | 129     | .00         | .24    | .00   | . 39  |  |
| 19     | .50    | 1.0         | . 27     | .17      | .00  | .00     | .02  | 16      | .00         | .04    | .00   | . 27  |  |
| 20     | .46    | .91         | .25      | . 16     | .00  | .00     | .00  | 4.7     | .00         | 2.7    | .00   | . 19  |  |
| 21     | .45    | .79         | .23      | .14      | .00  | .00     | .00  | 2.0     | .00         | .87    | .00   | .15   |  |
| 22     | .37    | .71         | .24      | .14      | .00  | .00     | .00  | 1.1     | .00         | .32    | .00   | .10   |  |
| 23     | .32    | .77         | .24      | .13      | .00  | .00     | 5.2  | .74     | .00         | .27    | .00   | .29   |  |
| 24     | .26    | .72         | .30      | .13      | .00  | .00     | .98  | .57     | .00         | .29    | .00   | .75   |  |
| 25     | .53    | .70         | .34      | .13      | .00  | .00     | .32  | .48     | .00         | .18    | .00   | 6.1   |  |
|        |        |             |          |          | .00  | .00     |      | . 40    | .00         | .10    | .00   | 0.1   |  |
| 26     | .33    | .62         | .29      | . 14     | .00  | .00     | . 19 | . 42    | .00         | .11    | .00   | 1.9   |  |
| 27     | .28    | .52         | .38      | .12      | .11  | .00     | .13  | . 37    | .00         | .00    | .00   | 1.0   |  |
| 28     | .38    | .48         | .41      | .12      | .60  | .07     | .09  | .33     | .00         | .05    | .00   | 1.1   |  |
| 29     | .49    | .42         | . 29     | .10      |      | 6.8     | .08  | .33     | .00         | .04    | .00   | .76   |  |
| 30     | . 32   | .41         | .38      | .09      |      | .41     | .07  | .32     | .00         | .00    | .00   | .62   |  |
| 31     | . 25   |             | .40      | .08      |      | . 25    |      | .28     |             | .00    | .00   |       |  |
| TOTAL  | 36.33  | 225.13      | 11.24    | 6.55     | 1.01 | 8.44    | 7.83 | 258.06  | 1.79        | 7.99   | 3.71  | 49.28 |  |
| MEAN   | 1.17   | 7.50        | .36      | .21      | .04  | .27     | .26  | 8.32    | .06         | . 26   | .12   | 1.64  |  |
| MAX    | 16     | 68          | 1.4      | 2.1      | .60  | 6.8     | 5.2  | 129     | .25         | 2.7    | 1.9   | 18    |  |
| MIN    | . 25   | .41         | .23      | .00      | .00  | .00     | .00  | .02     | .00         | .00    | .00   | .00   |  |
| CFSM   | 1.43   | 9.15        | .44      | . 26     | .04  | .33     | .32  | 10.1    | .07         | .32    | .15   | 2.00  |  |
| IN.    | 1.65   | 10.21       | .51      | .30      | .05  | .38     | .36  | 11.71   | .08         | .36    | .17   | 2.24  |  |
| AC-FT  | 72     | 447         | 22       | 13       | 2.0  | 17      | 16   | 512     | 3.6         | 16     | 7.4   | 98    |  |
| WTR YR | 1985 T | OTAL 617.30 | 6 MEAN   | 1.69     | MAX  | 129 MIN | 00.  | CFSM    | 2.06 IN.    | 28.01  | AC-FT | 1220  |  |

### RIO GRANDE DE LOIZA BASIN

## 50055650 QUEBRADA CAIMITO NEAR JUNCOS, PR--Continued

## WATER QUALITY RECORDS

PERIOD OF RECORD .-- WATER YEARS JUNE 1984 TO CURRENT YEAR

| DATE | TIME    | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE   | TIME   | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|------|---------|---------------------------------------|--------------------------------------|-----------------------------|--------|--------|---------------------------------------|--------------------------------------|-----------------------------|
| DEC, | 04 0955 | 0.5                                   | 378                                  | 24.5                        | APR, O | 1 0900 | 0.2                                   | 3920                                 | 22.0                        |
| JAN, | 11 1047 | 0.3                                   | 373                                  | 25.0                        | SEP, C | 3 1148 | 0.09                                  | 359                                  | 34.5                        |

### 50056400 RIO VALENCIANO NEAR JUNCOS, PR

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. Elevation of gage is 320 ft (98 m), from topographic map.

REMARKS. -- Estimated daily discharges: Nov. 2-9 and June 14 to July 2. Records fair except those for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--14 years (1972-85), 50.7 cu ft/s (1.436 cu m/s), 41.98 in/yr (1,066 mm/yr), 36,730 acre-ft/yr (45.3 cu hm/yr); median of yearly mean discharges, 51 cu ft/s (1.44 cu m/s), 36,900 acre-ft/yr (45 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD. --Maximum discharge, 25,700 cu ft/s (728 cu m/s), May 18, 1985, gage height, 21.30 ft (6.492 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 discharge, 2.0 cu ft/s (0.057 cu m/s), May 11, 1984, gage height, 0.13 ft (0.040 m).

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

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

|        |      | Disch     | arge     | Gage h | eight |          |      | Disch     | arge     | Gage h | eight |
|--------|------|-----------|----------|--------|-------|----------|------|-----------|----------|--------|-------|
| Date   | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   | Date     | Time | (cu ft/s) | (ou m/s) | (ft)   | (m)   |
| May 15 | 1415 | 11,800    | 334      | 14.25  | 4.343 | Sept. 12 | 2015 | 4,150     | 118      | 8.38   | 2.554 |
| May 10 | OFAE | *25 700   | 720      | +91 20 | 6 402 |          |      | 3.5       |          |        |       |

DISCHARGE, IN CUBIC FEET PER SECOND. WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

Minimum discharge, 8.5 cu ft/s (0.241 cu m/s), Mar. 25, 26.

|        |      | DISCHAR   | CGB, IN | CUBIC FEET F |      |        | ALUES |      | BEK 1964 | IO SEPI | EMBER 1905 |         |       |
|--------|------|-----------|---------|--------------|------|--------|-------|------|----------|---------|------------|---------|-------|
| DAY    | OCT  | NOV       | DEC     | JAN          | FEB  | MAR    | 2     | APR  | MAY      | JUN     | JUL        | AUG     | SEP   |
| 1      | 44   | 93        | 30      | 35           | 17   | 18     |       | 23   | 15       | 24      | 13         | 18      | 18    |
| 2      | 43   | 325       | 45      |              | 14   | 12     |       | 18   | 14       | 23      |            | 22      | 17    |
| 3      | 65   |           | 41      |              | 13   | 13     |       | 14   | 15       | 21      |            | 18      | 17    |
| 4      | 46   | 330       | 31      | 31           | 13   | 11     |       | 13   | 14       | 20      |            | 16      | 14    |
| 5      | 42   | 860       | 29      |              | 12   | 13     |       | 12   | 15       | 21      |            | 15      | 17    |
| 6      | 59   | 920       | 28      | 29           | 12   | 16     |       | 13   | 17       | 20      | 11         | 19      | 13    |
| 7      | 68   | 470       | 26      | 22           | 11   | 52     |       | 16   | 13       | 20      |            | 27      | 12    |
| 8      | 53   |           | 25      | 21           | 11   | 36     |       | 14   | 13       | 25      |            | 20      | 86    |
| 9      | 138  | 116       | 30      |              | 11   | 17     |       | 14   | 15       | 21      |            | 20      | 43    |
| 10     | 121  | 112       | 28      | 20           | 11   | 14     |       | 11   | 13       | 20      | 11         | 16      | 18    |
| 11     | 80   | 85        | 205     | 20           | 12   | 13     |       | 25   | 15       | 18      | 13         | 15      | 22    |
| 12     | 70   | 74        | 216     | 18           | 11   | 13     |       | 26   | 30       | 19      | 16         | 15      | 631   |
| 13     | 96   | 67        | 59      | 18           | 10   | 12     |       | 17   | 21       | 17      | 12         | 31      | 554   |
| 14     | 85   | 93        | 37      | 17           | 12   | 11     |       | 14   | 245      | 17      | 11         | 20      | 98    |
| 15     | 80   | 93        | 32      | 16           | 13   | 9.8    | 1     | 21   | 2250     | 16      | 49         | 17      | 58    |
| 16     | 62   | 60        | 28      | 16           | 12   | 10     |       | 27   | 284      | 15      |            | 16      | 40    |
| 17     | 53   | 57        | 30      | 16           | 12   | 11     |       | 21   | 751      | 14      | 93         | 15      | 30    |
| 18     | 45   | 54        | 23      | 16           | 13   | 26     |       | 15   | 3910     | 14      | 29         | 15      | 25    |
| 19     | 41   | 47        | 24      | 16           | 13   | 13     |       | 15   | 180      | 13      | 21         | 17      | 20    |
| 20     | 51   | 43        | 23      | 16           | 21   | 11     |       | 12   | 84       | 13      | 148        | 14      | 21    |
| 21     | 40   | 40        | 22      | 16           | 13   | 10     |       | 12   | 63       | 12      |            | 17      | 20    |
| 22     | 38   | 39        | 21      | 16           | 12   | 10     |       | 13   | 51       | 12      |            | 16      | 20    |
| 23     | 36   | 46        | 21      | 15           | 12   | 10     |       | 530  | 43       | 13      | 21         | 14      | 24    |
| 24     | 34   | 37        | 24      | 15           | 12   | 9.3    |       | 144  | 41       | 12      |            | 13      | 31    |
| 25     | 61   | 35        | 31      | 15           | 12   | 9.1    |       | 83   | 40       | 12      | 20         | 16      | 145   |
| 26     | 44   | 36        | 26      | 18           | 11   | 11     |       | 46   | 36       | 11      |            | 14      | 42    |
| 27     | 38   | 35        | 24      | 16           | 22   | 10     |       | 26   | 32       | 12      |            | 159     | 31    |
| 28     | 44   | 33        | 27      | 16           | 44   | 10     |       | 20   | 31       | 11      |            | 54      | 46    |
| 29     | 35   | 35        | 21      | 15           |      | 509    |       | 18   | 28       | 11      |            | 18      | 52    |
| 30     | 31   | 33        | 26      | 14           |      | 53     |       | 17   | 27       | 11      |            | 20      | 37    |
| 31     | 32   | 777       | 21      | 14           |      | 48     |       |      | 25       |         | 16         | 15      |       |
| TOTAL  | 1775 | 5788      | 1254    | 613          | 392  | 1021.2 |       | 1250 | 8331     | 488     |            | 722     | 2202  |
| MBAN   | 57.3 | 193       | 40.5    | 19.8         | 14.0 | 32.9   |       | 41.7 | 269      | 16.3    |            | 23.3    | 73.4  |
| MAX    | 138  | 1350      | 216     | 46           | 44   | 509    |       | 530  | 3910     | 25      | 148        | 159     | 631   |
| MIN    | 31   | 33        | 21      | 14           | 10   | 9.1    |       | 11   | 13       | 11      | 10         | 13      | 12    |
| CFSM   | 3.49 | 11.8      | 2.47    | 1.21         | .85  | 2.01   |       | 2.54 | 16.4     | .99     | 1.66       | 1.42    | 4.48  |
| IN.    | 4.03 | 13.13     | 2.84    | 1.39         | .89  | 2.32   |       | 2.84 | 18.90    | 1.11    | 1.92       | 1.64    | 4.99  |
| AC-FT  | 3520 | 11480     | 2490    | 1220         | 778  | 2030   |       | 2480 | 16520    | 968     | 1680       | 1430    | 4370  |
| CAL YR |      |           | 34.9    | MBAN 54.5    |      | 1350   | MIN   | 4.2  | CFSM     | 3.32    | IN. 45.2   |         | 39540 |
| WTR YR | 1985 | TOTAL 246 | 82.2    | MBAN 67.6    | MAX  | 3910   | MIN   | 9.1  | CFSM     | 4.12    | IN. 55.9   | 9 AC-FT | 48960 |

### RIO GRANDE DE LOIZA BASIN

## 50056400 RIO VALENCIANO NEAR JUNCOS, PR--Continued

### WATER QUALITY RECORDS

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

| DATE    | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE   | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|---------|------|---------------------------------------|--------------------------------------|-----------------------------|--------|------|---------------------------------------|--------------------------------------|-----------------------------|
| DRC, 05 | 1515 | 29                                    | 265                                  | 25.0                        | MAR. O | 1113 | 11                                    | 298                                  | 24.0                        |
| JAN, 11 | 1212 | 20                                    | 250                                  | 23.5                        | APR, O | 1300 | 14                                    | 321                                  | 28.0                        |
| FRB, 12 | 1020 | 11                                    | 294                                  | 21.5                        | SEP, O | 0958 | 17                                    | 245                                  | 26.5                        |

#### 50056900 QUEBRADA MAMEY NEAR GURABO, PR

LOCATION.--Lat 18°14'57", long 65°56'44", Hydrologic Unit 21010005, at left downstream side of bridge on Highway 189, 1.9 mi (3.0 km) southeast of Gurabo plaza, and 2.1 mi (3.4 km) northwest of Juncos plaza.

DRAINAGE AREA .-- 2.30 sq mi (5.96 sq km).

#### WATER-DISCHARGE RECORDS

PERIOD OF RECORD .-- December 1983 to current year.

GAGE .-- Water-stage recorder. Elevation of gage is 180 ft (55 m), from topographic map.

REMARKS. -- Estimated daily dicharges: July 16-23, 29-31 and Sept. 14-23. Records fair except those for estimated daily discharges, which are poor.

EXTREMES FOR PERIOD OF RECORD. --Maximum discharge, 1,690 cu ft/s (47.9 cu m/s), May 15, 1985, gage height, 9.42 ft (2.871 m), from floodmark, from rating curve extended above 400 cu ft/s (11.3 cu m/s) on basis of indirect measurement of peak flow and step-backwater analysis; minimum discharge, 0.24 (0.007 cu m/s), Aug. 30, 1984, gage height, 2.84 ft (0.866 m).

EXTREMES FOR CURRENT YEAR .-- Peak discharges greater than base discharge of 400 cu ft/s (11.3 cu m/s) and maximum (\*):

|         |      | Disch     | arge     | Gage h | eight |         |      | Discha      | arge     | Gage h | eight        |
|---------|------|-----------|----------|--------|-------|---------|------|-------------|----------|--------|--------------|
| Date    | Time | (ou ft/s) | (cu m/s) | (ft)   | (m)   | Date    | Time | (cu ft/s)   | (cu m/s) | (ft)   | ( <b>m</b> ) |
| Oct. 14 | 0630 | 434       | 12.3     | 6.53   | 1.990 | Mar. 29 | 0245 | 478         | 13.5     | 6.68   | 2.036        |
| Oct. 30 | 1500 | 434       | 12.3     | 6.53   | 1.990 | May 15  | 1400 | *1,690      | 47.9     | *9.42  | 2.871        |
| Nov. 2  | 2145 | 454       | 12.8     | 6.60   | 2.012 | May 17  | 1145 | 1,440       | 40.8     | 8.95   | 2.728        |
| Nov. 3  | 0130 | 565       | 16.0     | 6.95   | 2.118 | May 18  | 0645 | 1,190       | 33.7     | 8.43   | 2.569        |
| Now 5   | 1630 | 561       | 15 0     | 6 04   | 9 115 | 100     |      | 40.44.2.2.2 |          |        |              |

Minimum discharge, 0.26 ou ft/s (0.007 ou m/s), May 9-11.

REVISIONS. -- The maximum discharge for 1984 water year has been revised to 1,100 cu ft/s, June 10, 1984, gage height 8.11 ft.

|          |      | D     | ISCHARGE, | IN   | CUBIC | FEET | PER | SECOND,<br>MEAN |       | R YEAR | CTC  | OBER | 1984 | то   | SEPTEMBI | RR 1985 |       |        |
|----------|------|-------|-----------|------|-------|------|-----|-----------------|-------|--------|------|------|------|------|----------|---------|-------|--------|
| DAY      | oc   | T     | NOV       | DEC  | ;     | JAN  |     | FEB             | MAR   |        | APR  |      | MAY  |      | JUN      | JUL     | AUG   | SEP    |
| 1        | 1.   | 3     | 3.0       | 1.5  |       | 2.1  |     | .76             | 1.3   |        | .95  |      | . 36 |      | .81      | . 68    | .74   | .59    |
| 2        | 1.   |       | 48        | 4.8  |       | 9.9  |     | .73             | .86   |        | .83  |      | .35  |      | .80      | . 67    | .73   | .61    |
| 3        | 1.   |       | 16        | 2.1  |       | 1.6  |     | .69             | .81   |        | .86  |      | .35  |      | .80      | .67     | .68   | . 55   |
| 4        | 1.   |       | 60        | 1.7  |       | 1.4  |     | .66             | .84   |        | .74  |      | .32  |      | .78      | .67     | .66   | . 47   |
| 5        | 14   |       | 11        | 1.6  |       | 1.3  |     | .62             | .88   |        | .72  |      | .32  |      | .77      | .61     | .76   | .51    |
| 6        | 3.   | 0 1   | 40        | 1.6  |       | 1.5  |     | .61             | 1.0   |        | .73  |      | .32  |      | .76      | .56     | .59   | .63    |
| 7        | 1.   | 5     | 54        | 1.5  |       | 1.6  |     | .60             | 1.1   |        | .70  |      | .30  |      | .73      | .57     | .48   | .51    |
| 8        | 1.   | 3     | 10        | 1.5  |       | 1.3  |     | . 59            | 1.1   |        | .68  |      | .29  |      | .75      | . 56    | .43   | 2.1    |
| 9        | 16   |       | 9.4       | 1.6  |       | 1.2  |     | .58             | .88   |        | .66  |      | . 28 |      | .73      | .55     | .40   | 1.7    |
| 10       | 6.   | 9     | 18        | 1.6  |       | 1.1  |     | .57             | .87   |        | .61  |      | . 28 |      | .70      | .49     | .40   | .65    |
| 11       | 2.   |       | 4.1       | 4.7  |       | 1.1  |     | .56             | .86   |        | .58  |      | . 29 |      | .68      | .47     | .38   | .58    |
| 12       | 1.   |       | 2.9       | 3.8  |       | 1.0  |     | . 55            | .87   |        | .57  |      | .36  |      | .67      | .47     | .42   | 17     |
| 13       | 3.   | 4     | 2.5       | 1.5  |       | .96  |     | .53             | . 86  |        | .60  |      | .35  |      | .64      | . 46    | .84   | 34     |
| 14       | 43   |       | 4.2       | 1.4  |       | .95  |     | .53             | . 87  |        | . 56 |      | . 6  |      | .61      | . 47    | .52   | 3.1    |
| 15       | 3.   | 7     | 4.0       | 1.3  |       | .93  |     | .59             | . 87  |        | .61  | 163  |      |      | .60      | 4.6     | .47   | 1.7    |
| 16       | 2.   | 9     | 2.3       | 1.7  |       | .89  |     | .61             | .91   |        | .82  | 11   |      |      | .63      | 1.2     | .43   | 1.2    |
| 17       | 11   |       | 2.5       | 1.4  |       | .89  |     | .62             | . 95  |        | .62  | 164  |      |      | .63      | .88     | .39   | .90    |
| 18       | 4.   |       | 2.2       | 1.3  |       | .86  |     | .74             | 1.1   |        | .55  | 239  |      |      | .63      | .80     | .44   | .75    |
| 19       | 2.   |       | 2.0       | 1.3  |       | . 82 |     | .72             | .92   |        | . 49 |      | . 9  |      | .64      | .90     | . 44  | .60    |
| 20       | 1.   | 7     | 1.9       | 1.3  |       | .79  |     | .74             | .81   |        | .48  | 3    | . 3  |      | .62      | 4.4     | .38   | .63    |
| 21       | 13   |       | 1.9       | 1.3  |       | .78  |     | .72             | .79   |        | .46  |      | . 1  |      | .68      | 1.1     | .85   | .60    |
| 22       | 3.   |       | 1.9       | 1.2  |       | .77  |     | .73             | .78   |        | .43  |      | . 6  |      | .66      | .80     | .51   | .60    |
| 23       | 1.   |       | 2.0       | 1.3  |       | .78  |     | .70             | .79   | 35     |      |      | . 4  |      | .63      | .82     | .43   | .72    |
| 24       | 1.0  | 6     | 1.9       | 1.7  |       | .73  |     | .74             | .79   |        | . 6  |      | . 2  |      | .64      | .81     | .40   | 2.0    |
| 25       | 14   |       | 1.9       | 1.6  |       | .74  |     | .77             | .75   | 1      | . 5  | 1    | . 1  |      | .65      | .82     | .38   | 27     |
| 26       | 2.   |       | 2.1       | 1.4  |       | .86  |     | .78             | .77   |        | .66  |      | .0   |      | .70      | .81     | .47   | 1.8    |
| 27       | 2.0  | 0     | 1.8       | 1.6  |       | .79  |     | 1.0             | . 78  |        | .51  |      | .99  |      | .66      | .73     | 6.5   | 2.0    |
| 28       | 12   |       | 1.8       | 1.4  |       | .80  | 7   | 7.0             | .98   |        | .43  |      | .94  |      | .62      | .81     | 1.1   | 4.4    |
| 29<br>30 | 3.9  | 9     | 1.7       | 1.3  |       | .75  |     |                 | 82    |        | . 41 |      | . 89 |      | .60      | .84     | .68   | 1.8    |
| 31       | 4.   | 4     |           | 1.8  |       | .74  |     |                 | 1.8   |        | .39  |      | .86  |      | .60      | .80     | .54   |        |
| TOTAL    | 226. | 5 6   | 16.5      | 56.3 | 4     | 0.67 | 26  | 5.04 1          | 10.79 | 57     | .75  | 612  | 88   | 2    | 0.42     | 29.79   | 22.95 | 110.80 |
| MBAN     | 7.3  |       |           | 1.82 |       | 1.31 |     | .89             | 3.57  |        | .92  |      | 9.8  | -    | .68      | .96     | .74   | 3.69   |
| MAX      | 4    |       | 140       | 4.8  |       | 9.9  |     | 7.0             | 82    | •      | 35   |      | 239  |      | .81      | 4.6     | 6.5   | 34     |
| MIN      | 1.:  |       | 1.5       | 1.2  |       | .73  |     | .53             | .75   |        | . 39 |      | . 28 |      | .60      | .46     | .38   | . 47   |
| CFSM     | 3.1  |       | 8.96      | .79  |       | .57  |     | .39             | 1.55  |        | .83  |      | .61  |      | .30      | .42     | .32   | 1.60   |
| IN.      | 3.60 |       | 9.97      | .91  |       | .66  |     | .40             | 1.79  |        | .93  |      | .91  |      | .33      | .48     | .37   | 1.79   |
| AC-FT    | 449  |       | 1220      | 112  |       | 81   |     | 50              | 220   |        | 115  |      | 220  |      | 41       | 59      | 46    | 220    |
| CAL YR   | 1984 | TOTAL | 1521.3    | 6    | MBAN  | 4.1  | 6   | MAX             | 140   | MIN    | .28  | CF   | SM : | 1.81 | IN.      | 24.61   | AC-FT | 3020   |
| WTR YR   |      |       | 1930.3    |      | MBAN  | 5.2  |     |                 | 239   | MIN    | . 28 |      | SM : |      | IN.      | 31.22   | AC-FT | 3830   |

#### RIO GRANDE DE LOIZA BASIN

## 50056900 QUEBRADA MAMEY NEAR GURABO, PR--Continued

## WATER QUALITY RECORDS

PERIOD OF RECORD .-- WATER YEARS MARCH 1984 TO CURRENT YEAR

| DATE    | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE    | TIME     | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|---------|------|---------------------------------------|--------------------------------------|-----------------------------|---------|----------|---------------------------------------|--------------------------------------|-----------------------------|
| DEC. 06 | 1320 | 1.6                                   | 608                                  | 25.5                        | MAR. 05 | 1138     | 0.8                                   | 721                                  | 23.5                        |
| JAN, 15 | 0922 | 1.0                                   | 608                                  | 20.5                        | SEP. 04 | 1125     | 0.5                                   | 599                                  | 27.5                        |
| FEB, 13 | 1205 | 0.6                                   | 696                                  | 23.0                        |         | 2.400.00 |                                       |                                      |                             |

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 Rio Grande de Loiza.

DRAINAGE ARKA .-- 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. Elevation of gage is 136.58 ft (41.63 m) above mean sea level.

REMARKS .-- Estimated daily discharges: Oct. 1-7, 12, 13, 17, 21, 22 and Nov. 10-15, 17, 18, 20-23. Records fair except those for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--26 years (1960-85), 133 cu ft/s (3.766 cu m/s), 30.00 in/yr (762 mm/yr), 96,360 acre-ft/yr (119 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 Rio Gurabo and Rio Valenciano, 7.0 mi (11.3 km) upstream, adjusted for channel storage and flow from intervening area; minimum discharge, 4.5 cu ft/s (0.127 cu m/s), Feb. 21, 25, 1968.

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

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

|      |   |   |      | Disch     | arge     | Gage h | eight      |       |    |      | Disch     | arge     | Gage h | eight |
|------|---|---|------|-----------|----------|--------|------------|-------|----|------|-----------|----------|--------|-------|
| Dat  | e |   | Time | (cu ft/s) | (cu m/s) | (ft)   | <b>(=)</b> | Date  |    | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   |
| Oct. | 1 | 4 | 0900 | 5,890     | 167      | 12.25  | 3.734      | May   | 15 | 1630 | 22,000    | 623      | 20.09  | 6.123 |
| Nov. |   | 3 | 0730 | 5,170     | 146      | 11.39  | 3.472      | May   | 16 | 0015 | 6,810     | 184      | 12.91  | 3.935 |
| Nov. |   | 5 | 1915 | 7,560     | 214      | 13.94  | 2.249      | May   | 17 | 1400 | 5,810     | 164      | 12.16  | 3.706 |
| Nov. |   | 6 | 1515 | 6,090     | 172      | 12.49  | 3.807      | May   | 18 | 0800 | *38,200   | 1,080    | *23.35 | 7.117 |
| Mar. | 2 | 9 | 0645 | 4,940     | 140      | 11.10  | 3.383      | Sept. | 12 | 2345 | 6,050     | 171      | 12.44  | 3.792 |
| Apr. | 2 | 3 | 1900 | 3,870     | 110      | 9.68   | 2.950      | Sept. | 13 | 1300 | 3,210     | 90.9     | 8.71   | 2.655 |

DISCHARGE. IN CURIC PRET DER SECOND. WATER VEAR OCTORER 1984 TO SEPTEMBER 1985

Minimum discharge, 15 cu ft/s (0.425 cu m/s), Mar. 26.

|                  |       | DISC    | HARGE, IN | CORIC        | <b>FRET</b> | PKR | MEAN |            | R YKA<br>ALUBS |      | BKK 1984 | TO SEPT | KMBK | K 1980 |                |                 |
|------------------|-------|---------|-----------|--------------|-------------|-----|------|------------|----------------|------|----------|---------|------|--------|----------------|-----------------|
| DAY              | oc    | r nov   | V DE      | C            | JAN         |     | FRB  | MAR        |                | APR  | MAY      | JUN     |      | JUL    | AUG            | SEP             |
| 1                | 6     | 5 168   | 5 7       | 2            | 63          |     | 32   | 99         |                | 78   | 35       | 51      |      | 24     | 29             | 56              |
| 2                | 5     |         |           |              | 287         |     | 33   | 48         |                | 49   | 33       | 49      |      | 27     | 55             | 45              |
| 3                | 120   |         |           |              | 96          |     | 29   | 36         |                | 40   | 40       | 49      |      | 25     | 39             | 41              |
| 4                | 80    |         |           |              | 79          |     | 27   | 32         |                | 35   | 36       | 47      |      | 27     | 31             | 32              |
| 5                | 96    |         |           |              | 68          |     | 26   | 28         |                | 31   | 33       | 45      |      | 22     | 28             | 82              |
| 6                | 118   |         |           |              | 97          |     | 25   | 21         |                | 30   | 38       | 42      |      | 23     | 27             | 50              |
| 7                | 78    |         |           |              | 88          |     | 25   | 77         |                | 32   | 33       | 41      |      | 21     | 38             | 30              |
| 8                | 41    | 7 599   | 9 5       | 9            | 60          |     | 24   | 152        |                | 30   | 29       | 43      |      | 22     | 31             | 208             |
| 9                | 486   | 5 510   | 5         | В            | 52          |     | 24   | 79         |                | 29   | 28       | 43      |      | 23     | 30             | 247             |
| 10               | 430   | 320     | 9         | 1            | 51          |     | 24   | 47         |                | 27   | 28       | 42      |      | 24     | 43             | 58              |
| 11               | 172   |         |           |              | 50          |     | 26   | 35         |                | 25   | 28       | 41      |      | 23     | 36             | 50              |
| 12               | 160   |         |           |              | 44          |     | 24   | 29         |                | 51   | 45       | 39      |      | 26     | 32             | 695             |
| 13               | 110   |         |           |              | 42          |     | 22   | 28         |                | 33   | 66       | 32      |      | 27     | 49             | 2380            |
| 14               | 1410  |         |           | 6            | 40          |     | 22   | 24         |                | 31   | 436      | 30      |      | 24     | 45             | 343             |
| 15               | 241   | 1 325   | 5 6       | 5            | 40          |     | 29   | 22         |                | 41   | 5930     | 27      |      | 101    | 32             | 173             |
| 16               | 161   |         |           |              | 38          |     | 27   | 22         |                | 55   | 1370     | 27      |      | 218    | 27             | 101             |
| 17               | 198   |         |           | 0            | 36          |     | 27   | 24         |                | 55   | 2120     | 28      |      | 195    | 26             | 83              |
| 18               | 119   |         |           |              | 36          |     | 30   | 41         |                | 46   | 10900    | 29      |      | 88     | 23             | 59              |
| 19               | 94    |         |           |              | 34          |     | 29   | 45         |                | 36   | 664      | 28      |      | 48     | 27             | 49              |
| 20               | 126   | 125     | 5 5       | 4            | 34          |     | 45   | 26         |                | 27   | 280      | 27      |      | 401    | 29             | 41              |
| 21               | 125   |         |           |              | 32          |     | 32   | 34         |                | 29   | 165      | 29      |      | 126    | 41             | 37              |
| 22               | 80    |         |           |              | 31          |     | 28   | 23         |                | 25   | 130      | 27      |      | 65     | 36             | 35              |
| 23               | 76    |         |           |              | 30          |     | 25   | 20         |                | 1020 | 107      | 26      |      | 51     | 27             | 40              |
| 24               | 68    |         |           |              | 30          |     | 37   | 19         |                | 426  | 93       | 26      |      | 77     | 26             | 87              |
| 25               | 136   | 3 100   | ) 8:      | ı            | 29          |     | 37   | 17         |                | 206  | 84       | 29      |      | 53     | 26             | 778             |
| 26               | 96    |         |           |              | 36          |     | 34   | 16         |                | 133  | 76       | 28      |      | 51     | 31             | 137             |
| 27               | 80    |         |           |              | 35          |     | 48   | 23         |                | 68   | 69       | 26      |      | 42     | 466            | 98              |
| 28               | 123   |         |           |              | 34          |     | 273  | 35         |                | 49   | 63       | 23      |      | 42     | 229            | 253             |
| 29               | 139   |         |           |              | 33          |     |      | 1530       |                | 42   | 57       | 23      |      | 49     | 77             | 159             |
| 30               | 145   |         |           |              | 30          |     |      | 147        |                | 39   | 55       | 20      |      | 41     | 46             | 75              |
| 31               | 92    |         | - 81      | 1            | 30          |     |      | 245        |                |      | 52       |         |      | 32     | 52             |                 |
| TOTAL            | 5515  |         |           |              | 685         |     | 064  | 3024       |                | 2818 | 23123    | 1017    |      | 2018   | 1734           | 6522            |
| MEAN             | 178   |         |           |              | 4.4         |     | 0.88 | 97.5       |                | 93.9 | 746      | 33.9    |      | 65.1   | 55.9           | 217             |
| MAX              | 1410  |         |           |              | 287         |     | 273  | 1530       |                | 1020 | 10900    | 51      |      | 401    | 466            | 2380            |
| MIN              | 47    |         |           |              | 29          |     | 22   | 16         |                | 25   | 28       | 20      |      | 21     | 23             | 30              |
| CFSM             | 2.96  |         |           |              | .90         |     | .63  | 1.62       |                | 1.56 | 12.4     | . 56    |      | 1.08   | .93            | 3.60            |
| IN.              | 3.41  |         |           |              | .04         |     | .66  | 1.87       |                | 1.74 | 14.29    | .63     |      | 1.25   | 1.07           | 4.03            |
| AC-FT            | 10940 | 34480   | 5440      | ) 3          | 340         | 2   | 110  | 6000       |                | 5590 | 45860    | 2020    |      | 4000   | 3440           | 12940           |
| CAL YR<br>WTR YR |       | TOTAL 5 | 68645     | MEAN<br>MEAN | 138         |     |      | 350<br>900 | MIN            | 8.6  | CFSM     | 2.29    | IN.  | 31.15  | AC-FT<br>AC-FT | 99970<br>136200 |
|                  |       |         | 20010     | LIMITA       | 100         |     | IU:  | ,,,,       | 11714          | 10   | OFBIT    |         | T14. | 40.46  | NO-L'I         | 10000           |

### RIO GRANDE DE LOIZA BASIN

## 50057000 RIO GURABO AT GURABO, PR--Continued

### WATER QUALITY RECORDS

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

| DATE    | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE |    | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|---------|------|---------------------------------------|--------------------------------------|-----------------------------|------|----|------|---------------------------------------|--------------------------------------|-----------------------------|
| DEC, 06 | 1022 | 66                                    | 350                                  | 24.0                        | APR. | 02 | 1110 | 48                                    | 348                                  | 25.0                        |
| FRB, 13 | 1450 | 22                                    | 407                                  | 22.5                        | SEP, | 04 | 1001 | 32                                    | 326                                  | 29.0                        |
| MAR, 05 | 0954 | 27                                    | 410                                  | 25.0                        |      |    |      |                                       |                                      | 1                           |

#### 50057025 RIO GURABO NEAR GURABO, PR

### WATER-QUALITY RECORDS

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

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

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

### WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | TIME        | STRE<br>FLO<br>INST<br>TANE                                     | W, CO<br>AN- DU<br>AN                             | FIC<br>N- P<br>CT- (ST  | AND- TI   | EMPER-<br>ATURE<br>DEG C)        | TUR-<br>BID-<br>ITY<br>(NTU | - D1  | SEN, (S-   | YGEN,<br>DIS-<br>OLVED<br>PER-<br>CENT<br>ATUR-<br>TION) | OXYO                                      | AND, FOR<br>RM- FEG<br>AL 0.7<br>GH UM-<br>RL) (COI            | CAL,<br>7 E<br>-MF (<br>LS./                  | STREP-<br>COCOCCI<br>FECAL,<br>F AGAR<br>COLS.<br>PER<br>00 ML) |
|----------------|-------------|---|---|---|---|----------------------------------|-----------------------------|---|--|--|---|--|---|---|
| OCT 1984       |             |   |   |   |   |                                  |                             |   |  |  |   |  |   |   |
| 25<br>JAN 1985 | 0935        | 175   |   | 306   | 7.40  | 26.5                             | 40                          |   | 6.1  | 75   |   | 24   |   |   |
| 23<br>APR      | 1105        | 8   | .0  | 408   | 7.60  | 25.0                             | 15                          |   | 6.1  | 73   |   | 30 K19   | 9000  | K500  |
| 19<br>JUN      | 0915        | 22  |   | 365   | 7.40  | 28.0                             | 10                          |   | 5.0  | 64   |   | 23 2   | 2300  | K100  |
| 17             | 1220        | 23  |   | 410   | 7.70  | 10.0                             | 9.0                         | 0   | 5.8  | 51   |   | <10 K6   | 600   | K1200   |
| JUL<br>29      | 1310        | 50  |   | 359   | 7.60  | 29.5                             | 6.0                         | 0   | 6.8  | 88   |   | 38   | 440   | K40   |
| DATE           |             | HARD-<br>NESS<br>(MG/L<br>AS                                    | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L                | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L                          | SODIUM<br>DIS-<br>(MG/I                         | 1, A<br>SOR<br>D TI              | ON                          | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L              | ALKA-<br>LINITY<br>WATER<br>TOTAL<br>FIELD<br>MG/L A | SUL  | FIDE<br>TAL                               | SULFATE<br>DIS-<br>SOLVED<br>(MG/L                             | CHLO<br>RIDE<br>DIS-<br>SOLV<br>(MG/          | ,<br>ED   |
|                |             | CACO3)  | AS CA)  | AS MG)  | AS NA   |                                  | 10                          | AS K)   | CACO3  |  | 8)  | AS SO4)  | AS C  |   |
| OCT 1984<br>25 |             | 100   | 23  | 11  | 23  |                                  | 1                           | 3.9   | 10   | 3  |   | 17   | 23  |   |
| JAN 1985<br>23 |             | 130   | 30  | 14  | 32  |                                  | 1                           | 4.5   | 13   | 3  | <0.5                                      | 23   | 32  |   |
| APR<br>19      |             |   |   |   |   | -                                |                             |   | 12   | 2  |   |  |   |   |
| JUN<br>17      |             | 120   | 28  | 13  | 29  |                                  | 1                           | 4.1   | 13   | 0  | <0.5                                      | 24   | 31  |   |
| JUL<br>29      |             |   |   |   |   |                                  |                             |   | 10   | 6  |   |  |   |   |
| DATE           |             | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F)              | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS<br>DIS-<br>SOLVE<br>(TONS<br>PER<br>DAY) | AT 1<br>RD DEG.<br>S SUS<br>PEND | DUB<br>05<br>C, h           | NITRO-<br>GEN,<br>NITRATE<br>TOTAL<br>(MG/L<br>AS N)    | NITRO<br>GEN,<br>NITRIT<br>TOTAL<br>(MG/L<br>AS N)   | G<br>E NO2<br>TO<br>(M                                   | TRO-<br>EN,<br>+NO3<br>TAL<br>G/L<br>N)   | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N)           | NITR<br>GEN<br>ORGAN<br>TOTA<br>(MG/<br>AS N  | ic<br>L<br>L  |
| OCT 1984       |             |   |   | 1977  | 53,571  |                                  |                             |   |  |  |   | A CONTRACTOR   |   |   |
| 25<br>JAN 1985 |             | 0.1   | 27  | 190   | 90  | 10                               | 4                           | 1.15  | 0.15   | 1  | .30                                       | 0.32   | 0.  | 98  |
| 23             |             | 0.1   | 31  | 250   | 5.3   | 1                                | 7                           | 1.36  | 0.14   | 1  | .50                                       | 0.27   | 0.  | 43  |
| APR<br>19      |             |   |   |   |   | - 2                              | 2                           | 0.82  | 0.08   | 0  | .90                                       | 0.31   | 0.  | 99  |
| JUN<br>17      |             | 0.2   | 31  | 240   | 15  | 2                                | 4                           | 1.03  | 0.07   | 1  | .10                                       | 0.21   | 0.  | 89  |
| JUL<br>29      |             |   |   |   |   | -                                | 6                           | 1.01  | 0.09   | 1  | . 10                                      | 0.18   | 0.  | 72  |
| DATE           | G<br>M<br>O | NITRO-<br>BN,AM-<br>ONIA +<br>RGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS N)         | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS NO3)                         | PHOS-<br>PHORUS<br>TOTAL<br>(MG/L<br>AS P)      | , ARSE<br>TOT                    | NIC<br>AL<br>/L             | BARIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS BA) | BORON<br>TOTAL<br>RECOV<br>BRABLI<br>(UG/L<br>AS B)  | TO' RE   | MIUM<br>TAL<br>COV-<br>ABLK<br>G/L<br>CD) | CHRO-<br>MIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CR) | COPPE<br>TOTA<br>RECO<br>ERAB<br>(UG/<br>AS C | L<br>V-<br>LR<br>L  |
| OCT 1984       |             | 1 0   |   | 10  |   |                                  |                             |   |  |  |   |  |   |   |
| 25<br>JAN 1985 |             | 1.3   | 2.6   | 12  | 0.54  |                                  |                             |   | -  | -  |   |  |   |   |
| 23<br>APR      |             | 0.7   | 2.2   | 9.7   | 0.69  |                                  | 2                           | 100   | 3  | 0  | <1  | <1   | <   | 10  |
| 19<br>JUN      |             | 1.3   | 2.2   | 9.7   | 0.53  |                                  |                             |   | -  | -  |   |  |   |   |
| 17<br>JUL      |             | 1.1   | 2.2   | 9.7   | 0.46  |                                  | 1                           | 100   | 30   | 0  | <1  | 3  | <   | 10  |
| 29             |             | 0.9   | 2.0   | 8.9   | 0.54  |                                  |                             |   |  | -  |   |  |   |   |

K = non-ideal count

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RIO GRANDE DE LOIZA BASIN

50057025 RIO GURABO NEAR GURABO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>, AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|---------------------------------------|----------------------------|--|
| OCT 1984       |   |   |   |   |  |   |   |                                       |                            |  |
| 25<br>JAN 1985 |   |   |   |   |  |   |   |                                       |                            |  |
| 23<br>APR      | 840   | 1   | 390   | <0.1  | <1   | <1  | 30  | (0.01                                 | 3                          | 0.05   |
| 19<br>JUN      |   |   |   | <0.1  |  |   |   |                                       | -                          |  |
| 17<br>JUL      | 1400  | <1  | 370   | <0.1  | <1   | <1  | 40  | <0.01                                 | 6                          | 0.06   |
| 29             |   |   |   |   |  |   |   |                                       |                            |  |

#### RIO GRANDE DE LOIZA BASIN

## 50059000 LAGO LOIZA AT DAMSITE, PR

#### WATER-QUALITY RECORDS

LOCATION.--Lat  $18^{\circ}19'49"$ , long  $66^{\circ}01'00"$ , at pumphouse at damsite, and 1.9 mi (3.1 km) south of Trujillo Alto plaza.

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

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

| DATE           | TIME             | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS | SPE-<br>CIFIC<br>CON-<br>DUCT- | PH<br>(STAND-<br>ARD | TEMPER-         | OXYGEN,<br>DIS-<br>SOLVED | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT | OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./ | STREP-<br>TOCOCCI<br>FECAL,<br>EF AGAR<br>(COLS.<br>PER |
|----------------|------------------|--|--------------------------------|----------------------|-----------------|---------------------------|--|--|---|---|
| DAIR           | IIII             | (CFS)                                  | ANCE<br>(US/CM)                | UNITS)               | (DEG C)         | (MG/L)                    | SATUR-<br>ATION)                           | (MG/L)                                 | 100 ML)   | 100 ML)   |
| OCT 1984       |                  |  |                                |                      |                 |                           |  |  |   |   |
| 23<br>JAN 1985 | 1300             | 124                                    | 186                            | 6.80                 | 27.0            | 3.5                       | 44   | 14                                     | K1300   | K210  |
| 23             | 1345             | 124                                    | 294                            | 7.40                 | 25.0            | 4.6                       | 55   | 24                                     | K43   | 370   |
| APR            |                  |  |                                |                      |                 |                           | 155  | -                                      |   |   |
| 19<br>JUN      | 1240             | 124                                    | 247                            | 7.00                 | 27.5            | 0                         |  | 15                                     | 110   | K18   |
| 12             | 1230             | 124                                    | 220                            | 7.70                 | 300.0           | 2.9                       | 38   | <10                                    |   |   |
| JUL 26         | 1210             | 124                                    | 167                            | 7.30                 | 29.5            | 4.4                       | 57   | 35                                     | 52  | K28   |
| 20             | 1210             | 124                                    | 101                            | 7.30                 | 29.5            | *.*                       | 57   | 30                                     | 52  | 840   |
|                |                  |  |                                |                      |                 |                           |  |  |   |   |
|                | ALKA-            |  | SOLIDS,                        |                      |                 | urmno                     | WYEDO                                      | HITERO                                 | NITRO-  |   |
|                | LINITY<br>WH WAT |  | RESIDUE<br>AT 105              | NITRO-<br>GEN,       | NITRO-<br>GEN,  | NITRO-<br>GEN,            | NITRO-<br>GEN,                             | NITRO-<br>GEN,                         | GEN, AM-<br>MONIA +                                 | NITRO-  |
|                | TOTAL            | SULFIDE                                | DEG. C.                        | NITRATE              | NITRITE         | NO2+NO3                   | AMMONIA                                    | ORGANIC                                | ORGANIC   | GEN.  |
|                | FIELD            | TOTAL                                  | 8U8-                           | TOTAL                | TOTAL           | TOTAL                     | TOTAL                                      | TOTAL                                  | TOTAL   | TOTAL   |
| DATE           | MG/L AS          | (MG/L                                  | PENDED                         | (MG/L                | (MG/L           | (MG/L                     | (MG/L                                      | (MG/L                                  | (MG/L   | (MG/L   |
|                | CACO3            | AS S)                                  | (MG/L)                         | AS N)                | AS N)           | AS N)                     | (N BA                                      | AS N)                                  | AS N)   | AS N)   |
| OCT 1984       |                  |  |                                |                      |                 |                           |  |  |   |   |
| 23<br>JAN 1985 | 54               |  | 17                             | 0.43                 | 0.07            | 0.50                      | 0.22                                       | 0.68                                   | 0.9   | 1.4   |
| 23             | 97               | <0.5                                   | 4                              | 0.27                 | 0.03            | 0.30                      | 0.06                                       | 0.64                                   | 0.7   | 1.0   |
| APR            |                  |  | 100                            | 7,574                |                 | 22.00                     |  |  |   |   |
| 19<br>JUN      | 80               |  | 26                             |                      | 0.02            | <0.10                     | 0.19                                       | 2.0                                    | 2.2   |   |
| 12             | 69               | <0.5                                   | 10                             | 0.08                 | 0.02            | 0.10                      | 0.10                                       | 0.5                                    | 0.6   | 0.7   |
| JUL 26         | 84               |  | 55                             | 0.08                 | 0.02            | 0.10                      | 0.35                                       | 1.8                                    | 2.2   | 2.3   |
|                |                  |  |                                |                      |                 |                           |  |  |   |   |
|                |                  |  |                                |                      |                 | MANGA-                    |  |  |   | METHY-  |
|                |                  |  | BORON,                         | COPPER,              | IRON,           | NESE,                     | ZINC,                                      |  |   | LENE  |
|                | NITRO-           | PHOS-                                  | TOTAL                          | TOTAL                | TOTAL           | TOTAL                     | TOTAL                                      | - Annihi de d                          |   | BLUE  |
|                | GEN,             | PHORUS,                                | RECOV-                         | RECOV-               | RECOV-          | RECOV-                    | RECOV-                                     | CYANIDE                                | PHENOLS   | ACTIVE  |
| DATE           | TOTAL<br>(MG/L   | TOTAL<br>(MG/L                         | ERABLE<br>(UG/L                | RRABLE<br>(UG/L      | ERABLE<br>(UG/L | ERABLE<br>(UG/L           | ERABLE<br>(UG/L                            | TOTAL<br>(MG/L                         | TOTAL   | SUB-<br>STANCE  |
| DAIL           | AS NO3)          | AS P)                                  | AS B)                          | AS CU)               | AS FE)          | AS MN)                    | AS ZN)                                     | AS CN)                                 | (UG/L)  | (MG/L)  |
| OCT 1984       |                  |  |                                |                      |                 |                           |  |  |   |   |
| 23             | 6.2              | 0.23                                   |                                |                      |                 |                           |  |  |   |   |
| JAN 1985       |                  | 0.10                                   |                                |                      | 000             | 000                       | 20   | 10.01                                  | 7   |   |
| 23<br>APR      | 4.4              | 0.17                                   | 20                             | <10                  | 320             | 200                       | 30   | <0.01                                  | 7   |   |
| 19<br>JUN      |                  | 0.13                                   |                                |                      |                 |                           |  |  |   |   |
| 12<br>JUL      | 3.1              | 0.06                                   | 30                             | 10                   | 550             | 120                       | 10   | <0.01                                  | 7   | 0.02  |
| 26             | 10               | 0.47                                   |                                |                      |                 |                           |  |  |   |   |

K = non-ideal count

RIO GRANDE DE LOIZA BASIN

#### 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).

K = non-ideal count

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

REMARKS: Flow controlled by Lago Loiza reservoir.

| DATE           | TIME                         | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPR-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM | PH<br>(STA)<br>ARI<br>) UNITS                                   | D AT  | PER- B  | ID-  | DIS-<br>SOLVED<br>(MG/L)  | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) | COLI-<br>FORM<br>FECAI<br>0.7<br>UM-MI<br>(COLS<br>100 MI | , TOCOCCI<br>L, FECAL,<br>KF AGAR<br>F (COLS.<br>-/ PER |
|----------------|------------------------------|---|--|---|---|---|--|---------------------------|--|---|---|---|
| OCT 1984       |                              |   |  |   |   |   |  |                           |  |   |   |   |
| 23             | 1015                         | 500   | 18   | 8 7   | .40   | 26.5  | 0.4  | 8.1                       | 100  | 19  | K140  | 00 610  |
| JAN 1985<br>26 | 1245                         | 16  | 39   | 9 8.  | .00 2   | 27.0  | 2.0  | 9.2                       | 114  | 30  | K1600   | 00 K45  |
| APR 19         | 1000                         | 14  | 29   |   |   |   | 3.3  | 8.1                       | 99   | <10   | K5000   | 00 3100   |
| JUN            |                              |   |  |   |   |   |  |                           |  |   |   |   |
| 12<br>JUL      | 1610                         | 8.4   | 31   | 2 8.  | .50   | 31.0  | 1.0  | 9.2                       | 123  | <10   | K150  | 00 36   |
| 26             | 1010                         | 15  | 34   | 0 7.  | .80 2   | 29.5  | 6.8  | 7.9                       | 102  | 26  | K950  | 970   |
|                | HARD-<br>NESS                | HARD-<br>NESS<br>NONCARB<br>WATER               | CALCIU   | MAGN<br>M SIU<br>DIS  | JM, SODI  | UM,   | DIUM<br>AD-<br>RP-                           | POTAS-<br>SIUM,<br>DIS-   | ALKA-<br>LINITY<br>WATER<br>TOTAL                              | SULFIDE                                       | SULFAT  | CHLO-<br>FE RIDE,<br>DIS-                               |
| DATE           | (MG/L<br>AS<br>CACO3)        | TOT FLD<br>MG/L AS<br>CACO3                     | SOLVE<br>(MG/L<br>AS CA                          | (MG/  | L (MC   |   | TIO  | SOLVED<br>(MG/L<br>AS K)  | FIRLD<br>MG/L AS<br>CACO3                                      | TOTAL<br>(MG/L<br>AS S)                       | SOLVE<br>(MG/I  | (MG/L   |
| OCT 1984       |                              |   |  |   |   |   |  |                           |  |   |   |   |
| 23<br>JAN 1985 | 57                           | 1   | 14   | 5.  | 4 15  | i   | 0.9  | 3.0                       | 56   |   | 12  | 14  |
| 26             | 140                          |   | 34   | 14  | 27  | <b>t</b>  | 1  | 2.8                       | 144  | <0.5  | 19  | 29  |
| APR<br>19      |                              |   | _  |   |   |   |  |                           | 98   |   |   |   |
| JUN 12         | 110                          |   | 27   | 10  | 22  |   | 0.9  | 2.3                       | 110  | <0.5  | 21  | 22  |
| JUL            |                              |   |  |   |   |   | 0.0  |                           |  |   | 98.   |   |
| 26             |                              |   | -  | -   | -   |   |  |                           | 108  |   |   |   |
| DAT            | SOL                          | DE, DI<br>IS- SC<br>LVED (M                     | CICA, SI<br>IS- CO<br>DLVRD TI<br>IG/L           | OLIDS,<br>JM OF<br>DNSTI-<br>JENTS,<br>DIS-<br>BOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | SOLIDS,<br>RESIDUE<br>AT 105<br>DEG. C,<br>SUS-<br>PENDED<br>(MG/L) | NITR<br>GEN<br>NITRA<br>TOTA<br>(MG/<br>AS N | TE NITE<br>L TOT<br>L (MC | RN, G<br>RITE NO2<br>PAL TO<br>B/L (M                          | EN,<br>+NO3 AM<br>TAL T                       | ITRO-<br>GEN,<br>MONIA C<br>OTAL<br>MG/L<br>S N)          | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N)    |
| OCT 198        |                              |   |  |   |   |   |  |                           |  |   |   |   |
| 23<br>JAN 198  |                              | 0.1   | 20   | 120   | 158   | 18  | 0.6  | 4 0.                      | 06 0   | .70   | 0.12  | 1.1   |
| 26<br>APR      |                              | .2  | 24   | 240   | 10  | 2   | 0.4  | 7 0.                      | 03 0   | .50   | 0.09  |   |
| 19             |                              |   |  |   |   | 26  | 0.3  | 6 0.                      | 04 0   | .40   | 0.14  | 0.66  |
| JUN 12         | 0                            | .2  | 22   | 190   | 4.4   | 4   |  | <0.                       | 01 0   | .10   | 0.21  | 0.09  |
| JUL 26         |                              | 0   |  |   |   | 9   | 0.3  | 8 0.                      | 02 0   | .40   | 0.03  | 0.37  |
|                | GEN,                         |   | ·····  |   |   |   | BARIU  |                           |  | MIUM M  |   | COPPER,   |
| DAT            | MONI<br>ORGA<br>TOT<br>E (MG | AL TO   | EN,<br>TAL T<br>IG/L                             | GEN,<br>TOTAL<br>(MG/L<br>NO3)                                  | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P)       | ARSENIC<br>TOTAL<br>(UG/L<br>AS AS)                                 | RECO<br>ERABI<br>(UG/I                       | V- REC<br>LE ERA<br>L (UG | COV- RE<br>BLE ER  | COV- R<br>ABLE E<br>G/L (                     | BCOV-   | TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CU)            |
| 000 100        |                              |   | .,   | ,   | ,   | nu nu j   | 0  |                           |  |   |   |   |
| OCT 198        | 1                            | .2  | 1.9  | 8.4   | 0.23  |   | 135  |                           |  |   |   | -   |
| JAN 198        |                              | .1  |  |   | 0.30  | 1   | <10  | 00                        | 30   | 1   | 1   | <10   |
| APR<br>19      | 0                            | .8  | 1.2  | 5.3   | 0.18  |   |  |                           |  |   |   | 174   |
| JUN<br>12      |                              |   | 0.4  | 1.8   | 0.09  | <1  | <10  |                           | 30   | <1  | 4   | <10   |
| JUL 26         | 0                            | .4  | 0.8  | 3.5   | 0.17  |   |  |                           |  |   |   | 1   |
|                |                              |   |  |   |   |   |  |                           |  |   |   |   |

RIO GRANDE DE LOIZA BASIN

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| OCT 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 23<br>JAN 1985 |   |   |   |   |  | -   |   |                                     |                            |  |
| 26<br>APR      | 330   | 1   | 50  | 0.1   | 2  | <1  | 20  | <0.01                               | 1                          | 0.05   |
| 19<br>JUN      |   |   |   | 0.1   | - 55                                       |   |   |                                     |                            |  |
| 12<br>JUL      | 250   | <1  | 20  | <0.1  | <1   | <1  | <10   | <0.01                               | 2                          | 0.03   |
| 26             |   |   |   |   |  |   |   |                                     |                            |  |

#### 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 Loiza.

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

#### WATER-DISCHARGE RECORDS

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

GAGE .-- Water-stage recorder. Rlevation of gage is 225 ft (68 m), from topographic map.

REMARKS.--Estimated daily discharges: Oct. 16, 17, Nov. 14-27, and July 20-23. Records fair except those for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--18 years (1968-85), 28.1 cu ft/s (0.796 cu m/s), 38.78 in/yr (985 mm/yr), 20,360 acre-ft/yr (25.1 cu hm/yr); median of yearly mean discharges, 25 cu ft/s (0.71 cu m/s), 18,100 acre-ft/yr (22 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD. --Maximum discharge, 15,000 cu ft/s (425 cu m/s), Sept. 13, 1982, gage height, 13.1 ft (3.99 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 discharge, 0.80 cu ft/s (0.023 cu m/s), July 24, 1977.

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

| Discharge |      |           |          | Gage h | eight      |        | Disch |           | Gage height |      |       |  |
|-----------|------|-----------|----------|--------|------------|--------|-------|-----------|-------------|------|-------|--|
| Date      | Time | (ou ft/s) | (cu m/s) | (ft)   | <b>(=)</b> | Date   | Time  | (cu ft/s) | (cu m/s)    | (ft) | (m)   |  |
| Mar. 29   | 0100 | 2,930     | 83.0     | 6.78   | 2.066      | May 17 | 1230  | 3,310     | 93.7        | 7.12 | 2.170 |  |
| May 15    | 1500 | *6,080    | 172      | *9.23  | 2.813      | May 18 | 0545  | 3,040     | 86.1        | 6.88 | 2.097 |  |

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

Minimum discharge, 4.5 cu ft/s (0.127 cu m/s), July 9.

|        |         | DIBOHAM   | A, IN COD | IO PAGE |       | MBAN VAL | UES OCT | OBER 130 | 4 IO BELL | Bribba 1505 |       |        |
|--------|---------|-----------|-----------|---------|-------|----------|---------|----------|-----------|-------------|-------|--------|
| DAY    | OCT     | NOV       | DEC       | JAN     | FEB   | MAR      | APR     | MAY      | JUN       | JUL         | AUG   | SEP    |
| 1      | 9.3     | 30        | 20        | 38      | 13    | 25       | 25      | 7.4      | 17        | 5.8         | 10    | 11     |
| 2      | 8.6     | 42        | 36        | 58      | 12    | 14       | 18      | 7.3      |           | 5.7         | 16    | 9.6    |
| 3      | 8.5     | 222       | 31        | 49      | 11    | 12       | 16      | 11       | 17        | 5.6         | 9.3   | 9.3    |
| 4      | 9.0     | 86        | 24        | 33      | 11    | 10       | 14      | 7.9      |           | 5.6         | 7.7   | 8.5    |
| 5      | 18      | 399       | 23        | 28      | ii    | ii       | 14      | 7.2      |           | 5.5         | 7.2   | 8.1    |
| 6      | 15      | 814       | 20        | 27      | 10    | 13       | 12      | 7.3      | 13        | 5.3         | 8.9   | 14     |
| 7      | 10      | 550       | 18        | 26      | 11    | 30       | 13      | 6.7      | 13        | 5.3         | 7.4   | 9.0    |
| 8      | 8.7     | 193       | 17        | 23      | 10    | 42       | 12      | 6.2      |           | 4.9         | 7.2   | 31     |
| 9      | 27      | 185       | 24        | 21      | 9.9   |          | 11      | 6.1      |           | 4.8         | 7.1   | 28     |
| 10     | 23      | 85        | 30        | 21      | 9.9   |          | 10      | 6.1      |           | 4.9         | 6.4   | 11     |
| 11     | 18      | 63        | 70        | 24      | 10    | 12       | 9.8     | 6.2      | 11        | 5.0         | 6.0   | 9.6    |
| 12     | 15      | 56        | 40        | 19      | 9.7   |          | 9.8     | 7.2      |           | 5.0         | 6.1   | 30     |
| 13     | 11      | 47        | 21        | 18      | 9.5   |          | 9.6     | 9.9      |           |             | 9.4   | 345    |
| 14     | 130     | 150       | 18        | 18      | 9.5   |          | 9.5     | 37       | 9.2       |             | 7.3   | 59     |
| 15     | 41      | 190       | 17        | 20      | 9.5   |          | 9.4     | 691      | 8.8       | 39          | 6.5   | 34     |
|        | **      |           |           | 20      | 3.0   | 3.4      |         | 001      | 0.0       |             | 0.0   |        |
| 16     | 28      | 50        | 22        | 17      | 9.5   | 8.7      | 10      | 99       | 8.3       |             | 5.8   | 21     |
| 17     | 21      | 106       | 83        | 15      | 9.5   | 8.9      | 11      | 513      | 8.1       | 67          | 5.2   | 17     |
| 18     | 24      | 44        | 26        | 15      | 9.8   | 9.2      | 12      | 898      | 7.7       | 20          | 5.4   | 16     |
| 19     | 49      | 77        | 24        | 14      | 9.9   | 11       | 9.1     | 124      | 7.6       | 11          | 7.1   | 14     |
| 20     | 27      | 55        | 22        | 14      | 9.9   |          | 8.5     | 61       | 6.9       | 145         | 5.9   | 13     |
| 21     | 40      | 35        | 18        | 13      | 9.9   | 8.4      | 8.7     | 47       | 6.7       | 36          | 6.7   | 11     |
| 22     | 31      | 38        | 23        | 12      | 9.9   | 7.9      | 7.6     | 39       | 6.2       | 16          | 6.6   | 11     |
| 23     | 22      | 55        | 18        | 14      | 9.9   | 8.0      | 114     | 34       | 6.0       | 15          | 6.0   | 31     |
| 24     | 16      | 29        | 20        | 13      | 19    | 7.7      | 37      | 30       | 6.1       | 14          | 6.3   | 34     |
| 25     | 45      | 25        | 28        | 12      | 17    | 7.2      | 15      | 29       | 6.1       |             | 6.7   | 205    |
| 26     | 24      | 25        | 32        | 12      | 16    | 7.1      | 11      | 25       | 5.9       | 14          | 6.4   | 32     |
| 27     | 24      | 29        | 65        | 13      | 33    | 35       | 9.4     | 23       | 5.8       | 11          | 121   | 21     |
| 28     | 98      | 23        | 78        | 13      | 96    | 28       | 8.8     | 21       | 5.8       | 12          | 51    | 114    |
| 29     | 69      | 22        | 34        | 12      |       | 408      | 7.9     | 20       | 5.8       | 13          | 17    | 35     |
| 30     | 49      | 21        | 46        | 12      |       | 70       | 7.7     | 19       | 5.8       | 12          | 55    | 26     |
| 31     | 32      |           | 55        | 11      |       | 54       |         | 17       |           | 8.9         | 16    |        |
| TOTAL  | 951.1   | 3746      | 1003      | 635     | 416.3 | 936.9    | 470.8   | 2823.5   |           |             | 450.6 | 1218.1 |
| MEAN   | 30.7    | 125       | 32.4      | 20.5    | 14.9  | 30.2     | 15.7    | 91.1     | 9.62      | 18.6        | 14.5  | 40.6   |
| MAX    | 130     | 814       | 83        | 58      | 96    | 408      | 114     | 898      |           | 145         | 121   | 345    |
| MIN    | 8.5     | 21        | 17        | 11      | 9.5   | 7.1      | 7.6     | 6.1      | 5.8       | 4.8         | 5.2   | 8.1    |
| CFSM   | 3.12    | 12.7      | 3.29      | 2.08    | 1.51  | 3.07     | 1.60    | 9.26     | .98       | 1.89        | 1.47  | 4.13   |
| IN.    | 3.60    | 14.16     | 3.79      | 2.40    | 1.57  | 3.54     | 1.78    | 10.67    | 1.09      | 2.18        | 1.70  | 4.61   |
| AC-FT  | 1890    | 7430      | 1990      | 1260    | 826   |          | 934     | 5600     | 573       | 1150        | 894   | 2420   |
|        | 1984 TO |           | 2.6 MEAN  |         | MAX   |          | 2.8     | CFSM     | 2.55      | IN. 34.79   |       | 18250  |
| WTR YR | 1985 T  | OTAL 1351 | 7.3 MEAN  | 37.0    | MAX   | 898 MIN  | 4.8     | CFSM     | 3.76      | IN. 51.10   | AC-FT | 26810  |

## RIO GRANDE DE LOIZA BASIN

## 50061800 RIO CANOVANAS NEAR CAMPO RICO, PR--Continued

### WATER QUALITY RECORDS

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

| DATE   |    | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE |    | TIMB | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|--------|----|------|---------------------------------------|--------------------------------------|-----------------------------|------|----|------|---------------------------------------|--------------------------------------|-----------------------------|
| FEB, 1 | 12 | 1305 | 9.7                                   | 250                                  | 23.0                        | APR, | 10 | 1442 | 12                                    | 226                                  | 27.0                        |

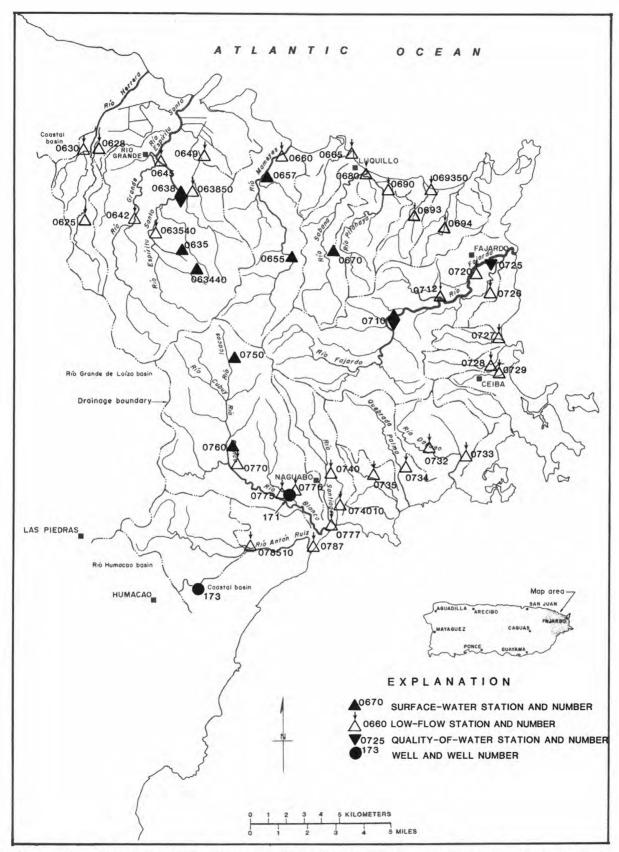


Figure 21.--Northeastern river basins--Río Herrera to Río Antón Ruíz basins.

#### RIO ESPIRITU SANTO BASIN

#### 50063440 QUEBRADA SONADORA NEAR EL VERDE, PR

LOCATION.--Lat 18°19'24", long 65°49'03", Hydrologic Unit 21010005, in Caribbean National Forest, at El Yunque, 0.6 mi (1.0 km) upstream from Rio Espiritu Santo, 0.2 mi (0.3 km) upstream from Highway 186, and about 1.2 mi (1.9 km) south of El Verde.

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

#### WATER-DISCHARGE RECORDS

PERIOD OF RECORD .-- March 1983 to current year.

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

REMARKS .-- Estimated daily discharges: Jan. 5-21. Records poor.

EXTREMES FOR PERIOD OF RECORD. -- Maximum discharge, 2,160 cu ft/s (61.2 cu m/s), May 14, 1985, gage height, 9.36 ft (2.853 m) from rating curve extended above 20 cu ft/s (0.57 cu m/s) on basis of step-backwater analysis; minimum discharge, 0.20 cu ft/s (0.006 cu m/s), July 14, 15, 1985, gage height 2.08 ft (0.634 m).

EXTREMES FOR CURRENT YEAR .-- Peak discharges greater than base discharge of 500 cu ft/s (14.2 cu m/s) and maximum (\*):

Discharge Gage height (cu ft/s) (cu m/s) (ft) (m)

May 14 1415 \*2,160 61.2 \*9.36 2.853

Minimum discharge, 0.20 cu ft/s (0.006 cu m/s), July 14, 15.

|        |        | DISCHARGE   | R, IN | CUBIC FEET | PER SECOND,<br>MEAN |       | YEAR O | CTOBER 198 | 4 TO SEP | TEMBER 1985 |              |       |
|--------|--------|-------------|-------|------------|---------------------|-------|--------|------------|----------|-------------|--------------|-------|
| DAY    | OCT    | NOV         | DEC   | JAN        | FRB                 | MAR   | API    | R MAY      | JUI      | JUL         | AUG          | SRP   |
| DAI    |        | NOV         |       |            | FBD                 | MAR   | AFI    | n mai      |          |             | 17 / 10 / 17 |       |
| 1      | 3.9    | 21          | 4.4   |            | 2.9                 | 9.4   | 4.5    |            | 1.9      | 2.3         | 1.3          | 5.9   |
| 2      | 10     | 25          | 18    | 14         | 1.7                 | 4.2   | 3.0    |            | 1.8      | 1.3         | 1.3          | 5.7   |
| 3      | 3.0    | 41          | 9.7   | 12         | 1.8                 | 3.1   | 2.     |            | 1.8      | 2.4         | 1.4          | 3.3   |
| 4      | 2.1    | 25          | 6.2   |            | 1.4                 | 2.7   | 2.2    |            |          | 5.8         | 1.1          | 2.1   |
| 5      | 4.8    | 64          | 5.6   | 3.8        | 1.1                 | 5.8   | 2.1    | 1 .98      | 1.6      | 1.7         | 1.1          | 1.7   |
| 6      | 5.9    | 69          | 5.7   |            | .95                 | 4.9   | 1.9    | 9 .95      | 1.5      | .79         | 2.3          | 1.6   |
| 7      | 2.6    | 49          | 4.2   | 3.7        | .78                 | 22    | 2.3    | .84        | 1.4      | .58         | 4.3          | 2.3   |
| 8      | 2.4    | 38          | 3.7   | 3.0        | .69                 | 14    | 2.4    | .90        | 1.3      | .48         | 5.8          | 8.2   |
| 9      | 13     | 24          | 19    | 2.8        | .62                 | 6.4   | 1.6    | . 80       | 1.2      | .41         | 1.6          | 4.2   |
| 10     | 4.7    | 14          | 12    | 5.0        | .61                 | 3.5   | 1.4    |            | 1.3      | .35         | 1.1          | 2.0   |
| 11     | 3.7    | 8.9         | 6.3   | 4.8        | 1.6                 | 2.8   | 1.5    | 1.9        | 1.3      | 3.9         | .88          | 5.9   |
| 12     | 3.3    | 11          | 5.5   |            | 1.3                 | 2.8   | 1.4    |            | 1.1      | .79         | 1.3          | 39    |
| 13     | 3.8    | 11          | 4.6   |            | .79                 | 2.6   | 4.4    |            | .91      | .37         | 9.2          | 57    |
| 14     | 10     | 64          | 4.3   | 6.8        | .88                 | 2.3   | 2.0    | 99         | .88      | .23         | 3.9          | 9.9   |
| 15     | 7.3    | 20          | 4.1   |            | 5.3                 | 2.6   | 1.3    | 3 50       | 1.1      | 17          | 7.2          | 5.8   |
| 16     | 5.5    | 8.8         | 5.4   | 2.1        | 1.9                 | 2.3   | 16     | 18         | .92      | 5.2         | 2.2          | 3.8   |
| 17     | 11     | 17          | 18    | 2.0        | 2.0                 | 2.5   | 20     | 48         | .78      | 23          | 1.4          | 3.1   |
| 18     | 6.4    | 8.1         | 5.1   | 1.8        | 2.6                 | 3.4   | 5.3    | 3 46       | .71      | 2.5         | 4.1          | 2.7   |
| 19     | 3.3    | 16          | 5.3   | 1.6        | 5.2                 | 2.2   | 2.5    | 12         | .77      | 1.6         | 7.9          | 2.3   |
| 20     | 17     | 9.4         | 5.4   | 1.6        | 2.7                 | 1.8   | 8.3    | 7.4        | .63      | 46          | 2.5          | 2.0   |
| 21     | 24     | 6.6         | 4.5   | 1.5        | 1.9                 | 1.6   | 3.9    | 5.7        | . 62     | 8.7         | 6.0          | 1.8   |
| 22     | 12     | 7.6         | 5.4   |            | 2.6                 | 1.5   | 1.9    | 4.2        | .57      | 2.6         | 2.5          | 1.7   |
| 23     | 5.3    | 11          | 4.2   | 1.2        | 4.6                 | 1.4   | 32     | 3.4        | .56      | 7.1         | 1.6          | 15    |
| 24     | 4.1    | 5.4         | 5.2   | 1.1        | 14                  | 1.3   | 5.5    |            | .54      | 10          | 1.4          | 9.7   |
| 25     | 12     | 4.7         | 8.7   | 1.1        | 5.3                 | 1.2   | 2.8    | 3 2.8      | .48      | 3.5         | 1.9          | 42    |
| 26     | 11     | 4.9         | 10    | 1.8        | 9.0                 | 1.3   | 2.1    | 2.5        | .44      |             | 3.1          | 11    |
| 27     | 12     | 6.4         | 14    | 1.4        | 47                  | 28    | 1.8    | 2.3        | .41      |             | 43           | 4.6   |
| 28     | 31     | 5.2         | 8.8   |            | 43                  | 24    | 1.6    |            | .39      |             | 21           | 22    |
| 29     | 13     | 4.1         | 7.5   |            |                     | 70    | 1.5    |            | .36      |             | 4.3          | 5.4   |
| 30     | 16     | 3.8         | 21    | .93        |                     | 43    | 1.3    |            | . 46     |             | 8.3          | 3.3   |
| 31     | 17     |             | 20    | .84        |                     | 11    |        | 1.9        | -        | 1.6         | 3.6          |       |
| TOTAL  | 281.1  | 603.9       | 261.8 |            |                     | 285.6 | 140.8  |            |          |             | 158.58       | 285.0 |
| MEAN   | 9.07   | 20.1        | 8.45  |            | 5.86                | 9.21  | 4.69   |            |          |             | 5.12         | 9.50  |
| MAX    | 31     | 69          | 21    | 14         | 47                  | 70    | 32     | 99         | 1.9      | 46          | 43           | 57    |
| MIN    | 2.1    | 3.8         | 3.7   | .84        | .61                 | 1.2   | 1.3    |            | . 36     | .23         | .88          | 1.6   |
| CFSM   | 8.98   | 19.9        | 8.37  | 3.38       | 5.80                | 9.12  | 4.64   |            | .97      |             | 5.07         | 9.41  |
| IN.    | 10.35  | 22.24       | 9.64  |            |                     | 10.52 | 5.19   |            | 1.09     |             | 5.84         | 10.50 |
| AC-FT  | 558    | 1200        | 519   | 210        | 326                 | 566   | 279    | 688        | 58       | 336         | 315          | 565   |
| CAL YR |        | TOTAL 2748. |       | MBAN 7.51  |                     |       |        |            |          | N. 101.22   | AC-FT        | 5450  |
| WTR YR | 1985 7 | TOTAL 2832. | 58    | MBAN 7.76  | MAX 9               | 9 MIN | .23    | CFSM       | 7.68     | N. 104.33   | AC-FT        | 5620  |

## RIO ESPIRITU SANTO BASIN

## 50063440 QUEBRADA SONADORA NEAR EL VERDE, PR--Continued

### WATER QUALITY RECORDS

PERIOD OF RECORD .-- WATER YEARS APRIL 1983 TO CURRENT YEAR

| DATE |    | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE    | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|------|----|------|---------------------------------------|--------------------------------------|-----------------------------|---------|------|---------------------------------------|--------------------------------------|-----------------------------|
| FEB, | 12 | 0923 | 1.4                                   | 61                                   | 19.5                        | MAR, 14 | 1356 | 2.3                                   | 54                                   | 20.0                        |

#### 50063500 QUEBRADA TORONJA AT EL VERDE, PR

LOCATION.--Lat 18°19'43", long 65°49'14", Hydrologic Unit 21010005, in Caribbean National Forest, at downstream side of culvert on Highway 186, 0.2 mi (0.4 km) upstream from Rio Espiritu Santo, and about 0.9 mi (1.4 km) south of El Verde.

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

#### WATER-DISCHARGE RECORDS

PERIOD OF RECORD .-- April 1983 to current year.

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

REMARKS. -- Estimated daily discharges: Feb. 4-11 and Sept. 14-30. Records poor.

EXTREMES FOR PERIOD OF RECORD. -- Maximum discharge, 18 ou ft/s (0.51 ou m/s), July 5, 1983, gage height, 1.71 ft (0.521 m), from rating curve extended above 1.0 cu ft/s (0.03 m) on basis of step-backwater analysis; minimum discharge, no flow for part of each day Apr. 10, 17, 1983.

EXTREMES FOR CURRENT YEAR. -- Peak discharges greater than base discharge of 13 cu ft/s (0.37 cu m/s) (revised) and maximum (\*):

| Discharge |      | Gage      | height   |      |       | Discha  | arge | Gage      | height   |       |       |
|-----------|------|-----------|----------|------|-------|---------|------|-----------|----------|-------|-------|
| Date      | Time | (cu ft/s) | (cu m/s) | (ft) | (m)   | Date    | Time | (cu ft/s) | (cu m/s) | (ft)  | (m)   |
| Oct. 17   | 1815 | 10        | 0.28     | 1.61 | 0.491 | Mar. 29 | 0015 | 11        | 0.31     | 1.61  | 0.491 |
| Feb. 27   | 1645 | 11        | 0.31     | 1.61 | 0.491 | May 14  | 1415 | *12       | 0.34     | *1.62 | 0.494 |
| Reh 28    | 1230 | 10        | 0 29     | 1 60 | 0 400 | -       |      |           |          |       |       |

Minimum discharge, 0.02 cu ft/s (0.001 cu m/s), July 9, 13.

| •                |      | DIS   | CHARGE,          | IN C | CUBIC 1      | BET  | PER |      |       | R YEA |      | BER 1984     | TO SEPT | EMBE | R 1985         |                |            |
|------------------|------|-------|------------------|------|--------------|------|-----|------|-------|-------|------|--------------|---------|------|----------------|----------------|------------|
| DAY              | oc   |       | ov               | DEG  |              | 7431 |     | MEAN |       |       |      | MAW          | 71751   |      | JUL            | AUG            | SEP        |
| DAY              | OC.  | 1 N   | OV               | DEC  | •            | JAN  |     | FRB  | MAR   |       | APR  | MAY          | JUN     |      | JUL            | AUG            | 367        |
| 1                | . 0  | 6.    | 70               | . 35 |              | 45   |     | .10  | .61   |       | . 34 | .09          | .12     |      | . 10           | .06            | . 19       |
| 2                | . 1  | 5.    | 83               | .81  |              | .62  |     | .07  | . 27  |       | .27  | .09          | .13     |      | .06            | .07            | .19        |
| 3                | .0   | 7 2.  | 6                | .47  |              | 66   |     | .08  | . 20  |       | .23  | .09          | .12     |      | .05            | .06            | .14        |
| 4                | . 0  | 6 1.  | 4                | .41  |              | .44  |     | .07  | .18   |       | . 20 | .09          | .12     |      | .06            | .06            | .11        |
| 5                | . 1  | 4 3.  | 8                | . 36 |              | . 36 |     | .06  | . 26  |       | .18  | .09          | .12     |      | .03            | .06            | .10        |
| 6                | .10  | 0 3.  | 7                | . 36 |              | . 36 |     | .06  | . 23  |       | . 17 | .09          | .09     |      | .03            | .07            | .09        |
| 7                | .00  | 6 3.  | 7                | . 32 |              | .34  |     | .05  | . 47  |       | .19  | .08          | .08     |      | .03            | .18            | . 10       |
| 8                | .0   | 5 3.  | 0                | . 32 |              | . 29 |     | .05  | .72   |       | .16  | .08          | .08     |      | .03            | .14            | . 23       |
| 9                | .11  | 7 1.  |                  | . 3  |              | .27  |     | .06  | . 37  |       | .13  | .08          | .08     |      | .03            | .06            | .12        |
| 10               | .01  | в 1.  | 3                | .72  |              | .51  |     | .05  | .25   |       | .12  | .10          | .07     |      | .03            | .05            | .10        |
| 11               | .00  |       |                  | .40  |              | .35  |     | .07  | . 20  |       | .12  | .12          | .08     |      | .07            | .05            | .55        |
| 12               | . 0  | 5.    | 80               | . 35 |              | .23  |     | .05  | . 19  |       | .11  | . 32         | .08     |      | .04            | .08            | 2.0        |
| 13               | . 0  |       |                  | . 32 |              | .21  |     | .05  | . 18  |       | .13  | .17          | .07     |      | .03            | . 22           | 4.0        |
| 14               | .00  |       |                  | . 32 |              | . 19 |     | . 05 | . 16  |       | . 10 | 3.0          | .07     |      | .03            | .10            | .49        |
| 15               | .13  | 2 1.  | 9                | .31  |              | .18  |     | .09  | .12   |       | .09  | 3.3          | .08     |      | .33            | .11            | . 25       |
| 16               | . 09 |       | 93               | .38  |              | 18   |     | .05  | .12   |       | . 24 | 1.0          | .07     |      | .06            | .06            | .17        |
| 17               | . 53 | 3 1.  | 3                | .68  |              | .18  |     | .04  | . 11  |       | . 36 | 2.7          | .07     |      | .54            | . 05           | .14        |
| 18               | .1   |       |                  | . 34 |              | .17  |     | .04  | .11   |       | . 16 | 3.4          | .07     |      | . 06           | .09            | .12        |
| 19               | .08  |       |                  | . 35 |              | 15   |     | .06  | .09   |       | .11  | 1.1          | .08     |      | . 17           | .12            | .10        |
| 20               | . 58 | в.    | 81               | .32  |              | 15   |     | .05  | .09   |       | . 16 | .71          | .07     |      | 1.8            | .07            | .09        |
| 21               | . 48 |       |                  | .23  |              | 14   |     | .05  | .09   |       | .13  | . 52         | .07     |      | .24            | .11            | .08        |
| 22               | . 38 |       |                  | .23  |              | 12   |     | .05  | .07   |       | .10  | .39          | .07     |      | .09            | .06            | .08        |
| 23               | . 22 |       |                  | . 22 | ,            | 12   |     | .08  | .07   |       | . 45 | . 29         | .06     |      | .12            | .05            | .07        |
| 24               | .14  |       |                  | . 25 |              | 11   |     | . 27 | .07   |       | .21  | . 25         | .07     |      | . 16           | .06            | .05        |
| 25               | . 28 | в .   | 44               | . 27 |              | 13   |     | .08  | .07   |       | . 15 | .22          | .07     |      | .10            | .10            | 3.1        |
| 26               | . 28 |       |                  | . 29 |              | 12   |     | .29  | .07   |       | .13  | .20          | .06     |      | .09            | .09            | .56        |
| 27               | . 26 |       | 43               | .53  |              | 12   | 1   | 2.1  | .50   |       | .12  | .18          | .06     |      | .10            | 2.1            | .20        |
| 28               | .91  |       | 38               | . 29 |              | 10   |     | 2.4  | . 20  |       | . 12 | . 15         | .06     |      | .22            | .93            | 1.3        |
| 29               | . 45 | 5 .   | 33               | . 27 |              | 09   |     |      | 2.8   |       | .11  | .14          | .06     |      | .12            | .21            | . 24       |
| 30               | . 3  |       | 32               | .84  |              | 09   |     |      | 1.7   |       | .11  | .13          | .08     |      | .08            | .49            | .15        |
| 31               | .54  |       |                  | .96  |              | 09   |     |      | .66   |       |      | .12          |         |      | .06            | .19            |            |
| TOTAL            | 7.02 |       |                  | .57  |              | 52   | (   |      | 11.23 |       | 5.20 | 19.29        | 2.41    |      | 4.96           | 6.15           | 15.11      |
| MBAN             | . 23 |       |                  | .44  |              | 24   |     | .23  | . 36  |       | . 17 | .62          | .08     |      | . 16           | .20            | .50        |
| MAX              | .91  |       |                  | 1.3  |              | 66   |     | 2.4  | 2.8   |       | . 45 | 3.4          | .13     |      | 1.8            | 2.1            | 4.0        |
| MIN              | .05  |       |                  | .22  |              | 09   |     | .04  | .07   |       | .09  | .08          | .06     |      | .03            | .05            | .05        |
| CFSM             | 3.59 |       |                  | .87  |              | 75   |     | 3.59 | 5.62  |       | 2.66 | 9.69         | 1.25    |      | 2.50           | 3.12           | 7.81       |
| IN.              | 4.08 |       |                  | .89  | . 4.         | 37   |     | 3.79 | 6.53  |       | 3.02 | 11.21        | 1.40    |      | 2.88           | 3.57           | 8.78       |
| AC-FT            | 14   |       | 80               | 27   |              | 15   |     | 13   | 22    |       | 10   | 38           | 4.8     |      | 9.8            | 12             | 30         |
| CAL YR<br>WTR YR |      | TOTAL | 101.36<br>139.14 |      | MBAN<br>MBAN | .2   |     |      | 3.8   | MIN   | .02  | CFSM<br>CFSM | 4.37    | IN.  | 58.92<br>80.88 | AC-FT<br>AC-FT | 201<br>276 |

## RIO ESPIRITU SANTO BASIN

### 50063500 QUEBRADA TORONJA AT EL VERDE, PR--Continued

## WATER QUALITY RECORDS

PERIOD OF RECORD .-- WATER YEARS APRIL 1983 TO CURRENT YEAR

| DATE   | TIME   | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE    | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|--------|--------|---------------------------------------|--------------------------------------|-----------------------------|---------|------|---------------------------------------|--------------------------------------|-----------------------------|
| FEB, 1 | 2 1030 | 0.06                                  | 128                                  | 20.5                        | MAR, 14 | 1450 | 0.1                                   | 111                                  | 22.0                        |

#### 50063800 RIO ESPIRITU SANTO NEAR RIO GRANDE, PR

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

DRAINAGE ARRA. -- 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. Elevation of gage is 40 ft (12 m), from topographic map.

REMARKS.--Estimated daily discharges: Jul. 15, 17, 20, and Sept. 12, 13, 23, 25, 28. Records fair except those for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--19 years (1967-85), 57.2 cu ft/s (1.620 cu m/s), 90.11 in/yr (2,289 mm/yr), 41,440 acre-ft/yr (51.1 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, 12,400 cu ft/s (351 cu m/s), Dec. 2, 1983, gage height, 12.07 ft (3.679 m), from rating curve extended above 600 cu ft/s (17.0 cu m/s) on basis of step-backwater analysis; minimum discharge, 4.0 cu ft/s (0.113 cu m/s), July 3-5, 1975, Apr. 14, 15, 1984.

EXTREMES FOR CURRENT YEAR .-- Peak discharges greater than base discharge of 3,000 cu ft/s (85.0 cu m/s) and maximum (\$):

|        |      | Disch     |          | Gage height |       |        |      | Disch     |          | Gage h | eight |  |
|--------|------|-----------|----------|-------------|-------|--------|------|-----------|----------|--------|-------|--|
| Date   | Time | (cu ft/s) | (cu m/s) | (ft)        | (m)   | Date   | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   |  |
| May 14 | 1500 | *8,440    | 239      | *10.43      | 3.179 | May 17 | 2015 | 3,220     | 91.2     | 7.38   | 2.249 |  |

Minimum discharge, 5.3 cu ft/s (0.150 cu m/s), July 10.

|        |       | DISCHARGE    | , IN CUBI | C FEET | PER SECOND,<br>MEAN | WATER  |      | ER 1984 | 4 TO SEPTEME | ER 1985 |       |       |  |
|--------|-------|--------------|-----------|--------|---------------------|--------|------|---------|--------------|---------|-------|-------|--|
| DAY    | oc    | r nov        | DEC       | JAN    | FEB                 | MAR    | APR  | MAY     | JUN          | JUL     | AUG   | SEP   |  |
| 1      | 36    | 178          | 31        | 69     | 22                  | 110    | 40   | 13      | 18           | 11      | 12    | 46    |  |
| 2      | 74    | 194          | 132       | 136    | 18                  | 39     | 30   | 12      | 17           | 11      | 12    | 44    |  |
| 3      | 26    | 446          | 82        | 123    | 16                  | 28     | 26   | 13      | 17           | 12      | 13    | 28    |  |
| 4      | 19    | 196          | 54        | 60     | 15                  | 24     | 23   | 12      | 16           | 19      | 11    | 19    |  |
| 5      | 50    | 738          | 46        | 40     | 13                  | 43     | 21   | 12      | 14           | 11      | 11    | 17    |  |
| 6      | 51    | 7 717        | 43        | 44     | 12                  | 45     | 20   | 12      | 14           | 7.7     | 16    | 16    |  |
| 7      | 22    | 545          | 33        | 43     | 12                  | 163    | 23   | 11      | 14           | 6.7     | 17    | 18    |  |
| 8      | 19    | 346          | 27        | 30     | 11                  | 164    | 26   | 11      | 13           | 6.4     | 49    | 59    |  |
| 9      | 102   |              | 192       | 27     | 11                  | 71     | 18   | 10      | 13           | 6.3     | 15    | 41    |  |
| 10     | 52    | 133          | 123       | 71     | 11                  | 43     | 17   | 13      | 12           | 5.9     | 12    | 19    |  |
| 11     | 36    | 86           | 43        | 61     | 21                  | 27     | 16   | . 17    | 12           | 16      | 11    | 58    |  |
| 12     | 28    | 96           | 42        | 30     | 15                  | 27     | 18   | 98      | 12           | 9.9     | 11    | 500   |  |
| 13     | 34    | 83           | 29        | 25     | 12                  | 24     | 31   | 50      | 11           | 7.8     | 43    | 520   |  |
| 14     | 68    | 551          | 26        | 24     | 12                  | 20     | 20   | 794     | 11           | 6.6     | 29    | 93    |  |
| 15     | 84    | 255          | 25        | 27     | 34                  | 20     | 16   | 591     | 13           | 75      | 40    | 47    |  |
| 16     | 51    | 84           | 30        | 22     | 17                  | 19     | 107  | 166     | 12           | 43      | 17    | 32    |  |
| 17     | 89    | 176          | 132       | 20     | 16                  | 20     | 149  | 547     | 11           | 120     | 12    | 27    |  |
| 18     | 6     |              | 34        | 20     | 20                  | 26     | 54   | 543     | 11           | 24      | 14    | 24    |  |
| 19     | 40    |              | 30        | 19     | 43                  | 20     | 25   | 119     | 11           | 13      | 63    | 22    |  |
| 20     | 212   | 92           | 35        | 18     | 27                  | 16     | 59   | 60      | 9.9          | 220     | 20    | 21    |  |
| 21     | 197   |              | 26        | 17     | 17                  | 15     | 35   | 46      | 9.7          | 76      | 42    | 20    |  |
| 22     | 107   |              | 34        | 16     | 18                  | 14     | 18   | 38      | 9.7          | 20      | 20    | 19    |  |
| 23     | 44    |              | 25        | 16     | 24                  | 14     | 189  | 33      | 9.6          | 31      | 14    | 90    |  |
| 24     | 29    |              | 28        | 16     | 116                 | 13     | 58   | 30      | 9.4          | 65      | 12    | 55    |  |
| 25     | 114   | 41           | 48        | 15     | 41                  | 13     | 28   | 28      | 9.5          | 27      | 17    | 290   |  |
| 26     | 96    |              | 54        | 19     | 80                  | 13     | 19   | 25      | 9.7          | 24      | 13    | 79    |  |
| 27     | 102   |              | 101       | 17     | 431                 | 196    | 16   | 24      | 9.1          | 16      | 462   | 31    |  |
| 28     | 227   |              | 61        | 16     | 518                 | 63     | 15   | 22      | 9.0          | 43      | 215   | 160   |  |
| 29     | 118   |              | 35        | 14     |                     | 675    | 14   | 20      | 9.0          | 28      | 35    | 42    |  |
| 30     | 121   |              | 187       | 14     |                     | 354    | 13   | 20      | 9.3          | 17      | 83    | 24    |  |
| 31     | 111   |              | 183       | 13     |                     | 111    |      | 19      |              | 13      | 31    |       |  |
| TOTAL  | 2425  |              | 1971      | 1082   | 1603                | 2430   | 1144 | 3409    | 355.9        | 992.3   | 1372  | 2461  |  |
| MBAN   | 78.2  |              | 63.6      | 34.9   | 57.3                | 78.4   | 38.1 | 110     | 11.9         | 32.0    | 44.3  | 82.0  |  |
| MAX    | 227   |              | 192       | 136    | 518                 | 675    | 189  | 794     | 18           | 220     | 462   | 520   |  |
| MIN    | 19    |              | 25        | 13     | 11                  | 13     | 13   | 10      | 9.0          | 5.9     | 11    | 16    |  |
| CFSM   | 9.07  |              | 7.38      | 4.05   | 6.65                | 9.10   | 4.42 | 12.8    | 1.38         | 3.71    | 5.14  | 9.51  |  |
| IN.    | 10.47 |              | 8.51      | 4.67   |                     | 10.49  | 4.94 | 14.71   | 1.54         | 4.28    | 5.92  | 10.62 |  |
| AC-FT  | 4810  | 11640        | 3910      | 2150   | 3180                | 4820   | 2270 | 6760    | 706          | 1970    | 2720  | 4880  |  |
| CAL YR |       | TOTAL 22623. |           | 61.8   |                     | 38 MIN |      |         | 7.17 IN.     | 97.63   | AC-FT | 44870 |  |
| WTR YR | 1985  | TOTAL 25114. | 2 MBAN    | 68.8   | MAX 7               | 94 MIN | 5.9  | CFSM    | 7.98 IN.     | 108.38  | AC-FT | 49810 |  |

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

### WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | TIME   | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS)                    | SPR-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM)                | PH<br>(STAND-<br>ARD<br>UNITS)                    | TEMPER-<br>ATURE<br>(DEG C)   | TUR-<br>BID-<br>ITY<br>(NTU)                          | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L)                                 | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | OXYGEN<br>DEMAND,<br>CHEM-<br>ICAL<br>(HIGH<br>LEVEL)<br>(MG/L) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) |
|----------------|--|--|--|---|---|---|---|--|---|--|
| OCT 1984       |  |  |  |   |   | 120000  |   |  |   |  |
| 24<br>JAN 1985 | 1330   | 28   | 95   | 7.50  | 25.5  | 3.9   | 7.6   | 92   | 22  | K22000   |
| 18             | 1410   | 20   | 126  | 7.60  | 22.5  | 30  | 9.3   | 106  | 22  | 280  |
| MAR<br>12      | 1400   | 36   | 101  | 7.40  | 24.5  | 3.0   | 9.0   | 106  | 13  | K15000   |
| MAY<br>17      | 1000   | 94   | 69   | 6.80  | 22.5  | 6.5   | 9.0   | 103  | <10   | 4500   |
| AUG            | 1425   | 16   | 143  | 7.60  | 28.5  | 2.0   | 7.8   | 99   | <10   | 7500   |
| 00             | 1425   | 10   | 143  | 7.60  | 28.5  | 2.0   | 7.0   | 93   | 110   | 7500   |
| DATE           | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACOS)                             | HARD-<br>NESS<br>NONCARB<br>WATER<br>TOT FLD<br>MG/L AS<br>CACO3 | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA)      | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG)                | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA)          | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO                             | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K)            | ALKA-<br>LINITY<br>WATER<br>TOTAL<br>FIELD<br>MG/L AS<br>CACO3  | SULFIDE<br>TOTAL<br>(MG/L<br>AS S)                             |
| OCT 1984       | 120  | 97   |  | 5.0   |   | 7.0   | 0.6   | 0.2  | 30  |  |
| 24<br>JAN 1985 | 130  | 27   |  | 5.8   | 3.1   | 7.0   | 0.6   | 0.3  |   |  |
| 18<br>MAR      |  | 40   |  | 8.6   | 4.6   | 8.6   | 0.6   | 0.3  | 43  | <0.5   |
| 12<br>MAY      | 6000   |  |  |   |   |   |   |  | 34  |  |
| 17<br>AUG      | 3100   | 17   | 1  | 3.5   | 1.9   | 5.5   | 0.6   | 0.4  | 16  | <0.5   |
| 06             | 850  |  |  |   |   |   |   |  | 31  |  |
| DATE           | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4)                      | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)                | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F)               | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY)     | SOLIDS,<br>RESIDUE<br>AT 105<br>DEG. C,<br>SUS-<br>PENDED<br>(MG/L) | NITRO-<br>GEN,<br>NITRITE<br>TOTAL<br>(MG/L<br>AS N)           | NITRO-<br>GEN,<br>NO2+NO3<br>TOTAL<br>(MG/L<br>AS N)            | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N)           |
| OCT 1984       |  |  |  |   |   |   |   |  |   |  |
| 24<br>JAN 1985 | 2.1  | 10   | <0.1   | 16  | 62  | 4.7   | <1  | 0.01   | ₹0.10   | 0.02   |
| 18<br>MAR      | 2.1  | 9.6  | <0.1   | 22  | 82  | 4.4   | <1  | <0.01  | <0.10   | <0.01  |
| 12<br>MAY      |  |  |  |   |   |   | 6   | <0.01  | <0.10   | 0.05   |
| 17             | 2.6  | 7.9  | <0.1   | 11  | 42  | 11  | 7   | <0.01  | <0.10   | 0.09   |
| AUG<br>06      |  |  |  |   |   |   | 3   | <0.01  | <0.10   | 0.07   |
| DATE           | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N)               | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P)                      | ARSENIC<br>TOTAL<br>(UG/L<br>AS AS)               | BARIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS BA)             | BORON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS B) | CADMIUM<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CD)             | CHRO-<br>MIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CR) | COPPER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CU)         | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PE)          |
| OCT 1984       |  |  |  |   |   |   |   |  |   |  |
| 24<br>JAN 1985 | 0.48   | 0.5  | <0.01  |   |   |   |   | 7.7  |   |  |
| 18<br>MAR      |  | 0.6  | <0.01  | <1  | <100  | ₹20   | 1   | <1   | ₹10   | 220  |
| 12<br>MAY      | 0.55   | 0.6  | <0.01  |   |   |   |   |  |   |  |
| 17             | 0.61   | 0.7  | <0.01  | <1  | <100  | <20   | 1   | <1   | <10   | 500  |
| 06             | 0.33   | 0.4  | 0.03   |   |   | 44  |   |  | 44  |  |

K = non-ideal count

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RIO ESPIRITU SANTO BASIN

50063800 RIO ESPIRITU SANTO NEAR RIO GRANDE, PR--Continued
WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| OCT 1984       |   |   |   |  |   |   |                                     |                            |  |
| 24<br>JAN 1985 |   |   |   |  |   |   |                                     |                            |  |
| 18<br>MAR      | 2   | 30  | <0.1  | <1   | (1  | 20  | <0.01                               | 4                          | 0.01   |
| 12<br>MAY      |   |   | <0.1  |  |   |   |                                     |                            |  |
| 17             | 3   | 10  | <0.1  | <1   | <1  | <10   | <0.01                               | 7                          | 0.03   |
| 06             |   |   |   |  |   | -   |                                     |                            |  |

#### 50065500 RIO MAMEYES NEAR SABANA, PR

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

DRAINAGE AREA .-- 6.88 sq mi (17.82 sq km).

#### WATER-DISCHARGE RECORDS

PERIOD OF RECORD .-- August 1967 to December 1973. June 1983 to current year.

GAGE .-- Water-stage recorder. Elevation of gage is 275 ft (84 m), from topographic map.

REMARKS. -- Estimated daily discharges: Oct. 20 to Nov. 20 and Jan. 28 to Feb. 12. Records fair except those for estimated daily discharges, which are poor.

AVERAGE DISCHARGE. -- 8 years (1968-73, 1984-85), 57.8 cu ft/s (1.637 cu m/s), 114.09 in/yr (2,898 mm/yr), 41,880 acre-ft/yr (51.6 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD .-- Maximum discharge, 19,800 cu ft/s (561 cu m/s), Sept. 4, 1973, gage height, 13.02 ft (3.968 m), from rating curve extended above 1,800 cu ft/s (51.0 cu m/s) on basis of slope-area measurement of peak flow; minimum discharge, 5.1 cu ft/s (0.144 cu m/s), Apr. 8, 9, 1970.

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

|        |      | Discharge<br>Time (cu ft/s) (cu m/s) |          |       | Gage height |        |      | Discharge |            |        |       |
|--------|------|--------------------------------------|----------|-------|-------------|--------|------|-----------|------------|--------|-------|
| Date   | Time | (cu ft/s)                            | (cu m/s) | (ft)  | (m)         | Date   | Time | (cu ft/s) | (cu m/s) . | (ft)   | (m)   |
| May 14 | 1445 | 10,100                               | 286      | 10.25 | 3.124       | May 17 | 2245 | *13,900   | 394        | *11.44 | 3.487 |

Minimum discharge, 8.0 cu ft/s (0.227 cu m/s). June 19.

|       |       | DISCHARGE     | IN CUBIC | FEET | PER SECOND, | WATER | YEAR OCTOBE | R 198 | 4 TO SEPTEMBE | R 1985 |       |       |
|-------|-------|---------------|----------|------|-------------|-------|-------------|-------|---------------|--------|-------|-------|
| PAY   | oc    | r NOV         | DEC      | JAN  | FEB         | MAR   | APR         | MAY   | JUN           | JUL    | AUG   | SEP   |
| 1     | 4     | 4 220         | 36       | 43   | 29          | 64    | 33          | 19    | 14            | 14     | 11    | 35    |
| 2     | 7     | 1 186         | 92       | 64   | 20          | 37    | 28          | 20    | 15            | 12     | 10    | 37    |
| 3     | 40    | 6 472         | 56       | 57   | 15          | 30    | 25          | 20    | 15            | 14     | 11    | 26    |
| 4     | 31    |               | 47       | 36   | 17          | 24    | 25          | 20    | 15            | 21     | 9.6   | 24    |
| 5     | 7     |               | 45       | 31   | 15          | 29    | 24          | 22    | 15            | 12     | 13    | 23    |
| 6     | 58    | 650           | 36       | 35   | 14          | 31    | 23          | 19    | 14            | 12     | 14    | 22    |
| 7     | 39    | 550           | 32       | 29   | 13          | 73    | 30          | 37    | 14            | 11     | 29    | 28    |
| 8     | 39    | 360           | 34       | 24   | 12          | 81    | 25          | 20    | 15            | 11     | 20    | 65    |
| 9     | 108   | 305           | 103      | 23   | 12          | 43    | 21          | 17    | 12            | 14     | 19    | 31    |
| 10    | 52    |               | 72       | 32   | 11          | 31    | 20          | 19    | 11            | 15     | 19    | 23    |
| 11    | 4:    |               | 46       | 31   | 13          | 25    | 20          | 27    | 11            | 46     | 19    | 32    |
| 12    | 6     |               | 42       | 23   | 12          | 27    | 21          | 117   | 9.3           | 15     | 26    | 173   |
| 13    | 61    | 7 89          | 35       | 21   | 12          | 23    | 29          | 44    | 9.3           | 13     | 36    | 326   |
| 14    | 112   | 2 375         | 29       | 24   | 15          | 22    | 20          | 364   | 9.5           | 14     | 28    | 91    |
| 15    | 78    | 8 215         | 28       | 26   | 24          | 22    | 19          | 329   | 10            | 82     | 36    | 59    |
| 16    | 69    |               | 31       | 19   | 17          | 23    | 58          | 170   | 9.2           | 50     | 22    | 46    |
| 17    | 103   | 3 147         | 80       | 19   | 20          | 26    | 135         | 731   | 9.2           | 124    | 19    | 40    |
| 18    | 54    | 68            | 31       | 18   | 23          | 49    | 37          | 324   | 9.3           | 46     | 24    | 36    |
| 19    | 51    | 113           | 31       | 18   | 34          | 33    | 23          | 78    | 9.7           | 41     | 32    | 35    |
| 20    | 228   | 5 59          | 33       | 17   | 21          | 31    | 41          | 42    | 9.9           | 150    | 21    | 30    |
| 21    | 210   |               | 27       | 16   | 16          | 30    | 27          | 30    | 10            | 58     | 29    | 29    |
| 22    | 110   |               | 28       | 16   | 17          | 28    | 20          | 24    | 10            | 44     | 19    | 46    |
| 23    | 60    |               | 24       | 16   | 34          | 26    | 216         | 20    | 11            | 60     | 18    | 77    |
| 24    | 46    |               | 26       | 15   | 54          | 26    | 54          | 19    | 11            | 72     | 16    | 207   |
| 25    | 76    | 47            | 34       | 15   | 33          | 25    | 34          | 17    | 11            | 41     | 18    | 82    |
| 26    | 101   | 45            | 40       | 21   | 38          | 27    | 26          | 19    | 11            | 35     | 19    | 52    |
| 27    | 98    | 3 53          | 55       | 20   | 147         | 84    | 23          | 14    | 37            | 43     | 157   | 77    |
| 28    | 122   | 44            | 37       | 18   | 221         | 89    | 22          | 14    | 12            | 51     | 93    | 56    |
| 29    | 102   | 38            | 29       | 16   |             | 280   | 21          | 15    | 11            | 26     | 29    | 47    |
| 30    | 309   |               | 95       | 17   |             | 173   | 20          | 14    | 11            | 19     | 28    | 62    |
| 31    | 155   |               | 94       | 15   |             | 60    |             | 14    |               | 14     | 23    |       |
| OTAL  | 2823  |               | 1428     | 775  | 909         | 1572  | 1120        | 2639  | 371.4         | 1180   | 867.6 | 1917  |
| BAN   | 91.1  |               | 46.1     | 25.0 | 32.5        | 50.7  | 37.3        | 85.1  | 12.4          | 38.1   | 28.0  | 63.9  |
| AX    | 309   |               | 103      | 64   | 221         | 280   | 216         | 731   | 37            | 150    | 157   | 326   |
| IN    | 37    |               | 24       | 15   | 11          | 22    | 19          | 14    | 9.2           | 11     | 9.6   | 22    |
| FSM   | 13.2  |               | 6.70     | 3.63 | 4.72        | 7.37  | 5.42        | 12.4  | 1.80          | 5.54   | 4.07  | 9.29  |
| N.    | 15.26 |               | 7.72     | 4.19 | 4.91        | 8.50  | 6.06        | 14.27 | 2.01          | 6.38   | 4.69  | 10.37 |
| C-FT  | 5600  | 11390         | 2830     | 1540 | 1800        | 3120  | 2220        | 5230  | 737           | 2340   | 1720  | 3800  |
| AL YR |       | TOTAL 21913   | MEAN     | 59.9 | MAX 69      | 5 MIN | 11 C        | FSM I |               | 118.48 | AC-FT | 43460 |
| TR YR | 1005  | TOTAL 21345.0 | MEAN     | 58.5 | MAX 73      | 1 MIN | 9.2 C       | FSM I | 3.50 IN.      | 115.41 | AC-FT | 42340 |

### RIO MAMEYES BASIN

## 50065500 RIO MAMEYES NEAR SABANA, PR--Continued

## WATER QUALITY RECORDS

PERIOD OF RECORD .-- WATER YEARS JUNE 1983 TO CURRENT YEAR

| DATE   | TIME   | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE    | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|--------|--------|---------------------------------------|--------------------------------------|-----------------------------|---------|------|---------------------------------------|--------------------------------------|-----------------------------|
| FRB, 1 | 3 1245 | 12                                    | 121                                  | 21.5                        | SEP, 12 | 1137 | 30                                    | 94                                   | 23.5                        |

#### 50065700 RIO MAMEYES AT HIGHWAY 191 AT MAMEYES, PR

LOCATION.--Lat 18°22'03", long 65°46'14", Hydrologic Unit 21010005, on left bank, 0.2 mi (0.3 km) upstream from Quebrada Anon, 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).

CAL YR 1984 TOTAL 30264.8

MBAN

82.7 MAX

882

MIN

9.0

CFSM 7.01 IN. 95.41 AC-FT 60030

#### WATER-DISCHARGE RECORDS

PERIOD OF RECORD .-- October 1966 to January 1985 (discontinued) .

GAGE.--Water-stage recorder. Blevation of gage is 22 ft (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 .-- No estimated daily discharges during period of record. Records fair.

AVERAGE DISCHARGE.--18 years (1967-84), 72.6 cu ft/s (2.056 cu m/s), 83.55 in/yr (2,122 mm/yr), 52,600 acre-ft/yr (64.8 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 discharge, 5.0 cu ft/s (0.142 cu m/s), Apr. 28, 1975.

EXTREMES FOR CURRENT PERIOD .-- Peak discharges greater than base discharge of 5,300 cu ft/s (150 cu m/s) and maximum (\*):

|     |    |      |     | Disc  | harge    | Gage  | height |
|-----|----|------|-----|-------|----------|-------|--------|
| Dat | e  | Time | (cu | ft/s) | (cu m/s) | (ft)  | (m)    |
| Ont | 30 | 1300 | *3  | 500   | 00 1     | *11 1 | 4 3 30 |

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

Minimum discharge, 17 cu ft/s (0.481 cu m/s), Oct. 4, 5.

|             |       | DISCHARGE | IN COBIC | raar | LIM | MEAN. |     | ES COLORE | . 1504 1 | O DEL TEND | an 1505 |     |     |
|-------------|-------|-----------|----------|------|-----|-------|-----|-----------|----------|------------|---------|-----|-----|
| DAY         | OCT   | NOV       | DEC      | JAN  |     | FEB   | MAR | APR       | MAY      | JUN        | JUL     | AUG | SEP |
| 1<br>2<br>3 | 33    | 273       | 36       | 59   |     |       |     |           |          |            |         |     |     |
| 2           | 87    | 231       | 187      | 97   |     |       |     |           |          |            |         |     |     |
| 3           | 30    | 597       | 79       | 87   |     |       |     |           |          |            |         |     |     |
| 4           | 20    | 387       | 55       | 54   |     |       |     |           |          |            |         |     |     |
| 5           | 98    | 882       | 52       | 44   |     |       |     |           |          |            |         |     |     |
| 6           | 60    | 824       | 43       | 49   |     |       |     |           |          |            |         |     |     |
| 7           | 24    | 689       | 37       | 43   |     |       |     |           |          |            |         |     |     |
| 8           | 22    | 453       | 37       | 31   |     |       |     |           |          |            |         |     |     |
| 9           | 165   | 385       | 178      | 28   |     |       |     |           |          |            |         |     |     |
| 10          | 48    | 202       | 117      | 68   |     |       |     |           |          |            |         |     |     |
| 11          | 34    | 123       | 55       | 46   |     |       |     |           |          |            |         |     |     |
| 12          | 42    | 101       | 53       | 28   |     |       |     |           |          |            |         |     |     |
| 13          | 46    | 109       | 43       | 22   |     |       |     |           |          |            |         |     |     |
| 14          | 240   | 473       | 34       | 22   |     |       |     |           |          |            |         |     |     |
| 15          | 218   | 269       | 32       | 32   |     |       |     |           |          |            |         |     |     |
| 16          | 120   | 97        | 35       | 20   |     |       |     |           |          |            |         |     |     |
| 17          | 164   | 182       | 117      | 19   |     |       |     |           |          |            |         |     |     |
| 18          | 95    | 84        | 35       | 18   |     |       |     |           |          |            |         |     |     |
| 19          | 76    | 141       | 36       | 20   |     |       |     |           |          |            |         |     |     |
| 20          | 285   | 102       | 45       | 20   |     |       |     |           |          |            |         |     |     |
| 21          | 266   | 72        | 34       | 21   |     |       |     |           |          |            |         |     |     |
| 22          | 138   | 72        | 36       | 19   |     |       |     |           |          |            |         |     |     |
| 23          | 73    | 109       | 31       | 19   |     |       |     |           |          |            |         |     |     |
| 24          | 55    | 59        | 34       | 19   |     |       |     |           |          |            |         |     |     |
| 25          | 91    | 51        | 44       |      |     |       |     |           |          |            |         |     |     |
| 26          | 125   | 50        | 50       |      |     |       |     |           |          |            |         |     |     |
| 27          | 121   | 83        | 72       |      |     |       |     |           |          |            |         |     |     |
| 28          | 152   | 46        | 51       |      |     |       |     |           |          |            |         |     |     |
| 29          | 126   | 39        | 36       |      |     |       |     |           |          |            |         |     |     |
| 30          | 387   | 36        | 174      |      |     |       |     |           |          |            |         |     |     |
| 31          | 194   |           | 150      |      |     |       |     |           |          |            |         |     |     |
| TOTAL       | 3635  |           | 2018     |      |     |       |     |           |          |            |         |     |     |
| MBAN        | 117   |           | 65.1     |      |     |       |     |           |          |            |         |     |     |
| MAX         | 387   | 882       | 187      |      |     |       |     |           |          |            |         |     |     |
| MIN         | 20    | 36        | 31       |      |     |       |     |           |          |            |         |     |     |
| CFSM        | 9.92  |           | 5.52     |      |     |       |     |           |          |            |         |     |     |
| IN.         | 11.46 |           | 6.36     |      |     |       |     |           |          |            |         |     |     |
| AC-FT       | 7210  | 14320     | 4000     |      |     |       |     |           |          |            |         |     |     |

## RIO MAMEYES BASIN

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

## WATER QUALITY RECORDS

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

| DATE    | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|---------|------|---------------------------------------|--------------------------------------|-----------------------------|------|------|---------------------------------------|--------------------------------------|-----------------------------|
| JAN, 24 | 1204 | 9.6                                   | 150                                  | 23.0                        |      |      | And the second                        |                                      |                             |

### 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 sq km).

#### WATER-DISCHARGE RECORDS

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

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

REMARKS. -- Estimated daily discharges: Mar. 19 to Apr. 13. Records fair except those for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--6 years (1980-85), 17.7 cu ft/s (0.501 cu m/s), 60.70 in/yr (1,542 mm/yr), 12,820 acre-ft/yr (15.8 cu hm/yr).

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

EXTREMES FOR CURRENT YEAR .-- Peak discharges greater than base discharge of 1,500 ou ft/s (42.5 ou m/s) and maximum (\*):

|        |      | Discha    | arge     | Gage height |       |        |       | Disch     | Gage height |        |       |
|--------|------|-----------|----------|-------------|-------|--------|-------|-----------|-------------|--------|-------|
| Date   | Time | (cu ft/s) | (cu m/s) | (ft)        | (m)   | Date   | Time  | (cu ft/s) | (cu m/s)    | (ft)   | (m)   |
| May 16 | 0400 | 1,890     | 53.5     | 12.74       | 3.883 | May 17 | *0930 | *3,470    | 98.3        | *14.73 | 4.490 |

DISCUADOR IN CIRIC PEPE DED GECOND WATER VEAD OCTORED 1004 TO SEPTEMBER 1005

Minimum discharge, 1.1 cu ft/s (0.031 cu m/s), Aug. 10-12, 25, 26.

|                  |       | DISC | HARGE, I | N CUBI       | C FEET     | PER | SECOND,<br>MEAN |      | YEAR       | осто | BER 198 | 34 TO | SEPTEMB | ER 1985        |                |                |
|------------------|-------|------|----------|--------------|------------|-----|-----------------|------|------------|------|---------|-------|---------|----------------|----------------|----------------|
| DAY              | oc    | T NO | v D      | BC           | JAN        |     | FRB             | MAR  |            | APR  | MA      | ,     | JUN     | JUL            | AUG            | SEP            |
| 1                | 10    | 31   | 7 14     |              | 13         |     | 5.5             | 20   | 1          | 1    | 2.0     | ,     | 9.3     | 2.3            | 1.4            | 3.0            |
| 2                | 17    | 3:   |          |              | 15         |     | 3.8             | 7.4  |            | 8.0  | 2.1     |       | 8.5     | 2.2            | 1.3            | 3.3            |
| 3                | 14    | 154  |          |              | 14         |     | 3.0             | 4.6  |            | 6.6  | 2.3     |       | 8.0     | 2.3            | 1.4            | 1.7            |
| 4                | 5.    |      |          |              | 12         |     | 3.1             | 3.6  |            | 5.8  | 2.3     |       | 7.9     | 1.9            | 1.2            | 1.4            |
| 5                | 50    | 324  |          |              | 9.9        |     | 2.9             | 4.0  |            | 5.0  | 2.4     |       | 8.6     | 1.8            | 1.4            | 1.3            |
| 6                | 26    | 239  | 13       |              | 12         |     | 2.8             | 7.5  |            | 4.7  | 2.3     | 3     | 8.6     | 1.5            | 1.5            | 1.2            |
| 7                | 9.    | 182  | 12       |              | 11         |     | 2.5             | 19   | 1          | 0    | 29      |       | 7.8     | 1.5            | 1.8            | 4.9            |
| 8                | 7.    | 0 76 | 13       |              | 8.0        |     | 2.5             | 28   |            | 8.2  | 6.8     | 3     | 7.5     | 1.5            | 6.7            | 17             |
| 9                | 94    | 89   | 43       |              | 7.6        |     | 2.4             | 14   |            | 4.5  | 2.6     | 3     | 6.8     | 1.4            | 1.5            | 5.4            |
| 10               | 22    | 46   | 3 24     |              | 13         |     | 2.2             | 9.5  |            | 3.9  | 2.6     |       | 7.1     | 1.4            | 1.2            | 2.1            |
| 11               | 14    | 38   | 3 13     |              | 10         |     | 2.5             | 4.8  |            | 5.0  | 2.8     | 3     | 6.4     | 7.0            | 1.2            | 6.7            |
| 12               | 11    | 34   | 16       |              | 7.6        |     | 2.5             | 5.8  |            | 3.9  | 28      |       | 5.4     | 2.5            | 1.6            | 91             |
| 13               | 13    | 34   | 13       |              | 6.6        |     | 2.5             | 4.4  |            | 5.8  | 12      |       | 5.8     | 1.3            | 4.9            | 217            |
| 14               | 70    | 127  | 1 10     |              | 6.6        |     | 2.5             | 3.5  |            | 4.7  | 13      |       | 4.6     | 1.8            | 4.3            | 32             |
| 15               | 78    | 54   | 9        | 4            | 6.7        |     | 3.7             | 4.0  |            | 4.0  | 81      |       | 4.1     | 18             | 5.9            | 14             |
| 16               | 32    | 30   |          |              | 5.8        |     | 2.7             | 3.6  |            | 4.5  | 157     |       | 3.4     | 9.3            | 1.9            | 9.9            |
| 17               | 23    | 34   |          |              | 5.8        |     | 2.5             | 3.7  | 7          | 9    | 407     |       | 2.8     | 31             | 1.3            | 7.6            |
| 18               | 16    | 26   |          |              | 5.5        |     | 2.7             | 14   | 1          | 6    | 257     |       | 2.7     | 2.8            | 1.6            | 5.5            |
| 19               | 14    | 35   |          |              | 4.7        |     | 5.3             | 3.2  |            | 5.1  | 48      |       | 2.6     | 1.8            | 3.5            | 4.8            |
| 20               | 87    | 27   | 7        | 6            | 4.4        |     | 3.2             | 2.3  |            | 7.6  | 31      |       | 2.4     | 46             | 1.6            | 6.1            |
| 21               | 83    | 22   |          |              | 4.3        |     | 2.3             | 2.0  |            | 5.1  | 25      |       | 2.2     | 9.5            | 2.1            | 3.9            |
| 22               | 23    | 21   |          |              | 4.3        |     | 2.5             | 2.0  |            | 2.5  | 22      |       | 2.1     | 2.6            | 1.4            | 3.4            |
| 23               | 16    | 23   |          |              | 4.2        |     | 2.6             | 1.9  |            | 6    | 19      |       | 2.0     | 2.2            | 1.2            | 8.8            |
| 24               | 14    | 19   |          |              | 4.1        |     | 5.3             | 1.6  | 1          | 6    | 18      |       | 2.7     | 4.6            | 1.3            | 54             |
| 25               | 16    | 19   | 6.       | 9            | 3.8        |     | 2.5             | 1.5  |            | 5.9  | 16      |       | 3.2     | 2.1            | 1.2            | 118            |
| 26               | 16    | 18   |          |              | 4.6        |     | 4.0             | 2.3  |            | 3.6  | 14      |       | 1.9     | 1.5            | 1.5            | 20             |
| 27               | 17    | 29   |          |              | 4.2        | 4   | 17              | 8.5  |            | 2.8  | 13      |       | 1.6     | 1.4            | 91             | 11             |
| 28               | 19    | 18   |          |              | 3.8        | 10  | 80              | 17   |            | 2.5  | 13      |       | 1.7     | 16             | 42             | 11             |
| 29               | 15    | 15   |          | 3            | 3.5        |     |                 | 25   |            | 2.3  | 12      |       | 1.6     | 11             | 4.7            | 9.5            |
| 30               | 45    | 14   |          |              | 3.5        |     |                 | 50   |            | 2.3  | 11      |       | 1.7     | 2.9            | 2.5            | 8.9            |
| 31               | 19    |      | 28       |              | 3.2        |     |                 | 30   |            |      | 10      |       |         | 1.9            | 1.9            |                |
| TOTAL            | 895.0 |      |          |              | 222.7      |     |                 | 08.7 |            | 2.3  | 1264.2  |       | 41.0    | 195.0          | 198.0          | 684.4          |
| MEAN             | 28.9  |      |          |              | 7.18       | 8   | 3.39            | 13.2 | 1          | 1.1  | 40.8    |       | 4.70    | 6.29           | 6.39           | 22.8           |
| MAX              | 94    |      |          | 3            | 15         |     | 108             | 125  |            | 86   | 407     |       | 9.3     | 46             | 91             | 217            |
| MIN              | 5.0   |      |          |              | 3.2        |     | 2.2             | 1.5  |            | 2.3  | 2.0     |       | 1.6     | 1.3            | 1.2            | 1.2            |
| CFSM             | 7.30  |      |          |              | 1.81       |     | 2.12            | 3.33 |            | .80  | 10.3    |       | 1.19    | 1.59           | 1.61           | 5.76           |
| IN.              | 8.41  |      |          |              | 2.09       | 2   | 2.21            | 3.84 |            | . 12 | 11.88   |       | 1.32    | 1.83           | 1.86           | 6.43           |
| AC-FT            | 1780  | 3740 | 87       | 3            | 442        |     | 466             | 811  |            | 659  | 2510    |       | 280     | 387            | 393            | 1360           |
| CAL YR<br>WTR YR |       |      | 208.6    | MBAN<br>MBAN | 17.<br>18. |     |                 |      | MIN<br>MIN | 1.4  | CFSM    |       |         | 58.32<br>64.83 | AC-FT<br>AC-FT | 12310<br>13690 |

## RIO SABANA BASIN

## 50067000 RIO SABANA AT SABANA, PR--Continued

## WATER QUALITY RECORDS

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

| DATE   | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE    | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|--------|------|---------------------------------------|--------------------------------------|-----------------------------|---------|------|---------------------------------------|--------------------------------------|-----------------------------|
| FRB, 1 | 1005 | 2.9                                   | 148                                  | 22.5                        | SEP, 12 | 1335 | 5.5                                   | 117                                  | 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 Penon, 1.1 mi (1.8 km) northeast of Colonia Paraiso, 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. Elevation 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. -- No estimated daily discharges during water year. Records fair. Low flow affected by diversions for water supply (approximately 9.0 cu ft/s (0. 255 cu m/s).

AVERAGE DISCHARGE.--24 years (1962-85), 67.7 cu ft/s (1.917 cu m/s), 61.70 in/yr (1,567 mm/yr), 49,050 acre-ft/yr (60.5 cu hm/yr); median of yearly mean discharges, 68 cu ft/s (1.93 cu m/s), 49,300 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 discharge, 0.86 cu ft/s (0.024 cu m/s), May 3, 1984.

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

| Date    |      | Disch     | arge     | Gage h | eight      |        |      | Disch     | arge     | Gage h | eight |
|---------|------|-----------|----------|--------|------------|--------|------|-----------|----------|--------|-------|
| Date    | Time | (cu ft/s) | (cu m/s) | (ft)   | <b>(=)</b> | Date   | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   |
| Oct. 16 | 1545 | 3.600     | 102      | 7.93   | 2.417      | May 17 | 2345 | *6.000    | 170      | 19.88  | 3.011 |

DISCHARGE. IN CURIC PERT DEP SECOND. WATER VEAD OCTOBER 1984 TO SEPTEMBER 1985

Minimum discharge, 3.4 cu ft/s (0.096 cu m/s), July 10, 11.

|          |      | D.    | ISCHARGE | , IN C   | OBIC PERT |       | MBAN | VALU |      | OBER | 1984 T   | O SEPTEM | 3KK 1982 |          |        |
|----------|------|-------|----------|----------|-----------|-------|------|------|------|------|----------|----------|----------|----------|--------|
| DAY      | oc   | r     | NOV      | DEC      | JAN       | FEB   |      | MAR  | APR  | 1    | MAY      | JUN      | JUL      | AUG      | SEP    |
| 1        | 2    | 5     | 103      | 28       | 108       | 15    |      | 82   | 41   |      | 12       | 17       | 6.8      | 18       | 22     |
| 2        | 5    | 6     | 123      | 102      | 170       | 12    |      | 23   | 29   |      | 11       | 16       | 13       | 12       | 17     |
| 3        | 2    | 4     | 398      | 74       | 77        | 10    |      | 16   | 24   |      | 15       | 15       | 9.1      | 11       | 16     |
| 4        | 1    |       | 222      | 49       | 43        | 9.9   |      | 12   | 21   |      | 14       | 14       | 18       | 7.2      | 12     |
| 5        | 2    |       | 939      | 45       | 31        | 9.1   |      | 41   | 18   |      | 12       | 13       | 9.5      | 5.5      | 9.9    |
| 6        | 4:   | 2     | 850      | 34       | 55        | 8.2   |      | 22   | 17   |      | 15       | 13       | 6.2      | 7.3      | 9.1    |
| 7        | 8    |       | 695      | 29       | 37        | 7.8   |      | 80   | 38   |      | 15       | 13       | 5.5      | 12       | 10     |
| 8        | 3    |       | 284      | 32       | 26        | 7.4   |      | 93   | 30   |      | 15       | 13       | 5.0      | 20       | 135    |
| 9        | 36   | 1     | 312      | 203      | 22        | 7.5   | 4    | 16   | 16   |      | 20       | 12       | 5.8      | 7.1      | 39     |
| 10       | 7    |       | 157      | 117      | 38        | 7.2   |      | 24   | 14   |      | 13       | 14       | 4.3      | 5.3      | 16     |
| 11       | 40   |       | 107      | 44       | 31        | 24    |      | 16   | 18   |      | 12       | 13       | 41       | 4.6      | 17     |
| 12       | 5    |       | 89       | 39       | 22        | 11    | 1    | 14   | 14   |      | 83       | 11       | 11       | 5.3      | 255    |
| 13       | 3    |       | 96       | 31       | 20        | 9.6   |      | 12   | 21   |      | 35       | 10       | 8.7      | 25       | 686    |
| 14       | 23   |       | 564      | 27       | 19        | 13    |      | 11   | 14   |      | 193      | 9.3      | 6.4      | 16       | 150    |
| 15       | 23   | 7     | 213      | 25       | 22        | 20    |      | 9.2  | 15   |      | 262      | 8.9      | 66       | 16       | 66     |
| 16       | 349  |       | 89       | 29       | 17        | 12    |      | 9.5  | 63   |      | 103      | 8.6      | 51       | 8.6      | 43     |
| 17       | 134  |       | 129      | 91       | 16        | 15    |      | 12   | 224  |      | 300      | 8.2      | 91       | 5.7      | 34     |
| 18       | 69   |       | 75       | 29       | 16        | 25    | 2    | 26   | 57   | 9    | 51       | 8.2      | 20       | 7.3      | 28     |
| 19       | 50   | )     | 140      | 26       | 15        | 49    | 1    | 11   | 26   | 1    | 160      | 8.2      | 13       | 17       | 25     |
| 20       | 243  | 3     | 93       | 27       | 14        | 19    |      | 8.0  | 34   |      | 85       | 7.9      | 180      | 7.7      | 24     |
| 21       | 238  |       | 61       | 22       | 13        | 11    |      | 7.0  | 25   |      | 60       | 7.3      | 40       | 19       | 20     |
| 22       | 76   |       | 58       | 24       | 13        | 13    |      | 7.0  | 15   |      | 48       | 7.9      | 19       | 8.2      | 19     |
| 23       | 4    |       | 67       | 21       | 13        | 16    |      | 6.8  | 173  |      | 40       | 7.3      | 16       | 5.8      | 25     |
| 24       | 35   |       | 47       | 21       | 12        | 34    |      | 5.7  | 90   |      | 35       | 7.0      | 27       | 5.2      | 175    |
| 25       | 50   | )     | 46       | 43       | 11        | 16    |      | 5.1  | 34   |      | 32       | 7.3      | 15       | 4.5      | 225    |
| 26       | 46   |       | 47       | 34       | 16        | 12    |      | 8.3  | 22   |      | 28       | 7.0      | 12       | 4.7      | 59     |
| 27       | 51   |       | 39       | 41       | 14        | 142   |      | 31   | 18   |      | 25       | 6.2      | 11       | 340      | 38     |
| 28       | 65   |       | 36       | 29       | 12        | 249   |      | 32   | 14   |      | 23       | 5.7      | 42       | 150      | 85     |
| 29       | 51   |       | 32       | 22       | 10        |       | 47   |      | 13   |      | 21       | 5.5      | 30       | 33       | 46     |
| 30<br>31 | 83   |       | 30       | 88<br>78 | 10<br>9.9 |       | 19   |      | 13   |      | 20<br>18 | 5.7      | 20<br>14 | 24<br>19 | 33     |
| mom a r  | 2989 |       | 5141     | 1504     | 932.9     |       |      |      |      |      |          | 200 0    | 817.3    | 832.0    | 2220 0 |
| TOTAL    | 96.4 |       |          |          |           | 784.7 |      | 7.6  | 1151 |      | 76       | 300.2    |          |          | 2339.0 |
| MBAN     |      |       | 205      | 48.5     | 30.1      | 28.0  | 4    | 7.7  | 38.4 |      | 28       | 10.0     | 26.4     | 26.8     | 78.0   |
| MAX      | 361  |       | 939      | 203      | 170       | 249   |      | 476  | 224  | 13   | 00       | 17       | 180      | 340      | 686    |
| MIN      | 15   |       | 30       | 21       | 9.9       | 7.2   |      | 5.1  | 13   |      | 11       | 5.5      | 4.3      | 4.5      | 9.1    |
| CFSM     | 6.47 |       | 3.8      | 3.26     | 2.02      | 1.88  |      | .20  | 2.58 |      | 59       | .67      | 1.77     | 1.80     | 5.23   |
| IN.      | 7.46 |       | 5.33     | 3.75     | 2.33      | 1.96  |      | .69  | 2.87 |      | 93       | .75      | 2.04     | 2.08     | 5.84   |
| AC-FT    | 5930 | 12    | 2180     | 2980     | 1850      | 1560  | 2    | 930  | 2280 | 78   | 90       | 595      | 1620     | 1650     | 4640   |
| CAL YR   |      | TOTAL | 21817.2  |          |           | MAX   | 939  | MIN  | 1.0  | CFSM | 4.00     | IN.      | 54.47    | AC-FT    | 43270  |
| WTR YR   | 1985 | TOTAL | 23244.7  | MR       | AN 63.7   | MAX   | 1300 | MIN  | 4.3  | CFSM | 4.28     | IN.      | 58.03    | AC-FT    | 46110  |

RIO FAJARDO BASIN

#### 50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

### WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD . --

SUSPENDED-SEDIMENT DISCHARGE: October 1982 to current year.

INSTRUMENTATION .-- Automatic sediment sampler removed on September 1985. USD-49 Sediment sampler since February 1983.

REMARES. -- Automatic sediment sampler set to collect samples above a streamflow of 100 ft3/sec. In addition to automatic sediment sampler, samples were collected by a local observer once daily during low flow and more than once daily during high flow events for concentration and particle size analyses.

EXTREMES FOR PERIOD OF DAILY RECORD .--SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,820 mg/L May 17, 1985; Minimum daily mean, 0.0 mg/L May 9, 1983.

SEDIMENT LOADS: Maximum daily, 19,800 tons (17,960 tonnes) April 21, 1983; minimum daily, 0.0 tons (0.0 tonne) May 9, 1983.

EXTREMES FOR CURRENT YEAR.-SEDIMENT CONCENTRATION: Maximum daily mean 1,820 mg/L May 17; Minimum daily mean, 1.0 mg/L several days.

SEDIMENT LOADS: Maximum daily, 13,700 tons (12,500 tonnes) May 17; minimum daily, 0.03 tons (0.03 tonne) several days.

| DATE   | TIME                                   | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPB-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS)    | TEMPER-<br>ATURE<br>(DEG C)       | TUR-<br>BID-<br>ITY<br>(NTU) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L) | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) |
|--|--|---|---|-----------------------------------|-----------------------------------|------------------------------|-------------------------------------|--|---|--|--|
| NOV 1984   |  |   |   |                                   |                                   |                              |                                     |  |   |  |  |
| 01<br>JAN 1985   | 1215                                   | 86  | 91  | 7.40                              | 26.0                              | 7.6                          | 8.0                                 | 98   | 15  | K1000  | K180   |
| 08   | 1225                                   | 25  | 126   | 7.80                              | 25.0                              |                              | 10.2                                | 123  | 10  | 240  | 130  |
| 29   | 1220                                   | 172   | 316   | 6.80                              | 23.0                              | 15                           | 8.3                                 | 96   | 14  | 4000   | 4100   |
| 16   | 1125                                   | 188   | 65  | 6.80                              | 24.0                              | 13                           | 8.6                                 | 102  | <10   | 4200   | 7200   |
| AUG<br>05  | 1130                                   | 5.7   | 127   | 7.80                              | 28.5                              | 1.9                          | 9.7                                 | 123  | <10   | 48   | 54   |
|  |  | HARD-<br>NESS                                   | CALCIUM   | MAGNE-<br>SIUM,                   | SODIUM,                           | SODIUM<br>AD-                | POTAS-<br>SIUM,                     | ALKA-<br>LINITY<br>WATER                                       |   | SULFATE  | CHLO-<br>RIDE,   |
| DATE   | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | NONCARB<br>WATER<br>TOT FLD<br>MG/L AS<br>CACO3 | DIS-<br>SOLVED<br>(MG/L<br>AS CA)                 | DIS-<br>SOLVED<br>(MG/L<br>AS MG) | DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SORP-<br>TION<br>RATIO       | DIS-<br>SOLVED<br>(MG/L<br>AS K)    | TOTAL<br>FIELD<br>MG/L AS<br>CACO3                             | SULFIDE<br>TOTAL<br>(MG/L<br>AS S)            | DIS-<br>SOLVED<br>(MG/L<br>AS SO4)                             | DIS-<br>SOLVED<br>(MG/L<br>AS CL)                                  |
| NOV 1984   | NESS<br>(MG/L<br>AS<br>CACOS)          | WATER<br>TOT FLD<br>MG/L AS                     | DIS-<br>SOLVED<br>(MG/L<br>AS CA)                 | DIS-<br>SOLVED<br>(MG/L<br>AS MG) | DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SORP-<br>TION<br>RATIO       | SOLVED<br>(MG/L<br>AS K)            | TOTAL<br>FIRLD<br>MG/L AS<br>CACO3                             | TOTAL<br>(MG/L                                | DIS-<br>SOLVED<br>(MG/L<br>AS SO4)                             | DIS-<br>SOLVED<br>(MG/L<br>AS CL)                                  |
| NOV 1984<br>01   | NESS<br>(MG/L<br>AS                    | WATER<br>TOT FLD<br>MG/L AS                     | DIS-<br>SOLVED<br>(MG/L                           | DIS-<br>SOLVED<br>(MG/L           | DIS-<br>SOLVED<br>(MG/L           | SORP-<br>TION                | SOLVED<br>(MG/L                     | TOTAL<br>FIRLD<br>MG/L AS                                      | TOTAL<br>(MG/L                                | DIS-<br>SOLVED<br>(MG/L  | DIS-<br>SOLVED<br>(MG/L  |
| NOV 1984<br>01<br>JAN 1985<br>08                           | NESS<br>(MG/L<br>AS<br>CACOS)          | WATER<br>TOT FLD<br>MG/L AS                     | DIS-<br>SOLVED<br>(MG/L<br>AS CA)                 | DIS-<br>SOLVED<br>(MG/L<br>AS MG) | DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SORP-<br>TION<br>RATIO       | SOLVED<br>(MG/L<br>AS K)            | TOTAL<br>FIRLD<br>MG/L AS<br>CACO3                             | TOTAL<br>(MG/L                                | DIS-<br>SOLVED<br>(MG/L<br>AS SO4)                             | DIS-<br>SOLVED<br>(MG/L<br>AS CL)                                  |
| NOV 1984<br>01<br>JAN 1985<br>08<br>MAR<br>29              | NESS<br>(MG/L<br>AS<br>CACO3)          | WATER<br>TOT FLD<br>MG/L AS<br>CACO3            | DIS-<br>SOLVED<br>(MG/L<br>AS CA)                 | DIS-<br>SOLVED<br>(MG/L<br>AS MG) | DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SORP-<br>TION<br>RATIO       | SOLVED<br>(MG/L<br>AS K)            | TOTAL<br>FIBLD<br>MG/L AS<br>CACO3                             | TOTAL<br>(MG/L<br>AS S)                       | DIS-<br>SOLVED<br>(MG/L<br>AS SO4)                             | DIS-<br>SOLVED<br>(MG/L<br>AS CL)                                  |
| NOV 1984<br>01<br>JAN 1985<br>08                           | NESS<br>(MG/L<br>AS<br>CACO3)          | WATER<br>TOT FLD<br>MG/L AS<br>CACO3            | DIS-<br>SOLVED<br>(MG/L<br>AS CA)                 | DIS-<br>SOLVED<br>(MG/L<br>AS MG) | DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SORP-<br>TION<br>RATIO       | SOLVED<br>(MG/L<br>AS K)            | TOTAL<br>FIBLD<br>MG/L AS<br>CACO3                             | TOTAL (MG/L AS S)                             | DIS-<br>SOLVED<br>(MG/L<br>AS SO4)                             | DIS-<br>SOLVED<br>(MG/L<br>AS CL)                                  |
| NOV 1984<br>01<br>JAN 1985<br>08<br>MAR<br>29<br>MAY<br>16 | NESS<br>(MG/L<br>AS<br>CACO3)          | WATER<br>TOT FLD<br>MG/L AS<br>CACO3            | DIS-<br>SOLVED<br>(MG/L<br>AS CA)                 | DIS-<br>SOLVED<br>(MG/L<br>AS MG) | DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SORP-<br>TION<br>RATIO       | SOLVED<br>(MG/L<br>AS K)            | TOTAL<br>FIBLD<br>MG/L AS<br>CACO3<br>25<br>37                 | TOTAL (MG/L AS S)                             | DIS-<br>SOLVED<br>(MG/L<br>AS SO4)                             | DIS-<br>SOLVED<br>(MG/L<br>AS CL)                                  |

STRRAMFLOW.

INSTANTANBOUS

(CFS)

14.5

SPRCIFIC CON-

TURE

(DEG C)

31.5

DUCTANCE

(UMHOS)

120

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

NITRO-SOLIDS. SOLIDS FLUO-SILICA, SUM OF SOLIDS, RESIDUE NITRO-NITRO-NITRO-NITRO-NITRO-GEN, AM-RIDE, DIS-CONSTI-DIS-AT 105 GEN, GEN, GEN, GEN, GEN, MONIA + SOLVED (MG/L NO2+NO3 ORGANIC DIS-TUENTS, SOLVED DEG. C, NITRATE NITRITE AMMONIA ORGANIC SOLVED TOTAL TOTAL DIS-(TONS PER SUS-TOTAL TOTAL TOTAL DATE (MG/L SOLVED PENDED (MQ/L (MG/L (MG/L (MG/L AS (MG/L (MG/L AS F) SIO2) (MG/L) DAY) (MG/L) (N BA AS N) AS N) (N BA AS N) (N BA NOV 1984 0.5 01... JAN 1985 (0.1 18 0.20 0.25 0.25 62 8 <0.01 14 08... <0.01 0.20 <0.01 0.4 MAR 29 . . . 16 0.28 0.02 0.30 0.05 0.45 0.5 MAV 16 ... (0.1 11 22 0.01 0.40 0.24 0.36 0.6 43 21 0.39 AUG 0.89 <0.01 0.10 0.05 0.15 0.2 CHRO-BARIUM, COPPER. CADMIUM MIUM. IRON, LEAD, BORON. NITRO-NITRO-TOTAL TOTAL PHOS-TOTAL TOTAL TOTAL TOTAL TOTAL GEN, GEN, PHORUS, ARSENIC RECOV-RECOV-RECOV-RECOV-RECOV-RECOV-RECOV-TOTAL TOTAL TOTAL TOTAL BRABLE BRABLE ERABLE BRABLE ERABLE BRABLE ERABLE DATE (MG/L (MG/L (MG/L (UG/L (UG/L (UG/L (UG/L (UG/L (UG/L (UG/L (UG/L (N BA AS NO3) AS P) AS AS) AS BA) AS B) AS CD) AS CR) AS CU) AS FR) AS PB) NOV 1984 01... 0.7 3.1 0.03 **JAN 1985** 08... 0.6 2.7 <0.01 <20 <10 480 MAR 29... 3.5 0.8 <0.01 MAY 16 . . . 1.0 4.4 <0.01 <1 <100 <20 <1 10 2200 2 AUG 05... 0.3 1.3 0.02 MANGA-METHY-SEDI-NESE, MERCURY SILVER, ZINC, LENE MENT, SRLR-SEDI-TOTAL. TOTAL. TOTAL TOTAL RLUR DIS-NIUM. MENT. CHARGE. RRCOV-RRCOV-RRCOV-RRCOV-CYANTER ACTIVE ERABLE ERABLE BRABLE BRABLE TOTAL PHENOLS SUB-SUS-SUS-TOTAL DATE (UG/L (UG/L (UG/L (UG/L (UG/L (MG/L TOTAL STANCE PENDED PENDED AS CN) AS MN) AS HG) AS SE AS AG) AS ZN) (UG/L) (MG/L) (MG/L) (T/DAY) JAN 1985 08... <0.01 0.03 20 30 MAR 29. <0.1 MAY 16 . . . 50 <0.1 <1 <1 20 <0.01 46 --TEMPERA-

STREAMFLOW.

INSTANTANBOUS

(CFS)

54.5

DATE

DEC, 04 1455

TIME

SPECIFIC CON-

DUCTANCE

(UMHOS)

110

TEMPERA-

DATE

TIME

SEP, 03 1416

TURK

(DRG C)

26.0

RIO FAJARDO BASIN
50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

DDE, TOTAL (UG/L)

DDD, TOTAL (UG/L) DI-AZINON, TOTAL (UG/L)

DDT, TOTAL (UG/L) DI-ELDRIN TOTAL (UG/L)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

CHLOR-DANE, TOTAL (UG/L)

ALDRIN, TOTAL (UG/L)

PCB, TOTAL (UG/L)

TIME

DATE

|           | AUG 198 |        | 130 <.          |               | 01            |                 | 01 /            | 01            | 01 /            |               | 01            |         |
|-----------|---------|--------|-----------------|---------------|---------------|-----------------|-----------------|---------------|-----------------|---------------|---------------|---------|
|           | 05      |        | 130 <.          | .1 (.         | .01 (.        | .1 (.           | 01 (.           | .01 (         | .01 (.          | .01 (.        | 01            |         |
|           |         |        |                 |               |               |                 | нврта-          |               |                 | мвтн-         |               |         |
|           |         |        | ENDO-           |               |               | HEPTA-          | CHLOR           |               | MALA-           | OXY-          |               |         |
|           |         |        | SULFAN,         | BNDRIN,       | ETHION,       | CHLOR,          | RPOXIDE         | LINDANE       | THION,          | CHLOR,        |               |         |
|           |         | DATE   | TOTAL           | TOTAL         | TOTAL         | TOTAL           | TOTAL           | TOTAL         | TOTAL           | TOTAL         |               |         |
|           |         |        | (UG/L)          | (UG/L)        | (UG/L)        | (UG/L)          | (UG/L)          | (UG/L)        | (UG/L)          | (UG/L)        |               |         |
|           | AT      | G 1985 |                 |               |               |                 |                 |               |                 |               |               |         |
|           |         | 05     | <.01            | <.01          | <.01          | <.01            | <.01            | <.01          | <.01            | <.01          |               |         |
|           |         |        |                 |               |               |                 |                 |               |                 |               |               |         |
|           |         |        |                 |               |               |                 | NAPH-           |               |                 |               |               |         |
|           |         |        |                 |               |               |                 | THA-            |               |                 |               |               |         |
|           |         |        | METHYL          | METHYL        |               |                 | LENES,          | nen           | mov             | momax         |               |         |
|           |         |        | PARA-<br>THION, | TRI-          | MIREX.        | PARA-<br>THION, | POLY-<br>CHLOR. | PER-<br>THANE | TOX-<br>APHENE, | TOTAL<br>TRI- |               |         |
|           |         | DATE   | TOTAL           | TOTAL         | TOTAL         | TOTAL           | TOTAL           | TOTAL         | TOTAL           | THION         |               |         |
|           |         |        | (UG/L)          | (UG/L)        | (UG/L)        | (UG/L)          | (UG/L)          | (UG/L)        | (UG/L)          | (UG/L)        |               |         |
|           |         | G 1985 |                 |               |               |                 |                 |               |                 | The Contract  |               |         |
|           |         | 05     | <.01            | ₹.01          | <.01          | <.01            | ₹.1             | <.1           | < 1             | ₹.01          |               |         |
|           |         |        |                 |               |               |                 |                 |               |                 |               |               |         |
|           |         |        | SED.            | SED.          | SED.          | SED.            | SED.            | SED.          | SED.            | SED.<br>SUSP. | SED.<br>SUSP. | SED.    |
|           |         | SEDI-  | SUSP.<br>FALL   | SUSP.<br>FALL | SUSP.<br>FALL | SUSP.<br>FALL   | SUSP.<br>FALL   | SUSP.         | SUSP.           | SIEVE         | SIEVE         | SUSP.   |
|           |         | MENT,  | DIAM.           | DIAM.         | DIAM.         | DIAM.           | DIAM.           | DIAM.         | DIAM.           | DIAM.         | DIAM.         | DIAM.   |
|           |         | SUS-   | % FINER         | % FINER       | % FINER       | % FINER         | % FINER         | % FINER       | % FINER         | %, FINER      | % FINER       | % FINER |
| DATE      | TIME    | PENDED | THAN            | THAN          | THAN          | THAN            | THAN            | THAN          | THAN            | THAN          | THAN          | THAN    |
|           |         | (MG/L) | .002 MM         | .004 MM       | .008 MM       | .016 MM         | .031 MM         | .062 MM       | .125 MM         | .250 MM       | .500 MM       | 1.00 MM |
| OCT 1984  |         |        |                 |               |               |                 |                 |               |                 |               |               |         |
| 09        | 12:45   | 3070   | 18              | 29            | 39            | 60              | 73              | 80            | 90              | 95            | 98            | 99      |
| 09        | 13:00   | 3880   | 12              | 23            | 34            | 68              | 74              | 80            | 90              | 90            | 99            | 99      |
| 09        | 13:15   | 4130   | 20              | 21            | 32            | 51              | 71              | 79            | 90              | 97            | 99            | 99      |
| 09        | 13:30   | 2820   | 9               | 17            | 28            | 44              | 65              | 70            | 89              | 96            | 98            | 99      |
| 20        | 20:45   | 850    | 38              | 41            | 44            | 46              | 48              | 59            | 70              | 83            | 94            | 99      |
| 20<br>NOV | 23:45   | 1380   | 34              | 40            | 48            | 55              | 66              | 80            | 92              | 96            | 98            | 99      |
| 03        | 04:30   | 633    | 31              | 42            | 53            | 63              | 72              | 82            | 88              | 95            | 99            | 99      |
| 14        | 14:30   | 1210   | 16              | 25            | 37            | 52              | 70              | 90            | 95              | 99            | 99            | 100     |
| 14        | 15:30   | 16     | 16              | 24            | 34            | 51              | 70              | 89            | 95              | 99            | 99            | 100     |
| MAY 1985  |         |        |                 |               |               |                 |                 | 30            |                 |               |               |         |
| 17        | 05:30   | 5220   | 8               | 15            | 24            | 35              | 48              | 70            | 85              | 98            | 99            | 100     |
| 17        | 08:00   | 3610   | 11              | 18            | 29            | 41              | 54              | 60            | 75              | 91            | 98            | 99      |

|                                  |                                  |                                      |                                      | ,                               | Tank Golden                          | 2001 10 0111                        |                                  |                                      | 17.                                 |
|----------------------------------|----------------------------------|--------------------------------------|--------------------------------------|---------------------------------|--------------------------------------|-------------------------------------|----------------------------------|--------------------------------------|-------------------------------------|
| DAY                              | MKAN<br>DISCHARGE<br>(CFS)       | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY)  | MEAN<br>DISCHARGE<br>(CFS)      | MBAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) | MEAN<br>DISCHARGE<br>(CFS)       | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) |
|                                  |                                  | OCTOBER                              |                                      |                                 | NOVEMBER                             |                                     |                                  | DECEMBER                             |                                     |
| 1<br>2<br>3<br>4<br>5            | 25<br>56<br>24<br>15<br>25       | 10<br>25<br>7<br>5                   | .73<br>7.3<br>.37<br>.19             | 103<br>123<br>398<br>222<br>939 | 39<br>56<br>368<br>130<br>990        | 22<br>26<br>815<br>58<br>3550       | 28<br>102<br>74<br>49<br>45      | 5<br>51<br>38<br>31<br>18            | .47<br>27<br>11<br>5.8<br>2.9       |
| 6<br>7<br>8<br>9                 | 42<br>89<br>34<br>361<br>74      | 19<br>104<br>34<br>369<br>37         | 3.0<br>57<br>2.8<br>1350<br>7.4      | 850<br>695<br>284<br>312<br>157 | 918<br>536<br>104<br>221<br>47       | 3640<br>1510<br>97<br>349<br>40     | 34<br>29<br>32<br>203<br>117     | 5<br>5<br>9<br>250<br>120            | .58<br>.51<br>1.0<br>409<br>55      |
| 11<br>12<br>13<br>14<br>15       | 40<br>51<br>37<br>231<br>237     | 14<br>18<br>16<br>292<br>290         | 1.7<br>2.9<br>1.8<br>587<br>646      | 107<br>89<br>96<br>564<br>213   | 28<br>28<br>34<br>696<br>85          | 9.5<br>7.9<br>11<br>3410<br>70      | 44<br>39<br>31<br>27<br>25       | 15<br>10<br>8<br>7<br>6              | 2.0<br>1.2<br>.82<br>.49            |
| 16<br>17<br>18<br>19<br>20       | 349<br>134<br>69<br>50<br>243    | 741<br>84<br>68<br>32<br>146         | 4080<br>52<br>15<br>4.9              | 89<br>129<br>75<br>140<br>93    | 30<br>48<br>15<br>62<br>10           | 23<br>23<br>3.7<br>45<br>3.0        | 29<br>91<br>29<br>26<br>27       | 6<br>44<br>20<br>5                   | .52<br>16<br>1.8<br>.39<br>.81      |
| 21<br>22<br>23<br>24<br>25       | 238<br>76<br>47<br>35<br>50      | 168<br>10<br>5<br>5<br>20            | 213<br>2.5<br>.78<br>.59<br>3.3      | 61<br>58<br>67<br>47<br>46      | 8<br>5<br>5<br>5                     | 1.6<br>.99<br>1.0<br>.78<br>.74     | 22<br>24<br>21<br>21<br>43       | 10<br>5<br>5<br>6<br>17              | .68<br>.36<br>.32<br>.37<br>2.5     |
| 26<br>27<br>28<br>29<br>30<br>31 | 46<br>57<br>65<br>57<br>83<br>49 | 15<br>25<br>38<br>22<br>67<br>32     | 3.8<br>4.6<br>10<br>5.5<br>52<br>9.7 | 47<br>39<br>36<br>32<br>30      | 5<br>5<br>5<br>5                     | .78<br>.63<br>.63<br>.54            | 34<br>41<br>29<br>22<br>88<br>78 | 13<br>17<br>5<br>5<br>123<br>43      | 1.5<br>2.3<br>.43<br>.35            |
| TOTAL                            | 2989                             |                                      | 7307.80                              | 6141                            |                                      | 13721.30                            | 1504                             |                                      | 595.57                              |
| DAY                              | MEAN<br>DISCHARGE<br>(CFS)       | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY)  | MEAN<br>DISCHARGE<br>(CFS)      | MBAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) | MEAN<br>DISCHARGE<br>(CFS)       | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) |
|                                  |                                  | JANUARY                              |                                      |                                 | FEBRUARY                             |                                     |                                  | MARCH                                |                                     |
| 1<br>2<br>3<br>4<br>5            | 108<br>170<br>77<br>43<br>31     | 84<br>210<br>37<br>16<br>13          | 68<br>208<br>8.6<br>2.0<br>1.2       | 15<br>12<br>10<br>9.9<br>9.1    | 7<br>6<br>15<br>5                    | .26<br>.16<br>.35<br>.12            | 82<br>23<br>16<br>12<br>41       | 28<br>10<br>6<br>7<br>38             | 8.9<br>.78<br>.34<br>.34<br>9.6     |
| 6<br>7<br>8<br>9                 | 55<br>37<br>26<br>22<br>38       | 22<br>14<br>13<br>12<br>13           | 3.6<br>1.4<br>.88<br>.75             | 8.2<br>7.8<br>7.4<br>7.5<br>7.2 | 10<br>5<br>6<br>3<br>4               | .18<br>.09<br>.09<br>.04            | 22<br>80<br>93<br>46<br>24       | 12<br>49<br>50<br>25<br>12           | 1.0<br>31<br>18<br>3.6<br>1.1       |
| 11<br>12<br>13<br>14<br>15       | 31<br>22<br>20<br>19<br>22       | 13<br>12<br>8<br>7                   | 1.0<br>.75<br>.41<br>.34             | 24<br>11<br>9.6<br>13<br>20     | 12<br>4<br>8<br>10<br>10             | .62<br>.11<br>.18<br>.30            | 16<br>14<br>12<br>11<br>9.2      | 10<br>10<br>10<br>6<br>5             | .59<br>.51<br>.49<br>.24            |
| 16<br>17<br>18<br>19<br>20       | 17<br>16<br>16<br>15             | 15<br>10<br>10<br>10<br>6            | .65<br>.41<br>.41<br>.38             | 12<br>15<br>25<br>49<br>19      | 5<br>5<br>8<br>19<br>10              | .14<br>.19<br>.53<br>3.2            | 9.5<br>12<br>26<br>11<br>8.0     | 5<br>5<br>17<br>5<br>4               | .18<br>.24<br>1.8<br>.22<br>.12     |
| 21<br>22<br>23<br>24<br>25       | 13<br>13<br>13<br>12<br>11       | 20<br>10<br>10<br>15<br>10           | .65<br>.30<br>.30<br>.41             | 11<br>13<br>16<br>34<br>16      | 6<br>4<br>7<br>10<br>12              | .15<br>.12<br>.35<br>.78            | 7.0<br>7.0<br>6.8<br>5.7<br>5.1  | 5<br>8<br>6<br>6<br>5                | .14<br>.22<br>.15<br>.13            |
| 26<br>27<br>28<br>29<br>30       | 16<br>14<br>12<br>10             | 5<br>5<br>5<br>5<br>8                | .20<br>.16<br>.14<br>.14             | 12<br>142<br>249                | 5<br>80<br>250                       | .18<br>42<br>296<br>                | 8.3<br>31<br>62<br>476<br>190    | 5<br>19<br>261<br>477<br>279         | .14<br>2.9<br>621<br>1290<br>451    |
| 31                               | 9.9                              | 8                                    | .18                                  | 704 7                           |                                      | 247 65                              | 111                              | 33                                   | 13                                  |
| TOTAL                            | 932.9                            |                                      | 303.75                               | 784.7                           |                                      | 347.65                              | 1477.6                           |                                      | 2458.01                             |

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### 50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

| DAY                              | MEAN<br>DISCHARGE<br>(CFS)      | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) | MEAN<br>DISCHARGE<br>(CFS)       | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY)    | MEAN<br>DISCHARGE<br>(CFS)      | MBAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) |
|----------------------------------|---------------------------------|--------------------------------------|-------------------------------------|----------------------------------|--------------------------------------|--|---------------------------------|--------------------------------------|-------------------------------------|
|                                  |                                 | APRIL                                |                                     |                                  | MAY                                  |  |                                 | JUNE                                 |                                     |
| 1<br>2<br>3<br>4<br>5            | 41<br>29<br>24<br>21<br>18      | 5<br>6<br>6<br>6                     | .50<br>.42<br>.26<br>.26            | 12<br>11<br>15<br>14             | 10<br>10<br>10<br>5<br>5             | .30<br>.27<br>.32<br>.19               | 17<br>16<br>15<br>14            | 8<br>8<br>5<br>5                     | .39<br>.35<br>.20<br>.20            |
| 6<br>7<br>8<br>9                 | 17<br>38<br>30<br>16<br>14      | 6<br>14<br>5<br>5<br>5               | .24<br>2.2<br>.34<br>.20            | 15<br>15<br>16<br>20<br>13       | 5<br>6<br>12<br>12<br>6              | .19<br>.30<br>.44<br>.49               | 13<br>13<br>13<br>12<br>14      | 6<br>6<br>3<br>2<br>3                | .21<br>.21<br>.11<br>.06            |
| 11<br>12<br>13<br>14<br>15       | 18<br>14<br>21<br>14<br>15      | 5<br>5<br>5<br>5                     | .19<br>.16<br>.24<br>.16            | 12<br>83<br>35<br>193<br>262     | 6<br>68<br>13<br>369<br>380          | .18<br>25<br>1.3<br>460<br>572         | 13<br>11<br>10<br>9.3<br>8.9    | 3<br>2<br>2<br>2<br>2                | .11<br>.06<br>.05<br>.05            |
| 16<br>17<br>18<br>19<br>20       | 63<br>224<br>57<br>26<br>34     | 29<br>327<br>13<br>5                 | 8.5<br>434<br>2.0<br>.32<br>.45     | 403<br>1300<br>951<br>160<br>85  | 357<br>1820<br>1720<br>25<br>17      | 1500<br>13700<br>9900<br>24<br>3.9     | 8.6<br>8.2<br>8.2<br>8.2<br>7.9 | 2<br>2<br>2<br>2<br>2<br>2           | .05<br>.04<br>.04<br>.04            |
| 21<br>22<br>23<br>24<br>25       | 25<br>15<br>173<br>90<br>34     | 5<br>5<br>136<br>58<br>15            | .30<br>.20<br>158<br>21<br>1.2      | 60<br>48<br>40<br>35<br>32       | 10<br>8<br>6<br>8<br>10              | 1.6<br>1.1<br>.70<br>.80               | 7.3<br>7.9<br>7.3<br>7.0<br>7.3 | 2<br>2<br>2<br>3<br>2                | .04<br>.04<br>.04<br>.06            |
| 26<br>27<br>28<br>29<br>30<br>31 | 22<br>18<br>14<br>13<br>13      | 8<br>10<br>5<br>5<br>5               | .41<br>.43<br>.18<br>.16            | 28<br>25<br>23<br>21<br>20<br>18 | 8<br>5<br>5<br>5<br>5                | .63<br>.35<br>.34<br>.31<br>.28        | 7.0<br>6.2<br>5.7<br>5.5<br>5.7 | 3<br>3<br>3<br>3<br>2                | .06<br>.05<br>.05<br>.04<br>.03     |
| TOTAL                            | 1151                            |                                      | 633.06                              | 3976                             |                                      | 26196.52                               | 300.2                           |                                      | 3.05                                |
| DAY                              | MEAN<br>DISCHARGE<br>(CFS)      | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) | MEAN<br>DISCHARGE<br>(CFS)       | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY)    | MEAN<br>DISCHARGE<br>(CFS)      | MEAN<br>CONCEN-<br>TRATION<br>(MG/L) | SEDIMENT<br>DISCHARGE<br>(TONS/DAY) |
|                                  |                                 | JULY                                 |                                     |                                  | AUGUST                               |  |                                 | SEPTEMBER                            |                                     |
| 1<br>2<br>3<br>4<br>5            | 6.8<br>13<br>9.1<br>18<br>9.5   | 3<br>6<br>6<br>6<br>8                | .06<br>.18<br>.13<br>.24            | 18<br>12<br>11<br>7.2<br>5.5     | 10<br>10<br>5<br>2<br>2              | .40<br>.32<br>.16<br>.04               | 22<br>17<br>16<br>12<br>9.9     | 10<br>10<br>9<br>10<br>8             | .51<br>.41<br>.32<br>.27<br>.20     |
| 6<br>7<br>8<br>9                 | 6.2<br>5.5<br>5.0<br>5.8<br>4.3 | 7<br>6<br>5<br>4<br>3                | .11<br>.07<br>.06<br>.05            | 7.3<br>12<br>20<br>7.1<br>5.3    | 2<br>4<br>20<br>8<br>5               | .05<br>.22<br>1.1<br>.16<br>.09        | 9.1<br>10<br>135<br>39<br>16    | 8<br>8<br>70<br>12<br>10             | .18<br>.18<br>31<br>1.1<br>.38      |
| 11<br>12<br>13<br>14<br>15       | 41<br>11<br>8.7<br>6.4<br>66    | 15<br>8<br>8<br>8<br>79              | 3.0<br>.20<br>.16<br>.12            | 4.6<br>5.3<br>25<br>16<br>16     | 6<br>4<br>13<br>8<br>6               | .09<br>.07<br>1.1<br>.39<br>.32        | 17<br>255<br>686<br>150<br>66   | 10<br>522<br>708<br>30<br>9          | .41<br>1400<br>1940<br>12<br>1.3    |
| 16<br>17<br>18<br>19<br>20       | 51<br>91<br>20<br>13<br>180     | 38<br>77<br>10<br>10<br>143          | 7.4<br>46<br>.49<br>.32             | 8.6<br>5.7<br>7.4<br>17<br>7.7   | 2<br>3<br>4<br>11<br>8               | .05<br>.06<br>.10<br>.64               | 43<br>34<br>28<br>25<br>24      | 8<br>2<br>2<br>2<br>2<br>3           | .82<br>.16<br>.13<br>.11            |
| 21<br>22<br>23<br>24<br>25       | 40<br>19<br>16<br>27<br>15      | 8<br>8<br>7<br>8<br>4                | .80<br>.37<br>.26<br>.59            | 19<br>8.2<br>5.8<br>5.2<br>4.5   | 8<br>3<br>3<br>3<br>2                | .43<br>.08<br>.06<br>.05               | 20<br>19<br>25<br>175<br>225    | 1<br>1<br>4<br>128<br>267            | .04<br>.04<br>.23                   |
| 26<br>27<br>28<br>29<br>30<br>31 | 12<br>11<br>42<br>30<br>20      | 3<br>2<br>24<br>11<br>6              | .08<br>.05<br>4.7<br>.74<br>.29     | 4.7<br>340<br>150<br>33<br>24    | 2<br>385<br>81<br>40<br>15           | .03<br>746<br>140<br>2.9<br>.89<br>.43 | 59<br>38<br>85<br>46<br>33      | 17<br>10<br>49<br>13<br>10           | 2.3<br>.78<br>25<br>1.3<br>.57      |
| TOTAL<br>YEAR                    | 817.3<br>23244.8                |                                      | 261.07<br>56551.17                  | 832.1                            |                                      | 896.50                                 | 2339.0                          |                                      | 3826.89                             |

LOCATION.--Lat 18°19'35", long 65°38'47", 1.2 mi (1.9 km) southwest of Playa de Fajardo, and 0.5 mi (0.8 km) east of Fajardo plaza.

DRAINAGE AREA .-- 23.4 sq mi (60.6 sq km).

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

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | TIME                                   | STREA<br>FLOW<br>INSTA                                 | AM- CI<br>AN- DU<br>DUS AN                        | PR-<br>FIC<br>N-<br>ICT-<br>ICB  | PH<br>(STAN<br>ARI<br>UNITS                       | ) A'  | APER-<br>FURE<br>EG C)                | B                         | JR-<br>ID-<br>FY<br>FU)  | SOL                                     | EN,<br>S-<br>VED | OXYG<br>DIS<br>SOL<br>(PE<br>CE<br>SATI               | S-<br>VED<br>R-<br>NT<br>UR- | OXYGE<br>DEMAN<br>CHEM-<br>ICAL<br>(HIG<br>LEVEL<br>(MG/L | D,<br>-<br>H  | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>COLS./<br>00 ML) | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) |
|----------------|--|--|---|----------------------------------|---|---|---------------------------------------|---------------------------|--------------------------|---|------------------|---|------------------------------|---|---|--|--|
| NOV 1984       |  |  |   |                                  |   |   |                                       |                           |                          |   |                  |   |                              |   |   |  |  |
| 19<br>JAN 1985 | 1015                                   | 90   |   | 148                              | 7.  | 40  | 26.5                                  |                           | 5.1                      |   | 7.8              |   | 96                           |   | 13  | 370  | K100   |
| 18<br>MAR      | 1020                                   | 26   |   | 208                              | 7.  | 20  | 23.0                                  | 7                         | 5                        |   | 9.0              |   | 104                          | -   | 28  | 2200   |  |
| 15<br>MAY      | 1050                                   | 17   |   | 210                              | 7.  | 30  | 25.0                                  | 80                        | )                        |   | 7.6              |   | 91                           | <   | 10  | K9800  | 900  |
| 22             | 1450                                   | 42   |   | 181                              | 7.  | 30  | 28.5                                  | 4                         | .5                       |   | 8.7              |   | 110                          |   | 1   | K74000   | 2400   |
| AUG<br>06      | 1050                                   | 10   |   | 211                              | 7.  | 20  | 29.0                                  |                           | 5.4                      |   | 7.1              |   | 92                           |   | 12  | 38000  | 550  |
| DATE           | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | HARI<br>NESS<br>NONCA<br>WATE<br>TOT F<br>MG/L<br>CACO | ARB CAL<br>RR DI<br>FLD SO<br>AS (M               | CIUM<br>S-<br>LVED<br>G/L<br>CA) | MAGN<br>SIU<br>DIS<br>SOLV<br>(MG/<br>AS M        | M, SOI<br>I- DI<br>ED SOI<br>L (N                 | OIUM,<br>IS-<br>LVED<br>IG/L<br>I NA) | SOE                       | ON                       |   | /L               | ALKA<br>LINIT<br>WATI<br>TOTA<br>FIRI<br>MG/L<br>CACO | TY<br>SR<br>AL<br>LD<br>AS   | SULFII<br>TOTAI<br>(MG/I                                  | DE 1<br>L S<br>L  | ULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>S SO4)                  | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)                |
| NOV 1984       |  |  |   |                                  |   |   |                                       |                           |                          |   |                  |   |                              |   |   |  |  |
| 19<br>JAN 1985 | 42                                     |  | 1   | 9.7                              | 4.  | 3 1   | 2                                     |                           | 8.0                      | 1                                       | . 3              |   | 41                           |   |   | 5.5  | 19   |
| 18             | 57                                     |  | 6 1   | 4                                | 5.  | 4 1   | 7                                     |                           | 1                        | 1                                       | .0               |   | 51                           | <0.   | . 5   | 5.9  | 27   |
| MAR<br>15      |  |  |   |                                  |   |   |                                       |                           |                          |   |                  |   | 51                           | -   | -   |  |  |
| MAY 22         | 51                                     |  | 10 1  | 3                                | 4.  | 6 1   | 5                                     |                           | 0.9                      | 1                                       | . 4              |   | 41                           | <0.   | . 5   | 6.9  | 29   |
| AUG<br>06      |  |  |   |                                  |   |   |                                       |                           |                          |   |                  |   | 41                           |   |   |  | . 44   |
| DATE           | RI<br>D<br>SO<br>(M                    | UO-<br>DE,<br>IS-<br>LVED<br>G/L<br>F)                 | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | SUM<br>CON:<br>TUE:<br>D:<br>SO: | IDS,<br>OF<br>STI-<br>NTS,<br>IS-<br>LVED<br>G/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | RES<br>AT<br>DEG<br>SU<br>PEN         |                           | OI<br>NITH<br>TOT<br>(MC | TRO-<br>EN,<br>RATE<br>TAL<br>G/L<br>N) |                  | AL<br>L   |                              | AL<br>/L  | NITRO<br>GEN,<br>AMMONI<br>TOTAI<br>(MG/I<br>AS N)          | G ORG  | TRO-<br>EN,<br>ANIC<br>TAL<br>G/L<br>N)                            |
| NOV 1984       |  | 0 1  | 25  |                                  | 100   | 0.5   |                                       |                           | •                        | 20                                      |                  | 0.1   |                              | 20  | 0.14  |  | 0.06   |
| 19<br>JAN 1985 | 5                                      | 0.1  |   |                                  |   | 25  |                                       | 4                         | 0.                       | . 29                                    |                  | 01  |                              | 30  | 0.14  |  | 0.06   |
| 18<br>MAR      |  | 0.2  | 21  |                                  | 120   | 8.6   |                                       | 17                        |                          |   | <0.              | 01  | 0.                           | 10  | 0.05  |  | 0.75   |
| 15<br>MAY      |  |  |   |                                  |   |   |                                       | 47                        | 0.                       | . 17                                    | 0.               | 03  | 0.                           | 20  | 0.23  | 3  | 0.17   |
| 22<br>AUG      | <                                      | 0.1  | 23  |                                  | 120   | 13  |                                       | 12                        |                          |   | <0.              | 01  | 0.                           | 30  | 0.22  | 2  | 0.08   |
| 06             |  |  |   |                                  |   | 144   |                                       | 10                        | 0.                       | . 17                                    | 0.               | 03  | 0.                           | 20  | 0.22  | 2  | 0.28   |
| DATE           | GEN<br>MON<br>ORG.<br>TO               | TRO-<br>,AM-<br>IA +<br>ANIC<br>TAL<br>G/L<br>N)       | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS N)         | TO                               | TAL<br>G/L  | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P)       | TO'                                   | ENIC<br>TAL<br>G/L<br>AS) | ERA<br>(UC               |   | TOT              | AL<br>OV-<br>BLE<br>/L                                | ERA<br>(UG                   | IUM<br>AL<br>OV-<br>BLE<br>/L                             | CHRO-<br>MIUM,<br>TOTAL<br>RECOV<br>ERABL<br>(UG/L<br>AS CR | COPI   | PER,<br>FAL<br>COV-<br>ABLE<br>G/L<br>CU)                          |
| NOV 1984       |  |  |   |                                  |   |   |                                       |                           |                          |   |                  |   |                              |   |   |  |  |
| 19<br>JAN 1985 |  | 0.2  | 0.5   | :                                | 2.2   | <0.01   |                                       |                           |                          |   |                  |   |                              |   | -   | -  |  |
| 18<br>MAR      |  | 8.0  | 0.9   | 4                                | 4.0   | 0.08  |                                       | <1                        |                          | 100                                     |                  | <20   |                              | 2   | <   | 1  | <10  |
| 15             |  | 0.4  | 0.6   | 1                                | 2.7   | 0.07  |                                       |                           |                          |   |                  |   |                              |   | -   | -1   |  |
| MAY<br>22      |  | 0.3  | 0.6   |                                  | 2.7   | 0.01  |                                       | <1                        | <                        | 100                                     |                  | <20   |                              | 1   | <   | 1  | <10  |
| AUG<br>06      | - 1                                    | 0.5  | 0.7   |                                  | 3.1   | 0.10  |                                       |                           |                          |   |                  |   |                              |   | -   | -  | 44   |

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RIO FAJARDO BASIN

50072500 RIO FAJARDO BELOW FAJARDO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LRAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| NOV 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 19<br>JAN 1985 |   |   |   |   |  |   |   |                                     |                            |  |
| 18<br>MAR      | 2100  | 1   | 150   | 0.2   | <1   | <1  | 20  | <0.01                               | 11                         | 0.02   |
| 15             |   |   |   | 0.2 .   |  |   |   |                                     |                            | -  |
| MAY 22         | 830   | 3   | 150   | 0.3   | <1   | <1  | <10   | <0.01                               | 7                          | 0.03   |
| AUG<br>06      |   |   |   |   |  | 4   |   |                                     | 10114                      |  |

### 50075000 RIO ICACOS NEAR NAGUABO, PR

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 Rio 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 sharp-crested weir. Elevation of gage is 2,020 ft (616 m), from topographic map.

REMARKS .-- Estimated daily discharges: Oct. 17-19, Nov. 1-19. Records poor.

AVERAGE DISCHARGE.--13 years (1946-52, 1980-85), 15.2 cu ft/s (0.430 cu m/s), 163.82 in/yr (4,161 mm/yr), 11,010 acre-ft/yr (13.6 cu hm/yr); median of yearly mean discharges, 14 cu ft/s (0.40 cu m/s), 10,100 acre-ft/yr (12 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD. --Maximum discharge, 2,860 cu ft/s (81.0 cu m/s), Apr. 21, 1983, gage height, 8.96 ft (2.731 m), from rating curve extended above 30 cu ft/s (0.850 cu m/s) on basis of step-backwater analysis; minimum daily discharge, 1.5 cu ft/s (0.042 cu m/s), Mar. 22, Apr. 10, 1946.

EXTREMES FOR CURRENT YEAR .-- Peak discharges greater than base discharge of 650 cu ft/s (18.4 cu m/s) and maximum (\*):

|         |      | Disch     | arge     | Gage h | eight |        |      | Disch     | arge     | Gage h | eight |
|---------|------|-----------|----------|--------|-------|--------|------|-----------|----------|--------|-------|
| Date    | Time | (cu ft/s) | (ou m/s) | (ft)   | (m)   | Date   | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   |
| Mar. 28 | 2315 | *1,000    | 28.3     | *6.19  | 1.887 | May 17 | 2245 | 864       | 24.5     | 5.87   | 1.789 |
| May 14  | 1500 | 958       | 27 1     | 6 00   | 1 956 |        |      |           |          |        |       |

Minimum discharge, 3.6 cu ft/s (0.102 cu m/s), July 13, 14, 15.

|                  |       | DISCHARGE   | , IN CUI | BIC FEET P | ER SECOND,<br>MEAN |          | LUES OC | TOBER 1984 | TO SEPT | EMBER 1985               |       |               |
|------------------|-------|-------------|----------|------------|--------------------|----------|---------|------------|---------|--------------------------|-------|---------------|
| DAY              | ост   | NOV         | DEC      | JAN        | FEB                | MAR      | APR     | MAY        | JUN     | JUL                      | AUG   | SEP           |
| 1                | 7.1   | 29          | 11       | 13         | 6.3                | 13       | 8.5     | 6.0        | 6.5     | 4.2                      | 7.0   | 11            |
| 2                | 12    | 35          | 37       | 22         | 5.3                | 7.9      | 7.6     | 7.2        | 6.3     | 4.3                      | 5.8   | 9.0           |
| 3                | 6.6   | 58          | 15       | 20         | 5.2                | 7.8      | 7.1     | 6.4        | 6.1     | 4.5                      | 5.7   | 7.1           |
| 4                | 6.2   | 35          | 18       | 11         | 5.2                | 6.5      | 6.8     | 6.1        | 6.1     | 6.4                      | 5.4   | 6.4           |
| 5                | 13    | 91          | 13       | 8.5        | 5.0                | 12       | 6.6     | 7.0        | 6.0     | 4.3                      | 6.1   | 6.1           |
| 6                | 9.4   | 102         | 11       | 12         | 4.9                | 9.1      | 6.6     | 6.1        | 6.0     | 4.1                      | 5.8   | 6.2           |
| 7                | 7.4   | 79          | 9.7      | 8.4        | 4.8                | 28       | 9.8     | 7.3        | 5.8     | 4.0                      | 12    | 6.4           |
| 8                | 6.9   | 53          | 10       | 7.6        | 4.8                | 20       | 7.3     | 6.3        | 5.8     | 6.0                      | 7.2   | 36            |
| 9                | 36    | 33          | 33       | 7.3        | 4.8                | 9.6      | 7.4     | 8.0        | 5.6     | 4.5                      | 5.6   | 9.3           |
| 10               | 18    | 21          | 16       | 10         | 8.1                | 8.4      | 6.6     | 6.7        | 5.9     | 4.0                      | 5.3   | 7.6           |
| 11               | 9.3   | 15          | 13       | 9.7        | 7.1                | 7.0      | 7.7     | 6.5        | 5.6     | 4.5                      | 5.2   | 10            |
| 12               | 8.6   | 17          | 10       | 7.2        | 5.3                | 7.1      | 7.8     | 27         | 5.5     | 4.5                      | 6.2   | 37            |
| 13               | 15    | 17          | 9.2      | 6.8        | 4.8                | 6.4      | 9.7     | 8.2        | 5.5     | 3.7                      | 9.4   | 83            |
| 14               | 30    | 93          | 8.8      | 12         | 6.6                | 6.3      | 6.9     | 124        | 5.4     | 3.9                      | 6.2   | 13            |
| 15               | 14    | 28          | 8.7      | 7.9        | 8.4                | 6.1      | 7.5     | 84         | 5.2     | 22                       | 9.3   | 10            |
| 16               | 8.3   | 14          | 9.3      | 6.5        | 5.1                | 6.6      | 27      | 24         | 5.1     | 12                       | 5.7   | 9.2           |
| 17               | 17    | 24          | 26       | 6.4        | 7.1                | 6.2      | 25      | 112        | 4.8     | 31                       | 5.3   | 8.8           |
| 18               | 12    | 13          | 8.9      | 6.2        | 8.0                | 10       | 10      | 75         | 4.8     | 5.8                      | 8.3   | 8.3           |
| 19               | 7.9   | 23          | 10       | 6.0        | 18                 | 6.2      | 8.0     | 13         | 4.8     | 13                       | 6.9   | 8.0           |
| 20               | 53    | 14          | 9.1      | 6.0        | 7.0                | 6.1      | 20      | 11         | 4.8     | 46                       | 9.1   | 7.9           |
| 21               | 30    | 14          | 8.1      | 5.9        | 6.1                | 5.9      | 8.6     | 9.6        | 4.7     | 11                       | 10    | 7.6           |
| 22               | 13    | 15          | 9.2      | 5.6        | 5.7                | 5.9      | 7.2     | 9.2        | 4.6     | 6.8                      | 6.1   | 7.4           |
| 23               | 9.9   | 17          | 7.7      | 5.6        | 19                 | 5.7      | 39      | 8.6        | 4.6     | 6.6                      | 5.6   | 9.6           |
| 24               | 8.3   | 13          | 8.3      | 5.6        | 15                 | 5.6      | 10      | 8.3        | 4.6     | 10                       | 5.3   | 24            |
| 25               | 18    | 12          | 10       | 5.7        | 12                 | 5.5      | 7.8     | 8.0        | 4.6     | 6.3                      | 5.2   | 68            |
| 26               | 16    | 12          | 10       | 5.8        | 8.7                | 5.9      | 7.2     | 7.8        | 4.4     | 6.1                      | 8.3   | 13            |
| 27               | 15    | 12          | 19       | 6.0        | 42                 | 40       | 6.8     | 7.4        | 4.2     | 5.6                      | 53    | 10            |
| 28               | 26    | 11          | 11       | 5.5        | 81                 | 65       | 6.5     | 7.4        | 4.1     | 9.5                      | 14    | 27            |
| 29               | 19    | 11          | 9.7      | 5.1        |                    | 115      | 6.4     | 7.0        | 4.0     | 6.5                      | 7.2   | 11            |
| 30<br>31         | 14    | 11          | 31<br>28 | 4.9        |                    | 49<br>13 | 6.3     | 6.9        | 4.2     | 6.1<br>5.5               | 7.4   | 11            |
| TOTAL            | 490.9 | 922         | 138.7    | 255.0      | 321.3              | 506.8    | 309.7   | 638.7      | 155.6   | 272.7                    | 267.4 | 488.9         |
| MEAN             | 15.8  | 30.7        | 14.2     | 8.23       | 11.5               | 16.3     | 10.3    | 20.6       | 5.19    | 8.80                     | 8.63  | 16.3          |
| MAX              | 53    | 102         | 37       | 22         | 81                 | 115      | 39      | 124        | 6.5     | 46                       | 53    | 83            |
| MIN              | 6.2   | 11          | 7.7      | 4.8        | 4.8                | 5.5      | 6.3     | 6.0        | 4.0     | 3.7                      | 5.2   | 6.1           |
| CFSM             | 12.5  | 24.4        | 11.3     | 6.53       | 9.13               | 12.9     | 8.17    | 16.3       | 4.12    | 6.98                     | 6.85  | 12.9          |
| IN.              | 14.49 |             | 2.95     | 7.53       |                    | 14.96    | 9.14    | 18.86      | 4.12    | 8.05                     | 7.89  | 14.43         |
| AC-FT            | 974   | 1830        | 870      | 506        | 637                | 1010     | 614     | 1270       | 309     | 541                      | 530   | 970           |
|                  |       |             |          | 300        | 031                | 1010     |         |            | 309     | 241                      |       |               |
| CAL YR<br>WTR YR |       | OTAL 4877.7 |          |            |                    |          |         | 0 CFSM     | 10.6    | IN. 144.01<br>IN. 149.62 |       | 9670<br>10050 |
|                  |       |             |          |            |                    |          |         |            |         |                          |       |               |

## RIO BLANCO BASIN

# 50075000 RIO ICACOS NEAR NAGUABO, PR--Continued

# WATER QUALITY RECORDS

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

| DATE   | 1   | PIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE |    | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|--------|-----|------|---------------------------------------|--------------------------------------|-----------------------------|------|----|------|---------------------------------------|--------------------------------------|-----------------------------|
| FRB, 1 | 4 0 | 0938 | 5.0                                   | 68                                   | 18.5                        | APR. | 10 | 1105 | 6.3                                   |                                      | 19.5                        |
| MAR, 1 | 4 1 | 1146 | 6.2                                   | 62                                   | 19.0                        | SEP, | 12 | 0900 | 9.0                                   | 60.4                                 | 21.0                        |

### 50076000 RIO BLANCO NEAR FLORIDA, PR

LOCATION. -- Lat 18°13'45", long 65°47'06", Hydrologic Unit 21010005, on left bank of Highway 191, 0.5 mi (0.8 km) upstream from Quebrada Sonadora, 0.7 mi (1.1 km) upstream from intersection of Highway 191 and 31, 0.8 mi (1.3 km) south of Florida.

DRAINAGE AREA . -- 12.3 sq mi (31.9 sq km).

CAL YR 1984 TOTAL 24855

#### WATER-DISCHARGE RECORDS

PERIOD OF RECORD .-- October 1982 to January 1985 (discontinued).

GAGE .-- Water-stage recorder. Elevation of gage is 50 ft (15 m), from topographic map.

REMARKS. -- No estimated daily discharges during period of record. Records fair. Low flow affected by diversion for water supply.

EXTREMES FOR PERIOD OF RECORD. --Maximum discharge, 11,000 cu ft/s (312 cu m/s), Apr. 21, 1983, gage height, 22.76 ft (6.937 m) from rating curve extended above 200 cu ft/s (5.664 cu m/s) on basis of step-backwater analysis and slope-area measurement; minimum discharge, 8.8 cu ft/s (0.249 cu m/s), Apr. 10, 1983.

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

|       |      |       | Disc  | harge    | Gage h | eight |
|-------|------|-------|-------|----------|--------|-------|
| Date  | Time | (cu   | ft/s) | (cu m/s) | (ft)   | (=)   |
| Nov 6 | 0515 | • • • | 950   | 119      | *16 50 | 5 057 |

Minimum discharge observed, 20 cu ft/s (0.566 cu m/s), Oct. 4, 5.

MRAN

67.9 MAX

|       |      | DISCHARGE, | IN   | CUBIC | FRET | PER | SECOND,<br>MEAN |     | YEAR<br>LURS | OCTOBER | 1984 | то | SEPTEMBER | 1985 |     |     |
|-------|------|------------|------|-------|------|-----|-----------------|-----|--------------|---------|------|----|-----------|------|-----|-----|
| DAY   | OCT  | NOV        | DEC  |       | JAN  |     | FRB             | MAR |              | APR     | MAY  |    | JUN       | JUL  | AUG | SEP |
| 1     | 24   | 163        | 38   | 3     | 156  |     |                 |     |              |         |      |    |           |      |     |     |
| 2     | 47   | 183        | 183  | 3     | 199  |     |                 |     |              |         |      |    |           |      |     |     |
| 3     | 27   | 458        | 83   | 3     | 106  |     |                 |     |              |         |      |    |           |      |     |     |
| 4     | 21   | 270        | 74   | 1     | 60   |     |                 |     |              |         |      |    |           |      |     |     |
| 5     | 40   | 670        | 56   | 3     | 43   |     |                 |     |              |         |      |    |           |      |     |     |
| 6     | 42   | 881        | 46   |       | 88   |     |                 |     |              |         |      |    |           |      |     |     |
| 7     | 26   | 547        | 41   |       | 49   |     |                 |     |              |         |      |    |           |      |     |     |
| 8     | 31   | 240        | 43   |       | 38   |     |                 |     |              |         |      |    |           |      |     |     |
| 9     | 320  | 283        | 152  |       | 35   |     |                 |     |              |         |      |    |           |      |     |     |
| 10    | 145  | 138        | 93   | 3     | 48   |     |                 |     |              |         |      |    |           |      |     |     |
| 11    | 72   | 91         | 52   |       | 46   |     |                 |     |              |         |      |    |           |      |     |     |
| 12    | 60   | 85         | 45   |       | 34   |     |                 |     |              |         |      |    |           |      |     |     |
| 13    | 65   | 83         | 37   |       | 31   |     |                 |     |              |         |      |    |           |      |     |     |
| 14    | 356  | 345        | 35   |       | 39   |     |                 |     |              |         |      |    |           |      |     |     |
| 15    | 100  | 206        | 34   | 1     | 36   |     |                 |     |              |         |      |    |           |      |     |     |
| 16    | 103  | 81         | 42   |       | 26   |     |                 |     |              |         |      |    |           |      |     |     |
| 17    | 97   | 149        | 128  |       | 25   |     |                 |     |              |         |      |    |           |      |     |     |
| 18    | 51   | 79         | 40   |       | 25   |     |                 |     |              |         |      |    |           |      |     |     |
| 19    | 37   | 124        | 43   |       | 24   |     |                 |     |              |         |      |    |           |      |     |     |
| 20    | 179  | 88         | 41   | L     | 24   |     |                 |     |              |         |      |    |           |      |     |     |
| 21    | 133  | 61         | 35   |       | 23   |     |                 |     |              |         |      |    |           |      |     |     |
| 22    | 77   | 62         | 43   |       | 22   |     |                 |     |              |         |      |    |           |      |     |     |
| 23    | 47   | 70         | 34   |       | 22   |     |                 |     |              |         |      |    |           |      |     |     |
| 24    | 37   | 53         | 37   |       | 21   |     |                 |     |              |         |      |    |           |      |     |     |
| 25    | 108  | 53         | 72   |       | 21   |     |                 |     |              |         |      |    |           |      |     |     |
| 26    | 62   | 55         | 66   |       |      |     |                 |     |              |         |      |    |           |      |     |     |
| 27    | 87   | 45         | 110  | )     |      |     |                 |     |              |         |      |    |           |      |     |     |
| 28    | 140  | 43         | 72   | 2     |      |     |                 |     |              |         |      |    |           |      |     |     |
| 29    | 117  | 41         | 43   | 1     |      |     |                 |     |              |         |      |    |           |      |     |     |
| 30    | 63   | 39         | 146  |       |      |     |                 |     |              |         |      |    |           |      |     |     |
| 31    | 54   |            | 134  |       |      |     |                 |     |              |         |      |    |           |      |     |     |
| TOTAL | 2768 |            | 2098 |       |      |     |                 |     |              |         |      |    |           |      |     |     |
| MBAN  | 89.3 |            | 67.7 |       |      |     |                 |     |              |         |      |    |           |      |     |     |
| MAX   | 356  | 881        | 183  |       |      |     |                 |     |              |         |      |    |           |      |     |     |
| MIN   | 21   | 39         | 34   |       |      |     |                 |     |              |         |      |    |           |      |     |     |
| CFSM  | 7.26 |            | 5.50 |       |      |     |                 |     |              |         |      |    |           |      |     |     |
| IN.   | 8.37 |            | 6.35 |       |      |     |                 |     |              |         |      |    |           |      |     |     |
| AC-FT | 5490 | 11280      | 4160 |       |      |     |                 |     |              |         |      |    |           |      |     |     |

881 MIN

IN. 75.17

14 CFSM 5.52

AC-FT 49300

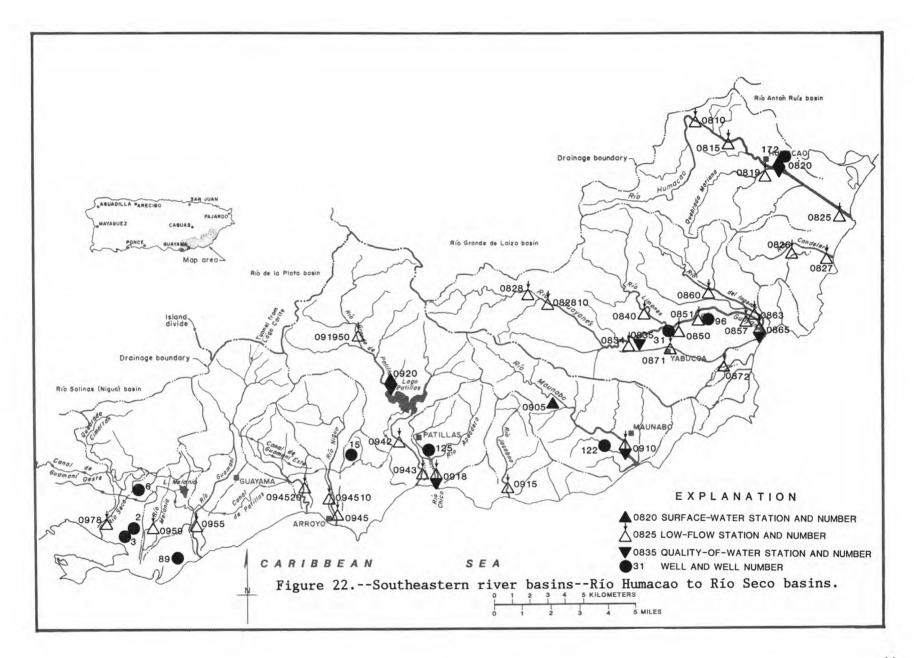
## RIO BLANCO BASIN

# 50076000 RIO BLANCO NEAR FLORIDA, PR--Continued

# WATER QUALITY RECORDS

PERIOD OF RECORD .-- WATER YEARS OCTOBER 1982 TO CURRENT YEAR

| DATE | TIME    | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE    | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|------|---------|---------------------------------------|--------------------------------------|-----------------------------|---------|------|---------------------------------------|--------------------------------------|-----------------------------|
| DEC, | 04 1209 | 91                                    | 76                                   | 24.0                        | JAN, 26 | 1226 | 22                                    | 112                                  | 24.0                        |



208 RIO HUMACAO BASIN

### 50082000 RIO HUMACAO AT HIGHWAY 3 AT HUMACAO, PR

LOCATION.--Lat 18°08'49", long 65°49'37", at bridge on Highway 3, 300 ft (91 m) downstream from Quebrada Mariana, and 0.4 mi (0.6 km) south of Humacao.

DRAINAGE AREA. -- 17.3 sq mi (44.8 sq km).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD .-- October 1982 to March 1985 (discontinued).

GAGE .-- Water-stage recorder and concrete control. Elevation of gage 33.33 ft (10.159 m) above mean sea level.

REMARKS .-- No estimated daily discharges during period of record. Records fair.

EXTREMES FOR PERIOD OF RECORD. --Maximum discharge, 9,940 cu ft/s (282 cu m/s), July 5, 1983, gage height, 15.00 ft (4.572 m) on basis of rating curve extended above 100 cu ft/s (2.83 cu m/s) on basis of step-backwater analysis and slope-area measurement of peak flow; minimum discharge, 7.9 cu ft/s (0.224 cu m/s), May 1-4, 9, 10, 1984.

EXTREMES FOR CURRENT PERIOD .-- Peak discharges greater than base discharge of 2,000 cu ft/s (56.6 cu m/s) and maximum (\*):

|         |      | Discha    | Gage h   | eight  |       |
|---------|------|-----------|----------|--------|-------|
| Date    | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   |
| Oct. 14 | 0515 | \$1.740   | 49.3     | *10.19 | 3.106 |

Minimum discharge, 14 cu ft/s (0.396 cu m/s), Mar. 21, 25, 28.

|      |      | DISCHARGE, | IN CUBI | C FEET F | PER SECOND,<br>MEAN |      | YEAR OCTOBER<br>.UES | 1984 TC | SEPTEMBE | K 1985 |     |       |
|------|------|------------|---------|----------|---------------------|------|----------------------|---------|----------|--------|-----|-------|
| YAC  | OCT  | NOV        | DEC     | JAN      | FEB                 | MAR  | APR                  | MAY     | JUN      | JUL    | AUG | SE    |
| 1    | 35   | 121        | 58      | 38       | 29                  | 24   |                      |         |          |        |     |       |
| 2    | 40   | 159        | 71      | 39       | 28                  | 19   |                      |         |          |        |     |       |
| 3    | 63   | 454        | 56      | 29       | 25                  | 30   |                      |         |          |        |     |       |
| 4    | 29   | 331        | 45      | 39       | 24                  | 20   |                      |         |          |        |     |       |
| 5    | 28   | 483        | 48      | 32       | 23                  | 21   |                      |         |          |        |     |       |
| 6    | 60   | 426        | 47      | 30       | 22                  | 24   |                      |         |          |        |     |       |
| 7    | 67   | 233        | 45      | 28       | 23                  | 42   |                      |         |          |        |     |       |
| 8    | 53   | 147        | 50      | 29       | 20                  | 37   |                      |         |          |        |     |       |
| 9    | 168  | 126        | 57      | 27       | 21                  | 24   |                      |         |          |        |     |       |
| 10   | 145  | 115        | 49      | 27       | 21                  | 19   |                      |         |          |        |     |       |
| 11   | 72   | 108        | 46      | 31       | 20                  | 17   |                      |         |          |        |     |       |
| 12   | 49   | 104        | 68      | 30       | 20                  | 18   |                      |         |          |        |     |       |
| 13   | 92   | 99         | 43      | 30       | 19                  | 19   |                      |         |          |        |     |       |
| 14   | 374  | 113        | 41      | 30       | 22                  | 18   |                      |         |          |        |     |       |
| 15   | 153  | 101        | 42      | 29       | 23                  | 17   |                      |         |          |        |     |       |
| 16   | 122  | 87         | 46      | 30       | 20                  | 16   |                      |         |          |        |     |       |
| 17   | 111  | 81         | 47      | 28       | 20                  | 17   |                      |         |          |        |     |       |
| 18   | 69   | 78         | 42      | 29       | 19                  | 33   |                      |         |          |        |     | 18:03 |
| 19   | 56   | 78         | 45      | 29       | 25                  | 18   |                      |         |          |        |     |       |
| 20   | 50   | 74         | 43      | 28       | 29                  | 17   |                      |         |          |        |     |       |
| 21   | 43   | 71         | 37      | 26       | 22                  | 17   |                      |         |          |        |     |       |
| 22   | 43   | 66         | 33      | 27       | 20                  | 16   |                      |         |          |        |     |       |
| 23   | 41   | 67         | 33      | 26       | 19                  | 16   |                      |         |          |        |     |       |
| 24   | 40   | 49         | 34      | 25       | 20                  | 16   |                      |         |          |        |     |       |
| 25   | 50   | 82         | 39      | 25       | 20                  | 15   |                      |         |          |        |     |       |
| 26   | 77   | 87         | 36      | 26       | 21                  | 18   |                      |         |          |        |     |       |
| 27   | 50   | 54         | 32      | 25       | 36                  | 16   |                      |         |          |        |     |       |
| 28   | 53   | 52         | 32      | 25       | 56                  | 18   |                      |         |          |        |     |       |
| 29   | 47   | 49         | 31      | 24       |                     | 385  |                      |         |          |        |     |       |
| 30   | 41   | 53         | 38      | 23       |                     | 85   |                      |         |          |        |     |       |
| 31   | 37   |            | 33      | 24       |                     | 62   |                      |         |          |        |     |       |
| OTAL | 2358 |            | 1367    | 888      | 667                 | 1114 |                      |         |          |        |     |       |
| BAN  | 76.1 |            | 44.1    | 28.6     | 23.8                | 35.9 |                      |         |          |        |     |       |
| AX   | 374  | 483        | 71      | 39       | 56                  | 385  |                      |         |          |        |     |       |
| IN   | 28   | 49         | 31      | 23       | 19                  | 15   |                      |         |          |        |     |       |
| FSM  | 4.40 |            | 2.55    | 1.65     | 1.38                | 2.08 |                      |         |          |        |     |       |
| N.   | 5.07 |            | 2.94    | 1.91     | 1.43                | 2.40 |                      |         |          |        |     |       |
| C-FT | 4680 | 8230       | 2710    | 1760     | 1320                | 2210 |                      |         |          |        |     |       |

50082000 RIO HUMACAO AT HIGHWAY 3 AT HUMACAO, PR

# WATER-QUALITY RECORDS

PERIOD OF RECORD .-- Water years 1958-66, 1969 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE   | TIME           | STRE<br>FLO<br>INST<br>TANE<br>(CF                               | W, COI<br>AN- DUO<br>OUS AND                                       | FIC<br>N- PI<br>CT- (ST   | AND- T   | EMPER-<br>ATURE<br>DEG C)           | IT  | D- D<br>Y SO  | GEN,<br>IS-<br>LVED S                                       | YGEN,<br>DIS-<br>BOLVED<br>(PER-<br>CENT<br>BATUR-<br>ATION) | OXYO<br>DEMA<br>CHE<br>ICA<br>(HI<br>LEVE<br>(MG/            | AND, I<br>RM- I<br>AL (<br>GH (<br>RL) (                     | COLI-<br>FORM,<br>FECAL,<br>D.7<br>JM-MF<br>COLS./ | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML)          |
|--|----------------|--|--|---|--|-------------------------------------|---|---|---|--|--|--|--|---|
| NOV 1984   | 12.1           | -  |  |   |  |                                     |   |   |   |  |  |  |  |   |
| 02<br>JAN 1985                                     | 1210           | 77   |  | 178   | 7.40   | 26.0                                | ) 1   | . 3   | 6.8   | 83   |  | 19 N   | 132000   | 17000   |
| 11   | 1100           | 28   |  | 260   | 7.40   | 24.5                                | 45  |   | 8.5   | 102  |  | 30 3   | 860000   | K13000  |
| MAR<br>13  | 1200           | 18   |  | 294   | 7.40   | 27.5                                |   | 22  | 9.4   | 118  |  | 10   |  | K500  |
| MAY  | 1200           | 10   |  | 454   | 7.40   | 21.0                                |   |   | 3.4   | 110  |  | 10   |  | AUU   |
| 31<br>AUG  | 1115           | 43   |  | 235   | 7.60   | 28.5                                | 5 5   | . 5   | 8.5   | 108  |  | <10  | K1000  | K1000   |
| 22   | 1710           | 11   |  | 374   | 7.60   | 27.0                                | 11  |   | 6.0   | 75   |  | 22 K1  | 30000  | 32000   |
| DATE   | 1              | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3)                           | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA)                       | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG)                              | SODIU<br>DIS-<br>SOLVE<br>(MG/                 | M,<br>D<br>L R                      | BODIUM<br>AD-<br>BORP-<br>TION<br>RATIO   | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K)               | WATER   | C SUL<br>D TO  | FIDE<br>TAL<br>G/L<br>S)                                     | SULFAT<br>DIS-<br>SOLVE<br>(MG/I<br>AS SO4                   | PE RI  | ILO-<br>IDB,<br>IS-<br>DLVED<br>IG/L<br>I CL)                               |
| NOV 1984   |                |  |  |   |  |                                     |   |   |   |  |  |  |  |   |
| 02   |                | 49   | 13   | 4.1   | 15   |                                     | 1   | 2.3   |   | 52   |  | 11   | 1  | 4   |
| JAN 1985   |                | 75   | 20   | 6.0   | 23   |                                     | 1   | 1.6   | ,   | 31   | (0.5   | 12   |  | 4   |
| MAR  |                |  |  |   |  |                                     |   |   |   |  |  |  |  |   |
| 13<br>MAY  |                |  |  |   |  |                                     | ==  |   |   | 35   |  | -  | 7  |   |
| 31   |                | 71   | 19   | 5.6   | 21   |                                     | 1   | 1.9   | 7   | 19   | <0.5   | 8.   | 8 2  | 11  |
| AUG 22   |                |  |  |   |  |                                     |   |   | 8   | 37   |  | -  | -  |   |
| DATE  NOV 1984 02 JAN 1985 11 MAR 13 MAY 31 AUG 22 |                | FLUO-RIDE,<br>DIS-SOLVED (MG/L<br>AS F)                          | SILICA,<br>DIS-<br>SOLVED<br>(MG/AS<br>SIO2)<br>25<br>37<br><br>35 | SOLIDS,<br>SUM OF<br>CONSTI-<br>TURNTS,<br>DIS-<br>SOLVED<br>(MG/L)<br>120<br>170 | SOLIDI<br>DIS-<br>SOLVI<br>(TONE<br>PER<br>DAY | S, RE<br>- AT<br>ED DE<br>S S<br>PE | DLIDS,<br>ISIDUB<br>105<br>G. C.,<br>IUS-<br>INDED<br>MG/L)<br>111<br>116<br><br>22<br>13 | NITROGEN, NITRATE TOTAL (MG/L AS N)  0.37  0.87  0.77  0.48  0.48 | NITRO GEN, NITRIT TOTAL (MG/I AS N)  0.03  0.03  0.03  0.02 | G. RE NO22 TO (M. AS   | TRO-<br>EN,<br>+NO3<br>TAL<br>G/L<br>N)<br>.40<br>.90<br>.80 | NITRO GBN, AMMONI TOTAL (MG/L) AS N)  0.11  0.33  0.12  0.08 | AS   | TRO-<br>BEN,<br>BANIC<br>OTAL<br>G/L<br>GN)<br>0.69<br>0.97<br>0.78<br>0.42 |
| DATE NOV 1984                                      | GI<br>MC<br>OF | NITRO-<br>SN, AM-<br>DNIA +<br>RGANIC<br>FOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS N)                          | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS NO3)                                       | PHOS-<br>PHORUS<br>TOTAL<br>(MG/I<br>AS P)     | B, AR<br>L T<br>L (                 | SENIC<br>OTAL<br>UG/L<br>S AS)  | BARIUM,<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS BA)           | BORON<br>TOTAL<br>RECOV<br>ERABL<br>(UG/L<br>AS B)          | TO' REGERA   | MIUM<br>TAL<br>COV-<br>ABLE<br>G/L<br>CD)                    | CHRO-<br>MIUM,<br>TOTAL<br>RECOV<br>ERABL<br>(UG/L<br>AS CR  | COF<br>TC<br>- RE<br>- RE<br>- (U                  | PPER,<br>TAL<br>CCOV-<br>ABLE<br>G/L<br>CU)                                 |
| JAN 1985   |                |  |  |   |  |                                     |   |   |   | -  |  |  |  |   |
| MAR 11   |                | 1.3  | 2.2  | 9.7   | 0.32   |                                     | <1  | 100   | <2  | 0  | <1   | <  | 1  | 20  |
| 13   |                | 0.9  | 1.7  | 7.5   | 0.29   | •                                   |   |   | -   | -  |  | -  | -  |   |
| 31   |                | 0.5  | 1.0  | 4.4   | 0.08   | 3                                   | <1  | 100   | 2   | 0  | 1  |  | 1  | 10  |
| AUG 22   |                | 1.1  | 1.6  | 7.1   | 0.40   | )                                   |   |   |   | _  |  |  | _  |   |
|  |                |  |  |   | 0.10   | -                                   |   |   |   |  |  |  |  | -   |

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RIO HUMACAO BASIN

50082000 RIO HUMACAO AT HIGHWAY 3 AT HUMACAO, PR--Continued
WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| NOV 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 02<br>JAN 1985 |   |   |   |   |  |   |   |                                     |                            |  |
| 11             | 4200  | <1  |   |   | <1   | 1   | 50  | <0.01                               | 4                          | 0.04   |
| 13<br>MAY      |   |   |   |   |  |   |   |                                     |                            | 15   |
| 31             | 640   | 7   | 120   | <0.1  | <1   | <1  | <10   | <0.01                               | 6                          | 0.03   |
| 22             |   |   |   |   |  |   |   |                                     |                            |  |

### WATER-QUALITY RECORDS

LOCATION.--Lat 18°03'33", long 65°54'03", at bridge on Highway 182, 1.4 mi (2.2 km) west-northwest of Yabucoa plaza.

DRAINAGE AREA. -- 17.2 sq mi (44.6 sq km).

PERIOD OF RECORD. -- Water years 1958-62, 1968-70, 1980 to current year.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | TIME        | STRE<br>FLO<br>INST<br>TANE                                     | W, COM  | FIC<br>N- P<br>CT- (ST  | RD                             | TEMPR<br>ATUR<br>(DEG               | B IT  | D- 1<br>Y SC  | YGEN,<br>DIS-<br>DLVED<br>MG/L) | SOL<br>(PE                               | S-<br>VED<br>R-<br>NT<br>UR-       | OXYO<br>DEMA<br>CHI<br>ICA<br>(HI<br>LEVI<br>(MG, | AND,<br>EM-<br>AL<br>IGH<br>EL) (                           | COLI-<br>FORM,<br>FECAL<br>0.7<br>UM-MF<br>COLS. | TOCOL<br>FEC.<br>KF A                                  | CCI<br>AL,<br>GAR<br>S.<br>R |
|----------------|-------------|---|---|---|--------------------------------|-------------------------------------|---|---|---------------------------------|--|------------------------------------|---|---|--|--|------------------------------|
| OCT 1984<br>31 | 0935        | 57  |   | 160   | 7.20                           | 23                                  | .0 16   |   | 8.2                             |  | 95                                 |   | 44  | K1300  | 0  | 230                          |
| JAN 1985       | 0333        | 31  |   | 100   | 7.20                           | 43                                  | .0 10   |   | 0.2                             |  | 33                                 |   | **  |  |  |                              |
| 30<br>APR      | 1030        | 30  |   | 168   | 7.40                           | 22                                  | .0 3  | .0  | 9.0                             |  | 102                                |   | 17  | K900   | 0 2  | 000                          |
| 22             | 1325        | 35  |   | 146   | 7.30                           | 25                                  | .5 29   |   | 7.3                             |  | 89                                 |   | <10   | 200  | 0 2  | 500                          |
| JUN 14         | 1440        | 36  |   | 165   | 7.40                           | 27                                  | .0 16   |   | 8.4                             |  | 104                                |   | <10   | 260  | 0  | 540                          |
| AUG            |             |   |   |   |                                |                                     |   |   |                                 |  |                                    |   |   |  |  |                              |
| 22             | 1218        | 31  |   | 176   | 7.50                           | 27                                  | .5 15   |   | 7.7                             |  | 97                                 |   | 23  | K120   |  | 460                          |
| DATE           |             | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3)                          | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA)      | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG)                | SODI<br>DIS<br>SOLV<br>(MG     | BD<br>/L                            | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO                             | POTAS-<br>SIUM,<br>DIS-<br>SOLVEI<br>(MG/L<br>AS K)     | TO' MG/                         | KA-<br>ITY<br>FER<br>FAL<br>BLD<br>L AS  | SULF<br>TOT<br>(MG                 | AL<br>/L  | SULFA'<br>DIS-<br>SOLVI<br>(MG/I                            | re<br>Ed<br>L                                    | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)    |                              |
| OCT 1984       |             |   |   |   |                                |                                     |   |   |                                 |  |                                    |   |   |  |  |                              |
| 31<br>JAN 1985 |             | 44  | 11  | 3.9   | 13                             |                                     | 0.9   | 1.1   |                                 | 52                                       |                                    |   | 4   | . 1  | 11   |                              |
| 30             |             | 48  | 12  | 4.3   | 16                             |                                     | 1   | 1.0   |                                 | 59                                       | <                                  | 0.5   | 3   | . 4  | 13   |                              |
| APR 22         |             |   |   |   |                                |                                     |   |   |                                 | 51                                       |                                    |   |   |  | 1.44   |                              |
| JUN<br>14      |             | 47  | 12  | 4.1   | 15                             |                                     | 1   | 1.2   |                                 | 58                                       | ,                                  | 0.5   | 4   | . 1  | 12   |                              |
| AUG            |             |   | **  | ***   | 10                             |                                     | •   |   |                                 |  | •                                  |   |   | •  |  |                              |
| 22             |             | -   | -   | -   |                                |                                     | - 55  |   |                                 | 56                                       |                                    |   |   |  |  |                              |
| DATE           |             | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F)              | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLI<br>DI<br>SOL<br>(TO<br>PR | DS, I<br>S- A<br>VED I<br>NS<br>R I | SOLIDS,<br>RESIDUE<br>AT 105<br>DEG. C,<br>SUS-<br>PENDED<br>(MG/L) | NITRO-<br>GEN,<br>NITRATE<br>TOTAL<br>(MG/L<br>AS N)    | GI<br>NITI                      | TRO-<br>SN,<br>RITE<br>FAL<br>S/L<br>N)  | NIT<br>GE<br>NO2+<br>TOT<br>(MG    | N,<br>NO3<br>AL<br>/L                             | NITRO<br>GEN<br>AMMONI<br>TOTAI<br>(MG/I<br>AS N)           | ia o   | NITRO-<br>GEN,<br>RGANIC<br>TOTAL<br>(MG/L<br>AS N)    |                              |
| OCT 1984       |             |   |   |   |                                |                                     |   |   |                                 |  |                                    |   |   |  |  |                              |
| 31             |             | <0.1  | 34  | 110   | 17                             |                                     | 18  |   | - <0                            | .01                                      | 0.                                 | 30  | 0.04  | 1  | 0.16   |                              |
| JAN 1985<br>30 |             | 0.1   | 36  | 120   | 9                              | . 8                                 | 14  |   | . (0.                           | .01                                      | 0.                                 | 20  | 0.04  |  |  |                              |
| APR 22         |             |   |   |   |                                |                                     | 38  | 0.27  | 0                               | .03                                      | 0.                                 | 30  | 0.06  |  | 0.84   |                              |
| JUN            |             |   |   |   |                                |                                     |   | 0.21  |                                 |  |                                    |   |   |  |  |                              |
| AUG            |             | 0.2   | 35  | 120   | 12                             |                                     | 36  | -   | - (0.                           | .01                                      | 0.                                 | 10  | 0.04  |  | 0.66   |                              |
| 22             |             |   |   |   |                                |                                     | 12  |   | - <0.                           | .01                                      | 0.                                 | 20  | 0.04  |  | 0.26   |                              |
| DATE           | G<br>M<br>O | NITRO-<br>BN,AM-<br>ONIA +<br>RGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS N)         | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS NO3)                         | PHORITOTA<br>(MG               | US, A<br>AL<br>/L                   | ARSENIC<br>TOTAL<br>(UG/L<br>AS AS)                                 | BARIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS BA) | TOTE REC                        | RON,<br>FAL<br>COV-<br>ABLE<br>B/L<br>B) | CADM<br>TOT.<br>REC<br>BRAI<br>(UG | AL<br>OV-<br>BLR<br>/L                            | CHRO-<br>MIUM,<br>TOTAL<br>RECOV<br>ERABL<br>(UG/I<br>AS CE | C<br>/-<br>LR                                    | OPPER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CU) |                              |
| OCT 1984       |             |   |   |   |                                |                                     |   |   |                                 |  |                                    |   |   |  |  |                              |
| 31             |             | 0.2   | 0.5   | 2.2   | 0.                             | 01                                  |   |   |                                 |  |                                    |   |   | -  |  |                              |
| JAN 1985<br>30 |             | <0.1  |   |   | <0.                            | 01                                  | <1  | <100  |                                 | (20                                      |                                    | <1  |   | 1  | <10  |                              |
| APR 22         |             | 0.9   | 1.2   | 5.3   |                                |                                     |   |   |                                 |  |                                    |   |   |  |  |                              |
| JUN            |             |   |   |   | 0.0                            |                                     | 44  |   |                                 |  |                                    |   |   |  |  |                              |
| 14             |             | 0.7   | 0.8   | 3.5   | 0.0                            | 04                                  | <1  | 100   |                                 | <20                                      |                                    | <1  |   | 2  | <10  |                              |
| 22             |             | 0.3   | 0.5   | 2.2   | 0.0                            | 05                                  |   |   |                                 |  |                                    |   | -   | -  |  |                              |

RIO GUAYANES BASIN

# 50083500 RIO GUAYANES AT YABUCOA, PR--Continued WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SKLE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| OCT 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 31<br>JAN 1985 |   |   |   |   |  |   |   |                                     |                            |  |
| 30             | 1500  | 1   | 80  | <0.1  | <1   | <1  | <10   | <0.01                               | 8                          | 0.01   |
| APR 22         |   |   |   | 0.2   |  |   |   | - Day and                           |                            |  |
| JUN            |   |   |   |   |  |   |   |                                     |                            | 100  |
| 14             | 1900  | 1   | 100   | <0.1  | <1   | <1  | 30  | <0.01                               | <1                         | 0.02   |
| 22             |   |   |   |   |  |   |   |                                     | -                          |  |
|                |   |   |   |   |  |   |   |                                     |                            |  |
| DATE           | TI  | PCB<br>TOTA<br>(UG/                                   | AL TOT  | AL TOTA   | L TOT                                      |   | AL TOT  | DI<br>T, AZIN<br>TAL TOT            | ON, BLDR<br>AL TOTA        | IN<br>L  |
| AUG 1985<br>22 | 12  | 18 <  | 0.1 <0.   | 01 (0   | .1 <0.                                     | 01 <0.  | 01 (0.  | 01 <0                               | .01 <0.0                   | 1  |
|                |   | THE   |   |   |  | HEPTA-  |   |                                     | METH-                      |  |
|                |   | ENDO-<br>SULFAN.                                      | ENDRIN,   | BTHION.   | HEPTA-<br>CHLOR.                           | EPOXIDE   | LINDANE   | MALA-<br>THION,                     | OXY-<br>CHLOR,             |  |
|                | DATE  | TOTAL (UG/L)  | TOTAL (UG/L)  | TOTAL (UG/L)  | TOTAL (UG/L)                               | TOTAL (UG/L)  | TOTAL (UG/L)  | TOTAL (UG/L)                        | TOTAL (UG/L)               |  |
|                |   | (00/11/   | (00/11)   | (00/11)   | (00/11)                                    | (00/11/   | (00,1)  | (00/11/                             | (00,1)                     |  |
|                | 1985<br>2   | <0.01   | <0.01   | <0.01   | <0.01                                      | <0.01   | <0.01   | <0.01                               | <0.01                      |  |
|                |   | METHYL  | METHYL  |   |  | NAPH-<br>THA-<br>LENES,                                 |   |                                     | 1 77                       |  |
|                |   | PARA-<br>THION.                                       | TRI-<br>THION,  | MIREX.  | PARA-<br>THION.                            | POLY-<br>CHLOR.   | PER-  | TOX-<br>APHENE,                     | TOTAL<br>TRI-              |  |
|                | DATE  | TOTAL (UG/L)  | TOTAL (UG/L)  | TOTAL (UG/L)  | TOTAL<br>(UG/L)                            | TOTAL (UG/L)  | TOTAL<br>(UG/L)                                       | TOTAL (UG/L)                        | THION (UG/L)               |  |
|                | 1985  |   |   |   |  |   |   |                                     | ALC: U                     |  |
| 2              | 2   | <0.01   | <0.01   | <0.01   | <0.01                                      | <0.1  | <0.1  | <1                                  | <0.01                      |  |

LOCATION.--Lat 18°03'45", long 65°49'42", at old railroad crossing, 0.2 mi (0.3 km) from mouth, 0.4 mi (0.8 km) west of Playa de Guayanes, and 3.5 mi (5.6 km) northeast of Yabucoa plaza.

DRAINAGE AREA. -- 34.0 sq mi (88.1 sq km).

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

### WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | TIME     | STRE<br>FLO<br>INST<br>TANE                  | W, COI<br>AN- DUG<br>OUS AND                 | FIC<br>N- F<br>CT- (ST<br>CB A                       | RD A                              | MPER-<br>TURE<br>EG C)        | TUR<br>BID<br>ITY<br>(NTU | o- Di   | GEN, (<br>IS-<br>LVED S  | YGEN,<br>DIS-<br>BOLVED<br>PER-<br>CENT<br>BATUR- | OXYO<br>DEMA<br>CHE<br>ICA<br>(HI<br>LEVE<br>(MG/ | AND, FORM— FEAL O. IGH UM RL) (CO             | CAL,<br>7<br>-MF<br>LS./           | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) |
|----------------|----------|--|--|--|-----------------------------------|-------------------------------|---------------------------|---|--|---|---|---|------------------------------------|--|
| NOV 1984       |          |  |  |  |                                   |                               |                           | 1   |  |   | 111111  |   |                                    |  |
| 02             | 0905     | 650  |  | 114  | 6.80                              | 25.0                          | 65                        |   | 7.5  | 90  |   | 30  |                                    |  |
| JAN 1985<br>30 | 1300     | 45   |  | 200  | 7.70                              | 25.0                          | 4.                        | 0   | 9.5  | 113   |   | 23  | 2300                               | K70  |
| APR 22         | 1040     | 47   |  | 195  | 7.30                              | 25.5                          | 38                        |   | 6.0  | 73  |   | 10  | 4500                               | K1100  |
| JUN            |          |  |  |  |                                   |                               |                           |   |  |   |   |   |                                    |  |
| 14<br>AUG      | 1135     | 68   |  | 208  | 7.60                              | 27.5                          | 11                        |   | 8.6  | 106   |   | <10   | 230                                | 310  |
| 22             | 1520     | 20   |  | 267  | 7.90                              | 26.5                          | 15                        |   | 5.8  | 70  |   | 16  | 370                                | 270  |
| DATE           | 1        | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3)       | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM<br>DIS-<br>SOLVED<br>(MG/L | SOF<br>TI<br>RAT              | ON                        | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LINITY<br>WH WAT<br>TOTAL<br>FIBLE<br>MG/L A<br>CACO3 | SUL<br>TO   | FIDE<br>TAL<br>G/L<br>S)                          | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLARIDIS-<br>DIS-<br>SOL'<br>(MG, | R,<br>-<br>VED<br>/L   |
| NOV 1984       |          |  |  |  |                                   |                               |                           |   |  |   |   |   |                                    |  |
| 02<br>JAN 1985 |          | 27   | 7.0  | 2.4  | 9.5                               |                               | 0.8                       | 2.2   | 3  | 10  |   | 8.2   | 9                                  | . 0  |
| 30             |          | 52   | 13   | 4.7  | 19                                |                               | 1                         | 1.5   | 6  | 4   | <0.5  | 6.3   | 17                                 |  |
| APR 22         |          | 44.  |  |  | _                                 | -                             |                           |   | 6  | 6   |   |   |                                    |  |
| JUN 14         |          | 55   | 14   | 4.8  | 18                                |                               | 1                         | 1.6   | 6  | 5   | <0.5  | 7.0   | 16                                 |  |
| AUG 22         |          |  |  |  |                                   |                               |                           |   |  | 5   |   |   |                                    |  |
|                |          | FLUO-  | SILICA,                                      | SOLIDS,  | SOLIDS                            | SOLI                          |                           | NITRO-  | NITRO  | - NI  | TRO-  | NITRO-  | NITI                               | RO-  |
| DATE           |          | RIDE,<br>DIS-<br>BOLVED<br>(MG/L<br>AS F)    | DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2)       | TUENTS,<br>DIS-<br>SOLVED<br>(MG/L)                  | DIS-<br>SOLVE<br>(TONS<br>PER     | AT 1<br>D DEG.<br>SUS<br>PEND | C,                        | GEN,<br>NITRATE<br>TOTAL<br>(MG/L<br>AS N)          | GEN,<br>NITRIT<br>TOTAL<br>(MG/L<br>AS N)                      | B NO2   | EN,<br>+NO3<br>TAL<br>G/L<br>N)                   | GBN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N)    | ORGAN<br>TOTA<br>(MG,              | NIC<br>AL<br>/L  |
| NOV 1984       |          |  |  |  |                                   |                               |                           |   |  |   |   |   |                                    |  |
| 02<br>JAN 1985 |          | <0.1   | 15   | 71   | 125                               | 41                            | 7                         | 0.16  | 0.04   | 0   | .20   | 0.15  | 1                                  | . 6  |
| 30             |          | 0.1  | 36   | 140  | 17                                |                               | 9                         |   | <0.01  | 0   | .30   | 0.03  | 0                                  | . 17   |
| APR 22         |          |  |  |  |                                   | - 6                           | 0                         | 0.28  | 0.02   | 0   | .30   | 0.07  | 0.                                 | .53  |
| JUN<br>14      |          | 0.2  | 35   | 140  | 25                                |                               | 5                         | 0.19  | 0.01   | 0   | .20   | 0.05  | 0                                  | . 85   |
| AUG 22         |          |  |  |  | 25                                |                               | 4                         | 0.15  | <0.01  |   | .20   | 0.07  |                                    | . 33   |
| 24             |          | NITRO-                                       |  | -  | -                                 |                               |                           |   |  |   |   | CHRO-   |                                    |  |
| DATE           | MC<br>OF | SN,AM-<br>ONIA +<br>RGANIC<br>TOTAL<br>(MG/L | NITRO-<br>GEN,<br>TOTAL<br>(MG/L             | NITRO-<br>GEN,<br>TOTAL<br>(MG/L                     | PHORUS<br>TOTAL<br>(MG/L          | TOT<br>(UG                    | NIC<br>AL<br>/L           | BARIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L       | BORON<br>TOTAL<br>RECOV<br>ERABL<br>(UG/L                      | - REGERATE  | MIUM<br>TAL<br>COV-<br>ABLE<br>G/L                | MIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L   | TOTA<br>RECO<br>ERAF<br>(UG)       | AL<br>DV-<br>BLE<br>'L   |
| 1000 See 3     | ,        | (N BA  | AS N)  | AS NO3)  | AS P)                             | AS                            | no)                       | AS BA)  | AS B)  | AS  | CD)   | AS CR)  | AS C                               | ,,,  |
| NOV 1984<br>02 |          | 1.8  | 2.0  | 8.9  | 0.33                              |                               |                           |   |  | _   |   |   |                                    |  |
| JAN 1985<br>30 |          | 0.2  | 0.5  | 2.2  | <0.01                             |                               | <1                        | <100  | <2   | 0   | <1  | 2   |                                    | 10   |
| APR 22         |          | 0.6  | 0.9  | 4.0  | 0.10                              |                               |                           |   | -  |   |   |   |                                    |  |
| JUN            |          |  |  |  |                                   |                               |                           |   |  |   |   |   |                                    |  |
| AUG            |          | 0.9  | 1.1  | 4.9  |                                   |                               | <1                        | 100   | 2  | U   | <1  | 5   | •                                  | 10   |
| 22             |          | 0.4  | 0.6  | 2.7  | 0.14                              |                               |                           |   | -  | -   |   |   |                                    |  |

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RIO GUAYANES BASIN

50086500 RIO GUAYANES ABOVE MOUTH AT PLAYA DE GUAYANES, PR--Continued
WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| NOV 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 02<br>JAN 1985 |   |   |   |   |  |   |   | 1.75                                |                            |  |
| 30             | 1500  | 1   | 60  | 0.1   | <1   | <1  | 20  | <0.01                               | 1                          | 0.02   |
| APR            |   |   |   |   |  |   |   |                                     |                            |  |
| 22             |   |   |   | 0.1   |  |   |   |                                     |                            |  |
| JUN            |   |   |   |   |  |   |   |                                     |                            |  |
| AUG            | 1200  | 1   | 100   | <0.1  | <1   | <1  | 30  | <0.01                               | 1                          | 0.03   |
| 22             |   |   |   |   |  |   |   |                                     |                            |  |

### 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 January 1985 (discontinued).

GAGE .-- Water-stage recorder. Elevation of gage is 230 ft (70 m), from topographic map.

REMARKS .-- No estimated daily discharges during period of record. Records fair.

AVERAGE DISCHARGE.--13 years (1972-84), 18.4 ou ft/s (0.521 cu m/s), 46.44 in/yr (1,180 mm/yr), 13,330 acre-ft/yr (16.4 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 discharge, 2.2 cu ft/s (0.062 cu m/s), July 16, Aug. 7, 13, 1974.

EXTREMES FOR CURRENT PERIOD .-- Peak discharges greater than base discharge of 600 cu ft/s (17.0 cu m/s) and maximum (\*):

|        |      | Discha    | rge      | Gage h | eight |        |      | Disch     | arge     | Gage b | neight |
|--------|------|-----------|----------|--------|-------|--------|------|-----------|----------|--------|--------|
| Date   | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   | Date   | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)    |
| Oct. 9 | 1615 | *1,530    | 43.3     | *8.84  | 2.694 | Nov. 3 | 1000 | 708       | 20.1     | 7.05   | 2.149  |
| Nov. 2 | 1800 | 626       | 17.7     | 6.81   | 2.076 |        |      |           |          |        |        |

DISCHARGE, IN CUBIC FEET PER SECOND. WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

Minimum discharge, 6.9 cu ft/s (0.195 cu m/s), Jan. 24.

|                  |      | DISCHARGE, | IN   | CORIC PER | r PBK | MEAN |     | VES | 1984 | TO SEPTEMB | RK 1985 |     |     |
|------------------|------|------------|------|-----------|-------|------|-----|-----|------|------------|---------|-----|-----|
| DAY              | OCT  | NOV        | DEC  | C JAN     |       | FEB  | MAR | APR | MAY  | JUN        | JUL     | AUG | SEP |
| 1                | 18   | 95         | 1:   | 3 11      |       |      |     |     |      |            |         |     |     |
| 2                | 17   | 143        | 36   | 6 17      |       |      |     |     |      |            |         |     |     |
| 3                | 49   | 288        | 15   |           |       |      |     |     |      |            |         |     |     |
| 1<br>2<br>3<br>4 | 21   | 157        | 11   |           |       |      |     |     |      |            |         |     |     |
| 5                | 18   | 182        | 1    | 5 12      |       |      |     |     |      |            |         |     |     |
| 6                | 19   | 256        | 14   |           |       |      |     |     |      |            |         |     |     |
| 7                | 72   | 127        | 14   |           |       |      |     |     |      |            |         |     |     |
| 8                | 29   | 64         | 1:   |           |       |      |     |     |      |            |         |     |     |
| 9                | 144  | 46         | 14   |           |       |      |     |     |      |            |         |     |     |
| 10               | 61   | 37         | 14   | 1 11      |       |      |     |     |      |            |         |     |     |
| 11               | 31   | 30         | 1:   |           |       |      |     |     |      |            |         |     |     |
| 12               | 23   | 27         | 1:   |           |       |      |     |     |      |            |         |     |     |
| 13               | 29   | 24         | 1:   |           |       |      |     |     |      |            |         |     |     |
| 14<br>15         | 110  | 26         | 13   | 8.6       |       |      |     |     |      |            |         |     |     |
| 15               | 91   | 22         | 12   | 2 8.3     |       |      |     |     |      |            |         |     |     |
| 16               | 44   | 19         | 13   |           |       |      |     |     |      |            |         |     |     |
| 17               | 41   | 18         | 13   |           |       |      |     |     |      |            |         |     |     |
| 18               | 28   | 17         | 12   |           |       |      |     |     |      |            |         |     |     |
| 19               | 26   | 16         | 12   | 8.0       |       |      |     |     |      |            |         |     |     |
| 20               | 23   | 15         | 12   | 7.9       |       |      |     |     |      |            |         |     |     |
| 21               | 28   | 14         | 11   | 7.8       |       |      |     |     |      |            |         |     |     |
| 22               | 26   | 15         | 11   | 1 7.7     |       |      |     |     |      |            |         |     |     |
| 23               | 21   | 15         | 11   | 1 7.5     |       |      |     |     |      |            |         |     |     |
| 24               | 19   | 15         | 12   | 7.5       |       |      |     |     |      |            |         |     |     |
| 25               | 21   | 33         | 13   | 7.5       |       |      |     |     |      |            |         |     |     |
| 26               | 19   | 39         | 14   |           |       |      |     |     |      |            |         |     |     |
| 27               | 17   | 16         | 14   | 7.6       |       |      |     |     |      |            |         |     |     |
| 28               | 19   | 15         | 12   |           |       |      |     |     |      |            |         |     |     |
| 29               | 18   | 14         | 11   |           |       |      |     |     |      |            |         |     |     |
| 30               | 17   | 14         | 14   |           |       |      |     |     |      |            |         |     |     |
| 31               | 15   |            | 13   |           |       |      |     |     |      |            |         |     |     |
| TOTAL            | 1114 | 1799       | 431  |           |       |      |     |     |      |            |         |     |     |
| MBAN             | 35.9 |            | 13.9 |           |       |      |     |     |      |            |         |     |     |
| MAX              | 144  | 288        | 36   |           |       |      |     |     |      |            |         |     |     |
| MIN              | 15   | 14         | 11   |           |       |      |     |     |      |            |         |     |     |
| CFSM             | 6.67 |            | 2.58 |           |       |      |     |     |      |            |         |     |     |
| IN.              | 7.70 | 12.44      | 2.98 |           |       |      |     |     |      |            |         |     |     |
| AC-FT            | 2210 | 3570       | 855  |           |       |      |     |     |      |            |         |     |     |

CAL YR 1984 TOTAL 6843.3 MEAN 18.7 MAX 288 MIN 3.8 CFSM 3.48 IN. 47.32 AC-FT 13570

## RIO MAUNABO BASIN

# 50090500 RIO MAUNABO AT LIZAS, PR--Continued

# WATER QUALITY RECORDS

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

| DATE   | TIME   | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE   | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|--------|--------|---------------------------------------|--------------------------------------|-----------------------------|--------|------|---------------------------------------|--------------------------------------|-----------------------------|
| JAN, 2 | 9 1305 | 7.3                                   | 195                                  | 24.0                        | APR, 1 | 1422 | 7.4                                   | 207                                  | 27.0                        |

### 50091000 RIO MAUNABO AT MAUNABO, PR

## WATER-QUALITY RECORDS

LOCATION.--Lat 18°00'24", long 65°54'19", at bridge on Highway 3, 0.4 mi (0.6 km) southwest of Maunabo plaza, and 1.3 mi (2.1 km) upstream from mouth.

DRAINAGE AREA. -- 12.4 sq mi (32.1 sq km).

PERIOD OF RECORD .-- Water years 1958-66, 1975 to current year.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | TIME             | STRE<br>FLO<br>INST<br>TANEG<br>(CF:                     | M, COI<br>AN- DUG<br>OUS AND                 | FIC<br>N- PI<br>CT- (ST                              | AND- T                                    | EMPER-<br>ATURE<br>DEG C) | TUR-<br>BID-<br>ITY<br>(NTU)     | - DI  | SEN, (<br>IS-<br>LVED S                                       | YGEN,<br>DIS-<br>OLVED<br>PER-<br>CENT<br>ATUR-<br>TION) | OXYG<br>DEMA<br>CHE<br>ICA<br>(HI<br>LEVE<br>(MG/ | ND, F<br>M- F<br>L 0<br>GH U                                  | OLI-<br>ORM,<br>BCAL,<br>.7<br>M-MF<br>OLS./<br>O ML) | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) |
|----------------|------------------|--|--|--|---|---------------------------|----------------------------------|---|---|--|---|---|---|--|
| OCT 1984       | 1010             | 32   |  | 226  | 7. 40                                     | 00.5                      |                                  |   | • •   | 104  |   | 33  | 22000   | 430  |
| 31<br>FEB 1985 | 1210             | 32   |  | 226  | 7.40                                      | 26.5                      | 5.1                              | 1   | 8.4   | 104  |   | 33  | 22000   | 430  |
| 04             | 1105             | 12   |  | 255  | 7.60                                      | 25.0                      | 2.0                              | 0   | 9.8   | 117  |   | 20  | 4000  | 640  |
| APR 24         | 1350             | 30   |  | 174  | 6.90                                      | 28.0                      | 15                               |   | 8.3   | 106  |   | 21  | 2400  | 2200   |
| JUN<br>17      | 1435             | 12   |  | 229  | 7.60                                      | 31.5                      | 7.9                              | 9   | 7.9   | 105  |   | 10  | K7800   | 500  |
| AUG 21         | 1330             | 17   |  |  | 8.00                                      | 31.0                      | 3.6                              | 5   | 7.7   | 103  |   | 17  |   |  |
|                | 1000             |  |  |  |   | 31.0                      |                                  |   |   | 100  |   | •   |   |  |
| DATE           | N (              | ARD-<br>BSS<br>MG/L<br>AS<br>ACO3)                       | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA) | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM<br>DIS-<br>SOLVE<br>(MG/I<br>AS NA | SOF<br>D TI               | OIUM<br>AD-<br>RP-<br>ION<br>PIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K)     | ALKA-<br>LINITY<br>WATER<br>TOTAL<br>FIELD<br>MG/L A<br>CACO3 | SUL<br>TO  | FIDE<br>TAL<br>G/L<br>S)                          | SULFAT<br>DIS-<br>SOLVE<br>(MG/L<br>AS SO4                    | R RI<br>DI<br>D SO                                    | LO-<br>DR,<br>S-<br>LVED<br>G/L<br>CL)                             |
| OCT 1984       |                  |  |  |  |   |                           |                                  |   |   |  |   |   |   |  |
| 31<br>FEB 1985 |                  | 68   | 16   | 6.8  | 20  |                           | 1                                | 0.9   | 7   | 4  |   | 11  | 1   | 8  |
| 04<br>APR      |                  | 80   | 19   | 8.0  | 22  |                           | 1                                | 0.9   | 8   | 9  | <0.5  | 11  | 1   | 9  |
| 24             |                  |  |  |  |   | -                         |                                  |   | 6   | 5  |   | - 4   | _   |  |
| JUN<br>17      |                  | 72   | 17   | 7.1  | 21  |                           | 1                                | 1.1   | 7   | 7  | <0.5  | 9.  | 8 1   | 8  |
| AUG 21         |                  |  |  |  |   |                           |                                  |   | 7   | 5  |   |   |   |  |
|                | R                | LUG-   | SILICA,<br>DIS-                              | SOLIDS,<br>SUM OF<br>CONSTI-                         | SOLID:                                    | - AT 1                    | DUE<br>05                        | NITRO-<br>GEN,  | NITRO   | G  | TRO-  | NITRO<br>GEN,   | G   | TRO-<br>EN,  |
|                |                  | DIS-<br>OLVED  | SOLVED<br>(MG/L                              | TURNTS,<br>DIS-                                      | SOLVI<br>(TONS                            |                           |                                  | TOTAL   | TOTAL   |  | +NO3  | TOTAL   |   | ANIC<br>TAL  |
| DATE           | (1               | MG/L<br>B F)   | AS<br>SIO2)                                  | SOLVED   | PER                                       | PEND                      | DED                              | (MG/L<br>AS N)  | (MG/L<br>AS N)  | (M   | G/L<br>N)   | (MG/L<br>AS N)  | (M  | G/L<br>N)  |
| 3.00           | A.               | 3 F/   | 3102)  | (MG/L)   | DAI                                       | ( MG                      | 1/L)                             | AB N)   | AS N)   | AS   | N)  | AO N  | AO  | N)   |
| OCT 1984<br>31 |                  | 0.1  | 35   | 150  | 13  |                           | 5                                | 0.49  | 0.01  | 0  | . 50  | 0.06  |   | 0.04   |
| FBB 1985       |                  |  |  |  |   |                           |                                  |   |   |  |   |   |   |  |
| APR            |                  | 0.1  | 37   | 170  | 5.  | , 1                       | 3                                |   | <0.01   | 0  | . 20  | 0.06  |   | 0.14   |
| 24<br>JUN      |                  |  |  |  |   | 2                         | 26                               | 0.38  | 0.02  | 0  | . 40  | 0.12  |   | 0.38   |
| 17             |                  | 0.2  | 38   | 160  | 5.  | ľ                         | 6                                | 0.09  | 0.01  | 0  | . 10  | 0.04  |   | 0.66   |
| 21             |                  |  | -  |  |   | 1                         | 3                                |   | <0.01   | 0  | .10   | 0.03  |   | 0.37   |
| DATE           | MOI<br>ORG<br>TO | ITRO-<br>N,AM-<br>NIA +<br>GANIC<br>DTAL<br>MG/L<br>B N) | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS N)    | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS NO3)          | PHOS-<br>PHORUS<br>TOTAI<br>(MG/I         | ARSE<br>TOT               | NIC<br>AL                        | BARIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS BA) | BORON<br>TOTAL<br>RECOV-<br>ERABLI<br>(UG/L<br>AS B)          | TO<br>RE<br>R ER<br>(U                                   | MIUM<br>TAL<br>COV-<br>ABLE<br>G/L<br>CD)         | CHRO-<br>MIUM,<br>TOTAL<br>RECOV-<br>ERABLI<br>(UG/L<br>AS CR | TO RE   | PER,<br>TAL<br>COV-<br>ABLE<br>G/L<br>CU)                          |
| OCT 1984       |                  |  |  | or cost  |   |                           |                                  |   |   |  | 475   |   |   | 15.73  |
| 31             |                  | 0.1  | 0.6  | 2.7  | 0.01                                      | 13                        |                                  |   |   | -  |   | 1,2.  | 2   |  |
| FEB 1985<br>04 |                  | 0.2  | 0.4  | 1.8  | 0.08                                      |                           | <1                               | <100  | 30  | 0  | 1   |   |   | <10  |
| APR 24         |                  | 0.5  | 0.9  |  |   |                           |                                  |   |   |  |   |   |   |  |
| JUN            |                  |  |  | 4.0  | 0.08                                      |                           |                                  |   | -   |  |   | -   |   |  |
| 17             |                  | 0.7  | 0.8  | 3.5  | 0.02                                      |                           | <1                               | <100  | 20  | )  | <1  |   | 5   | <10  |
| 21             |                  | 0.4  | 0.5  | 2.2  | 0.06                                      |                           |                                  |   |   |  |   |   |   |  |

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RIO MAUNABO BASIN

50091000 RIO MAUNABO AT MAUNABO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| OCT 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 31<br>FRB 1985 |   |   |   |   |  |   |   |                                     |                            |  |
| 04<br>APR      | 710   | <1  | 60  | <0.1  | <1   | <1  | <10   | <0.01                               | 2                          | 0.03   |
| 24<br>JUN      |   |   |   | <0.1  |  |   |   |                                     |                            | X 27-  |
| 17             | 470   | 2   | 40  | <0.1  | <1   | <1  | 50  | <0.01                               | 5                          | 0.03   |
| 21             |   |   |   |   |  |   |   |                                     |                            |  |

# 50091800 RIO CHICO AT PROVIDENCIA, PR

### WATER-QUALITY RECORDS

LOCATION.--Lat 17°59'16", long 66°00'18", at flat low bridge 200 ft (61 m) south of Highway 3, 0.5 mi (0.8 km) above mouth, and 1.5 mi (2.4 km) southeast of Patillas plaza.

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

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

### WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | TIME                | STRE<br>FLO<br>INST<br>TANE<br>(CF                       | W,<br>CAN-<br>BOUS | DUC   | FIC<br>N-<br>CT- (S<br>CB                                      | PH<br>TAND-<br>ARD<br>IITS)              | TEMI<br>ATU                                   |  | TUN<br>BID<br>ITY<br>(NTU | )- 1<br>7 SC  | YGEN,<br>DIS-<br>DLVED<br>4G/L) | SOI<br>(PI<br>CI<br>SAT                  | GEN,<br>IS-<br>LVED<br>GR-<br>GNT<br>TUR-<br>ION) | CHI                                       | AND,<br>EM-<br>AL<br>IGH<br>EL) | COL<br>FOR<br>FEC<br>0.7<br>UM-<br>(COL<br>100  | MF                       | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) |
|----------------|---------------------|--|--------------------|-------|--|--|---|--|---------------------------|---|---------------------------------|--|---|---|---------------------------------|---|--------------------------|--|
| OCT 1984       |                     |  |                    |       |  | 1  |   |  |                           |   |                                 |  |   |   |                                 |   |                          |  |
| 31<br>JAN 1985 | 1350                | 6  | 6.6                |       | 442  | 7.40                                     |   | 27.0   | 3.                        | 3   | 6.0                             |  | 75  |   | 33                              | 5700  | 0000                     |  |
| O9             | 1345                | 1  | .9                 |       | 624  | 7.60                                     |   | 26.0   | 2.                        | 0   | 2.2                             |  | 27  |   | 57                              | 4000  | 000                      | K90000   |
| 24<br>JUN      | 1135                | 2  | .4                 |       | 525  | 6.90                                     |   | 27.0   | 1.                        | 0   | 5.4                             |  | 68  |   | 51                              | 2800  | 000                      | K170000  |
| 17             | 1140                | 0  | .3                 |       | 831  | 7.20                                     |   | 31.0   | 6.                        | 1   | 0                               |  |   |   | 140                             | 1200  | 000                      | 920000   |
| AUG<br>21      | 1635                | 1  | .8                 |       | 598  | 7.90                                     |   | 29.0   | 11                        |   | 2.7                             |  | 35  |   | 140                             | 4800  | 000                      | 200000   |
| DATE           | N<br>(              | IARD-<br>IESS<br>MG/L<br>AS<br>:ACO3)                    | (MC                |       | MAGNE<br>SIUM<br>DIS-<br>SOLVE<br>(MG/L<br>AS MG               | D SOI                                    | DIUM,<br>IS-<br>LVED<br>MG/L<br>B NA)         | SOR  | ON                        | POTAS-<br>SIUM,<br>DIS-<br>SOLVEI<br>(MG/L<br>AS K)     | TO FI                           | TAL<br>ELD<br>L AS                       | TO (M   | FIDR<br>TAL<br>G/L<br>S)                  | BO<br>(M                        | FATE<br>S-<br>LVED<br>G/L<br>SO4)               | RII<br>DIS<br>SOI<br>(MC | LO-<br>DB,<br>3-<br>LVBD<br>G/L<br>CL)                             |
| OCT 1984<br>31 |                     | 110  | 24                 |       | 12   |  | 52  |  | 2                         |   |                                 | 140                                      |   |   |                                 | 27  | 36                       |  |
| JAN 1985       |                     |  |                    |       |  |  |   |  |                           | 1.6   |                                 | 146                                      |   |   |                                 |   |                          |  |
| O9             |                     | 130  | 29                 | ,     | 14   | •  | 67  |  | 3                         | 3.8   |                                 | 198                                      |   | <0.5                                      |                                 | 35  | 49                       | 9  |
| 24<br>JUN      |                     |  |                    |       | -  | -  |   |  |                           |   |                                 | 157                                      |   |   |                                 |   |                          |  |
| 17             |                     | 140  | 36                 | 5     | 12   | 8  | 86  |  | 3                         | 8.5   |                                 | 251                                      |   | 1.4                                       |                                 | 55  | 78                       | 3  |
| 21             |                     |  |                    |       | -  | -  |   |  |                           | -   |                                 | 153                                      |   |   |                                 |   |                          |  |
| DATE           | R<br>S<br>(         | LUO-<br>IDE,<br>DIS-<br>OLVED<br>MG/L<br>S F)            |                    | - VED | SOLIDS<br>SUM OF<br>CONSTI<br>TUENTS<br>DIS-<br>SOLVE<br>(MG/L | SOL - II - | LIDS,<br>DIS-<br>DLVED<br>TONS<br>PER<br>DAY) | SOLI<br>RESI<br>AT 1<br>DEG.<br>SUS<br>PEND<br>(MG | DUE<br>05<br>C,           | NITRO-<br>GEN,<br>NITRATE<br>TOTAL<br>(MG/L<br>AS N)    | NIT<br>TO                       | TRO-<br>EN,<br>RITE<br>TAL<br>G/L<br>N)  | NO2<br>TO   | TRO-<br>EN,<br>+NO3<br>TAL<br>G/L<br>N)   | AMM<br>TO<br>(M                 | TRO-<br>EN,<br>ONIA<br>TAL<br>G/L<br>N)         |                          | TAL<br>3/L   |
| OCT 1984       |                     | 0.1  | 3                  | 80    | 27   | 0  | 4.8   | 2  | 2                         | 0.59  | 0                               | .11                                      | 0   | .70                                       | 2                               | . 50  | ,                        | 1.5  |
| JAN 1985<br>09 |                     | 0.2  |                    | 10    | 35   |  | 1.8   |  | 9                         | 0.18  |                                 | .02                                      |   | .20                                       |                                 | . 20  |                          | 5.8  |
| APR            |                     |  |                    |       |  |  |   |  |                           |   |                                 |  |   |   |                                 |   |                          |  |
| 24<br>JUN      |                     |  |                    |       | -  |  |   |  | 6                         | 0.18  |                                 | .02                                      |   | . 20                                      |                                 | . 80  |                          | 5.2  |
| 17             |                     | 0.2  | 3                  | 13    | 46   | 0  | 0.37  | 3  | 9                         |   | 0                               | .04                                      | <0  | . 10                                      | 20                              | . 0   | •                        | 3.0  |
| 21             |                     |  |                    |       |  | -  |   | 2  | 8                         | 0.39  | 0                               | .21                                      | 0   | .60                                       | 5                               | . 40  | 4                        | 1.3  |
| DATE           | GR<br>MO<br>OR<br>T | ITRO-<br>N,AM-<br>NIA +<br>GANIC<br>OTAL<br>MG/L<br>S N) |                    | /L    | NITRO<br>GEN,<br>TOTAL<br>(MG/L<br>AS NO3                      | PHO<br>TO<br>(M                          | IOS-<br>DRUS,<br>DTAL<br>IG/L<br>I P)         | ARSE<br>TOT<br>(UG<br>AS                           | NIC<br>AL<br>/L           | BARIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS BA) | RE<br>RR<br>(U                  | RON,<br>TAL<br>COV-<br>ABLE<br>G/L<br>B) | REG<br>ER   | MIUM<br>FAL<br>COV-<br>ABLE<br>G/L<br>CD) | TO' REG                         | RO-<br>UM,<br>TAL<br>COV-<br>ABLR<br>G/L<br>CR) | ERA<br>(UC               |  |
| OCT 1984       |                     |  |                    |       |  |  |   |  |                           |   |                                 |  |   |   |                                 |   |                          |  |
| 31<br>JAN 1985 |                     | 4.0  | 4                  | . 7   | 21   | 0  | .69   |  |                           |   |                                 |  |   |   |                                 |   |                          |  |
| 09<br>APR      |                     | 13   | 13                 |       | 58   | 2  | .00   |  | 1                         | <100  |                                 | <20                                      |   | 1   |                                 | 27  |                          | 50   |
| 24             |                     | 14   | 14                 |       | 63   | 1  | .40   |  |                           |   |                                 |  |   |   |                                 |   |                          |  |
| JUN<br>17      |                     | 26   |                    |       | - 5  | - 4                                      | .60   |  | <1                        | <100  |                                 | 70                                       |   | 8   |                                 | 42  |                          | 270  |
| AUG<br>21      |                     | 9.7  | 10                 |       | 46   |  | .70   |  |                           |   |                                 |  |   |   |                                 |   |                          |  |

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RIO CHICO BASIN

50091800 RIO CHICO AT PROVIDENCIA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FR) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| OCT 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 31<br>JAN 1985 |   |   |   |   |  |   |   | 1-1-                                | -                          |  |
| 09<br>APR      | 220   | 1   | 80  |   | <1   | <1  | 100   | 0.04                                | 10                         | 1.3  |
| 24             |   |   |   | <0.1  |  |   |   |                                     |                            |  |
| JUN            |   |   |   |   |  |   |   |                                     |                            |  |
| 17             | 1000  | <1  | 130   | <0.1  | <1   | 2   | 560   | <0.01                               | 12                         | 4.7  |
| AUG            |   |   |   |   |  |   |   |                                     |                            |  |
| 21             |   |   |   |   |  |   |   |                                     |                            |  |

### 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 AREA .-- 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. Blevation of gage is 235 ft (72 m), from topographic map.

REMARKS .-- Estimated daily discharges: Dec. 31 to Jan. 10, Aug. 20-27. Records poor.

AVERAGE DISCHARGE.--19 years (1967-85), 60.4 cu ft/s (1.710 cu m/s), 44.82 in/yr (1,138 mm/yr), 43,760 acre-ft/yr (54.0 cu hm/yr); median of yearly mean discharges, 61 cu ft/s (1.73 cu m/s), 44,200 acre-ft/yr (54 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,800 cu ft/s (419 cu m/s), Sept. 16, 1975, gage height, 12.45 ft (3.795 m), from rating curve extended above 250 cu ft/s (7.08 cu m/s) on basis of slope-area measurement of peak flow; minimum discharge, 4.6 cu ft/s (0.130 cu m/s), May 13-16, 1968, gage height, 3.55 ft (1.082 m).

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

|        |      | Disch     | arge     | Gage h | eight |        |      | Disch     | arge     | Gage h | eight |
|--------|------|-----------|----------|--------|-------|--------|------|-----------|----------|--------|-------|
| Date   | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   | Date   | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   |
| Oct. 9 | 1400 | 4,760     | 135      | 10.32  | 3.146 | May 17 | 1130 | 3,500     | 99.1     | 9.36   | 2.862 |
| Nov. 3 | 0630 | *9,190    | 260      | *12.86 | 3.920 | May 18 | 0845 | 5,680     | 161      | 10.93  | 3.331 |

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

Minimum daily discharge, 8.3 cu ft/s (0.235 cu m/s), June 30.

|        |        | 2100111110 | , 10 0001 |      |      | BAN VALU | RS   | 100  |       | 2.122W 1000 |       |       |
|--------|--------|------------|-----------|------|------|----------|------|------|-------|-------------|-------|-------|
| DAY    | OCT    | NOV        | DEC       | JAN  | FRB  | MAR      | APR  | MAY  | JUN   | JUL         | AUG   | SKP   |
| 1      | 42     | 230        | 51        | 30   | 20   | 36       | 23   | 22   | 27    | 9.4         | 24    | 32    |
| 2      | 39     | 511        | 124       | 33   | 20   | 34       | 20   | 24   | 28    | 9.8         | 23    | 30    |
| 3      | 57     | 1900       | 93        | 27   | 19   | 38       | 19   | 32   | 30    | 10          | 22    | 27    |
| 4      | 49     | 522        | 67        | 28   | 19   | 39       | 21   | 31   | 30    | 11          | 21    | 25    |
| 5      | 60     | 1080       | 61        | 28   | 19   | 40       | 22   | 32   | 28    | 10          | 21    | 23    |
| 6      | 62     | 1160       | 55        | 30   | 20   | 41       | 19   | 29   | 27    | 9.9         | 21    | 22    |
| 7      | 72     | 658        | 51        | 27   | 21   | 52       | 21   | 29   | 25    | 11          | 20    | 21    |
| 8      | 75     | 245        | 47        | 26   | 21   | 48       | 21   | 27   | 23    | 12          | 20    | 30    |
| 9      | 528    | 159        | 49        | 24   | 21   | 35       | 22   | 27   | 20    | 12          | 25    | 29    |
| 10     | 254    | 115        | 49        | 24   | 21   | 29       | 21   | 27   | 17    | 11          | 23    | 21    |
| 11     | 136    | 95         | 44        | 24   | 21   | 26       | 23   | 39   | 12    | 11          | 23    | 27    |
| 12     | 88     | 82         | 42        | 23   | 22   | 26       | 22   | 31   | 12    | 10          | 21    | 159   |
| 13     | 123    | 76         | 41        | 23   | 22   | 25       | 25   | 30   | 10    | 9.6         | 35    | 469   |
| 14     | 178    | 84         | 38        | 22   | 26   | 23       | 20   | 147  | 11    | 15          | 30    | 108   |
| 15     | 148    | 94         | 36        | 22   | 28   | 23       | 16   | 325  | 11    | 67          | 34    | 66    |
| 16     | 129    | 73         | 37        | 21   | 24   | 23       | 31   | 162  | 11    | 111         | 27    | 45    |
| 17     | 108    | 70         | 38        | 21   | 20   | 23       | 37   | 676  | 9.3   | 242         | 25    | 37    |
| 18     | 82     | 71         | 35        | 21   | 19   | 131      | 42   | 1150 | 8.7   |             | 24    | 31    |
| 19     | 67     | 68         | 33        | 21   | 22   | 32       | 27   | 213  | 9.8   |             | 25    | 28    |
| 20     | 63     | 63         | 32        | 21   | 25   | 25       | 19   | 77   | 9.7   |             | 24    | 28    |
| 21     | 66     | 62         | 29        | 21   | 21   | 21       | 31   | 52   | 9.7   | 33          | 23    | 27    |
| 22     | 59     | 68         | 29        | 21   | 20   | 19       | 19   | 45   | 9.6   | 23          | 23    | 26    |
| 23     | 54     | 79         | 28        | 21   | 19   | 16       | 198  | 39   | 10    | 26          | 23    | 31    |
| 24     | 51     | 71         | 31        | 20   | 19   | 16       | 158  | 31   | 10    | 68          | 24    | 288   |
| 25     | 63     | 97         | 36        | 19   | 18   | 15       | 82   | 30   | 10    | 45          | 25    | 610   |
| 26     | 81     | 177        | 34        | 22   | 23   | 16       | 43   | 30   | 9.3   | 87          | 24    | 152   |
| 27     | 72     | 77         | 34        | 20   | 88   | 17       | 31   | 27   | 8.7   | 41          | 92    | 81    |
| 28     | 60     | 65         | 34        | 19   | 38   | 18       | 29   | 28   | 9.0   | 41          | 116   | 78    |
| 29     | 56     | 60         | 28        | 19   |      | 63       | 26   | 29   | 8.7   | 34          | 44    |       |
| 30     | 53     | 56         | 32        | 19   |      | 30       | 23   | 29   | 8.3   | 26          | 35    | 50    |
| 31     | 49     |            | 33        | 19   |      | 37       |      | 28   |       | 25          | 33    |       |
| TOTAL  | 3024   | 8168       | 1371      | 716  | 676  | 1017     | 1111 | 3498 | 452.8 | 1082.7      | 950   | 2659  |
| MEAN   | 97.5   | 272        | 44.2      | 23.1 | 24.1 | 32.8     | 37.0 | 113  | 15.1  | 34.9        | 30.6  | 88.6  |
| MAX    | 528    | 1900       | 124       | 33   | 88   | 131      | 198  | 1150 | 30    | 242         | 116   | 610   |
| MIN    | 39     | 56         | 28        | 19   | 18   | 15       | 16   | 22   | 8.3   |             | 20    | 21    |
| CFSM   | 5.33   | 14.9       | 2.42      | 1.26 | 1.32 | 1.79     | 2.02 | 6.17 | .83   | 1.91        | 1.67  | 4.84  |
| IN.    | 6.15   | 16.60      | 2.79      | 1.46 | 1.37 | 2.07     | 2.26 | 7.11 | .92   | 2.20        | 1.93  | 5.41  |
| AC-FT  | 6000   | 16200      | 2720      | 1420 | 1340 | 2020     | 2200 | 6940 | 898   | 2150        | 1880  | 5270  |
| CAL YR |        | OTAL 24835 |           | 67.9 | MAX  | 1900 MIN | 9.0  | CFSM | 3.71  | IN. 50.49   | AC-FT | 49260 |
| WTR YR | 1985 T | OTAL 24725 | .5 MBAN   | 67.7 | MAX  | 1900 MIN | 8.3  | CFSM | 3.70  | IN. 50.26   | AC-FT | 49040 |

### 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.

|                |                    |                             | SPE-                   |                |         |                |                 | OXYGEN,<br>DIS-         | COLI-                  | STREP-                      |                        |
|----------------|--------------------|-----------------------------|------------------------|----------------|---------|----------------|-----------------|-------------------------|------------------------|-----------------------------|------------------------|
|                |                    | STREAM-<br>FLOW,<br>INSTAN- | CIFIC<br>CON-<br>DUCT- | PH<br>(STAND-  | TEMPER- | TUR-<br>BID-   | OXYGEN,<br>DIS- | SOLVED<br>(PER-<br>CENT | FECAL,<br>0.7<br>UM-MF | FECAL,<br>KF AGAR<br>(COLS. | HARD-<br>NESS<br>(MG/L |
| DATE           | TIME               | (CFS)                       | ANCE<br>(US/CM)        | ARD<br>UNITS)  | (DEG C) | ITY<br>(NTU)   | SOLVED (MG/L)   | SATUR-<br>ATION)        | (COLS./<br>100 ML)     | PER<br>100 ML)              | CACO3)                 |
| OCT 1984       |                    |                             |                        |                |         |                |                 |                         |                        |                             |                        |
| 11             | 1120               | 136                         | 140                    | 7.60           | 25.5    | 7.0            | 9.4             | 114                     | 3600                   | 500                         | 39                     |
| JAN 1985<br>09 | 1035               | 24                          | 168                    | 7.60           | 21.0    | 1.0            | 10.6            | 118                     | 420                    | 56                          | 52                     |
| APR            | 1033               | 44                          | 100                    | 7.00           | 21.0    | 1.0            | 10.0            | 110                     | 420                    | 30                          | 1 100                  |
| 04             | 1250               | 20                          | 170                    | 7.80           | 25.0    | 1.0            | 8.2             | 99                      | 250                    | 120                         | 50                     |
|                |                    |                             |                        |                |         |                |                 |                         |                        |                             |                        |
|                |                    |                             |                        |                |         | ALKA-          |                 |                         |                        |                             | SOLIDS,                |
|                |                    | MAGNE-                      |                        | SODIUM         | POTAS-  | LINITY         |                 | CHLO-                   | FLUO-                  | SILICA,                     | RESIDUE                |
|                | CALCIUM<br>DIS-    | SIUM,<br>DIS-               | SODIUM,                | AD-<br>SORP-   | SIUM,   | WATER          | SULFATE<br>DIS- | RIDE,<br>DIS-           | RIDE,<br>DIS-          | DIS-<br>SOLVED              | AT 180<br>DEG. C       |
|                | SOLVED             | SOLVED                      | DIS-<br>SOLVED         | TION           | DIS-    | FIELD          | SOLVED          | SOLVED                  | SOLVED                 | (MG/L                       | DIS-                   |
| DATE           | (MG/L              | (MG/L                       | (MG/L                  | RATIO          | (MG/L   | MG/L AS        | (MG/L           | (MG/L                   | (MG/L                  | AS                          | SOLVED                 |
| 7777           | AS CA)             | AS MG)                      | AS NA)                 |                | AS K)   | CACO3          | AS SO4)         | AS CL)                  | AS F)                  | 8102)                       | (MG/L)                 |
| OCT 1984       |                    |                             |                        |                |         |                |                 |                         |                        |                             |                        |
| 11             | 8.6                | 4.2                         | 13                     | 0.9            | 0.5     | 39             | 9.1             | 13                      | 0.1                    | 24                          | 98                     |
| JAN 1985<br>09 | 12                 | 5.3                         | 14                     | 0.9            | 0.4     | 53             | 11              | 13                      | <0.1                   | 24                          | 116                    |
| APR            | 12                 | 3.3                         | 14                     | 0.5            | 0.4     | 33             | **              | 13                      | 10.1                   | 44                          | 110                    |
| 04             | 11                 | 5.4                         | 13                     | 0.8            | 0.4     | 52             | 11              | 12                      | <0.1                   | 24                          | 116                    |
|                |                    |                             |                        |                |         |                |                 |                         |                        |                             |                        |
|                | SOLIDS,            |                             | NITRO-                 | NITRO-         | NITRO-  | NITRO-         |                 |                         | PHOS-                  | PHOS-                       |                        |
|                | SUM OF             | SOLIDS,                     | GEN,                   | GEN,           | GEN,    | GEN, AM-       | 12002           | PHOS-                   | PHORUS,                | PHATE,                      | ALUM-                  |
|                | CONSTI-<br>TUENTS, | DIS-                        | NO2+NO3                | AMMONIA        | AMMONIA | MONIA +        | PHOS-           | PHORUS,                 | ORTHO,                 | ORTHO,                      | INUM,<br>DIS-          |
|                | DIS-               | (TONS                       | DIS-                   | DIS-<br>SOLVED | DIS-    | ORGANIC        | PHORUS,         | DIS-                    | DIS-<br>SOLVED         | SOLVED                      | SOLVED                 |
| DATE           | SOLVED             | PER                         | (MG/L                  | (MG/L          | (MG/L   | (MG/L          | (MG/L           | (MG/L                   | (MG/L                  | (MG/L                       | (UG/L                  |
| 7117           | (MG/L)             | DAY)                        | AS N)                  | AS N)          | AS NH4) | (N BA          | AS P)           | AS P)                   | AS P)                  | AS PO4)                     | AS AL)                 |
| OCT 1984       |                    |                             |                        |                |         |                |                 |                         |                        |                             |                        |
| 11             | 96                 | 36                          | 0.57                   | 0.13           | 0.17    | 0.2            | 0.04            | 0.04                    | 0.03                   | 0.09                        | 40                     |
| JAN 1985<br>09 | 110                | 7.5                         | 0.10                   |                |         |                | 0.08            | 0.02                    | 0.02                   | 0.06                        | 20                     |
| APR            | 110                | 7.5                         | 0.19                   | 0.03           | 0.04    | 0.3            | 0.08            | 0.02                    | 0.02                   | 0.06                        | 20                     |
| 04             | 110                | 6.3                         | <0.10                  | <0.01          |         | 0.2            | 0.01            | <0.01                   | <0.01                  |                             | 30                     |
|                |                    |                             |                        |                |         |                |                 |                         |                        |                             |                        |
|                |                    |                             |                        |                |         |                |                 |                         |                        |                             |                        |
|                |                    |                             | BERYL-                 |                | CHRO-   |                |                 |                         |                        |                             | MANGA-                 |
|                |                    | BARIUM,                     | LIUM,                  | CADMIUM        | MIUM,   | COBALT,        | COPPER,         | IRON,                   | LEAD,                  | LITHIUM                     | NESE,                  |
|                | DIS-               | DIS-                        | DIS-                   | DIS-<br>SOLVED | D18-    | DIS-<br>SOLVED | DIS-<br>SOLVED  | DIS-<br>SOLVED          | DIS-                   | DIS-                        | DIS-<br>SOLVED         |
| DATE           | (UG/L              | (UG/L                       | SOLVED (UG/L           | (UG/L          | (UG/L   | (UG/L          | (UG/L           | (UG/L                   | (UG/L                  | (UG/L                       | (UG/L                  |
| DAIL           | AS AS)             | AS BA)                      | AS BE)                 | AS CD)         | AS CR)  | AS CO)         | AS CU)          | AS FE)                  | AS PB)                 | AS LI)                      | (MM EA                 |
| OCT 1984       |                    |                             |                        |                |         |                |                 |                         |                        |                             |                        |
| 11             | <1                 | 19                          | <0                     | <1             | <1      | <3             | <1              | 61                      | 1                      | <4                          | 12                     |
| JAN 1985       |                    |                             |                        |                |         |                |                 |                         |                        |                             |                        |
| 09<br>APR      | <1                 | 18                          | 0.5                    | <1             | 2       | <3             | 1               | 22                      | 1                      | <4                          | 6                      |
| 04             | <1                 | 18                          | (0.5                   | <1             | <1      | <3             | 1               | 19                      | 1                      | <4                          | 5                      |
|                |                    |                             |                        |                |         |                |                 |                         |                        |                             |                        |

## RIO GRANDE DE PATILLAS BASIN

50092000 RIO GRANDE DE PATILLAS NEAR PATILLAS, PR--Continued (National stream-quality accounting network station)

# WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | MERCURY<br>DIS-<br>SOLVED<br>(UG/L<br>AS HG) | MOLYB-<br>DENUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MO) | NICKEL,<br>DIS-<br>SOLVED<br>(UG/L<br>AS NI) | (UG/L<br>SOLVED<br>(UG/L<br>SKI.K- | SILVER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS AG) | STRON-<br>TIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SR) | VANA-<br>DIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS V) | ZINC,<br>DIS-<br>SOLVED<br>(UG/L<br>AS ZN) | (MG/L)<br>BUS-<br>BENDED<br>SEDI- | SEDI-<br>MENT,<br>DIS-<br>CHARGE,<br>SUS-<br>PENDED<br>(T/DAY) |
|----------------|--|---|--|------------------------------------|--|--|--|--|-----------------------------------|--|
| OCT 1984       |  |   |  |                                    |  |  |  |  |                                   |  |
| 11<br>JAN 1985 | <0.1   | <10   | 2  | <1                                 | <1   | 35   | <6   | 9  | 22                                | 8.1  |
| 09             | <0.1   | <10   | <1   | <1                                 | <1   | 40   | <6   | 7  | 1                                 | 0.06   |
| APR 04         | <0.1   | <10   | 1  | <1                                 | <1   | 41   | <6   | 9  | 31                                | 1.7  |

| DATE           | TIME | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SEDI-<br>MENT,<br>SUS-<br>PENDED<br>(MG/L) | SED.<br>SUSP.<br>SIEVE<br>DIAM.<br>% FINER<br>THAN<br>.062 MM |
|----------------|------|---|--|---|
| OCT 1984       |      |   |  |   |
| 11<br>APR 1985 | 1120 | 136   | 22   | 99  |
| 04<br>JUL      | 1250 | 20  | 31   | 92  |
| 02             | 1145 | 10  | 32   | 79  |

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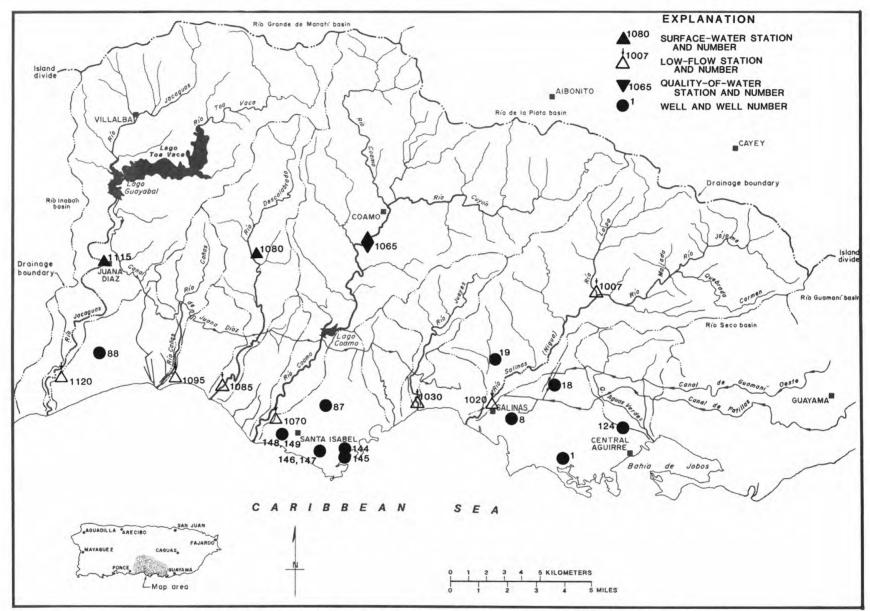


Figure 23. -- South coast river basins -- Río Salinas to Río Jacaguas basins.

226 RIO COAMO BASIN

### 50106500 RIO COAMO NEAR COAMO, PR

LOCATION.--Lat 18°03'52", long 66°22'10", Hydrologic Unit 21010004, on Highway 153 bridge, 0.4 mi (0.6 km) above Rio de la Mina, and 1.8 mi (2.9 km) south of Coamo plaza.

DRAINAGE AREA .-- 46.0 sq mi (119.1 sq km).

#### WATER-DISCHARGE RECORDS

PERIOD OF RECORD. --1959-61 (annual low-flow measurements only), September 1960 (indirect flood measurement only), 1965-67 (annual maximum discharge only), January 1967 to December 1968, January to December 1969 (high-water discharges only), January to December 1970, (annual maximum discharge and occasional measurements only). February 1984 to September 1985 (discontinued).

GAGE .-- Water-stage recorder. Blevation of gage is 260 ft (79 m), from topographic map.

REMARKS.--Estimated daily discharges: Oct. 16, Dec. 3-10, Apr. 28 to May 15, May 19-21, and Sept. 13-30. Records fair except those for estimated daily discharges, which are poor. Diversion to Coamo water treatment plant, for municipal supply, upstream from station. Some diurnal fluctuation from return flow from Coamo sewage treatment plant.

EXTREMES FOR PERIOD OF RECORD. -- Maximum discharge, 22,000 cu ft/s (623 cu m/s), Oct. 9, 1970, gage height, 21.4 ft (6.52 m), from floodmark, on basis of contracted-opening measurement of peak flow; minimum discharge, 1.3 cu ft/s (0.037 cu m/s), Apr. 10, 11, 1968.

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

|         |      | Disch     | arge     | Gage h | eight |        |      | Disch     | arge     | Gage h | eight |
|---------|------|-----------|----------|--------|-------|--------|------|-----------|----------|--------|-------|
| Date    | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   | Date   | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   |
| Nov. 3  | 0815 | *3,500    | 99.1     | \$7.34 | 2.237 | May 17 | 1415 | 2,650     | 75.0     | 6.51   | 1.984 |
| Apr. 26 | 1600 | 2,610     | 73.9     | 6.51   | 1.984 | May 18 | 1100 | 2,450     | 69.4     | 6.29   | 1.917 |

Minimum discharge, 4.6 cu ft/s (0.13 cu m/s), Apr. 15.

|        |         | DISCHARGE, | IN CUB | IC FEET | PER SECOND,<br>MEAN |       | YEAR | остов | BR 1984 T | O SEPTE | MBKR 1985 |       |       |
|--------|---------|------------|--------|---------|---------------------|-------|------|-------|-----------|---------|-----------|-------|-------|
| D. W   | 0.00    | No.        |        |         |                     |       |      |       |           |         |           |       |       |
| DAY    | OCT     | NOV        | DEC    | JAN     | FEB                 | MAR   | A    | PR    | MAY       | JUN     | JUL       | AUG   | SEP   |
| 1      | 17      | 15         | 54     | 30      | 13                  | 9.8   | 13   |       | 12        | 62      | 17        | 22    | 23    |
| 2      | 14      | 23         | 66     | 29      | 13                  | 9.4   | 11   |       | 11        | 57      | 18        | 18    | 21    |
| 3      | 26      | 808        | 54     | 28      | 13                  | 9.1   | 10   |       | 10        | 82      | 18        | 12    | 20    |
| 4      | 12      | 187        | 51     | 27      | 13                  | 8.5   | 10   |       | 9.6       | 58      | 18        | 11    | 19    |
| 5      | 75      | 255        | 47     | 26      | 12                  | 8.0   | 9    | . 6   | 8.7       | 53      | 18        | 12    | 21    |
| 6      | 75      | 256        | 43     | 26      | 12                  | 8.6   | 8    | . 9   | 8.3       | 47      | 18        | 10    | 36    |
| 7      | 53      | 237        | 41     | 26      | 12                  | 10    | 9    | .0    | 8.7       | 44      | 17        | 9.6   | 26    |
| 8      | 47      | 189        | 40     | 26      | 12                  | 11    | 7    | . 9   | 8.3       | 43      | 17        | 9.9   | 25    |
| 9      | 159     | 148        | 38     | 25      | 11                  | 11    | 7    | . 5   | 8.3       | 41      | 18        | 11    | 26    |
| 10     | 79      | 120        | 36     | 25      | 11                  | 11    | 7    | .1    | 8.0       | 39      | 18        | 11    | 25    |
| 11     | 43      | 104        | 35     | 25      | 12                  | 12    | 7    | . 1   | 8.0       | 37      | 16        | 20    | 25    |
| 12     | 38      | 89         | 34     | 23      | 11                  | 14    |      | . 7   | 7.6       | 35      | 15        | 14    | 48    |
| 13     | 36      | 83         | 34     | 21      | 11                  | 15    |      | .0    | 7.6       | 34      | 14        | 16    | 700   |
| 14     | 61      | 79         | 33     | 20      | 12                  | 16    |      | .2    | 7.3       | 33      | 15        | 15    | 100   |
| 15     | 39      | 77         | 33     | 19      | 13                  | 17    |      | .1    | 66        | 30      | 35        | 13    | 50    |
| 16     | 30      | 72         | 33     | 19      | 12                  | 17    | 5    | . 2   | 239       | 25      | 23        | 12    | 35    |
| 17     | 35      | 68         | 36     | 18      | ii                  | 19    |      | . 7   | 700       | 25      | 22        | 12    | 30    |
| 18 .   | 64      | 66         | 35     | 17      | 11                  | 32    |      | . 3   | 933       | 27      | 18        | 12    | . 27  |
| 19     | 56      | 63         | 34     | 17      | 11                  | 24    |      | . 3   | 312       | 25      | 16        | 12    | 25    |
| 20     | 34      | 60         | 33     | 16      | 10                  | 20    |      | . 2   | 169       | 24      | 17        | 12    | 23    |
| 21     | 25      | 59         | 32     | 15      | 10                  | 20    | 6    | . 2   | 140       | 23      | 16        | 13    | 22    |
| 22     | 21      | 58         | 32     | 15      | 9.6                 | 18    |      | . 3   | 119       | 31      | 15        | 13    | 21    |
| 23     | 19      | 56         | 31     | 15      | 9.3                 | 18    | 154  |       | 101       | 34      | 14        | 13    | 23    |
| 24     | 17      | 55         | 33     | 15      | 10                  | 17    | 77   |       | 95        | 29      | 14        | 13    | 190   |
| 25     | 16      | 81         | 32     | 15      | 10                  | 16    | 46   |       | 92        | 26      | 13        | 13    | 280   |
| 26     | 16      | 96         | 32     | 15      | 11                  | 18    | 240  |       | 88        | 24      | 13        | 13    | 50    |
| 27     | 15      | 69         | 31     | 15      | 9.9                 | 17    | 26   |       | 82        | 22      | 13        | 37    | 30    |
| 28     | 15      | 60         | 31     | 14      | 11                  | 15    | 17   |       | 76        | 20      | 13        | 25    | 21    |
| 29     | 16      | 56         | 31     | 14      |                     | 17    | 15   |       | 73        | 20      | 13        | 18    | 18    |
| 30     | 14      | 55         | 31     | 14      |                     | 17    | 14   |       | 70        | 18      | 12        | 35    | 120   |
| 31     | 15      |            | 31     | 13      |                     | 15    |      |       | 66        |         | ii        | 36    |       |
| TOTAL  | 1182    | 3644       | 1157   | 623     | 316.8               | 470.4 | 755  | . 3   | 3544.4    | 1068    | 515       | 493.5 | 2080  |
| MBAN   | 38.1    |            | 37.3   | 20.1    | 11.3                | 15.2  | 25   |       | 114       | 35.6    | 16.6      | 15.9  | 69.3  |
| MAX    | 159     | 808        | 66     | 30      | 13                  | 32    |      | 40    | 933       | 82      | 35        | 37    | 700   |
| MIN    | 12      | 15         | 31     | 13      | 9.3                 | 8.0   |      | .1    | 7.3       | 18      | 11        | 9.6   | 18    |
| CFSM   | .83     | 2.63       | . 81   | .44     | .25                 | .33   |      | 55    | 2.48      | .77     | .36       | .35   | 1.51  |
| IN.    | .96     | 2.95       | .94    | .50     | .26                 | .38   |      | 61    | 2.87      | .86     | .42       | .40   | 1.68  |
| AC-FT  | 2340    |            | 2290   | 1240    | 628                 | 933   | 15   |       | 7030      | 2120    | 1020      | 979   | 4130  |
| WTR YR | 1985 то | TAL 15849. | 4 MBA  | N 43    | 4 MAX               | 933   | MIN  | 5.1   | CFSM      | .94 1   | N. 12.82  | AC-FT | 31440 |

227 50106500 RIO COAMO NEAR COAMO, PR

## WATER-QUALITY RECORDS

PERIOD OF RECORD .-- Water years 1978 to current year.

| DATE  | TIME                                      | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS)                   | CON-<br>DUCT-                                    | PH<br>(STAND-<br>ARD<br>UNITS)                       | TEMPER-<br>ATURE<br>(DEG C)                             | TUR<br>BID<br>ITY<br>(NTU  | - Di   | D<br>SO<br>SEN, (P<br>IS- C<br>LVED SA                   | IS- DE<br>LVED C<br>ER- I<br>ENT (<br>TUR- LE           | MAND,<br>HEM-<br>CAL<br>HIGH<br>VBL) (             | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>COLS./ | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) |
|---|---|---|--|--|---|--|--|--|---|--|--|--|
| NOV 1984  | 1245                                      | 80  | 650  | 8.30   | 25.0  | 2.   | 5  | 7.8  | 95  | 15   | 8500   | 580  |
| JAN 1985  |   |   |  |  |   |  |  |  |   |  |  |  |
| 29<br>MAR   | 1125                                      | 13  | 695  | 8.30   | 25.0  | 1.   | 0  | 9.9  | 120   | 23   | 370  | K180   |
| 18<br>MAY   | 1315                                      | 35  | 500  | 7.80   | 26.0  | 1.   | 5  | 7.8  | 97  | 27 K   | 140000   | K170000  |
| 28  | 1300                                      | 79  | 630  | 8.40   | 30.0  | 0.   | 8  | 7.8  | 104   | <10  | 2700   | K1800  |
| AUG   | 1230                                      | 9.7   | 660  | >8.40  | 31.0  | 2.   | 0  | 7.4  | 100   | 11   | 500  | K75  |
|   |   |   |  |  |   | 3  |  |  |   |  |  |  |
| DATE  | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3)    | HARD-<br>NESS<br>NONCARB<br>WH WAT<br>TOT FLD<br>MG/L AS<br>CACO3 | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA)     | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA)            | SODI<br>AD<br>SORP<br>TIO<br>RATI  | - 81<br>- D1<br>N SOI                                    | TAS- LIN TUM, WH TIS- TO LVED FI                         | WAT<br>TAL SUI<br>BLD TO<br>L AS (1                     | LFIDE I  | ULFATE<br>DIS-<br>BOLVED<br>(MG/L<br>B SO4)        | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)                |
| NOV 1984  |   |   |  |  |   |  |  |  |   |  |  |  |
| 14  | 280                                       | 30  | 74   | 22   | 32  | 0  | .9 2   | 2.9  | 245   |  | 39   | 43   |
| JAN 1985<br>29  | 280                                       | 17  | 75   | 23   | 39  | - 1  |  | .0   | 265   | <0.5   | 38   | 46   |
| MAR<br>18   |   |   |  |  |   |  |  |  | 186   |  |  |  |
| MAY<br>28   | 270                                       | 27  | 72   | 23   | 35  | 1  | 2  | 2.9  | 248   | <0.5   | 34   | 42   |
| 06  |   |   |  |  |   |  |  |  | 233   |  |  |  |
| NOV 198<br>14<br>JAN 198<br>29<br>MAR<br>18<br>MAY<br>28<br>AUG<br>06 | RII<br>D<br>SO<br>FB (M<br>AS             | DR, D<br>IS- SC<br>LVRD (I  | LICA, SUNIS- CON<br>OLVED TUR<br>MG/L I<br>AS SC | STI -  | LIDS, RES<br>DIS- AT<br>DLVED DEC<br>PONS SU<br>PER PER | LIDS,<br>BIDUR<br>105<br>1. C,<br>135-<br>HDRD<br>HG/L)<br>11<br>3<br>82<br>20<br>14 | NITROGEN, NITRATE TOTAL (MG/L AS N)  3.46 3.33 2.86 2.67 | NITROGEN, NITRITE TOTAL (MG/L AS N)  0.04 0.27 0.04 0.23 | NITRO GEN, NO2+NOC TOTAL (MG/L AS N)  3.50 3.60 2.90    | GEN<br>3 AMMONI<br>TOTAL<br>(MG/I<br>AS NI<br>0.47 | GIA ORG. TO' (Me                                   | TRO-<br>EN,<br>ANIC<br>FAL<br>G/L<br>N)<br>0.43<br>0.62<br><br>0.2 |
| NOV 198<br>14<br>JAN 198<br>29<br>MAR<br>18                           | GEN<br>MON:<br>ORG,<br>TO:<br>E (MM<br>AS | ANIC C<br>PAL TO<br>D/L (1  | GEN, GOTAL TO<br>MG/L (M<br>B N) AS              | REN, PHOPTAL TO IG/L (M NO3) AS                      | TAL TO  | BENIC<br>DTAL<br>JG/L<br>I AS)   | BARIUM,<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS BA)  | BORON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS B)    | CADMIUN<br>TOTAL<br>RECOV-<br>ERABLI<br>(UG/L<br>AS CD) | TOTAL<br>RRCOV<br>RRABI<br>(UG/I<br>AS CR          | COPI   | PBR,<br>FAL<br>COV-<br>BBLR<br>S/L<br>CU)                          |
| MAY   |   |   |  |  |   |  |  |  |   |  |  |  |
| 28  |   | 0.5   |  |  | . 25  | <1   | <100   | 70   | 1   |  | 7  | <10  |
| 06  |   | 1.0   | 3.9 1  | 7 0  | .70   |  |  |  |   | 0 10   | -  |  |

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RIO COAMO BASIN

50106500 RIO COAMO NEAR COAMO, PR--Continued

WATER-QUALITY RECORDS, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| NOV 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 14<br>JAN 1985 |   |   |   |   |  |   |   |                                     |                            |  |
| 29<br>MAR      | 230   | 1   | 30  | <0.1  | <1   | <1  | 50  | <0.01                               |                            | 0.09   |
| 18<br>MAY      |   |   |   | 0.3   |  |   |   |                                     |                            | 7  |
| 28             | 1000  | 5   | 50  | <0.1  | <1   | <1  | 30  | <0.01                               | 4                          | 0.05   |
| 06             |   |   |   |   |  |   |   |                                     |                            |  |

### 50108000 RIO DESCALABRADO NEAR LOS LLANOS, PR

LOCATION.--Lat 18°03'08", long 66°25'34", Hydrologic Unit 21010004, at bridge on Highway 14, 1.5 mi (2.4 km) west of Los Llanos, and 5.3 mi (8.5 km) east of Juana Diaz.

DRAINAGE AREA .-- 12.9 sq mi (33.4 sq km).

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD. -- 1959-65 (annual low-flow measurements only), 1965 (annual maximum discharge), January 1966 to June 1969, July to December (maximum discharge only), February to September 1984.

GAGE .- Water-stage recorder. Blevation of gage is 220 ft (67 m), from topographic map.

REMARKS.--Estimated daily discharges: Oct. 1-13, Apr. 27 to May 10, May 19-21, Aug. 2-9, Aug. 13 to Sept. 3, and Sept. 7-12. Records fair except those for estimated daily discharges, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,000 cu ft/s (198 cu m/s), May 21, 1969, gage height, 11.5 ft (3.50 m), from rating curve extended above 250 cu ft/s (7.08 cu m/s) on basis of slope-area measurements of peak flow; no flow many days.

EXTREMES FOR CURRENT PERIOD. -- Peak discharges greater than base discharge of 1,500 cu ft/s (19.8 cu m/s) and maximum (\*):

|         |      | Discha    | arge     | Gage h | eight |         |      | Disch     | arge     | Gage h | eight |
|---------|------|-----------|----------|--------|-------|---------|------|-----------|----------|--------|-------|
| Date    | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   | Date    | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   |
| Nov. 3  | 0700 | 1,510     | 42.8     | 7.55   | 2.301 | Aug. 11 | 1430 | 1,560     | 44.2     | 7.64   | 2.329 |
| Nov. 27 | 1500 | 2,300     | 65.1     | 8.79   | 2.679 | Sept. 5 | 1600 | 1,590     | 45.0     | 7.69   | 2.344 |
| Apr. 26 | 1600 | 1,560     | 44.2     | 7.64   | 2.329 | Sept. 6 | 1645 | 1,580     | 44.7     | 7.68   | 2.341 |
| May 18  | 0815 | \$2.490   | 70.5     | 19.07  | 2.765 | ****    |      |           |          |        |       |

DISCHARGE IN CURIC PEPT DED SECOND. WATER VEAR OCTOBER 1984 TO SEPTEMBER 1985

Minimum daily discharge, 0.47 cu ft/s (0.013 cu m/s), Apr. 22.

|        |         | DISCHARGE  | , IN CUBIC | FEET PE | R SECOND,<br>MEAN |       | ALUKS | OCTOR | ER 1984 | TO SEPTEMBE | R 1985 |       |       |
|--------|---------|------------|------------|---------|-------------------|-------|-------|-------|---------|-------------|--------|-------|-------|
| DAY    | ост     | NOV        | DEC        | JAN     | FEB               | MAR   |       | PR    | MAY     | JUN         | JUL    | AUG   | SEP   |
| 1      | 12      | 14         | 17         | 5.0     | 2.7               | 1.3   |       | 90    | .68     | 15          | 5.5    | 17    | 2.8   |
| 2      | 10      | 11         | 19         | 5.0     | 2.6               | 1.1   |       | 90    | .70     | 14          | 5.7    | 6.2   | 2.7   |
| 3      | 18      | 266        | 16         | 4.8     | 2.4               | 1.0   |       | 91    | .60     | 15          | 5.8    | 4.1   | 2.7   |
| 4      | 13      | 40         | 14         | 4.9     | 2.4               | .89   |       | 81    | . 59    | 14          | 5.5    | 3.2   | 3.2   |
| 5      | 50      | 79         | 13         | 4.7     | 2.4               | .83   |       | .80   | .58     | 11          | 5.2    | 2.7   | 112   |
| 6      | 25      | 52         | 12         | 5.1     | 2.4               | .89   |       | 78    | .58     | 12          | 5.1    | 2.4   | 171   |
| 7      | 16      | 45         | 12         | 5.3     | 2.3               | .99   |       | 86    | .64     | 8.1         | 4.9    | 2.3   | 10    |
| 8      | 15      | 43         | 11         | 4.8     | 2.3               | .95   |       | 81    | .60     | 7.5         | 5.1    | 2.2   | 4.5   |
| 9      | 201     | 40         | 11         | 4.6     | 2.4               | .88   |       | 76    | . 59    | 7.0         | 5.0    | 2.2   | 4.0   |
| 10     | 30      | 36         | 10         | 4.4     | 2.3               | .80   |       | 78    | 26      | 7.0         | 4.8    | 2.5   | 3.5   |
| 11     | 20      | 35         | 9.9        | 4.4     | 2.7               | .77   |       | 77    | 1.7     | 6.9         | 4.5    | 67    | 3.2   |
| 12     | 18      | 32         | 9.5        | 4.2     | 2.4               | .82   |       | 72    | 1.7     | 6.9         | 4.6    | 3.7   | 3.0   |
| 13     | 17      | 29         | 9.2        | 4.0     | 2.2               | .89   |       | 67    | 1.8     | 6.4         | 4.5    | 3.0   | 67    |
| 14     | 23      | 27         | 8.8        | 4.1     | 3.2               | .84   |       | 66    | 2.0     | 6.0         | 4.8    | 2.8   | 11    |
| 15     | 15      | 23         | 8.8        | 3.9     | 2.6               | .78   |       | 65    | 61      | 5.4         | 14     | 2.7   | 4.5   |
| 16     | 14      | 21         | 9.2        | 3.8     | 2.4               | .72   |       | 61    | 61      | 5.0         | 3.8    | 3.1   | 3.5   |
| 17     | 11      | 20         | 8.4        | 3.8     | 1.9               | .69   |       | 64    | 205     | 4.9         | 4.0    | 2.7   | 3.1   |
| 18     | 30      | 19         | 7.9        | 3.8     | 1.7               | 2.8   |       |       | 428     | 8.3         | 3.0    | 2.6   | 2.8   |
| 19     | 26      | 18         | 7.9        | 3.7     | 1.9               | 1.4   |       |       | 101     | 5.6         | 2.9    | 2.5   | 2.4   |
| 20     | 16      | 16         | 7.5        | 3.7     | 1.8               | 1.2   |       | 52    | 56      | 5.1         | 3.0    | 2.7   | 2.3   |
| 21     | 14      | 14         | 7.1        | 3.6     | 1.5               | 1.2   |       | 51    | 44      | 4.7         | 3.0    | 2.6   | 2.4   |
| 22     | 12      | 12         | 6.8        | 3.6     | 1.4               | .96   |       | 47    | 37      | 20          | 2.8    | 2.5   | 2.6   |
| 23     | 11      | 11         | 6.7        | 3.5     | 1.4               | .92   | 37    |       | 32      | 34          | 2.8    | 3.0   | 2.2   |
| 24     | 8.6     | 11         | 7.6        | 3.5     | 1.5               | .89   | 88    |       | 28      | 10          | 2.6    | 2.5   | 19    |
| 25     | 7.1     | 68         | 6.5        | 3.4     | 1.4               | .87   | 50    |       | 25      | 7.5         | 2.5    | 2.4   | 28    |
| 26     | 6.2     | 45         | 6.2        | 3.4     | 1.3               | . 89  | 127   |       | 24      | 6.4         | 2.6    | 2.4   | 4.6   |
| 27     | 5.6     | 147        | 5.9        | 3.4     | 1.2               | 1.1   | 2.    | 0     | 21      | 5.7         | 2.7    | 5.8   | 2.7   |
| 28     | 5.5     | 20         | 5.7        | 3.2     | 1.7               | .90   | 1.    | 0     | 18      | 5.3         | 3.0    | 2.5   | 2.0   |
| 29     | 5.1     | 18         | 5.7        | 3.1     |                   | 2.0   |       | 80    | 17      | 5.2         | 2.8    | 2.3   | 1.4   |
| 30     | 4.8     | 18         | 5.5        | 3.2     |                   | 1.2   |       | 70    | 16      | 5.3         | 2.7    | 2.3   | 18    |
| 31     | 5.0     |            | 5.3        | 2.9     |                   | 1.0   | -     |       | 16      |             | 2.5    | 3.0   |       |
| TOTAL  | 664.9   |            |            | 24.8    |                   | 32.47 | 322.  |       | 228.76  |             | 131.7  | 168.9 | 502.1 |
| MBAN   | 21.4    | 41.0       |            | 4.03    | 2.09              | 1.05  |       | . 7   | 39.6    | 9.17        | 4.25   | 5.45  | 16.7  |
| MAX    | 201     | 266        | 19         | 5.3     | 3.2               | 2.8   |       | 27    | 428     | 34          | 14     | 67    | 171   |
| MIN    | 4.8     | 11         | 5.3        | 2.9     | 1.2               | .69   |       | 47    | .58     | 4.7         | 2.5    | 2.2   | 1.4   |
| CFSM   | 1.66    | 3.18       | .73        | .31     | .16               | .08   |       | 83    | 3.07    | .71         | .33    | .42   | 1.29  |
| IN.    | 1.92    | 3.55       | .84        | . 36    | . 17              | .09   |       | 93    | 3.54    | .79         | .38    | .49   | 1.45  |
| AC-FT  | 1320    | 2440       | 577        | 248     | 116               | 64    | 6     | 39    | 2440    | 546         | 261    | 335   | 996   |
| WTR YR | 1985 TO | TAL 5030.5 | 3 MRAN     | 13.8    | MAX               | 428   | MIN   | .47   | CFSM    | 1.07 IN.    | 14.51  | AC-FT | 9980  |

## RIO DESCALABRADO BASIN

## 50108000 RIO DESCALABRADO NEAR LOS LLANOS, PR--Continued

# WATER QUALITY RECORDS

PERIOD OF RECORD .-- WATER YEARS APRIL 1984 TO CURRENT YEAR

| DATE |    | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE   | TIME   | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|------|----|------|---------------------------------------|--------------------------------------|-----------------------------|--------|--------|---------------------------------------|--------------------------------------|-----------------------------|
| DEC, | 04 | 0940 | 15                                    | 578                                  | 22.5                        | MAR, C | 6 1100 | 1.0                                   | 752                                  | 23.0                        |
| JAN, | 18 | 1232 | 3.8                                   | 582                                  | 24.0                        | 8EP, 1 | 2 1332 | 3.1                                   | 612                                  | 27.0                        |
| FRB, | 13 | 1200 | 2.2                                   | 680                                  | 24.0                        |        |        |                                       |                                      |                             |

LOCATION.--Lat 18°03'16", long 66°30'40", Hydrologic Unit 21010004, on Highway 14 bridge, 0.4 mi (0.6 km) west of Juana Diaz plaza, and 4.0 mi (6.4 km) downstream from Lago Guayabal.

DRAINAGE AREA. -- 49.8 sq mi (129.0 sq km).

#### WATER-DISCHARGE RECORDS

PERIOD OF RECORD .-- March 1984 to current year.

GAGE .-- Water-stage recorder. Elevation of gage is 131 ft (40 m), from topographic map.

REMARKS.--Estimated daily discharges: Oct. 6-13, Sept. 10-30. Records fair except those for estimated daily discharges, which are poor. Flow regulation from Lago Guayabal.

EXTREMES FOR PERIOD OF RECORD. --Maximum discharge, 12,700 cu ft/s (360 cu m/s), May 18, 1985, gage height, 18.78 ft (5.724 m) from rating curve extended above 500 cu ft/s (14.2 cu m/s) in basis of step-backwater analysis and discharge of peak flow; minimum daily discharge, 1.2 cu ft/s (0.034 cu m/s), May 18, 1984.

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

|         |      | Disch     | arge     | Gage h | eight |       |    |      | Disch     | arge     | Gage h | eight |
|---------|------|-----------|----------|--------|-------|-------|----|------|-----------|----------|--------|-------|
| Date    | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   | Date  | •  | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   |
| Oct. 5  | 1900 | 3,380     | 95.7     | 12.13  | 3.697 | May   | 18 | 1145 | *12,700   | 360      | *18.78 | 5.724 |
| Oct. 15 | 1600 | 4,720     | 134      | 13.55  | 4.130 | June  | 23 | 1800 | 4,650     | 132      | 13.29  | 4.051 |
| Nov. 3  | 1000 | 5,690     | 161      | 14.14  | 4.310 | June  | 25 | 1715 | 2,420     | 68.5     | 11.11  | 3.386 |
| Nov. 25 | 2145 | 4,300     | 122      | 12.99  | 3.959 | Aug.  | 1  | 1630 | 1,670     | 47.3     | 10.21  | 3.112 |
| Nov. 27 | 1615 | 2,150     | 60.9     | 10.80  | 3.292 | Sept. | 5  | 1715 | 4,450     | 126      | 13.12  | 3.999 |
| May 17  | 0245 | 5.680     | 161      | 14.13  | 4.307 |       |    |      |           |          |        |       |

Minimum daily discharge, 2.2 cu ft/s (0.054 cu m/s), Aug. 19, 1985.

|      |      | DISCHARGE, | IN   | CUBIC FEET PE | R SECOND<br>MKA |       | R YEAR OCTO | BER 1984 | TO SEPTEM | BKR 1985 |        |     |
|------|------|------------|------|---------------|-----------------|-------|-------------|----------|-----------|----------|--------|-----|
| DAY  | OCT  | NOV        | DRC  | JAN           | FEB             | MAR   | APR         | MAY      | JUN       | JUL      | AUG    | SEI |
| 1    | 77   | 26         | 102  | 49            | 9.2             | 7.4   | 6.6         | 6.3      | 63        | 11       | 273    | 64  |
| 2    | 80   | 36         | 93   | 56            | 9.4             | 7.3   | 6.7         | 8.1      | 47        | 9.1      | 46     | 45  |
| 3    | 88   | 1270       | 110  | 52            | 7.9             | 5.6   | 7.0         | 8.1      | 39        | 11       | 30     | 44  |
| 4    | 78   | 446        | 97   | 32            | 7.4             | 5.3   | 6.0         | 8.3      | 34        | 35       | 13     | 11  |
| 5    | 376  | 466        | 89   | 30            | 7.4             | 5.0   | 4.9         | 6.7      | 24        | 61       | 7.8    | 350 |
| 6    | 90   | 371        | 87   | 31            | 7.4             | 5.8   | 4.5         | 4.9      | 24        | 54       | 6.6    | 151 |
| 7    | 70   | 350        | 84   | 35            | 7.3             | 5.3   | 4.0         | 5.6      | 18        | 38       | 6.3    | 10  |
| 8    | 60   | 327        | 63   | 24            | 7.2             | 5.2   | 4.4         | 7.3      | 13        | 40       | 5.7    | 10  |
| 9    | 180  | 297        | 50   | 11            | 7.4             | 5.0   | 5.9         | 7.6      | 8.1       | 41       | 5.8    | 6   |
| 10   | 110  | 226        | 57   | 9.1           | 7.4             | 4.8   | 5.9         | 7.8      | 6.4       | 14       | 7.6    | 10  |
| 11   | 88   | 187        | 74   | 7.9           | 8.6             | 5.1   | 6.9         | 7.8      | 6.1       | 13       | 55     | 40  |
| 12   | 90   | 177        | 74   | 7.5           | 9.3             | 5.1   | 6.2         | 7.9      | 6.0       | 4.2      | 82     | 7   |
| 13   | 104  | 161        | 74   | 7.4           | 8.9             | 5.2   | 6.1         | 7.4      | 8.5       | 3.8      | 37     | 90  |
| 14   | 149  | 137        | 70   | 7.4           | 9.5             | 5.2   | 6.2         | 7.7      | 13        | 3.3      | 49     | 16  |
| 15   | 628  | 125        | 58   | 7.5           | 9.2             | 5.2   | 6.3         | 15       | 13        | 4.2      | 51     | 5   |
| 16   | 216  | 97         | 61   | 7.7           | 9.5             | 5.1   | 6.2         | 272      | 11        | 8.7      | 53     | 3   |
| 17   | 109  | 85         | 58   | 8.0           | 8.7             | 5.3   | 6.1         | 1450     | 8.6       | 10       | 15     | 10  |
| 18   | 83   | 79         | 29   | 7.8           | 7.9             | 6.4   | 6.5         | 2540     | 7.1       | 20       | 3.4    | 5   |
| 19   | 77   | 79         | 24   | 7.6           | 7.5             | 6.0   | 6.7         | 539      | 8.7       | 31       | 2.2    | 3   |
| 20   | 88   | 65         | 23   | 7.4           | 8.4             | 5.9   | 6.6         | 354      | 11        | 15       | 4.6    | 2   |
| 21   | 60   | 37         | 24   | 7.7           | 8.4             | 5.9   | 6.6         | 254      | 10        | 7.3      | 4.8    | 1   |
| 22   | 52   | 34         | 44   | 9.6           | 8.0             | 5.9   | 6.7         | 200      | 64        | 6.4      | 4.9    | 3   |
| 23   | 35   | 37         | 45   | 11            | 8.2             | 5.6   | 7.8         | 166      | 450       | 5.8      | 3.8    | 2   |
| 24   | 30   | 38         | 58   | 11            | 7.8             | 5.9   | 109         | 127      | 146       | 4.5      | 4.6    | 140 |
| 25   | 28   | 397        | 59   | 11            | 7.7             | 6.1   | 19          | 130      | 427       | 3.7      | 4.8    | 45  |
| 26   | 27   | 524        | 37   | 9.0           | 7.1             | 6.5   | 11          | 111      | 75        | 18       | 4.9    | 20  |
| 27   | 22   | 371        | 23   | 8.6           | 7.1             | 6.8   | 8.3         | 90       | 72        | 31       | 5.7    | 8   |
| 28   | 16   | 163        | 26   | 8.3           | 7.3             | 6.2   | 6.5         | 89       | 36        | 35       | 42     | 5   |
| 29   | 15   | 149        | 32   | 8.7           |                 | 7.0   | 5.9         | 83       | 23        | 104      | 70     | 4   |
| 30   | 17   | 118        | 32   | 9.2           |                 | 6.6   | 5.9         | 76       | 16        | 96       | 161    | 12  |
| 31   | 34   |            | 44   | 9.2           |                 | 6.4   |             | 76       |           | 37       | 213    |     |
| TAL  | 3177 |            | 1801 |               | 227.1           | 180.1 | 306.4       | 6673.5   | 1688.5    | 776.0    | 1273.5 | 492 |
| BAN  | 102  |            | 58.1 | 16.4          | 8.11            | 5.81  | 10.2        | 215      | 56.3      | 25.0     | 41.1   | 16  |
| AX   | 628  | 1270       | 110  | 56            | 9.5             | 7.4   | 109         | 2540     | 450       | 104      | 273    | 140 |
| IN   | 15   | 26         | 23   | 7.4           | 7.1             | 4.8   | 4.0         | 4.9      | 6.0       | 3.3      | 2.2    | 1   |
| FSM  | 2.05 |            | 1.17 | .33           | . 16            | .12   | .20         | 4.32     | 1.13      | . 50     | .83    | 3.2 |
| Ν.   | 2.37 |            | 1.35 | .38           | . 17            | .13   | .23         | 4.99     | 1.26      | .58      | .95    | 3.6 |
| C-FT | 6300 | 13640      | 3570 | 1010          | 450             | 357   | 608         | 13240    | 3350      | 1540     | 2530   | 976 |

## RIO JACAGUAS BASIN

# 50111500 RIO JACAGUAS AT JUANA DIAZ, PR--Continued

# WATER QUALITY RECORDS

PERIOD OF RECORD .-- WATER YEARS APRIL 1984 TO CURRENT YEAR

| DATE    | TIME   | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE | 7    | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|---------|--------|---------------------------------------|--------------------------------------|-----------------------------|------|------|------|---------------------------------------|--------------------------------------|-----------------------------|
| DEC, O  |        |                                       | 257                                  | 26.0                        | MAR, | 06 1 | 1425 | 5.7                                   | 470                                  | 26.0                        |
| FRB, 13 | 3 1005 | 8.2                                   | 386                                  | 25.0                        | SEP, | 12 1 | 1032 | 67                                    | 231                                  | 28.0                        |

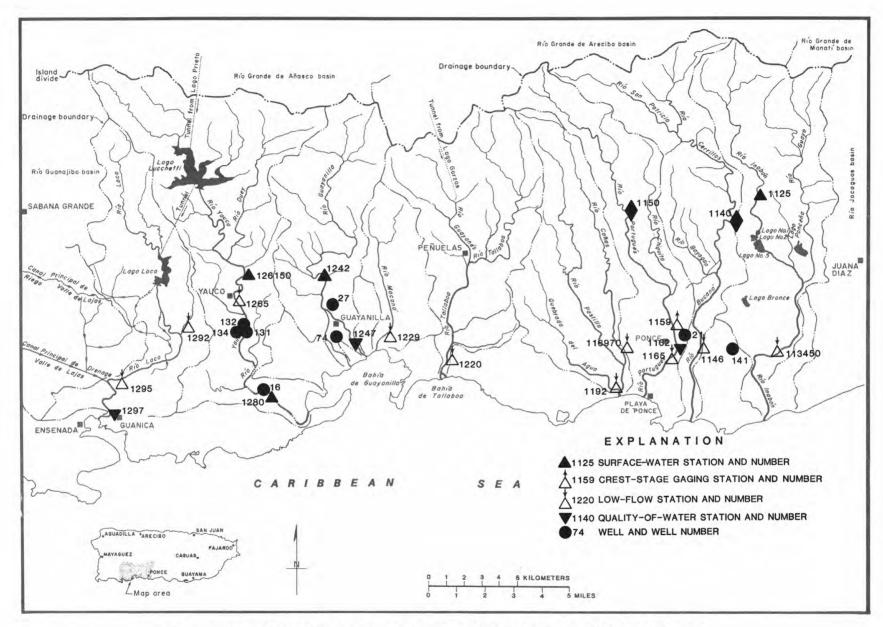


Figure 24.--South coast river basins--Río Inabón to Río Loco basins.

234 RIO INABON BASIN

### 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. Klevation of gage is 410 ft (125 m), from topographic map. Prior to April 1971 nonrecording gage and crest-stage gage at different datum.

REMARKS .-- No estimated daily discharges during water year. Records fair.

AVERAGE DISCHARGE.--19 years (1965-69, 1972-85), 18.7 cu ft/s (0.530 cu m/s), 26.18 in/yr (665 mm/yr), 13,550 acre-ft/yr (16.7 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, 5,720 cu ft/s (162 cu m/s) Oct. 9, 1970, gage height, 20.6 ft (6.28 m), datum then in use, from floodmark, 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 discharge, 0.80 cu ft/s (0.023 cu m/s), July 23, 1977.

EXTREMES FOR CURRENT YEAR .-- Peak discharges greater than base discharge of 500 cu ft/s (14.2 cu m/s), and maximum (\*):

|         |      | Disch     | arge     | Gage h | eight |      |    |      | Disch     | arge     | Gage h | eight |
|---------|------|-----------|----------|--------|-------|------|----|------|-----------|----------|--------|-------|
| Date    | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   | Dat  | 9  | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   |
| Nov. 3  | 0945 | 841       | 23.8     | 9.51   | 2.899 | May  | 17 | 0115 | 876       | 24.8     | 9.80   | 2.987 |
| Nov. 25 | 2300 | 579       | 16.4     | 7.26   | 2.213 |      | 18 | 1100 | *3,410    | 96.6     | *17.84 | 5.438 |
| May 6   | 2015 | 726       | 20.6     | 8.54   | 2.603 | June | 18 | 1600 | 575       | 16.3     | 7.22   | 2.201 |
| May 15  | 1945 | 834       | 23.6     | 9.45   | 2.880 | Aug. | 10 | 1545 | 698       | 19.8     | 8.30   | 2.530 |
| May 16  | 2115 | 681       | 19.3     | 8.15   | 2.484 |      |    |      |           |          |        |       |

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

Minimum daily discharge, 1.7 cu ft/s (0.048 cu m/s), Apr. 9.

|          |          | DIS   | CHARGE | , IN COD | IC FEET |       | MBAN | VAL  | UES OC | IOBER | 1504 10  | , SELIENI | DER 1305 |          |       |
|----------|----------|-------|--------|----------|---------|-------|------|------|--------|-------|----------|-----------|----------|----------|-------|
| DAY      | OCT      | N     | ov     | DEC      | JAN     | FEB   |      | MAR  | APR    |       | MAY      | JUN       | JUL      | AUG      | SEP   |
| 1        | 19       |       | 24     | 18       | 7.4     | 4.6   |      | 10   | 3.3    |       | 12       | 18        | 13       | 20       | 22    |
| 2        | 16       |       | 24     | 19       | 6.8     | 4.8   |      | 7.0  | 2.1    |       | 19       | 18        | 14       | 15       | 19    |
| 3        | 25       |       | 50     | 18       | 6.5     | 4.0   |      | 8.2  | 1.8    |       | 34       | 23        | 14       | 12       | 17    |
| 4        | 19       |       | 20     | 14       | 6.1     | 3.7   |      | 2.5  | 2.2    |       | 21       | 20        | 12       | 10       | 15    |
| 5        | 40       | 1     | 24     | 13       | 5.8     | 3.6   |      | 2.3  | 2.2    |       | 18       | 17        | 11       | 10       | 20    |
| 6        | 42       | 1     | 08     | 12       | 5.6     | 3.3   |      | 3.4  | 1.8    |       | 97       | 17        | 12       | 10       | 22    |
| 7        | 30       |       | 99     | 12       | 5.5     | 3.3   |      | 2.5  | 1.9    |       | 86       | 16        | 12       | 10       | 25    |
| 8        | 25       | 1     | 01     | 11       | 5.2     | 3.3   |      | 2.7  | 1.8    |       | 35       | 16        | 11       | 8.8      | 22    |
| 9        | 104      |       | 85     | 13       | 5.2     | 3.5   |      | 2.6  | 1.7    |       | 23       | 15        | 11       | 9.3      | 15    |
| 10       | 79       |       | 66     | 13       | 5.0     | 3.7   |      | 2.9  | 11     |       | 23       | 16        | 9.9      | 50       | 16    |
| 11       | 52       |       | 57     | 12       | 5.2     | 5.4   |      | 3.0  | 27     |       | 20       | 16        | 12       | 55       | 15    |
| 12       | 35       |       | 50     | 12       | 5.5     | 4.6   |      | 3.2  | 15     |       | 19       | 16        | 13       | 46       | 19    |
| 13       | 44       |       | 45     | 11       | 4.8     | 3.4   |      | 2.9  | 7.2    |       | 18       | 16        | 9.9      | 36       | 54    |
| 14       | 35       |       | 43     | 9.6      | 5.1     | 6.1   |      | 2.7  | 5.0    |       | 19       | 15        | 9.0      | 39       | 33    |
| 15       | 54       |       | 40     | 9.5      | 5.5     | 5.7   |      | 2.3  | 4.0    |       | 168      | 14        | 23       | 37       | 25    |
| 16       | 47       |       | 37     | 11       | 5.6     | 4.9   |      | 2.3  | 3.6    |       | 200      | 14        | 12       | 31       | 21    |
| 17       | 45       |       | 34     | 18       | 5.7     | 3.9   |      | 2.6  | 3.9    |       | 282      | 14        | 8.6      | 28       | 23    |
| 18       | 34       |       | 34     | 10       | 5.9     | 2.9   | 1    | 2    | 4.4    |       | 633      | 40        | 8.2      | 27       | 23    |
| 19       | 55       |       | 32     | 11       | 5.8     | 2.9   |      | 6.9  | 3.3    |       | 153      | 22        | 7.0      | 25       | 24    |
| 20       | 48       |       | 29     | 11       | 5.4     | 3.1   |      | 7.3  | 2.7    |       | 92       | 15        | 7.1      | 24       | 21    |
| 21       | 35       |       | 28     | 9.9      | 5.5     | 2.6   |      | 6.6  | 2.9    |       | 60       | 14        | 6.6      | 23       | 20    |
| 22       | 29       |       | 27     | 9.7      | 5.2     | 2.3   |      | 6.3  | 11     |       | 43       | 17        | 6.4      | 23       | 19    |
| 23       | 25       |       | 26     | 9.4      | 4.7     | 1.9   |      | 5.0  | 53     |       | 36       | 37        | 7.0      | 22       | 18    |
| 24       | 23       |       | 25     | 15       | 4.5     | 1.9   |      | 4.5  | 44     |       | 31       | 38        | 8.2      | 22       | 59    |
| 25       | 21       |       | 74     | 10       | 4.5     | 2.0   |      | 3.5  | 60     |       | 28       | 31        | 8.3      | 22       | 78    |
| 26       | 20       |       | 62     | 9.0      | 4.5     | 2.7   |      | 3.1  | 42     |       | 26       | 26        | 7.8      | 23       | 42    |
| 27       | 18       |       | 38     | 9.2      | 4.5     | 3.0   |      | 4.4  | 24     |       | 24       | 21        | 9.0      | 46       | 32    |
| 28       | 17       |       | 31     | 9.2      | 4.5     | 4.6   |      | 5.8  | 17     |       | 22       | 19        | 11       | 30       | 27    |
| 29       | 16       |       | 24     | 8.2      | 4.5     |       |      | 3.3  | 15     |       | 21       | 16        | 9.8      | 25       | 23    |
| 30<br>31 | 18<br>24 |       | 20<br> | 8.3      | 4.6     |       |      | 5.0  | 13     |       | 20<br>19 | 14        | 8.7      | 40<br>33 | 29    |
|          |          |       |        |          |         |       |      |      |        |       |          |           |          |          |       |
| TOTAL    | 1094     |       |        | 364.5    | 164.9   | 101.7 |      | 2.0  | 387.8  |       | 302      | 591       | 323.5    | 812.1    | 798   |
| MEAN     | 35.3     |       |        | 11.8     | 5.32    | 3.63  |      | 1.58 | 12.9   |       | 4.3      | 19.7      | 10.4     | 26.2     | 26.6  |
| MAX      | 104      |       | 50     | 19       | 7.4     | 6.1   |      | 12   | 60     |       | 633      | 40        | 23       | 55       | 78    |
| MIN      | 16       |       | 20     | 8.2      | 4.3     | 1.9   |      | 2.3  | 1.7    |       | 12       | 14        | 6.4      | 8.8      | 15    |
| CFSM     | 3.64     |       |        | 1.22     | .55     | . 37  |      | . 47 | 1.33   |       | .66      | 2.03      | 1.07     | 2.70     | 2.74  |
| IN.      | 4.20     | 6.    |        | 1.40     | .63     | .39   |      | .54  | 1.49   |       | .83      | 2.27      | 1.24     | 3.11     | 3.06  |
| AC-FT    | 2170     | 34    | 90     | 723      | 327     | 202   |      | 282  | 769    | 4     | 570      | 1170      | 642      | 1610     | 1580  |
| CAL YR   |          | TOTAL |        |          |         | MAX   | 250  | MIN  | 2.1    | CFSM  | 1.81     | IN.       | 24.74    | AC-FT    | 12790 |
| WTR YR   | 1985     | TOTAL | 8838.  | 5 MBA    | N 24.2  | MAX   | 633  | MIN  | 1.7    | CFSM  | 2.49     | IN.       | 33.90    | AC-FT    | 17530 |

### RIO INABON BASIN

# 50112500 RIO INABON AT REAL ABAJO, PR--Continued

## WATER QUALITY RECORDS

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

# WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE   | TIME   | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE    | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|--------|--------|---------------------------------------|--------------------------------------|-----------------------------|---------|------|---------------------------------------|--------------------------------------|-----------------------------|
| FRB, 2 | 8 0902 | 4.9                                   | 294                                  | 21.0                        | SEP, 23 | 1306 | 17                                    | 219                                  | 28.5                        |

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236 RIO BUCANA BASIN

### 50114000 RIO CERRILLOS NEAR PONCE, PR

LOCATION.--Lat 18°04'15", long 66°34'51", Hydrologic Unit 21010004, on right bank off Highway 139, 2.3 mi (3.7 km) upstream from Quebrada Ausubo and 4.6 mi (7.4 km) northeast of Plaza Degetau in Ponce.

DRAINAGE AREA. -- 17.8 sq mi (46.1 sq km).

#### WATER-DISCHARGE RECORDS

PERIOD OF RECORD .-- February to April 1964 (monthly measurements only), May 1964 to June 1985.

GAGE.--Water-stage recorder. Datum of gage is 253.10 ft (77.145 m) above mean sea level. Prior to Mar 22, 1977, at site 0.15 mi (0.24 km) upstream and datum 9.90 ft (3.018 m) higher.

REMARKS. -- No estimated daily discharges during water year. Records fair. Some low-flow regulation by construction upstream.

AVERAGE DISCHARGE.--20 years (1965-84), 35.1 cu ft/s (1.994 cu m/s), 26.78 in/yr (680 mm/yr), 25,430 acre-ft/yr (31.4 cu hm/yr); median of yearly mean discharges, 33 cu ft/s (0.93 cu m/s), 23,900 acre-ft/yr (29 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD. --Maximum discharge, 22,400 cu ft/s (634 cu m/s), Sept. 16, 1975, gage height, 11.2 ft (3.41 m), site and datum then in use, from floodmarks, from rating curve extended above 150 cu ft/s (4.25 cu m/s) on basis of slope-area measurement of peak flow; minimum discharge, 2.2 cu ft/s (0.062 cu m/s), May 28, 1967.

EXTREMES FOR CURRENT PERIOD .-- Peak discharges greater than base discharge of 1,200 cu ft/s (34.0 cu m/s) and maximum (\*):

|         |      | Disch     | Discharge |      | Gage height |     |    |         | Disch     | arge     | Gage h | neight |
|---------|------|-----------|-----------|------|-------------|-----|----|---------|-----------|----------|--------|--------|
| Date    | Time | (cu ft/s) | (cu m/s)  | (ft) | <b>(=)</b>  | Dat | .e | Time    | (cu ft/s) | (cu m/s) | (ft)   | (m)    |
| Apr. 11 | 1830 | 1,760     | 49.8      |      | 2.722       | May | 18 | Unknown | *8,270    | 234      | *14.64 | 4.462  |
| Apr. 22 | 1645 | 1,520     | 43.0      | 8.52 | 2.597       |     |    |         |           |          |        |        |

Minimum discharge, 3.5 cu ft/s (0.099 cu m/s), Mar. 17.

|       |      | DISCHARGE, | IN CUBI | C FEET | PER SECON |       | YEAR OCTOBER | 1984 | TO SEPTI | EMBER 1985 |       |     |
|-------|------|------------|---------|--------|-----------|-------|--------------|------|----------|------------|-------|-----|
|       |      |            |         |        |           |       |              |      |          |            |       | 12. |
| DAY   | OCT  | NOV        | DEC     | JAN    | FKB       | MAR   | APR          | MAY  | JUN      | JUL        | AUG   | SEP |
| 1     | 75   | 49         | 30      | 13     | 10        | 113   | 14           | 23   | 40       |            |       |     |
| 2     | 67   | 54         | 32      | 13     | 9.0       | 44    | 13           | 37   | 40       |            |       |     |
| 3     | 79   | 240        | 33      | 12     | 7.2       | 6.2   | 13           | 62   | 50       |            |       |     |
| 4     | 62   | 149        | 28      | 12     | 7.0       | 5.2   | 14           | 38   | 41       |            |       |     |
| 5     | 83   | 160        | 29      | 12     | 6.6       | 5.0   | 15           | 34   | 36       |            |       |     |
| 6     | 95   | 127        | 29      | 11     | 6.4       | 4.8   | 14           | 180  | 30       |            |       |     |
| 7     | 69   | 125        | 27      | 11     | 6.2       | 5.4   | 13           | 100  | 27       |            |       |     |
| 8     | 63   | 117        | 26      | 11     | 6.4       | 6.1   | 14           | 66   | 24       |            |       |     |
| 9     | 138  | 102        | 29      | 10     | 6.6       | 5.4   | 13           | 44   | 22       |            |       |     |
| 10    | 126  | 81         | 29      | 9.7    | 6.2       | 5.4   | 52           | 41   | 22       |            |       |     |
| 11    | 96   | 70         | 25      | 9.7    | 11        | 4.9   | 460          | 38   | 24       |            |       |     |
| 12    | 73   | 62         | 28      | 9.7    | 10        | 5.2   | 274          | 35   | 28       |            |       |     |
| 13    | 103  | 55         | 24      | 9.1    | 6.4       | 4.4   | 39           | 49   | 22       |            |       |     |
| 14    | 95   | 51         | 22      | 8.3    | 11        | 3.9   | 26           | 190  |          |            |       |     |
| 15    | 96   | 47         | 22      | 8.9    | 10        | 3.8   | 21           | 320  |          |            | 102 5 |     |
| 16    | 117  | 42         | 23      | 8.8    | 9.0       | 3.7   | 18           | 500  |          |            |       |     |
| 17    | 120  | 40         | 29      | 8.5    | 8.0       | 3.7   | 17           | 1000 |          |            |       |     |
| 18    | 95   | 41         | 22      | 8.3    | 7.2       | 28    | 17           | 2500 |          |            |       |     |
| 19    | 98   | 38         | 19      | 8.3    | 6.8       | 11    | 16           | 700  |          |            |       |     |
| 20    | 95   | 34         | 19      | 8.0    | 6.6       | 7.2   | 14           | 180  |          |            |       |     |
| 21    | 74   | 31         | 18      | 8.0    | 6.5       | 7.2   | 16           | 128  |          |            |       |     |
| 22    | 62   | 30         | 17      | 8.3    | 6.4       | 9.6   | 347          | 92   |          |            |       |     |
| 23    | 55   | 30         | 16      | 7.8    | 6.3       | 7.1   | 744          | 77   |          |            |       |     |
| 24    | 51   | 29         | 21      | 7.4    | 6.3       | 6.7   | 500          | 60   |          |            |       |     |
| 25    | 50   | 73         | 17      | 7.2    | 6.3       | 6.7   | 250          | 56   |          |            |       |     |
| 26    | 45   | 91         | 17      | 7.5    | 7.1       | 7.0   | 120          | 54   |          |            |       |     |
| 27    | 42   | 40         | 16      | 7.5    | 11        | 9.8   | 50           | 52   |          |            |       |     |
| 28    | 40   | 34         | 16      | 7.5    | 8.0       | 13    | 32           | 50   |          |            |       |     |
| 29    | 39   | 30         | 14      | 7.5    |           | 9.4   | 29           | 48   |          |            |       |     |
| 30    | 41   | 29         | 14      | 10     |           | 18    | 25           | 45   |          |            |       |     |
| 31    | 37   |            | 14      | 15     |           | 19    |              | 43   |          |            |       |     |
| TOTAL | 2381 | 2101       | 705     | 296.0  | 215.5     | 389.8 | 3190         | 6842 |          |            |       |     |
| MBAN  | 76.8 |            | 22.7    | 9.55   | 7.70      | 12.6  | 106          | 221  |          |            |       |     |
| MAX   | 138  | 240        | 33      | 15     | 11        | 113   | 744          | 2500 |          |            |       |     |
| MIN   | 37   | 29         | 14      | 7.2    | 6.2       | 3.7   | 13           | 23   |          |            |       |     |
| CFSM  | 4.31 |            | 1.28    | .54    | .43       | .71   | 5.96         | 12.4 |          |            |       |     |
| IN.   | 4.98 |            | 1.47    | .62    | .45       | .81   |              | 4.30 |          |            |       |     |
| AC-FT | 4720 |            | 1400    | 587    | 427       | 773   |              | 3570 |          |            |       |     |
|       | 1.20 | 4110       |         | 001    | 741       | 113   | 0000 1       |      |          |            |       |     |

CAL YR 1984 TOTAL 10385.4 MEAN 28.4 MAX 240 MIN 4.1 CFSM 1.60 IN. 21.70 AC-FT 20600

237 50114000 RIO CERRILLOS NEAR PONCE, PR--Continued

### WATER-QUALITY RECORDS

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

### WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | TIME     | STRE<br>FLO<br>INST<br>TANE<br>(CF:                             | W, COM<br>AN- DUG<br>OUS ANG                                     | PIC<br>N- PI<br>CT- (ST/                          | ND- TEM   | PER- B<br>URR I                                   | ID- D<br>TY SO  | GEN, (P<br>IS- C<br>LVED SA                           | IS- DEI<br>LVED CI<br>ER- IC<br>ENT (I                  | HAND, FO<br>HEM- FE<br>CAL O.<br>HIGH UM<br>/BL) (CO | LI- STREP RM, TOCOCC CAL, FECAL 7 KF AGA -MF (COLS., LS./ PER ML) 100 ML |
|----------------|----------|---|--|---|---|---|---|---|---|--|--|
| NOV 1984       |          |   |  |   |   |   |   |   |   |  |  |
| 15<br>JAN 1985 | 1045     | 48  |  | 285 8   | 3.50  | 22.0  | 0.7   | 8.7   | 100   | <10  | K130 41  |
| 30             | 0935     | 10  |  | 311 8   | 3.50  | 20.0 1  | 5   | 9.4   | 104   | 25   | K180 6   |
| MAR<br>19      | 1030     | 10  |  | 293 8   | 3.30  | 24.5  | 8.5   | 9.1   | 110   | 14   | 86 32  |
| MAY            | 1030     | 10  |  | 200   |   |   |   |   | 110   | 14   |  |
| 29<br>AUG      | 1150     | 44  |  | 302 8   | 3.40  | 28.0  | 6.0   | 7.4   | 95  | <10  | 290 48   |
| 07             | 1000     | 18  |  | 264 8   | 3.70  | 27.5  | 5.2   | 8.6   | 109   | <10 K  | 2100 7   |
| DATE           |          | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3)                          | HARD-<br>NESS<br>NONCARB<br>WATER<br>TOT FLD<br>MG/L AS<br>CACO3 | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA)      | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG)                | SODIUM,<br>DIS-                                   | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO                             | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K)   | WATER   |  | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4)                            |
| NOV 1984       |          |   |  |   |   |   |   |   |   |  |  |
| 15             |          | 130   | 7  | 40  | 6.8   | 9.8   | 0.4   | 1.0   | 12  |  | 17   |
| JAN 1985<br>30 |          | 140   | 2  | 44  | 7.5   | 12  | 0.5   | 0.9   | 139   | <0.5   | 18   |
| MAR<br>19      |          |   |  |   |   |   |   |   | 128   |  |  |
| MAY            |          |   |  |   |   |   |   |   |   |  |  |
| 29             |          | 130   | 6  | 41  | 7.0   | 11  | 0.4   | 1.1   | 128   | ₹0.5   | 20   |
| 07             |          |   |  |   |   |   |   | -   | 108   |  |  |
| DATE           |          | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)             | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F)               | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | SOLIDS,<br>RESIDUE<br>AT 105<br>DEG. C,<br>SUS-<br>PENDED<br>(MG/L) | NITRO-<br>GEN,<br>NITRITE<br>TOTAL<br>(MG/L<br>AS N)  | GEN,  | GEN,   | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N)                     |
| NOV 1984       |          |   |  |   | 122   |   | 2.  | 62.25   |   | 2002   |  |
| 15<br>JAN 1985 |          | 8.1   | <0.1   | 22  | 180   | 23  | 2   | <0.01   | 0.80  | 0.13   |  |
| 30<br>MAR      |          | 9.3   | 0.1  | 21  | 200   | 5.3   | 33  | <0.01   | 0.30  | 0.01   | 0.49   |
| 19             |          |   |  |   |   |   | 9   |   | -   |  |  |
| MAY 29         |          | 8.2   | 0.1  | 22  | 190   |   | 112   | <0.01   | 0.60  | 0.02   | 0.08   |
| AUG<br>07      |          |   |  |   |   |   | 8   | <0.01   | 0.30  | 0.04   | 0.26   |
| DATE           | Mi<br>Ol | NITRO-<br>EN,AM-<br>ONIA +<br>RGANIC<br>FOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS N)                        | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS NO3)       | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P)                         | ARSENIC<br>TOTAL<br>(UG/L<br>AS AS)               | BARIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS BA)             | BORON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS B) | CADMIUM<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CD) | TOTAL<br>RECOV-<br>BRABLE<br>(UG/L                   | COPPER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CU)                  |
| NOV 1984       |          |   |  |   |   |   |   |   |   |  |  |
| 15             |          | <0.1  |  |   | <0.01   |   |   |   | -   |  |  |
| JAN 1985<br>30 |          | 0.5   | 0.8  | 3.5   | 0.07  | <1  | <100  | <20   | 2   | 7  | <10  |
| MAR<br>19      |          |   |  |   |   |   |   |   |   |  | 122  |
| MAY            |          | 0.1   | 0.7  | 2 1   | 0.00  |   | 100   | /00   |   |  | 10   |
| 29<br>AUG      |          | 0.1   | 0.7  | 3.1   | 0.02  | <1  | 100   | ⟨20   | <1  | . 5  | 10   |
| 07             |          | 0.3   | 0.6  | 2.7   | 0.03  |   |   |   | -   |  |  |

K = non-ideal count

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RIO BUCANA BASIN

50114000 RIO CERRILLOS NEAR PONCE, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>BECOV-<br>BRABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| NOV 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 15<br>JAN 1985 |   |   |   |   |  |   |   | n - 11                              | -                          |  |
| 30<br>MAR      | 1900  | 1   | 80  | <0.1  | <1   | <1  | 20  | <0.01                               | 2                          | 0.02   |
| 19             |   |   |   | <0.1  |  |   |   |                                     |                            |  |
| MAY 29         | 4000  | 6   | 180   | <0.1  | <1   | <1  | 30  | <0.01                               | 12                         | 0.01   |
| AUG            | 4000  | •   | 100   | 10.1  | 11   | **  | 30  | (0.01                               | 1.6                        | 0.01   |
| 07             |   |   |   |   |  |   |   |                                     |                            |  |

#### 50115000 RIO PORTUGUES NEAR PONCE, PR

LOCATION.--Lat 18°04'45", long 66°38'01", Hydrologic Unit 21010004, on right bank 30 ft (9 m) upstream from bridge on Highway 504, 0.2 mi (0.3 km) upstream from small unnamed tributary, 4.4 mi (7.1 km) upstream from Rio Chiquito, and 4.7 mi (7.6 km) north of Plaza Degetau in Ponce.

DRAINAGE AREA .-- 8.82 sq mi (22.84 sq km).

#### WATER-DISCHARGE RECORDS

PERIOD OF RECORD .-- February to June 1964 (monthly measurements only), July 1964 to current year.

GAGE. -- Water-stage recorder. Elevation of gage is 470 ft (143 m), from topographic map. Prior to Dec. 4, 1964, non-recording gage at same site and datum.

REMARKS. -- Estimated daily discharges: June 5-10, July 9 to Aug. 13. Records fair except those for estimated daily discharges, which are poor. Some low-flow regulation due to unknown activity upstream.

AVERAGE DISCHARGE.--21 years (1965-85), 18.2 cu ft/s (0.515 cu m/s), 28.02 in/yr (712 mm/yr), 13,190 acre-ft/yr (16.3 cu hm/yr); median of yearly mean discharges, 18 cu ft/s (0.51 cu m/s), 13,000 acre-ft/yr (16 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD. --Maximum discharge, 13,100 cu ft/s (371 cu m/s), Sept. 16, 1975, gage height, 10.1 ft (3.08 m), from floodmarks 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 discharge, 1.0 cu ft/s (0.028 cu m/s), May 29, 1973.

EXTREMES FOR CURRENT YEAR .-- Peak discharges greater than base discharge of 800 cu ft/s (22.7 cu m/s) and maximum (\*):

|        |      | Disch     | arge     | Gage h | eight |        |      | Disch     | arge     | Gage h | eight |
|--------|------|-----------|----------|--------|-------|--------|------|-----------|----------|--------|-------|
| Date   | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   | Date   | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   |
| Oct. 9 | 1300 | 1,160     | 32.9     | 6.45   | 1.966 | May 17 | 0245 | 921       | 26.1     | 5.88   | 1.792 |
| Nov. 3 | 1130 | 1,860     | 52.7     | 7.88   | 2.402 | May 18 | 1145 | *3,050    | 86.4     | \$9.87 | 3.008 |
| Mar 15 | 2030 | 953       | 24 2     | 5 71   | 1 740 | 10000  |      | 18.       |          |        |       |

DISCHARGE, IN CUBIC FEET PER SECOND. WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

Minimum discharge, 2.4 cu ft/s (0.068 cu m/s), Mar. 15, 16, 17, 18.

|          |          | Dia   | CHARGE | , IN CUBI | C PERT |       | MBAN VA | ALUES   | LOBEK I | 984 1 | O SELLEMI | 3KK 1985 | 7     |       |
|----------|----------|-------|--------|-----------|--------|-------|---------|---------|---------|-------|-----------|----------|-------|-------|
| DAY      | OCT      | N     | voi    | DEC       | JAN    | FEB   | MAR     | APR     |         | IAY   | JUN       | JUL      | AUG   | SEP   |
| 1        | 37       |       | 23     | 27        | 8.9    | 4.7   | 16      | 3.2     | 5       | . 1   | 14        | 5.8      | 7.3   | 9.5   |
| 2        | 23       |       | 32     | 20        | 8.8    | 4.9   |         | 3.4     |         | . 3   | 13        | 8.8      | 5.0   | 8.0   |
| 3        | 31       |       | 53     | 18        | 8.8    | 4.7   | 4.8     | 3.3     |         | . 2   | 16        | 9.1      | 4.6   | 7.5   |
| 4        | 21       |       | 55     | 16        | 9.3    | 4.4   | 4.2     | 3.3     |         | . 4   | 15        | 6.4      | 4.5   | 7.1   |
| 5        | 110      |       | 85     | 16        | 8.8    | 4.6   | 3.8     | 3.2     |         | . 2   | 13        | 6.1      | 10    | 28    |
| 6        | 94       | 1     | 10     | 15        | 9.0    | 5.0   | 3.5     | 2.9     | 8       | . 2   | 12        | 5.8      | 6.0   | 20    |
| 7        | 47       | 1     | 12     | 14        | 9.2    | 4.5   | 5.0     | 3.1     | 23      |       | 11        | 5.6      | 4.3   | 21    |
| 8        | 38       |       | 80     | 14        | 8.5    | 4.6   | 5.1     | 3.0     | 7       | . 5   | 11        | 5.5      | 4.2   | 21    |
| 9        | 216      |       | 63     | 16        | 8.5    | 4.9   | 4.3     | 2.6     | 5       | . 8   | 10        | 5.3      | 3.9   | 16    |
| 10       | 113      |       | 43     | 14        | 9.4    | 5.3   | 3.8     | 4.9     |         | . 7   | 10        | 5.2      | 5.2   | 50    |
| 11       | 74       |       | 35     | 14        | 12     | 7.8   | 3.1     | 48      |         | . 9   | 9.6       | 5.3      | 16    | 30    |
| 12       | 38       |       | 30     | 15        | 11     | 5.7   | 3.5     | 19      | 3       | . 9   | 9.0       | 5.2      | 12    | 26    |
| 13       | 64       |       | 27     | 12        | 12     | 5.2   | 3.1     | 5.9     | 4       | . 1   | 8.7       | 5.0      | 20    | 48    |
| 14       | 48       |       | 26     | 11        | 12     | 9.7   | 2.8     | 4.5     | 4       | . 5   | 8.4       | 4.8      | 28    | 50    |
| 15       | 65       |       | 25     | 11        | 12     | 8.6   | 2.7     | 4.0     | 157     |       | 8.1       | 13       | 17    | 34    |
| 16       | 75       |       | 24     | 13        | 13     | 6.6   | 2.4     | 3.9     | 303     |       | 7.8       | 7.1      | 11    | 26    |
| 17       | 97       |       | 23     | 18        | 12     | 5.4   | 2.4     | 3.9     | 390     |       | 7.9       | 12       | 9.0   | 24    |
| 18       | 63       |       | 22     | 13        | 11     | 4.7   | 18      | 3.9     | 982     |       | 12        | 8.0      | 8.1   | 22    |
| 19       | 44       |       | 19     | 12        | 9.4    | 4.5   | 6.7     | 3.9     | 104     |       | 9.4       | 6.3      | 7.5   | 20    |
| 20       | 46       |       | 17     | 12        | 9.0    | 4.5   | 4.1     | 3.9     | 40      |       | 7.7       | 6.1      | 7.2   | 19    |
| 21       | 35       |       | 16     | 11        | 9.3    | 4.5   | 6.4     | 4.7     | 28      |       | 7.4       | 6.0      | 7.1   | 19    |
| 22       | 28       |       | 15     | 11        | 8.9    | 4.2   | 5.1     | 5.7     | 23      |       | 7.3       | 5.9      | 7.0   | 19    |
| 23       | 24       |       | 14     | 11        | 7.3    | 4.2   | 3.6     | 25      | 20      |       | 9.9       | 5.7      | 6.7   | 19    |
| 24       | 20       |       | 13     | 13        | 6.7    | 3.9   | 3.4     | 21      | 18      |       | 12        | 5.6      | 6.6   | 93    |
| 25       | 21       |       | 75     | 11        | 6.5    | 4.0   | 3.1     | 30      | 16      |       | 11        | 5.5      | 6.4   | 39    |
| 26       | 19       |       | 84     | 9.8       | 5.9    | 4.4   | 3.1     | 26      | 16      |       | 7.6       | 5.4      | 6.6   | 26    |
| 27       | 18       |       | 33     | 9.0       | 5.3    | 5.2   | 4.0     | 15      | 14      |       | 7.0       | 5.3      | 15    | 53    |
| 28       | 17       |       | 23     | 9.0       | 5.0    | 4.9   | 3.6     | 7.5     | 15      |       | 6.4       | 5.2      | 8.3   | 31    |
| 29       | 16       |       | 21     | 9.0       | 5.0    |       | 2.8     | 6.1     | 15      |       | 6.1       | 5.2      | 6.8   | 21    |
| 30<br>31 | 25<br>17 |       | 19     | 9.0       | 4.8    |       | 3.5     | 5.3     | 14      |       | 6.0       | 5.1      | 14    | 20    |
| TOTAL    | 1584     | 10    | 17     | 413.1     | 271.9  | 145.6 | 153.7   | 280.1   | 2258    | 0     | 294.3     | 196.3    | 289.3 | 827.1 |
| MEAN     | 51.1     |       | .9     | 13.3      | 8.77   | 5.20  | 4.96    | 9.34    |         | . 9   | 9.81      | 6.33     | 9.33  | 27.6  |
| MAX      | 216      |       | 53     | 27        | 13     | 9.7   | 18      | 48      |         | 82    | 16        | 13       | 28    | 93    |
| MIN      | 16       |       | 13     | 9.0       | 4.6    | 3.9   | 2.4     | 2.6     |         | .9    | 6.0       | 4.8      | 3.9   | 7.1   |
| CFSM     | 5.79     |       | 24     | 1.51      | .99    | .59   | .56     | 1.06    |         | 27    | 1.11      | .72      | 1.06  | 3.13  |
| IN.      | 6.68     |       | 09     | 1.74      | 1.15   | .61   | .65     | 1.18    |         | 53    | 1.24      | .83      | 1.22  | 3.49  |
| AC-FT    | 3140     |       | 00     | 819       | 539    | 289   | 305     | 556     |         | 80    | 584       | 389      | 574   | 1640  |
| CAL YR   | 1984     | TOTAL | 7126.  | 8 MEAN    | 19.5   | MAX   | 553 M   | IIN 1.2 | CFSM    | 2.21  | IN.       | 30.06    | AC-FT | 14140 |
| WTR YR   | 1985     | TOTAL | 8631.  | 2 MEAN    | 23.6   | MAX   |         | IIN 2.4 | CFSM    | 2.68  | IN.       | 36.40    | AC-FT | 17120 |

# 50115000 RIO PORTUGUES NEAR PONCE, PR--Continued WATER-QUALITY RECORDS

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

| DATE           | TIME                                   | STREAM<br>FLOW,<br>INSTAN<br>TANBOU<br>(CFS)                  | COI<br>I- DUG<br>IS ANG                          | FIC<br>N- P<br>CT- (ST<br>CB A                                      | RD   | KMPER-<br>ATURE<br>DEG C)                  | TUR-<br>BID-<br>ITY<br>(NTU)            | SOI  | JEN,<br>IS-<br>VED                                 | XYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | OXYGE<br>DEMAN<br>CHEN<br>ICAL<br>(HIC<br>LEVEL<br>(MG/I | ND, FO<br>M- FE<br>L O.<br>GH UM<br>L) (CO                     | LI-<br>RM,<br>CAL,<br>7<br>-MF<br>LS./<br>ML) | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) |
|----------------|--|---|--|---|--|--|---|--|--|---|--|--|---|--|
| NOV 1984       |  |   |  |   |  |  |   |  |  |   |  |  |   |  |
| 15<br>JAN 1985 | 1750                                   | 25  |  | 290   | 8.40   | 23.0                                       | 1.6                                     |  | 8.5  | 101   |  |  | 2200  | 10000  |
| 30             | 1530                                   | 4.9   |  |   | 8.80   | 22.5                                       | 0.5                                     |  | 9.0  | 105   |  |  | K160  | 220  |
| 19<br>MAY      | 1600                                   | 5.7   |  |   | 8.50   | 25.0                                       | 1.0                                     |  | 8.0  | 98  |  |  | K660  | 520  |
| 29<br>AUG      | 1640                                   | 15  |  |   | 8.60   | 26.0                                       | 1.7                                     |  | 7.5  | 94  |  | (10  | 230   | 820  |
| 07             | 1500                                   | 4.6   |  | 277   | 8.70   | 28.0                                       | 3.3                                     |  | 8.2  | 106   |  | (10  | K180  | K180   |
| DATE           | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | HARD-<br>NESS<br>NONCAR<br>WATER<br>TOT FL<br>MG/L A<br>CACO3 | B CALC<br>DIS<br>D SOI<br>S (MC                  | CIUM S<br>B- D<br>LVED SO<br>B/L (M                                 | IS-<br>LVBD S<br>G/L                           | ODIUM,<br>DIS-<br>OLVED<br>(MG/L<br>AS NA) | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | SI<br>SOI                                    | AS- L<br>UM,<br>S-<br>VRD                          | ALKA-<br>INITY<br>WATER<br>TOTAL<br>FIBLD<br>G/L AS<br>CACO3  | SULFI<br>TOTA<br>(MG/                                    | DE DI  | FATE<br>S-<br>LVED<br>G/L<br>SO4)             | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)                |
| NOV 1984       |  |   |  |   |  |  |   |  | - A-   |   |  |  |   |  |
| 15<br>JAN 1985 | 130                                    |   | 0 42   | 2   | 6.6  | 9.6  | 0.                                      | 4 1  | . 1  | 132   |  |  | 7.9   | 8.9  |
| 30<br>MAR      | 140                                    | -   | - 46   | 5   | 7.7  | 11   | 0.                                      | 4 1  | .1   | 148   | <0   | .5   | 8.4   | 10   |
| 19<br>MAY      |  | -   | -  |   |  |  |   | -  |  | 122   |  |  |   | out 75   |
| 29<br>AUG      | 120                                    | -   | - 39   | )   | 6.7  | 9.7  | 0.                                      | 4 1  | .4   | 130   | <0   | .5   | 8.4   | 8.3  |
| 07             |  | -   | -  |   |  |  |   | 1  |  | 125   |  |  |   |  |
| DAT            | RII<br>D<br>SOI<br>B (M                | DR,<br>IS-<br>LVED<br>G/L                                     | ILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS<br>DIS-<br>SOLVI<br>(TONS<br>PER<br>DAY | BD DEG<br>B SUS<br>PENI                    | IDUB 1<br>105<br>. C, Ni<br>3-          | NITRO-<br>GEN,<br>ITRATE<br>FOTAL<br>(MG/L   | NITRO<br>GEN<br>NITRI<br>TOTAL<br>(MG/)<br>AS N    | FE NO2  | TRO-<br>GEN,<br>2+NO3<br>OTAL<br>IG/L                    | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N)           | GI  | AL<br>J/L  |
| NOV 198        |  | .,  | 5102,  | (1147 117   | DAI  | , (130                                     | ,, ,, ,                                 |  | AD N   | ,   | ,  | AD 11,   | A.J   | "  |
| 15<br>JAN 198  | <                                      | 0.1   | 22   | 180   | 12   |  | 2                                       |  | <0.0   | 1 1   | .40  | 0.17   | •   | .13  |
| 30             | <                                      | 0.1   | 21   | 190   | 2.0  | 8  | 1                                       |  | <0.0   | 1 0   | .60  | <0.01  |   |  |
| 19             |  |   |  |   |  |  | 3                                       |  |  | -   |  |  |   |  |
| 29             | -                                      | 0.1   | 19   | 170   | 6.9  | 9  | 7                                       | 0.95   | 0.0  | 5 1   | .00  | <0.01  |   | 77.1   |
| 07             |  |   |  |   |  |  | 4                                       | 0.89   | <0.0   | 1 0   | .70  | 0.03   | C   | . 37   |
| DAT            | GEN<br>MONI<br>ORGA<br>TO              | ANIC<br>PAL<br>3/L  | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS N)        | NITRO-<br>GBN,<br>TOTAL<br>(MG/L<br>AS NO3)                         | PHOS-<br>PHORUS<br>TOTAL<br>(MG/I              | ARSI<br>L TOT<br>L (UC                     | NIC F<br>TAL F                          | ARIUM,<br>POTAL<br>RECOV-<br>RRABLE<br>(UG/L | BORON<br>TOTAL<br>RECOV<br>BRABI<br>(UG/I<br>AS B) | TO RELE ER  | MIUM<br>TAL<br>COV-<br>ABLE<br>IG/L                      | CHRO-<br>MIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CR) | BRA<br>(UC                                    | AL<br>OV-<br>BLE   |
| NOV 198        | 1                                      |   |  |   |  |  |   |  |  |   |  |  |   |  |
| 15<br>JAN 198  | 5                                      | 0.3   | 1.7  | 7.5   | <0.01  | 1  |   |  |  | -   |  |  |   | -  |
| 30             |  | 0.3   | 0.9  | 4.0   | 0.04   | 1  | <1                                      | <100   | (2   | 20  | 2  | 5  |   | <10  |
| 19             |  |   |  |   |  |  |   |  | 1  | T STORY   | 177  |  |   |  |
| 29<br>AUG      |  | ).2   | 1.2  | 5.3   | <0.01  | ı  | <1                                      | 100  | <:   | 20  | 1  | 3  |   | <10  |
| 07             |  | 0.4   | 1.1  | 4.9   | 0.03   |  |   |  |  | -   |  |  |   |  |

RIO PORTUGUES BASIN

50115000 RIO PORTUGUES NEAR PONCE, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

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| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| NOV 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 15<br>JAN 1985 |   |   |   |   |  |   |   |                                     |                            |  |
| 30<br>MAR      | 110   | 1   | 20  | <0.1  | <1   | <1  | 20  | <0.01                               | 2                          | 0.03   |
| 19             |   |   |   | 0.3   |  |   |   |                                     |                            |  |
| MAY 29         | 420   | 2   | 30  | <0.1  | <1   | <1  | 20  | <0.01                               | 2                          | 0.02   |
| AUG<br>07      |   |   |   |   |  |   |   |                                     |                            |  |

### 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 CSC 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).

K = non-ideal count

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

| DATE                        | TIME                       | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CN | PH<br>- (STA  | ND- TEMP  | RR- B   | D- D  | GEN, (<br>IS-<br>LVED S                              | YGEN,<br>DIS-<br>OLVED<br>PER-<br>CENT<br>ATUR-<br>TION) | OXYGEN<br>DEMAND,<br>CHEM-<br>ICAL<br>(HIGH<br>LEVEL)<br>(MG/L) | FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) |
|-----------------------------|----------------------------|---|--|---|---|---|---|--|--|---|---|--|
| NOV 1984                    |                            |   |  |   |   |   |   |  |  |   |   |  |
| 16<br>JAN 1985              | 0845                       | 26  | 41   | 71 8  | .20 2   | 1.5 3   | )   | 9.9  | 112  | 20  | 26000   | K1200  |
| 29                          | 1600                       | 2.9   | 62   | 28 7  | .40 3   | 0.0   | 1.0   | 5.1  | 67   | 26  | K66000  | 590  |
| MAR<br>18                   | 1755                       | 19  | 31   | 74 7  | .90 2   | 7.0 1   | 5   | 5.2  | 65   | 15  | K270000   | 33000  |
| MAY 28                      | 1645                       | 19  | 36   | 80 8  | .50 3   | 3.0   | 7.5   | 9.5  | 132  | <10   | 22000   | k1500  |
| AUG                         |                            |   |  |   |   |   |   |  |  |   |   |  |
| 00                          | 1645                       | 20  | 4.6  | 55 7  | .80 3   | 0.0 10  | •   | 6.4  | 84   | 17  | 180000  | K2800  |
|                             | HARD-<br>NESS<br>(MG/L     | HARD-<br>NESS<br>NONCARB<br>WATER<br>TOT FLD    | CALCIU<br>DIS-<br>SOLVE                          | DI:   | UM, SODI<br>S- DIS<br>VKD SOLV                    | UM, A<br>- SOI<br>ED T  | D- S<br>P- D<br>ON SO                                   | TAS- LI<br>IUM, W<br>IS- T<br>LVED F                 | LKA-<br>NITY<br>ATER<br>OTAL<br>IELD                     | SULFIDE   | SULFATE<br>DIS-<br>SOLVED                             | CHLO-<br>RIDR,<br>DIS-<br>SOLVED                                   |
| DATE                        | CACO3)                     | MG/L AS<br>CACO3                                | AS CA  |   |   |   |   |  | ACO3   | (MG/L<br>AS S)  | (MG/L<br>AS SO4)                                      | (MG/L<br>AS CL)  |
| NOV 1984                    |                            |   |  |   |   |   |   |  |  |   |   |  |
| 16<br>JAN 1985              | 190                        | 17  | 57   | 11  | 25  |   | 0.8   | 1.7  | 171  | - I   | 39  | 26   |
| 29<br>MAR                   | 220                        | 12  | 65   | 13  | 50  |   | 2   | 2.3  | 204  | <0.5  | 69  | 44   |
| 18                          |                            |   |  |   |   |   |   |  | 149  |   |   |  |
| 28                          | 150                        | 12  | 43   | 9   | .6 29   |   | 1   | 2.2  | 135  | <0.5  | 39  | 26   |
| AUG                         |                            |   |  | -   |   |   |   |  | 141  |   |   |  |
|                             |                            |   |  |   |   |   |   |  |  |   |   |  |
| DATE                        | RII<br>Di<br>SOI           | DR, DI<br>IS- SC<br>LVED (1                     | LICA; S<br>18- C<br>DLVRD T<br>MG/L<br>AS        | SOLIDS,<br>BUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | SOLIDS,<br>RESIDUR<br>AT 105<br>DEG. C,<br>SUS-<br>PENDED<br>(MG/L) | NITRO-<br>GEN,<br>NITRATE<br>TOTAL<br>(MG/L<br>AS N)    | NITRO<br>GEN,<br>NITRIT<br>TOTAL<br>(MG/L<br>AS N)   | GE<br>NO2+<br>TOT<br>(MG                                 | N, G<br>NO3 AMM<br>AL TO<br>/L (M                               | EN, GONIA ORG<br>TAL TO<br>G/L (M                     | ITRO-<br>JEN,<br>JANIC<br>DTAL<br>JG/L<br>J N)                     |
| NOV 1984                    |                            |   |  |   |   |   |   |  |  |   |   |  |
| 16<br>JAN 1985              |                            | 0.1   | 21   | 280   | 20  | 58  | 1.88  | 0.02   | 1.   | 90 0  | .23   | 0.17   |
| 29<br>MAR                   |                            | 0.3   | 21   | 390   | 3.0   | 8   | 1.85  | 0.15   | 2.   | 00 0  | .44   | 0.56   |
| 18                          |                            |   |  |   |   | 2   |   | _  | 4 3 7 40   |   |   |  |
| MAY 28                      |                            | 0.1   | 18   | 250   |   | 44  | 0.77  | 0.03   | 0.   | 80 0  | .07   | 0.33   |
| AUG<br>06                   |                            |   |  |   |   | 27  | 0.46  | 0.04   |  | 50 0  | .14   | 0.66   |
|                             |                            |   |  |   |   | ۵,  | 0.40  | 0.04   | ٠.   | 50 0  |   | 0.00   |
| DATE                        | GEN<br>MONI<br>ORGA<br>TOT | ANIC COLL TO                                    | GEN,<br>OTAL<br>MG/L                             | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>S NO3)                          | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P)       | ARSENIC<br>TOTAL<br>(UG/L<br>AS AS)                                 | BARIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS BA) | BORON<br>TOTAL<br>RECOV-<br>BRABLI<br>(UG/L<br>AS B) | TOT<br>REC<br>E ERA<br>(UG                               | IUM MI<br>AL TO<br>OV- RE<br>BLE ER<br>/L (U                    | TAL TO<br>COV- RE<br>ABLE ER<br>G/L (U                | PPER,<br>DTAL<br>GCOV-<br>AABLE<br>IG/L                            |
| NOV 1984<br>16              |                            | 0.4   | 2.3  | 10  | 0.04  |   |   |  |  | .01   |   | - 100  |
|                             |                            | , , 4   |  | 10  | 0.04  |   |   |  |  |   |   |  |
| JAN 1985                    |                            |   |  | 19  | 0.29  | <1  | 100   | 6  | 0  | 2   | 4   | <10  |
| JAN 1985<br>29<br>MAR       |                            | 1.0   | 3.0  | 13  | 0.20  |   |   |  |  |   |   |  |
| JAN 1985<br>29<br>MAR<br>18 |                            |   | 3.0  |   |   |   |   |  |  |   | _   | _  |
| JAN 1985<br>29<br>MAR       | 1                          |   |  |   |   |   |   |  |  | <br><1  |   |  |

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE                   | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>RRABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG)       | ZINC,<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L)                 | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|------------------------|---|---|---|---|--|---|---|-------------------------------------|--|--|
| NOV 1984               |   |   |   |   |  |   |   |                                     |  |  |
| 16<br>JAN 1985         |   |   |   |   |  |   |   |                                     |  |  |
| 29                     | 420   | 1   | 250   | <0.1  | <1   | <1  | 20  | <0.01                               | <1   | 0.06   |
| MAR                    | 120   | •   | 200   |   | **   | **  |   | 10.01                               | **   | 0.00   |
| 18                     |   |   |   | 0.1   |  |   |   |                                     |  |  |
| MAY                    |   |   |   |   |  |   |   |                                     |  |  |
| 28                     | 1300  | 9   | 120   | <0.1  | <1   | <1  | 20  | <0.01                               | 10   | 0.16   |
| 06                     |   |   |   |   |  |   |   |                                     |  |  |
| DATE<br>AUG 1985<br>06 | TIM   | (UG/  | AL TOT  | AL TOTA   | L TOT                                      | /L) (UG   | AL TOT<br>/L) (UG                                     | AL TOTA                             | ON, ELDR<br>AL TOTA<br>/L) (UG/            | IN<br>L<br>L)  |
|                        | DATE  | ENDO-<br>SULFAN,<br>TOTAL<br>(UG/L)                   | ENDRIN,<br>TOTAL<br>(UG/L)                                      | ETHION,<br>TOTAL<br>(UG/L)                              | HEPTA-<br>CHLOR,<br>TOTAL<br>(UG/L)        | HEPTA-<br>CHLOR<br>EPOXIDE<br>TOTAL<br>(UG/L)                 | LINDANE<br>TOTAL<br>(UG/L)                            | MALA-<br>THION,<br>TOTAL<br>(UG/L)  | METH-<br>OXY-<br>CHLOR,<br>TOTAL<br>(UG/L) |  |
| AUG                    | 1985  |   |   |   |  |   |   |                                     |  |  |
| 06                     | i   | <0.01   | <0.01   | <0.01   | <0.01                                      | <0.01   | <0.01   | <0.01                               | <0.01                                      |  |
|                        | DATE  | METHYL<br>PARA-<br>THION,<br>TOTAL<br>(UG/L)          | METHYL<br>TRI-<br>THION,<br>TOTAL<br>(UG/L)                     | MIREX,<br>TOTAL<br>(UG/L)                               | PARA-<br>THION,<br>TOTAL<br>(UG/L)         | NAPH-<br>THA-<br>LENES,<br>POLY-<br>CHLOR.<br>TOTAL<br>(UG/L) | PER-<br>THANE<br>TOTAL<br>(UG/L)                      | TOX-<br>APHENE,<br>TOTAL<br>(UG/L)  | TOTAL TRI- THION (UG/L)                    |  |

AUG 1985 06...

<0.01

<0.01

<0.01

<0.01

<0.1

<0.1

<1

<0.01

#### 50124200 RIO GUAYANILLA NEAR GUAYANILLA, PR

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. Blevation of gage is 80 ft (24 m) from topographic map.

REMARKS. -- Estimated daily discharges: Oct. 1-17. Records fair except those for estimated daily discharges, which are poor.

EXTREMES FOR PERIOD OF RECORD. --Maximum discharge, 14,700 cu ft/s (416 cu m/s), Sept. 12, 1982, gage height, 20.4 ft (6.21 m) from floodmarks, from rating curve extended above 100 cu ft/s (2.83 cu m/s) on basis of step-backwater analysis and indirect measurement of peak flow; minimum discharge, 1.8 cu ft/s (0.051 cu m/s), Apr. 17-19, 1981.

EXTREMES FOR CURRENT YEAR .-- Peak discharges greater than base discharge of 800 cu ft/s (22.7 cu m/s) and maximum (\*):

|         |      | Disch     | arge     | Gage h | eight |          |      | Disch     | arge     | Gage h | eight |
|---------|------|-----------|----------|--------|-------|----------|------|-----------|----------|--------|-------|
| Date    | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   | Date     | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   |
| Nov. 3  | 0815 | 927       | 26.2     | 9.60   | 2.926 | May 16   | 0845 | 871       | 24.7     | 9.48   | 2.890 |
| Nov. 25 | 1945 | 852       | 24.1     | 9.44   | 2.877 | May 17   | 0100 | 1,570     | 44.5     | 10.85  | 3.307 |
| Nov. 27 | 1545 | 936       | 26.5     | 9.62   | 2.932 | May 18   | 0730 | 1,280     | 36.2     | 10.34  | 3.152 |
| May 15  | 2245 | *1,640    | 46.4     | *10.98 | 3.347 | Sept. 14 | 1315 | 1,010     | 28.6     | 9.78   | 2.981 |

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

Minimum daily discharge, 2.9 cu ft/s (0.082 cu m/s), Apr. 20.

|        |      |             | .,   |           |       | AN V  | ALUES   | , D. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. |          |       |       |       |
|--------|------|-------------|------|-----------|-------|-------|---------|---|----------|-------|-------|-------|
| DAY    | OCT  | NOV         | DEC  | JAN       | FEB   | MAR   | APR     | MAY   | JUN      | JUL   | AUG   | SEP   |
| 1      | 12   | 53          | 43   | 10        | 11    | 13    | 4.9     | 5.7   | 20       | 7.6   | 5.9   | 5.8   |
| 2      | 11   |             | 42   |           | 11    | 6.6   | 4.8     | 5.3   | 20       | 8.1   | 6.3   | 5.2   |
| 3      | 52   |             | 37   |           | ii    | 6.0   | 4.5     | 5.2   | 21       | 8.2   | 5.6   | 5.0   |
| 4      | 21   |             | 33   |           | 10    | 8.5   | 4.5     | 5.1   | 20       | 7.4   | 5.0   | 4.9   |
| 5      | 20   |             | 30   |           | 10    | 6.5   | 5.1     | 4.8   | 18       | 6.9   | 5.3   | 9.5   |
|        | 20   | 210         | 30   | 3.2       | 10    | 0.5   | 3.1     | 4.0   | 10       |       | 0.0   | 3.5   |
| 6      | 28   |             | 29   | 9.1       | 11    | 5.9   | 4.1     | 4.8   | 17       | 6.5   | 6.3   | 16    |
| 7      | 17   | 108         | 28   | 8.9       | 11    | 6.6   | 4.1     | 7.8   | 17       | 6.2   | 6.4   | 16    |
| 8      | 13   | 99          | 27   |           | 11    | 12    | 4.1     | 5.4   | 16       | 6.2   | 5.6   | 13    |
| 9      | 190  | 92          | 42   |           | 12    | 8.4   | 3.9     | 5.0   | 16       | 6.3   | 6.9   | 7.3   |
| 10     | 70   |             | 33   |           | 12    | 8.6   | 3.8     | 4.8   | 16       | 6.5   | 5.3   | 5.9   |
| 11     | 28   | 72          | 29   | 9.4       | 18    | 7.3   | 4.1     | 4.7   | 14       | 6.4   | 9.3   | 5.9   |
| 12     | 16   |             | 24   |           | 16    | 6.6   | 5.3     | 4.5   | 14       | 6.2   | 11    | 7.2   |
| 13     | 12   |             | 22   |           |       |       | 3.7     |   |          |       | 8.5   |       |
|        |      |             |      |           | 8.9   | 6.4   |         | 4.5   | 13       | 6.2   |       | 21    |
| 14     | 20   |             | 21   |           | 9.8   | 6.1   | 3.5     | 4.5   | 12       | 6.3   | 6.6   | 207   |
| 15     | 32   | 46          | 19   | 8.3       | 13    | 5.9   | 3.3     | 124   | 12       | 10    | 9.8   | 75    |
| 16     | 280  |             | 20   |           | 10    | 5.7   | 3.3     | 316   | 12       | 10    | 6.1   | 26    |
| 17     | 112  | 43          | 20   | 8.6       | 11    | 5.8   | 3.3     | 455   | 12       | 8.2   | 5.6   | 17    |
| 18     | 85   | 41          | 18   | 9.6       | 9.7   | 13    | 3.3     | 713   | 12       | 8.7   | 5.0   | 15    |
| 19     | 66   | 40          | 16   | 9.6       | 9.5   | 8.2   | 3.1     | 241   | 12       | 7.1   | 5.0   | 12    |
| 20     | 95   | 38          | 16   | 9.5       | 11    | 5.9   | 2.9     | 152   | 12       | 6.9   | 11    | 10    |
| 21     | 168  | 37          | 15   | 9.8       | 11    | 5.7   | 3.2     | 93  | 11       | 6.9   | 9.4   | 10    |
| 22     | 76   |             | 14   |           | 10    | 5.7   | 4.5     | 59  | 11       | 6.2   | 6.0   | 13    |
| 23     | 55   |             | 14   |           | 9.9   | 5.5   | 6.3     | 45  | 9.6      | 7.4   | 5.3   | 8.9   |
| 24     | 47   |             | 16   |           | 12    | 5.5   | 19      | 38  | 9.4      | 8.7   | 4.9   | 125   |
| 25     | 52   |             | 14   |           | 15    | 5.2   | 30      | 34  | 9.6      | 6.4   | 4.7   | 114   |
| 26     | 44   | 167         | 13   | 12        | 7.5   | 6.1   | 42      | 30  | 9.3      | 5.6   | 4.9   | 54    |
| 27     | 60   |             | 13   |           | 10    | 7.4   | 14      | 27  | 8.8      | 5.8   | 8.0   | 61    |
| 28     | 43   | 76          |      |           | 17    |       |         |   | 8.6      | 5.9   | 7.2   | 37    |
| 29     |      |             | 12   |           |       | 5.0   | 7.5     | 26  |          |       |       |       |
|        | 38   |             | 11   |           |       | 5.0   | 6.4     | 24  | 8.4      | 5.9   | 5.5   | 21    |
| 30     | 47   |             | 11   |           |       | 8.5   | 5.9     | 22  | 7.6      | 5.6   | 5.9   | 19    |
| 31     | 53   |             | 11   | 10        |       | 6.3   |         | 21  |          | 5.3   | 10    |       |
| TOTAL  | 1863 | 2826        | 693  |           | 319.3 | 218.9 | 218.4   | 2492.1                                      | 399.3    | 215.6 | 208.3 | 947.6 |
| MEAN   | 60.1 | 94.2        | 22.4 |           | 11.4  | 7.06  | 7.28    | 80.4  | 13.3     | 6.95  | 6.72  | 31.6  |
| MAX    | 280  | 459         | 43   | 12        | 18    | 13    | 42      | 713   | 21       | 10    | 11    | 207   |
| MIN    | 11   | 34          | 11   | 8.2       | 7.5   | 5.0   | 2.9     | 4.5   | 7.6      | 5.3   | 4.7   | 4.9   |
| CFSM   | 3.18 | 4.98        | 1.19 | .51       | .60   | .37   | .39     | 4.25  | .70      | . 37  | .36   | 1.67  |
| IN.    | 3.67 | 5.56        | 1.36 |           | .63   | .43   | .43     | 4.91  | .79      | .42   | .41   | 1.87  |
| AC-FT  | 3700 | 5610        | 1370 |           | 633   | 434   | 433     | 4940  | 792      | 428   | 413   | 1880  |
| CAL YR | 1984 | TOTAL 8410  | . 8  | MEAN 23.0 | MAX   | 459   | MIN 2.7 | CFSM  | 1.22 IN. | 16.55 | AC-FT | 16680 |
| WTR YR |      | TOTAL 10699 |      | MEAN 29.3 |       | 713   | MIN 2.9 |   | 1.55 IN. |       | AC-FT | 21220 |
|        |      |             |      |           |       |       |         | 0.00  |          |       |       |       |

## RIO GUAYANILLA BASIN

## 50124200 RIO GUAYANILLA NEAR GUAYANILLA, P.R.--Continued

### WATER QUALITY RECORDS

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

# WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE   | T    | IME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE   | TIME   | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|--------|------|-----|---------------------------------------|--------------------------------------|-----------------------------|--------|--------|---------------------------------------|--------------------------------------|-----------------------------|
| DEC, C | 7 09 | 910 | 29                                    | 455                                  | 22.0                        | MAR, 0 | 8 1132 | 10                                    | 426                                  | 25.0                        |
| JAN, 1 | 8 09 | 912 | 10                                    | 430                                  | 22.0                        | SEP, 1 | 1 1628 | 5.8                                   | 360                                  | 30.0                        |
| FEB, 1 | 4 10 | 010 | 8.9                                   | 440                                  | 23.0                        |        |        |                                       |                                      |                             |

245

RIO GUAYANILLA BASIN

### 50124700 RIO GUAYANILLA AT CENTRAL RUFINA, PR

246

### WATER-QUALITY RECORDS

LOCATION.--Lat 18°00'40", long 66°46'49", at dirt road bridge, 0.7 mi (1.1 km) from mouth, 0.9 mi (1.4 km) east of Central Rufina and 0.9 mi (1.4 km) southeast of Guayanilla.

DRAINAGE AREA . -- 22.8 sq mi (69.1 sq km).

K = non-ideal count

PERIOD OF RECORD .-- Water years 1960-65, 1974 to current year.

| DATE           | TIME                                   | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS)                   | SPR-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM | PH<br>(STAN<br>ARD<br>UNITS                                    | ATU   | PER- E  | TUR-<br>BID-<br>ITY<br>VTU)     | OXYGE<br>DIS<br>SOLV<br>(MG/              | 901<br>N, (PI<br>- CI<br>BD SA                        | IS- DE<br>LVBD C<br>BR- I<br>BNT (<br>TUR- LE       | YGEN<br>MAND,<br>CHEM-<br>CAL<br>HIGH<br>KVEL) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) |
|----------------|--|---|--|--|---|---|---------------------------------|---|---|---|--|--|--|
| NOV 1984       |  |   |  |  |   |   |                                 |   |   |   |  |  |  |
| 16<br>JAN 1985 | 1400                                   | 34  | 480  | 8.   | 60 2  | 27.0  | 36                              | 9   | . 1   | 114   | <10  | K110000  | 5800   |
| 31<br>MAR      | 0830                                   | 1.6   | 74:  | 2 7.   | 80 2  | 22.0  | 2.5                             | 4   | .3  | 49  | 43   | K2000  | 1000   |
| 20             | 0915                                   | 2.3   | 940  | 7.   | 70 2  | 8.0   | 2.5                             | 1   | . 3   | 17  | 65   | K760000  | 260000   |
| MAY<br>30      | 1000                                   | 22.0  | 45   | . 8.   | 50 2  | 8.5   | 2.0                             | 9   | . 5   | 122   |  | K500   | 4900   |
| AUG<br>08      | 0945                                   | 1.3   | 910  | 7.   | 65 2  | 9.5   | 4.1                             | 2   | .4  | 32  | 67   | 30000  | K79000   |
|                |  |   |  |  |   |   |                                 |   |   |   |  |  |  |
| DATE           | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | HARD-<br>NESS<br>NONCARB<br>WATER<br>TOT FLD<br>MG/I. AS<br>CACO3 | CALCIUM<br>DIS-<br>SOLVKI<br>(MG/L<br>AS CA)     | DIS<br>SOLV<br>(MG/  | M, SODI<br>- DIS<br>RD SOLV<br>L (MG              | UM,<br>I- SC<br>VED T   | DIUM<br>AD-<br>ORP-<br>TION     | POTAL<br>SIUI<br>DIS-<br>SOLVI<br>(MG/I   | M, WATE<br>TOTAL<br>BD FII                            | ITY<br>FRR<br>FAL SU<br>BLD T<br>L AS (             | LFIDE<br>OTAL<br>MG/L<br>S S)                  | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4)                  | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)                |
| NOV 1984       |  |   |  |  |   |   |                                 |   |   |   |  |  |  |
| 16<br>JAN 1985 | 220                                    | 32  | 57   | 18   | 19  |   | 0.6                             | 1.  | 6   | 184   |  | 49   | 24   |
| 31<br>MAR      | 300                                    | 14  | 84   | 22   | 52  |   | 1                               | 4.  | 1   | 286   | (0.5   | 92   | 55   |
| 20             |  |   |  |  |   |   |                                 |   | -   | 303   |  |  |  |
| MAY<br>30      | 200                                    | 30  | 52   | 17   | 18  |   | 0.6                             | 1.  | 5   | 170   | <0.5   | 44   | 21   |
| AUG<br>08      |  |   |  |  |   |   |                                 |   | _   | 305   |  |  |  |
| DAT            | RI<br>D<br>SO<br>E (M                  | DE, DI<br>IS- SC<br>LVED (N<br>G/L                                | LICA, SU<br>IS- CO<br>DLVED TU<br>IG/L<br>AS S   | DLIDS,<br>IM OF<br>DNSTI-<br>JENTS,<br>DIS-<br>BOLVED<br>MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | SOLIDS,<br>RESIDUE<br>AT 105<br>DEG. C,<br>SUS-<br>PENDED<br>(MG/L) | NI'<br>GI<br>NITI<br>TO'<br>(MC | TRO-<br>BN,<br>RATE I<br>TAL<br>G/L<br>N) | NITRO-<br>GEN,<br>NITRITE<br>TOTAL<br>(MG/L<br>AS N)  | NITRO<br>GEN,<br>NO2+NO<br>TOTAL<br>(MG/L           | GR<br>3 AMMO<br>TOT<br>(MG                     | N, ONIA ORO  | ITRO-<br>JEN,<br>JANIC<br>DTAL<br>4G/L<br>B N)                     |
| NOV 198        |  |   |  |  |   |   |                                 |   |   |   |  |  |  |
| 16<br>JAN 198  |  | 0.1   | 20   | 300  | 27  | 47  | 0                               | . 89                                      | 0.01  | 0.90  | 0.   | 75   | 0.15   |
| 31<br>MAR      |  | 0.2   | 22   | 500  | 2.2   | 17  | 0                               | . 38                                      | 0.12  | 0.50  | 10.  | 0  | 6.0  |
| 20             |  |   |  |  |   | 12  |                                 |   |   | -   | -  |  |  |
| 30             | <                                      | 0.1   | 19   | 270  |   | 4   | 0                               | . 17                                      | 0.03  | 0.20  | 0.   | 99   | 1.1  |
| 08             |  |   |  |  |   | 8   | 0                               | . 89                                      | 0.06  | <0.10   | 16.  | 0  | 1.0  |
| DAT            | GEN<br>MON:<br>ORG,<br>TO'<br>B (M     | ANIC C<br>TAL TO<br>G/L (M  | BEN,<br>DTAL I<br>MG/L (                         | GEN,<br>OTAL<br>MG/L<br>NO3)                                   | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P)       | ARSENIC<br>TOTAL<br>(UG/L<br>AS AS)                                 | REC<br>ERA<br>(UC               | IUM,<br>FAL<br>COV-<br>ABLE<br>B/L<br>BA) | BORON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS B) | CADMIU<br>TOTAL<br>RECOV<br>BRABL<br>(UG/L<br>AS CD | TOT REC REC UG                                 | M, COI<br>AL TO<br>OV- RI<br>BLE RI<br>/L (U                   | PPER,<br>DTAL<br>RCOV-<br>RABLE<br>UG/L<br>3 CU)                   |
| NOV 198        |  |   |  |  |   |   |                                 |   |   |   |  |  |  |
| 16<br>JAN 198  |  | 0.9   | 1.8  | 8.0  | 0.30  |   |                                 |   |   |   |  |  | -  |
| 31<br>MAR      | 10                                     | 6 1   | 7  | 73   | 1.70  | 2   |                                 | 100                                       | 110   |   | 2  | 9  | 20   |
| 20             |  |   |  |  |   |   |                                 |   |   | -   | -  |  |  |
| 30             |  | 2.1   | 2.3  | 10   | 0.24  | <1  |                                 | 100                                       | 40  | <   | 1  | 4  | <10  |
| 08             | 1                                      | 7   | 1.2  |  | <0.01   |   |                                 |   |   | -   | -  |  |  |
|                |  |   |  |  |   |   |                                 |   |   |   |  |  |  |

<0.01

# 50124700 RIO GUAYANILLA AT CENTRAL RUFINA, PR--Continued WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| IRON,  |          |                                    |                                    |   |                                    |                                      |   |                                    |  |  |  |
|--|----------|------------------------------------|------------------------------------|---|------------------------------------|--------------------------------------|---|------------------------------------|--|--|--|
| 16  JAN 1985  31  1800  1 290  0.2  <1 <1 50 <0.01  6 0.2  MAR  ABR  20  MAY  30  190  <1 30  <0.1  <1 <1 30 <0.01  10 0.0  AUG  08  DATE  TIME  PCB, ALDRIN, DANE, DDD, DDE, DDT, AZINON, ELDRIN TOTAL  TOT                | DATE     | TOTAL<br>RECOV-<br>ERABLE<br>(UG/L | TOTAL<br>RECOV-<br>ERABLE<br>(UG/L | NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L | TOTAL<br>RECOV-<br>ERABLE<br>(UG/L | NIUM,<br>TOTAL<br>(UG/L              | TOTAL<br>RECOV-<br>ERABLE<br>(UG/L                        | TOTAL<br>RECOV-<br>BRABLE<br>(UG/L | TOTAL (MG/L                                | TOTAL  | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
| 31 1800 1 290 0.2 <1 <1 50 <0.01 6 0.2  MAR  AR  20 0.1  MAY  30 190 <1 30 <0.1 <1 <1 30 <0.01 10 0.0  AUG  08   |          |                                    |                                    |   |                                    |                                      |   |                                    |  |  |  |
| 31 1800 1 290 0.2 <1 <1 50 <0.01 6 0.2  MAR 20 0.1  MAY 30 190 <1 30 <0.1 <1 <1 30 <0.01 10 0.0  AUG 08  |          |                                    |                                    |   |                                    |                                      |   |                                    |  |  |  |
| 20   | 31       | 1800                               | 1                                  | 290   | 0.2                                | <1                                   | (1  | 50                                 | <0.01                                      | 6  | 0.21   |
| MAY 30 190 <1 30 <0.1 <1 <1 <1 30 <0.01 10 0.0  AUG 08   |          |                                    |                                    |   | 0.1                                |                                      |   |                                    | 22   |  |  |
| AUG 1985  O8  O945   | MAY      |                                    |                                    | 7.7   |                                    | -                                    | 1,77  |                                    |  |  |  |
| O8  DATE    DI   |          | 190                                | <1                                 | 30  | <0.1                               | <1                                   | <1  | 30                                 | <0.01                                      | 10   | 0.08   |
| DATE TIME PCB, ALDRIN, DANE, DDD, DDE, DDT, AZINON, ELDRIN TOTAL DATE TOTAL TO |          |                                    |                                    |   |                                    |                                      |   |                                    |  |  |  |
| (UG/L) (UG/L) (UG/L) (UG/L) (UG/L) (UG/L) (UG/L) (UG/L)  AUG 1985  08 <0.01 <0.01 <0.01 <0.01 <0.01 0.01 0   | AUG 1985 | 094                                | 4B TOTA<br>(UG/I                   | L TOT. (UG) 1.1 <0.4                        | IN, DANE TOTA (L) (UG/1            | B, DD<br>LL TOT<br>L) (UG<br>).1 <0. | AL TOT<br>/L) (UG<br>01 <0.<br>HEPTA-<br>CHLOR<br>EPOXIDE | AL TOT /L) (UG 01 <0.              | T, AZIN AL TOT (/L) (UG 01 0  MALA- THION, | ON, ELDI AL TOTA /L) (UG,  .15 <0.0  METH- OXY- CHLOR, | L<br>L<br>L)   |
| 08 <0.01 <0.01 <0.01 <0.01 <0.01 0.01 0  |          | DALL                               |                                    |   |                                    |                                      |   |                                    |  |  |  |
| THA- METHYL METHYL LENES, PARA- TRI- PARA- POLY- PER- TOX- TOTAL THION, THION, MIREX, THION, CHLOR. THANK APHENE, TRI- DATE TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL THION  |          |                                    | <0.01                              | <0.01                                       | <0.01                              | <0.01                                | <0.01   | 0.01                               | 0.03                                       | <0.01  |  |
|  |          | DATE                               | PARA-<br>THION,<br>TOTAL           | TRI-<br>THION,<br>TOTAL                     | TOTAL                              | THION,                               | THA-<br>LENES,<br>POLY-<br>CHLOR.<br>TOTAL                | THANK                              | APHENE,<br>TOTAL                           | TRI-<br>THION  |  |

<0.01

.<0.1

<0.1

<1

<0.01

<0.01

<0.01

AUG 1985

08...

#### 50126150 RIO YAUCO ABOVE DIVERSION MONSERRATE NEAR YAUCO, PR

LOCATION.--Lat 18°02'58", long 66°50'30", Hydrologic Unit 21010004, on right bank off Highway 375, about 300 ft (91 m) upstream from diversion Monserrate, 0.1 mi (0.2 km) downstream from Quebrada de las Quebradas, 0.9 mi (1.4 km) downstream from Rio Duey, and 1.0 mi (1.6 km) northeast of Yauco Plaza.

DRAINAGE AREA .-- 27.2 sq mi (70.4 sq km).

TOTAL 7489.6

MEAN

20.5

MAX 744

CAL YR 1984

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD .-- November 1976 to Jan. 23, 1985 (discontinued).

GAGE .-- Water-stage recorder. Rlevation of gage is 115 ft (35 m), from topographic map.

REMARKS.--Estimated daily discharges: Oct. 16, 17, 20, and 21. Records poor. Flow affected by numerous diversions into and out of the basin.

AVERAGE DISCHARGE.--7 years (1978-84), 21.8 cu ft/s (0.617 cu m/s), 10.88 in /yr (276 mm/yr), 15,790 acre-ft/yr (19.5 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 floodmark, from rating curve extended above 300 cu ft/s (8.50 cu m/s) on basis of step-backwater analysis; minimum daily discharge, 0.2 cu ft/s (0.006 cu m/s), June 30, 1978.

EXTREMES FOR CURRENT PERIOD .-- Peak discharges greater than base discharge of 1,000 cu ft/s (28.3 cu m/s) and maximum (\*):

Discharge Gage height
Time (cu ft/s) (cu m/s) (ft) (m)

Nov. 3 1015 \*2.020 57.2 \*5.30 1.615

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

Minimum daily discharge, 4.5 cu ft/s (0.13 cu m/s), Oct. 2.

MRAN VALUES DAY OCT NOV DRC AUG SEP JAN FKR MAR APR MAY JUN JUL 20 4.5 29 18 21 3 744 17 7.1 8.5 290 16 6.9 15 6 11 138 15 6.7 6.8 7 121 15 6.7 10 28 99 24 11 11 92 21 6.6 6.3 87 6.7 13 4.7 81 14 8.1 73 12 6.3 15 13 65 12 6.0 110 17 45 53 13 5.5 18 56 47 12 5.6 43 19 16 12 5.5 12 20 61 5.5 21 97 37 11 5.5 22 19 34 11 5.5 23 33 5.5 9.7 10 25 16 28 9.9 26 7.9 28 9.4 27 27 9.1 11 27 11 8.9 29 5.6 25 8.5 30 17 23 7.8 31 62 7.6 TOTAL 2830 768.4 445.9 MRAN 24.8 94.3 14.4 ---744 110 49 MAX 23 7.6 MIN 4.5 CFSM .91 3.47 .53 TN. 1.05 3.87 . 61 AC-FT 1520 5610 884

IN.

10.24

AC-FT

14860

249

# 50126150 RIO YAUCO ABOVE DIVERSION MONSERRATE NEAR YAUCO, PR--Continued

### WATER QUALITY RECORDS

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

| DATE   | TIME   | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE    | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|--------|--------|---------------------------------------|--------------------------------------|-----------------------------|---------|------|---------------------------------------|--------------------------------------|-----------------------------|
| DEC, 0 | 6 0915 | 14                                    | 440                                  | 23.0                        | JAN, 23 | 0825 | 5.5                                   | 430                                  | 21.0                        |

#### 50128000 RTO 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 January 1985 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 15.14 ft (4.615 m) above mean sea level, datum of 1929. Prior to Oct. 1, 1978; at same site at datum 4.0 ft (1.219 m) higher.

REMARKS. -- No estimated daily discharges during water year. 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. -- 7 years (1978-84), 19.5 cu ft/s (0.552 cu m/s), 5.82 in/yr (148 mm/yr), 14,130 acre-ft/yr (17.4 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 CURRENT PERIOD .-- Peak discharges greater than base discharge of 1,000 cu ft/s (28.3 cu m/s) and maximum (\*):

SEP

|        |      | Disch     | arge     | Gage h | eight |
|--------|------|-----------|----------|--------|-------|
| Date   | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   |
| lov. 3 | 2115 | *3.960    | 112      | 13.88  | 4.231 |

Minimum discharge, 2.1 cu ft/s (0.061 cu m/s), Jan. 21, 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 VALUES DAY OCT NOV DRC JAN FRR MAR APR MAY JUN JUL AUG 136 13 34 23 1720 3 40 22 6.2 36 1330 19 5.5 13 5 515 18 5.2 6 28 268 17 7 17 160 16 4.7

87 31 7.3 TOTAL 1571 5564 535.4 MRAN 50.7 185 17.3 ---

1720 7.1 MIN 16 11 CFSM 4.07 .38 IN. 1.28 4.55 44 AC-FT 3120 11040 1060 ---

---

107

217

MAX

IN. 11.25 AC-FT 27280 CAL YR 1984 TOTAL 13755.68 MEAN 37.6 MAX 1720 MIN .20

## 50128000 RIO YAUCO NEAR YAUCO, PR--Continued

## WATER QUALITY RECORDS

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

# WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE   | TIME   | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE    | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|--------|--------|---------------------------------------|--------------------------------------|-----------------------------|---------|------|---------------------------------------|--------------------------------------|-----------------------------|
| DEC, O | 8 1210 | 17                                    | 690                                  | 25.5                        | JAN, 22 | 1032 | 2.2                                   | 768                                  | 23.5                        |

251

### 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 Guanica and 1.2 mi (1.9 km) northeast of Ensenada.

DRAINAGE AREA. -- Indeterminate.

K = non-ideal count

PERIOD OF RECORD .-- Water years 1975 to current year.

| DATE           | TIME                                   | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS)                  | CON-<br>DUCT-                               | PH<br>(STAN<br>ARD                           | ATU   | RE I  | ID-<br>ry s   | YGEN, (I<br>DIS- (OLVED SA                               | DIS- DE<br>OLVED C<br>PER- I<br>CENT (<br>ATUR- LE | MAND, F<br>HEM- F<br>CAL O<br>HIGH U<br>VKL) (C | OCLI-<br>ORM,<br>ECAL,<br>17<br>M-MF<br>OCLS./ | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) |
|----------------|--|--|---|--|---|---|---|--|--|---|--|--|
| NOV 1984       |  |  |   |  |   |   |   |  |  |   |  |  |
| 09             | 1425                                   | 371  | 39  | 0 7.   | 90 2  | 5.0 1   | 7   | 6.3  | 77   | 18  | K1300  | K1300  |
| JAN 1985<br>31 | 1245                                   | 0.0  | 1400  | 0 7.   | 90 2  | 5.5   | 3.5   | 5.0  | 64   | 100   | 2800   | 10   |
| MAR            |  |  |   |  | 20 2  | 5.5   | 3.3   | 5.0  |  | 7   |  | 10   |
| 20             | 1210                                   | 0.0  | 39  | 0 8.   | 00 2  | 6.0   | 9.5   | 6.0  | 74   | 15  | K1300  | K1100  |
| 30             | 1230                                   | 0.0  | 63  | 2 8.   | 00 2  | 8.5   | 5.0   | 6.1  | 78   | <10   | K1700  | 950  |
| AUG<br>08      | 1200                                   | 0.0  | 1450  | 0 7.   | 80 3  | 2.0   | 5.7   | 4.7  | 67   | 69  | K610   | 320  |
|                | 1200                                   | 0.0  | 1450  | • ••   | 50 5  | 2.0   |   | 4  |  | 0.5   | AUTO   | 320  |
| DATE           | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | HARD-<br>NESS<br>NONCARB<br>WATER<br>TOT FLD<br>MG/L AS<br>CACO3 | CALCIUI<br>DIS-<br>SOLVEI<br>(MG/L<br>AS CA | DIS<br>SOLV                                  | M, SODI<br>- DIS<br>ED SOLV<br>L (MG              | UM, /<br>- SOI<br>BD TI<br>/L RAT             | AD- : RP- : ION : RON : | OTAS- LIN<br>SIUM, WA<br>DIS- TO<br>OLVED FI<br>MG/L MG/ | L AS (   | LFIDE D<br>OTAL S<br>MG/L (                     | LFATE<br>IS-<br>OLVED<br>MG/L<br>SO4)          | CHLO-<br>RIDB,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)                |
| NOV 1004       |  |  |   |  | -,  | ,   |   |  |  |   |  |  |
| NOV 1984<br>09 | 150                                    | 1  | 30  | 18   | 21  |   | 0.8   | 2.7  | 148  |   | 20   | 22   |
| JAN 1985       | 1500                                   | 1200   | 120   | 290  | 2100  |   | 4   | 62   | 302  | 0.5   | 600  | 3800   |
| MAR            | 1300                                   | 1200   | 120   | 290  | 2100  |   |   | 0.2  |  | 0.5   | 000  | 3800   |
| 20             |  |  |   |  |   |   |   |  | 148  |   |  |  |
| 30             | 220                                    |  | 42  | 27   | 53  |   | 2   | 2.8  | 232  | <0.5  | 36   | 52   |
| AUG<br>08      |  |  |   |  |   |   |   |  | 259  |   |  | 4600   |
| DAT:           | RI<br>D<br>SO<br>B (M<br>AS            | DE, DI<br>IS- SC<br>LVED (N<br>IG/L /                            | LICA, SUIS- COOLVED TUMG/L AS SUIO2)        | ONSTI-<br>JENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | AT 105<br>DEG. C,<br>SUS-<br>PENDED<br>(MG/L) | NITRO-<br>GEN,<br>NITRATI<br>TOTAL<br>(MG/L<br>AS N)  | GEN, NITRITE TOTAL (MG/L AS N)                           | GEN,<br>NO2+NO<br>TOTAL<br>(MG/L<br>AS N)          | GEN,<br>3 AMMONI<br>TOTAL<br>(MG/L<br>AS N)     | GI<br>A ORGA<br>TOT<br>(MC<br>AS               | TAL<br>3/L<br>N)   |
| 09<br>JAN 198  |  | 0.1  | 22  | 220  | 225   | 33  | 0.77  | 0.03   | 0.80   | 0.15  |  | 1.0  |
| 31<br>MAR      |  | 0.4  | 26  | 7200   |   | 7   | 0.27  | 0.03   | 0.30   | 0.21  | (  | .49  |
| 20             |  |  |   |  |   | 17  |   |  | . 4.   | -   | - 5  | 140  |
| MAY<br>30      |  | 0.2  | 25  | 380  |   | 32  | 0.67  | 0.03   | 0.70   | 0.06  |  | .24  |
| AUG<br>08      |  |  |   |  |   |   |   | 0.01   |  | 0.07  |  | .43  |
| 00             |  |  |   |  |   | 30  | 0.09  | 0.01   | 0.10   | 0.07  |  | 7.43   |
| DATI           | GEN<br>MON<br>ORG<br>TO                | ANIC C<br>TAL TO<br>G/L (N                                       | GEN,<br>OTAL 1<br>MG/L (                    | IITRO-<br>GEN, I<br>OTAL<br>MG/L<br>NO3)     | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P)       | ARSENIC<br>TOTAL<br>(UG/L<br>AS AS)           | BARIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS BA)   | TOTAL RECOV- RRABLE (UG/L                                | TOTAL<br>RECOV-                                    | TOTAL RECOVE REABLE (UG/L                       | R RRA  | COV-<br>ABLE   |
| NOV 1984       |  |  |   |  |   |   |   |  |  |   |  |  |
| 09             |  | 1.2  | 2.0   | 8.9  | 0.20  |   |   |  | -  | -   | -  |  |
| JAN 1988       |  | 0.7  | 1.0   | 4.4  | 0.23  | 2   | 100   | 1100   |  | 1   | 6  | 20   |
| MAR 20         |  |  |   |  |   |   |   |  |  |   |  | 1  |
| MAY            |  |  |   |  |   |   |   |  |  |   |  |  |
| 30<br>AUG      |  | 0.3  | 1.0   | 4.4  | 0.14  | <1  | 100   | 100  | <.   | 1 2:  | 4  | <10  |
| 08             |  | 0.5  | 0.6   | 2.7  | 0.09  |   |   | -  | -  | -   | -  |  |

<1

<0.01

<0.1

# 50129700 RIO LOCO AT GUANICA, PR--Continued

### WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB)            | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN)  | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG)  | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE)   | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG)       | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AB CN)       | PHENOLS<br>TOTAL<br>(UG/L)   | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|---|--|--|--|--|---|---|---|--|--|
|   |  |  |  |  |   |   |   |  |  |
|   |  |  |  |  |   |   |   |  |  |
| 1400  | 3  | 230  | 0.2  | 1  |   | 30  | 0.01                                      |  | 0.28   |
| 1400  |  | 230  | 0.2  | •  |   | 30  | 0.01                                      |  | 0.20   |
|   |  |  | <0.1   |  |   |   |   |  |  |
|   |  |  |  |  |   | 1.0   | 12.22                                     |  |  |
| 1600  | 10   | 100  | <0.1   | <1   | <1  | 30  | <0.01                                     | 8  | 0.03   |
|   |  |  |  |  |   |   |   |  |  |
| 120   | IB TOTA (UG/I  | L TOT. (UG   | IN, DANE AL TOTA (L) (UG/1   | L TOT  (UG   | AL TOT. /L) (UG 01 <0.  HEPTA- CHLOR EPOXIDE                  | AL TOT /L) (UG 01 <0.                                 | T, AZINAL TOT. /L) (UG 01 <0 MALA- THION, | ON, ELDE AL TOTA /L) (UG/ .01 <0.0  METH- OXY- CHLOR,  | L)   |
| DATE  |  |  |  |  |   |   |   |  |  |
| 1005  |  | 3230   | 1236.36  | ,  |   | 12502   | 0.555,55                                  | V4   |  |
|   | <0.01  | <0.01  | <0.01  | <0.01  | <0.01   | (0.01   | <0.01                                     | <0.01  |  |
|   |  |  |  |  |   |   |   |  |  |
| DATE  | METHYL<br>PARA-<br>THION,<br>TOTAL<br>(UG/L)                     | METHYL<br>TRI-<br>THION,<br>TOTAL<br>(UG/L)  | MIRKX,<br>TOTAL<br>(UG/L)  | PARA-<br>THION,<br>TOTAL<br>(UG/L)   | NAPH-<br>THA-<br>LENES,<br>POLY-<br>CHLOR.<br>TOTAL<br>(UG/L) | PBR-<br>THANB<br>TOTAL                                | TOX-<br>APHENE,<br>TOTAL                  | TOTAL TRI- THION (UG/L)  |  |
|   | TOTAL RECOV- RECOV- REABLE (UG/L AS FE)  1400 1600 TIM 1200 DATE | TOTAL RECOV- RECOV- RECOV- REABLE (UG/L AS PE) AS PB)  1400 3 1600 10 1600 10 1200 (UG/L UG/L) 1200 (COMPANY TOTAL (UG/L) 1985 3 (0.01 | IRON, LRAD, NESE, TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL RECOV— REABLE (UG/L (UG/L (UG/L (UG/L (UG/L (UG/L) (U | IRON, LEAD, NESE, MERCURY TOTAL TOTAL TOTAL TOTAL RECOV- RECOV- RECOV- ERABLE ERABLE ERABLE ERABLE (UG/L (UG | IRON,   | IRON,   | TRON,                                     | TRON, LEAD, NEBE, MERCURY TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL RECOV- CYANIDE REABLE RABLE RABLE RABLE RABLE RABLE TOTAL REABLE REABLE TOTAL REABLE REABLE TOTAL (UG/L) (UG/L) (UG/L) (UG/L) (UG/L) (UG/L) (UG/L) (UG/L) (MG/L) (MG/L) (MG/L) (MG/L) (MG/L) (MG/L) AS FE) AS AG AG AS ZN AS CN AS CN AS FE AS AG AS ZN AS CN AS CN AS CN AS FE AS AG AS ZN AS CN AS | TRON,  |

<0.01

<0.01

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<0.1

AUG 1985 08...

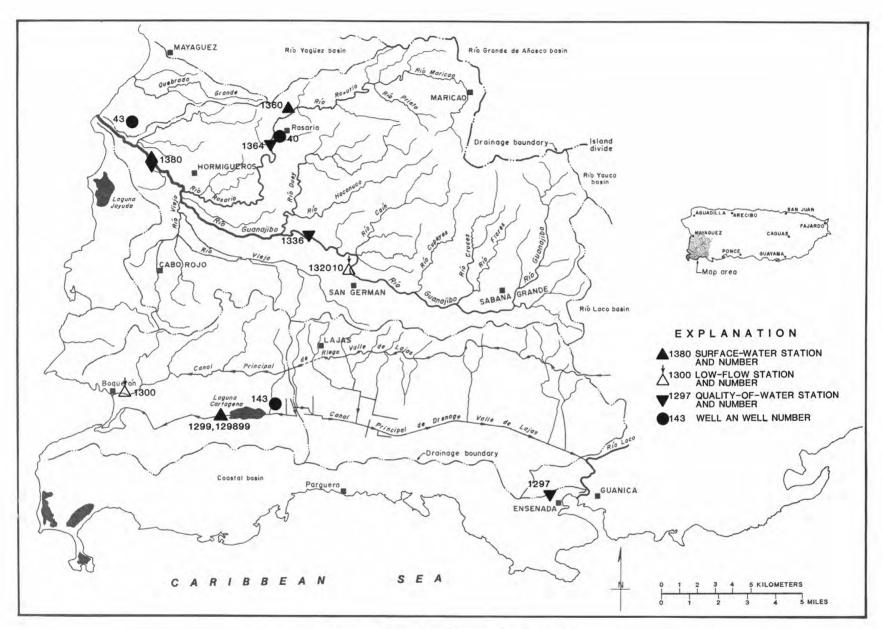


Figure 25.--Río Guanajibo basin.

### LAGUNA CARTAGENA BASIN

### 50129899 LAGUNA CARTAGENA NEAR BOQUERON, PR

LOCATION.--Lat 18°00'52", long 67°06'33", llydrologic Unit 21010004, on right bank, 0.6 mi (1.0 km) south of Hacienda Desengano, and 4.3 mi (6.9 km) southeast of Boqueron.

DRAINAGE AREA. -- Indeterminate.

### LAKE LEVEL RECORDS

PERIOD OF RECORD .-- June 1984 to current year.

GAGE .-- Water-stage recorder. Blevation of gage is 36 ft (11 m), from topographic map.

REMARKS .-- Record lost: Oct. 17-22. Records fair.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation, 15.39 ft (4.691 m) Nov. 3, 1985; minimum elevation, 7.43 ft (2.265 m) July 29, 1985.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 15.39 ft (4.691 m), Nov. 3; minimum elevation, 7.43 ft (2.265 m) July 29.

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

|      |      |       |      |      | INSTANTANE | ous obser | VATIONS A | AT 2400 |      |      |      |       |
|------|------|-------|------|------|------------|-----------|-----------|---------|------|------|------|-------|
| DAY  | OCT  | NOV   | DEC  | JAN  | FEB        | MAR       | APR       | MAY     | JUN  | JUL  | AUG  | SEP   |
| 1    | 8.63 | 8.96  | 8.78 | 8.43 | 8.35       | 8.19      | 7.96      | 7.53    | 8.41 | 7.47 | 7.48 | 8.23  |
| 2    | 8.59 | 8.88  | 8.72 | 8.43 | 8.34       | 8.19      | 7.95      | 7.50    | 8.40 | 7.48 | 7.48 | 8.17  |
| 3    | 8.63 | 15.06 | 8.68 | 8.43 | 8.33       | 8.19      | 7.98      | 7.49    | 8.36 | 7.48 | 7.48 | 8.13  |
| 4    | 8.61 | 13.30 | 8.64 | 8.43 | 8.34       | 8.18      | 8.03      | 7.49    | 8.35 | 7.48 | 7.48 | 8.08  |
| 5    | 8.64 | 12.12 | 8.60 | 8.43 | 8.33       | 8.17      | 8.04      | 7.49    | 8.31 | 7.48 | 7.76 | 9.14  |
| 6    | 8.64 | 11.43 | 8.56 | 8.42 | 8.30       | 8.17      | 8.02      | 7.49    | 8.33 | 7.48 | 8.01 | 9.33  |
| 7    | 8.66 | 10.92 | 8.56 | 8.41 | 8.28       | 8.16      | 8.01      | 7.49    | 8.29 | 7.48 | 8.15 | 9.17  |
| 8    | 8.66 | 10.43 | 8.78 | 8.40 | 8.26       | 8.15      | 8.01      | 7.49    | 8.28 | 7.48 | 8.10 | 8.98  |
| 9    | 8.66 | 9.96  | 9.22 | 8.40 | 8.24       | 8.16      | 7.99      | 7.49    | 8.23 | 7.48 | 8.02 | 8.79  |
| 10   | 8.66 | 9.61  | 9.22 | 8.41 | 8.22       | 8.14      | 7.98      | 7.49    | 8.19 | 7.48 | 7.91 | 8.71  |
| 11   | 8.64 | 9.35  | 9.11 | 8.41 | 8.26       | 8.13      | 7.93      | 7.49    | 8.15 | 7.48 | 7.77 | 9.16  |
| 12   | 8.61 | 9.17  | 8.99 | 8.41 | 8.25       | 8.12      | 7.81      | 7.49    | 8.12 | 7.48 | 7.77 | 9.54  |
| 13   | 8.56 | 9.03  | 8.86 | 8.41 | 8.25       | 8.09      | 7.68      | 7.49    | 8.08 | 7.48 | 7.90 | 10.45 |
| 14   | 8.53 | 8.92  | 8.76 | 8.41 | 8.25       | 8.07      | 7.61      | 7.49    | 8.05 | 7.48 | 7.96 | 10.42 |
| 15   | 8.50 | 8.84  | 8.69 | 8.40 | 8.25       | 8.05      | 7.56      | 7.52    | 8.00 | 7.48 | 7.93 | 10.23 |
| 16   | 8.48 | 8.75  | 8.64 | 8.40 | 8.24       | 8.03      | 7.56      | 8.38    | 7.92 | 7.48 | 7.88 | 10.00 |
| 17   | A    | 8.70  | 8.60 | 8.39 | 8.23       | 8.00      | 7.53      | 9.90    | 7.85 | 7.48 | 7.83 | 9.83  |
| 18   |      | 8.66  | 8.56 | 8.39 | 8.24       | 8.03      | 7.54      | 10.15   | 7.80 | 7.48 | 7.79 | 9.59  |
| 19   |      | 8.63  | 8.55 | 8.38 | 8.24       | 8.02      | 7.51      | 10.12   | 7.71 | 7.48 | 7.67 | 9.41  |
| 20   | A    | 8.60  | 8.52 | 8.39 | 8.23       | 8.04      | 7.49      | 9.91    | 7.64 | 7.47 | 7.61 | 9.27  |
| 21   | A    | 8.57  | 8.49 | 8.40 | 8.22       | 8.03      | 7.49      | 9.72    | 7.58 | 7.47 | 7.57 | 9.15  |
| 22   | A    | 8.54  | 8.48 | 8.39 | 8.21       | 8.02      | 7.51      | 9.51    | 7.56 | 7.47 | 7.52 | 9.02  |
| 23   | 9.31 | 8.52  | 8.48 | 8.39 | 8.22       | 7.95      | 7.54      | 9.34    | 7.52 | 7.47 | 7.48 | 8.63  |
| 24   | 9.11 | 8.51  | 8.48 | 8.38 | 8.21       | 7.89      | 7.59      | 9.18    | 7.49 | 7.47 | 7.47 | 8.78  |
| 25   | 9.02 | 8.56  | 8.48 | 8.37 | 8.21       | 7.85      | 7.65      | 9.05    | 7.49 | 7.47 | 7.47 | 8.79  |
| 26   | 8.93 | 8.86  | 8.47 | 8.36 | 8.21       | 7.91      | 7.66      | 8.92    | 7.49 | 7.47 | 7.51 | 8.69  |
| 27   | 9.59 | 9.09  | 8.45 | 8.37 | 8.19       | 7.86      | 7.62      | 8.81    | 7.49 | 7.48 | 7.60 | 8.65  |
| 28   | 9.87 | 9.07  | 8.44 | 8.37 | 8.21       | 7.84      | 7.60      | 8.71    | 7.49 | 7.47 | 8.48 | 8.60  |
| 29   | 9.68 | 8.97  | 8.43 | 8.37 |            | 7.81      | 7.59      | 8.62    | 7.49 | 7.48 | 8.50 | 8.56  |
| 30   | 9.35 | 8.86  | 8.43 | 8.36 |            | 7.77      | 7.56      | 8.54    | 7.49 | 7.48 | 8.41 | 8.53  |
| 31   | 9.12 |       | 8.43 | 8.36 |            | 8.04      |           | 8.46    |      | 7.48 | 8.35 |       |
| MEAN |      | 9.56  | 8.65 | 8.40 | 8.25       | 8.04      | 7.73      | 8.38    | 7.92 | 7.48 | 7.82 | 9.07  |
| MAX  |      | 15.06 | 9.22 | 8.43 | 8.35       | 8.19      | 8.04      | 10.15   | 8.41 | 7.48 | 8.50 | 10.45 |
| MIN  |      | 8.51  | 8.43 | 8.36 | 8.19       | 7.77      | 7.49      | 7.49    | 7.49 | 7.47 | 7.47 | 8.08  |

A No gage-height record.

257 50129900 LAGUNA CARTAGENA OUTFLOW NEAR BOQUERON, PR

LOCATION.--Lat 18°00'52", long 67°06'34", Hydrologic Unit 21010004, on right bank, 0.6 mi (1.0 km) south of Hacienda Desengano, and 4.3 mi (6.9 km) southeast of Boqueron.

DRAINAGE AREA . -- Indeterminate.

#### WATER-DISCHARGE RECORDS

PERIOD OF RECORD .-- June 1984 to current year.

GAGE .-- Water-stage recorder. Elevation of gage is 36 ft (11 m), from topographic map.

REMARKS .-- Estimated daily discharges: Oct. 17 - 22. Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,290 cu ft/s (36.5 cu m/s), Nov. 3, 1984, gage height, 15.39 ft (4.691 m), from rating curve extended above 50 cu ft/s (1.42 cu m/s) on basis of step-backwater analysis; no flow part or all of each day Mar 16-30, Apr. 12 to May 15, June 20 to Aug. 27, Sept. 3-4, 1985.

EXTREMES FOR CURRENT PERIOD. -- Peak discharges greater than base discharge of 60 cu ft/s (1.70 cu m/s) and maximum (\*):

Discharge Cage height Date Time (cu ft/s) (cu m/s) (ft) \*15.39 4.691 Nov. 3 1645 \*1.290 36.5

Minimum discharge, no flow part or all of each day Mar. 16-30, Apr. 12 to May 15, June 20 to Aug. 27, Sept. 3-4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 MRAN VALUES DAY OCT NOV DRC JAN FKR MAR APR MAY JUN JUL. AUG SKP 8.0 .00 2.9 .00 .00 . 19 11 . 38 4.6 9.0 6.9 2.2 .05 .00 2.7 .00 .00 .01 4.9 636 757 6.2 2.6 3 2.2 1.3 . 29 .08 .00 00 .00 .00 .00 .00 .00 2.2 .00 1.4 . 28 . 16 2.1 4.8 332 1.4 . 24 .20 .00 2.3 .00 .00 4.8 6 174 .00 5.0 4.5 2.1 1.1 22 . 20 .00 2.2 . 00 18 4.2 15 .92 5.2 106 2.0 . 21 .19 .00 2.1 .00 .13 5.4 1.8 .79 .00 .00 .18 5.4 13 1.7 .70 .00 1.8 .00 .02 6.1 3.4 10 5.3 29 16 1.7 . 58 . 16 . 14 .00 1.5 . 00 .00 11 5.2 20 14 1.8 . 58 .12 .07 .00 1.3 .00 .00 5.1 12 4.9 16 12 1.7 .68 . 10 .00 .00 1.1 .00 .00 21 13 4.3 13 9.4 1.7 . 73 .05 .00 .00 .94 .00 .00 35 .81 .00 .00 56 14 3.9 11 7.6 1.7 . 73 . 03 .00 .00 .00 49 1.7 .01 .00 .00 .65 .00 16 .00 .00 41 3.2 5.4 1.5 .70 .00 .00 . 45 8.1 46 99 .23 .00 .00 7.1 4.8 1.5 .65 .00 .00 17 18 580 .00 35 .00 .00 27 .65 .00 19 220 5.9 . 00 .04 .00 .00 21 4.0 1.4 . 70 .00 43 20 90 5.3 3.7 1.5 .71 .00 37 .00 .00 .00 17 .00 21 50 4.9 3.3 .00 .00 30 .00 .00 .00 14 .65 4.5 3.1 1.8 .59 22 30 .00 .00 24 .00 .00 .00 11 23 18 .00 .00 .00 .00 6.2 .00 19 . 51 .00 .00 .00 5.9 .00 .00 .00 25 11 4.1 2.9 1.4 . 49 .00 .00 13 .00 .00 7.5 2.9 26 10 5.3 1.4 .49 .00 .00 10 .00 .00 .00 6.3 27 12 12 2.8 1.5 .43 .00 .00 8.4 .00 .00 .00 5.5 28 30 12 2.5 1.5 .41 .00 .00 6.7 .00 .00 . 38 4.9 29 30 11 2.4 1.5 ---.00 .00 5.4 .00 .00 1.8 4.2 30 21 2.3 .00 .00 3.8 9.4 1.4 ---.00 .00 4.3 1.1 31 2.3 1.4 .09 .00 .60 3.4 TOTAL 1306.5 2340.7 176.4 52.8 22.10 2.87 1.50 277.66 28.13 .00 4.17 432.90 .09 MRAN 42.1 78.0 5.69 1.70 .79 .05 8.96 .94 .00 .13 14.4 580 757 2.9 1.8 MAX 2.2 1.5 .00 16 .38 . 20 43 MIN 3.2 4.1 2.3 .00 .00 .00 .00 .00 .00 CESM .00 .00 .00 -00 - 00 . 00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 AC-FT 2590 4640 350 105 5.7 3.0 551 56 .00 8.3 859 44 WTR YR 1985 9210 TOTAL 4645.73 MEAN 12.7 MAX 757 MIN CFSM .00 IN. .00 AC-FT .00

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LAGUNA CARTAGENA BASIN

# 50129900 LAGUNA CARTAGENA OUTFLOW NEAR BOQUERON, PR--Continued

### WATER QUALITY RECORDS

PERIOD OF RECORD. -- WATER YEARS AUGUST 1984 TO CURRENT YEAR

| DATE   | TIME   | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE    | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|--------|--------|---------------------------------------|--------------------------------------|-----------------------------|---------|------|---------------------------------------|--------------------------------------|-----------------------------|
| FRB, 2 | 2 1130 | 0.6                                   | 603                                  | 22.0                        | SEP, 10 | 1250 | 3.4                                   | 969                                  | 25.0                        |
| MAR. 0 | 4 1553 | 0.2                                   | 760                                  | 23.5                        |         |      |                                       |                                      |                             |

50133600 RIO QUANAJIBO NEAR SAN GERMAN, PR 259

### 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 German. DRAINAGE AREA.--45.5 sq mi (117.8 sq km).

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

| DATE           | TIME                                   | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS)                  | COI<br>DUG<br>B ANG                           | FIC<br>N-<br>CT-<br>CB                                  | PH<br>(STAND-<br>ARD<br>UNITS)   | TEMP                                    | TRE   | TUR-<br>BID-<br>ITY<br>(NTU)            | OXYGEN<br>DIS-<br>SOLVI<br>(MG/I                 | BO (P)  | GEN,<br>IS-<br>LVED<br>ER-<br>ENT<br>TUR-<br>ION) | OXYGEN<br>DEMAND,<br>CHEM-<br>ICAL<br>(HIGH<br>LEVEL)<br>(MG/L) | COL<br>FOR<br>FEC<br>0.7<br>UM-<br>(COL<br>100  | M,<br>AL,<br>MF<br>S./                | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) |
|----------------|--|--|---|---|--|---|---|---|--|---|---|---|---|---------------------------------------|--|
| NOV 1984       |  |  |   |   |  |   |   |   |  |   |   |   |   |                                       |  |
| 09<br>JAN 1985 | 0925                                   | 106  |   | 473   | 8.10   | 2                                       | 5.0   | 2.0                                     | 6  | .6  | 81  | 18  | 27  | 000                                   |  |
| 31             | 1700                                   | 9  |   | 622   | 7.80   | 2                                       | 4.0   | 1.0                                     | 1.   | . 3   | 15  | 38  | K120  | 000                                   | K10000   |
| 21             | 0900                                   | 13   |   | 602   | 7.70   | 2                                       | 4.0   | 1.0                                     | 3.   | 4   | 40  | 14  | 31  | 000                                   | 2100   |
| MAY<br>31      | 1525                                   | 23   |   | 540   | 8.20   | 3                                       | 0.0   | 0.7                                     | 7  | 8   | 103   | <10   | K   | 840                                   | K120   |
| 29             | 1220                                   | 25   |   | 456   | 7.90   | 2                                       | 8.5   | 4.0                                     | 6.   | 7   | 86  | 13  | K1  | 200                                   | 200  |
| DATE           | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | HARD-<br>NESS<br>NONCARE<br>WATER<br>TOT FLI<br>MG/L AS<br>CACO3 | DIS<br>SOI<br>S (MC                           | CIUM<br>3-<br>LVED<br>3/L<br>CA)                        | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG)   | SODI<br>DIS<br>SOLV<br>(MG              | UM,<br>I- S<br>IRD  | BODIUM<br>AD-<br>BORP-<br>TION<br>RATIO | POTAS<br>SIUN<br>DIS-<br>SOLVE<br>(MG/I<br>AS K) | H LINE<br>H, WA'<br>TO'<br>KD FII                     | KA-<br>ITY<br>FER<br>FAL<br>ELD<br>L AS<br>CO3    | SULFIDE<br>TOTAL<br>(MG/L<br>AS S)                              | SULF<br>DIS<br>SOL<br>(MG                       | -<br>VBD<br>/L                        | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)                |
| NOV 1984       |  |  |   |   |  |   |   |   |  |   |   |   |   |                                       |  |
| 09<br>JAN 1985 | 230                                    | 10   | 24  | 1   | 41   | 12                                      |   | 0.3                                     | 1.5  |   | 219   |   | 1   | 9                                     | 14   |
| 31<br>MAR      | 270                                    | -  | - 29  |   | 49   | 34                                      |   | 0.9                                     | 6.7  |   | 278   | <0.5  | 3   | 6                                     | 31   |
| 21             |  |  |   |   |  |   |   |   |  | -   | 254   |   |   |                                       |  |
| MAY<br>31      | 250                                    | 13   | 27  | ,   | 45   | 19                                      |   | 0.5                                     | 2.2  |   | 240   | <0.5  | 2   | 3                                     | 21   |
| AUG 29         |  |  |   |   |  |   |   |   |  | _   | 192   |   |   |                                       |  |
| DAT            | RII<br>Di<br>SOI<br>E (MC              | DE, DE, DE S<br>IS- S<br>LVED (<br>G/L                           | LICA,<br>DIS-<br>OLVED<br>MG/L<br>AS<br>DIO2) | SOLII<br>SUM C<br>CONST<br>TUENT<br>DIS<br>SOLV<br>(MG/ | OF SOLUTION OF SOL | IDS,<br>IS-<br>LVED<br>ONS<br>ER<br>AY) | SOLIDS<br>RESIDU<br>AT 108<br>DEG. C<br>SUS-<br>PENDEI<br>(MG/I | JE NI<br>5 G<br>C, NIT<br>TO            | EN,<br>RATE N                                    | NITRO-<br>GEN,<br>ITRITE<br>TOTAL<br>(MG/L<br>AS N)   |   | N, G<br>NO3 AMM<br>TAL TO                                       | TRO-<br>EN,<br>ONIA<br>TAL<br>G/L<br>N)         | NITE<br>GEN<br>ORGAN<br>TOTA<br>(MG,  | NIC<br>AL<br>/L  |
| NOV 198<br>09  |  | 0.1  | 33  | 2   | 80 7   | 9                                       | <1  | 0                                       | . 87   | 0.03  | 0.  | 90 0  | .47   | 0.                                    | .83  |
| JAN 198<br>31  |  | 0.6  | 32  | 3   | 80   |   | 4   |   |  | 0.01  | <0.   | 10 2  | .30   | 1.                                    | . 5  |
| MAR 21         |  |  | -   |   |  |   | 6   |   |  | 7.57  |   |   |   |                                       |  |
| MAY            |  |  |   |   |  |   |   |   |  | -   |   |   |   |                                       |  |
| 31<br>AUG      | <(                                     | 0.1  | 31  | 3   | 110 2  | 0                                       | 8   | 0                                       | . 35   | 0.15  | 0.  |   | . 28  |                                       | . 12   |
| 29             |  |  |   |   |  | 77                                      | 2   | 0                                       | .66  | 0.14  | 0.  | 80 0  | .34   | 0.                                    | . 46   |
| DAT            | GEN<br>MON I<br>ORGA<br>TOT            | ANIC<br>PAL T  | ITRO-<br>GEN,<br>OTAL<br>MG/L<br>S N)         | NITR<br>GEN<br>TOTA<br>(MG/                             | L TO   | OS-<br>RUS,<br>TAL<br>G/L<br>P)         | ARSENI<br>TOTAL<br>(UG/L<br>AS AS                               | C REG                                   | TAL<br>COV-<br>ABLE<br>G/L                       | BORON,<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS B) | ERA<br>(UC  | ILUM MI<br>PAL TO<br>POV- RE<br>BLE ER                          | RO-<br>UM,<br>TAL<br>COV-<br>ABLE<br>G/L<br>CR) | COPPE<br>TOTA<br>RECO<br>BRAE<br>(UG/ | AL<br>OV-<br>BLE<br>'L   |
| NOV 1984       | 4                                      |  |   |   |  |   |   |   |  |   |   |   |   |                                       |  |
| 09<br>JAN 198  | 1                                      | 1.3  | 2.2   | 9.  | 7 0  | . 19                                    | -   | -                                       |  |   |   |   |   |                                       |  |
| 31             |  | 3.8  | 77  |   | 3  | . 20                                    |   | 1                                       | 100  | 190   |   | 1   | 8   |                                       | 10   |
| MAR<br>21      |  |  |   |   |  |   | -   | -                                       |  |   |   |   |   |                                       |  |
| MAY<br>31      |  | 0.4  | 0.9   | 4.  | 0 0  | . 32                                    |   | 1                                       | 100  | 100   |   | <1  | 9   | (                                     | 10   |
| AUG<br>29      |  | .8   | 1.6   | 7.  | 1 0  | . 46                                    |   | _                                       |  |   |   |   |   |                                       |  |
|                | on-ideal                               |  |   |   | ă.   |   |   |   |  |   |   |   |   |                                       |  |

260 50133600 RIO

RIO GUANAJIBO BASIN

50133600 RIO GUANAJIBO NEAR SAN GERMAN, PR--Continued

WATER QUALITY DATA, WATER YEARS OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| NOV 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 09<br>JAN 1985 |   |   |   |   |  |   |   |                                     |                            |  |
| 31<br>MAR      | 210   | 4   | 370   | <0.1  | <1   | <1  | 10  | <0.01                               | 4                          | 0.1  |
| 21<br>MAY      |   |   |   | 0.1   |  |   |   | 1-                                  |                            | 2 - 25   |
| 31             | 100   | 2   | 120   | <0.1  | <1   | <1  |   | <0.01                               | 10                         | 0.04   |
| 29             |   |   |   |   |  |   |   |                                     |                            |  |

#### 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. Blevation of gage is 230 ft (70 m), from topographic map.

REMARKS .-- Estimated daily discharges: Nov. 8-Jan. 17, May 20-July 10, Aug. 16-Sept. 30. Records poor.

AVERAGE DISCHARGE.--10 years (1976-85), 45.2 cu ft/s (1.280 cu m/s), 37.43 in/yr (951 mm/yr), 32,750 acre-ft/yr (40.4 cu hm/yr); median of yearly mean discharges, 44 cu ft/s (1.25 cu m/s), 31,900 acre-ft/yr (39 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 floodmarks, from rating curve extended above 60 cu ft/s (1.70 cu m/s) on basis of slope-area measurement of peak flow; minimum daily discharge, 2.4 cu ft/s (0.068 cu m/s), June 18, 21, 1977.

EXTREMES FOR CURRENT YEAR .-- Peak discharges greater than base discharge of 1,500 cu ft/s (42.5 cu m/s) and maximum (\*);

| Discharge |      |           | arge     | Gage height |       |       |    |      | Disch     | arge     | Gage height |       |  |
|-----------|------|-----------|----------|-------------|-------|-------|----|------|-----------|----------|-------------|-------|--|
| Date      | Time | (cu ft/s) | (cu m/s) | (ft)        | (m)   | Date  |    | Time | (cu ft/s) | (cu m/s) | (ft)        | (m)   |  |
| Oct. 17   | 1745 | 3,410     | 96.6     | 7.61        | 2.320 | May   | 18 | 1345 | *5,590    | 158      | *9.26       | 2.822 |  |
| Oct. 19   | 1530 | 2,950     | 83.5     | 7.21        | 2.198 | Aug.  | 11 | 1630 | 3,020     | 85.5     | 7.27        | 2.216 |  |
| Nov. 3    | 1045 | 2,190     | 62.0     | 6.44        | 1.963 | Sept. | 10 | 1700 | 1,650     | 46.7     | 5.79        | 1.765 |  |

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

Minimum daily discharge, 11 cu ft/s (0.312 cu m/s), Feb. 20.

|        |      |       |         |           |      | MBAN VALU | KS   |           |      |       |       |       |
|--------|------|-------|---------|-----------|------|-----------|------|-----------|------|-------|-------|-------|
| DAY    | ост  | NO.   | V DEC   | JAN .     | FKB  | MAR       | APR  | MAY       | JUN  | JUL   | AUG   | SEP   |
| 1      | 71   | 15    | 0 34    | 20        | 14   | 14        | 30   | 20        | 31   | 65    | 33    | 45    |
| 2      | 67   |       |         |           | 14   |           | 24   | 21        | 29   | 30    | 25    | 40    |
| 3      | 80   |       |         |           | 14   |           | 22   | 48        | 29   | 28    | 21    | 40    |
| 4      | 61   |       |         |           | 13   |           | 22   | 27        | 26   | 27    | 20    | 66    |
| 5      | 63   |       |         |           | 13   |           | 26   | 23        | 26   | 30    | 32    | 178   |
| 6      | 63   | 9     | 6 31    | 18        | 12   | 15        | 25   | 36        | 25   | 25    | 34    | 200   |
| 7      | 58   | 9     | 0 30    | 18        | 12   |           | 22   | 44        | 25   | 26    | 28    | 86    |
| 8      | 52   | 8     | 0 29    |           | 12   |           | 25   | 41        | 35   | 50    | 21    | 134   |
| 9      | 52   | 7     |         |           | 13   |           | 20   | 30        | 26   | 26    | 19    | 76    |
| 10     | 49   |       |         |           | 19   |           | 19   | 38        | 26   | 61    | 25    | 268   |
| 11     | 46   | 6     | 8 30    | 18        | 18   | 41        | 19   | 51        | 25   | 52    | 228   | 70    |
| 12     | 46   | 6     | 8 32    | 17        | 14   |           | 19   | 38        | 25   | 31    | 77    | 56    |
| 13     | 44   | 6     | 1 28    | 16        | 14   |           | 18   | 30        | 25   | 27    | 48    | 50    |
| 14     | 42   | 6     | 0 27    | 17        | 14   | 16        | 18   | 26        | 26   | 24    | 116   | 45    |
| 15     | 46   | 54    | 8 26    |           | 13   |           | 17   | 25        | 25   | 25    | 59    | 60    |
| 16     | 55   | 5:    | 3 27    | 18        | 12   | 14        | 17   | 25        | 25   | 109   | 40    | 50    |
| 17     | 333  | 50    | 0 27    | 16        | 13   |           | 17   | 219       | 26   | 45    | 35    | 45    |
| 18     | 213  |       |         |           | 13   |           | 17   | 1030      | 65   | 34    | 30    | 43    |
| 19     | 332  |       |         |           | 12   |           | 17   | 239       | 28   | 30    | 27    | 50    |
| 20     | 186  |       |         |           | 11   |           | 16   | 96        | 28   | 28    | 93    | 45    |
| 21     | 116  | 4     | 1 23    | 16        | 13   | 17        | 17   | 64        | 29   | 27    | 63    | 43    |
| 22     | 83   | 40    | 0 24    | 16        | 13   | 15        | 71   | 64        | 29   | 26    | 45    | 42    |
| 23     | 73   | 4:    | 2 23    | 16        | 13   | 15        | 51   | 52        | 95   | 25    | 40    | 41    |
| 24     | 70   | 31    | 8 21    |           | 14   |           | 27   | 48        | 35   | 25    | 36    | 80    |
| 25     | 69   | 31    |         |           | 14   |           | 52   | 47        | 65   | 24    | 64    | 50    |
| 26     | 69   | 38    | 3 22    | 15        | 14   | 12        | 50   | 42        | 35   | 23    | 45    | 45    |
| 27     | 68   | 31    | 7 23    | 15        | 14   | 14        | 29   | 40        | 33   | 27    | 35    | 60    |
| 28     | 68   | 38    | 5 23    | 15        | 14   | 13        | 24   | 40        | 32   | 25    | 35    | 50    |
| 29     | 68   | 33    | 3 22    | 15        |      | 12        | 22   | 36        | 29   | 25    | 40    | 42    |
| 30     | 111  | 34    |         |           |      | 83        | 20   | 35        | 30   | 23    | 126   | 39    |
| 31     | 76   |       |         |           |      | 45        |      | 35        |      | 22    | 60    |       |
| TOTAL  | 2830 |       |         |           | 379  | 639       | 773  | 2610      | 988  | 1045  | 1600  | 2139  |
| MEAN   | 91.3 | 80.9  | 26.8    | 16.9      | 13.5 | 20.6      | 25.8 | 84.2      | 32.9 | 33.7  | 51.6  | 71.3  |
| MAX    | 333  | 547   | 7 40    | 22        | 19   | 83        | 71   | 1030      | 95   | 109   | 228   | 268   |
| MIN    | 42   |       |         |           | 11   |           | 16   | 20        | 25   | 22    | 19    | 39    |
| CFSM   | 5.57 |       |         |           | .82  |           | 1.57 | 5.13      | 2.01 | 2.05  | 3.15  | 4.35  |
| IN.    | 6.42 |       |         |           | .86  |           | 1.75 | 5.92      | 2.24 | 2.37  | 3.63  | 4.85  |
| AC-FT  | 5610 |       |         |           | 752  |           | 1530 | 5180      | 1960 | 2070  | 3170  | 4240  |
| CAL YR | 1984 | TOTAL | 18817.3 | MBAN 51.4 | MAX  | 547 MIN   | 8.7  | CFSM 3.13 | IN.  | 42.68 | AC-FT | 37320 |
| WTR YR | 1985 | TOTAL | 16786   | MBAN 46.0 | MAX  | 1030 MIN  | 11   | CFSM 2.80 | IN.  | 38.08 | AC-FT | 33300 |

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### RIO GUANAJIBO BASIN

## 50136000 RIO ROSARIO AT ROSARIO, PR--Continued

### WATER QUALITY RECORDS

PERIOD OF RECORD .-- WATER YEARS OCTOBER 1982 TO CURRENT YEAR

| DATE   | TIME   | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TRMPERA-<br>TURE<br>(DEG C) | DATE    | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|--------|--------|---------------------------------------|--------------------------------------|-----------------------------|---------|------|---------------------------------------|--------------------------------------|-----------------------------|
| MAR, O | 5 1214 | 15                                    | 257                                  | 23.5                        | SRP, 10 | 0915 | 59                                    | 245                                  | 23.0                        |

### WATER-QUALITY RECORDS

LOCATION.--Lat 18°09'36", long 67°05'08", at bridge on Highway 348, 0.5 mi (0.8 km) southwest of Rosario plaza. DRAINAGE AREA.--18.3 sq mi (47.4 sq km).

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

| DATE           | TIME                 | STREA<br>FLOO<br>INSTA<br>TANKO<br>(CFS                  | W, CO<br>AN- DU<br>OUS AN  | FIC<br>N- PI<br>CT- (ST.                          | AND- TE  | MPER-<br>TURE<br>OEG C)      | TUE<br>BII<br>ITY<br>(NTU | )- D:   | GEN,<br>IS-<br>LVED S                              | YGEN,<br>DIS-<br>BOLVED<br>(PER-<br>CENT<br>BATUR-<br>ATION) | DEMA<br>CHE<br>ICA<br>(HI<br>LEVE<br>(MG/      | ND, FO<br>M- FE<br>L O.<br>GH UM<br>L) (CO                 | RM, TOO<br>CAL, FI<br>7 KF<br>-MF (CO<br>LS./           | TREP<br>COCC<br>BCAL<br>AGA<br>OLS.<br>PER<br>0 ML |
|----------------|----------------------|--|--|---|--|------------------------------|---------------------------|---|--|--|--|--|---|--|
| OV 1984<br>08  | 1710                 | 88   |  | 240   | 8.30   | 25.0                         | 3.                        | 7   | 8.0  | 98   |  | 34   | 560   | 49   |
| RB 1985        |                      | 1.35   |  |   |  |                              |                           |   |  |  |  |  |   |  |
| 08             | 0950                 | 13   |  | 295   | 8.30   | 20.0                         | 0.                        | . 5   | 9.5  | 105  |  | 10   | 58  | 11   |
| 21             | 1245                 | 20   |  | 259   | B.50   | 27.0                         | 2.                        | .0  | 9.7  | 122  |  | 14   | 290   | 29   |
| 07             | 0800                 | 20   |  | 258   | 8.40   | 24.5                         | 1.                        | 4   | 8.5  | 102  |  | 10   | 40  | K8   |
| 15             | 1145                 | 58   |  | 196   | 8.30   | 26.0                         | 47                        |   | 8.3  | 101  |  | 10   | 2800  | 92   |
| 371111         | 7.77                 | - 77   |  |   |  |                              |                           |   | 3.0  | 2.5  |  |  |   | 177  |
| DATE           | N (                  | ARD-<br>IESS<br>MG/L<br>AS<br>ACO3)                      | HARD-<br>NESS<br>NONCARB<br>WATER<br>TOT FLD<br>MG/L AS<br>CACO3 | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA)      | MAGNE<br>SIUM<br>DIS-<br>SOLVE<br>(MG/L<br>AS MG               | DIS<br>D SOLV                | 8-                        | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO                             | POTAS<br>SIUM<br>DIS-<br>SOLVE<br>(MG/I<br>AS K)   | I- LIN<br>I, WA<br>TO<br>ID FI                               | KA-<br>ITY<br>TER<br>TAL<br>ELD<br>L AS<br>CO3 | SULFIDE<br>TOTAL<br>(MG/L<br>AS S)                         | SULFATI<br>DIS-<br>SOLVRI<br>(MG/L<br>AS SO4)           | 0  |
| NOV 1984       |                      |  |  |   |  |                              |                           |   |  |  |  |  |   |  |
| 08<br>FEB 1985 |                      | 110  |  | 19  | 15   | 6                            | 5.2                       | 0.3   | 1.0  |  | 110  |  | 5.9   | 9  |
| 08             |                      | 130  |  | 26  | 17   | 9                            | 9.5                       | 0.4   | 1.2  |  | 139  | <0.5   | 6.4   | 1  |
| 21             |                      |  |  |   | -  | -                            |                           |   |  | _  | 127  |  |   |  |
| JUN<br>07      |                      | 120  | 1  | 23  | 16   | 8                            | 3.6                       | 0.3   | 1.0  |  | 122  | <0.5   | 6.7   | 7  |
| AUG<br>15      |                      |  | - 1  |   |  |                              |                           |   |  | _  | 84   |  |   |  |
| DATE           | R<br>D<br>S          | HLO-<br>IDE,<br>IS-<br>OLVED<br>MG/L<br>S CL)            | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F)               | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | SOLIDS<br>SUM OF<br>CONSTI<br>TUENTS<br>DIS-<br>SOLVE<br>(MG/L | SOLI<br>- DI<br>, SOL<br>(TO | NS<br>LS-<br>LDS,         | SOLIDS,<br>RESIDUE<br>AT 105<br>DEG. C,<br>SUS-<br>PENDED<br>(MG/L) | NITRO<br>GEN,<br>NITRIT<br>TOTAL<br>(MG/I<br>AS N) | K NO2  | TRO-<br>EN,<br>+NO3<br>TAL<br>G/L<br>N)        | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N)       | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AB N)    | **   |
| NOV 1984       |                      |  |  |   |  |                              |                           |   |  |  |  |  |   |  |
| 08<br>FEB 1985 |                      | 6.1  | <0.1   | 28  | 15   | 0 35                         | i                         | 4   | <0.01  | 0  | .80  | <0.01  |   |  |
| 08             |                      | 10   | <0.1   | 28  | 18   | 0 6                          | 5.4                       | 3   | <0.01  | 0  | .40  | <0.01  |   |  |
| MAR<br>21      |                      |  |  |   | _  | _                            |                           | 3   | <0.01  | . 0  | .40  | 0.01   | 0.29  | ,  |
| JUN<br>07      |                      | 8.6  | <0.1   | 26  | 16   |                              | 3.7                       | 6   | <0.01  |  | . 20   | 0.14   | 0.06  |  |
| AUG            |                      | 0.0  |  | 20  | 10   |                              |                           |   | 10.01  |  | . 20   | 0.14   | 0.00  |  |
| 15             |                      |  | -  |   | -  | -                            |                           | 42  | -  | -  |  |  | -   |  |
| DATE           | GR<br>MOI<br>OR<br>T | ITRO-<br>N,AM-<br>NIA +<br>GANIC<br>OTAL<br>MG/L<br>S N) | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS N)                        | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS NO3)       | PHOS-<br>PHORUS<br>TOTAL<br>(MG/L<br>AS P)                     | , ARSE                       | NIC                       | BARIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS BA)             | BORON<br>TOTAL<br>RECOV<br>BRABL<br>(UG/L<br>AS B) | TO' REG  | MIUM<br>TAL<br>COV-<br>ABLE<br>G/L<br>CD)      | CHRO-MIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CR) | COPPER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CU) |  |
| NOV 1984       |                      |  |  |   |  |                              |                           |   |  |  |  |  |   |  |
| 08<br>FEB 1985 |                      | 0.4  | 1.2  | 5.3   | 0.05   |                              |                           |   | -  | -  |  |  |   |  |
| 08             |                      | 0.2  | 0.6  | 2.7   | 0.06   |                              | <1                        | <100  | <2   | 0  | <1   | 6  | <10   |  |
| MAR<br>21      |                      | 0.3  | 0.7  | 3.1   | 0.03   |                              |                           |   |  | _  |  |  |   |  |
| JUN<br>07      |                      | 0.2  |  |   |  |                              |                           |   |  |  |  |  |   |  |
| AUG            |                      | 0.4  | 0.4  | 1.8   | 0.03   |                              | <1                        | <100  | <2   | U  | <1   | 18   | <10   |  |
| 15             |                      | l count  |  |   | -  |                              |                           |   | -  | -  |  |  |   |  |

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RIO GUANAJIBO BASIN

50136400 RIO ROSARIO NEAR HORMIGUEROS, PR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>RRABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SKLE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| NOV 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 08<br>FEB 1985 |   |   |   |   |  |   |   |                                     |                            |  |
| 08             | 170   | 1   | <10   | <0.1  | <1   | <1  | 20  | <0.01                               | <1                         | 0.02   |
| MAR            |   |   |   |   |  |   |   |                                     |                            |  |
| 21<br>JUN      |   |   |   | 0.1   |  |   |   | 77                                  |                            |  |
| 07             | 230   | 2   | 10  | <0.1  | <1   | <1  | 40  | <0.01                               | 3                          | <0.01  |
| 15             |   |   |   |   |  |   |   |                                     |                            |  |

### 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 Rio 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 .-- No estimated daily discharges during water year. Records fair.

AVERAGE DISCHARGE.--12 years (1974-85), 216 cu ft/s (6.117 cu m/s), 24.44 in/yr (621 mm/yr), 156,500 acre-ft/yr (193 cu hm/yr); median of yearly mean discharges, 200 cu ft/s (5.66 cu m/s), 145,000 acre-ft/yr (180 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD. --Maximum discharge, 128,000 cu ft/s (3,620 cu m/s), Sept. 16, 1975, gage height, 28.50 ft (8.687 m), site and datum then in use, from rating curve extended above 100 cu ft/s (2.83 cu m/s) on the basis of contracted-opening measurement of peak flow; minimum discharge, 4.6 cu ft/s (0.130 cu m/s), June 22, 1977.

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

|         |      | D         | ischarge | Ga     | Gage height |        |      | Disch     | arge     | Gage h | neight |
|---------|------|-----------|----------|--------|-------------|--------|------|-----------|----------|--------|--------|
| Date    | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)         | Date   | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)    |
| Oct. 18 | 0630 | 2,480     | 70.2     | 19.68  | 5.998       | May 18 | 2245 | 7,660     | 217      | 22.88  | 6.974  |
| Nov. 3  | 2300 | *11 300   | 320      | 124 10 | 7 346       | Nov 8  | 2130 | 2.200     | 62.3     | 18.93  | 5.770  |

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

Minimum discharge, 18 cu ft/s (0.510 cu m/s), Feb. 21.

|        |       | -     | omma <sub>2</sub> | , 111 000 |      |      | MBAN | VALU | IRS  |      |      |      |       |        |        |
|--------|-------|-------|-------------------|-----------|------|------|------|------|------|------|------|------|-------|--------|--------|
| DAY    | oc    | T N   | ov                | DEC       | JAN  | FE   | В    | MAR  | APR  | 1    | MAY  | JUN  | JUL   | AUG    | SEP    |
| 1      | 252   | 33    | 1                 | 99        | 52   | 28   |      | 53   | 166  |      | 58   | 79   | 46    | 85     | 91     |
| 2      | 202   | 34    | 4                 | 99        | 52   | 29   |      | 47   | 109  | 1    | 08   | 76   | 102   | 90     | 76     |
| 3      | 189   | 290   | 0                 | 96        | 50   | 28   |      | 35   | 89   |      | 00   | 87   | 59    | 58     | 43     |
| 4      | 184   | 508   | 0                 | 90        | 49   | 26   |      | 59   | 77   |      | 74   | 132  | 43    | 48     | 32     |
| 5      | 331   | 145   | 0                 | 88        | 47   | 25   |      | 40   | 82   |      | 24   | 75   | 36    | 59     | 177    |
| 6      | 209   |       |                   | 85        | 49   | 24   |      | 32   | 75   | 1    | 06   | 65   | 33    | 115    | 787    |
| 7      | 208   | 54    | 0                 | 83        | 48   | 23   |      | 114  | 63   | 1    | 40   | 62   | 31    | 109    | 759    |
| 8      | 175   |       |                   | 110       | 45   | 22   |      | 175  | 62   | 1    | 24   | 56   | 29    | 73     | 461    |
| 9      | 172   | 35    | 7                 | 89        | 43   | 23   |      | 105  | 54   |      | 96   | 52   | 49    | 65     | 279    |
| 10     | 179   | 30    | 2                 | 100       | 43   | 22   |      | 86   | 50   |      | 87   | 47   | 46    | 57     | 387    |
| 11     | 160   |       |                   | 84        | 46   | 23   |      | 118  | 49   |      | 07   | 44   | 108   | 354    | 592    |
| 12     | 151   | 22    | 2                 | 79        | 43   | 64   |      | 69   | 46   |      | 04   | 45   | 54    | 481    | 510    |
| 13     | 146   |       |                   | 78        | 40   | 36   |      | 55   | 42   |      | 76   | 41   | 46    | 230    | 501    |
| 14     | 142   |       |                   | 72        | 39   | 29   |      | 49   | 39   |      | 65   | 43   | 41    | 234    | 379    |
| 15     | 164   | 17    | 1                 | 71        | 38   | 28   |      | 43   | 33   |      | 59   | 39   | 77    | 186    | 436    |
| 16     | 192   |       |                   | 70        | 38   | 27   |      | 41   | 30   |      | 73   | 39   | 219   | 127    | 284    |
| 17     | 576   |       | 1                 | 70        | 37   | 24   |      | 39   | 28   | 6    | 52   | 36   | 217   | 112    | 220    |
| 18     | 1900  |       | 4                 | 65        | 35   | 23   |      | 34   | 27   | 25   | 90   | 59   | 92    | 87     | 208    |
| 19     | 1100  | 14    | 1                 | 63        | 35   | 22   |      | 34   | 27   | 34   | 60   | 104  | 71    | 76     | 191    |
| 20     | 900   | 13    | 1                 | 62        | 35   | 22   |      | 33   | 28   | 12   | 10   | 54   | 68    | 488    | 155    |
| 21     | 798   | 12    | 8                 | 60        | 32   | 20   |      | 38   | 26   | 6    | 56   | 43   | 58    | 452    | 171    |
| 22     | 958   | 12    | 5                 | 58        | 31   | 21   |      | 35   | 39   | 4    | 12   | 92   | 112   | 168    | 289    |
| 23     | 481   | 13    | 1                 | 57        | 32   | 22   |      | 33   | 141  |      | 10   | 158  | 177   | 107    | 171    |
| 24     | 349   | 12    | 5                 | 61        | 32   | 23   |      | 32   | 63   | 2    | 64   | 208  | 121   | 84     | 584    |
| 25     | 295   | 12    | 6                 | 59        | 30   | 25   |      | 30   | 50   | 2    | 18   | 119  | 73    | 97     | 370    |
| 26     | 262   | 17    | 8                 | 56        | 31   | 48   |      | 45   | 126  | 1    | 75   | 142  | 67    | 165    | 209    |
| 27     | 263   | 12    | 5                 | 55        | 31   | 39   |      | 69   | 99   | 1    | 48   | 73   | 62    | 127    | 359    |
| 28     | 260   | 13    | 0                 | 53        | 30   | 41   |      | 40   | 62   | 1    | 29   | 55   | 99    | 98     | 302    |
| 29     | 206   | 10    | 9                 | 51        | 29   |      |      | 59   | 53   | 1    | 07   | 49   | 71    | 68     | 195    |
| 30     | 234   | 10    | 3                 | 53        | 29   |      |      | 487  | 46   | 1    | 12   | 46   | 68    | 106    | 167    |
| 31     | 311   |       | -                 | 55        | 28   |      |      | 523  |      |      | 79   |      | 52    | 199    |        |
| TOTAL  | 11949 |       |                   | 2271      | 1199 | 787  |      | 652  | 1881 | 124  |      | 2220 | 2427  | 4805   | 9385   |
| MEAN   | 385   |       |                   | 73.3      | 38.7 | 28.1 |      | 5.5  | 62.7 |      | 01   | 74.0 | 78.3  | 155    | 313    |
| MAX    | 1900  |       |                   | 110       | 52   | 64   |      | 523  | 166  |      | 60   | 208  | 219   | 488    | 787    |
| MIN    | 142   |       |                   | 51        | 28   | 20   |      | 30   | 26   |      | 58   | 36   | 29    | 48     | 32     |
| CFSM   | 3.21  |       |                   | .61       | .32  | . 23 |      | .71  | .52  | 3.   | 34   | .62  | .65   | 1.29   | 2.61   |
| IN.    | 3.70  |       |                   | .70       | .37  | . 24 |      | .82  | .58  | 3.   | 85   | .69  | .75   | 1.49   | 2.91   |
| AC-FT  | 23700 | 3095  | 0 4               | 4500      | 2380 | 1560 | 5    | 260  | 3730 | 246  | 40   | 4400 | 4810  | 9530   | 18620  |
| CAL YR |       | TOTAL | 80043             | MEAN      | 219  | MAX  | 5080 | MIN  | 13   | CFSM |      | IN.  | 24.81 | AC -FT | 158800 |
| WTR YR | 1985  | TOTAL | 67603             | MBAN      | 185  | MAX  | 5080 | MIN  | 20   | CFSM | 1.54 | IN.  | 20.96 | AC-FT  | 134100 |

### 50138000 RIO GUANAJIBO NEAR HORMIGUEROS, PR--Continued

## WATER-QUALITY RECORDS

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

| DATE           |  | STREAM-<br>FLOW,<br>INSTAN-<br>FANEOUS<br>(CFS)                  | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM)            | PH<br>(STAND-<br>ARD<br>UNITS)                       | TEMPER-<br>ATURE<br>(DEG C)                        | TUR-<br>BID-<br>ITY<br>(NTU)            | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L)                 | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | OXYGEN<br>DEMAND,<br>CHEM-<br>ICAL<br>(HIGH<br>LEVEL)<br>(MG/L) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | STREP-<br>TOCOCCI<br>FECAL<br>KF AGAI<br>(COLS.<br>PER<br>100 ML |
|----------------|--|--|--|--|--|---|---|--|---|--|--|
| NOV 1984       | 1000   | 477  | 244  |  |  |   |   |  |   | 20000  | 750  |
| 08<br>FRB 1985 | 1200   | 477  | 344  | 7.70   | 25.0   | 60                                      | 5.0   | 61   | 26  | 20000  | 7500   |
| 01             | 1000   | 28   | 475  | 7.90   | 22.0   | 1.5                                     | 6.1   | 69   | 18  | 2200   | K640   |
| 20<br>MAY      | 1625   | 38   | 465  | 7.80   | 25.5   | 65                                      | 4.9   | 60   | 17  | 35000  | K1100  |
| 31             | 1100   | 87   | 467  | 7.90   | 27.0   | 1.0                                     | 5.5   | 69   | <10   | 39000  | 4500   |
| AUG<br>09      | 1515   | 61   | 430  | 8.00   | 32.0   | 19                                      | 4.7   | 64   | 16  |  |  |
|                |  |  |  |  |  |   |   |  |   |  |  |
| DATE           | NESS<br>(MG/L 1                                  | HARD-<br>NESS<br>HONCARB<br>WATER<br>FOT FLD<br>MG/L AS<br>CACO3 | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA)                 | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA)       | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LINITY<br>WATER<br>TOTAL<br>FIELD<br>MG/L AS<br>CACO3 | SULFIDE<br>TOTAL<br>(MG/L<br>AS S)                              | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4)                  | CHLO-<br>RIDE,<br>DIS-<br>SOLVKI<br>(MG/L<br>AS CL)              |
| NOV 1984       |  |  |  |  | ,  |   |   |  |   |  |  |
| 08             | 65   |  | 16   | 6.1  | 12   | 0.7                                     | 1.3   | 153  |   | 11   | 15   |
| FEB 1985<br>01 | 220  | 8  | 33   | 34   | 18   | 0.5                                     | 1.8   | 214  | (0.5  | 19   | 20   |
| 1AR<br>20      |  |  |  |  |  |   |   | 207  |   |  |  |
| 1AY<br>31      | 220  | 5  | 31   | 34   | 15   | 0.5                                     | 2.2   | 212  | <0.5  | 18   | 16   |
| AUG            |  | •  | 31   | 34   | 15   | 0.5                                     | 2.2   | - 250  | (0.5  | 10   | 10   |
| 09             |  |  |  |  |  |   | -   | 189  |   | 7  |  |
| DATE           | FLUC<br>RIDE<br>DIS<br>SOLV<br>(MG/              | I, DIS<br>I- SOI<br>VED (MO                                      | CA, SUM CON LVED TUE CON | STI- I<br>NTS, SC<br>IS- (T<br>LVED F                | IDS, RES<br>IS- AT<br>LVED DEC<br>ONS SU<br>ER PER | 105 G<br>3. C, NIT<br>JS- TO<br>IDED (M | RATE NIT  | DEN, CONTRICTE NO.   | EN, G<br>2+NO3 AMM<br>TAL TO<br>G/L (M                          | EN, G. ONIA ORG TAL TO G/L (M                                  | TRO-<br>BN,<br>ANIC<br>TAL<br>G/L<br>N)                          |
| NOV 1984       |  |  |  |  |  |   |   |  |   |  |  |
| 08<br>FEB 1985 | <0.  | 1 1  | 8  | 170 22   | 0  | 65 0                                    | .57   | 0.03   | 0.60 0  | .26  | 0.54   |
| 01             | 0.   | 2 3  | 30   | 280 2  | 1  | 6 0                                     | .87   | 0.03   | .90 0   | .17  | 0.63   |
| MAR 20         |  |  |  |  | 1  | 83                                      |   |  |   |  |  |
| MAY<br>31      | 0.   | 1 3  | 11   | 270 6  | 4  | 24 0                                    | .37   | 0.03   | .40 0   | .31  | 0.29   |
| AUG<br>09      |  |  |  |  |  | 30 0                                    | .89 0   | 0.11 1   | .00 0   | .37  | 0.43   |
| DATE           | NITH<br>GEN, A<br>MONIA<br>ORGAN<br>TOTA<br>(MG/ | M- H NIT   | RN, G<br>TAL TO  | EN, PHO<br>FAL TO<br>G/L (M                          | TAL TO   | SENIC RE<br>OTAL ER                     | TAL TO<br>COV- RE<br>ABLE ER<br>G/L (U              | OTAL TO<br>RCOV- RE<br>RABLE RE                                | MIUM MI<br>OTAL TO<br>CCOV- RE<br>ABLE ER                       | TAL TO' COV- REG ABLE ER. G/L (U                               | PER,<br>FAL<br>COV-<br>ABLK<br>G/L<br>CU)                        |
| NOV 1984       |  |  |  |  |  |   |   |  |   |  |  |
| 08<br>FEB 1985 | 0.   | 8 1  | .4   | 6.2 0  | . 32   |   |   |  |   |  | 77   |
| 01<br>MAR      | 0.   | 8 1  | .7   | 7.5 0  | .59  | <1                                      | 100   | 100  | 1   | 8  | <10  |
| 20             |  |  |  |  |  |   |   | -  |   |  |  |
| MAY<br>31      | 0.   | 6 1  | .0   | 4.4 0  | .34  | <1                                      | 100   | 50   | <1  | 14   | <10  |
| AUG<br>09      | 0.   | 8 1  | .8   | 8.0 0  | .73  |   |   |  |   |  |  |
|                |  |  | 77   |  | 3.1  |   |   |  |   |  |  |

50138000 RIO GUANAJIBO NEAR HORMIGUEROS, PR--Continued WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE          | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L)                 | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|---------------|---|---|---|---|--|---|---|-------------------------------------|--|--|
| NOV 1984      |   |   |   |   |  |   |   |                                     |  |  |
| 08            |   |   |   |   |  |   | 122   |                                     |  |  |
| FBB 1985      |   |   |   |   |  |   |   |                                     |  |  |
| 01            | 440   | 2   | 140   | <0.1  | <1   | <1  | 20  | <0.01                               | <1   | 0.05   |
| MAR<br>20     |   |   |   |   |  |   |   |                                     |  |  |
| MAY           |   |   |   | 0.2   |  |   |   |                                     |  |  |
| 31            | 1000  | 6   | 220   | (0.1  | <1   | <1  | <10   | <0.01                               | 12   | 0.03   |
| AUG           |   |   |   |   |  |   |   |                                     |  |  |
| 09            |   |   |   |   |  |   |   |                                     |  |  |
| DATE AUG 1985 | T1  | (UG/  | AL TOT<br>L) (UG  | AL TOTA   | R, DD<br>AL TOT<br>L) (UG                  | /L) (UG   | AL TOT  | (Ud                                 | ON, BLDR                                   | IN<br>L<br>L)  |
| 09            | 10  | 15 (  | 0.1 (0.   | 01 (  | 0.1 (0.                                    | 01 (0.  | 01 (0.  | 01 0                                | .03 (0.0                                   | 1  |
|               | DATE  | ENDO-<br>SULFAN,<br>TOTAL<br>(UG/L)                   | ENDRIN,<br>TOTAL<br>(UG/L)                                      | ETHION,<br>TOTAL<br>(UG/L)                              | HEPTA-<br>CHLOR,<br>TOTAL<br>(UG/L)        | HEPTA-<br>CHLOR<br>EPOXIDE<br>TOTAL<br>(UG/L)           | LINDANE<br>TOTAL<br>(UG/L)                            | MALA-<br>THION,<br>TOTAL<br>(UG/L)  | METH-<br>OXY-<br>CHLOR,<br>TOTAL<br>(UG/L) |  |
| AUG           | 1985  |   |   |   |  |   |   |                                     |  |  |
| 09            |   | <0.01   | <0.01   | <0.01   | <0.01                                      | <0.01   | <0.01   | 0.01                                | <0.01                                      |  |
|               |   |   |   |   |  | NAPH-<br>THA-   |   |                                     |  |  |
|               |   | METHYL  | METHYL  |   | 0.5.                                       | LENES,  |   | 250                                 | 21213                                      |  |
|               |   | PARA-   | TRI-  | MYDRY   | PARA-                                      | POLY-   | PER-  | TOX-                                | TOTAL                                      |  |
|               | DATE  | THION,  | THION,  | MIREX,<br>TOTAL   | THION,                                     | TOTAL   | THANK   | APHENE,<br>TOTAL                    | TRI-<br>THION                              |  |
|               |   | (UG/L)  | (UG/L)  | (UG/L)  | (UG/L)                                     | (UG/L)  | (UG/L)  | (UG/L)                              | (UG/L)                                     |  |
|               |   | -0-11   | 342000  | 1000000   | 43/47/201                                  |   |   | 2. 2.22.20                          | 4.00                                       |  |
|               | 1985  | 102 20  | 100 20  | 45.50   |  | 7.7   | turant at   | 12.10                               |  |  |
| 09            |   | <0.01   | <0.01   | <0.01   | <0.01                                      | <0.1  | <0.1  | <1                                  | <0.01                                      |  |

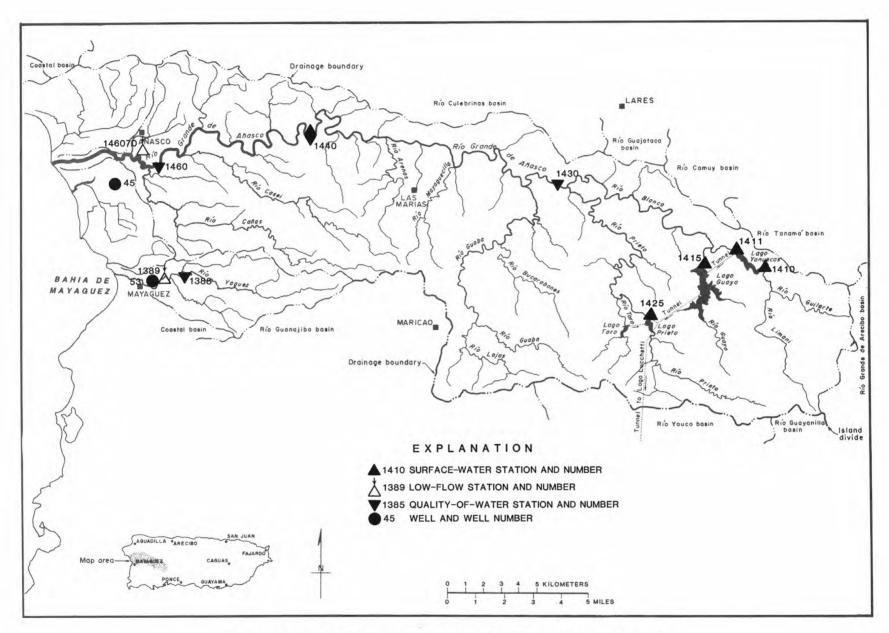


Figure 26.--Río Yagüez and Río Grande de Añasco basins.

### 50138800 RIO YAGUEZ NBAR MAYAGUEZ, PR

### WATER-QUALITY RECORDS

LOCATION.--Lat 18°12'31", long 67°07'07", at steel-truss bridge on unnumbered paved road about 800 ft (244 m) south of Highway 106, 1.8 mi (2.9 km) west of Highways 106 and 352 junction, and 1.4 mi (2.3 km) east-northeast from Mayaguez plaza.

DRAINAGE AREA. -- 6.7 sq mi (17.3 sq km).

K = non-ideal count

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | TIME   | STRE<br>FLC<br>INST<br>TANE                                       | RAM- CI<br>DW, CO<br>TAN- DU<br>ROUS AN           | CT- (ST                                     | AND- TEM  | PER- B                              | ID- D<br>TY SO  | GEN, (PIS- CLVED SA  | DIS- DEM<br>DLVED CH<br>PER- IC<br>EENT (H | IAND, FOI<br>IEM- FEC<br>CAL 0.'<br>IIGH UM-<br>VEL) (COI | LI- STREP- RM, TOCOCCI CAL, FECAL, FECAL, FECAL COLS. PER ML) 100 ML |
|----------------|--------|---|---|---|---|-------------------------------------|---|--|--|---|--|
| OV 1984        |        |   |   |   |   |                                     |   |  |  |   |  |
| 07             | 1630   | 29  |   | 262   | 8.00  | 24.0                                | 6.2   | 7.7  | 93   | <10   | 1400 790   |
| RB 1985<br>01  | 1650   |   |   | 312   | 8.20  | 23.0                                | 0.5   | 8.1  | 94   | 26  | 560 760  |
| AR             |        |   |   |   |   |                                     |   |  |  |   |  |
| 21<br>UN       | 1700   | )   |   | 247   | 8.00  | 24.0 2                              | 5   | 7.8  | 93   | 17  | 5900 3100  |
| 07             | 1136   | 5   |   | 293   | 8.30  | 27.0                                | 1.5   | 8.1  | 101  | 1   | K150 210   |
| 15             | 1530   | ) 8   | .0  | 418   | 7.90  | 28.0 4                              | 7   | 7.8  | 99   | 11  | 3800 3500  |
|                |        |   |   |   |   |                                     |   |  |  |   |  |
| DATE           |        | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3)                            | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA)      | DIS-<br>SOLVED<br>(MG/L                     | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA)      | SORP-<br>TION<br>RATIO              | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS E)     | ALKA-<br>LINITY<br>WATER<br>TOTAL<br>FIBLD<br>MG/L AS<br>CACO3 | SULFIDE<br>TOTAL<br>(MG/L<br>AS 8)         | SULFATE DIS- SOLVED (MG/L AS SO4)                         | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)                  |
| NOV 1984       |        | 110   | 28  | 9.2   | 9.3   | 0.4                                 | 1.9   | 114  |  | 6.4   | 7.9  |
| FEB 1985       |        |   |   |   |   | 0.4                                 |   |  |  |   |  |
| 01             |        | 140   | 37  | 11  | 13  | 0.5                                 | 1.7   | 146  | <0.5                                       | 8.8   | 11   |
| 21             |        |   |   |   |   |                                     |   | 110  |  |   |  |
| JUN 07         |        | 130   | 34  | 10  | 12  | 0.5                                 | 1.9   | 138  | <0.5                                       | 8.6   | 11   |
| AUG<br>15      |        |   | 1-11-1  |   |   |                                     | 7   | 84   |  |   |  |
| DATE           |        | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F)                | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | CONSTI-                                     | SOLIDS,<br>DIS-<br>SOLVED<br>(TONS<br>PER<br>DAY) | AT 105                              | NITRO-<br>GEN,<br>NITRATE<br>TOTAL<br>(MG/L<br>AS N)    | NITRO-<br>GEN,<br>NITRITE<br>TOTAL<br>(MG/L<br>AS N)           | GEN,                                       | GEN,  | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N)                 |
| NOV 1984       |        | <0.1  | 28  | 160   | 12  | 1                                   |   | <0.01  | 1.00                                       | 0.07  | 0.13   |
| FEB 1985       |        |   |   |   | 12  |                                     |   |  |  |   |  |
| 01             |        | 0.1   | 31  | 200   |   | 2                                   |   | <0.01  | 0.50                                       | 0.13  | 0.37   |
| 21<br>JUN      |        |   |   |   |   | 46                                  |   | <0.01  | 0.80                                       | 0.04  | 0.16   |
| 07             |        | <0.1  | 26  | 190   |   | 3                                   |   | <0.01  | 0.40                                       | 0.02  | 0.38   |
| AUG<br>15      |        |   |   |   |   | 12                                  | 0.79  | 0.01   | 0.80                                       | 0.03  | 0.27   |
| DATE           | M<br>O | NITRO-<br>EN,AM-<br>IONIA +<br>PRGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS N)         | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS NO3) | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P)       | ARSENIC<br>TOTAL<br>(UG/L<br>AS AS) | BARIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS BA) | BORON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS B)          | TOTAL<br>RECOV-                            | TOTAL<br>RECOV-<br>RRABLE<br>(UG/L                        | COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)                             |
| NOV 1984       |        |   |   |   |   |                                     |   |  |  |   |  |
| 07             |        | 0.2   | 1.2   | 5.3   | 0.04  |                                     |   |  | -  |   |  |
| FEB 1985<br>01 |        | 0.5   | 1.0   | 4.4   | 0.09  | <1                                  | 100   | 30   | 1  | <1  | <10  |
| MAR<br>21      |        | 0.2   | 1.0   | 4.4   | 0.07  |                                     |   |  |  |   |  |
| JUN            |        |   |   |   |   |                                     |   |  |  |   | <b>₹10</b>   |
| 07             |        | 0.4   | 0.8   | 3.5   | 0.03  | <1                                  | 200   | <20  |  |   |  |
| 15             |        | 0.3   | 1.1   | 4.9   | 0.03  |                                     |   |  |  |   |  |

RIO YAGUEZ BASIN
50138800 RIO YAGUEZ NEAR MAYAGUEZ, PR--Continued
WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| NOV 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 07<br>FEB 1985 |   |   |   |   |  |   |   |                                     |                            |  |
| 01             | 240   | 2   | <10   | <0.1  | <1   | <1  | 10  | <0.01                               | <1                         | 0.03   |
| MAR            |   |   |   |   |  |   |   |                                     |                            |  |
| 21             |   |   |   | 0.1   |  |   |   |                                     |                            |  |
| JUN            |   |   |   |   |  |   |   |                                     |                            |  |
| 07             | 170   | 2   | 10  | <0.1  | <1   | <1  | 30  |                                     | 7                          | 0.03   |
| AUG            |   |   |   |   |  |   |   |                                     |                            |  |
| 15             |   |   |   |   |  |   |   |                                     |                            |  |

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#### 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) northwest of Highways 129 and 135 junction, 2.5 mi (4.0 km) northeast of Castaner, 2.3 mi (3.7 km) east-southeast of Lago Guayo Dam, and 0.5 mi (0.8 km) upstream from Rio Limani.

DRAINAGE AREA. -- 15.4 sq mi (40.1 sq km).

#### WATER-DISCHARGE RECORDS

PERIOD OF RECORD. -- March 1946 to December 1966 in reports of the Puerto Rico Water Resources Authority as "Rio Yahuecas near Adjuntas"; June 1980 to January 1985 (discontinued).

GAGE .-- Water-stage recorder. Klevation of gage is about 1,530 ft (466 m) from USGS topographic map.

REMARKS .-- No estimated daily discharges during period of record. Records fair.

AVERAGE DISCHARGE.--24 years (1947-66, 1981-84), 37.2 ou ft/s (1.054 cu m/s), 32.80 in/yr (833 mm/yr), 27,000 acre-ft/yr (33.3 cu hm/yr); median of yearly mean discharges, 36 cu ft/s (1.02 cu m/s), 26,100 acre-ft/yr (32 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 discharge, 4.4 cu ft/s (0.125 cu m/s), Apr. 23, 25, 1984.

EXTREMES FOR CURRENT PERIOD. -- Peak discharges greater than base discharge of 1,700 cu ft/s (48.1 cu m/s) and maximum (\*):

| Discharge |      | Gage      | height   |       |       |         | Disch | Gage heigh |          |        |       |
|-----------|------|-----------|----------|-------|-------|---------|-------|------------|----------|--------|-------|
| Date      | Time | (cu ft/s) | (cu m/s) | (ft)  | (m)   | Date    | Time  | (ou ft/s)  | (cu m/s) | (ft)   | (m)   |
| Oct. 15   | 1530 | 5,860     | 166      | 13.71 | 4.179 | Nov. 3  | 1045  | *6,290     | 178      | *13.99 | 4.264 |
| Oct. 17   | 1730 | 3,490     | 98.8     | 11.96 | 3.645 | Nov. 25 | 1930  | 1,900      | 53.8     | 10.40  | 3.170 |
| Oct. 19   | 1500 | 4 960     | 140      | 13 10 | 3 003 |         |       |            |          |        |       |

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

SEP

Minimum discharge, 16 cu ft/s (0.543 cu m/s), Jan.29-31.

VALUES MEAN DAY OCT NOV DEC MAY JUN JUL AUG JAN APR 

7.92

8.86

34.0

2.55

20.4

1.32

1.52

TOTAL

MEAN

MAX

MIN

TN.

CFSM

AC-FT

6.56

7.58

CAL YR 1984 TOTAL 16120.9 MEAN 44.0 MAX 1160 MIN 4.9 CFSM 2.86 IN. 38.94 AC-FT 31980

#### 50141100 LAGO YAHUECAS NEAR CASTANER, PR

LOCATION.--Lat 18°13'20", long 66°49'15", Hydrologic Unit 21010003, at Yahuecas Dam on Rio Blanco, 1.1 mi (1.8 km) northeast of Lago Guayo, 2.8 mi (4.5 km) northeast of Castaner, 3.8 mi (6.1 km) northeast of Lago Prieto, and about 4.0 mi (6.4 km) northwest of Adjuntas.

DRAINAGE AREA. -- 17.4 sq mi (45.1 sq km).

#### **ELEVATION RECORDS**

PERIOD OF RECORD .-- April 1980 to January 1985 (discontinued) .

GAGE .-- Water-stage recorder. Elevation of gage is 1,400.00 ft (426.720 m) above mean sea level.

REMARKS.--Lago Yahuecas was completed in 1956. The dam is a unit of the southwestern Puerto Rico project and provides a maximum storage of 1,800 ac-ft (2.22 cu hm) for power and irrigation. The dam is a concrete gravity structure with a total length of 450 ft (137.2 m), a maximum structural height of 90 ft (27.4 m), and a maximum base width of 60 ft (18.3 m). The spillway is an ungated overflow type with a crest elevation of 71.00 ft (21.641 m) and a crest length of 200 ft (61.0 m); It was designed to pass a maximum flood of 38,000 cu ft/s (1,076 cu m/s) at a reservoir elevation of 84.00 ft (25.603 m). Timber flashboards, originally installed on the spillway crest, were subsequently removed and their use discontinued. Diversions are conveyed to Lago Guayo by an 11 ft (3.4 m) diameter, 6,470 ft (1,972 m) long tunnel, mostly unlined.

EXTREMES OBSERVED FOR PERIOD OF RECORD. -- Maximum elevation, 76.61 ft (23.351 m), Sept. 13, 1982; minimum elevation, 46.67 ft (14.225 m), Sept. 9, 1984.

EXTREMES OBSERVED FOR CURRENT PERIOD. -- Maximum elevation, 74.32 ft (22.653 m) Nov. 3; minimum elevation, 52.11 ft (15.883 m) Jan. 24.

Capacity Table
(based on data from Puerto Rico Water Resources Authority)

Blevation, in feet Contents, in acre-feet Blevation, in feet Contents, in acre-feet

30 0 65 1,000
49 393 71 1,308
60 778 75 1.540

#### ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS AT 2400

| DAY              | OCT   | NOV   | DEC   | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|------------------|-------|-------|-------|-------|-----|-----|-----|-----|-----|-----|-----|-----|
| 1                | A     | 71.32 | 71.43 | 55.34 |     |     |     |     |     |     |     |     |
| 1<br>2<br>3<br>4 | A     | 71.28 | 71.26 | 55.29 |     |     |     |     |     |     |     |     |
| 3                | 71.25 | 71.84 | 71.28 | 55.43 |     |     |     |     |     |     |     |     |
| 4                | 71.19 | A     | 71.22 | 55.16 |     |     |     |     |     |     |     |     |
| 5                | 71.60 | A     | 58.89 | 55.25 |     |     |     |     |     |     |     |     |
| 6                | 71.35 | A     | 55.44 | 55.11 |     |     |     |     |     |     |     |     |
| 7                | 71.28 |       | 55.41 | 55.33 |     |     |     |     |     |     |     |     |
| 7<br>8           | 71.27 |       | 55.45 | 55.12 |     |     |     |     |     |     |     |     |
| 9                | 71.28 |       | 55.68 | 53.59 |     |     |     |     |     |     |     |     |
| 10               | 71.28 | A     | 55.61 | 53.14 |     |     |     |     |     |     |     |     |
| 11               | 71.28 | A     | 55.83 | 52.64 |     |     |     |     |     |     |     |     |
| 12               | 71.26 |       | 55.94 | 52.59 |     |     |     |     |     |     |     |     |
| 13               | 71.25 | A     | 55.78 | 52.72 |     |     |     |     |     |     |     |     |
| 14               | 71.24 | 71.29 | 55.78 | 52.83 |     |     |     |     |     |     |     |     |
| 15               | 71.66 | 71.28 | 56.10 | 52.82 |     |     |     |     |     |     |     |     |
| 16               | 71.49 | 71.25 | 56.69 | 52.91 |     |     |     |     |     |     |     |     |
| 17               | 71.71 | 71.24 | 56.53 | 52.99 |     |     |     |     |     |     |     |     |
| 18               | 71.43 | 71.25 | 56.31 | 53.07 |     |     |     |     |     |     |     |     |
| 19               | 71.66 | 71.22 | 56.60 | 53.08 |     |     |     |     |     |     |     |     |
| 20               | 71.52 | 71.22 | 56.74 | 53.05 |     |     |     |     |     |     |     |     |
| 21               | 71.41 | 71.19 | 56.68 | 53.10 |     |     |     |     |     |     |     |     |
| 22               | 71.36 | 71.23 | 56.74 | 53.18 |     |     |     |     |     |     |     |     |
| 23               | 71.33 | 71.18 | 57.02 | 53.11 |     |     |     |     |     |     |     |     |
| 24               | 71.30 | 71.18 | 57.72 | 52.27 |     |     |     |     |     |     |     |     |
| 25               | 71.30 | 71.70 | 58.05 | 52.33 |     |     |     |     |     |     |     |     |
| 26               | 71.37 | 71.30 | 57.38 | 52.33 |     |     |     |     |     |     |     |     |
| 27               | 71.37 | 71.31 | 56.74 | 52.52 |     |     |     |     |     |     |     |     |
| 28               | 71.33 | 71.29 | 56.52 | 52.45 |     |     |     |     |     |     |     |     |
| 29               | 71.28 | 71.27 | 56.03 | 52.34 |     |     |     |     |     |     |     |     |
| 30               | 71.32 | 71.26 | 55.89 | 52.50 |     |     |     |     |     |     |     |     |
| 31               | 71.28 |       | 55.52 | A     |     |     |     |     |     |     |     |     |
| MBAN             |       | 65.45 | 58.33 |       |     |     |     |     |     |     |     |     |
| MAX              |       | 71.84 | 71.43 |       |     |     |     |     |     |     |     |     |
| MIN              |       | 52.76 | 55.41 |       |     |     |     |     |     |     |     |     |

A No gage-height record.

#### 50141500 LAGO GUAYO NEAR CASTANER, PR

LOCATION.--Lat 18°12'46", long 66°50'06", Hydrologic Unit 21010003, at Guayo Dam on Rio 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 Castaner, and 6.0 mi (9.6 km) west of Adjuntas.

DRAINAGE AREA .-- 9.60 sq mi (24.86 sq km).

#### RIRVATION RECORDS

PERIOD OF RECORD .-- April 1980 to January 1985 (discontinued).

GAGE .-- Water-stage recorder. Datum of gage is 1,400.00 ft (426.720 m) above mean sea level.

10.660

REMARKS.--Lago Guayo was completed in 1956. The dam is on Rio Guayo and is the largest in the southwestern Puerto Rico project. The maximum storage is 17,400 ac-ft (21.5 cu hm) for power and irrigation. The dam is a concrete gravity structure with a total length of 555 ft (169.2 m), a maximum structural height of 190 ft (57.9 m), and a maximum width at the base of 145 ft (44.2 m). The ungated overflow spillway with a crest elevation of 60.00 ft (18.288 m) and a crest length of 220 ft (67.1 m) was designed to pass a maximum flood of 30,200 cu ft/s (855 cu m/s) at a reservoir elevation of 70.00 ft (21.336 ft). Timber flashboards that were added to increase storage capacity were subsequently removed and their use discontinued.

EXTREMES OBSERVED FOR PERIOD OF RECORD .-- Maximum elevation, 62.43 ft (19.029 m), May 27, 1980; minimum elevation, 28.62 ft (8.723 m), May 2, 1984.

EXTREMES OBSERVED FOR CURRENT PERIOD .-- Maximum elevation, 59.68 ft (18.190 m) Oct. 22; minimum elevation, 46.81 ft (14.268 m) Jan. 14.

Capacity Table (based on data from Puerto Rico Water Resources Authority) Blevation, in feet Contents, in acre-feet Blevation, in feet Contents, in acre-feet 13,550 30 49 6,530 60

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS AT 2400

65

| DAY  | OCT   | NOV   | DEC   | JAN   | FBB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|------|-------|-------|-------|-------|-----|-----|-----|-----|-----|-----|-----|-----|
| 1    | 58.93 | 48.61 | 51.75 | 53.82 |     |     |     | 1   |     |     |     |     |
| 2    | 58.14 | 47.41 | 52.11 | 53.31 |     |     |     |     |     |     |     |     |
| 3    | 57.70 | 54.26 | 52.50 | 53.38 |     |     |     |     |     |     |     |     |
| 4    | 56.98 | 56.26 | 52.82 | 52.73 |     |     |     |     |     |     |     |     |
| 5    | 56.72 | 57.25 | 54.58 | 52.88 |     |     |     |     |     |     |     |     |
| 6    | 56.22 | 58.06 | 54.75 | 52.52 |     |     |     |     |     |     |     |     |
| 7    | 55.67 | 58.52 | 54.12 | 52.53 |     |     |     |     |     |     |     |     |
| 8    | 55.44 | 58.94 | 53.67 | 51.61 |     |     |     |     |     |     |     |     |
| 9    | 55.36 | 59.06 | 54.23 | 50.31 |     |     |     |     |     |     |     |     |
| 10   | 54.97 | 58.98 | 53.78 | 49.08 |     |     |     |     |     |     |     |     |
| 11   | 54.43 | 58.99 | 54.12 | 47.99 |     |     |     |     |     |     |     |     |
| 12   | 53.96 | 58.76 | 54.61 | 47.07 |     |     |     |     |     |     |     |     |
| 13   | 53.47 | 57.84 | 54.40 | 46.86 |     |     |     |     |     |     |     |     |
| 14   | 52.95 | 56.75 | 54.35 | 47.14 |     |     |     |     |     |     |     |     |
| 15   | 54.39 | 55.49 | 54.77 | 47.53 |     |     |     |     |     |     |     |     |
| 16   | 54.85 | 54.39 | 55.23 | 47.89 |     |     |     |     |     |     |     |     |
| 17   | 56.25 | 53.13 | 55.86 | 48.26 |     |     |     |     |     |     |     |     |
| 18   | 57.40 | 52.78 | 55.51 | 48.63 |     |     |     |     |     |     |     |     |
| 19   | 58.58 | 51.54 | 55.88 | 48.96 |     |     |     |     |     |     |     |     |
| 20   | 59.14 | 50.73 | 56.34 | 49.29 |     |     |     |     |     |     |     |     |
| 21   | 59.37 | 49.05 | 56.26 | 49.62 |     |     |     |     |     |     |     |     |
| 22   | 59.27 | 49.49 | 56.47 | 49.95 |     |     |     |     |     |     |     |     |
| 23   | 58.76 | 49.28 | 56.91 | 50.26 |     |     |     |     |     |     |     |     |
| 24   | 57.52 | 49.68 | 57.67 | 50.59 |     |     |     |     |     |     |     |     |
| 25   | 56.56 | 51.06 | 58.07 | 50.89 |     |     |     |     |     |     |     |     |
| 26   | 55.40 | 51.38 | 57.24 | 51.20 |     |     |     |     |     |     |     |     |
| 27   | 54.36 | 51.04 | 56.29 | 51.48 |     |     |     |     |     |     |     |     |
| 28   | 53.64 | 51.25 | 55.78 | 51.77 |     |     |     |     |     |     |     |     |
| 29   | 52.46 | 51.69 | 55.16 | 52.07 |     |     |     |     |     |     |     |     |
| 30   | 50.93 | 51.36 | 54.84 | 52.35 |     |     |     |     |     |     |     |     |
| 31   | 49.89 |       | 54.56 | A A   |     |     |     |     |     |     |     |     |
| MBAN | 55.80 | 53.77 | 54.99 |       |     |     |     |     |     |     |     |     |
| MAX  | 59.37 | 59.06 | 58.07 |       |     |     |     |     |     |     |     |     |
| MIN  | 49.89 | 47.41 | 51.75 |       |     |     |     |     |     |     |     |     |

A No gage-height record.

#### 50142500 LAGO PRIETO NEAR CASTANER, PR

LOCATION.--Lat 18°11'08", long 66°51'48", Hydrologic Unit 21010004, at dam on Rio Prieto, 2.0 mi (3.2 km) west of Castaner, 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 (24.86 sq km).

#### BLEVATION RECORDS

PERIOD OF RECORD .-- May 1980 to January 1985 (discontinued).

GAGE .-- Water-stage recorder. Datum of gage is 1,400.00 ft (476.720 m) above mean sea level.

REMARKS.--Lago Prieto was completed in 1955. It provides a maximum storage of approximately 700 ac-ft (0.863 cu hm) for power and irrigation. A power tunnel adit from the reservoir to the Lago Guayo tunnel allows for releases to Power Plant No. 1. Turbine releases are collected in Lago Antonio Lucchetti and are reused for power generation at Power Plant No. 2. The dam is a concrete gravity structure with a total length of 260 ft (79.2 m), a maximum structural height of 98 ft (29.9 m), and a maximum base width of 65 ft (19.8 m). The ungated overflow spillway, with a crest elevation of 85.00 ft (25.908 m), and a crest length of 170 ft (51.8 m) was designed to pass a maximum flood of 32,000 cu ft/s (906 cu m/s). Timber flashboards that were added after initial construction were subsequently removed, and their use discontinued.

EXTREMES OBSERVED FOR PERIOD OF RECORD. -- Maximum elevation, 87.49 ft (26.667 m), Sept. 13, 1982; minimum, less than 52.60 ft (16.032 m) many days.

EXTREMES OBSERVED FOR CURRENT PERIOD. -- Maximum elevation, 86.80 ft (26.457 m) Nov. 3; minimum elevation, 56.74 ft (17.294 m) Jan. 10.

Capacity Table
(based on data from Puerto Rico Water Resources Authority)

Elevation, in feet Contents, in acre-feet Elevation, in feet Contents, in acre-feet

| 49<br>60<br>65 | 0   | 85 | 484        |
|----------------|-----|----|------------|
| 60             | 97  | 90 | 484<br>586 |
| 65             | 156 |    |            |

#### ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS AT 2400

| DAY  | OCT   | NOV   | DEC   | JAN   | FEB | MAR | APR | MAY | JUN | JUL | AUG | SKP |
|------|-------|-------|-------|-------|-----|-----|-----|-----|-----|-----|-----|-----|
| 1    | 65.26 | 64.70 | 63.98 | 56.99 |     |     |     |     |     |     |     |     |
| 2    | 64.93 | 63.27 | 64.26 | 57.02 |     |     |     |     |     |     |     |     |
| 3    | 67.62 | 77.02 | 64.27 | 56.94 |     |     |     |     |     |     |     |     |
| 4    | 64.78 | 67.36 | 64.29 | 56.91 |     |     |     |     |     |     |     |     |
| 5    | 66.96 | 67.15 | 64.34 | 56.86 |     |     |     |     |     |     |     |     |
| 6    | 65.70 | 66.69 | 61.31 | 57.02 |     |     |     |     |     |     |     |     |
| 7    | 64.54 | 67.99 | 59.51 | 56.87 |     |     |     |     |     |     |     |     |
| 8    | 63.87 | 69.20 | 58.89 | 56.76 |     |     |     |     |     |     |     |     |
| 9    | 65.89 | 68.21 | 59.01 | 56.86 |     |     |     |     |     |     |     |     |
| 10   | 64.42 | 67.46 | 59.24 | 56.87 |     |     |     |     |     |     |     |     |
| 11   | 63.32 | 67.27 | 58.30 | 57.01 |     |     |     |     |     |     |     |     |
| 12   | 62.70 | 66.81 | 57.99 | 57.07 |     |     |     |     |     |     |     |     |
| 13   | 62.37 | 65.95 | 57.45 | 57.12 |     |     |     |     |     |     |     |     |
| 14   | 62.22 | 65.61 | 57.57 | 57.13 |     |     |     |     |     |     |     |     |
| 15   | 65.25 | 65.17 | 57.64 | 57.16 |     |     |     |     |     |     |     |     |
| 16   | 65.28 | 64.77 | 57.84 | 57.16 |     |     |     |     |     |     |     |     |
| 17   | 71.08 | 64.50 | 57.99 | 57.22 |     |     |     |     |     |     |     |     |
| 18   | 65.86 | 64.67 | 57.46 | 57.23 |     |     |     |     |     |     |     |     |
| 19   | 67.45 | 63.96 | 57.44 | 57.24 |     |     |     |     |     |     |     |     |
| 20   | 70.39 | 63.57 | 57.62 | 57.25 |     |     |     |     |     |     |     |     |
| 21   | 66.86 | 63.38 | 57.16 | 57.28 |     |     |     |     |     |     |     |     |
| 22   | 65.46 | 63.31 | 57.00 | 57.29 |     |     |     |     |     |     |     |     |
| 23   | 65.15 | 63.40 | 57.43 | 57.29 |     |     |     |     |     |     |     |     |
| 24   | 64.66 | 63.19 | 58.45 | 57.32 |     |     |     |     |     |     |     |     |
| 25   | 65.20 | 73.32 | 58.12 | 57.33 |     |     |     |     |     |     |     |     |
| 26   | 64.26 | 64.58 | 57.28 | 57.34 |     |     |     |     |     |     |     |     |
| 27   | 63.78 | 64.27 | 56.95 | 57.38 |     |     |     |     |     |     |     |     |
| 28   | 63.74 | 63.75 | 56.99 | 57.39 |     |     |     |     |     |     |     |     |
| 29   | 63.20 | 63.69 | 56.87 | 57.40 |     |     |     |     |     |     |     |     |
| 30   | 63.42 | 63.64 | 56.88 | A     |     |     |     |     |     |     |     |     |
| 31   | 66.47 |       | 56.87 | A     |     |     |     |     |     |     |     |     |
| MBAN | 65.23 | 65.93 | 58.92 |       |     |     |     |     |     |     |     |     |
| MAX  | 71.08 | 77.02 | 64.34 |       |     |     |     |     |     |     |     |     |
| MIN  | 62.22 | 63.19 | 56.87 |       |     |     |     |     |     |     |     |     |

A No gage-height record.

### 50143000 RIO GRANDE DE ANASCO 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 Rio Blanco and Rio Prieto, and 3.7 mi (6.0 km) southwest of Lares plaza.

DRAINAGE AREA, --26.3 sq mi (68.1 sq km) this does not include 36.2 sq mi (93.8 sq km) which contributes only during high floods, and 3.5 sq mi (9.1 sq km) which contributes only part of its storm runoff.

PERIOD OF RECORD .-- Water years 1959-68, 1970 to ourrent year.

### WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | TIME                                   | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS)                  | CON-<br>DUCT-          | PH<br>(STANI<br>ARD                | ATU   | RE                       | TUR-<br>BID-<br>ITY<br>(NTU)            | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L)                 | OXYGEN,<br>DIS-<br>SOLVEI<br>(PER-<br>CENT<br>SATUR-<br>ATION) | DEMAND CHEM- ICAL (HIGH LEVEL)          | FORM FECA 0.7 UM-M                           | , TOCOCCI<br>L, FECAL,<br>KF AGAR<br>F (COLS.<br>./ PER |
|----------------|--|--|------------------------|------------------------------------|---|--------------------------|---|---|--|---|--|---|
| OCT 1984       |  |  |                        |                                    |   |                          |   |   |  |   |  |   |
| 31<br>FBB 1985 | 1425                                   | 111  | 25                     | 6 8.4                              | 10 2  | 4.5                      | 13                                      | 8.5   | 104  | 1 2                                     | 2 K13  | 00 K1000  |
| 06             | 1430                                   | 16   | 32                     | 7 8.6                              | 30 2  | 5.5                      | 0.5                                     | 9.5   | 118  | 1                                       | 2 K1   | 00 K70  |
| MAR 27         | 1320                                   | 27   | 28                     | 0 8.2                              |   |                          | 3.0                                     | 8.9   | 108  | 5 <1                                    |  | 20 210  |
| JUN            | 1320                                   | 41   | 28                     |                                    |   | 3.0                      | 3.0                                     | 8.9   | 100  | , ,,                                    | 0 2  | 20 210  |
| 05<br>JUL      | 1425                                   | 40   | 25                     | 2 8.7                              | 70 3  | 0.0                      | 3.1                                     | 8.7   | 117  | 1                                       | 7 K9   | 10 K64  |
| 31             | 1500                                   | 22   | 27                     | 1 -                                | 3   | 2.0                      | 10                                      | 8.4   | 116  | 3 <1                                    | 0 1  | 10 140  |
|                |  |  |                        |                                    |   |                          |   |   | THE S  |   |  |   |
| DATE           | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | HARD-<br>NESS<br>NONCARB<br>WATER<br>TOT FLD<br>MG/L AS<br>CACO3 | BOLVE<br>DIS-          | DIS-<br>D SOLVE<br>(MG/I           | DIS<br>BD SOLV                              | UM,                      | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LINITY<br>WATER<br>TOTAL<br>FIRLD<br>MG/L AS<br>CACO3 | SULFID<br>TOTAL<br>G (MG/L<br>AS S)     | SOLV<br>(MG/                                 | FD SOLVED DIS-  |
|                | ,                                      | 0.1000   | 011                    | ,                                  | ,   | ,                        |   | ,   | 0.1000   |   |  |   |
| OCT 1984<br>31 | 100                                    | 3  | 28                     | 8.3                                | 3 10  |                          | 0.4                                     | 1.6   | 101  |   | - 13   | 8.2   |
| FBB 1985       | 140                                    |  |                        |                                    |   |                          |   |   |  |   | - 00   | 10  |
| 06             | 140                                    | 2  | 36                     | 11                                 | 14  |                          | 0.5                                     | 1.6   | 133  | <0.                                     | 5 23   | 12  |
| 27<br>JUN      |  |  | -                      |                                    |   |                          |   |   | 115  | -                                       | -  |   |
| 05             | 110                                    | 13   | 29                     | 8.0                                | 11  |                          | 0.5                                     | 1.6   | 92   | <0.                                     | 5 19   | 9.6   |
| JUL 31         |  |  |                        |                                    |   |                          |   |   |  |   |  |   |
|                | RI                                     | DE, D  | LICA, S                | -ITENO                             | BOLIDS,<br>DIS-                             | SOLIDS<br>RESIDE         | JE NIT                                  | SN, (   | GEN,   | GEN,                                    | NITRO-<br>GEN,                               | NITRO-<br>GEN,  |
| DA             | TE (M                                  | LVED (I  | MG/L<br>AS             | UENTS,<br>DIS-<br>SOLVED<br>(MG/L) | (TONS<br>PER<br>DAY)                        | SUS-<br>PENDEI<br>(MG/I  | TOT<br>(MC                              | TAL TO  | OTAL T   | MG/L                                    | MMONIA<br>TOTAL<br>(MG/L<br>AS N)            | ORGANIC<br>TOTAL<br>(MG/L<br>AS N)                      |
| 31             |  | 0.1  | 28                     | 160                                | 47  | 12                       | 1.                                      | .08   | 0.02   | 1.10                                    | <0.01  |   |
| FEB 19<br>06   |  | 0.1  | 32                     | 210                                | 9.0   | 2                        |   | (   | 0.01   | 0.70                                    | <0.01  |   |
| MAR            |  |  | 17                     |                                    |   |                          |   |   |  |   |  | 0.07  |
| 27<br>JUN      |  |  |                        |                                    |   | 6                        | 0.                                      |   |  | 0.60                                    | 0.03   | 0.37  |
| 05<br>JUL      | •                                      | 0.1  | 22                     | 160                                |   | 8                        |   | (   | 0.01   | 0.80                                    | 0.07   | 0.53  |
| 31             | •                                      |  |                        |                                    |   |                          |   |   | 1.   | 7                                       |  |   |
| DA             | GEN<br>MON<br>ORG<br>TO<br>TE (M       | ANIC (I  | GEN,<br>OTAL '<br>MG/L | GEN, P<br>FOTAL<br>(MG/L           | PHOS-<br>PHORUS,<br>TOTAL<br>(MG/L<br>AS P) | ARSENT<br>TOTAL<br>(UG/I | . ERA                                   | COV- REALE REALE (U                                 | OTAL T<br>SCOV- R<br>RABLE E<br>JG/L (                         | DMIUM<br>OTAL<br>ECOV-<br>RABLE<br>UG/L | CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) | COPPER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CU) |
| OCT 19         |  |  |                        |                                    |   |                          |   |   |  |   |  |   |
| 31<br>FEB 19   |  | 0.3  | 1.4                    | 6.2                                | 0.05  | -                        |   |   |  |   |  |   |
| 06             |  | 0.2  | 0.9                    | 4.0                                | 0.10  |                          | (1 (                                    | 100   | <20  | <1                                      | <1   | <10   |
| MAR<br>27      |  | 0.4  | 1.0                    | 4.4                                | 0.02  |                          |   |   |  |   |  |   |
| JUN<br>05      |  | 0.6  | 1.4                    | 6.2                                | 0.04  |                          |   | 100   | 30   | 1                                       | 3  | <10   |
| JUL 31         |  |  |                        |                                    |   |                          |   |   |  | 111                                     |  |   |
| 31             |  |  |                        |                                    |   |                          | _                                       |   |  | - 1                                     | 100  |   |

K = non-ideal count

RIO GRANDE DE ANASCO BASIN

50143000 RIO GRANDE DE ANASCO NEAR LARES, PR--Continued
WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FR) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE'<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|---|
| OCT 1984       |   |   |   |   |  |   |   |                                     |                            |   |
| 31<br>FRB 1985 |   |   |   |   |  |   |   |                                     |                            |   |
| 06             | 120   | <1  | 10  | (0.1  | <1   | <1  | 40  | <0.01                               | <1                         | 0.02  |
| MAR            |   |   |   |   |  |   |   |                                     |                            |   |
| 27             |   |   | -   | 0.3   |  |   |   |                                     |                            |   |
| JUN            |   |   |   |   |  |   |   |                                     |                            |   |
| 05             | 220   | 2   | 20  | <0.1  | <1   | <1  | 20  | <0.01                               | 4                          | 0.01  |
| JUL            |   |   |   |   |  |   |   |                                     |                            |   |
| 31             |   |   |   |   |  |   |   |                                     |                            |   |

#### 50144000 RIO GRANDE DE ANASCO 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 Marias, 5.4 mi (8.7 km) southwest of San Sebastian.

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 Rio 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 Rio Toro Diversion dam.

AVERAGE DISCHARGE.--22 years (1964-85), 310 cu ft/s (8.779 cu m/s), 44.64 in/yr (1,134 mm/yr), 224,600 acre-ft/yr (277 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 (3,960 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 discharge, 31 cu ft/s (0.878 cu m/s), Apr. 19, 20, 1965, gage height, 0.88 ft (0.268 m).

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

| Date   | Time | Di<br>(cu ft/s) | scharge<br>(cu m/s) | (ft)  | ge height (m) | Date   | Time | Disch<br>(cu ft/s) |       | Gage h | eight (m) |
|--------|------|-----------------|---------------------|-------|---------------|--------|------|--------------------|-------|--------|-----------|
| Nov. 3 | 1630 | 15,200          | 430                 | 11.45 | 3.490         | May 18 | 1215 | <b>*77,200</b>     | 2,186 | *26.77 | 8.159     |

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

Minimum discharge, 61 cu ft/s (1.728 cu m/s), Apr. 21.

|        |       | 7,777 | ,      |      |      |      | MBAN  | VALUI | RS   |      |      |       |       |       |        |
|--------|-------|-------|--------|------|------|------|-------|-------|------|------|------|-------|-------|-------|--------|
| DAY    | OCT   | NO    | V DE   | C    | JAN  | FEB  | м     | AR    | APR  | M    | IAY  | JUN   | JUL   | AUG   | SEP    |
| 1      | 1340  | 68    | 6 22   | 0    | 122  | 94   | 1     | 66    | 89   |      | 75   | 152   | 83    | 835   | 179    |
| 2      | 810   |       |        |      | 121  | 94   |       | 99    | 79   |      | 41   | 149   | 233   | 306   | 190    |
| 3      | 632   |       |        |      | 121  | 90   |       | 05    | 73   |      | 25   | 309   | 176   | 249   | 177    |
| 4      | 726   |       |        |      | 120  | 90   |       | 38    | 72   |      | 35   | 381   | 146   | 183   | 148    |
| 5      | 1160  |       |        |      | 122  | 88   |       | 00    | 80   |      | 01   | 174   | 137   | 140   | 158    |
| 6      | 1140  | 57    | 0 17   | 2    | 134  | 84   |       | 86    | 77   | 3    | 16   | 202   | 133   | 590   | 1010   |
| 7      | 909   | 59    | 4 15   | 2    | 132  | 84   |       | 85    | 77   | 4    | 18   | 240   | 130   | 610   | 490    |
| 8      | 639   | 68    | 5 14   | 9    | 121  | 84   |       | 98    | 89   |      | 08   | 230   | 209   | 408   | 473    |
| 9      | 531   |       |        |      | 119  | 84   |       | 25    | 92   |      | 35   | 151   | 194   | 293   | 368    |
| 10     | 532   |       |        |      | 115  | 84   |       | 25    | 273  |      | 06   | 147   | 285   | 433   | 283    |
| 11     | 476   | 46    | 9 14   | 3    | 119  | 93   | 1     | 91    | 243  | 1    | 42   | 135   | 209   | 461   | 383    |
| 12     | 776   |       |        |      | 111  | 89   |       | 11    | 139  |      | 58   | 133   | 287   | 376   | 304    |
| 13     | 492   | 399   |        |      | 111  | 93   |       | 93    | 121  |      | 49   | 124   | 220   | 405   | 315    |
| 14     | 447   |       |        |      | 111  | 89   |       | 98    | 81   |      | 85   | 116   | 152   | 684   | 312    |
| 15     | 1030  | 39    |        |      | 110  | 88   |       | 86    | 75   |      | 77   | 115   | 583   | 537   | 377    |
| 16     | 804   |       |        |      | 107  | 85   |       | 80    | 70   | 1    | 20   | 114   | 377   | 247   | 244    |
| 17     | 773   | 33    | 5 14   | 4    | 106  | 82   |       | 78    | 67   | 16   | 20   | 237   | 404   | 196   | 210    |
| 18     | 1460  | 31:   | 3 13   | 3    | 106  | 76   |       | 78    | 66   | 191  | 00   | 396   | 391   | 196   | 406    |
| 19     | 1340  | 31:   | 3 13   | 1    | 102  | 76   |       | 78    | 69   | 39   | 70   | 346   | 255   | 164   | 356    |
| 20     | 1380  | 29    | 1 13   | 4    | 102  | 76   |       | 80    | 68   | 16   | 90   | 217   | 186   | 149   | 257    |
| 21     | 782   |       |        |      | 102  | 74   |       | 86    | 65   |      | 26   | 174   | 166   | 315   | 203    |
| 22     | 588   |       |        |      | 101  | 74   |       | 42    | 168  |      | 74   | 232   | 152   | 162   | 264    |
| 23     | 520   | 26    | 4 12   | 9    | 100  | 75   | 1     | 23    | 455  | 3    | 53   | 476   | 152   | 141   | 227    |
| 24     | 488   | 260   | 0 15   | 9    | 100  | 78   | 1     | 01    | 135  | 3    | 16   | 487   | 147   | 133   | 447    |
| 25     | 467   | 25    | 5 14   | 2    | 97   | 78   |       | 90    | 112  | 2    | 66   | 391   | 138   | 354   | 383    |
| 26     | 443   |       |        |      | 94   | 81   |       | 82    | 311  |      | 35   | 419   | 443   | 310   | 247    |
| 27     | 429   |       |        |      | 94   | 101  |       | 83    | 126  |      | 10   | 225   | 183   | 190   | 387    |
| 28     | 407   |       |        |      | 94   | 84   |       | 92    | 95   |      | 94   | 178   | 183   | 159   | 356    |
| 29     | 406   |       |        |      | 94   |      |       | 88    | 84   |      | 80   | 160   | 195   | 135   | 264    |
| 30     | 505   |       |        |      | 94   |      |       | 98    | 78   |      | 69   | 161   | 191   | 427   | 255    |
| 31     | 616   |       | - 12   | 3    | 94   |      | 1     | 11    |      | 1    | 59   |       | 142   | 404   |        |
| TOTAL  | 23048 | 1761  |        |      | 3376 | 2368 | 34    |       | 3629 | 326  |      | 6971  | 6882  | 10192 | 9673   |
| MEAN   | 743   |       |        |      | 109  | 84.6 |       | 10    | 121  | 10   |      | 232   | 222   | 329   | 322    |
| MAX    | 1460  |       |        |      | 134  | 101  |       | 99    | 455  | 191  |      | 487   | 583   | 835   | 1010   |
| MIN    | 406   |       |        |      | 94   | 74   |       | 78    | 65   |      | 75   | 114   | 83    | 133   | 148    |
| CFSM   | 7.88  |       |        |      | 1.16 | .90  | 1.    |       | 1.28 | 11   |      | 2.46  | 2.35  | 3.49  | 3.41   |
| IN.    | 9.09  | 6.9   |        |      | 1.33 | .93  | 1.    |       | 1.43 | 12.  |      | 2.75  | 2.71  | 4.02  | 3.82   |
| AC-FT  | 45720 | 34940 | 933    | 0    | 6700 | 4700 | 67    | 90    | 7200 | 647  | 70   | 13830 | 13650 | 20220 | 19190  |
| CAL YR |       | TOTAL | 146438 | MEAN | 400  | MAX  | 4380  | MIN   | 43   | CFSM | 4.24 | IN.   | 57.77 | AC-FT | 290500 |
| WTR YR | 1985  | TOTAL | 124534 | MBAN | 341  | MAX  | 19100 | MIN   | 65   | CFSM | 3.62 | IN.   | 49.13 | AC-FT | 247000 |

# (National stream-quality accounting network station)

## WATER-QUALITY RECORDS

PERIOD OF RECORD .-- Water years 1963 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

|  | DATE     | TIME   | STREAM-<br>FLOW,<br>INSTAN-<br>TANEOUS<br>(CFS) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS)             | TEMPER-<br>ATURE<br>(DEG C)                | TUR-<br>BID-<br>ITY<br>(NTU)               | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L)              | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACOS)      |
|--|----------|--|---|---|--|--|--|--|--|--|--|---|
| 10   1130   115   251   8.20   22.5   2.5   11.5   132   86   54   110   |          | 1000   |   |   |  |  |  |  |  |  | ****   |   |
| BIARD    SIMPLE   S   | JAN 1985 |  | 177   |   |  |  |  |  |  |  |  |   |
| HARD-   MONCARB   CALCIUM   MAGNR   SIUM,   AD-   SIUM,   MATER   SULFATE   RIDE,   RIDE,   DIS-     | APR      | 1130   | 115   | 251   | 8.20                                       | 22.5                                       | 2.5  | 11.5   | 132  | 86   | 54   |   |
| NSS  | 03       | 1215   | 71  | 241   | 8.00                                       | 26.0                                       | 4.0  | 11.3   | 138  |  | <2   | 100   |
| 08   | DATE     | NBSS<br>NONCARB<br>WATER<br>TOT FLD<br>MG/L AS | DIS-<br>SOLVED<br>(MG/L                         | SIUM,<br>DIS-<br>SOLVED<br>(MG/L                  | DIS-<br>SOLVED<br>(MG/L                    | AD-<br>SORP-<br>TION                       | SIUM,<br>DIS-<br>SOLVED<br>(MG/L           | LINITY<br>WATER<br>TOTAL<br>FIELD<br>MG/L AS     | DIS-<br>SOLVED<br>(MG/L  | RIDE,<br>DIS-<br>SOLVED<br>(MG/L                               | RIDE,<br>DIS-<br>SOLVED<br>(MG/L                                   | DIS-<br>SOLVED<br>(MG/L<br>AS               |
| Jan 1985   10  |          |  | 2.4   | 1000  | 2712                                       |  | 2.5  | 3.0  | 20.00  | 12.5   | - 6-3  | 72  |
| 10   |          | 3  | 24  | 8.4   | 8.7  | 0.4  | 1.5  | 92   | 9.1  | 7.0  | ₹0.1   | 29  |
| SOLIDS, SOLIDS, SOLIDS, RESIDUE SUM OF SOLIDS, ORTHO, OR   | 10       |  | 27  | 9.6   | 9.8  | 0.4  | 1.1  | 108  | 11   | 11   | <0.1   | 28  |
| RESIDUE   SUM OF   SOLIDS   GEN      |          | 1  | 26  | 9.6   | 9.8  | 0.4  | 1.2  | 104  | 12   | 8.2  | <0.1   | 29  |
| 08 153 140 222 1.00 0.02 0.03 0.4 0.07 0.07 0.03 0.09  JAN 1985  10 176 160 55 0.76 0.02 0.03 0.3 0.05 0.04 0.03 0.09  APR  03 159 160 30 0.22 <0.01 0.4 0.04 0.03 <0.01  ALUM-  INUM, ARSENIC BARIUM, LIUM, CADMIUM MIUM, COBALT, COPPER, IRON, LEAD, LITHIUM DIS-  BOLVED SOLVED                | DATE     | RESIDUE<br>AT 180<br>DEG. C<br>DIS-<br>SOLVED  | SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED  | DIS-<br>SOLVED<br>(TONS<br>PER                    | GEN,<br>NO2+NO3<br>DIS-<br>SOLVED<br>(MG/L | GEN,<br>AMMONIA<br>DIS-<br>SOLVED<br>(MG/L | GEN,<br>AMMONIA<br>DIS-<br>SOLVED<br>(MG/L | GEN, AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L | PHORUS,<br>TOTAL<br>(MG/L                                      | PHORUS,<br>DIS-<br>SOLVED<br>(MG/L                             | PHORUS,<br>ORTHO,<br>DIS-<br>SOLVED<br>(MG/L                       | PHATE,<br>ORTHO,<br>DIS-<br>SOLVED<br>(MG/L |
| JAN 1985 10 176 180 55 0.76 0.02 0.03 0.3 0.05 0.04 0.03 0.09 APR 03 159 160 30 0.22 0.01 0.4 0.04 0.03 0.01   ALUM- INUM, ARSENIC BARIUM, LIUM, CADMIUM MIUM, COBALT, COPPER, IRON, LEAD, LITHIUM DIS- SOLVED              |          |  |   |   |  |  |  |  |  |  |  |   |
| APR 03  159 160 30 0.22 0.01 0.4 0.04 0.03 0.03 0.01   ALUM- INUM, ARSENIC BARIUM, LIUM, CADMIUM MIUM, COBALT, COPPER, IRON, LEAD, LITHIUM DIS- SOLVED              |          | 153  | 140   | 222   | 1.00                                       | 0.02                                       | 0.03                                       | 0.4  | 0.07   | 0.07   | 0.03   | 0.09  |
| ALUM- INUM, ARSENIC BARIUM, LIUM, CADMIUM MIUM, COBALT, COPPER, IRON, LEAD, LITHIUM DIS- SOLVED SOLV |          | 176  | 160   | 56  | 0.76                                       | 0.02                                       | 0.03                                       | 0.3  | 0.05   | 0.04   | 0.03   | 0.09  |
| NUM,   ARSENIC   BARIUM,   LIUM,   CADMIUM   MIUM,   COBALT,   COPPER,   IRON,   LEAD,   LITHIUM   DIS-     | 03       | 159  | 160   | 30  | 0.22                                       | <0.01                                      |  | 0.4  | 0.04   | 0.03   | <0.01  |   |
| NUM,   ARSENIC   BARIUM,   LIUM,   CADMIUM   MIUM,   COBALT,   COPPER,   IRON,   LEAD,   LITHIUM   DIS-     |          |  |   |   |  |  |  |  |  |  |  |   |
| 08 10 <1 40 0 <1 <1 <3 6 19 <1 <4  JAN 1985  10 10 <1 41 <0.5 1 <1 <3 <1 11 <1 <4  APR   | DATE     | INUM,<br>DIS-<br>SOLVED<br>(UG/L               | DIS-<br>SOLVED<br>(UG/L                         | DIS-<br>SOLVED<br>(UG/L                           | LIUM,<br>DIS-<br>SOLVED<br>(UG/L           | DIS-<br>SOLVED<br>(UG/L                    | MIUM,<br>DIS-<br>SOLVED<br>(UG/L           | DIS-<br>SOLVED<br>(UG/L                          | DIS-<br>SOLVED<br>(UG/L  | DIS-<br>SOLVED<br>(UG/L  | DIS-<br>SOLVED<br>(UG/L  | DIS-<br>SOLVED<br>(UG/L                     |
| 08 10 <1 40 0 <1 <1 <3 6 19 <1 <4  JAN 1985  10 10 <1 41 <0.5 1 <1 <3 <1 11 <1 <4  APR   | OCT 1984 |  |   |   |  | 3.60                                       |  |  |  |  |  |   |
| 10 10 <1 41 <0.5 1 <1 <3 <1 11 <1 <4   | 08       | 10   | <1  | 40  | 0  | <1   | <1   | (3   | 6  | 19   | <1   | <4  |
|  | 10       | 10   | <1  | 41  | <0.5                                       | 1  | <1   | <3   | (1   | 11   | <1   | <4  |
|  |          | 10   | 1   | 38  | <0.5                                       | <1   | <1   | <3   | 1  | 10   | <1   | 4   |

K = non-ideal count

## RIO GRANDE DE ANASCO BASIN

## 50144000 RIO GRANDE DE ANASCO NEAR SAN SEBASTIAN, PR--Continued

(National stream-quality accounting network station)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE                       | MANGA-<br>NESE,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MN) | MERCURY<br>DIS-<br>SOLVED<br>(UG/L<br>AS HG) | MOLYB-<br>DENUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS MO) | NICKEL,<br>DIS-<br>SOLVED<br>(UG/L<br>AS NI) | SELE-<br>NIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SE) | SILVER,<br>DIS-<br>SOLVED<br>(UG/L<br>AS AG) | STRON-<br>TIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS SR) | VANA-<br>DIUM,<br>DIS-<br>SOLVED<br>(UG/L<br>AS V) | ZINC,<br>DIS-<br>SOLVED<br>(UG/L<br>AS ZN) | SEDI-<br>MENT,<br>SUS-<br>PENDED<br>(MG/L) | MENT,<br>DIS-<br>CHARGE,<br>SUS-<br>PENDED<br>(T/DAY) |
|----------------------------|--|--|---|--|---|--|--|--|--|--|---|
| OCT 1984<br>08<br>JAN 1985 | 11   | <0.1   | <10   | 3  | <1  | <1   | 130  | <6   | 12   | 38   | 65  |
| 10<br>APR                  | 12   | <0.1   | <10   | <1   | <1  | <1   | 140  | 6  | 4  | 5  | 1.6   |
| 03                         | 14   | <0.1   | <10   | 1  | <1  | <1   | 130  | <6   | 4  | 54   | 10  |

|                |      |                             |                         | SED.<br>SUSP.            |
|----------------|------|-----------------------------|-------------------------|--------------------------|
|                |      | STREAM-                     | SEDI-                   | SIEVE                    |
| DATE           | TIME | FLOW,<br>INSTAN-<br>TANBOUS | MENT,<br>SUS-<br>PENDED | DIAM.<br>% FINER<br>THAN |
|                |      | (CFS)                       | (MG/L)                  | .062 MM                  |
| OCT 1984       |      |                             |                         |                          |
| 08<br>APR 1985 | 1600 | 538                         | 38                      | 91                       |
| 03             | 1215 | 71                          | 54                      | 92                       |
| 03             | 1225 | 175                         | 69                      | 93                       |
|                |      |                             |                         |                          |

### WATER-QUALITY RECORDS

LOCATION.--Lat 18°16'00", long 67°08'05", at bridge on Highway 430, 0.2 mi (0.3 km) south of Highway 109 at El Espino and 1.4 mi (2.3 km) east-southeast from Anasco plaza.

DRAINAGE AREA. -- 139 sq mi (360 sq km) this does not include 39.7 sq mi (102.8 sq km), flow is diverted to south coast.

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

### WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | TIME        | STRE<br>FLO<br>INST   | AM- CI<br>W, CO<br>AN- DU<br>OUS AN               | CT- (S                                    | PH<br>TAND-<br>ARD        |   | PER-<br>JRE  | TUR<br>BII<br>ITY<br>(NTU | )- Di   |   | DIS-<br>SOLVE<br>(PER-<br>CENT<br>SATUR | DEMA<br>D CHI<br>ICA<br>(H:                            | AND, FOR AND, FOR AL OLIGH UISL) (CO                           | DLI-<br>DRM,<br>BCAL,<br>.7<br>M-MF<br>DLS./<br>D ML) | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) |
|----------------|-------------|---|---|---|---------------------------|---|--|---------------------------|---|---|---|--|--|---|--|
| NOV 1984       |             | 3,370   | 340   | 11111                                     |                           | 1200  |  |                           |   |   |   |  |  |   | Account.   |
| 07<br>FBB 1985 | 1135        | 780   |   | 222                                       | 7.80                      |   | 24.0   | 12                        |   | 8.0   | 9                                       | 6  | <10  | K1300   | K1300  |
| 07<br>MAR      | 1630        | 97  |   | 250                                       | 8.20                      |   | 25.0   | 1.                        | 5   | 9.4   | 11                                      | 3  | <10  | K82   | K18  |
| 28<br>JUN      | 1450        | 116   |   | 241                                       | 8.20                      |   | 26.5   | 4.                        | 5   | 9.7   | 12                                      | 0  | <10  | K20   | K18  |
| 07             | 1615        | 177   |   | 199                                       | 7.70                      |   | 28.5   | 90                        |   | 7.1   | 9                                       | 1  | 10   | 2400  | K1300  |
| 16             | 1200        | 518   |   | 258                                       | 7.60                      |   | 26.0   | 46                        |   | 8.0   | 9                                       | 7  | 15   | (1900   | 4700   |
| DATE           |             | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3)                          | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA)      | DIS-<br>SOLVE<br>(MG/L                    | D SOI                     | DIUM,<br>IS-<br>LVED<br>4G/L<br>3 NA)         | SODI<br>SORE<br>TIC<br>RATI                              | )-<br>)-<br>)N            | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K)     | ALKA<br>LINIT<br>WATE<br>TOTA<br>FIBL<br>MG/L<br>CACO | Y<br>R<br>L S<br>D<br>AS                | ULFIDE<br>TOTAL<br>(MG/L<br>AS S)                      | SULFATI<br>DIS-<br>SOLVRI<br>(MG/L<br>AS SO4)                  | RI<br>DI<br>O SC<br>(M                                | HLO-<br>IDE,<br>IS-<br>ILVED<br>IG/L<br>I CL)                      |
| NOV 1984       |             |   |   |   |                           |   |  |                           |   |   |   |  |  |   |  |
| 07<br>FEB 1985 |             | 89  | 22  | 8.3                                       |                           | 8.4   | 0  | . 4                       | 1.7   |   | 92                                      |  | 8.3  | 3   | 6.9  |
| 07<br>MAR      |             | 110   | 27  | 9.8                                       |                           | 11  | 0  | .5                        | 1.4   | 1   | 12                                      | <0.5   | 9.6  | 5   | 7.9  |
| 28<br>JUN      |             |   |   | •   | -                         |   |  |                           |   | 1   | 05                                      |  | -  |   |  |
| 07<br>AUG      |             | 83  | 21  | 7.5                                       |                           | 7.9   | 0  | . 4                       | 1.6   |   | 90                                      | <0.5   | 9.4  |   | 5.9  |
| 16             |             |   |   | · ·                                       | -                         |   |  |                           | 144   |   | 87                                      |  |  |   |  |
| DATE           |             | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F)              | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | CONSTI                                    | SOI<br>- I<br>, SC<br>(1) | .1DS,<br>DIS-<br>DLVED<br>CONS<br>PER<br>DAY) | SOLID<br>RESID<br>AT 10<br>DEG.<br>SUS-<br>PENDE<br>(MG/ | UR<br>5<br>C,             | NITRO-<br>GEN,<br>NITRATE<br>TOTAL<br>(MG/L<br>AS N)    | NITR<br>GEN<br>NITRI<br>TOTA<br>(MG/                  | TE N<br>L<br>L                          | NITRO-<br>GEN,<br>02+NO3<br>TOTAL<br>(MG/L<br>AS N)    | NITRO-<br>GEN,<br>AMMONIA<br>TOTAL<br>(MG/L<br>AS N)           | ORG<br>TO   | TRO-<br>JEN,<br>JANIC<br>TAL<br>JG/L                               |
| NOV 1984<br>07 |             | <0.1  | 28  | 14  |                           | 2   | 40   |                           |   | <0.0  |   | 1.20   | 0.05   |   | 0.35   |
| FEB 1985       |             |   |   |   |                           |   |  |                           |   |   |   |  |  |   |  |
| MAR            |             | ₹0.1  | 30  | 16  |                           | 13  | 6  |                           |   | <0.0  |   | 0.30   | <0.04  |   |  |
| 28<br>JUN      |             |   |   | -   |                           |   | 4  |                           | 0.27  | 0.0   |   | 0.30   | 0.01   |   | 0.79   |
| O7             |             | ⟨0.1  | 21  | 13  | 0 6                       | 1   | 163  |                           | 0.49  | 0.0   | 1                                       | 0.50   | 0.05   |   | 0.95   |
| 16             |             |   |   | -   | -                         |   | 68   | 3                         |   |   |   |  |  |   | 72   |
| DATE           | G<br>M<br>O | NITRO-<br>EN,AM-<br>ONIA +<br>RGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS N)         | NITRO<br>GEN,<br>TOTAL<br>(MG/L<br>AS NO3 | PHO<br>TO<br>(N           | OS-<br>ORUS,<br>OTAL<br>IG/L                  | ARSEN<br>TOTA<br>(UG/                                    | IC<br>L<br>L              | BARIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS BA) | BORO<br>TOTA<br>RECO<br>ERAB<br>(UG/<br>AS B          | L<br>V-<br>LE<br>L                      | ADMIUM<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CD) | CHRO-<br>MIUM,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS CR) | TO<br>RE<br>ER<br>(U                                  | PER,<br>TAL<br>COV-<br>ABLE<br>G/L<br>CU)                          |
| NOV 1984       |             |   |   |   |                           |   | 1  |                           | 100   | 70.7  |   |  |  |   |  |
| 07<br>FEB 1985 |             | 0.4   | 1.6   | 7.1                                       | C                         | .07   |  |                           |   |   |   |  |  |   |  |
| 07<br>MAR      |             | 0.4   | 0.7   | 3.1                                       | <0                        | .04   |  | <1                        | <100  | <   | 20                                      | <1   | 4  |   | 80   |
| 28             |             | 0.8   | 1.1   | 4.9                                       | C                         | .03   |  |                           |   |   |   |  | 19-  |   | ::   |
| JUN<br>07      |             | 1.0   | 1.5   | 6.6                                       | 0                         | .02   |  | <1                        | 100   |   | 20                                      | <1   | 15   |   | 10   |
| AUG<br>16      |             |   | (44   |   |                           |   |  |                           |   |   |   |  |  |   |  |

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RIO GRANDE DE ANASCO BASIN
50146000 RIO GRANDE DE ANASCO NEAR ANASCO, PR--Continued
WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE      | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L)                 | LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|-----------|---|---|---|---|--|---|---|-------------------------------------|--|--|
| NOV 1984  |   |   |   |   |  |   |   |                                     |  |  |
| 07        |   |   |   |   |  |   |   |                                     |  |  |
| FEB 1985  | 470   | <1  | 100   | <0.1  | <1   | <1  | 30  | <0.01                               | <1   | 0.02   |
| MAR       | ****  |   | 100   |   | **   | **  |   | 10.01                               | 1725                                       |  |
| 28        |   |   |   | 0.2   |  |   |   |                                     |  |  |
| JUN<br>07 | 6000  | 3   | 220   | <0.1  | <1   | <1  | 30  | <0.01                               |  | <0.01  |
| AUG       | 0000  | •   | 220   | (0.1  | 11   | 11  | 30  | 10.01                               |  | 10.01  |
| 16        |   |   |   |   |  |   |   |                                     |  |  |
| DATE      | TII   | PCB TOTAL   | AL TOT  |   | R, DE                                      |   | AL TOT  |                                     | ION, BLDR                                  | IN<br>L  |
| AUG 1985  |   |   |   |   |  |   |   |                                     |  |  |
| 16        | 120   | 00 (  | 0.1 <0.   | 01 (  | 0.1 <0.                                    | 01 <0.  | 01 (0.  | 01 0                                | .01 (0.0                                   | 1  |
|           | DATE  | ENDO-<br>SULFAN,<br>TOTAL<br>(UG/L)                   | ENDRIN,<br>TOTAL<br>(UG/L)                                      | ETHION,<br>TOTAL<br>(UG/L)                              | HEPTA-<br>CHLOR,<br>TOTAL<br>(UG/L)        | HEPTA-<br>CHLOR<br>EPOXIDE<br>TOTAL<br>(UG/L)           | LINDANE<br>TOTAL<br>(UG/L)                            | MALA-<br>THION,<br>TOTAL<br>(UG/L)  | METH-<br>OXY-<br>CHLOR,<br>TOTAL<br>(UG/L) |  |
|           |   | (00,0)  | (00,0)  | (00, 11)  | (00,4)                                     | (00,1,  | (00,11)   | (00,1,                              | (00,2)                                     |  |
|           | 1985<br>6   | <0.01   | <0.01   | <0.01   | <0.01                                      | <0.01   | <0.01   | <0.01                               | <0.01                                      |  |
|           |   | METHYL  | METHYL  |   | DADA                                       | NAPH-<br>THA-<br>LENES,                                 | DPD   | mov.                                | TOTAL                                      |  |
|           |   | PARA-<br>THION.                                       | TRI-<br>THION.  | MIREX.  | PARA-<br>THION.                            | POLY-<br>CHLOR.   | PER-<br>THANE   | TOX-<br>APHENE,                     | TRI-                                       |  |
|           | DATE  | TOTAL   | TOTAL   | TOTAL   | TOTAL                                      | TOTAL   | TOTAL   | TOTAL                               | THION                                      |  |
|           |   | (UG/L)  | (UG/L)  | (UG/L)  | (UG/L)                                     | (UG/L)  | (UG/L)  | (UG/L)                              | (UG/L)                                     |  |
| AUG       | 1985  |   |   |   |  |   |   |                                     |  |  |
|           | 5   | <0.01   | <0.01   | <0.01   | <0.01                                      | <0.1  | <0.1  | <1                                  | <0.01                                      |  |

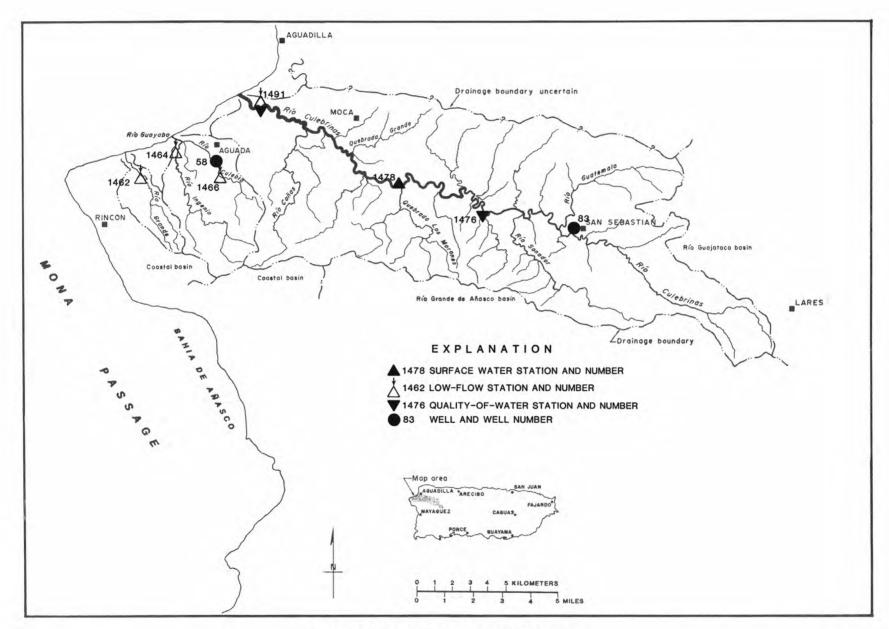


Figure 27.--Río Culebrinas basin.

### 50147600 RIO CULEBRINAS NEAR SAN SEBASTIAN, PR

### WATER-QUALITY RECORDS

LOCATION.--Lat 18°20'51", long 67°02'40", at bridge on Highway 423, 1.3 mi (2.1 km) south of Quebrada El Salto Bridge on Highway 111, and 2.1 mi (3.4 km) west of Central La Plata.

DRAINAGE AREA. -- 58.2 sq mi (150.7 sq km).

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

### WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | TIME                                      | STREAM-<br>FLOW,<br>INSTAN-<br>TANBOUS<br>(CFS)                  | SPE-<br>CIFI<br>CON-<br>DUCT<br>ANCE<br>(US/C | C PI<br>- (STA                                  | AND-                                  | TEMPER-<br>ATURE<br>(DEG C)                  | B                              | JR-<br>ID-<br>TY<br>TU)   | OXYGE<br>DIS<br>SOLV<br>(MG/       | SO SA SO SA   | GEN,<br>IS-<br>LVED<br>ER-<br>ENT<br>TUR-<br>ION) | OXYGEN<br>DEMAND,<br>CHEM-<br>ICAL<br>(HIGH<br>LEVEL)<br>(MG/L) |   | CAL,<br>MF        | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) |
|----------------|---|--|---|---|---------------------------------------|--|--------------------------------|---------------------------|------------------------------------|---|---|---|---|-------------------|--|
| NOV 1984       | 1515                                      | 140  |   | 40 (  |                                       |  |                                |                           |                                    |   | 0.7   | 1 1   |   |                   | 8700   |
| 01<br>FEB 1985 | 1515                                      | 149  |   |   | 3.10                                  | 23.6   |                                |                           |                                    | 1.2   | 97  | 13  |   | 0000              | 6700   |
| 06             | 0910                                      | 22   | 2   | 80 7  | 7.80                                  | 20.0   |                                | 2.5                       | 7                                  | .0  | 77  | 15  |   | 360               | 320  |
| 27<br>JUN      | 1735                                      | 46   | 4   | 54 7  | 7.70                                  | 24.6   |                                | 0.0                       | 6                                  | .4  | 77  | 29  | K1  | 800               | 570  |
| 06             | 1520                                      | 66   | 2   | 69 8  | 3.40                                  | 27.0   |                                | 5.0                       | 8                                  | .3  | 104   | 20  |   | 810               | <10  |
| AUG<br>01      | 1340                                      | 72   | 2   | 88 8  | 3.50                                  | 27.0   | , ,                            | 3.6                       | 8                                  | .7  | 109   | <10   | 3   | 400               | 3400   |
| DATE           | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3)    | HARD-<br>NESS<br>NONCARB<br>WATER<br>TOT FLD<br>MG/L AS<br>CACO3 | CALCII<br>DIS-<br>SOLVI<br>(MG/I              | UM SI<br>DI<br>RD SOI<br>L (MG                  | S-                                    | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA) | SOI<br>TI<br>RA                | OIUM<br>AD-<br>RP-<br>ION | POTA<br>SIU<br>DIS<br>SOLV<br>(MG/ | S- LIN<br>M, WA<br>- TO<br>ED FI<br>L MG/             | KA-<br>ITY<br>TER<br>TAL<br>BLD<br>L AS<br>CO3    | SULFIDE<br>TOTAL<br>(MG/L<br>AS S)                              |   | I/L<br>VKD        | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)                |
|                | CACOS                                     | CACOS  | AS C  | A) AS   | MG)                                   | AS NA  |                                |                           | AS A                               | , CA  | CUS   | AS 5)   | AS S  | 04)               | AS CLI   |
| NOV 1984<br>01 | 100                                       | 1  | 33  | 4   | .3                                    | 8.7  |                                | 0.4                       | 2.                                 | 1   | 99  | 44.   | 1   | 0                 | 11   |
| FEB 1985<br>06 | 100                                       |  | 32  |   | 5.3                                   | 17   |                                | 0.8                       | 2.                                 | 2   | 112   | <0.5  | 1   | 4                 | 14   |
| MAR 27         |   |  |   |   |                                       | ••   |                                |                           |                                    | -   | 174   |   |   |                   |  |
| JUN            |   |  |   |   |                                       | -  |                                |                           |                                    |   |   |   |   |                   |  |
| 06<br>AUG      | 110                                       | 0  | 37  | . 5   | . 1                                   | 15   |                                | 0.6                       | 2.                                 | 5   | 113   | <0.5  | 1   | 4                 | 11   |
| 01             | SOL                                       | S- SC<br>VED (N  | LICA, S<br>IS- O<br>DLVED S<br>IG/L           | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS- | SOLII<br>SOLV                         | DS, RE<br>B- AT<br>VED DE<br>NS S            | LIDS,<br>SIDUR<br>105<br>G. C, | GI<br>NITE<br>TOT         | AL                                 | NITRO-<br>GEN,<br>NITRITE<br>TOTAL                    | NO2+<br>TOT                                       | N,<br>NO3 AM<br>AL T  | ITRO-<br>GEN,<br>MONIA<br>OTAL                          | GE<br>ORGA<br>TOT | AL   |
| DATE           | (MG<br>AS                                 |  | (O2)  | SOLVED (MG/L)                                   | DAY                                   |  | MG/L)                          | (MC                       |                                    | (MG/L<br>AS N)  | (MC   |   | MG/L<br>S N)  | AS                |  |
| NOV 1984       |   |  | 23  | 150   |                                       |  | 00                             |                           | 07                                 | 0.00  |   |   | 0.10  |                   | . 60   |
| FEB 1985       |   | . 1  |   | 150   | 61                                    |  | 98                             |                           | 07                                 | 0.03  |   |   | 0.12  |                   | .58  |
| 06<br>MAR      | 0   | .1   | 34  | 190   | 11                                    |  | 4                              | 1.                        | 22                                 | 0.08  | 1.  | 30  | 0.08  | 0                 | .22  |
| 27<br>JUN      |   |  |   |   |                                       |  | 18                             | 0.                        | 71                                 | 0.09  | 0.  | 80  | 0.28  | 0                 | .82  |
| 06             | 0   | .1   | 28  | 180   | 32                                    |  | 16                             | 0.                        | 86                                 | 0.04  | 0.  | 90  | 0.13  | 2                 | .3   |
| AUG<br>01      |   |  |   |   |                                       |  |                                | 1.                        | 15                                 | 0.05  | 1.  | 20  | 0.05  | 0                 | .55  |
| DATE           | NIT<br>GEN,<br>MONI<br>ORGA<br>TOT<br>(MG | AM-<br>A + NI<br>NIC C<br>AL TC<br>/L (N                         | TRO-<br>GEN,<br>DTAL<br>IG/L<br>I N)          | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS NO3)     | PHOS<br>PHORU<br>TOTA<br>(MG/<br>AS I | JS, AR<br>AL T<br>/L (                       | SENIC<br>OTAL<br>UG/L<br>S AS) | ERA<br>(UC                | OV-<br>BLE                         | BORON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS B) | CADM<br>TOT<br>REC<br>BRA<br>(UG<br>AS            | IUM M<br>AL T<br>OV- R<br>BLR K<br>/L (                         | HRO-<br>IUM,<br>OTAL<br>BCOV-<br>RABLE<br>UG/L<br>S CR) |                   | AL<br>OV-<br>BLR<br>/L   |
| NOV 1984       |   |  | 1.0   |   |                                       |  |                                | ÷ .                       |                                    |   |   |   |   |                   |  |
| 01<br>FEB 1985 |   | . 7  | 1.8   | 8.0   | 0.1                                   | 10   |                                |                           |                                    |   |   |   |   |                   |  |
| 06<br>MAR      | 0   | . 3  | 1.6   | 7.1   | 0.2                                   | 24   | 2                              | <                         | 100                                | 40  |   | <1  | <1  |                   | 10   |
| 27<br>JUN      | 1   | . 1  | 1.9   | 8.4   | 0.5                                   | 54   |                                |                           |                                    |   |   |   |   |                   |  |
| 06             | 2   | .4   | 3.3   | 15  | 0.0                                   | 06   | <1                             | <                         | 100                                | <20   |   | 6   | 2   |                   | 10   |
| AUG<br>01      | 0   | .6   | 1.8   | 8.0   | 0.0                                   | 9  |                                |                           |                                    |   |   |   |   |                   |  |
|                |   |  |   |   |                                       |  |                                |                           |                                    |   |   |   |   |                   |  |

K = non-ideal count

RIO CULEBRINAS BASIN

50147600 RIO CULEBRINAS NEAR SAN SEBASTIAN, PR--Continued
WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | IRON,<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SELE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>BRABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|----------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| NOV 1984       |   |   |   |   |  |   |   |                                     |                            |  |
| 01<br>FEB 1985 |   |   |   |   |  |   |   |                                     |                            |  |
| 06<br>MAR      | 300   | 1   | 50  | <0.1  | <1   | <1  | 20  | <0.01                               | 2                          | 0.04   |
| 27<br>JUN      |   |   |   | 0.2   |  |   |   |                                     |                            |  |
| 06             | 360   | 10  | 50  | 0.3   | <1   | <1  | 110   | <0.01                               | 2                          | 0.02   |
| 01             |   |   |   |   |  |   |   |                                     |                            |  |

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RIO CULEBRINAS BASIN

#### 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. Blevation of gage is 45 ft (14 m), from topographic map.

REMARKS .-- Estimated daily discharges: May 8. Records fair except those for estimated daily discharges which are poor.

AVERAGE DISCHARGE.--18 years (1968-85), 302 cu ft/s (8.553 cu m/s), 57.60 in/yr (1,463 mm/yr), 218,800 acre-ft/yr (270 cu hm/yr); median of yearly mean discharges, 290 cu ft/s (8.21 cu m/s), 210,000 acre-ft/yr (260 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 69,000 cu ft/s (1,950 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 discharge, 16 cu ft/s (0.453 cu m/s), Apr. 17-19, 1979.

EXTREMES FOR CURRENT YEAR .-- Peak discharges greater than base discharge of 11,300 cu ft/s (320 cu m/s) and maximum (\*):

|        |      | Disch     | arge     | Gage h | eight |      |    |      |     | Disch | arge     | Gage h | eight |  |
|--------|------|-----------|----------|--------|-------|------|----|------|-----|-------|----------|--------|-------|--|
| Date   | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   | Dat  | e  | Time | (cu | ft/s) | (cu m/s) | (ft)   | (m)   |  |
| Oct. 5 | 1930 | 17,300    | 490      | 25.01  | 7.623 | May  | 18 | 1630 | *32 | .800  | 929      | *29.65 | 9.037 |  |
| Oct. 6 | 1945 | 23,800    | 674      | 27.19  | 8.288 | May  | 19 | 2015 | 24  | ,800  | 702      | 27.48  | 8.376 |  |
| May 7  | 2115 | 14,800    | 419      | 24.01  | 7.318 | June | 25 | 2115 | 25  | 700   | 728      | 27.76  | 8.461 |  |
| May 13 | 2030 | 13.000    | 368      | 23.22  | 7.077 |      |    |      |     |       |          |        |       |  |

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

Minimum discharge, 32 cu ft/s (0.906 cu m/s), Mar. 18.

|                  |       |       |                  |      |            |            | MBAN          | VALU | RS       |              |      |            |       |                |                  |
|------------------|-------|-------|------------------|------|------------|------------|---------------|------|----------|--------------|------|------------|-------|----------------|------------------|
| DAY              | OCT   | NO    | v                | DEC  | JAN        | FE         | В             | MAR  | APR      | M            | IAY  | JUN        | JUL   | AUG            | SEP              |
| 1                | 289   | 28    | 8                | 100  | 76         | 4          | 6             | 51   | 44       |              | 85   | 121        | 160   | 278            | 141              |
| 2                | 269   | 52    | 2                | 99   | 69         | 4          |               | 61   | 45       |              | 94   | 114        | 352   | 161            | 131              |
| 3                | 244   |       |                  | 98   | 68         | 4          |               | 45   | 41       |              | 36   | 108        | 162   | 335            | 143              |
| 4                | 227   |       |                  | 94   | 65         | 4          |               | 48   | 41       |              | 59   | 104        | 126   | 168            | 186              |
| 5                | 3590  |       |                  | 90   | 70         | 4          |               | 38   | 40       |              | 63   | 106        | 119   | 127            | 127              |
| 6                | 6060  | 22    | 8                | 88   | 119        | 4          | 2             | 35   | 41       | 5            | 77   | 109        | 110   | 504            | 162              |
| 7                | 859   | 25    | 5                | 87   | 122        | 3          | 9             | 37   | 40       | 32           | 70   | 128        | 105   | 2430           | 216              |
| 8                | 371   | 26    |                  | 85   | 69         | 4          |               | 34   | 61       |              | 00   | 141        | 259   | 1780           | 136              |
| 9                | 359   |       |                  | 82   | 65         | 4          |               | 39   | 196      | 2            | 74   | 193        | 152   | 408            | 125              |
| 10               | 378   | 20    |                  | 96   | 63         | 3          |               | 36   | 392      |              | 92   | 215        | 269   | 230            | 143              |
| 11               | 1330  | 19    | 1                | 94   | 62         | 3          | 9             | 68   | 1320     | 1            | 96   | 191        | 157   | 186            | 131              |
| 12               | 1850  | 17    | 8                | 84   | 61         | 4          |               | 46   | 1450     | 2            | 23   | 197        | 293   | 226            | 115              |
| 13               | 885   | 16    |                  | 81   | 60         | 5          |               | 37   | 744      |              | 70   | 114        | 150   | 292            | 115              |
| 14               | 696   | 16    |                  | 79   | 60         | 6          |               | 44   | 220      |              | 83   | 100        | 115   | 337            | 116              |
| 15               | 1460  |       |                  | 78   | 60         | 5          |               | 37   | 182      |              | 57   | 95         | 1140  | 278            | 111              |
| 16               | 650   | 15    | 0                | 79   | 58         | 4          | 9             | 34   | 164      | 1            | 39   | 116        | 226   | 175            | 108              |
| 17               | 359   | 16    | 5                | 86   | 56         | 4          |               | 36   | 167      | 18           | 20   | 163        | 472   | 307            | 127              |
| 18               | 628   |       |                  | 79   | 56         | 4          |               | 33   | 154      | 101          |      | 145        | 1720  | 265            | 118              |
| 19               | 1220  |       |                  | 76   | 56         | 4          |               | 34   | 173      | 67           |      | 604        | 482   | 162            | 857              |
| 20               | 717   | 13    |                  | 75   | 53         | 3          |               | 487  | 123      | 11           |      | 1470       | 356   | 147            | 275              |
| 21               | 539   | 13    | 0                | 73   | 53         | 3          | 7             | 522  | 204      | 4            | 07   | 329        | 226   | 220            | 196              |
| 22               | 313   | 12    | 6                | 78   | 52         | 3          | 9             | 308  | 407      | 3            | 07   | 173        | 168   | 188            | 155              |
| 23               | 279   | 12    | 3                | 77   | 53         | 3          | 5             | 138  | 268      | 2            | 57   | 133        | 150   | 140            | 155              |
| 24               | 339   | 11    |                  | 89   | 51         | 4          |               | 76   | 169      |              | 30   | 188        | 293   | 129            | 982              |
| 25               | 292   | 11    |                  | 77   | 50         | 4          |               | 64   | 130      |              | 98   | 5220       | 149   | 497            | 245              |
| 26               | 239   | 11    | 8                | 73   | 49         | 3          | 9             | 56   | 120      | 1            | 78   | 1070       | 189   | 232            | 161              |
| 27               | 219   | 11    | 3                | 75   | 49         | 4:         | 3             | 60   | 106      | 1            | 63   | 258        | 154   | 186            | 150              |
| 28               | 211   | 10    | 9                | 81   | 49         | 4          | 0             | 62   | 100      | 1            | 49   | 191        | 125   | 159            | 170              |
| 29               | 221   | 10    |                  | 74   | 49         |            | _             | 56   | 94       | 1            | 39   | 164        | 125   | 141            | 891              |
| 30               | 342   | 10    | 4                | 71   | 45         |            | -             | 54   | 92       | 1            | 32   | 159        | 128   | 178            | 699              |
| 31               | 400   |       | -                | 75   | 47         |            | -             | 50   |          | 1            | 26   |            | 115   | 192            |                  |
| TOTAL            | 25835 | 598   |                  | 2573 | 1915       | 119        |               | 2726 | 7328     | 315          |      | 12419      | 8747  | 11058          | 7387             |
| MBAN             | 833   | 20    | 0                | 83.0 | 61.8       | 42.        | 5 1           | 87.9 | 244      | 10           |      | 414        | 282   | 357            | 246              |
| MAX              | 6060  | 56    | 7                | 100  | 122        | 6          | 1             | 522  | 1450     | 101          | 00   | 5220       | 1720  | 2430           | 982              |
| MIN              | 211   | 10    | 4                | 71   | 45         | 3          | 5             | 33   | 40       |              | 85   | 95         | 105   | 127            | 108              |
| CFSM             | 11.7  | 2.8   | 1                | 1.17 | .87        | .60        | 0             | 1.23 | 3.43     | 14           | . 3  | 5.81       | 3.96  | 5.01           | 3.46             |
| IN.              | 13.50 | 3.1   | 3                | 1.34 | 1.00       | .63        |               | 1.42 | 3.83     | 16.          | 51   | 6.49       | 4.57  | 5.78           | 3.86             |
| AC-FT            | 51240 | 1188  |                  | 5100 | 3800       | 236        |               | 5410 | 14540    | 626          |      | 24630      | 17350 | 21930          | 14650            |
| CAL YR<br>WTR YR |       | TOTAL | 123468<br>118760 |      | 337<br>325 | MAX<br>MAX | 6920<br>10100 | MIN  | 25<br>33 | CFSM<br>CFSM | 4.73 | IN.<br>IN. | 64.51 | AC-FT<br>AC-FT | 244900<br>235600 |

RIO CULEBRINAS BASIN

50147800 RIO CULEBRINAS AT HIGHWAY 404 NEAR MOCA, PR--Continued

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### WATER QUALITY RECORDS

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

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE    | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE   | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|---------|------|---------------------------------------|--------------------------------------|-----------------------------|--------|------|---------------------------------------|--------------------------------------|-----------------------------|
| FEB, 21 | 1325 | 37                                    | 265                                  | 25.0                        | SEP, 1 | 0953 | 110                                   | 232                                  | 26.5                        |
| MAR, 04 | 1114 | 45                                    | 268                                  | 24.5                        | 100.00 |      |                                       |                                      |                             |

### RIO CULEBRINAS BASIN

## 50149100 RIO CULEBRINAS NEAR AGUADA, PR

### WATER-QUALITY RECORDS

LOCATION.--Lat 18°24'03", long 67°09'40", at bridge on Highway 2, and 2.3 mi (3.7 km) northeast of Aguada plaza. DRAINAGE AREA.--97.0 Sq mi (251.2 sq km).

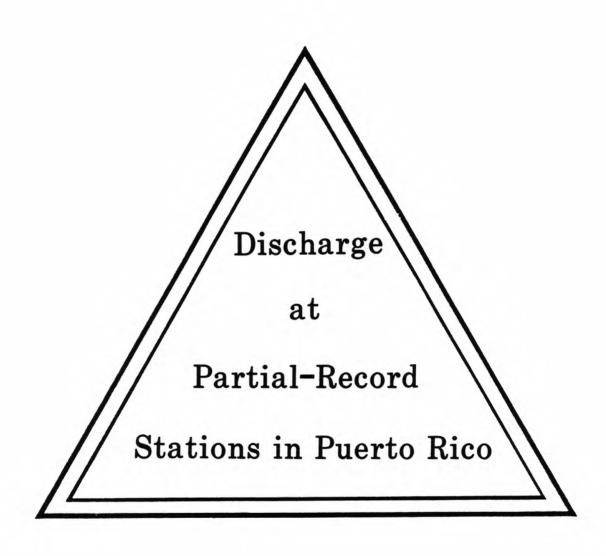
PERIOD OF RECORD .-- Water years 1958, 1970 to current year.

### WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | TIME                                   | STREAM<br>FLOW,<br>INSTAN<br>TANBOU<br>(CFS)                  | CON<br>I- DUC<br>IS AND                          | FIC<br>4- P<br>CT- (8T  | H<br>AND-<br>RD<br>TS)                    | TEMP<br>ATU<br>(DEG                     | RE  | TUR-<br>BID-<br>ITY<br>NTU)          | SOL                                       | EN,<br>S-<br>VED                             | XYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | CHI   | AND,<br>BM-<br>AL<br>EGH<br>BL)        | COLI<br>FORM<br>FECA<br>0.7<br>UM-N<br>(COLS | i,<br>L,<br>iF                   | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) |
|----------------|--|---|--|---|---|---|---|--------------------------------------|---|--|---|---|--|--|----------------------------------|--|
| NOV 1984       | 1100                                   |   |  |   |   |   |   |                                      |   |  |   |   |  |  |                                  | 0000   |
| 02<br>FBB 1985 | 1100                                   | 352   |  | 265   | 7.80                                      | 2                                       | 4.5   | 80                                   |   | 7.7  | 93  |   | 11                                     | K140   | 000                              | 9200   |
| 07<br>MAR      | 1130                                   | 40  |  | 380   | 7.30                                      | 2                                       | 6.0   | 5.0                                  |   | 1.5  | 18  |   | 130                                    |  |                                  | K190000  |
| 28<br>JUN      | 1000                                   | 100   |  | 449   | 7.40                                      | 2                                       | 4.0   | 10                                   |   | 5.1  | 60  |   | 41                                     | 420  | 000                              | 47000  |
| 06             | 1030                                   | 128   |  | 307   | 8.20                                      | 2                                       | 7.0   | 6.1                                  |   | 7.1  | 89  |   | 12                                     | K12  | 00                               | K80  |
| AUG<br>01      | 1020                                   | 179   |  | 307   | 8.20                                      | 2                                       | 7.0   | 27                                   |   | 5.2  | 65  |   | <10                                    |  |                                  | 670  |
| DATE           | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3) | HARD-<br>NESS<br>NONCAR<br>WATER<br>TOT FL<br>MG/L A<br>CACO3 | B CALC   | CIUM S<br>S- D<br>LVRD SO<br>B/L (M                                 | GNE-<br>IUM,<br>IS-<br>LVED<br>G/L<br>MG) | SODI<br>DIS<br>SOLV<br>(MG              | UM,<br>- S<br>RD<br>/L F  | ODIUM<br>AD-<br>ORP-<br>TION<br>ATIO | 81  | AS- L<br>UM,<br>S-<br>VED<br>/L M            | ALKA-<br>INITY<br>WATER<br>TOTAL<br>FIELD<br>G/L AS<br>CACO3  | SULI<br>TOT<br>(MC                              | AL S/L                                 | SULFA<br>DIS-<br>SOLV<br>(MG/<br>AS SO       | BD<br>L                          | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L                          |
| NOV 1984       |  |   |  |   |   |   |   |                                      |   |  |   |   |  |  |                                  |  |
| 02<br>FBB 1985 | 110                                    | -   | - 35   | 5   | 4.6                                       | 9                                       | . 6   | 0.4                                  | 2   | .0   | 109   |   |  | 9  | . 4                              | 9.8  |
| 07             | 160                                    |   | 2 48   | 1   | 8.6                                       | 16                                      |   | 0.6                                  | 9   | . 2  | 153   |   | 0.5                                    | 21   |                                  | 17   |
| MAR<br>28      |  | _   | _  |   |   |   |   |                                      |   |  | 185   |   |  |  |                                  |  |
| JUN<br>06      | 130                                    | _   | - 42   |   | 5.6                                       | 13                                      |   | 0.5                                  | 1   | . 9  | 131   |   | 0.5                                    | 9  | . 5                              | 12   |
| AUG<br>01      |  |   |  |   |   |   |   |                                      |   |  | 131   |   |  | -  |                                  | 1111   |
| DAT            | RI<br>D<br>SO<br>E (M<br>AS            | DR,<br>IS-<br>LVED<br>G/L                                     | ILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2) | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SO<br>(T                                  | IDS,<br>IS-<br>LVED<br>ONS<br>ER<br>AY) | SOLIDS<br>RESIDU<br>AT 105<br>DEG. C<br>SUS-<br>PENDED<br>(MG/L | B NI<br>G<br>, NIT<br>TO<br>(M       | TRO-<br>EN,<br>RATE<br>TAL<br>G/L<br>N)   | NITR<br>GEN<br>NITRI<br>TOTA<br>(MG/<br>AS N | TR NO2<br>L TO<br>L (M  | TRO-<br>GBN,<br>2+NO3<br>OTAL<br>4G/L<br>B N)   | NIT<br>GE<br>AMMO<br>TOT<br>(MG<br>AS  | NIA<br>AL<br>/L                              |                                  | AL<br>/L   |
| NOV 198<br>02  |  | 0.1   | 24   | 160   | 15  | 2                                       | 177   | 0                                    | .78                                       | 0.0  | 2 0   | 0.80  | <0.                                    | 01   |                                  |  |
| FRB 198        | 5                                      | 0.2   | 34   | 250   | 2   |   | <1  |                                      |   | 0.0  |   | 0.20  | <0.                                    |  |                                  |  |
| MAR            | •                                      |   | 12.0   | 1977  | 4   |   |   |                                      |   |  |   |   |  |  |                                  |  |
| 28<br>JUN      |  |   |  |   |   |   | 13  |                                      | .44                                       | 0.0  |   | 0.50  |  | 31   |                                  | . 2  |
| AUG            |  | 0.1   | 29   | 190   | 6   | 6                                       | 17  | 0                                    | .68                                       | 0.0  | 2 0   | 0.70  | 0.                                     | 12   |                                  | .58  |
| 01             |  |   |  |   |   |   | 24  | 0                                    | .78                                       | 0.0  | 2 0   | 0.80  | 0.                                     | 10   | 0                                | .4   |
| DAT            | GEN<br>MON<br>ORG<br>TO<br>E (M        | ANIC<br>TAL<br>G/L  | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS N)        | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS NO3)                         | PHO<br>TO<br>(M                           | OS-<br>RUS,<br>TAL<br>G/L<br>P)         | ARSENI<br>TOTAL<br>(UG/L<br>AS AS                               | C RE                                 | IUM,<br>TAL<br>COV-<br>ABLE<br>G/L<br>BA) | BORO<br>TOTA<br>RECO<br>RRAB<br>(UG/<br>AS B | L TO<br>V- RE<br>LE ER<br>L (U                                | OMIUM<br>OTAL<br>SCOV-<br>RABLE<br>JG/L<br>JG/L | CHR<br>MIU<br>TOT<br>REC<br>ERA<br>(UG | M,<br>AL<br>OV-<br>BLE<br>/L                 | COPP<br>TOT<br>REC<br>ERA<br>(UG | AL<br>OV-<br>BLE<br>/L   |
| NOV 198        |  |   |  |   |   |   |   |                                      |   |  |   |   |  |  |                                  |  |
| 02<br>FEB 198  |  | 0.4   | 1.2  | 5.3   | 0   | .07                                     | -   | 7                                    |   | 11   | -   |   |  |  |                                  |  |
| 07             |  | 1.9   |  |   | 1   | . 10                                    |   | 2                                    | 100                                       | - 5  | 30  | 1   |  | 3  |                                  | 90   |
| MAR<br>28      |  | 1.5   | 2.0  | 8.9   | 0   | .92                                     | _   | -                                    |   |  | 4   |   |  |  |                                  |  |
| JUN<br>06      |  | 0.7   | 1.4  | 6.2   | 0   | . 24                                    | <   | 1                                    | <100                                      | <  | 20  | 1   |  | 6  |                                  | <10  |
| AUG<br>01      |  | 0.5   | 1.3  | 5.8   |   | .08                                     |   |                                      |   |  |   |   |  |  |                                  | 2 14   |
|                | on-ideal                               |   |  | 0.0   |   |   | _   |                                      |   |  | 100   |   |  |  |                                  |  |

RIO CULEBRINAS BASIN 289 50149100 RIO CULEBRINAS NEAR AGUADA, PR--Continued WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE                   | IRON,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS FE) | LEAD,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS PB) | MANGA-<br>NESE,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS MN) | MERCURY<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS HG) | SRLE-<br>NIUM,<br>TOTAL<br>(UG/L<br>AS SE) | SILVER,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS AG) | ZINC,<br>TOTAL<br>RECOV-<br>ERABLE<br>(UG/L<br>AS ZN) | CYANIDE<br>TOTAL<br>(MG/L<br>AS CN) | PHENOLS<br>TOTAL<br>(UG/L) | METHY-<br>LENE<br>BLUE<br>ACTIVE<br>SUB-<br>STANCE<br>(MG/L) |
|------------------------|---|---|---|---|--|---|---|-------------------------------------|----------------------------|--|
| NOV 1984               |   |   |   |   |  |   |   |                                     |                            |  |
| 02                     |   |   |   |   |  |   |   |                                     |                            |  |
| FKB 1985               |   |   |   |   |  |   |   |                                     | 1.2                        |  |
| 07<br>MAR              | 3300  | <1  | 600   | 0.2   | <1   | <1  | 50  | <0.01                               | <1                         | 0.09   |
| 28                     |   |   |   | 0.1   |  |   |   |                                     |                            |  |
| JUN                    | 1000  |   | 1   |   | 200  | 100   |   | 44.40                               | 4.0                        | A.2. 24  |
| 06                     | 1000  | 49  | 60  | <0.1  | <1   | <1  | 20  | <0.01                               | 3                          | <0.01  |
| 01                     |   |   |   | -   |  |   |   |                                     |                            |  |
| DATE<br>AUG 1985<br>01 |   | (UG/<br>20 <  | AL TOT  | AL TOTA   | AL TOT<br>L) (UG                           | /L) (UG<br>01 <0.<br>HEPTA-                             | AL TOT  | 3/L) (UG<br>01 0                    | ON, ELDI AL TOT: /L) (UG,  | RIN<br>AL<br>'L)   |
|                        |   | BNDO-<br>SULFAN,                                      | ENDRIN,   | BTHION,   | HEPTA-<br>CHLOR,                           | CHLOR   | LINDANK   | MALA-<br>THION,                     | CHLOR,                     |  |
|                        | DATE  | TOTAL (UG/L)  | TOTAL (UG/L)  | TOTAL (UG/L)  | TOTAL (UG/L)                               | TOTAL (UG/L)  | TOTAL (UG/L)  | TOTAL (UG/L)                        | TOTAL (UG/L)               |  |
| AUG                    | 1985  |   |   |   |  |   |   |                                     |                            |  |
|                        | 1   | <0.01   | <0.01   | <0.01   | <0.01                                      | <0.01   | <0.01   | <0.01                               | <0.01                      |  |
|                        |   |   |   |   |  | NAPH-<br>THA-   |   |                                     |                            |  |
|                        |   | METHYL<br>PARA-                                       | MRTHYL<br>TRI-  |   | PARA-                                      | LENES,<br>POLY-   | PBR-  | TOX-                                | TOTAL                      |  |
|                        |   | THION,  | THION.  | MIREX.  | THION.                                     | CHLOR.  | THANK   | APHENE,                             | TRI-                       |  |
|                        | DATE  | TOTAL   | TOTAL   | TOTAL   | TOTAL                                      | TOTAL   | TOTAL   | TOTAL                               | THION                      |  |
|                        |   | (UQ/L)  | (UG/L)  | (UG/L)  | (UG/L)                                     | (UG/L)  | (UG/L)  | (UG/L)                              | (UG/L)                     |  |
| AUG                    | 1985  |   |   |   |  |   |   |                                     |                            |  |
| nou                    |   |   |   |   |  |   |   |                                     |                            |  |



As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are useable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or floods to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at partial-record stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations and the second is a table of annual maximum stage and discharge at crest-stage stations.

#### Low-flow partial-record stations

Measurements of streamflow in the areas covered by this report made at low-flow partial-record stations are given in the following table. These measurements were made during periods of base flow when streamflow is primarily from ground-water storage. These measurements, when correlated with the simultaneous discharge of nearby stream when continuous records are available, will give a picture of the low-flow potentiality of stream.

#### Discharge measurements made at low-flow partial-records stations during water year 1985

#### PUBLICATION RECORD

| STATION  | STATION   | LOCATION  | DRAINAGE<br>ARBA |         |      | STREAM-        | SPE-<br>CIFIC | TEMPER- |
|----------|---|---|------------------|---------|------|----------------|---------------|---------|
| NUMBER   | NAME  | AND   | sq mi            | DATE    | TIME | ofs            | CONDUC-       | ATURE   |
|          |   | BASIN   | (sq km)          |         |      | (cms)          | umhos         | deg C   |
|          |   | Quebrada de los Cedros basin  |                  |         |      |                |               |         |
| 50007000 | Quebrada de los Cedros<br>near Isabela, PR            | Lat 18 30 46, long 67 05 47<br>Hydrologic unit 21010002.<br>On dirt road, 4.7mi (7.6km)<br>west of Isabela, and 0.5 mi<br>(0.8 km) upstream from mouth  | 6.91<br>(17.90)  | 4/09/85 | 1400 | Dry            |               |         |
|          |   | Rio Guajataca basin   |                  |         |      |                |               |         |
| 50011400 | Rio Guajataca above<br>mouth near<br>Quebradillas, PR | Lat 18 28 31, long 66 57 46 Hydrologic unit 21010002. At ford, 1.7 mi (2.7 km) up- stream from bridge on Hwy 2, 2.1 mi (3.4 km) from the Atlantic Ocean, 6.6 mi (10.6 km) downstream from Lago Guajataca, and 1.6 mi (2.6 km) west of Quebradi- llas.   | 23.7<br>(61.4)   | 4/09/85 | 1445 | No<br>Meas     |               |         |
|          |   | Rio Camuy basin   |                  |         |      |                |               |         |
| 50015800 | Rio Camuy at<br>Capaez, PR                            | Lat 18 27 49, long 66 49 58 Hydrologic unit 21010002. At 1.1 mi (1.7 km) south of Purification Plant of Hati- llo, about 1.4 mi (2.2 km) south of Hwy 2, and 1.8 mi (2.9 km) upstream from mouth  | 22.0<br>(57.0)   | 4/12/85 | 1830 | 139<br>(3.94)  | 370           | 24.0    |
|          |   | Rio Grande de Arecibo basin   |                  |         |      |                |               |         |
| 50029000 | Rio Grande de<br>Arecibo at Central<br>Cambalache, PR | 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 Hwy 2, 13.9 mi (22.4 km) downstream from Dos Bocas Reservior, 1.9 mi (3.1 km) downstream from Rio Tanama and 1.6 mi (2.6 km) southeast of Arecibe | 200 (520)        | 4/3/85  | 1330 | 145<br>(4.11)  |               |         |
|          |   | Rio Cibuco basin  |                  |         |      |                |               |         |
| 50039000 | Rio Indio near Vega<br>Baja, PR                       | Lat 18 26 19, long 66 22 13 Hydrologic unit 21010002. At bridge on Hwy 160, 0.6 mi (1.0 km) upstream from Rio Cibuco, and 1.2 mi (1.9 km) southeast of Vega Baja.   | 26.7<br>(69.2)   | 4/10/85 | 1125 | 17.1<br>(0.48) | 533           | 24.0    |

| STATION  | STATION   | LOCATION   | DRAINAGE<br>ARBA |         |      | STRKAM-<br>FLOW | SPEC-<br>CIFIC | TEMPER- |
|----------|---|--|------------------|---------|------|-----------------|----------------|---------|
| NUMBER   | NAME  | AND  | aq mi            | DATE    | TIME | ofs             | TANCE          | ATURE   |
|          |   | BASIN  | (sq km)          |         |      | (oms)           | umhos          | deg C   |
|          |   | Rio de la Plata basin  |                  |         |      |                 |                |         |
| 50045800 | Rio Lajas at Toa<br>Alta, PR                      | Lat 18 23 39, long 66 15 16<br>Hydrologic unit 21010005.<br>At bridge on Hwy 165, 0.2<br>mi (0.3 km) upstream from<br>Rio de la Plata, and 0.5 mi<br>(0.8 km) northwest of Toa<br>Alta.  | 8.60<br>(22.27)  | 4/10/85 | 1525 | 5.63<br>(0.16)  | 578            | 25.5    |
|          |   | Rio Hondo basin  |                  |         |      |                 |                |         |
| 50047502 | Rio Hondo at<br>Bayamon, PR                       | Lat 18 23 51, long 66 09 22<br>Hydrologic unit 21010005.<br>At bridge on Hwy 2, 700 ft<br>(213 m) east of Hwy 2 and<br>Calle Parque intersection,<br>and 0.7 mi (1.2 km) south<br>of sewage treatment plant.                     | 7.59<br>(19.66)  | 4/12/85 | 1441 | 13.1<br>(0.37)  | 690            | 28.5    |
| 50047504 | Quebrada Santa Catalina<br>at Bayamon, PR         | Lat 18 24 05, long 66 09 43<br>Hydrologic unit 21010005.<br>700 ft (213 m) downstream<br>from bridge on Hwy 2 and<br>0.2 mi (0.3 km) upstream<br>from mouth.   | 2.50<br>(6.47)   | 4/11/85 | 1110 | 0.89<br>(0.025) | 740            | 26.5    |
| 50047508 | Cano de Quebrada<br>Catalina at Bayamon, PR       | Lat 18 24 27, long 66 09 38<br>Hydrologic unit 21010005.<br>At bridge on new Hwy 187,<br>0.7 mi (1.1 km) north of Hwy<br>2 and Calle Parque intersec-<br>tion, and 0.2 mi (0.3 km)<br>upstream from sewage treat-<br>ment plant. | 0.65<br>(1.68)   | 4/11/85 | 1230 | 0.15<br>(0.004) | 590            | 25.5    |
| 50047525 | Rio Hondo II near<br>Bayamon, PR                  | Lat 18 25 19, long 66 10 38 Hydrologic unit 21010005. At bridge on Hwy 872 and 0.7 mi (1.1 km) downstream from bridge on Hwy 22.   | 3.18<br>(8.24)   | 4/11/85 | 0935 | 1.75<br>(0.05)  | 797            | 25.5    |
|          |   | Rio de Bayamon basin   |                  |         |      |                 |                |         |
| 50048510 | Rio de Bayamon at Flood<br>Channel at Bayamon, PR | Lat 18 24 29, long 66 09 04<br>Hydrologic unit 21010005.<br>At bridge on Hwy 890, 1.0 mi<br>(1.6 km) downstream from<br>bridge on Hwy 2, and 3.2 mi<br>(5.1 km) upstream from<br>mouth.  | 73.2<br>(189.6)  | 4/12/85 | 1502 | 50.3<br>(1.42)  | 410            | 29.0    |
|          |   | Rio Puerto Nuevo basin   |                  |         |      |                 |                |         |
| 50049000 | Rio Piedras at Rio<br>Piedras, PR                 | Lat 18 23 48, long 66 03 24 Hydrologic unit 21010005. On left bank, at bridge on Hwy 1, 0.3 mi (0.5 km) southwest of Rio Piedras Plaza, and 0.4 mi (0.6 km) downstream from diversion for water supply.                          | 12.5<br>(32.4)   | 4/08/85 | 1450 | 10.2<br>(0.29)  | 422            | 27.0    |
| 50049310 | Quebrada Josefina at<br>Pinero Avenue, PR         | Lat 18 24 33, long 66 04 36<br>Hydrologic unit 21010005. At<br>bridge on Pinero Ave, and<br>0.4 mi (0.6 km) upstream<br>from junction with Rio Pie-<br>dras.   | 19.0<br>(49.2)   | 4/08/85 | 1220 | 2.83<br>(0.080) | 400            | 31.5    |

| STATION  | STATION   | LOCATION   | DRAINAGE        |         |      | STREAM-        | SPR-                      | TEMPER- |
|----------|---|--|-----------------|---------|------|----------------|---------------------------|---------|
| NUMBER   | NAMB  | AND  | AREA<br>sq mi   | DATE    | TIME | FLOW           | CIFIC<br>CONDUC-<br>TANCE | ATURE   |
|          |   | BASIN  | (sq km)         |         |      | (cms)          | umhos                     | deg C   |
|          |   | Rio Puerto Nuevo basin   |                 |         |      |                |                           |         |
| 50049600 | Quebrada Margarita at<br>Caparra Heights, PR    | Lat 18 24 33, long 66 06 18 Hydrologic unit 21010005. At bridge on Franklin D. Roosevelt Ave, at San Patricio Plasa and Fort Buchannan interchange with Hwy 2, and 0.1 mi (0.2 km) south of Caparra Heights.                 | 1.82<br>(4.71)  | 4/08/85 | 1720 | 38.7<br>(1.10) | 217                       | 27.0    |
|          |   | Quebrada Blasina basin   |                 |         |      |                |                           |         |
| 50050300 | Quebrada Blasina near<br>Carolina, PR           | Lat 18 23 27, long 65 58 28 Hydrologic unit 21010005. At bridge on Hwy 3, 1.4 mi (2.3 km) south of Valle Arriba Heights, and 1.2 mi (1.9 km) west-southwest of Carolina.   | 2.96<br>(7.67)  | 4/08/85 | 0825 | 5.67<br>(0.16) | 538                       | 26.0    |
|          |   | Rio Grande de Loiza basin  |                 |         |      |                |                           |         |
| 50051010 | Rio Grande de Loiza<br>below Rio Emajagua, PR   | Lat 18 07 23, long 65 59 18 Hydrologic unit 21010005. 200 ft (61 m) below junction with Rio Emajagua and 400 ft (122 m) north of Hwy 181 and Hwy 745 intersection.   | 12.2<br>(31.6)  | 4/08/85 | 1155 | 20.8<br>(0.59) | 137                       | 26.0    |
| 50051140 | Rio Grande de Loiza at<br>Jagual, PR            | Lat 18 09 29, long 65 58 48<br>Hydrologic unit 21010005.<br>200 ft (61 m) east of Jagual<br>School on Hwy 181 and 1.7<br>mi (2.8 km) above junction<br>with Rio Cayaguas.  | 17.8<br>(46.1)  | 4/08/85 | 1300 | 30.2<br>(0.86) | 153                       | 27.0    |
| 50052300 | Rio Grande de Loiza at<br>San Lorenzo North, PR | Lat 18 11 39, long 65 57 46<br>Hydrologic unit 21010005.<br>Above sewage treatment plant<br>on north side of San Lorenzo,<br>0.2 mi (0.3 km) northwest of<br>the plaza, and 1.6 mi (2.6 km)<br>downstream from Rio Cayaguas. |                 | 4/08/85 | 1408 | 54.6<br>(1.55) | 173                       | 30.0    |
| 50052700 | Rio Grande de Loiza at<br>Hwy 183, PR           | Lat 18 12 22, long 65 59 23<br>Hydrologic unit 21010005.<br>2.1 mi (3.4 km) northwest of<br>Plaza de San Lorenzo and 1.8<br>mi (2.9 km) downstream from<br>bridge on Hwy 181.  | 50.9<br>(131.8) | 4/08/85 | 1414 | 58.1<br>(1.64) | 206                       | 31.5    |
| 50052900 | Quebrada las Bambuas at mouth, PR               | Lat 18 13 31, long 66 00 58<br>Hydrologic unit 21010005.<br>300 ft (91 m) upstream from<br>bridge on Hwy 183 and 900 ft<br>(275 m) above junction with<br>Rio Grande de Loiza.   | 2.33 (6.03)     | 4/09/85 | 1645 | 0.77 (0.022)   | 582                       | 29.0    |
| 50053300 | Quebrada Beatriz above<br>Rio Turabo, PR        | Lat 18 11 15, long 66 03 04<br>Hydrologic unit 21010005.<br>1,400 ft (425 m) downstream<br>from bridge on Hwy 765 and<br>400 ft (120 m) above junction<br>with Rio Turabo.   | 5.65<br>(14.63) | 4/08/85 | 0948 | 3.89<br>(0.11) | 252                       | 25.0    |
| 50053500 | Rio Turabo below<br>Quebrada Beatriz, PR        | Lat 18 11 22, long 66 03 02<br>Hydrologic unit 21010005.<br>0.9 mi (1.4 km) downstream<br>from bridge on Hwy 765 and<br>400 ft (120 m) below junction<br>with Quebrada Beatriz.  | 17.3<br>(44.8)  | 4/08/85 | 1035 | 16.6<br>(0.47) | 195                       | 26.5    |

| STATION  | STATION                                | LOCATION   | DRAINAGE<br>ARBA       |         |      | STREAM-<br>FLOW | CIFIC   | TEMPER- |
|----------|--|--|------------------------|---------|------|-----------------|---------|---------|
| NUMBER   | NAME                                   | AND  | sq mi                  | DATE    | TIME | ofs             | CONDUC- | ATURE   |
|          |  | BASIN  | (sq km)                |         |      | (CES)           | umhos   | deg C   |
|          |  | Rio Grande de Loiza basin  |                        |         |      |                 |         |         |
| 50054500 | Rio Turabo at Caguas, PR               | Lat 18 13 36, long 66 01 40 Hydrologic unit 21010005. At bridge on Hwy 183, 0.9 mi (1.5 km) southeast of the plaza in Caguas, and 1.3 mi (2.1 km) upstream from Rio Grde Loiza.                          | 29.3<br>(75.9)<br>ande | 4/09/85 | 1610 | 15.2<br>(0.43)  | 243     | 31.5    |
| 50055310 | Rio Caguitas above<br>mouth, PR        | Lat 18 15 22, long 66 01 06<br>Hydrologic unit 21010005.<br>0.5 mi (0.7 km) downstream<br>from bridge on Hwy 30 and<br>0.4 mi (0.7 km) above junc-<br>tion with Rio Grande de Loiza                      | 18.0<br>(46.6)         | 4/09/85 | 1358 | 22.2<br>(0.63)  | 650     | 29.0    |
| 50055410 | Rio Bairoa at mouth, PR                | Lat 18 15 47, long 66 01 09<br>Hydrologic unit 21010005.<br>0.8 mi (1.2 km) downstream<br>from bridge on Hwy 30 and<br>0.4 mi (0.6 km) above junc-<br>tion with Rio Grande de Loiza                      | 7.51<br>(19.45)        | 4/09/85 | 1452 | 4.26<br>(0.12)  | 430     | 30.0    |
| 50055500 | Quebrada Honda at Las<br>Torres, PR    | Lat 18 13 15, long 65 49 57<br>Hydrologic unit 21010005.At<br>bridge on Hwy 31, 100 ft<br>(30 m) east of Hwy 31 and<br>Hwy 936 intersection, and<br>1.8 mi (2.9 km) above junc-<br>tion with Rio Gurabo. | 1.15<br>(2.98)         | 4/08/85 | 1015 | 0.21            | 450     | 23.5    |
| 50055600 | Rio Gurabo at Ceiba<br>Norte, PR       | Lat 18 13 29, long 65 51 34 Hydrologic unit 21010005. 0.4 mi (0.6 km) downstream from bridge on Hwy 31 and 0.2 mi (0.4 km) below junction with Quebrada Honda.   | 12.0<br>(31.1)         | 4/08/85 | 0915 | 5.13<br>(0.15)  | 390     | 25.0    |
| 50055700 | Rio Gurabo at<br>El Mango, PR          | Lat 18 13 56, long 65 52 52<br>Hydrologic unit 21010005.<br>1.2 mi (2.0 km) upstream<br>from bridge on Hwy 31 and<br>0.2 mi (0.4 km) above junc-<br>tion with Quebrada Grande.                           | 16.5<br>(42.7)         | 4/10/85 | 1102 | 5.93<br>(0.17)  | 390     | 27.5    |
| 50056000 | Rio Valenciano near Las<br>Piedras, PR | Lat 18 10 37, long 65 54 21<br>Hydrologic unit 21010005.<br>At bridge on Hwy 183 (km<br>17.3), and 3.2 mi (5.1 km)<br>west of Las Piedras.   | 6.85<br>(17.74)        | 4/10/85 | 0935 | 7.18<br>(0.20)  | 214     | 24.0    |
| 50056550 | Rio Valenciano at<br>mouth, PR         | Lat 18 14 13, long 65 55 13<br>Hydrologic unit 21010005.<br>0.6 mi (1.0 km) downstream<br>from bridge on Hwy 31 and<br>1,000 ft (305 m) above junc-<br>tion with Rio Gurabo.                             | 19.0<br>(49.2)         | 4/10/85 | 1203 | 13.4<br>(0.38)  | 378     | 27.5    |
| 50056600 | Rio Gurabo near<br>Juncos, PR          | Lat 18 14 38, long 65 55 25<br>Hydrologic unit 21010005.<br>At bridge on Hwy 185 and<br>0.4 mi (0.6 km) below junc-<br>tion with Rio Valenciano.   | 50.0<br>(129.5)        | 4/10/85 | 1258 | 22.1<br>(0.63)  | 357     | 29.5    |
| 50057015 | Rio Gurabo below<br>Hwy 943, PR        | Lat 18 15 50, long 65 58 41<br>Hydrologic unit 21010005.<br>0.6 mi (0.9 km) northeast of<br>Plaza de Gurabo and 0.7 mi<br>(1.2 km) downstream from<br>bridge on Hwy 181.                                 | 62.4<br>(161.6)        | 4/10/85 | 1419 | 29.9<br>(0.85)  | 405     | 29.0    |

| STATION<br>NUMBER | STATION                                   | LOCATION  | DRAINAGE<br>AREA | DATE    | TIME | STREAM-<br>FLOW | SPR-<br>CIFIC<br>CONDUC- | TEMPER- |
|-------------------|---|---|------------------|---------|------|-----------------|--------------------------|---------|
| NUMBER            | NAME                                      | AND   | sq mi            | DATE    | TIME | ofs             | TANCE                    |         |
|                   |   | BASIN   | (sq km)          |         |      | (cms)           | umhos                    | deg C   |
|                   |   | Rio Grande de Loiza basin   |                  |         |      |                 |                          |         |
| 50058400          | Rio Canas above Lago<br>Loiza, PR         | Lat 18 17 34, long 66 02 33 Hydrologic unit 21010005. At bridge about 2000 ft (610 m) off Hwy 1, 1.0 mi (1.6km) upstream from Lago Loiza, 1.0 mi (1.6 km) north of La Barra, and 4.0 mi (6.4 km) north of Caguas.       | 7.63<br>(19.76)  | 4/09/85 | 1237 | 5.09<br>(0.14)  | 318                      | 26.5    |
| 50059000          | Lago Loiza at<br>Dam Site, PR             | Lat 18 19 49, long 66 01 00 Hydrologic unit 21010005. At pumphouse at damsite and 1.9 mi (3.1 km) south of Trujillo Alto Plaza.   | 208<br>(539)     | 4/09/85 | 1137 | 4.79<br>(0.14)  | 217                      | 26.5    |
| 50059200          | Quebrada Grande at La<br>Gloria, PR       | Lat 18 20 28, long 65 59 20 Hydrologic unit 21010005, 400 ft (122 m) downstream from bridge on Hwy 181, 200 ft (61 m) below junction with Quebrada Grande, and 1.5 mi (2.4 km) above junction with Rio Grande de Loiza. | 12.0<br>(31.1)   | 4/08/85 | 1345 | 4.31<br>(0.12)  | 604                      | 25.5    |
| 50060000          | Rio Grande de Loiza<br>above Carolina, PR | Lat 18 22 10, long 65 57 50 Hydrologic unit 21010005. 0.5 mi (0.8 km) west of Trujillo Bajo and 0.2 mi (0.3 km) northwest of intersection of Hwys 853 and 858.  | (596)            | 4/08/85 | 1135 | No Meas         | s 298                    | 29.0    |
| 50060200          | Quebrada Maracuta at<br>Trujillo Bajo, PR | Lat 18 22 11, long 65 57 28 Hydrologic unit 21010005. At bridge on Hwy 853 and 0.3 mi (0.5 km) above junction with Rio Grande de Loiza.   | 10.2 (26.4)      | 4/08/85 | 1030 | 4.05<br>(0.11)  | 580                      | 27.5    |
| 50061000          | Rio Grande de Loiza at<br>Carolina, PR    | Lat 18 22 39, long 65 57 08 Hydrologic unit 21010005. At bridge on Hwy 3, 0.5 mi (0.8 km) southeast of Carolina Plaza, and 9.1 mi (14.km) upstream from mouth.  | 243<br>(629)     | 4/08/85 | 0910 | No Flor         | 333                      | 28.0    |
| 50061200          | Rio Canovanillas at<br>Carruzos, PR       | Lat 18 19 03, long 65 54 16 Hydrologic unit 21010005. At bridge on road 500 ft (152 m) off Hwy 185, and 0.7 mi (1.1 km) east of Jesus T. Pinero School.   | 9.10<br>(23.57)  | 4/09/85 | 1250 | 3.42<br>(0.097) | 600                      | 29.0    |
| 50061500          | Rio Canovanillas at<br>Loiza, PR          | Lat 18 22 44, long 65 55 00<br>Hydrologic unit 21010005.At<br>bridge on Hwy 3, 0.9 mi (1.4<br>km) upstream from Rio Gran-<br>de Loiza, and 1.0 mi (1.6 km)<br>west of Loiza.  | 16.5<br>(42.7)   | 4/09/85 | 0850 | 7.39<br>(0.21)  | 600                      | 26.0    |
| 50061900          | Rio Canovanas at La<br>Marina, PR         | Lat 18 21 01, long 65 53 51 Hydrologic unit 21010005. 100 ft (30 m) east of Hwy 185 and 0.9 mi (1.5 km) downstream from bridge on Hwy 957.  | 14.6<br>(37.8)   | 4/09/85 | 1430 | 18.3<br>(0.52)  | 255                      | 26.0    |
| 50062000          | Rio Canovanas at<br>Loiza, PR             | Lat 18 22 53, long 65 53 33<br>Hydrologic unit 21010005.At<br>bridge on Hwy 958 and 0.3<br>mi (0.5 km) east of Loiza.   | 17.0<br>(44.0)   | 4/09/85 | 1025 | 11.0<br>(0.31)  | 263                      | 26.5    |

| STATION  | STATION   | LOCATION  | DRAINAGE<br>AREA | A 192.2 | 2000 | STREAM-<br>FLOW | CIFIC   | TEMPER- |
|----------|---|---|------------------|---------|------|-----------------|---------|---------|
| NUMBER   | NAMB  | AND   | sq mi            | DATE    | TIME | ofs             | CONDUC- | ATURE   |
|          |   | BASIN   | (sq km)          |         |      | (cms)           | unhos   | deg C   |
|          |   | Rio Herrera basin   |                  |         |      |                 |         |         |
| 50062500 | Rio Herrera near Colonia<br>Dolores, PR         | Lat 18 21 02, long 65 52 00<br>Hydrologo unit 21010005.<br>On right bank, at bridge on<br>on Hwy 958, 2.0 mi (3.2 km)<br>south of Colonia Dolores,<br>and 3.2 mi (5.1 km) south-<br>west of Rio Grande.   | 2.75<br>(7.12)   | 4/10/85 | 1100 | 5.01<br>(0.14)  | 208     | 24.5    |
| 50062800 | Rio Herrera near<br>Loiza, PR                   | Lat 18 22 48, long 65 51 33<br>Hydrologic unit 21010005.At<br>bridge on Hwy 3, 1.9 mi<br>(3.1 km) west of Rio Gran-<br>de, and 2.8 mi (4.5 km) east<br>of Loisa.  | 3.86<br>(10.00)  | 4/10/85 | 0955 | 6.07<br>(0.17)  | 240     | 24.5    |
| 50063000 | Quebrada Cambalache<br>near Loiza, PR           | Lat 18 22 49, long 65 52 04 Hydrologic unit 21010005.At bridge on Hwy 3, 2.2 mi (3.5 km) east of Loiza, and 2.5 mi (4.0 km) west of Rio Grande.   | 1.32<br>(3.42)   | 4/10/85 | 0840 | 0.43<br>(0.012) | 642     | 25.5    |
|          |   | Rio Espiritu Santo basin  |                  |         |      |                 |         |         |
| 50063540 | Rio Espiritu Santo at<br>Camp Eliza Colberg, PR | Lat 18 20 22, long 65 49 42<br>Hydrologic unit 21010005.<br>3.1 mi (4.9 km) northwest of<br>Pico El Yunque and 0.8 mi<br>(1.3 km) below junction with<br>Quebrada Sonadora.   | 5.27<br>(13.65)  | 4/11/85 | 0905 | 10.8 (0.31)     | 78      | 22.0    |
| 50063850 | Quebrada Jimenez near<br>Rio Grande, PR         | Lat 18 21 36, long 65 48 47<br>Hydrologic unit 21010005.<br>300 ft (91 m) upstream from<br>Rio Espiritu Santo and 1.9<br>mi (3.1 km) southeast of Rio<br>Grande.  | 3.63<br>(9.40)   | 4/11/85 | 1030 | 5.31<br>(0.15)  | 134     | 25.0    |
| 50064200 | Rio Grande near<br>Bl Verde, PR                 | Lat 18 20 43, long 65 50 30 Hydrologic unit 21010005.On left bank, 400 ft (120 m) upstream from bridge on Hwy 960, 500 ft (150 m) southwest of junction of Hwys 956 & 960, 1.1 mi (1.8 km) west of Rl Verde, and 2.7mi (4.3km) south of Rio Grande. | 7.31<br>(18.93)  | 4/10/85 | 1440 | 16.8<br>(0.48)  | 122     | 26.0    |
| 50064500 | Rio Grande at<br>Rio Grande, PR                 | Lat 18 22 40, long 65 49 28<br>Hydrologic unit 21010005.At<br>bridge on Hwy 3, 0.5 mi (0.8<br>km) southeast of Rio Grande,<br>and 0.8 mi (1.3km) upstream<br>from Rio Espiritu Santo.   | 10.4<br>(26.9)   | 4/10/85 | 1325 | 20.4<br>(0.58)  | 157     | 27.0    |
| 50064900 | Quebrada Juan Gonzalez<br>near Rio Grande, PR   | Lat 18 22 37, long 65 48 04<br>Hydrologic unit 21010005.At<br>bridge on Hwy 955, 800 ft<br>(244 m) upstream from bridge<br>on Hwy 3, and 1.5 mi (2.4 km)<br>above junction with Rio Es-<br>pirutu Santo.  | 2.17<br>(5.62)   | 4/11/85 | 1215 | 1.60<br>(0.045) | 275     | 25.5    |

DISCHARGE AT PARTIAL-RECORD STATIONS

| STATION  | STATION                                       | LOCATION   | DRAINAGE<br>AREA |         |      | STREAM-<br>FLOW | CIFIC   | TEMPER- |
|----------|---|--|------------------|---------|------|-----------------|---------|---------|
| NUMBER   | NAME  | AND  | sq mi            | DATE    | TIME | ofs             | CONDUC- | ATURE   |
|          |   | BASIN  | (sq km)          |         |      | (cas)           | umhos   | deg C   |
|          |   | Rio Mameyes basin  |                  |         |      |                 |         |         |
| 50065700 | Rio Mameyes at<br>Hwy 191 at<br>Mameyes, PR   | Lat 18 22 03, long 65 46 14,<br>Hydrologic Unit 21010005,<br>0.2 mi (0.3 km) upstream<br>from Quebrada Anon, 0.3 mi<br>(0.5 km) downstream from<br>Quebrada Tabonuco, and 0.3 mi<br>(0.5 km) south of Mameyes.       | 11.8 (30.6)      | 4/19/85 | 1205 | 51.9<br>(1.47)  |         | 25.0    |
| 50066000 | Rio Mameyes at<br>Mameyes, PR                 | Lat 18 22 30, long 65 45 50 Hydrologic unit 21010005. At bridge on Hwy 3, 0.5 mi (0.8 km) downstream from Quebrada Anon, 0.5 mi (0.8 km) east of Mameyes (Palmer Post Office), and 3.1 mi (5.0 km) west of Luquillo. | 13.5<br>(35.0)   | 4/11/85 | 1330 | 27.6<br>(0.78)  | 148     | 27.5    |
|          |   | Quebrada Mata de Platano basis   | 1                |         |      |                 |         |         |
| 50066500 | Quebrada Mata de Platano<br>near Luquillo, PR | Lat 18 22 52, long 65 43 16 Hydrologic unit 21010005. At bridge on Hwy 3, 0.4 mi (0.6 km) northwest of Luquillo Plaza, and 0.3 mi (0.5 km) above mouth.  | 2.38<br>(6.16)   | 4/08/85 | 1101 | No Flow         | 605     | 27.0    |
|          |   | Rio Sabana basin   |                  |         |      |                 |         |         |
| 50068000 | Rio Sabana at<br>Luquillo, PR                 | Lat 18 22 15, long 65 42 51<br>Hydrologic unit 21010005.At<br>Hwy 3 bridge and 0.4 mi (0.6<br>km) southwest of Luquillo.   | 7.05<br>(18.26)  | 4/08/85 | 1204 | 7.90<br>(0.22)  | 106     | 26.0    |
|          |   | Rio Pitahaya basin   |                  |         |      |                 |         |         |
| 50069000 | Rio Pitahaya near<br>Luquillo, PR             | Lat 18 21 32, long 65 42 03<br>Hydrologic unit 21010005.At<br>bridge on Hwy 3, 1.6 mi (2.6<br>km) southeast of Luquillo,<br>and 1.7 mi (2.7 km) upstream<br>from Rio Sabana.   | 4.51<br>(11.68)  | 4/08/85 | 1257 | 4.58<br>(0.13)  | 164     | 27.0    |
|          |   | Rio Juan Martin basin  |                  |         |      |                 |         |         |
| 50069300 | Tributary to Rio Juan<br>Martin at Hwy 3, PR  | Lat 18 21 14, long 65 40 59<br>Hydrologic unit 21010005.At<br>bridge on Hwy 3 and 200 ft<br>(61 m) above junction with<br>Rio Juan Martin.   | 0.53<br>(1.37)   | 4/08/85 | 1322 | 0.03            | 602     | 28.0    |
| 50069350 | Rio Juan Martin above<br>mouth, PR            | Lat 18 21 44, long 65 40 35<br>Hydrologic unit 21010005.<br>0.8 mi (1.2 km) downstream<br>from bridge on Hwy 3 and<br>0.4 mi (0.7 km) above mouth.   | 2.41<br>(6.24)   | 4/08/85 | 1406 | 0.47<br>(0.013) | 455     | 29.5    |
|          |   | Quebrada Fajardo basin   |                  |         |      |                 |         |         |
| 50069400 | Quebrada Fajardo at<br>Hwy 194, PR            | Lat 18 20 49, long 65 39 55<br>Hydrologic unit 21010005.<br>At bridge on Hwy 194, 0.5 mi<br>(0.8 km) east of Hwy 194<br>and Hwy 3 intersection, and<br>1.5 mi (2.4 km) above mouth.                                  | 1.16 (3.00)      | 4/08/85 | 1457 | 0.13<br>(0.004) | 495     | 31.0    |

| STATION  | STATION                                      | LOCATION  | DRAINAGE<br>AREA |         |      | STREAM-<br>FLOW | SPE-<br>CIFIC | TEMPER- |
|----------|--|---|------------------|---------|------|-----------------|---------------|---------|
| NUMBER   | NAME   | AND   | sq mi            | DATE    | TIME | ofs             | TANCE         | ATURE   |
|          |  | BASIN   | (sq km)          |         |      | (oms)           | umhos         | deg C   |
|          |  | Rio Fajardo basin   |                  |         |      |                 |               |         |
| 50071200 | Rio Fajardo at Vapor<br>below Confluence, PR | Lat 18 18 28, long 65 40 10<br>Hydrologic unit 21010005.<br>1.7 mi (2.8 km) southwest of<br>Plaza de Fajardo and 1.4 mi<br>(2.3 km) upstream from bridge<br>on Hwy 3.                       | 19.4<br>(50.2)   | 4/09/85 | 0837 | 17.9<br>(0.51)  | 118           | 26.0    |
| 50072000 | Rio Fajardo at<br>Fajardo, PR                | Lat 18 19 11, long 65 39 07<br>Hydrologic unit 21010005.<br>At bridge on Hwy 3, 0.5 mi<br>(0.8 km) south of Fajardo,<br>and 2.5 mi (4.0 km) upstream<br>from mouth.                         | 21.6<br>(55.9)   | 4/09/85 | 0946 | 18.9<br>(0.54)  | 122           | 26.5    |
| 50072600 | Quebrada Mata Redonda<br>near Fajardo, PR    | Lat 18 19 34, long 65 39 00 Hydrologic unit 21010005.At bridge on Hwy 3, 1.2 mi (2.0 km) south of Plaza de Fajardo, and 1.7 mi (2.7 km) above junction with Rio Fajardo.                    | 1.34<br>(3.47)   | 4/09/85 | 0859 | No Flow         | 593           | 26.5    |
|          |  | Rio Demajagua basin   |                  |         |      |                 |               |         |
| 50072700 | Rio Demajagua at<br>Demajagua, PR            | Lat 18 17 10, long 65 38 21 Hydrologic unit 21010005. At bridge on Hwy 3, 200 ft (61 m) south of Hwy 3 and Hwy 982 intersection, and 0.3 mi (0.5 km) above mouth.                           | 1.61<br>(4.17)   | 4/09/85 | 1020 | 0.27<br>(0.008) | 315           | 27.0    |
|          |  | Quebrada Ceiba basin  |                  |         |      |                 |               |         |
| 50072800 | Quebrada Ceiba at<br>Ceiba, PR               | Lat 18 16 25, long 65 38 25 Hydrologic unit 21010005.At bridge on Hwy 3, 0.8 mi (1.3 km) northeast of Plaza de Ceiba, and 0.8 mi (1.3 km) above mouth.                                      | 2.15<br>(5.57)   | 4/09/85 | 1102 | 1.24 (0.035)    | 485           | 29.5    |
|          |  | Quebrada Aguas Claras basin   |                  |         |      |                 |               |         |
| 50072900 | Quebrada Aguas Claras<br>near Ceiba, PR      | Lat 18 16 03, long 65 38 20<br>Hydrologic unit 21010005.At<br>bridge on Hwy 979 and 0.6 mi<br>(0.9 km) above mouth.   | 0.83<br>(2.15)   | 4/09/85 | 1136 | 0.35<br>(0.010) | 418           | 31.5    |
|          |  | Rio Daguao basin  |                  |         |      |                 |               |         |
| 50073200 | Rio Daguao at<br>Daguao, PR                  | Lat 18 13 42, long 65 40 39<br>At railroad bridge, 0.1 mi<br>(0.2 km) downstream from<br>bridge on Hwy 3, 0.3 mi (0.5<br>km) east of Daguao, and 2.8<br>mi (4.5 km) upstream from<br>mouth. | 2.26<br>(5.85)   | 4/09/85 | 1245 | 0.63<br>(0.018) | 470           | 28.0    |
| 50073300 | Rio Daguao above<br>mouth, PR                | Lat 18 13 36, long 65 39 31<br>Hydrologic unit 21010005.<br>At bridge 650 ft (200 m)<br>downstream from bridge on<br>Langley Drive and 0.9 mi<br>(1.4 km) above mouth.                      | 4.29<br>(11.11)  | 4/09/85 | 1148 | No Flow         | 392           | 30.0    |

| STATION  | STATION  | LOCATION   | DRAINAGE        |         |      | STREAM-        | SPE-             | TEMPER- |
|----------|--|--|-----------------|---------|------|----------------|------------------|---------|
| NUMBER   | NAME   | AND  | AREA<br>sq mi   | DATE    | TIME | FLOW           | CIFIC<br>CONDUC- | ATURE   |
|          |  | BASIN  | (sq km)         |         |      | ofs<br>(cms)   | TANCE<br>umhos   | deg C   |
|          |  | Quebrada Palma basin   |                 |         |      |                |                  |         |
| 50073400 | Quebrada Palma at<br>Daguao, PR                | Lat 18 13 16, long 65°41 30 Hydrologic unit 21010005. At bridge on Hwy 3, 0.8 mi (1.3 km) southwest of Daguao, and 1.7 mi (2.7 km) upstream from mouth.  | 4.84<br>(12.54) | 4/09/85 | 1325 | 1.88           | 360              | 28.0    |
|          |  | Quebrada Botija basin  |                 |         |      |                |                  |         |
| 50073500 | Quebrada Botija<br>at Hwy 31, PR               | Lat 18 12 55, long 65°42 25<br>Hydrologic unit 21010005.<br>At bridge on Hwy 31, 500 ft<br>(152 m) upstream from bridge<br>on Hwy 3, and 1.6 mi (2.6 km)<br>above mouth.   | 1.10 (2.85)     | 4/09/85 | 1346 | 0.18           | 580              | 29.5    |
|          |  | Rio Santiago basin   |                 |         |      |                |                  |         |
| 50074000 | Rio Santiago at<br>Naguabo, PR                 | Lat 18 12 57, long 65°43 41 Hydrologic unit 21010005.At bridge on Hwy 31, 0.3 mi (0.5 km) northeast of Naguabo, 0.4 mi (0.6 km) downstream from Quebrada Grande, and 2.2 mi (3.5 km) upstream from mouth.                      | 4.99<br>(12.92) | 4/09/85 | 1446 | 5.85<br>(0.17) | 160              | 31.0    |
| 50074010 | Tributary to Rio<br>Santiago at<br>Hwy 192, PR | Lat 18 12 04, long 65°43 33<br>Hydrologic unit 21010005.<br>At bridge on Hwy 192 and<br>0.7 mi (1.1 km) above junc-<br>tion with Rio Santiago.   | 1.08 (2.80)     | 4/09/85 | 1455 | No Flow        | 250              | 29.0    |
|          |  | Rio Blanco basin   |                 |         |      |                |                  |         |
| 50076000 | Rio Blanco near<br>Florida, PR                 | Lat 18 13 45, long 65 47 06<br>Hydrologic Unit 2101005. 0.5<br>mi (0.8 Km) upstream from<br>Quebrada Sonadora, 0.7 mi<br>(1.1 km) upstream from<br>intersection of Hwy 191 and<br>31, and 0.8 mi (1.3 km)<br>south of Florida. | 12.3<br>(31.9)  | 4/08/85 | 1205 | 36.5<br>(1.03) | 95               | 25.0    |
| 50077000 | Rio Blanco at<br>Rio Blanco, PR                | Lat 18 13 09, long 65 46 57<br>Hydrologic unit 21010005. At<br>bridge on Hwy 31 and 0.4 mi<br>(0.6 km) east of Rio Blanco.   | 17.6<br>(45.6)  | 4/08/85 | 1055 | 23.9<br>(0.68) | 122              | 23.5    |
| 50077500 | Rio Blanco below<br>La Fe, PR                  | Lat 18 12 17, long 65 45 31 Hydrologic unit 21010005. 1.9 mi (3.0 km) downstream from bridge on Hwy 31 and 0.7 mi (1.1 km) south of Hwy 31 and Hwy 970 intersection.   | 20.8<br>(53.9)  | 4/09/85 | 1310 | 29.4<br>(0.83) | 200              | 26.5    |
| 50077600 | Quebrada Vaca below<br>La Fe, PR               | Lat 18 12 25, long 65 45 04 Hydrologic unit 21010005. 1.1 mi (1.8 km) downstream from bridge on Hwy 31 and 0.8 mi (1.4 km) southeast of Hwy 31 and Hwy 970 intersection.   | 3.47<br>(8.99)  | 4/09/85 | 1345 | 2.25<br>(0.06) | 385              | 28.0    |

| STATION  | STATION                                     | LOCATION   | DRAINAGE<br>AREA  |  |  | STREAM-   | SPR-<br>CIFIC  | TEMPER-   |
|----------|---|--|---|--|--|---|--|---|
| NUMBER   | NAME  | AND  | sq mi   | DATE   | TIME   | cfs   | CONDUC-  | ATURE   |
|          |   | BASIN  | (sq km)   |  |  | (cms)   | umhos  | deg C   |
|          |   | Rio Blanco basin   |   |  |  |   |  |   |
| 50077700 | Rio Blanco at<br>mouth, PR                  | Lat 18 11 17, long 65°43 47<br>Hydrologic unit 21010005.At<br>bridge on Hwy 3, at mouth,<br>and 0.8 mi (1.2 km) south-<br>west of Hwy 3 and Hwy 192<br>intersection.   | 27.2<br>(70.4)  | 4/09/85  | 1540   | 46.0<br>(1.30)  | 2270   | 27.0  |
|          |   | Rio Anton Ruiz basin   |   |  |  |   |  |   |
| 50078510 | Rio Anton Ruiz at Pasto<br>Viejo, PR        | Lat 18 10 26, long 65°47 05<br>Hydrologic unit 21010005.At<br>bridge on unimproved road,<br>300 ft (91 m) north of Hwy<br>925, and 1.5 mi (2.4 km)<br>north of Hwy 3 and Hwy 925<br>intersection.  | 5.75<br>(14.89)   | 4/09/85  | 1155   | 7.26<br>(0.21)  | 367  | 29.0  |
| 50078700 | Rio Anton Ruiz at mouth, PR                 | Lat 18 10 35, long 65°44 23<br>Hydrologic unit 21010005.<br>At bridge on Hwy 3, 1.8 mi<br>(2.9 km) southwest of Hwy 3<br>and Hwy 192 intersection,<br>and 200 ft (61 m) above<br>mouth.  | a 7.99<br>(20.69)   | 4/09/85  | 1610   | No Flow   | 15300  | 27.5  |
|          |   | Rio Humacao basin  |   |  |  |   |  |   |
| 50081000 | Rio Humacao at Las<br>Piedras, PR           | Lat 18 10 27, long 65°52 11 Hydrologic unit 21010005. On left bank about 60ft (18.3 m) off bridge on Hwy 921 (km 1.1), 0.6mi (1.0km) south -east of junction with Hwy 30, 0.8 mi (1.3 km) down- stream from Quebrada Blanca, and 0.8mi (1.3km) south of Las Piedras. | 6.65<br>(17.22)   | 4/09/85  | 0825   | 11.3<br>(0.32)  | 177  | 23.0  |
| 50081500 | Rio Humacao near<br>Humacao, PR             | Lat 18 09 37, long 65°50 41<br>Hydrologic unit 21010005.At<br>bridge on Hwy 914 and 1.3<br>mi (2.1 km) northwest of<br>Humacao.  | 9.23<br>(23.91)   | 4/09/85  | 1035   | 10.9<br>(0.31)  | 224  | 25.0  |
| 50081900 | Quebrada Mariana at<br>Patagonia, PR        | Lat 18 08 46, long 65°49 40 Hydrologic unit 21010005.At bridge on Hwy 908 and 450 ft (137 m) above junction with Rio Humacao.  | 5.76<br>(14.92)   | 4/09/85  | 0935   | 6.98<br>(0.20)  | 280  | 26.0  |
| 50082500 | Rio Humacao Flood<br>Channel near mouth, PR | Lat 18 07 28, long 65°47 23<br>Hydrologic unit 21010005.<br>3.1 mi (4.9 km) southeast<br>of Plaza de Humacao and<br>0.6 mi (0.9 km) above<br>mouth.  | 25.1<br>(65.0)  | 4/11/85  | 0835   | 29.7<br>(0.84)  | 535  | 25.0  |
|          |   | Rio Candelero basin  |   |  |  |   |  |   |
| 50082600 | Rio Candelero at<br>Hwy 909, PR             | Lat 18 06 17, long 65°48 54<br>Hydrologic unit 21010005.At<br>bridge on Hwy 906, 1.4 mi<br>(2.2 km) downstream from<br>bridge on Hwy 3, and 1.7 mi<br>(2.7 km) above mouth.  | 3.65<br>(9.45)  | 4/10/85  | 1315   | 1.40 (0.04)   | 297  | 32.5  |
|          | 50081900<br>50082500                        | Humacao, PR  50081900 Quebrada Mariana at Patagonia, PR  50082500 Rio Humacao Flood Channel near mouth, PR  50082600 Rio Candelero at  | Lat 18 09 37, long 65°50 41 Hydrologic unit 21010005.At bridge on Hwy 914 and 1.3 mi (2.1 km) northwest of Humacao.  50081900 Quebrada Mariana at Patagonia, PR  Lat 18 08 46, long 65°49 40 Hydrologic unit 21010005.At bridge on Hwy 908 and 450 ft (137 m) above junction with Rio Humacao.  50082500 Rio Humacao Flood Channel near mouth, PR  Hydrologic unit 21010005. 3.1 mi (4.9 km) southeast of Plaza de Humacao and 0.6 mi (0.9 km) above mouth.  Rio Candelero basin  Lat 18 06 17, long 65°48 54 Hydrologic unit 21010005.At bridge on Hwy 906, 1.4 mi (2.2 km) downstream from bridge on Hwy 37, and 1.7 mi | Lat 18 09 37, long 65°50 41   Hydrologic unit 21010005.At   9.23   bridge on Hwy 914 and 1.3   (23.91)   mi (2.1 km) northwest of   Humacao. | Lat 18 09 37, long 65°50 41   Hydrologic unit 21010005.At   9.23   4/09/85   bridge on Hwy 914 and 1.3   (23.91)   mi (2.1 km) northwest of   Humacao. | Lat 18 09 37, long 65°50 41   Hydrologic unit 21010005.At   9.23   4/09/85 1036   bridge on Hwy 914 and 1.3   (23.91)   mi (2.1 km) northwest of   Humacao.   Lat 18 08 46, long 65°49 40   Hydrologic unit 21010005.At   bridge on Hwy 908 and 450   ft (137 m) above junction   with Rio Humacao.   Source of Plaza de Humacao.   Hydrologic unit 21010005.   3.1 mi (4.9 km) southeast   (65.0)   of Plaza de Humacao and   0.6 mi (0.9 km) above   mouth.   Rio Candelero basin   Lat 18 06 17, long 65°48 54   Hydrologic unit 21010005.   At   bridge on Hwy 906, 1.4 mi   (9.45)   (2.2 km) downstream from   bridge on Hwy 906, 1.4 mi   (9.45)   (9.45)   (2.2 km) downstream from   bridge on Hwy 3, and 1.7 mi | Lat 18 09 37, long 65°50 41   Hydrologio unit 21010005.At   9.23   4/09/85   1035   10.9 | Lat 18 09 37, long 65°50 41   Hydrologio unit 21010005.At bridge on Hwy 914 and 1.3 (23.91)   (0.31)   (0.31) |

| NAME   |   | ARKA   |  |  | FLOW             | CIFIC                      |                            |
|--|---|--|--|--|------------------|----------------------------|----------------------------|
|  | AND   | sq mi  | DATE   | TIME   | ofs              | CONDUC-                    | ATURE                      |
|  | BASIN   | (sq km)  |  |  | (cms)            | umhos                      | deg C                      |
|  | Rio Candelero basin   |  |  |  |                  |                            |                            |
| Rio Candelero at<br>mouth, PR                            | Lat 18 06 09, long 65 47 43 Hydrologic unit 21010005.At bridge on unimproved road, 1.3 mi (2.1 km) downstream from bridge on Hwy 906, and 0.4 mi (0.7 km) above mouth.  | 4.77<br>(12.35)  | 4/10/85  | 1235   | 1.76<br>(0.05)   | 337                        | 29.5                       |
|  | Rio Guayanes basin  |  |  |  |                  |                            |                            |
| Rio Guayanes near<br>Colonia Laura, PR                   | Lat 18 04 55, long 65 57 32<br>Hydrologic unit 21010005.On<br>left bank, 1000 ft (305 m)<br>south of Hwy 182, 4.5 mi<br>(7.2km) west of Colonia Laura,<br>and 5.8 mi (9.3 km) north-<br>northwest of Yabucoa.   | 4.69<br>(12.15)  | 4/08/85  | 0935   | 9.85<br>(0.28)   | 137                        | 23.5                       |
| Rio Guayanes below Rio<br>Arenas, PR                     | Lat 18 04 44, long 65 56 54<br>Hydrologic unit 21010005.<br>100 ft (30 m) below junction<br>with Rio Arenas and 2.8 mi<br>(4.6 km) above junction with<br>Quebrada Guayabo.   | 7.44<br>(19.27)  | 4/08/85  | 1105   | 21.4<br>(0.61)   | 132                        | 24.0                       |
| Rio Guayanes at<br>Calabazas, PR                         | Lat 18 03 33, long 65 54 03<br>Hydrologic unit 21010005.At<br>bridge on Hwy 182 and 1.4<br>mi (2.2 km) above junction<br>with Rio Limones.  | 17.2<br>(44.5)   | 4/09/85  | 0840   | 33.1<br>(0.94)   | 167                        | 24.0                       |
| Rio Limones near<br>Yabucoa, PR                          | Lat 18 04 35, long 65 53 42<br>Hydrologic unit 21010005.At<br>bridge on Hwy 904, 1.2 mi<br>(2.0 km) upstream from Rio<br>Guayanes, and 2.0 mi (3.2<br>km) northwest of Yabucoa.   | 7.89<br>(12.70)  | 4/08/85  | 1320   | 15.7<br>(0.44)   | 168                        | 30.0                       |
| Rio Guayanes at<br>Yabucoa, PR                           | Lat 18 03 42, long 65 52 33<br>Hydrologic unit 21010005.At<br>bridge on Hwy 3, 0.5 mi (0.8<br>km) downstream from Rio Li-<br>mones, and 0.7 mi (1.1 km)<br>north of Yabucoa.  | 26.5<br>(68.6)   | 4/09/85  | 0740   | No Flow          | 163                        | 23.0                       |
| Rio Guayanes at Central<br>Roig, PR                      | Lat 18 03 57, long 65 52 22 Hydrologic unit 21010005. At abandonend lake control structure, 0.2 mi (0.3 km) northeast of Central Roig, 1.0 mi (1.6 km) downstream from Rio Limones, and 1.0 mi (1.6 km) northeast of Yabucoa.                         | 26.6<br>(68.9)   | 4/11/85  | 1005   | 36.2<br>(1.03)   | 168                        | 23.5                       |
| Rio Guayanes near<br>mouth near Playa de<br>Guayanes, PR | Lat 18 04 16, long 65 50 14 Hydrologic unit 21010005. At dirt road crossing, south of Hwy 906, and 3.1 mi (5.0 km) northeast of Yabucoa.  | 27.6<br>(71.5)   | 4/10/85  | 0915   | 44.3<br>(1.25)   | 167                        | 24.5                       |
| Rio del Ingenio near<br>Yabucoa, PR                      | Lat 18 05 03, long 65 51 27<br>Hydrologic unit 21010005.At<br>bridge on Hwy 3, 0.2 mi (0.3<br>km) upstream from Quebrada<br>Cortadera and Aguacate, and<br>2.6 mi (4.2 km) northeast of   | 2.46<br>(6.37)   | 4/11/85  | 1235   | 3.67<br>(0.10)   | 213                        | 29.0                       |
|  | Rio Guayanes hear Colonia Laura, PR  Rio Guayanes below Rio Arenas, PR  Rio Guayanes at Calabazas, PR  Rio Guayanes at Yabucoa, PR  Rio Guayanes at Yabucoa, PR  Rio Guayanes at Central Roig, PR  Rio Guayanes near mouth near Playa de Guayanes, PR | Rio Candelero basin  Rio Candelero at mouth, PR  Lat 18 06 09, long 65 47 43 Hydrologio unit 21010005. At bridge on unimproved road, 1.3 mi (2.1 km) downstream from bridge on Hwy 906, and 0.4 mi (0.7 km) above mouth.  Rio Guayanes basin  Rio Guayanes near Colonia Laura, PR  Lat 18 04 55, long 65 57 32 Hydrologio unit 21010005.0n left bank, 1000 ft (305 m) south of Hwy 182, 4.5 mi (7.2 km) west of Colonia Laura, and 5.8 mi (9.3 km) northmorthwest of Yabucoa.  Rio Guayanes below Rio Arenas, PR  Rio Guayanes at Calabazas, PR  Rio Guayanes at Lat 18 03 33, long 65 54 03 Hydrologic unit 21010005. At bridge on Hwy 182 and 1.4 mi (2.2 km) above junction with Rio Limones.  Rio Guayanes at Lat 18 04 35, long 65 53 42 Hydrologic unit 21010005. At bridge on Hwy 904, 1.2 mi (2.0 km) upstream from Rio Guayanes, and 2.0 mi (3.2 km) northwest of Yabucoa.  Rio Guayanes at Lat 18 03 42, long 65 52 33 Hydrologic unit 21010005. At bridge on Hwy 304, 1.2 mi (2.0 km) upstream from Rio Limones, and 0.7 mi (1.1 km) north of Yabucoa.  Rio Guayanes at Central Roig, 1.0 mi (1.6 km) downstream from Rio Limones, and 0.7 mi (1.1 km) north of Yabucoa.  Rio Guayanes near mouth near Playa de Guayanes, PR  Rio Guayanes near mouth near Playa de Guayanes, PR  Lat 18 04 16, long 65 50 14 Hydrologic unit 21010005. At abandonend lake control structure, 0.2 mi (0.3 km) northeast of Yabucoa.  Rio Guayanes near mouth near Playa de Guayanes, PR  Lat 18 04 16, long 65 50 14 Hydrologic unit 21010005. At abandonend lake control structure, 0.2 mi (0.3 km) northeast of Yabucoa.  Rio Guayanes, PR  Lat 18 04 16, long 65 50 14 Hydrologic unit 21010005. At abandonend Rio Control Structure, 0.2 mi (0.3 km) northeast of Yabucoa.  Rio Guayanes, PR  Lat 18 04 16, long 65 50 14 Hydrologic unit 21010005. At dirt road crossing, south of Hwy 306, and 3.1 mi (5.0 km) northeast of Yabucoa. | Rio Candelero basin   Lat 18 06 09, long 65 47 43   Hydrologio unit 21010005.4t bridge on unimproved road, 1.3 mi (2.1 km) downstream from bridge on livy 906, and 0.4 mi (0.7 km) above mouth.   Rio Guayanes basin   Lat 18 04 55, long 65 57 32   Hydrologio unit 21010005.0n left basin, 1000 ft (305 m) extra from the set of the s | Rio Candelero basin   Rio Candelero at mouth, PR | Rio Candelero at | Rio Candelero at mouth, PR | Rio Candelero at mouth, PR |

Low-flow partial-record stations--Continued

| STATION  | STATION  | LOCATION  | DRAINAGE<br>AREA |         |       | STREAM-<br>FLOW | SPE-<br>CIFIC | TEMPER- |
|----------|--|---|------------------|---------|-------|-----------------|---------------|---------|
| NUMBER   | NAME   | AND<br>ARBA   | sq mi            | PLOW    | CIFIC | cfs             | TANCE         | ATURE   |
|          |  | BASIN   | (sq km)          |         |       | (cms)           | umhos         | deg C   |
| 50005000 |  | Rio Guayanes basin  |                  |         |       |                 |               |         |
| 50086300 | Rio del Ingenio near<br>Playa de Guayanes, PR            | Lat 18 04 20, long 65 50 02<br>Hydrologic unit 21010005.<br>1.8 mi (2.9 km) downstream<br>from bridge on Hwy 3 and<br>0.6 mi (1.0 km) above junc-<br>tion with Rio Guayanes.  | 11.5<br>(29.8)   | 4/10/85 | 1020  | 8.74<br>(0.25)  | 290           | 28.0    |
| 50086500 | Rio Guayanes at Playa<br>de Guayanes, PR                 | Lat 18 03 45, long 65 49 42<br>Hydrologic unit 21010005.<br>At old railroad crossing,<br>0.2 mi (0.3 km) from mouth,<br>0.4 mi (0.6km) west of Pla-<br>ya de Guayanes, and 3.5 mi<br>(5.6 km) northeast of Yabu-<br>coa.    | 34.0<br>(88.1)   | 4/10/85 | 1130  | 49.5<br>(1.40)  | 166           | 27.5    |
|          |  | Cano Santiago basin   |                  |         |       |                 |               |         |
| 50087100 | Cano Santiago at<br>Hwy 3, PR                            | Lat 18 03 25, long 65 52 33<br>Hydrologic unit 21010005.At<br>bridge on Hwy 3, 0.5 mi (0.8<br>km) north of Plaza de Yabucoa<br>and 0.3 mi (0.5 km) below jun<br>tion with Quebrada Aguas Larg                               | c-               | 4/08/85 | 1140  | 5.38<br>(0.15)  | 246           | 27.0    |
| 50087200 | Cano Santiago near<br>Central Roig, PR                   | Lat 18 03 18, long 65 50 59<br>Hydrologic unit 21010005.<br>At service road and railroad<br>bridge, 1.8 mi (2.9 km) east<br>of Central Roig, and 2.0 mi<br>(3.2 km) east of Yabucoa.  | 6.04<br>(15.64)  | 4/11/85 | 1110  | 5.70<br>(0.16)  | 395           | 27.5    |
|          |  | Rio Maunabo basin   |                  |         |       |                 |               |         |
| 50091000 | Rio Maunabo at<br>Maunabo, PR                            | Lat 18 00 24, long 65 54 19<br>Hydrologic unit 21010005.<br>At bridge on Hwy 3, 0.4 mi<br>(0.6 km) southwest of Mau-<br>nabo, and 1.3 mi (2.1 km)<br>upstream from mouth.   | 12.4<br>(32.1)   | 4/09/85 | 1000  | 16.5<br>(0.47)  | 234           | 26.0    |
|          |  | Rio Jacaboa basin   |                  |         |       |                 |               |         |
| 50091500 | Rio Jacaboa at Hacienda<br>San Isidro, PR                | Lat 17 58 48, long 65 58 03<br>Hydrologic unit 21010004.<br>At bridge on Hwy 3, 0.4 mi<br>(0.6km) upstream from mouth,<br>0.4 mi (0.6 km) east of Ha-<br>cienda San Isidro, and 4.8<br>mi (7.7 km) southwest of<br>Maunabo. | 5.23<br>(13.5)   | 4/09/85 | 1340  | 1.07            | 320           | 30.5    |
|          |  | Rio Chico basin   |                  |         |       |                 |               |         |
| 50091800 | Rio Chico at<br>Providencia, PR                          | Lat 17 59 16, long 66 00 18 Hydrologic unit 21010004. At flat low bridge 200 ft (61 m) south of Hwy 3, 0.5 mi (0.8 km) above mouth, and 1.5 mi (2.4 km) south- east of Patillas.  | 4.93<br>(12.77)  | 4/09/85 | 1430  | 0.71 (0.020)    | 1020          | 31.0    |
|          |  | Rio Grande de Patillas basin  |                  |         |       |                 |               |         |
| 50091950 | Rio Grande de Patillas<br>below Quebrada<br>Sonadora, PR | Lat 18 03 48, long 66 02 57<br>Hydrologic unit 21010004.<br>1,300 ft (395 m) downstream<br>from bridge on Hwy 184 and<br>1,000 ft (305 m) below junc-<br>tion with Quebrada Sonadora.                                       | 8.75<br>(22.66)  | 4/10/85 | 0830  | 10.9<br>(0.31)  | 128           | 22.0    |

| STATION  | STATION                                      | LOCATION  | DRAINAGE<br>ARBA |         |      | STREAM-<br>FLOW | SPE-<br>CIFIC | TEMPER- |
|----------|--|---|------------------|---------|------|-----------------|---------------|---------|
| NUMBER   | NAME   | AND   | sq mi            | DATE    | TIME | ofs             | CONDUC-       | ATURE   |
|          |  | BASIN   | (sq km)          |         |      | (cas)           | unhos         | deg C   |
|          |  | Rio Grande de Patillas basin  |                  |         |      |                 |               |         |
| 50094200 | Rio Grande de Patillas<br>at Patillas, PR    | Lat 18 00 15, long 66 01 27<br>Hydrologic unit 21010004.<br>At bridge on Hwy 3, 0.7 mi<br>(1.1 km) west of Patillas,<br>and 1.9 mi (3.1km) upstream<br>from mouth.                              | 27.9<br>(72.3)   | 4/10/85 | 0950 | 1.75<br>(0.050  | 375           | 27.0    |
| 50094300 | Rio Grande de Patillas<br>at Providencia, PR | Lat 17 59 20, long 66 00 47<br>Hydrologic unit 21010004.<br>At abandoned railroad bridge,<br>0.5 mi (0.8 km) above mouth,<br>and 0.6 mi (1.0 km) west of<br>Providencia.                        | 29.0<br>(75.1)   | 4/10/85 | 1110 | 3.61<br>(0.10)  | 350           | 29.0    |
|          |  | Rio Nigua basin   |                  |         |      |                 |               |         |
| 50094500 | Rio Nigua at<br>Arroyo, PR                   | Lat 17 58 10, long 66 03 41 Hydrologic unit 21010004. At bridge on Hwy 178, 0.2 mi (0.3 km) north of Arroyo, and 3.7 mi (6.0 km) east of Guayama.   | 8.04<br>(20.82)  | 4/10/85 | 1140 | Dry             | -             |         |
|          |  | Quebrada Salada basin   |                  |         |      |                 |               |         |
| 50094510 | Quebrada Salada near<br>Arroyo, PR           | Lat 17 58 50, long 66 04 23 Hydrologic unit 21010004. At bridge on Hwy 3 and 0.9 mi (1.4 km) upstream from mouth.   | 0.76<br>(1.97)   | 4/10/85 | 1210 | 0.13<br>(0.004  | 2550          | 29.5    |
|          |  | Quebrada Corazon basin  |                  |         |      |                 |               |         |
| 50094520 | Quebrada Corazon near<br>Arroyo, PR          | Lat 17 58 58, long 66 04 41<br>Hydrologic unit 21010004.At<br>bridge on Hwy 3 and 1.0 mi<br>(1.6 km) above mouth.   | 4.29<br>(11.11)  | 4/10/85 | 1235 | 0.20<br>(0.006  | 878           | 27.0    |
|          |  | Rio Guamani basin   |                  |         |      |                 |               |         |
| 50095500 | Rio Guamani near<br>Guayama, PR              | Lat 17 57 30, long 66 08 20 Hydrologic unit 21010004. At railroad bridge, 0.5 mi (0.8 km) downstream from Hwy 3, 1.2 mi (1.9 km) upstream from mouth, and 2.5 mi (4.0 km) southwest of Guayama. | 12.3 (31.9)      | 4/09/85 | 0755 | 0.05<br>(0.001) | 533           | 23.5    |
|          |  | Rio Melania basin   |                  |         |      |                 |               |         |
| 50095900 | Rio Melania near<br>Jobos, PR                | Lat 17 57 51, long 66 09 30<br>Hydrologic unit 21010004.<br>0.6 mi (1.0 km) upstream<br>from bridge on Hwy 3.   | 3.51<br>(9.09)   | 4/09/85 | 0827 | 0.40<br>(0.01)  | 630           | 26.5    |
|          |  | Rio Seco basin  |                  |         |      |                 |               |         |
| 50097800 | Rio Seco near Central<br>Guamani, PR         | Lat 17 58 06, long 66 10 52<br>Hydrologic unit 21010004.At<br>bridge on Hwy 3, 0.2 mi<br>(0.3 km) north of Central<br>Guamani, and 1.2 mi (1.9 km)<br>northwest of Jobos.                       | 11.1 (28.7)      | 4/09/85 |      | Dry             | -             |         |

| STATION  | STATION                                   | LOCATION   | DRAINAGE<br>ARBA |         |      | STREAM-<br>FLOW | CIFIC   | TEMPER- |
|----------|---|--|------------------|---------|------|-----------------|---------|---------|
| NUMBER   | NAME                                      | AND  | sq mi            | DATE    | TIME | cfs             | CONDUC- | ATURE   |
|          |   | BASIN  | (sq km)          |         |      | (cms)           | umhos   | deg C   |
|          |   | Rio Salinas (Nigua) basin  |                  |         |      |                 |         |         |
| 50100700 | Rio Majada at Rabo<br>del Buey, PR        | Lat 18 02 17, long 66 14 27<br>Hydrologic unit 21010004.At<br>bridge on Hwy 1, at Rabo del<br>Buey, 200 ft (61 m) upstream<br>from Rio Lapa, and 5.6 mi<br>(9.0 km) northeast of Sali-<br>nas. | 22.2<br>(57.5)   | 4/09/85 | 0967 | 0.79 (0.02)     | 752     | 25.0    |
| 50102000 | Rio Salinas at<br>Salinas, PR             | Lat 17 58 42, long 66 18 17 Hydrologic unit 21010004.At bridge on Hwy 1 and 0.4 mi (0.6 km) west of Salinas Plaza.   | 52.4<br>(135.7)  | 4/09/85 | 1053 | 2.17<br>(0.06)  | 1200    | 26.0    |
|          |   | Rio Jueyes basin   |                  |         |      |                 |         |         |
| 50103000 | Rio Jueyes near<br>Jauca, PR              | Lat 17 58 45, long 66 20 20 Hydrologic unit 21010004.At bridge on Hwy 1, 1.8 mi (2.9 km) east of Jauca, and 2.7 mi (4.3 km) west of Salinas Plaza.   | 8.56<br>(22.17)  | 4/09/85 |      | Dry             | -       | -       |
|          |   | Rio Coamo basin  |                  |         |      |                 |         |         |
| 50107000 | Rio Coamo near Santa<br>Isabel, PR        | Lat 17 58 36, long 66 25 10<br>Hydrologic unit 21010004.At<br>bridge on Hwy 1, at Velaz-<br>quez, and 1.1 mi (1.8 km)<br>northwest of Santa Isabel<br>Plaza.                                   | 69.0<br>(178.7)  | 4/09/85 |      | Dry             | ÷       | 4       |
|          |   | Rio Descalabrado basin   |                  |         |      |                 |         |         |
| 50108500 | Rio Descalabrado near<br>Santa Isabel, PR | Lat 17 59 34, long 66 26 35 Hydrologic unit 21010004.At bridge on Hwy 1, 0.9 mi (1.4 km) upstream from mouth, and 3.1 mi (5.0 km) northwest of Santa Isabel.                                   | 18.1<br>(46.9)   | 4/09/85 | 1145 | 0.24            | 1020    | 34.5    |
|          |   | Rio Canas basin  |                  |         |      |                 |         |         |
| 50109500 | Rio Canas near Santa<br>Isabel, PR        | Lat 17 59 39, long 66 28 35 Hydrologic unit 21010004. At bridge on Hwy 1, 0.5 mi (0.8 km) from mouth, 0.6 mi (1.0 km) east of Pastillo, and 5.1 mi (8.2 km) northwest of Santa Isabel Plaza.   | 6.38<br>(16.52)  | 4/09/85 |      | Dry             | -       |         |
|          |   | Rio Jacaguas basin   |                  |         |      |                 |         |         |
| 50112000 | Rio Jacaguas at<br>Arus, PR               | Lat 18 00 05, long 66 31 50 Hydrologic unit 21010004.At bridge on Hwy 1, at Arus, and 4.0 mi (6.4 km) south of Juana Diaz.   | 59.3<br>(153.6)  | 4/09/85 |      | Dry             | ų.      | 1       |

| STATION<br>NUMBER | STATION<br>NAME                               | LOCATION<br>AND   | DRAINAGE<br>AREA<br>sq mi | DATE    | TIME | STREAM-<br>FLOW | SPE-<br>CIFIC<br>CONDUC- | TEMPER- |
|-------------------|---|---|---------------------------|---------|------|-----------------|--------------------------|---------|
|                   |   | BASIN   | (sq km)                   |         |      | ofs<br>(cms)    | TANCE                    | deg C   |
|                   |   | Rio Inabon basin  |                           |         |      |                 |                          |         |
| 50113450          | Rio Inabon near<br>Arus, PR                   | Lat 18 00 22, long 66 33 13<br>Hydrologic unit 21010004.<br>At bridge on Hwy 1, 0.9 mi<br>(1.4 km) east of Ponce Mu-<br>nicipal Airport terminal,<br>and 1.7 mi (2.7 km) west<br>of Arus.                               | 30.2<br>(78.2)            | 4/12/85 | 0740 | 6.31<br>(0.18)  | 476                      | 22.0    |
|                   |   | Rio Bucana basin  |                           |         |      |                 |                          |         |
| 50114600          | Rio Bucana at<br>Ponce, PR                    | Lat 18 00 28, long 66 35 36 Hydrologic unit 21010004. At bridge on Hwy 1, 0.2 mi (0.3 km) east of intersection of Hwys 1 and 2, 1.5 mi (2.4 km) east of Plaza Degetau in Ponce and 3.1 mi (5.0 km) upstrefrom mouth.    | 27.3<br>(70.7)            | 4/12/85 | 1212 | 37.9<br>(1.07)  | 260                      | 24.5    |
|                   |   | Rio Portugues basin   |                           |         |      |                 |                          |         |
| 50116500          | Rio Portugues at Hwy 2<br>bypass at Ponce, PR | Lat 17 59 52, long 66 36 52<br>Hydrologic unit 21010004.<br>On pier at bridge on Hwy 2<br>bypass, 1.1 mi (1.8 km)<br>south of Plaza Degetau, and<br>2.0 mi (3.2 km) upstream<br>from mouth.                             | 20.5<br>(53.1)            | 4/12/85 | 1031 | 21.3<br>(0.60)  | 336                      | 25.0    |
|                   |   | Rio Matilde basin   |                           |         |      |                 |                          |         |
| 50116970          | Rio Canas below Las<br>Americas Avenue, PR    | Lat 18 00 37, long 66 38 23<br>Hydrologic unit 21010004.<br>0.5 mi (0.8 km) upstream<br>from junction with Rio Pas-<br>tillo.   | 8.39<br>(21.73)           | 4/12/85 | 1132 | 9.40<br>(0.27)  | 680                      | 26.5    |
| 50119200          | Quebrada del Agua at<br>Playa de Ponce, PR    | Lat 17 59 13, long 66 38 22<br>Hydrologic unit 21010004.<br>700 ft (213 m) upstream from<br>junction with Rio Matilde.  | 6.45<br>(16.71)           | 4/12/85 |      | Dry             | -                        |         |
|                   |   | Rio Tallaboa basin  |                           |         |      |                 |                          |         |
| 50122000          | Rio Tallaboa at<br>Tallaboa, PR               | Lat 18 00 31, long 66 43 49 Hydrologic unit 21010004.At bridge at Hacienda Dolores, 700 ft (213 m) upstream from Hwy 2, 0.8 mi (1.3 km) north- west of Tallaboa, and 7.6 mi (12.2 km) west of Plaza De- getau in Ponce. | 31.50<br>(81.6)           | 4/12/85 | 1352 | 8.69<br>(0.25)  | 388                      | 32.5    |
|                   |   | Rio Macana basin  |                           |         |      |                 |                          |         |
| 50122900          | Rio Macana at Magas<br>Arriba, PR             | Lat 18 01 00, long 66 45 57<br>Hydrologic unit 21010004.<br>1.8 mi (2.8 km) east of Pla-<br>za de Guayanilla, 200 ft<br>(60 m) upstream from bridge<br>on Hwy 2, and 0.6 mi (1.0 km)<br>upstream from mouth.            | 8.96<br>(23.21)           | 4/08/85 |      | Dry             |                          |         |
|                   |   | Rio Yauco basin   |                           |         |      |                 |                          |         |
| 50126500          | Rio Yauco at Pueblo Sur<br>at Yauco, PR       | Lat 18 02 08, long 66 50 51<br>Hydrologic unit 21010004.At<br>bridge on Hwy 2, 0.1 mi<br>(0.2 km) east of Yauco, and<br>0.6 mi (1.0 km) upstream<br>from Quebrada Berrenchin.   | 33.0<br>(85.5)            | 4/08/85 |      | Dry             |                          | -       |
|                   |   |   |                           |         |      |                 |                          |         |

| STATION  | STATION                                      | LOCATION  | DRAINAGE<br>ARBA |         |      | STREAM-<br>FLOW                | SPK-<br>CIFIC | TEMPER- |
|----------|--|---|------------------|---------|------|--------------------------------|---------------|---------|
| NUMBER   | NAME   | AND   | sq mi            | DATE    | TIME | ofs                            | CONDUC-       | ATURE   |
|          |  | BASIN   | (sq km)          |         |      | (oms)                          | unhos         | deg C   |
|          |  | Rio Loco basin  |                  |         |      |                                |               |         |
| 50129200 | Quebrada Susua at<br>Palomas, PR             | Lat 18 01 19, long 66 52 28<br>Hydrologic unit 21010004.At<br>bridge on Hwy 2, 0.5 mi (0.8<br>km) north of Palomas, and<br>1.9 mi (3.1 km) southwest of<br>Yauco.   | 3.23<br>(8.37)   | 4/08/85 |      | Dry                            | •             | -       |
| 50129300 | Lajas Bast Drainage<br>Canal nr Ensenada, PR | Lat 18 00 40, long 66 58 24 Hydrologic Unit 21010004. On upstream side of Cuesta Blan- ca Bridge on dirt road, 1.1 mi (1.8 km) north of Hwy 116, 1.0 mi (1.6 km) below Quebra- da Jicara, 3.9 mi (6.3 km) above Rio Loco and 4.0 mi (6.4 km) northwest of Ensena- da. | b                | 4/08/85 |      | No Meas                        | ÷             | -       |
| 50129500 | Rio Loco near<br>Guanica, PR                 | Lat 17 59 38, long 66 54 59 Hydrologic unit 21010004. 90 ft (27 m) upstream from sheet piling drop structure, 900 ft (274 m) upstream from Lajas Drainage Canal, 7.2 mi (11.6 km) downstream from Lago Loco, and 1.5 mi (2.4 km) north of Guanica.                    | 21.0<br>(54.4)   | 4/08/85 | 1145 | 3.50<br>(0.10)                 | 630           | 26.5    |
|          |  | Quebrada Boqueron basin   |                  |         |      |                                |               |         |
| 50130000 | Quebrada Boqueron at<br>Boqueron, PR         | Lat 18 01 40, long 67 09 35<br>Hydrologic unit 21010004.At<br>bridge on Hwy 101 and 0.9<br>mi (1.4 km) above mouth.   | 4.35<br>(11.27)  | 4/11/85 | 1230 | 0.50<br>(0.014)                | , <u>4</u> ,  | 26.5    |
|          |  | Rio Guanajibo basin   |                  |         |      |                                |               |         |
| 50132010 | Rio Guanajibo below<br>San German, PR        | Lat 18 05 28, long 67 02 38 Hydrologic unit 21010003. 0.5 mi (0.8 km) north of Plaza de San German and 1,500 ft (457 m) downstream from bridge on Hwy 360.  | 36.1<br>(93.5)   | 4/11/85 | 1430 | 10.9<br>(0.31)                 | 673           | 30.5    |
|          |  | Rio Yaguez basin  |                  |         |      |                                |               |         |
| 50138900 | Rio Yaguez at<br>Balboa, PR                  | Lat 18 12 13, long 67 07 55<br>Hydrologic unit 21010003.<br>1,200 ft (366 m) upstream<br>from bridge on Balboa St.<br>and 1.6 mi (2.6 km) up-<br>stream from mouth.   | 12.2<br>(31.6)   | 4/11/85 | 1003 | 9.08<br>(0.26)                 | 378           | 27.0    |
|          |  | Rio Grande de Anasco basin  |                  |         |      |                                |               |         |
| 50146070 | Rio Grande de Anasco<br>at Anasco Arriba, PR | upstream from mouth.  | 176<br>(456)     | 4/11/85 |      | Too Deep<br>120 est.<br>(3.40) |               | 1.7     |
|          |  | Rio Grande basin  |                  |         |      |                                |               |         |
| 50146200 | Rio Grande near<br>Rincon, PR                | Lat 18 22 06, long 67 13 56<br>Hydrologic unit 21010003.<br>At bridge on Hwy 115, 1.2 mi<br>(1.9 km) upstream from mouth,<br>and 2.2 mi (3.5 km) northeast<br>of Rincon.  | 2.83<br>(7.33)   | 4/10/85 | 1523 | 0.60<br>(0.017)                | 635           | 25.5    |

| STATION<br>NUMBER | STATION                           | LOCATION  | DRAINAGE<br>AREA<br>sq mi | DATE    | TIME | STREAM-<br>FLOW | 8PR-<br>CIFIC<br>CONDUC-<br>TANCE | TEMPER- |
|-------------------|-----------------------------------|---|---------------------------|---------|------|-----------------|-----------------------------------|---------|
|                   |                                   | BASIN   | (sq km)                   |         |      | (cms)           | unhos                             | deg C   |
|                   |                                   | Rio Ingenio basin   |                           |         |      |                 |                                   |         |
| 50146400          | Rio Ingenio near<br>Aguada, PR    | Lat 18 22 50, long 67 12 34 Hydrologic unit 21010003. At bridge on unimproved road, 0.3 mi (0.5 km) upstream from confluence with Rio Culebra, 0.7 mi (1.1 km) upstream from mouth of Rio Guayabo, and 1.4 mi (2.3 km) west of Aguads | 6.22<br>(16.11)           | 4/10/85 | 1402 | 2.17 (0.061     | 554                               | 26.5    |
|                   |                                   | Rio Culebra basin   |                           |         |      |                 |                                   |         |
| 50146600          | Rio Culebra near<br>Aguada, PR    | Lat 18 22 26, long 67 11 35 Hydrologic unit 21010003. At bridge on Hwy 411, 0.6 mi (1.0 km) south of Aguada, 1.5 mi (2.4 km) upstream from confluence with Rio Ingenio, and 1.9 mi (3.1 km) upstream from mouth of Rio Guayabo.       | 3.70<br>(9.58)            | 4/10/85 | 1438 | 1.25<br>(0.035  | 453                               | 27.0    |
|                   |                                   | Rio Culebrinas basin  |                           |         |      |                 |                                   |         |
| 50149100          | Rio Culebrinas near<br>Aguada, PR | Lat 18 24 03, long 67 09 40 Hydrologic unit 21010003. At bridge on Hwy 2 and 2.3 mi (3.7 km) northeast of Aguada Plaza.   | 97.0<br>(251.2)           | 4/10/85 | 1253 | 230<br>(6.51)   | 335                               | 25.0    |

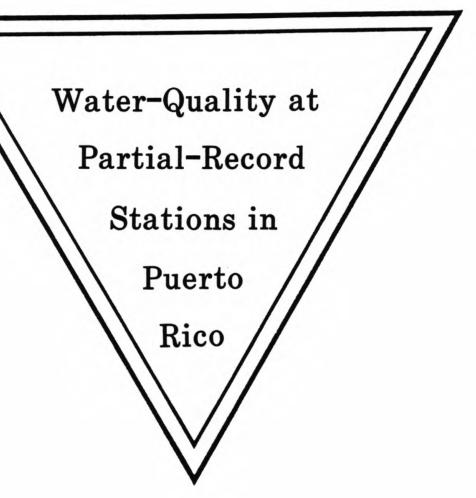
a Drainage area does not include coastal undefined drainage. b Indeterminate

### DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS

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

### Annual maximum discharge at crest-stage partial-record stations during water year 1985

|                   |  |  |                                      |                        | Ann      | ual maximu                  |                                       |
|-------------------|--|--|--------------------------------------|------------------------|----------|-----------------------------|---------------------------------------|
| Station<br>number | Station name                                   | Location   | Drainage<br>area<br>sq mi<br>(sq km) | Period<br>of<br>record | Date     | Gage<br>height<br>ft<br>(m) | Dis-<br>charge<br>cu ft/s<br>(cu m/s) |
|                   |  | Rio Portugues basin  |                                      |                        |          |                             |                                       |
| 50115900          | Rio Portugues at<br>Highway 14 at<br>Ponce, PR | Lat 18 01 09, long 66 36 26,<br>on left downstream side of<br>Highway 14 bridge, 1.7 mi<br>(2.7 km) downstream from<br>Rio Chiquito, and 0.6 mi<br>(0.97 km) northeast of<br>Degetau Plaza in Ponce. | 18.6<br>(48.2)                       | 1963-85                | 11/03/84 | 13.81<br>(4.209)            | 6,500<br>(184)                        |



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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE                     | TIME   | DEPTH<br>AT<br>SAMPLE<br>LOC-<br>ATION,<br>TOTAL<br>(FEET) | SPB-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS)                      | TEMPER-<br>ATURE<br>(DEG C)                                    | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L)              | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FRCAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML)  | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) | ALKA-<br>LINITY<br>WATER<br>TOTAL<br>FIELD<br>MG/L AS<br>CACO3      | SOLIDS,<br>RESIDUE<br>AT 105<br>DEG. C,<br>SUS-<br>PENDED<br>(MG/L) | NITRO-<br>GEN,<br>NITRATE<br>TOTAL<br>(MG/L<br>AS N) |
|--------------------------|--|--|---|---|--|--|--|---|--|---|---|--|
|                          |  |  |   | R   | 10 GUAJA'  | TACA BASIN                                       | l .  |   |  |   |   |  |
|                          | 50010720   | LA   | GO GUAJAT   | ACA NO.3  | NR MOUTH   | NR QUEBRA  | DILLAS, PR   | (LAT 18   | 22'05" LC  | NG 066°54   | ('36")  |  |
| DEC 1984                 | 0845   | 1.00   | 298   | 8.40  | 24.5   | 10.0   | 123  | К13   | K4   | 138   | 4   |  |
| MAY 1985                 | 1055   | 1.00   | 204   | 8.10  | 27.0   | 7.9  | 100  | к35   | 42   | 89  | 3   |  |
| JUL 23                   | 1115   | 1.00   | 243   | 8.20  | 29.0   | 8.0  | 104  | К5  |  | 93  | 6   |  |
|                          |  |  |   |   |  |  |  |   |  |   |   |  |
| DATI                     | AS   | N, GEI ITE NO2+I AL TOTA /L (MG, N) AS I                   | N, GE<br>NO3 AMMO<br>AL TOT.<br>/L (MG<br>N) AS   | N, GE<br>NIA ORGA<br>AL TOT<br>/L (MG<br>N) AS      | RO- GEN,<br>N, MONI<br>NIC ORGA<br>AL TOT<br>/L (MO<br>N) AS   | A + NIT<br>NIC GE<br>TAL TOT<br>S/L (MG<br>N) AS | N, GE<br>AL TOT<br>J/L (MG<br>N) AS N                          | 6/L (MC<br>103) AS  | RUS, RAT<br>FAL PLA<br>G/L TO<br>P) (UNI                           | PRO-PHY<br>LL PLA<br>10 TO<br>NK-CHRO<br>N FLUC<br>TS) (UC          | TTO- PHY NK- PLA ON TO OMO CHRO OROM FLUC H/L) (UC                  | TO-<br>NK-<br>ON<br>OMO                              |
|                          | 50010720   | LAC  | GO GUAJAT   | ACA NO.3  | NR MOUTH   | NR QUEBRA  | DILLAS, PR   | (LAT 18   | 22'05" LO  | NG 066°54   | (36")   |  |
| DEC 19.<br>19.<br>MAY 19 | (0.  | 01 <0.   | 10 0.   | 01 0  | .59 0  | .6   |  | 0.  | .01 0  | .0 <0.  | 10 <0.  | 10   |
| JUL                      |  | 01 (0.   | 10 0.   | 05 0  | .45 0  | . 5  |  | 0.  | .01 0  | .0 7.   | 40 (0.  | 10   |
| 23.                      | (0.  | 01 (0.1  | 10 (0.  | 01  | 0  | . 4  |  | <0.   | .01 0  | .01 11.   | 0 (0.   | 10   |
| DATE                     | TIMK   | DEPTH<br>AT<br>SAMPLE<br>LOC-<br>ATION,<br>TOTAL<br>(FERT) | SPE-<br>C1FIC<br>CON-<br>DUCT-<br>ANCB<br>(US/CM) | PII<br>(STAND-<br>ARD<br>UNITS)                     | TEMPER-<br>ATURE<br>(DEG C)                                    | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L)              | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML.) | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3)                              | HARD-<br>NESS<br>NONCARB<br>WATER<br>TOT FLD<br>MG/L AS<br>CACO3    | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA)         |
|                          | 50010790   | L  | AGO GUAJA   | PACA NO.1   | NR DAM N   | R QUEBRAD  | ILLAS, PR  | (LAT 18°2   | 3'56" LON  | G 066°55'   | 23")  |  |
| DEC 1984<br>19           | 1045   | 1 00   | 214   | 0.00  | 04.5   | 0.0  | 0.0  |   | wa   | 140   |   | 50   |
| 19<br>19                 | 1055   | 1.00<br>82.0   | 314<br>362  | 8.00<br>7.40  | 24.5   | 8.0<br>1.1                                       | 98<br>13   | K4  | K3   | 140<br>160  | 14  | 52<br>58   |
| 13                       | 1225<br>1250   | 1.00   | 176<br>312  | 8.40<br>7.20  | 28.0   | 10.0   | 129  | 33  | 58   | 76<br>140   | 5<br>4  | 25<br>52   |
| JUL<br>23                | 1215   | 1.00   | 242   | 8.00  | 28.5   | 6.6  | 85   | к10   |  | 99  | 7   | 34   |
| 23                       | 1230   | 62.3   | 332   | 7.10  | 24.0   | 0  |  | I   |  | 140   | 4   | 51   |
| DATK                     | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA)               | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO           | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K) | ALKA-<br>LINITY<br>WATER<br>TOTAL<br>FIELD<br>MG/L AS<br>CACO3 | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4)    | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)            | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F)              | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2)                  | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>RESIDUE<br>AT 105<br>DEG. C,<br>SUS-<br>PENDED<br>(MG/L) | NITRO-<br>GEN,<br>NITRATE<br>TOTAL<br>(MG/L<br>AS N) |
|                          | 50010790   | L.A  | GO GUAJA  | TACA NO.1   | NR DAM N   | R QUEBRAD  | ILLAS, PR  | (LAT 18°2   | 3'56" LON  | u 066°55'   | 23")  |  |
| DEC 1984                 |  |  |   |   |  |  |  |   |  |   |   |  |
| 19<br>19<br>1AY 1985     | 3.4  | 5.3<br>5.2   | 0.2   | 1.5   | 161<br>144   | 9.3  | 7.6  | <0.1<br><0.1  | 2.7<br>6.4   | 180<br>180  | 2   | 15 II  |
| 13<br>13                 | 3.4  | 5.6<br>5.6   | 0.3   | 1.6   | 71<br>141  | 9.2  | 8.2  | 0.1   | 0.1<br>6.5   | 96<br>170   | 4   | 11   |
| 23<br>23                 | 3.4  | 5.8  | 0.3   | 1.7   | 92<br>136  | 7.1  | 8.5  | <0.1<br><0.1  | 0.6  | 120<br>160  | 4   |  |
|                          |  |  |   |   |  | 0.0  |  |   |  |   |   |  |

### WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE                        | NITRO<br>GEN<br>NITRI<br>TOTA<br>(MG/I<br>AS N | GENTE NO2+N<br>L TOTA<br>L (MG/                            | I, GEN, IO3 AMMONI L TOTAL L (MG/I | GEN,<br>IA ORGANIC<br>L TOTAL<br>L (MG/L                | MONIA                  | M-<br>+ NITH<br>IC GEN<br>L TOTA<br>L (MG/    | I, GE<br>L TOT<br>L (MG  | AL TOTA  | US, RAT<br>AL PLA<br>/L TO   | RO- PHY<br>LL PLA<br>IO TO<br>NK- CHRO<br>N FLUO                    | TO- PHY NK- PLA N TO MO CHRO ROM FLUC                               | TTO-<br>ANK-<br>ON<br>OMO                            |
|-----------------------------|--|--|------------------------------------|---|------------------------|---|--|--|--|---|---|--|
|                             |  |  |                                    | RIO GUAJA   | TACA BA                | SINCONT                                       | INUKD  |  |  |   |   |  |
| 5                           | 0010790  | LA   | GO GUAJATA                         | ACA NO.1 NE   | DAM NR                 | QUEBRADI                                      | LLAS.PR  | (LAT 18° 2   | 3'56" LON  | G 066° 55'  | 23")  |  |
| DEC 198                     | 4  |  |                                    |   |                        |   |  |  |  |   |   |  |
| 19                          | <0.0   |  |                                    |   |                        |   |  | (0.0   |  | .0 2.   |   |  |
| 19<br>MAY 198               |  |  |                                    |   |                        |   |  |  |  |   |   |  |
| 13<br>13                    |  | 1 <0.1   |                                    | 0.06  |                        | 1   |  | <0.0   | 01 0   | .0 5.   | 40 <0.  | 10   |
| JUL 23                      |  | 1 (0.1   | 0 0.03                             |   |                        |   |  | (0.0   |  | .0 4.:  | 20 <0.  | 10   |
| 23                          |  | (0.1   |                                    | 0.37  |                        | 4<br>   |  | (0.0   | 0  |   | 10.   |  |
| DATE                        | TIME 3   | DEPTH<br>AT<br>BAMPLE<br>LOC-<br>ATION,<br>FOTAL<br>(FEET) | ANCE                               | ARD A   | MPER-<br>TURE<br>BG C) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L)           | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML) | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3)                              | HARD-<br>NESS<br>NONCARB<br>WATER<br>TOT FLD<br>MG/L AS<br>CACO3    | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA)         |
|                             |  |  |                                    | RIO GRANDE  | DE ARE                 | CIBO BASI                                     | N  |  |  |   |   |  |
|                             | 5002008  | 50   | LAGO GARZ                          | AS NO.1 NR  | DAM NR                 | ADJUNTAS                                      | , PR (LAT  | 180 08'21'   | LONG 06  | 6044'35")   |   |  |
| DEC 1984                    |  |  |                                    |   |                        |   |  |  |  |   |   |  |
| 18                          | 1245<br>1255                                   | 1.00   | 126<br>125                         | 7.30  | 20.5                   | 6.0<br>3.8                                    | 73<br>46   | 94   | 45   | 50<br>50  |   | 14   |
| MAY 1985<br>08              | 1245   | 1.00   | 150                                | 8.40  | 24.5                   | 8.6   | 111  | К2   | кв   | 67  |   | 19   |
| 08                          | 1300   | 82.0   | 146                                | 7.00  | 20.0                   | 0.4   | 5  |  |  | 66  | 22  | 19   |
| JUL<br>19                   | 0810   | 1.00   | 164                                | 7.20  | 24.0                   | 6.7   | 84   | 60   | 30   | 59  |   | 16   |
| 19                          | 0820   | 83.0   | 104                                | 6.50  | 20.0                   | 0.1   | 1  | 35   |  | 34  | :,==::  | 9.3  |
| DATE                        | DIS-   | BODIUM,<br>DIS-<br>BOLVED<br>(MG/L<br>AS NA)               | AD-<br>SORP-<br>TION<br>RATIO      | POTAS- I.I<br>SIUM, W<br>DIS- T<br>SOLVED F<br>(MG/L MG | OTAL<br>IBLD<br>/L AS  | BULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)            | FLUO-<br>RIDK,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F)             | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2)                  | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>RESIDUE<br>AT 105<br>DEG. C,<br>SUS-<br>PENDED<br>(MG/L) | NITRO-<br>GEN,<br>NITRATE<br>TOTAL<br>(MG/L<br>AS N) |
|                             | 5002005  | 60   | LAGO GARZ                          | AS NO.1 NR  | DAM NR                 | ADJUNTAS                                      | ,PR (LAT   | 18°08'21"  | LONG 06  | 6044'35")   |   |  |
| DEC 1984                    | 4. 1   |  |                                    |   |                        |   |  |  |  |   |   |  |
| 18                          | 3.6  | 5.4  | 0.3                                | 1.1   | 53<br>54               | 3.6   | 5.0  | <0.1   | 15<br>16   | 79<br>81  | 2   |  |
| MAY 1985<br>08              | 4.8  | 6.4  | 0.4                                | 1.0   | 69                     | 3.6   | 6.1  | <0.1   | 18   | 100   | 6   | 44   |
| 08<br>JUL                   | 4.4  | 5.9  | 0.3                                | 1.1   | 74                     | 3.4   | 5.7  | <0.1   | 19   | 100   | 35  |  |
| 19<br>19                    | 4.7  | 6.4<br>3.8   | 0.4                                | 1.0   | 64<br>38               | 3.8<br>4.3                                    | 6.0  | <0.1<br><0.1   | 9.1<br>11  | 85<br>59  | 9   |  |
| DATE                        | NITRO<br>GEN,<br>NITRIT<br>TOTAL<br>(MG/L      | GEN B NO2+NO TOTA (MG/                                     | , GEN, O3 AMMONI L TOTAL L (MG/L   | GEN,<br>A ORGANIC<br>TOTAL<br>(MG/L                     | MONIA                  | + NITR C GEN TOTA                             | GEI<br>L TOTA<br>L (MG   | N, PHORU<br>AL TOTA<br>/L (MG/                                 | S, RATI<br>L PLAN<br>L TON   | RO- PHYT<br>LL PLAN<br>IO TON<br>NK- CHROM<br>N FLUOR               | TO- PHY  NK- PLA  TO  O CHRO  ROM FLUO                              | TO-<br>NK-<br>N<br>MO<br>ROM                         |
|                             | 5002005  | 0  | LAGO GARZ                          | AS NO.1 NR  | DAM NR                 | ADJUNTAS                                      | , PR (LAT  | 18°08'21"  | LONG 066   | 5° 44' 35")   |   |  |
| DEC 198-<br>18<br>18        | <0.01  |  | 0 <0.01                            |   | 0.5                    |   | 8 3  | .5 <0.0  | 1 0.   | .0 1.1  | 0 <0.   | 10   |
| MAY 198:<br>08<br>08<br>JUL | <0.01  |  | 0.04                               |   | 0.4                    |   |  | <0.0   | 1 0.   |   | 00 <0.  | 10   |
| 19<br>19                    | <0.01  |  | 0 <0.01                            |   | 0.3                    |   |  | <0.0<br>   | 1 0.   |   | 0 (0.   | 10   |

K = non-ideal count

### WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | TIME   | DEPTH<br>AT<br>SAMPLE<br>LOC-<br>ATION,<br>TOTAL<br>(FEET) | SPB-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM  | PH<br>(STAND-<br>ARD<br>UNITS)            | TEMPER-<br>ATURE<br>(DEG C)                                    | OXYGEN,<br>DIS-<br>SOLVEI<br>(MG/L)           | CENT<br>SATUR-         | FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./ |  | ALKA-<br>LINITY<br>WATER<br>TOTAL<br>FIELD<br>MG/L AS<br>CACO3      | SOLIDS,<br>RESIDUE<br>AT 105<br>DEG. C,<br>SUS-<br>PENDED<br>(MG/L) | NITRO-<br>GEN,<br>NITRATI<br>TOTAL<br>(MG/L<br>AS N) |
|----------------|--|--|---|---|--|---|------------------------|--|--|---|---|--|
|                |  |  |   | RIO GRAN                                  | DE DE ARE  | CIBO BASI                                     | NCONTIN                | IURD                                       |  |   |   |  |
| 5              | 0025110  | ı  | AGO DOS   | BOCAS NO.3                                | AT WEST  | BRANCH NE                                     | UTUADO, I              | PR (LAT 18                                 | 019'15" L  | ONG 066°4   | 0'11")  |  |
| DEC 1984       |  |  |   |   |  |   |                        |  |  |   |   |  |
| 12<br>MAY 1985 | 1035   | 1.00   | 21  | 7.90                                      | 26.0   | 8.6   | 107                    | 120  | KII  | 73  | 2   | 0.58   |
| 09<br>JUL      | 0915   | 1.00   | 221   | 8.30                                      | 27.0   | 8.0   | 100                    | >600                                       | K4   | 78  | 4   | 1  |
| 18             | 1155   | 1.00   | 23  | 7.40                                      | 28.0   | 5.7   | 72                     | 65   | K15  | 77  | 4   |  |
| DATE           |  | RN, GRITE NO2<br>PAL TO                                    | EN, (1<br>+NO3 AMM<br>TAL TO<br>G/L (1            | GEN, G<br>MONIA ORG<br>OTAL TO<br>MG/L (M | TRO- GEN EN, MON ANIC ORGA TAL TOT G/L (MO                     | ANIC G<br>FAL TO<br>G/L (M                    | EN, COTAL TO           | EN, PHO<br>TAL TO<br>IG/L (M               | CHLCOS- PHY RUS, RAT TAL PLA G/L TC                                | ORO- PHY<br>FLL PLA<br>FLO TO<br>ANK- CHRO<br>ON FLUO               | ANK- PLA<br>ON TO<br>OMO CHRO<br>OROM FIJU                          | YTO-<br>ANK-<br>ON<br>OMO                            |
| 50             | 0025110  | L  | AGO DOS I   | OCAS NO.3                                 | AT WEST  | BRANCH NR                                     | UTUADO. F              | R (LAT 18                                  | 19'15" Lo  | NG 066°40   | 0'11")  |  |
| DEC 198        |  |  |   |   |  |   | ,                      | ,  |  |   | 7.7   |  |
| 12<br>MAY 198  |  | 02 0   | .60 <0  | .01                                       | (  | 0.5   | 1.1                    | 4.9 <0                                     | .01  | <0.   | .10 <0.   | 10   |
| 09             | . 0.   | 01 <0  | .10 (   | .01                                       | (  | 0.4   |                        | 0  | .02  | 0.0 10.   | .0 (0.  | 10   |
| 18             | . (0.  | 01 0   | .20 <0  | .01                                       | (  | 0.6   | 0.8                    | 3.5 <0                                     | .01 0  | 0.0 8.  | .20 <0.   | 10   |
| DATE           | TIME   | DEPTH<br>AT<br>SAMPLE<br>LOC-<br>ATION,<br>TOTAL<br>(FEET) | SPE-<br>C1FIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAND-<br>ARD<br>UNITS)            | TEMPER-<br>ATURE<br>(DEG C)                                    | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L)           | CENT<br>SATUR-         | FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./ | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML) | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3)                              | HARD-<br>NESS<br>NONCARB<br>WATER<br>TOT FILD<br>MG/L AS<br>CACO3   | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA)         |
|                | 50027  | 090  | LAGO I  | OS BOCAS                                  | NO.1 NR DA   | M NR UTU                                      | ADO, PR (L             | AT 18° 20'                                 | 9" LONG  | 66040'04'   | ')  |  |
| DEC 1984       |  |  |   |   | 22.00  |   |                        |  |  |   | 4   |  |
| 12             | 1145   | 1.00<br>88.6   | 204<br>177  |   | 26.0<br>23.5   | 8.4   |                        |  | K2   | 75<br>78  | 4 3   | 20<br>21   |
| 1AY 1985<br>09 | 1025   | 1.00   | 208   | 8.20                                      | 28.0   | 7.2   | 91                     |  |  | 83  | 6   | 23   |
| 09             | 1050   | 85.3   | 184   |   | 23.5   | 0.8   |                        |  |  | 86  | 14  | 24   |
| 18             | 1250<br>1300   | 1.00   | 230<br>189  |   | 28.5<br>24.5   | 5.6   |                        |  | 40   | 79<br>61  | 4   | 21<br>16   |
| DATE           | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA)               | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO           |   | ALKA-<br>LINITY<br>WATER<br>TOTAL<br>FIELD<br>MG/L AS<br>CACO3 | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4) | CHLO-<br>RIDE,<br>DIS- | FLUO-<br>RIDK,<br>DIS-                     | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2)                  | SOLIDS,<br>SUM OF<br>CONSTI-<br>TURNTS,<br>DIS-<br>SOLVED<br>(MG/L) | SOLIDS,<br>RESIDUB<br>AT 105<br>DEG. C,<br>SUS-<br>PENDED<br>(MG/L) | NITRO-<br>GEN,<br>NITRATE<br>TOTAL<br>(MG/L<br>AS N) |
|                | 50027  | 090  | 1400 5  | OS BOCAS N                                | 10 1 NP P  | M NIS LIMIT                                   | ADO DE 11              | AT 190201                                  | a" LONG O  | 66°40104"   |   |  |
| WC 1004        | 50027  | uau  | LAGO D  | OS BUCAS I                                | O. I NE DA   | NE UTU  | KOO, PK (L             | WI 10-50.(                                 | S LONG U   | 00 10 04  |   |  |
| 12             | 6.0  | 10   | 0.5   | 1.7                                       | 71   | 15  | 10                     | <0.1                                       | 21   | 130   | <1  | 0.49   |
| 12<br>MAY 1985 | 6.2  | 10   | 0.5   |   | 75   | 11  | 14                     | 0.1  | 24   | 130   |   |  |
| 09             | 6.2  | 10   | 0.5   |   | 77   | 11  | 9.5                    | (0.1                                       | 17   | 120   | 16  |  |
| 09             | 6.4  | 11   | 0.5   |   | 72   | 15  | 11                     | <0.1                                       | 18   | 130   |   | -  |
| 18             | 6.4  | 10 7.7   | 0.5   |   | 75<br>61   | 14<br>13                                      | 11<br>8.3              | 0.2  | 19<br>16   | 130<br>100  | 8   | ==   |
| K = non-i      | deal co  | unt  |   |   |  |   |                        |  |  |   |   |  |

# ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | NITR<br>GEN<br>NITRI<br>TOTA<br>(MG/<br>AS N    | GENTE NO2+N<br>L TOTA<br>L (MG/                            | I, GEN, IO3 AMMONI IL TOTAL II. (MG/I | GEN,<br>A ORGANIC<br>TOTAL<br>(MG/L | MONI                   | AM-<br>A + NITE<br>NIC GEN<br>AL TOTA<br>/I. (MG) | AL TOT   | 1/L (MG/                          | JS, RATIO<br>AL PLANK-<br>'L TON | PHYTO-<br>PLANK-<br>TON<br>CHROMO<br>FLUOROM | PHYTO-<br>PLANK-<br>TON<br>CHROMO                                  |
|----------------|---|--|---------------------------------------|-------------------------------------|------------------------|---|--|-----------------------------------|----------------------------------|--|--|
|                |   |  | RIO                                   | GRANDE DE                           | ARECII                 | BO BASIN  | -CONTINUE  | RD.                               |                                  |  |  |
|                | 500270  | 90   | LAGO DOS                              | BOCAS NO. 1                         | NR DA                  | M NR UTUAL  | 00, PR (LA   | T 18°20'09                        | " LONG 066°                      | 40'04")                                      |  |
| DEC 198        | 0.0   | 1 0.5  | 0 (0.01                               |                                     | 0                      | .9 1.   | 4 6  | 3.2 <0.0                          | 0.0                              | <0.10  | <0.10  |
| 12<br>MAY 198  |   |  | '-                                    |                                     |                        |   |  |                                   |                                  |  |  |
| 09             | <0.0  | 1 <0.1   | 0 <0.01                               |                                     | 0                      | . 3   |  | <0.0                              | 0.0                              | 6.60   | <0.10  |
| 09             |   | -  |                                       | -                                   |                        |   |  |                                   |                                  |  |  |
| 18<br>18       | <0.0  | 1 0.3  | 0.07                                  | 0.53                                | 0                      | .6 0.   | .9 4   | .0 <0.0                           | 0.0                              | 4.30   | <0.10  |
|                |   | n n n n n  |                                       |                                     |                        |   |  |                                   |                                  |  | 102  |
|                |   | DEPTH<br>AT  | SPR-                                  |                                     |                        |   | DIS-   |                                   | TOCOCCI LI                       | NITY RES                                     | LIDS,<br>BIDUE NITRO-  |
|                |   | BAMPLE<br>LOC-   | CIFIC<br>CON-                         | PH                                  |                        | OXYGEN,   | (PER-  | FECAL,                            |                                  |  | 105 GEN,<br>G. C, NITRATE  |
| DATE           | TIME  | ATION,<br>FOTAL  | ANCE                                  |                                     | MPER-<br>TURE          | DIS-  | CENT<br>SATUR-   | UM-MF<br>(COLS./                  | PER MG                           | IELD SU                                      | JS- TOTAL<br>NDED (MG/L  |
|                |   | (FEET)   | (US/CM) U                             | NITS) (D                            | EG C)                  | (MG/L)  | ATION)   | 100 ML)                           | 100 ML) C                        | ACO3 (N                                      | 4G/L) AS N)  |
|                |   |  |                                       | R10 DE                              | LA PLA                 | ATA BASIN   |  |                                   |                                  |  |  |
| 500            | 039900  | LAG  | O CARITE N                            | 0.3 ON R10                          | DE LA                  | PLATA NR  | CAYEY, PR  | (LAT 18°0                         | 5'04" LONG                       | 066006'03'                                   | ')   |
| DEC 1984       |   |  |                                       |                                     |                        |   |  |                                   |                                  |  |  |
| 13<br>MAY 1985 | 1155  | 1.00   | 80                                    | 7.20                                | 23.5                   | 9.4   | 118  |                                   |                                  | 25   | 3  |
| 07<br>JUL      | 1340  | 1.00   | 94                                    | 7.60                                | 25.5                   | 12.7  | 164  | K4                                | K12                              | 33   | 2  |
| 17             | 1145  | 1.00   | 96                                    | 7.20                                | 26.5                   | 6.9   | 90   |                                   |                                  | 30   | 3  |
| DATE           | NITRO<br>GEN<br>NITRI<br>TOTAL<br>(MG/I<br>AS N | GEN FE NO2+N TOTA L (MG/                                   | GEN, O3 AMMONI L TOTAL L (MG/L        | GEN,<br>A ORGANIC                   | MONIA                  | AM-<br>A + NITR<br>VIC GEN<br>AL TOTA<br>VL (MG/  | L TOT  | AL TOTA                           | S, RATIO<br>L PLANK-<br>L TON    | PHYTO-<br>PLANK-<br>TON<br>CHROMO<br>FLUOROM | CHLOR-B PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)                    |
| 500            | 39900   | LAG  | O CARITE NO                           | O.3 ON RIO                          | DR I'Y                 | PLATA NR  | CAYEY, PR  | (LAT 18°0                         | 5'04" LONG                       | 066°06'03"                                   | ')   |
| DEC 1984       |   |  |                                       |                                     |                        |   |  |                                   |                                  |  |  |
| 13<br>MAY 1985 | (0.0)   | 0.2  | 0.01                                  | 1.1                                 | 1.                     | 1 1.  | 3 5  | .8 0.1                            | 3 0.0                            | 3.90   | <0.10  |
| 07<br>JUL      | <0.01   | 0.2  | 0 0.11                                |                                     | 0.                     | 1 0.  | 3 1  | .3 <0.0                           | 1 0.0                            | 3.20   | <0.10  |
| 17             | <0.01   | (0.1   | 0 <0.01                               | 77                                  | 0.                     | 3   | 25   | <0.0                              | 1 0.0                            | 10.0   | <0.10  |
| DATE           | TIME T  | DEPTH<br>AT<br>BAMPLE<br>LOC-<br>ATION,<br>FOTAL<br>(FEET) | ANCE                                  | ARD A                               | MPER-<br>FURE<br>EG C) | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L)               | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | FECAL,<br>0.7<br>UM-MF<br>(COLS./ | KF AGAR N<br>(COLS. ()<br>PER    | ARD- NON<br>ESS WA<br>MG/L TOT<br>AS MG/     | RD- ISS ICARB CALCIUM ITER DIS- IFLD SOLVED IL AS (MG/L CO3 AS CA) |
|                | 50039   | 950  | LAGO CAI                              | RITE NO.1                           | NR DAM                 | NR CAYEY.   | PR (LAT  | 18°04'39"                         | LONG 066°06                      | 19")   |  |
| DEC 1984       |   |  |                                       |                                     |                        |   | - to a contract  |                                   |                                  | 4.0  |  |
| 13             | 1105<br>1115                                    | 1.00   | 78<br>79                              | 7.20<br>6.70                        | 22.5                   | 10.3  | 127  | 20                                | K 4                              | 21<br>21                                     | 4.2<br>4.1   |
| MAY 1985       |   |  |                                       |                                     | 21.5                   | 3.6   |  |                                   |                                  |  |  |
| 07             | 1210<br>1220                                    | 1.00   | 92<br>88                              | 7.60                                | 25.5                   |   |  |                                   |                                  | 31   | 6.4<br>6.4   |
| JUL<br>17      | 1040  | 1.00   | 90                                    | 7.20                                | 26.5                   | 6.8   | 88   | 29                                | 25                               | 28   | 5.4  |
| 17             | 1055  | 67.2   | 88                                    | 6.40                                | 21.5                   | 0.4   |  |                                   |                                  | 21   | 4.3  |

K = non-ideal count

### WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA)               | AD-<br>SORP-<br>TION S<br>RATIO (      | OTAS- LIM<br>SIUM, WA<br>DIS- TO<br>BOLVED FI        | TAL DIELD SOLL AS (I  | LFATE R IS- D OLVED S MG/L (              | IDE,<br>IS-<br>OLVED<br>MG/L                     | RIDE, D<br>DIS- S<br>SOLVED (<br>(MG/L                 | LICA, SUIS- CO<br>OLVED TU<br>MG/L<br>AS S                        | M OF INSTI- A<br>ENTS, I<br>DIS-                             | BOLIDS,<br>RESIDUE<br>AT 105<br>DEG. C,<br>SUS-<br>PENDED<br>(MG/L) | NITRO-<br>GEN,<br>NITRATI<br>TOTAL<br>(MG/L<br>AS N) |
|----------------|--|--|--|--|---|---|--|--|---|--|---|--|
|                |  |  | R                                      | IO DE LA I   | PLATA BAS   | INCONTI                                   | NUBD   |  |   |  |   |  |
|                | 500  | 39950  | LAGO CAR                               | ITE NO.1 N   | R DAM NR  | CAYEY.PR                                  | (LAT 18  | 04'39" LO  | NG 066°06   | '19")  |   |  |
| DEC 1984       |  |  |  |  |   |   |  |  |   |  |   |  |
| 13             | 2.6  | 6.7  | 0.6                                    | 0.6  | 25  | 2.9                                       | 7.9  | <0.1   | 13  | 53   | 2   |  |
| 13<br>MAY 1985 | 2.7  | 6.8  | 0.7                                    |  | 24  | 3.6                                       | 8.1  | <0.1   | 15  | 177  | -   | 11 7   |
| 07             | 3.6  | 8.4  | 0.7                                    | 0.7  | 31  | 3.2                                       | 8.4  | <0.1   | 15  | 65   | 1   |  |
| 07<br>JUL      | 3.7  | 8.4  | 0.7                                    | <0.1   | 33  | 3.2                                       | 8.5  | <0.1   | 16  |  |   | 211.   |
| 17             | 3.5  | 7.7  | 0.7                                    | 0.8  | 30  | 3.6                                       | 8.5  | <0.1   | 16  | 63   | 3   |  |
| 17             | 2.6  | 4.9  | 0.5                                    | 0.8  | 34  | 3.5                                       | 6.1  | <0.1   | 9.2   | 52   |   | -  |
| DATK           | NIT<br>GE<br>NITR<br>TOT<br>(MG<br>AS                | N, GEN<br>ITE NO2+N<br>AL TOTA<br>/L (MG/                  | N, GEN, NO3 AMMONIA L. TOTAL L. (MG/L. | GEN,   | NITRO-<br>GEN, AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS NO3       | PHORUS,<br>TOTAL<br>(MG/L                              | BIOMASS<br>CHI.ORO-<br>PHYLL<br>RATIO<br>PLANK-<br>TON<br>(UNITS) | CHLOR-<br>PHYTO<br>PLANK<br>TON<br>CHROMO<br>FLUORO<br>(UG/L | O- PHYT<br>C- PLAN<br>TON<br>CHRON<br>PLUON                         | ro-<br>NK-<br>N<br>NO<br>NO                          |
|                | 500  | 39950  | LAGO CAR                               | ITK NO.1 N   | R DAM NR  | CAYRY.PR                                  | (LAT 180   | 04'39" 1.0   | NG 066°06   | 19")   |   |  |
| DEC 198        | 4  |  |  |  |   |   |  |  |   |  |   |  |
| 13             |  | 01 0.1   | 0.01                                   |  | 0.5   | 0.6                                       | 2.7  | 0.02   |   | 0.80   |   |  |
| 13<br>MAY 198  |  |  |  |  |   |   |  |  |   | 1  | - 111   | -  |
| 07<br>07       | <0.  | 01 <0.1  | 0.01                                   | 0.29   | 0.3   |   |  | , - ,  | 0.0   | 1.60   | (0.1  | 0  |
| JUL<br>17      | ⟨0.  | 01 <0.1  | 0 <0.01                                |  | 0.3   |   |  | - <0.01  | 0.0   | 7.10   | <0.1  | 10   |
| 17             |  |  |  |  |   |   |  | -  |   | -  | 80  |  |
| DATE           | TIME   | DEPTH<br>AT<br>SAMPLE<br>LOC-<br>ATION,<br>TOTAL<br>(FEET) | DUCT- (S<br>ANCE                       | ARD AT   | PER- I  | GEN, (I<br>SCIS- C<br>DLVED SA            | DIS- I<br>DLVED I<br>PER- C<br>ENT C<br>ATUR- (C | FORM, TO<br>FECAL, FI<br>D.7 KF<br>JM-MF (CO<br>COLS./ | COCCI LINECAL, WAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA               | NITY RATER ADTAL DIELD                                       | OLIDS,<br>ERSIDUR<br>T 105<br>ERG. C,<br>SUS-<br>ENDED<br>(MG/L)    | NITRO-<br>GEN,<br>NITRATE<br>TOTAL<br>(MG/L<br>AS N) |
|                | 0044400  | LA   | GO LA PLATA                            | NO.5 NR M  | OUTH NR N   | IARANJ I TO                               | PR (LAT  | 18019'33   | " LONG 066  | 50 12'28"  | )   |  |
| DEC 1984<br>10 | 1135   | 1.00   | 341                                    | 8.50   | 26.0  | 11.2                                      | 139  | 1600   | 57  | 128  | 9   | 0.87   |
| MAY 1985<br>06 | 1600   | 1.00   | 339                                    | 8.00   | 28.0  | 10.4                                      | 132  | 50   | K110  | 121  | 6   | 1.1.   |
| JUL<br>15      | 1740   | 1.00   | 394                                    | 7.40   | 28.5  | 4.9                                       | 63   | 39   | 170   | 146  | 6   |  |
| DATE           | NITE<br>GE<br>NITE<br>TOT<br>(MG                     | N, GEN<br>ITE NO2+N<br>AL TOTA<br>/L (MG/                  | GEN, GEN, GAMMONIA L TOTAL L (MG/L     | NITRO-<br>GEN,<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N)  | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN,<br>TOTAL<br>(MG/L<br>AS NO3)      | PHORUS,<br>TOTAL<br>(MG/L                              | BIOMASS<br>CHLORO-<br>PHYLL<br>RATIO<br>PLANK-<br>TON<br>(UNITS)  | CHLOR-<br>PHYTO<br>PLANK<br>TON<br>CHROMO<br>FLUORO<br>(UG/L | - PHYT - PLAN TON CHROM M FLUOR                                     | 'O-<br>IK-<br>I<br>IO<br>IO                          |
| 5              | 0044400  | LA   | GO LA PLATA                            | NO.5 NR M  | OUTH NR N   | ARANJITO,                                 | PR (LAT  | 18°19'33'  | " LONG 066  | 0°12'28"   | )   |  |
| DEC 198        |  |  |  |  |   |   |  |  |   |  | NOT T   |  |
| 10<br>MAY 198  | 0.0  | 0.9  | 0.01                                   | 0.49   | 0.5   | 1.4                                       | 6.2  | 0.12   | 0.0   | 4.40   | <0.1  | 0  |
| 06<br>JUL      | (0.0   | 01 <0.1  | 0 0.05                                 | 0.65   | 0.7   |   | <u>.</u>   | 0.23   | 0.0   | 9.40   | <0.1  | 0  |
| 15             | <0.0   | 01 (0.1  | 0 <0.01                                |  | 0.4   | 4-  |  | 0.04   | 0.0   | 7.60   | <0.1  | 0  |
|                |  | count  |  |  |   |   |  |  |   |  |   |  |

# ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| TIME   | DEPTH<br>AT<br>SAMPLE<br>LOC-<br>ATION,<br>TOTAL<br>(FEET)  | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM)  | PH<br>(STAND-<br>ARD<br>UNITS)  | TEMPER-<br>ATURE<br>(DEG C)   | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L)  | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION)   | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML)   | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML)   | HARD-<br>NESS<br>(MG/L<br>AS<br>CACO3)  | HARD-<br>NESS<br>NONCARB<br>WATER<br>TOT FLD<br>MG/L AS<br>CACO3   | CALCIUM<br>DIS-<br>SOLVED<br>(MG/L<br>AS CA)   |
|--|---|--|---|---|--|--|--|--|---|--|--|
|  |   |  | RIO DE L  | A PLATA B   | ASINCONT   | LINUED   |  |  |   |  |  |
| 5004495  | )   | LAGO LA P  | LATA NO.3   | NR DAM N  | R NARANJI  | ro, PR (L  | AT 18°20'  | 18" LONG   | 066°14'01   | ")   |  |
| 1010   |   |  |   |   |  |  |  |  |   |  |  |
| 1320   | 77.1  | 285  | 7.50  | 23.5  | 1.3  |  |  |  | 110   | 0  | 29<br>26   |
| 1340   | 60.7  | 200  | 6.80  | 28.0  | 0.1  | 162  | K11  |  | 72  | 8  | 30<br>18   |
| 1600<br>1615   | 1.00<br>82.0  | 351<br>121   | 7.40<br>6.40  | 29.0<br>22.5  | 5.2<br>0.4   | 67<br>   | K3   | 22<br>   | 130<br>44   | 3  | 32<br>11   |
| MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA)  | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO  | POTAS-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS K)   | ALKA-<br>LINITY<br>WATER<br>TOTAL<br>FIELD<br>MG/L AS<br>CACO3  | SULFATE<br>DIS-<br>SOLVED<br>(MG/L<br>AS SO4)  | CHLO-<br>RIDB,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)  | FLUO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS F)   | SILICA,<br>DIS-<br>SOLVED<br>(MG/L<br>AS<br>SIO2)  | SOLIDS,<br>SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-<br>SOLVED<br>(MG/L)   | SOLIDS,<br>RESIDUE<br>AT 105<br>DEG. C,<br>SUS-<br>PENDED<br>(MG/L)  | NITRO-<br>GEN,<br>NITRATE<br>TOTAL<br>(MG/L<br>AS N)   |
| 50044950   |   | LAGO LA PI   | LATA NO.3   | NR DAM N  | R NARANJIT   | O, PR (L   | AT 18°20'  | 18" LONG   | 066 014 '01   | ")   |  |
|  | 10  | 0.7  |   | 110   | 10   | 10   |  | 17   | 100   |  | 0.10   |
| 10   | 13  | 0.6  | 2.1   | 106   | 13   | 16   | ₹0.1   | 20   | 160   |  | 0.18   |
| 12<br>6.6  | 19<br>13  | 0.8  | 2.4   | 120<br>64   | 17<br>12   | 22<br>15   | 0.1  | 19<br>15   | 190<br>120  | (1   | ==   |
| 13<br>3.9  | 19<br>7.0   | 0.7  | 2.5<br>1.9  | 130<br>47   | 19<br>7.7  | 24<br>7.0  | 0.1<br><0.1  | 5.3<br>7.9   | 190<br>75   | 3  | ==   |
| GEN<br>NITRI<br>TOTA<br>(MG/                         | TE NO2+   | N, GEN<br>NO3 AMMON<br>AL TOTA<br>/L (MG)  | N, GEN<br>NIA ORGAN<br>AL TOTA<br>/L (MG)   | RO- GEN, A<br>N, MONIA<br>NIC ORGAN<br>AL TOTA<br>/L (MG,   | AM-<br>A + NITR<br>NIC GEN<br>AL TOTA<br>/L (MG/   | L TOT  | N, PHORE   | CHLO<br>S- PHY<br>US, RAT<br>AL PLA<br>/L TO   | RO- PHY<br>LL PLA<br>IO TO<br>NK- CHRO<br>N FLUO  | TO- PHY NK- PLA N TO MO CHRO ROM FLUO  | TO-<br>NK-<br>N<br>MO<br>ROM   |
| 0044950  | 1   | LAGO LA PI   | LATA NO.3   | NR DAM NI   | R NARANJIT   | O, PR (L   | AT 18°20'  | 18" LONG   | 066°14'01   | ")   |  |
| 0.0  | 2 0.:   | 20 0.0   | 02 0  | .38 0   | .4 0.  | 6 2  | .7 0.  | 03 0   | .0 12.  | 0 (0.  | 10   |
| <0.0   | 1 <0.   | 10 0.0   | 04 0  | .76 0   | . 8  |  | 0.0  | 07 0   | .0 30.  | 0 <0.  | 10   |
| <0.0   | 1 (0.   | 10 <0.0  | 01  | o   | . 3  |  | (0.0   | 01 0   | .0 9.   | 00 (0.   | 10   |
|  | AT<br>SAMPLE<br>LOC-<br>ATION,  | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM)  | PH<br>(STAND-<br>ARD<br>UNITS)  | TEMPER-<br>ATURE<br>(DEG C)   | OXYGEN,<br>DIS-<br>SOLVED<br>(MG/L)  | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION)   | COLI-<br>FORM,<br>FECAL,<br>0.7<br>UM-MF<br>(COLS./<br>100 ML)   | STREP-<br>TOCOCCI<br>FECAL,<br>KF AGAR<br>(COLS.<br>PER<br>100 ML)   | ALKA-<br>LINITY<br>WATER<br>TOTAL<br>FIBLD<br>MG/L AS<br>CACO3  | SOLIDS,<br>RESIDUE<br>AT 105<br>DEG. C,<br>SUS-<br>PENDED<br>(MG/L)  | NITRO-<br>GEN,<br>NITRATE<br>TOTAL<br>(MG/L<br>AS N)   |
|  |   |  | RIO (   | RANDE DE  | LOIZA BAS  | IN   |  |  |   |  |  |
| 500575   | 00  | LAGO LOI   | ZA NO.4   | R MOUTH   | R CAGUAS,  | PR (LAT  | 18016'51   | LONG 06  | 6°00'35")   |  |  |
| 0915   | 1.00  | 292  | 7.90  | 25.5  | 10.9   | 134  | 290  | 26   | 93  | 6  | 0.54   |
| The second second                                    |   |  |   |   |  |  |  |  |   | -  | 10000000   |
| 1215   | 1.00  | 284  | 7.20  | 28.0  | 5.9  | 75   |  | K78  | 90  | 9  | 0.15   |
|  | 1310 1320 1340 1600 1615  MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)  11 10 12 6.6 13 3.9  NITE GEN NITE GEN NITE GEN OCO 40.00  CO.00  TIME | AT SAMPLE LOC- ATION, TOTAL (FERT)  50044950  1310 1.00 1320 77.1 1320 1.00 1340 60.7 1600 1.00 1815 SOLVED (MG/L AS MG) SOLVED (MG/L AS MG) AS NA)  11 18 10 13 12 19 6.6 13 13 19 3.9 7.0  NITRO- NITRI GEN, GEN, NITRITE NO2++ TOTAL TOTAL (MG/L AS N) AS  60044950  10 0.02 0.3 0.01 0.02 0.3 0.01 0.01 0.01 0.01 0.01 0.01 0.01 | AT SPE- SAMPLE CIFIC LOC- CON- ATION, DUCT- ATION, DUCT- ANCE (FERT) (US/CM)  50044950 LAGO LA P  1310 1.00 312 1320 77.1 285 1320 1.00 322 1340 60.7 200 1600 1.00 351 1615 82.0 121  MAGNE- SIUM, SODIUM, AD- SOLVED TION (MG/L (MG/L RATIO AS MG) AS NA)  50044950 LAGO LA P  11 18 0.7 10 13 0.6 12 19 0.8 6.6 13 0.7 13 19 0.7 3.9 7.0 0.5  NITRO- NITRO- NITION GEN, GEN, GEN, GEN, GEN, GEN, GEN, GEN, | AT SPR- SAMPLE CIFIC LOC- ATION, DUCT- (STAND- TIME TOTAL ANCE ARD (FEET) (US/CM) UNITS)  RIO DE L  50044950 LAGO LA PLATA NO.3  1310 1.00 312 8.50 1320 77.1 285 7.50  1320 1.00 322 8.40 1340 60.7 200 6.80  1600 1.00 351 7.40 1615 82.0 121 6.40  AAGNE- SIUM, SODIUM, AD- BIS- BIS- BIS- BIS- BIS- BIS- BIS- BIS | AT SAMPLE CIFIC CON- ATION, DUCT- (STAND- TEMPER- ATTOMAL (US/CM) UNITS)  RIO DE LA PLATA B  50044950 LAGO LA PLATA NO.3 NR DAM N  1310 1.00 312 8.50 26.5 1320 77.1 285 7.50 23.5 1320 1.00 322 8.40 28.0 1340 60.7 200 6.80 22.5 1600 1.00 351 7.40 29.0 1615 82.0 121 6.40 22.5 16165 82.0 121 6.40 22.5 1810M, SODIUM, AD- SIUM, WATER SIUM, | AT SAMPLE CIFIC LOC- CON- PH ATTON, DUCT- PH ATTON, DUCT- CON- PH ATTON, DUCT- CON- ATTON, DUCT- CON- ATTON, DUCT- CON- ATTON, DUCT- CON- ATTON, DUCT- PH ATTON, DUCT- CON- ATTON, DUCT- C | AT SPE- SAMPLE CIPIC LOC- CON- ATION, DUCT- (STAND- TEMPER- DIS- CENT TIME TOTAL ANCE ARD ATURE SOLVED SATUR- (FRET) (US/CM) UNITS) (DEC C) (MG/L) ATION)  RIO DE LA PLATA BASINCONTINUED  RIO DE LA PLATA BASINCONTINUED  RIO DE LA PLATA BASINCONTINUED  SO044950 LAGO LA PLATA NO.3 NR DAM NR NARANJITO, PR (I 1310 1.00 312 8.50 26.5 12.6 158 1320 77.1 285 7.50 23.5 1.3 1320 1.00 322 8.40 28.0 12.8 162 1340 60.7 200 6.80 22.5 0.1 1615 82.0 121 6.40 22.5 0.4 1616 82.0 121 6.40 22.5 0.4 1616 82.0 121 6.40 22.5 0.4 1617 SOUND SOLUM, AD- SIUM, MATER SULFATE RIDE, SOLUM, AD- SIUM, MATER SULFATE RIDE, SOLVED TION SOLVED FIELD SOLVED SOLVED MG/L (MG/L RATIO (MG/L MG/L AS (MG/L MG/L) MG/L (MG/L RATIO (MG/L MG/L AS (MG/L) MG/L (MG/L RATIO (MG/L MG/L AS (MG/L) MG/L (MG/L MG/L (MG/L MG/L MG/L MG/L MG/L MG/L MG/L MG/L (MG/L MG/L MG/L MG/L MG/L MG/L MG/L MG/L (MG/L MG/L MG/L MG/L MG/L MG/L MG/L MG/L | AT SPE- SAMPLE CIFIC   PH   OXYGEN, (PER   0.7   TIME   TOTAL   ANCR   ANCR   ANCR   OXYGEN   OXYGEN, (PER   0.7   TIME   TOTAL   ANCR   ANCR   ANCR   OXYGEN   OXYGEN   OXYGEN   TOTAL   ANCR   ANCR   ANCR   OXYGEN   OXYGEN   OXYGEN   TOTAL   ANCR   ANCR   ANCR   OXYGEN   OXYGEN   OXYGEN   TOTAL   ANCR   ANCR   ANCR   OXYGEN   OXYGEN   TIME   TOTAL   ANCR   ANCR   OXYGEN   OXYGEN   TIME   TOTAL   OXYGEN   OXYGEN   OXYGEN   TIME   OXYGEN   OXYGEN   OXYGEN   TIME   OXYGEN   OXYGEN   TIME   OXYGEN   OXYGEN   TIME   OXYGEN   OXYGEN | AT SPR- SAMPLE CIFIC LOC- LOC- LOC- LOC- LOC- LOC- ATION, DUCT (STAND- THE TO BE LA PLATA BASINCONTINUED  RIO DE LA PLATA BASINCONTINUED  RIO DE LA PLATA BASINCONTINUED  RIO DE LA PLATA BASINCONTINUED  LAGO LA PLATA NO.3 NR DAM NR NARANJITO, PR (LAT 18°20'18" LONG 1310 1.00 312 8.60 26.5 12.6 158 45 K2 1320 77.1 285 7.50 23.5 1.3 | AT SPRICE CLACE COPIC PH CLACE COPIC PH CACCE COPIC | ## AT SPR- SAMPLE CLFIC  SAMPL |

K = non-ideal count

### WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE                           |  | RN, GRITE NO2<br>TAL TO                                    | EN, (C)<br>+NO3 AMP<br>TAL TO<br>G/L (N           | TAL<br>IG/L                                | NITRO-<br>GEN,<br>RGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN, AM-<br>MONIA<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N)   | - NIT                                    | AL TO  | EN, P                                     | PHOS-<br>HORUS,<br>TOTAL<br>(MG/L<br>AS P) | BIOMA<br>CHLOR<br>PHYL<br>RATI<br>PLAN<br>TON<br>(UNIT       | O- PHYT<br>L PLAN<br>O TON<br>K- CHRON<br>FLUOR | O- PHY K- PLA TO O CHRO OM FLUO                                     | TTO-<br>ANK-<br>ON<br>OMO                          |
|--------------------------------|--|--|---|--|---|---|--|--|---|--|--|---|---|--|
|                                |  |  |   | R  | IO GRAN   | IDE DE LO   | DIZA BA                                  | BINCON   | TINUED                                    |  |  |   |   |  |
|                                | 50057  | 1500   | LAGO I  | OIZA NO                                    | .4 NR N   | OUTH NR   | CAGUAS                                   | PR (LA   | T 18°16                                   | '51" LC                                    | ONG 066  | 00'35")   |   |  |
| DEC 198                        | 34   |  |   |  |   |   |  |  |   |  |  |   |   |  |
| 11<br>MAY 198                  |  | 06 0   | .60   | .22  | 0.58  | 0.8   | 1  | .4   | 6.2                                       |  | 0.   | 0 12.0  | <0.   | 10   |
| 10<br>JUL                      | . 0.   | 05 0   | .20   | .71  | 0.49  | 1.2   | 1  | . 4  | 6.2                                       | 0.34                                       | 0.   | 0 19.0  | (0.   | 10   |
| 16                             | . 0.   | 11 0   | .40   | .44  | 0.86  | 1.3   | 1  | .7   | 7.5                                       | 0.29                                       | 0.   | 0 14.0  | <0.   | 10   |
| DATE                           | TIME   | DEPTH<br>AT<br>SAMPLE<br>LOC-<br>ATION,<br>TOTAL<br>(FEET) | SPE-<br>CIFIC<br>CON-<br>DUCT-<br>ANCE<br>(US/CM) | PH<br>(STAN<br>ARD<br>UNITS                | AT  | IPER-<br>TURE S   | (YGEN,<br>DIS-<br>BOLVED<br>(MG/L)       | OXYGEN,<br>DIS-<br>SOLVED<br>(PER-<br>CENT<br>SATUR-<br>ATION) | FORM<br>FECA<br>0.7<br>UM-M<br>(COLS      | L, FE<br>KF<br>F (CC                       | CREP-<br>COCCI<br>CAL,<br>AGAR<br>OLS.<br>PER                | NESS<br>(MG/L                                   | HARD-<br>NESS<br>NONCARB<br>WATER<br>TOT FLD<br>MG/L AS<br>CACO3    | CALCIU<br>DIS-<br>SOLVE<br>(MG/L<br>AS CA          |
|                                | 5005880  | 00   | LAGO LOI  | ZA NO.7                                    | NR DAM  | NR TRU  | ILLO AI                                  | TO, PR   | (LAT 18                                   | 019'29"                                    | LONG   | 066°00'47                                       | ")  |  |
| BC 1984                        |  |  |   |  |   |   |  |  |   |  |  |   |   |  |
| 11                             | 1040<br>1045   | 1.00<br>37.0   | 282<br>309  |  |   | 26.5<br>25.0  | 11.7                                     | 145  |   | 19   | K4   | 91<br>94  |   | 22   |
| 10                             | 1020   | 1.00   | 228   | 7.   | 20  | 27.5  | 7.9                                      | 99   |   | K9   | K11  | 72  | 1   | 18   |
| 10<br>UL                       | 1045   | 42.6   | 173   | 6.   | 40  | 24.0  | 0.3                                      |  |   |  |  | 52  |   | 13   |
| 16<br>16                       | 1055<br>1105   | 1.00<br>34.4   | 303<br>320  |  |   | 29.0  | 0.1                                      | 33   |   | 10   | 74   | 85<br>92  | =   | 19<br>22   |
| DATE                           | MAGNE-<br>SIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS MG) | SODIUM,<br>DIS-<br>SOLVED<br>(MG/L<br>AS NA)               | SODIUM<br>AD-<br>SORP-<br>TION<br>RATIO           | POTA<br>SIU<br>DIS<br>SOLV<br>(MG/<br>AS K | S- LIN<br>M, WA<br>- TO<br>BD FI<br>L MG/           | TAL E   | ULFATE<br>DIS-<br>SOLVED<br>MG/L<br>SO4) | CHLO-<br>RIDE,<br>DIS-<br>SOLVED<br>(MG/L<br>AS CL)            | FLUORIDE<br>RIDE<br>DIS-<br>SOLV<br>(MG/I | , DI<br>- SO<br>BD (M<br>L A               | ICA,   | SUM OF<br>CONSTI-<br>TUENTS,<br>DIS-            | SOLIDS,<br>RESIDUR<br>AT 105<br>DEG. C,<br>SUS-<br>PENDED<br>(MG/L) | NITRO<br>GEN,<br>NITRAT<br>TOTAL<br>(MG/L<br>AS N) |
|                                | 5005880  | 0  | LAGO LOI  | ZA NO.7                                    | NR DAM  | NR TRUJ   | ILLO AL                                  | TO, PR   | (LAT 18                                   | 019'29"                                    | LONG   | 066°00'47                                       | ")  |  |
| EC 1984<br>11<br>11<br>AY 1985 | 8.7<br>8.8   | 22<br>23   | 1 1   | 2.   |   | 93<br>99  | 18<br>18                                 | 17<br>28   | 0.:                                       |  | 26<br>30   | 170<br>190                                      | 40  | 0.16   |
| 10<br>10                       | 6.6  | 18<br>12   | 0.7   | 2.   |   | 71<br>57  | 17<br>9.4                                | 16<br>12   | (O.                                       |  | 23<br>16   | 140<br>100                                      | 6   | 1  |
| 16<br>16                       | 9.1<br>9.1   | 24<br>20   | 0.9   | 3.   |   | 87<br>106   | 23<br>14                                 | 25<br>21   | 0.:                                       |  | 16<br>20   | 170<br>170                                      | 10  | 112  |
| DATE                           | NIT<br>GB<br>NITR<br>TOT<br>(MG<br>AS                | N, GI<br>ITE NO2-<br>AL TO'<br>/L (MC                      | EN, G<br>+NO3 AMM<br>FAL TO<br>G/L (M             | EN,<br>ONIA O<br>TAL<br>G/L                | NITRO-<br>GEN,<br>RGANIC<br>FOTAL<br>(MG/L<br>AS N) | NITRO-<br>GEN, AM-<br>MONIA +<br>ORGANIC<br>TOTAL<br>(MG/L<br>AS N) | NITE                                     | L TO   | EN, PI<br>TAL '                           | PHOS-<br>HORUS,<br>TOTAL<br>(MG/L<br>AS P) | BIOMAS<br>CHLORG<br>PHYLI<br>RATIC<br>PLANI<br>TON<br>(UNITS | D- PHYT<br>L PLAN<br>D TON<br>K- CHROM<br>FLUOR | O- PHY<br>K- PLA<br>TO<br>O CHRO<br>OM FLUO                         | TO-<br>NK-<br>N<br>MO<br>ROM                       |
|                                | 5005880  | 0  | LAGO LOI  | ZA NO.7                                    | NR DAM  | NR TRUJ   | ILLO AL                                  | TO, PR   | (LAT 18                                   | 019'29"                                    | LONG (   | 066°00'47                                       | ")  |  |
| DEC 198<br>11<br>11<br>MAY 198 | 0.   | 04 0   | . 20 0  | .03  | 0.77  | 0.8   | 1.                                       | 0  | 4.4                                       | 0.09                                       | 0.0  | 14.0  | <b></b> <0.   | 10   |
| 10<br>10<br>JUL                |  | 03 <0  | .10 <0  | .01  | ==  | 0.7   |  |  | 11  | 0.10                                       | 5.0  | 20.0  | <0.   | 10   |
| 16                             | 0.   | 04 <0  | . 10 0  | . 10                                       | 0.8   | 0.9   |  | 77   |   | 0.16                                       | 0.0  | 14.0  | <0.   | 10   |

### WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE           | TIME | PCB,<br>TOTAL<br>(UG/L) | ALDRIN,<br>TOTAL<br>(UG/L) | CHLOR-<br>DANE,<br>TOTAL<br>(UG/L) | DDD,<br>TOTAL<br>(UG/L) | DDE,<br>TOTAL<br>(UG/L) | DDT,<br>TOTAL<br>(UG/L) | DI-<br>AZINON,<br>TOTAL<br>(UG/L) | DI-<br>KLDRIN<br>TOTAL<br>(UG/L) | ENDO-<br>SULFAN,<br>TOTAL<br>(UG/L) |
|----------------|------|-------------------------|----------------------------|------------------------------------|-------------------------|-------------------------|-------------------------|-----------------------------------|----------------------------------|-------------------------------------|
|                |      |                         |                            | RIO GU                             | AJATACA B               | ASIN                    |                         |                                   |                                  |                                     |
| 50010790       |      | LAGO GUAJA              | TACA NO.1                  | NR DAM N                           | R QUEBRAD               | ILLAS, PR               | (LAT 18°2               | 3'56" LONG                        | 066055                           | 23")                                |
| JUL 1985<br>23 | 1215 | <0.1                    | <0.01                      | <0.1                               | <0.01                   | <0.01                   | <0.01                   | <0.01                             | <0.01                            | <0.10                               |
|                |      |                         | RI                         | O GRANDE                           | DE ARECI                | BO BASIN                |                         |                                   |                                  |                                     |
| 500200         | 50   | LAGO GA                 | RZAS NO.1                  | NR DAM NI                          | R ADJUNTA               | S,PR (LAT               | 18°08'21                | " LONG 066                        | 044'35")                         |                                     |
| JUL 1985<br>19 | 0810 | <0.1                    | <0.01                      | <0.1                               | <0.01                   | <0.01                   | <0.01                   | <0.01                             | <0.01                            | <0.10                               |
| 500270         | 90   | LAGO DO                 | S BOCAS NO                 | .1 NR DAI                          | M NR UTUA               | DO, PR (LA              | T 18°20'0               | 9" LONG 06                        | 6°40'04"                         | )                                   |
| JUL 1985<br>18 | 1250 | <0.1                    | <0.01                      | <0.1                               | <0.01                   | <0.01                   | <0.01                   | <0.01                             | <0.01                            | <0.01                               |
|                |      |                         |                            | RIO DE I                           | LA PLATA                | BASIN                   |                         |                                   |                                  |                                     |
| 5003           | 9950 | LAGO (                  | CARITE NO.                 | 1 NR DAM                           | NR CAYRY                | .PR (LAT                | 18 04 '39"              | LONG 066                          | 06'19")                          |                                     |
| JUL 1985<br>17 | 1040 | <0.1                    | <0.01                      | (0.1                               | <0.01                   | <0.01                   | <0.01                   | <0.01                             | <0.01                            | <0.01                               |
| 50044950       |      | LAGO LA P               | LATA NO.3                  | NR DAM NE                          | R NARANJI               | ro, PR (L               | AT 18°20'               | 18" LONG 0                        | 66°14'01                         | ")                                  |
| JUL 1985<br>15 | 1600 |                         |                            |                                    |                         | <u></u>                 |                         | -                                 |                                  |                                     |
|                |      |                         |                            | RIO GRANI                          | DR DR FOIS              | ZA BASIN                |                         |                                   |                                  |                                     |
| 50058800       |      | LAGO LOIZ               | NO.7 NR                    | DAM NR TE                          | RUJILLO AI              | LTO, PR (               | LAT 18°19               | '29" LONG                         | 066°00'4                         | 7")                                 |
| JUL 1985<br>16 | 1055 | <0.1                    | 22.                        | <0.1                               | <0.01                   | <0.01                   | <0.01                   | <0.01                             | <0.01                            | <0.01                               |

| DATE           | PARA-<br>THION,<br>TOTAL<br>(UG/L) | NAPH-<br>THA-<br>LENES,<br>POLY-<br>CHLOR.<br>TOTAL<br>(UG/L) | PER-<br>THANB<br>TOTAL<br>(UG/L) | TOX-<br>APHENE,<br>TOTAL<br>(UG/L) | TOTAL TRI- THION (UG/L) | 2,4-D,<br>TOTAL<br>(UG/L) | 2,4,5-T<br>TOTAL<br>(UG/L) | 2, 4-DP<br>TOTAL<br>(UG/L) | SILVEX,<br>TOTAL<br>(UG/L) |
|----------------|------------------------------------|---|----------------------------------|------------------------------------|-------------------------|---------------------------|----------------------------|----------------------------|----------------------------|
|                |                                    |   | RIO GUA                          | AJATACA BA                         | SINCONT                 | INUED                     |                            |                            |                            |
| 50010790       | LAGO                               | GUAJATACA   | NO.1 NR                          | DAM NR QU                          | BBRADILLA:              | S,PR (LAT                 | 18°23'56                   | " LONG 06                  | 6°55'23")                  |
| MAY 1985<br>23 | <0.01                              | <0.1  | <0.1                             | <1                                 | <0.01                   | 0.08                      | <0.01                      | <0.01                      | <0.01                      |
|                |                                    | RIC   | GRANDE                           | DE ARECTE                          | D BASIN                 | CONTINUED                 |                            |                            |                            |
| 50020050       | LAG                                |   |                                  | DAM NR ADJ                         |                         |                           |                            | G 066°44'                  | 35")                       |
| JUL 1985       | 2                                  | o dinamo i  |                                  | mi itti ADO                        | Divino , i ic           | (LAT TO O                 | o ar non                   |                            | ,                          |
| 18             | <0.01                              | <0.1  | <0.1                             | <1                                 | <0.01                   | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| 50027090       | LA                                 | GO DOS BOO  | CAS NO. 1                        | NR DAM NR                          | UTUADO, PI              | R (LAT 18                 | °20'09" L                  | ONG 066°4                  | 0'04")                     |
| JUL 1985<br>18 | <0.01                              | <0.1  | <0.1                             | <1                                 | <0.01                   | <0.01                     | (0.01                      | <0.01                      | <0.01                      |
|                |                                    |   | RIO DE I                         | A PLATA B                          | ASINCON'                | LINUED                    |                            |                            |                            |
| 50039950       |                                    | LAGO CARI   | TE NO.1 N                        | IR DAM NR                          | CAYEY.PR                | (LAT 18°0                 | 4'39" LON                  | G 066°06'                  | 19")                       |
| JUL 1985<br>17 | <0.01                              | <0.1  | <0.1                             | <1                                 | <0.01                   | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
| 50044950       | LAGO                               | LA PLATA  | NO.3 NR                          | DAM NR NAI                         | RANJITO, I              | PR (LAT 1                 | 8°20'18"                   | LONG 066°                  | 14'01")                    |
| JUL 1985<br>15 |                                    |   |                                  |                                    |                         | <0.01                     | <0.01                      | <0.01                      | <0.01                      |
|                |                                    | 1   | RIO GRAND                        | B DR FOIS                          | A BASINC                | CONTINUED                 |                            |                            |                            |
| 50058800       | LAGO                               | LOIZA NO  | 7 NR DAM                         | NR TRUJI                           | LIO ALTO,               | PR (LAT                   | 18°19'29"                  | LONG 066                   | °00'47")                   |
| JUL 1985<br>16 | <0.01                              | <0.1  | <0.1                             | <1                                 | <0.01                   | 0.03                      | <0.01                      | <0.01                      | <0.01                      |
|                |                                    |   |                                  |                                    |                         |                           |                            |                            |                            |

### WATER-QUALITY DAA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE     | ENDRIN,<br>TOTAL<br>(UG/L) | ETHION,<br>TOTAL<br>(UG/L) | HEPTA-<br>CHLOR,<br>TOTAL<br>(UG/L) | HEPTA-<br>CHLOR<br>EPOXIDE<br>TOTAL<br>(UG/L) | LINDANE<br>TOTAL<br>(UG/L) | MALA-<br>THION,<br>TOTAL<br>(UG/L) | METH-<br>OXY-<br>CHLOR,<br>TOTAL<br>(UG/L) | METHYL<br>PARA-<br>THION,<br>TOTAL<br>(UG/L) | METHYL<br>TRI-<br>THION,<br>TOTAL<br>(UG/L) | MIREX,<br>TOTAL<br>(UG/L) |
|----------|----------------------------|----------------------------|-------------------------------------|---|----------------------------|------------------------------------|--|--|---|---------------------------|
|          |                            |                            | RIO                                 | GUAJATAC                                      | A BASIN                    | CONTINUED                          |  |  |   |                           |
| 50010790 | 1                          | LAGO GUAJAT                | ACA NO.1                            | NR DAM N                                      | R QUEBRAD                  | LLAS, PR                           | (LAT 18°23                                 | 3'56" LONG                                   | 066055'                                     | 23")                      |
| MAY 1985 |                            |                            |                                     |   |                            |                                    |  |  |   |                           |
| 23       | <0.01                      | <0.01                      | <0.01                               | <0.01   | <0.01                      | <0.01                              | <0.01                                      | <0.01  | <0.01                                       | <0.01                     |
|          |                            |                            | RIO GRA                             | NDE DE AR                                     | ECIBO BAS                  | NCONTI                             | NURD                                       |  |   |                           |
| 500200   | 50                         | LAGO GAR                   | ZAS NO.1                            | NR DAM N                                      | R ADJUNTAS                 | B,PR (LAT                          | 18°08'21'                                  | LONG 066                                     | 3°44'35")                                   |                           |
| JUL 1985 |                            |                            |                                     |   |                            |                                    |  |  |   |                           |
| 18       | <0.01                      | <0.01                      | <0.01                               | <0.01   | <0.01                      | <0.01                              | <0.01                                      | <0.01  | <0.01                                       | <0.01                     |
| 500270   | 90                         | LAGO DOS                   | BOCAS NO                            | O.1 NR DA                                     | M NR UTUAL                 | O,PR (LA                           | r 18°20'09                                 | " LONG OF                                    | 6040'04"                                    | )                         |
| JUL 1985 |                            |                            |                                     |   |                            |                                    |  |  |   |                           |
| 18       | <0.01                      | <0.01                      | <0.01                               | <0.01   | <0.01                      | <0.01                              | . <0.01                                    | <0.01  | <0.01                                       | <0.01                     |
|          |                            |                            | RIO                                 | DE LA PLA                                     | TA BASIN                   | CONTINUE                           | )  |  |   |                           |
| 5003     | 9950                       | LAGO C                     | ARITE NO                            | .1 NR DAM                                     | NR CAYBY.                  | PR (LAT                            | 8004'39"                                   | LONG 066                                     | 06'19")                                     |                           |
| JUL 1985 |                            |                            |                                     |   |                            |                                    |  |  |   |                           |
| 17       | <0.01                      | <0.01                      | <0.01                               | <0.01   | <0.01                      | <0.01                              | <0.01                                      | <0.01  | <0.01                                       | <0.01                     |
| 50044950 |                            | LAGO LA PL                 | ATA NO.3                            | NR DAM NI                                     | R NARANJIT                 | O, PR (LA                          | T 18°20'1                                  | 8" LONG 0                                    | 66 014 '01'                                 | .)                        |
| JUL 1985 |                            |                            |                                     |   |                            |                                    |  |  |   |                           |
| 15       |                            |                            |                                     |   | 77                         | 77                                 |  |  |   |                           |
|          |                            |                            | RIO GI                              | RANDE DE I                                    | LOIZA BASI                 | NCONTIN                            | IURD                                       |  |   |                           |
| 50058800 |                            | LAGO LOIZA                 | NO.7 NR                             | DAM NR TI                                     | RUJILLO AL                 | TO, PR (I                          | AT 18°19'                                  | 29" LONG                                     | 066 00 '47                                  | ")                        |
| JUL 1985 |                            |                            |                                     |   |                            |                                    |  |  |   |                           |
| 16       | <0.01                      | <0.01                      | <0.01                               | <0.01   | <0.01                      | <0.01                              | <0.01                                      | <0.01  | <0.01                                       | <0.01                     |

Ground-Water Records

for

Puerto Rico

#### RIO GUAJATACA BASIN

182538067015900. Local number, 164. LOCATION.--Lat 18°25'38", long 67°01'59". Owner: P.B. Aqueduct and Sewer Authority.

Name: Rocha Moca.

AQUIFER. -- Aymamon Limestone

MELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 12 in (0.30 m), cased 0-100 ft (0-30.49 m), perforated 100-160 ft (30.49-48.78 m), diameter 10 in (0.25 m), cased 0-140 ft (0-42.68 m), perforated 140-200 ft (42.68-61.0 m), gravel packed 120-200 ft (36.58-61.0 m). Depth 200 ft (61.0 m).

DATUM.--Elevation of land-surface datum is about 787 ft (240 m) above mean sea level, from topographic map. Measuring point: Upper edge of 1.5 in (0.04 m) pipe on pump base, 1.40 ft (0.43 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD.--January 18, 1982 to March 4, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 144.7 ft (44.12 m) below land-surface datum, Nov. 3, 1983; lowest water level measured, 176.1 ft (53.69 m) below land-surface datum, Feb. 18, 1982.

# WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date   | Water<br>level | Date    | Water<br>level | Date    | Water<br>level | Date   | Water<br>level |
|--------|----------------|---------|----------------|---------|----------------|--------|----------------|
| Oct. 5 | a147.6         | Dec. 20 | a148.8         | Feb. 20 | a148.5         | Mar. 4 | a148.6         |

182421067015000. Local number, 165. LOCATION.--Lat 18°24'21", long 67°01'50". Owner: P.R. Aqueduct and Sewer Authority.

Name: Mateo Perez - Bo. Saltos.

WELL CHARACTERISTICS. --Drilled production water-table well, diameter 16 in (0.40 m), cased 16 in (0.40 m) 0-40 ft (0-12.2 m), cased 12 in (0.30 m) 40-200 ft (12.2-61.0 m). Depth 200 ft (61.0 m).

DATUM. --Elevation of land-surface datum is about 672 ft (205 m) above mean sea level, from topographic map.

Measuring point: Hole on top of pump base, 1.00 ft (0.30 m) above land-surface datum.

REMARKS.--Pumping discontinued. Abandoned observation well.

PERIOD OF RECORD.--January 1982 to March 4, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 67.89 ft (20.69 m) below land-surface datum, Jan. 16, 1985; lowest water level measured, 70.60 ft (21.52 m) below land-surface datum, June 18, 1982.

### WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date              | Water<br>level | Date               | Water<br>level | Date    | Water<br>level | Date   | Water<br>level |
|-------------------|----------------|--------------------|----------------|---------|----------------|--------|----------------|
| Oct. 5<br>Nov. 15 | 69.08          | Dec. 20<br>Jan. 16 | 68.88          | Feb. 20 | 68.55          | Mar. 4 | 68.32          |

a Pumping.

325

#### RIO GRANDE DE ARECIBO BASIN

181041066441100. Local number, 86. LOCATION.--Lat 18°10'41", long 66°44'11". Owner: Joaquin Mattei - U.S. Geological Survey.

Name: Adjuntas.

AQUIFER.--Alluvium of Quaternary Age and volcanic rock of Eccene Age.

WELL CHARACTERISTICS.--Drilled test well, diameter 6 in (0.15 m). Depth 300 ft (91.4 m).

DATUM.--Elevation of land-surface datum is about 1,460 ft (445 m) above mean sea level, from topographic map.

Measuring point: Bottom edge of hole in 6 in (0.15 m) casing, 1.45 ft (0.44 m) above land-surface datum.

REMARKS . -- Observation well.

REMARKS.---OBSETVATION WELL.
PERIOD OF RECORD.--August 1967 to January 14, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.34 ft (1.32 m) below land-surface datum, Jan. 12, 1979; lowest water level measured, 12.60 ft (3.84 m) below land-surface datum, May 2, 1984.

#### WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

|        | Water |         | Water |         | Water |
|--------|-------|---------|-------|---------|-------|
| Date   | level | Date    | level | Date    | level |
| Oct. 3 | 9.37  | Nov. 14 | 8.78  | Jan. 14 | 12.37 |

181307066355000. Local number, 123. LOCATION.--Lat 18 13'07", long 66 35'50". Owner: P.R. Aqueduct and Sewer Authority. Name: Jayuya 3. AQUIFER.--Recent alluvium.

MELL CHARACTERISTICS.--Drilled for public supply well, diameter 10 in (0.25 m), cased 0-27 ft (0-8.23 m), perforated 27-100 ft (8.23-30.48 m), gravel packed 0-100 ft (0-30.48 m). Depth 100 ft (30.48 m).

DATUM.--Elevation of land-surface datum is about 1,400 ft (427 m) above mean sea level, from topographic map.

Measuring point: Lower edge of 0.75 in (0.02 m) 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 December 8, 1984, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.73 ft (3.27 m) below land-surface datum, May 30, 1980; lowest water level measured, a49.36 ft (a15.04 m) below land-surface datum, Apr. 21, 1976.

### WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

|         | Water |        | Water |
|---------|-------|--------|-------|
| Date    | level | Date   | level |
| Oct. 26 | 13.14 | Dec. 8 | 14.59 |

182630066384900. Local number, 161. LOCATION.--Lat 18026'30", long 66038'49". Owner: P.R. Aqueduct and Sewer Authority.

Name: Santana #2

AQUIFER. -- Aymamon Limestone

WRLL CHARACTERISTICS. --Drilled public supply water-table well, diameter 12 in (0.30 m), cased 0-180 ft (0-54.88 m), diameter 10 in (0.25 m), perforated 175-220 ft (53.35-67.07 m). Depth 220 ft (67.07 m).

DATUM .-- Elevation of land-surface datum is about 148 ft (45.1 m) above mean sea level, from topographic map.

Measuring point: Airhole in pump base, 0.90 ft (0.27 m) above land-surface datum.

REMARKS.--Observation well. Water levels affected by pumping.

PERIOD OF RECORD.--January 8, 1982 to March 5, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, a113.7 ft (a34.66 m) below land-surface datum, Jan. 8, 1982; lowest water level measured, a152.2 ft (a46.40 m) below land-surface datum, May 12, 1983.

### WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

|        | Water  |        | Water  |         | Water  |        | Water  |
|--------|--------|--------|--------|---------|--------|--------|--------|
| Date   | level  | Date   | level  | Date    | level  | Date   | level  |
| Oct. 9 | a132.4 | Dec. 4 | a132.5 | Jan. 15 | a132.6 | Mar. 5 | a134.0 |

a Pumping.

### RIO GRANDE DE MANATI BASIN

182548066300200. Local number, 68. LOCATION.--Lat 18°25'48", long 66°30'02". Owner: P.R. Aqueduot and Sewer Authority. Name: Manati 2.

Name: Manati 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 (0.51 to 0.30 m), cased 20 in (0.51 m) 8-168 ft (2.44-51.21 m); 12 in (0.30 m) 153-206 ft (46.65-62.80 m); perforated 20 in (0.51 m) 80-168 ft (24.39-51.21 m), 12 in (0.30 m), 153-206 ft (46.65-62.80 m). Depth 212 ft (64.6 m).

DATUM.--Elevation of land-surface datum is about 31.4 ft (9.57 m) above mean sea level, from topographic map.

Measuring point: Bottom edge of hole in 20 in (0.51 m) 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 December 7, 1984, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, a22.50 ft (a6.86 m) below land-surface datum, June 2, 1965; lowest water level measured, a37.19 ft (a11.34 m) below land-surface datum, Jan. 15, 1975.

### WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

|         | Water  |      |   | Water  |      |   | Water  |
|---------|--------|------|---|--------|------|---|--------|
| Date    | level  | Date |   | level  | Date |   | level  |
| Oct. 15 | a26.80 | Nov. | 1 | a28.77 | Dec. | 7 | a28.85 |

182603066333600. 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 (0-45.73 m).

Depth 235 ft (71.64 m). DATUM. -- Elevation of land-surface datum is about 213 ft (64.9 m) above mean sea level, from topographic map.

Measuring point: Lower edge of 0.75 in (0.02 m) pipe in pump base, 3.0 ft (0.91 m) above land surface datum.

REMARKS. -- Observation well.
PERIOD OF RECORD. -- March 1960 to March 5, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD. --Highest water level measured, a15.67 ft (a4.78 m) below land-surface datum, Dec. 4, 1984; lowest water level measured, 226.9 ft (69.17 m) below land-surface datum, Apr. 4, 1963.

### , WATER LEVEL, IN FERT BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date    | Water<br>level | Date   | Water<br>level | Date    | Water<br>level | Date   | Water<br>level |
|---------|----------------|--------|----------------|---------|----------------|--------|----------------|
| Oct. 15 | a16.37         | Dec. 4 | a15.67         | Jan. 15 | a17.37         | Mar. 5 | a17.74         |

a Pumping.

327 RIO GRANDE DE MANATI BASIN

182621066343300. Local number, 135. LOCATION.--Lat 18°26'21", long 66°34'33". Owner: Puerto Rico Land Authority.

LOCATION.--Lat 18"25'21", long 85"34"33".

Owner: Puerto Rico Land Authority.

Name: Lederle.

AQUIFER.--Limestone of Tertiary Age.

WELL CHARACTERISTICS.--Drilled agricultural water-table well, diameter 24 in (0.61 m), cased 0-30 ft (0-9.1 m), diameter 16.62 in (0.42 m), cased to 0-450 ft (0-137.2 m). Depth 550 ft (167.6 m).

DATUM.--Elevation of land-surface datum is 287 ft (87.48 m) above mean sea level, from topographic map.

Measuring point: Top of shelter floor, 2.8 ft (0.85 m) above land-surface datum.

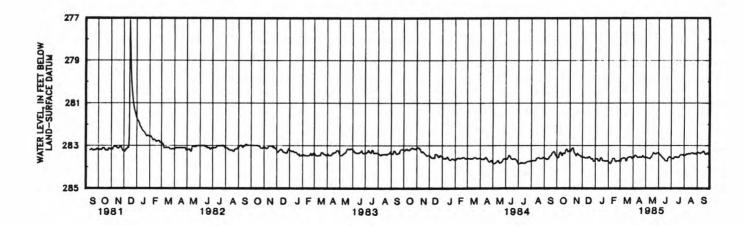
REMARKS .-- Recording observation well.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 276.8 ft (84.38 m) below land-surface datum, Dec. 16, 1981; lowest water level recorded, 283.9 ft (86.55 m) below land-surface datum, May 3, 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS AT 1200

| DAY    | OCT    |      | NOV  | 1    | DEC  | JAN    | FEB    | MAR    | APR    | MAY    | JUN    | JUL    | AUG    | SEP    |
|--------|--------|------|------|------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1      | 283.55 | 283  | .27  | 283  | . 55 | 283.61 | 283.74 | 283.72 | 283.56 | 283.55 | 283.34 | 283.56 | 283.46 | 283.32 |
| 2      | 283.56 | 283  | . 25 | 283  | . 55 | 283.60 | 283.77 | 283.72 | 283.55 | 283.55 | 283.36 | 283.59 | 283.46 | 283.32 |
| 3      | 283.57 | 283  | . 26 | 283  | . 54 | 283.60 | 283.80 | 283.71 | 283.53 | 283.55 | 283.39 | 283.60 | 283.46 | 283.33 |
| 4      | 283.55 | 283  | .21  | 283  | . 54 | 283.62 | 283.81 | 283.61 | 283.51 | 283.55 | 283.41 | 283.61 | 283.45 | 283.32 |
| 5      | 283.55 | 283  | .15  | 283  | . 54 | 283.62 | 283.83 | 283.60 | 283.46 | 283.56 | 283.44 | 283.61 | 283.42 | 283.33 |
| 6      | 283.44 |      | .14  | 283  |      | 283.61 | 283.84 | 283.60 | 283.45 | 283.58 | 283.45 | 283.61 | 283.39 | 283.34 |
| 7      | 283.39 |      | .12  | 283  |      | 283.63 | 283.81 | 283.58 | 283.45 | 283.58 | 283.47 | 283.60 | 283.39 | 283.35 |
| 8      | 283.33 |      | .11  | 283  |      | 283.71 | 283.76 | 283.58 | 283.46 | 283.58 | 283.50 | 283.56 | 283.40 | 283.35 |
| 9      | 283.31 |      | .12  | 283  |      | 283.72 | 283.72 | 283.59 | 283.48 | 283.59 | 283.52 | 283.54 | 283.40 | 283.35 |
| 10     | 283.31 | 283  | . 20 | 283  | . 58 | 283.72 | 283.70 | 283.57 | 283.51 | 283.60 | 283.54 | 283.53 | 283.39 | 283.34 |
| 11     | 283.35 |      | .28  | 283  |      | 283.71 | 283.60 | 283.56 | 283.53 | 283.60 | 283.56 | 283.53 | 283.38 | 283.33 |
| 12     | 283.41 |      | .34  | 283  |      | 283.68 | 283.59 | 283.57 | 283.54 | 283.59 | 283.59 | 283.53 | 283.37 | 283.32 |
| 13     | 283.44 |      | .37  | 283  |      | 283.59 | 283.59 | 283.59 | 283.55 | 283.55 | 283.61 | 283.52 | 283.37 | 283.30 |
| 14     | 283.46 |      | .40  | 283  |      | 283.56 | 283.60 | 283.61 | 283.55 | 283.52 | 283.62 | 283.53 | 283.38 | 283.30 |
| 15     | 283.37 | 283  | .45  | 283  | . 57 | 283.57 | 283.60 | 283.71 | 283.54 | 283.51 | 283.63 | 283.55 | 283.38 | 283.26 |
| 16     | 283.36 |      | .48  | 283  |      | 283.59 | 283.62 | 283.71 | 283.53 | 283.47 | 283.70 | 283.55 | 283.39 | 283.26 |
| 17     | 283.36 |      | . 45 | 283  |      | 283.61 | 283.71 | 283.69 | 283.53 | 283.44 | 283.70 | 283.55 | 283.37 | 283.27 |
| 18     | 283.37 |      | .39  | 283  |      | 283.70 | 283.73 | 283.60 | 283.53 | 283.40 | 283.70 | 283.55 | 283.34 | 283.31 |
| 19     | 283.37 |      | . 36 | 283  |      | 283.70 | 283.76 | 283.57 | 283.53 | 283.34 | 283.71 | 283.54 | 283.33 | 283.36 |
| 20     | 283.35 | 283  | . 37 | 283  | . 57 | 283.70 | 283.75 | 283.55 | 283.54 | 283.32 | 283.72 | 283.52 | 283.33 | 283.39 |
| 21     | 283.31 |      | .40  | 283  |      | 283.70 | 283.72 | 283.54 | 283.54 | 283.34 | 283.72 | 283.48 | 283.33 | 283.41 |
| 22     | 283.22 |      | .43  | 283  |      | 283.71 | 283.71 | 283.53 | 283.52 | 283.36 | 282.93 | 283.45 | 283.35 | 283.41 |
| 22     | 283.22 |      | .43  | 283  |      | 283.71 | 283.71 | 283.53 | 283.52 | 283.36 | 283.71 | 283.45 | 283.35 | 283.41 |
| 23     | 283.18 |      | . 44 | 283  |      | 283.73 | 283.71 | 283.53 | 283.50 | 283.37 | 283.60 | 283.44 | 283.36 | 283.38 |
| 24     | 283.17 |      | . 46 | 283  |      | 283.73 | 283.72 | 283.52 | 283.46 | 283.38 | 283.58 | 283.42 | 283.38 | 283.35 |
| 25     | 283.17 | 283  | .46  | 283  | .61  | 283.72 | 283.71 | 283.52 | 283.48 | 283.39 | 283.55 | 283.42 | 283.38 | 283.34 |
| 26     | 283.20 |      | .47  | 283  |      | 283.72 | 283.71 | 283.52 | 283.52 | 283.38 | 283.54 | 283.42 | 283.38 | 283.36 |
| 27     | 283.26 |      | .48  | 283  | .72  | 283.72 | 283.71 | 283.52 | 283.54 | 283.36 | 283.52 | 283.43 | 283.36 | 283.39 |
| 28     | 283.29 | 283  | . 52 | 283. |      | 283.72 | 283.72 | 283.54 | 283.54 | 283.35 | 283.52 | 283.42 | 283.38 | 283.41 |
| 29     | 283.27 | 283  | .53  | 283. | .73  | 283.71 |        | 283.59 | 283.54 | 283.34 | 283.54 | 283.41 | 283.39 | 283.44 |
| 30     | 283.25 | 283  | . 54 | 283. | .72  | 283.71 |        | 283.58 | 283.56 | 283.34 | 283.54 | 283.44 | 283.37 | 283.44 |
| 31     | 283.24 |      |      | 283  | .71  | 283.71 |        | 283.56 |        | 283.33 |        | 283.46 | 283.34 |        |
| LOW    | 283.57 | 283  | .54  | 283  | 73   | 283.73 | 283.84 | 283.72 | 283.56 | 283.58 | 283.02 | 283.61 | 283.46 | 283.44 |
| HIGH   | 283.17 | 283  | .11  | 283  | .52  | 283.56 | 283.59 | 283.52 | 283.46 | 282.92 | 282.62 | 282.63 | 283.33 | 283.26 |
| WTR YR | 1985   | MBAN | 283  | .43  | LOW  | 283.34 | HIGH   | 282.62 |        |        |        |        |        |        |
|        |        |      |      |      |      |        |        |        |        |        |        |        |        |        |



#### RIO GRANDE DE MANATI RASIN

182445066315800. Local number, 142. LOCATION.--Lat 18-24'45", long 66°31'58". Owner: P.R. Aqueduct and Sewer Authority. Name: Moran Simo. AQUIFER .-- Aymamon Limestone AQUIFER. --Aymamon Limestone.
WELL CHARACTERISTICS. --Drilled unused water-table well, diameter 20 in (0.51 m) 0-147 ft (0-44.82 m), cased 20 in (0.51 m) 0-100 ft (0-30.49 m), diameter 16 in (0.41 m) 147-211 ft (44.82-64.33 m), diameter 12 in (0.30 m) 211-320 ft (64.33-97.56 m), cased 12 in (0.30 m) 0-320 ft (0-97.6 m), perforated 248-320 ft (75.6-97.6 m), diameter 10 in (0.25 m) 320-517 ft (97.6-158 m), cased 8 in (0.20 m) 300-517 ft (91.46-158 m), perforated 480-517 ft (146-158 m). Depth 517 ft (158 m).

DATUM.--Elevation of land-surface datum is about 492 ft (150 m) above mean sea level, from topographic map.

Measuring point: Top of 1.75 in (0.04 m) hole on top of 3 in (0.08 m) casing, 1.0 ft (0.30 m) above land-surface datum datum. REMARKS . -- Observation well. PERIOD OF RECORD. --August 1981 to March 28, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD. --Highest water level measured, 226.5 ft (69.05 m) below land-surface datum, May 21, 1982; lowest water level measured, 229.9 ft (70.09 m) below land-surface datum, May 29, 1984. WATER LEVEL, IN FERT BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date    | Water<br>level | Date   | Water<br>level | Date    | Water<br>level | Date    | Water<br>level |
|---------|----------------|--------|----------------|---------|----------------|---------|----------------|
| Oct. 15 | 229.1          | Dec. 7 | 229.0          | Jan. 15 | 228.8          | Mar. 28 | 229.0          |

182542066305200. Local number, 166. LOCATION.--Lat 18°25'42", long 66°30'52". Owner: P.R. Aqueduct and Sewer Authority. Name: Manati (New well).

AQUIFER .-- Alluvium of Quaternary Age.

WELL CHARACTERISTICS. --Drilled unused water-table well, diameter 20 in (0.51 m), cased 0-100 ft (0-39.49 m), diameter 14 in (0.36 m), cased 0-140 ft (0-42.68 m), slotted 80-90 ft (24.39-27.44 m) and 130-140 ft (33.63-42.68 m). Depth 140 ft (42.68 m).

DATUM.--Elevation of land-surface datum is about 29.50 ft (9.0 m) above mean-sea level, from topographic map.

Measuring point: Top of 14 in (0.36 m) casing, 0.80 ft (0.24 m) above land-surface datum.

Measuring point: 100 of 14 in (0.36 m, Gasing, 0.35 in (1.1 m, 1.1 m) REMARKS. --Observation well.

PERIOD OF RECORD. --January 1982 to December 7, 1984, discontinued.

EXTREMES FOR PERIOD OF RECORD. --Highest water level measured, 22.90 ft (6.98 m) below land-surface datum, Mar. 3, 1983; lowest water level measured, 26.36 ft (8.04 m) below land-surface datum, Feb. 3, 1983.

### WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

|         | Water |         | Water |        | Water |
|---------|-------|---------|-------|--------|-------|
| Date    | level | Date    | level | Date   | level |
| Oct. 15 | 25.46 | Nov. 20 | 24.85 | Dec. 7 | 25.31 |

### RIO CIBUCO BASIN

182446066194800. Local number, 62.

LOCATION.--Lat 18°24'46", long 65°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 (0.41 to 0.30 m), cased 16 in (0.41 m) 0-50 ft (0-15.2 m), 12 in (0.30 m) 0-110 ft (0-33.54 m). Depth 210 ft (64.02 m).

DATUM.--Elevation of land-surface datum is about 102 ft (31.10 m) above mean sea level, from topographic map.

Measuring point: Lower edge of 0.75 in (0.02 ) pipe in pump base, 1.0 ft (0.30 m) above land-surface datum.

REMARKS.--Observation well. Water levels affected by pumping.

PERIOD OF RECORD.--January 1961 to March 6, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, a75.88ft (a23.13 m) below land-surface datum, Feb. 21, 1984; lowest water level measured, a137.9 ft (a42.04 m) below land-surface datum, Mar. 3, 1983.

# WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date    | Water<br>level | Date |   | Water<br>level | Date   |    | Water<br>level | Date |   | Water<br>level |
|---------|----------------|------|---|----------------|--------|----|----------------|------|---|----------------|
| Oct. 15 | a105.0         | Dec. | 3 | a93.05         | Jan. 1 | 16 | a96.85         | Mar. | 6 | a101.3         |

a Pumping.

### RIO CIBUCO BASIN

182647066201700. 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.

AQUIFER.--Limestone of Tertiary Age.
WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 8 in (0.20 m), cased 0-90 ft (0-27.43 m), perforated.
Depth 90 ft (27.43 m).

DATUM.--Elevation of land-surface datum is about 49 ft (14.9 m) above mean sea level, from topographic map.
Measuring point: Top of casing wooden cover, 1.30 ft (0.40 m) above land-surface datum.
REMARKS.--Recording observation well.

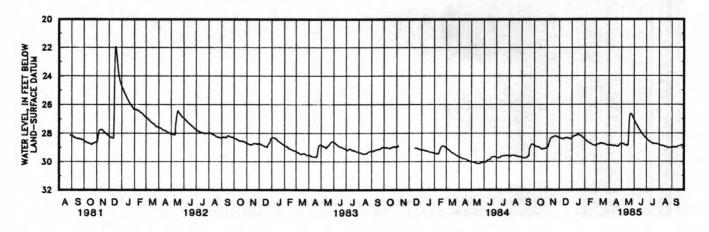
PERIOD OF RECORD.--February 1960 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 21.33 ft (6.50 m) below land-surface datum, Oct. 26, 1976; lowest water level recorded, 31.10 ft (9.48 m) below land-surface datum, July 31, 1975.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS AT 1200

| DAY  | OCT   | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUI.  | AUG   | SEP   |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1    | 28.84 | 29.00 | 28.32 | 28.34 | 28.41 | 28.82 | 28.84 | 28.74 | 27.06 | 28.37 | 28.82 | 28.98 |
| 2    | 28.86 | 28.98 | 28.33 | 28.29 | 28.44 | 28.80 | 28.83 | 28.74 | 27.12 | 28.40 | 28.82 | 28.98 |
| 3    | 28.88 | 28.96 | 28.34 | 28.25 | 28.46 | 28.78 | 28.83 | 28.73 | 27.18 | 28.43 | 28.84 | 28.98 |
| 4    | 28.90 | 28.86 | 28.35 | 28.23 | 28.49 | 28.78 | 28.83 | 28.74 | 27.22 | 28.46 | 28.85 | 28.97 |
| 5    | 28.92 | 28.76 | 28.36 | 28.21 | 28.52 | 28.77 | 28.83 | 28.74 | 27.28 | 28.49 | 28.86 | 28.98 |
| 6    | 28.94 | 28.67 | 28.37 | 28.20 | 28.54 | 28.76 | 28.83 | 28.74 | 27.34 | 28.51 | 28.86 | 28.98 |
| 7    | 28.95 | 28.58 | 28.39 | 28.18 | 28.56 | 28.75 | 28.86 | 28.76 | 27.38 | 28.54 | 28.87 | 28.98 |
| 8    | 28.95 | 28.49 | 28.39 | 28.17 | 28.59 | 28.74 | 28.86 | 28.77 | 27.43 | 28.56 | 28.88 | 28.99 |
| 9    | 28.95 | 28.41 | 28.40 | 28.17 | 28.60 | 28.73 | 28.87 | 28.79 | 27.48 | 28.58 | 28.88 | 28.99 |
| 10   | 28.95 | 28.35 | 28.40 | 28.17 | 28.63 | 28.71 | 28.88 | 28.82 | 27.54 | 28.60 | 28.89 | 28.99 |
| 11   | 28.96 | 28.32 | 28.38 | 28.15 | 28.65 | 28.70 | 28.89 | 28.83 | 27.59 | 28.62 | 28.89 | 28.99 |
| 12   | 28.97 | 28.30 | 28.36 | 28.12 | 28.67 | 28.69 | 28.88 | 28.84 | 27.64 | 28.64 | 28.90 | 28.99 |
| 13   | 29.00 | 28.29 | 28.35 | 28.10 | 28.69 | 28.70 | 28.88 | 28.85 | 27.69 | 28.66 | 28.91 | 28.98 |
| 14   | 29.02 | 28.28 | 28.34 | 28.09 | 28.70 | 28.70 | 28.88 | 28.86 | 27.73 | 28.67 | 28.92 | 28.95 |
| 15   | 29.03 | 28.27 | 28.34 | 28.08 | 28.71 | 28.71 | 28.87 | 28.86 | 27.78 | 28.69 | 28.94 | 28.93 |
| 16   | 29.05 | 28.26 | 28.34 | 28.09 | 28.73 | 28.72 | 28.87 | 28.85 | 27.83 | 28.70 | 28.96 | 28.91 |
| 17   | 29.07 | 28.24 | 28.32 | 28.11 | 28.75 | 28.73 | 28.88 | 28.82 | 27.87 | 28.72 | 28.96 | 28.90 |
| 18   | 29.10 | 28.22 | 28.32 | 28.12 | 28.77 | 28.74 | 28.90 | 28.55 | 27.92 | 28.73 | 28.96 | .00   |
| 19   | 29.11 | 28.21 | 28.32 | 28.13 | 28.80 | 28.74 | 28.92 | 27.87 | 27.97 | 28.74 | 28.96 |       |
| 20   | 29.13 | 28.20 | 28.32 | 28.14 | 28.81 | 28.75 | 28.93 | 27.13 | 28.01 | 28.73 | 28.98 | 28.89 |
| 21   | 29.12 | 28.20 | 28.32 | 28.15 | 28.82 | 28.76 | 28.93 | 26.80 | 28.05 | 28.73 | 28.99 | 28.88 |
| 22   | 29.10 | 28.20 | 28.34 | 28.17 | 28.83 | 28.77 | 28.93 | 26.68 | 28.09 | 28.74 | 29.00 | 28.87 |
| 23   | 29.09 | 28.21 | 28.35 | 28.19 | 28.84 | 28.78 | 28.93 | 26.64 | 28.13 | 28.74 | 29.01 | 28.86 |
| 24   | 29.08 | 28.22 | 28.35 | 28.21 | 28.85 | 28.79 | 28.89 | 26.63 | 28.16 | 28.74 | 29.03 | 28.84 |
| 25   | 29.07 | 28.24 | 28.36 | 28.23 | 28.85 | 28.80 | 28.85 | 26.65 | 28.19 | 28.75 | 29.03 | 28.83 |
| 26   | 29.07 | 28.25 | 28.37 | 28.26 | 28.85 | 28.81 | 28.81 | 26.69 | 28.22 | 28.75 | 29.03 | 28.83 |
| 27   | 29.07 | 28.27 | 28.38 | 28.29 | 28.86 | 28.83 | 28.77 | 26.74 | 28.25 | 28.76 | 29.03 | 28.84 |
| 28   | 29.07 | 28.27 | 28.39 | 28.31 | 28.84 | 28.84 | 28.76 | 26.79 | 28.28 | 28.77 | 29.01 | 28.84 |
| 29   | 29.07 | 28.29 | 28.40 | 28.34 |       | 28.85 | 28.74 | 26.86 | 28.31 | 28.78 | 29.00 | 28.83 |
| 30   | 29.03 | 28.30 | 28.40 | 28.36 |       | 28.86 | 28.74 | 26.93 | 28.34 | 28.79 | 28.99 | 28.84 |
| 31   | 29.01 |       | 28.37 | 28.39 |       | 28.84 |       | 26.99 |       | 28.80 | 28.98 |       |
| LOW  | 29.13 | 29.00 | 28.40 | 28.39 | 28.86 | 28.86 | 28.93 | 28.86 | 28.34 | 28.80 | 29.03 | 28.99 |
| HIGH | 28.84 | 28.20 | 28.32 | 28.08 | 28.41 | 28.69 | 28.74 | 26.63 | 27.06 | 28.37 | 28.82 | .00   |

WTR YR 1985 MEAN 28.46 LOW 29.13 HIGH .00



331

### RIO CIBUCO BASIN

182706066213500. Local number, 151. LOCATION:--Lat 18°27'06", long 66°21'35". Owner: AFDA - P.R. Department of Agriculture.

Name: Rice Program #3. AQUIFER .-- Aymamon Limestone.

AQUIFER. --Aymamon Limestone.

WBLL CHARACTERISTICS. --Drilled agricultural water-table well, diameter 18 in (0.46 m), cased 0-80 ft (0-24.39 m), diameter 16 in (0.41 m), open hole 80-160 ft (24.39-48.78 m). Depth 160 ft (48.78 m).

DATUM. --Elevation of land-surface datum is about 19.69 ft (6.0 m) above mean sea level, from topographic map.

Measuring point: Bottom of 1 in (0.02 m) hole at side of casing, 2.40 ft (0.73 m) above land-surface datum. REMARKS. --Observation well. Irrigation water supply.

PERIOD OF RECORD. --January 13, 1982 to December 5, 1984, discontinued.

EXTREMES FOR PERIOD OF RECORD. --Highest water level measured, 3.72 ft (1.13 m) below land-surface datum, Jan. 13, 1982. 1982; lowest water level measured, a41.78 ft (a12.74 m) below land-surface datum, Aug. 17, 1982.

### WATER LEVELS IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date    | Water<br>level | Date    | Water<br>level | Date   | Water<br>level |
|---------|----------------|---------|----------------|--------|----------------|
| Oct. 11 | 6.40           | Nov. 20 | 5.89           | Dec. 5 | 6.03           |

182612066225400. Local number, 155.
LOCATION:--Lat 18°26'12", long 66°22'54".
Owner: P.R. Aqueduct and Sewer Authority.

Name: La Trocha.
AQUIFER.--Aymamon Limestone.

AQUIFER.--Aymamon Limestone.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 20 in (0.51 m), cased 0-70 ft (0-21.34 m), diameter 16 in (0.41 m), cased 0-100 ft (0-30.49 m), perforated 100-200 ft (30.49-60.97 m) Depth 200 ft (61.0 m).

DATUM.--Elevation of land-surface datum is about 49.20 ft (15.0 m) above mean sea level, from topographic map. Measuring point: Top of 20 in (0.51 m) casing, 2.10 ft (0.64 m) above land-surface datum.

REMARKS.--Observation well. Never used as water supply well due to high concentrations of chlorides.

PERIOD OF RECORD.--January 14, 1982 to December 5, 1984, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 32.23 ft (9.83 m) below land-surface datum, Jan. 14, 1982; lowest water level measured, 34.62 ft (10.55 m) below land-surface datum, May 29, 1984.

### WATER LEVELS IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

|         | Water |         | Water |        | Water |
|---------|-------|---------|-------|--------|-------|
| Date    | level | Date    | level | Date   | level |
| Oct. 15 | 34.22 | Nov. 27 | 34.00 | Dec. 5 | 33.92 |

182648066230900. Local number, 156. LOCATION.--Lat 18°26'48", long 66°23'09". Owner: P.R. Aqueduct and Sewer Authority.

Name: El Criollo #1 .

AQUIFER. -- Aymanon Limestone

AQUIFER. --Aymamon Limestone.

WELL CHARACTERISTICS. --Drilled public supply water-table well, diameter 20 in (0.51 m), cased 0-98 ft (0-29.88 m), diameter 16 in (0.41 m), perforated 88-120 ft (26.83-36.58 m). Depth 120 ft (36.58 m).

DATUM. --Elevation of land-surface datum is about 49.20 ft (15.0 m) above mean sea level, from topographic map. Measuring point: Upper edge of 2 in (0.05 m) pipe on pump base, 1.80 ft (0.55 m) above land-surface datum. REMARKS. --Observation well. Water levels affected by pumping.

PERIOD OF RECORD. --January 14, 1982 to March 6, 1985, discontinued.

EXTREMES OF PERIOD OF RECORD. --Highest water level measured, 40.52 ft (12.35 m) below land-surface datumn, Feb. 16, 1982; lowest water level measured, a47.30 ft (a14.42 m) below land-surface datum, Apr. 5, 1983.

# WATER LEVELS IN FRET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date    | Water<br>level | Date   | Water<br>level | Date    | Water<br>level | Date   | Water<br>level |
|---------|----------------|--------|----------------|---------|----------------|--------|----------------|
| Oct. 15 | a43.36         | Dec. 5 | a43.13         | Jan. 16 | a42.91         | Mar. 6 | a43.00         |

a Pumping.

#### RIO CIRUCO BASTN

182656066221500. Local number, 167. LOCATION.--Lat 18°26'56", long 66°22'15". Owner: P. R. Land Authority, AFDA. Name: U.S.G.S. Observation Well #3.

Name: U.S.G.S. Observation Well #3.

AQUIFER.--Aymanon Limestone.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m) 0-228 ft (0-69.51 m), open hole 228-238 ft (69.51-72.56 m). Depth 238 ft (72.56 m).

DATUM.--Elevation of land-surface datum is about 13.12 ft (4.0 m) above mean sea level, from topographic map.

Measuring point: Top of 6 in (0.15 m) casing, 3.10 ft (0.94 m) above land-surface datum.

REMARKS.--Observation well. Water levels affected by nearby pumpage.

PERIOD OF RECORD.--January 1982 to December 5, 1984, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 13.07 ft (3.98 m) below land-surface datum, Jan. 13, 1982; lowest water level measured, c16.90 ft (c5.15 m) below land-surface datum, Aug. 18, 1983.

#### WATER LEVELS IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

|         | Water |         | Water |        | Water |
|---------|-------|---------|-------|--------|-------|
| Date    | level | Date    | level | Date   | level |
| Oct. 11 | 15.12 | Nov. 20 | 14.63 | Dec. 5 | 14.75 |

182751066221900. Local number, 168. LOCATION.--Lat 18°27'51", long 66°22'19".

Owner: AFDA. P.R. Department of Agriculture. Name: Rice Program #4.

AQUIFER. --Aymamon Limestone.

WELL CHARACTERISTICS. --Drilled agricultural water-table well, diameter 16 in (0.41 m), cased 16 in (0.41 m),

0-156 ft (0-32.3 m), slotted 56-106 ft (17.07-32.31 m), open hole 106-150 ft (32.31-45.73 m). Depth 150 ft

(40.73 m).

DATUM.--Elevation of land-surface datum is about 9.84 ft (3.0 m) above mean sea level, from topographic map.

Measuring point: Top of 16 in (0.41 m) casing, 0.80 ft (0.24 m) above land-surface datum.

REMARKS.--Observation well. Irrigation water supply well.

PERIOD OF RECORD.--March 17, 1982 to January 15, 1985, discontinued.

RXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.75 ft (1.45 m) below land-surface datum, Dec. 5, 1984; lowest water level measured, a53.85 ft (a16.42 m) below land-surface datum, July 26, 1982.

### WATER LEVEL, IN FRET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

|         | Water  |         | Water | Water  |       | Water   |       |
|---------|--------|---------|-------|--------|-------|---------|-------|
| Date    | level  | Date    | level | Date   | level | Date    | level |
| Oct. 11 | a28.68 | Nov. 20 | 5.01  | Dec. 5 | 4.75  | Jan. 15 | 4.96  |

182740066223000. Local number, 169.
LOCATION.--Lat 18°27'40", long 66°22'30".
Owner: AFDA. P.R. Department of Agriculture.

Name: Rice Program #5.

AQUIFER . -- Aymamon Limestone .

AQUIFER.--Aymamon Limestone.

WELL CHARACTERISTICS.--Drilled agricultural water-table well, diameter 16 in (0.41 m), cased 16 in (0.41 m) 0-80 ft (0-24.39 m), open hole 80-140 ft (24.39-42.68 m). Depth 140 ft (42.68 m).

DATUM.--Elevation of land-surface datum is about 13.10 ft (4.0 m) above mean sea level, from topographic map. Measuring point: Top of 16 in (0.41 m) casing, 0.10 ft (0.03 m) above land-surface datum.

REMARKS.--Observation well. Irrigation water supply well.

PERIOD OF RECORD.--March 17, 1982 to December 5, 1984, discontinued

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.15 ft (1.88 m) below land-surface datum, Mar. 17, 1982; lowest water level measured, a15.60 ft (a4.76 m) below land-surface datum, July 26, 1982.

### WATER LEVEL, IN FRET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

|         | Water  |         | Water |        | Water |
|---------|--------|---------|-------|--------|-------|
| Date    | level  | Date    | level | Date   | level |
| Oct. 11 | a11.30 | Nov. 20 | 6.40  | Dec. 5 | 6.54  |

a Pumping.

c Pumping nearby well

### RIO DE LA PLATA BASIN

180708066084200. Local number, 33.
LOCATION.--Lat 18°07'08", long 66°08'42".
Owner: P.R. Aqueduct and Sewer Authority.

Name: Cayey 10.
AQUIFER.--Volcanio rocks of Cretaceous Age.

AQUIFER.--Volcanic rocks of Cretaceous Age.

WELL CHARACTERISTICS.--Drilled public supply artesian well, diameter 16 to 12 in (0.41 to 0.31 m), cased 16 in (0.41 m) 0-30 ft (0-9.14 m), 12 in (0.30 m) 0-200 ft (0-60.97 m), perforated 30-200 ft (9.14-60.97 m), gravel packed 0-190 ft (0-57.92 m). Depth 220 ft (67.07 m).

DATUM.--Elevation of land-surface datum is about 1,280 ft (390 m) above mean sea level, from topographic map.

Measuring point: Lower edge of 0.75 in (0.02 m) pipe in pump base, 1.20 ft (0.37 m) above land-surface datum.

REMARKS.--Observation well. Water levels affected by pumping.

PERIOD OF RECORD.--September 1959 to March 1, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.49 ft (0.45 m) below land-surface datum, Jan. 18, 1961: lowest water level measured. a169.2 ft (a51.58 m) below land-surface datum, Dec. 10, 1976.

1961; lowest water level measured, a169.2 ft (a51.58 m) below land-surface datum, Dec. 10, 1976.

### WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date    | Water<br>level | Date    | Water<br>level | Date    | Water<br>level | Date   | Water<br>level |
|---------|----------------|---------|----------------|---------|----------------|--------|----------------|
| Oct. 25 | a88.96         | Dec. 12 | a46.33         | Feb. 12 | a109.9         | Mar. 1 | a107.3         |

180852066095400. Local number, 37.
LOCATION.--Lat 18°08'52", long 66°09'54".
Owner: P.R. Aqueduct and Sewer Authority.

Name: Barrio Rincon de Cidra. AQUIFER.--Volcanic rocks of Cretaceous Age.

WELL CHARACTERISTICS. -- Drilled water supply water-table well, diameter 16 to 8 in (0.41 to 0.20 m), cased 16 in (0.41 m) 0-30 ft (0-9.15 m), 12 in (30 cm) 0-43 ft (0-13.10 m), perforated 0-43 ft (0-13.10 m). Depth 200 ft (60.97 m).

DATUM.--Elevation of land-surface datum is about 1,180 ft (359.7 m) above mean sea level, from topographic map.

Measuring point: Lower edge at 0.75 in (0.02 m) pipe, 1.90 ft (0.58 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD.--June 1960 to March 5, 1985.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 14.38 ft (4.38 m) below land-surface datum, July 20, 1979; lowest water level measured, 62.87 ft (19.16 m) below land-surface datum, Jul. 5, 1961.

### WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date               | Water<br>level | Date               | Water<br>level | Date    | Water<br>level | Date   | Water<br>level |
|--------------------|----------------|--------------------|----------------|---------|----------------|--------|----------------|
| Oct. 25<br>Nov. 29 | 22.95<br>16.44 | Dec. 12<br>Jan. 16 | 16.87<br>19.45 | Feb. 12 | 21.92          | Mar. 5 | 23.00          |

180823066154500. Local number, 38. LOCATION.--Lat 18°08'23", long 66°15'45". 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 (0.25 m). Depth 82 ft (25.0 m).

DATUM.--Elevation of land-surface datum is about 1,980 ft (603 m) above mean sea level, from topographic map.

Measuring point: Top of clean-out door sill, 1.80 ft (0.55 m) above land-surface datum.

REMARKS .-- Observation well.

PERIOD OF RECORD. --September 1959 to December 13, 1984, discontinued; changed to a partial site on Sept. 2, 1981.

EXTREMES FOR PERIOD OF RECORD. --Highest water level measured, 3.60 ft (1.10 m) above land-surface datum, Sept. 6, 1960; lowest water level measured, 51.47 ft (15.69 m) below land-surface datum, Sept. 30, 1977.

### WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

|         | Water |         | Water |         | Water |  |
|---------|-------|---------|-------|---------|-------|--|
| Date    | level | Date    | level | Date    | level |  |
| Oct. 25 | 8.54  | Nov. 29 | 7.18  | Dec. 13 | 5.92  |  |

a Pumping.

#### RTO DR LA PLATA BASTN

182636066164200. Local number, 69. LOCATION.--Lat 18°26'36", long 66°16'42". Owner: P.R. Aqueduct and Sewer Authority. Name: Higuillar. Name: Higuillar.

AQUIFER.--Limestone of Tertiary Age.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 10 in (0.25 m). Depth 200 ft (60.97 m).

DATUM.--Elevation of land-surface datum is about 60 ft (18.3 m) above mean sea level, from topographic map.

Heasuring point: Airline hole in pump base, 1.10 ft (0.34 m) above land-surface datum.

REMARKS.--Observation well. Water levels affected by pumping.

PERIOD OF RECORD.--July 1958 to March 28, 1985, discontinued. EXTREMES FOR PERIOD OF RECORD. -- Highest water level measured, 41.21 ft (12.56 m) below land-surface datum, July 3, 1958; lowest water level measured, 58.89 ft (17.95 m) below land-surface datum, Oct. 26, 1977.

#### WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date               | Water<br>level   | Date   | Water<br>level | Date    | Water<br>level | Date    | Water<br>level |
|--------------------|------------------|--------|----------------|---------|----------------|---------|----------------|
| Oct. 15<br>Nov. 27 | a49.04<br>a49.04 | Dec. 3 | a49.64         | Jan. 16 | a48.47         | Mar. 28 | a49.16         |

182623066181400. Local number, 150.
LOCATION.--Lat 18°26'23", long 66°18'14".
Owner: Department of Agriculture, Land Authority; loaned to Puerto Rico Aqueduct and Sewer Authority.

Owner: Department of Agriculture, Land Authority; loaned to Fuerto Rico Aqueduct and Sewer Authority.

Name: Monterey Forestal.

AQUIFER.—Aymamon Limestone.

WELL CHARACTERISTICS.—Drilled public supply water-table well, diameter 12 in. (0.30 m), cased 12 in (0.30 m)

0-300 ft (0-91.46 m), open hole 300-400 ft (91.46-121.9 m). Depth 400 ft (121.9 m).

DATUM.—Elevation of land-surface datum is about 131.2 ft (40 m) above mean sea level, from topographic map.

Measuring point: Bottom edge of 1 in. (0.02 m) pipe on top of pump concrete base, 1.00 ft (0.30 m) above

land-surface datum.

REMARKS.--Irrigation supply observation well.

PERIOD OF RECORD.--January 1982 to December 3, 1984, discontinued.

EXTERMES FOR PERIOD OF RECORD.--Highest water level measured, a182.3 ft (a55.56 m) below land-surface datum, Dec. 3, 1984; lowest water level measured, a210.9 ft (a64.29 m) below land-surface datum, Apr. 15, 1982.

### WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

|         | Water |         | Water |        | Water |
|---------|-------|---------|-------|--------|-------|
| Date    | level | Date    | level | Date   | level |
| Oct. 15 | 193.5 | Nov. 27 | 183.3 | Dec. 3 | 182.3 |

a Pumping.

335 RIO HONDO TO RIO PUERTO NUEVO BASINS

181046066091700. Local number, 42. LOCATION.--Lat 18°10'46", 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 (0.33 m), cased 0-64 ft (0-19.51 m), perforated 16-64 ft (4.88-19.51 m). Depth 92 ft (28.05 m).

DATUM. --Elevation of land-surface datum is about 1,340 ft (408 m) above mean sea level, from topographic map.

Heasuring point: Airline hole in pump base, 1.40 ft (0.43 m) above land-surface datum.

REMARKS. -- Observation well.

PERIOD OF RECORD. -- September 1959 to March 5, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD. -- Highest water level measured, 12.30 ft (3.75 m) below land-surface datum, Dec. 27, 1979; lowest water level measured, 56.32 ft (17.17 m) below land-surface datum, Apr. 1, 1968.

### WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1986 INSTANTANEOUS OBSERVATIONS

| Date    | Water<br>level | Date    | Water<br>level | Date    | Water<br>level | Date   | Water<br>level |
|---------|----------------|---------|----------------|---------|----------------|--------|----------------|
| Oct. 25 | 17.36          | Dec. 12 | 15.20          | Feb. 12 | 17.04          | Mar. 5 | 17.51          |

182506066030800. 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.

NAME: HALO MAY CENTRAL, MCCFACKEN WELL.

AQUIFER.--Limestone of Tertiary Age.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 15 in (0.38 m), cased 0-205 ft (0-62.50 m), perforated 64-205 ft (19.51-62.50 m). Depth 205 ft (62.50 m).

DATUM.--Elevation of land-surface datum is about 33 ft (10.1 m) above mean sea level, from topographic map.

Measuring point: Top of casing 3.40 ft (1.04 m) above land-surface datum.

PEMARKS.--Observation well.

REMARKS .-- Observation well.

PERIOD OF RECORD .-- July 1958 to February 14, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD. -- Highest water level measured, 22.40 ft (6.83 m) below land-surface datum, Aug. 12, 1976; lowest water level measured, 42.40 ft (12.92 m), below land-surface datum, May 13, 1974.

# WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date    | Water<br>level | Date    | Water<br>level | Date    | Water<br>level | Date    | Water<br>level |
|---------|----------------|---------|----------------|---------|----------------|---------|----------------|
| Oct. 25 | 30.46          | Dec. 19 | 30.62          | Jan. 17 | 30.59          | Feb. 14 | 30.74          |

182547066110800. Local number, 66. LOCATION.--18°26'47", long 66°11'08". Owner: P.R. Aqueduot and Sewer Authority.

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 (39.63 m).

DATUM.--Elevation of land-surface datum is about 75 ft (22.87 m) above mean sea level, from topographic map.

Measuring point: Lower edge of 0.75 in (0.02 m) pipe in pump base, 1.20 ft (0.37 m) above land-surface datum.

REMARKS. --Observation well. Water levels affected by pumping.
PERIOD OF RECORD. --June 1958 to March 28, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD. --Highest water level measured, a39.23 ft (a11.96 m) below land-surface datum, Dec. 17, 1981; lowest water level measured, 57.75 ft (17.60 m), below land-surface datum, Aug. 13, 1976.

#### WATER LEVEL, IN FRET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

|         | Water |        | Water |         | Water |         | Water |
|---------|-------|--------|-------|---------|-------|---------|-------|
| Date    | level | Date   | level | Date    | level | Date    | level |
| Oct. 15 | 44.60 | Dec. 3 | 45.30 | Jan. 16 | 44.23 | Mar. 28 | 44.72 |

a Pumping.

#### RIO GRANDE DE LOTZA BASTN

181550065593200. Local number, 50. LOCATION.--Lat 18°15'50", long 65°59'32". Owner: Gurabo Agricultural Experimental Station.

AQUIFER. --Unconsolidated deposits of Quaternary Age.

WELL CHARACTERISTICS. --Drilled unused water-table well, diameter 13 in (0.33 m). Depth 145 ft (44.21 m).

DATUM. --Elevation of land-surface datum is about 148 ft (45.12 m) above mean sea level, from topographic map.

Measuring point: Top of 12 in (0.30 m) casing, 0.80 ft (0.24 m) above land-surface datum.

REMARKS. --Observation well.

PERIOD OF RECORD .-- December 1960 to March 5, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD. --Highest water level measured, 12.65 ft (3.86 m) below land-surface datum, Sept. 9, 1975; lowest water level measured, 44.38 ft (13.53 m) below land-surface datum, June 18, 1975.

# WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date    | Water<br>level | Date   | Water<br>level | Date    | Water<br>level | Date   | Water<br>level |
|---------|----------------|--------|----------------|---------|----------------|--------|----------------|
| Oct. 13 | 29.86          | Dec. 6 | 29.40          | Feb. 11 | 30.34          | Mar. 5 | 29.74          |

181538066021300. 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.

AMULIFAN. -- Unconsolidated deposits of Quaternary Age.
WELL CHARACTERISTICS. -- Drilled public supply water-table well, diameter 16 to 10 in (0.41 to 0.25 m) 0-69 ft
(0-21.04 m), 79-100 ft (24.08-30.49 m), 110-116 ft (33.54-35.37 m), perforated 79-100 ft (24.08-30.49 m),
soreened 69-79 ft (21.04-24.08 m) and 100-110 ft (30.49-33.54 m); gravel packed to 113 ft (34.45 m). Depth
116 ft (35.37 m).

DATUM .-- Rievation of land-surface datum is about 200 ft (60.98 m) above mean sea level, from topographic map.

Measuring point: Airline hole in pump base, 1.40 ft (0.43 m) above land-surface datum.

REMARKS.--Observation well. Water levels affected by pumping.

PERIOD OF RECORD.--July 1959 to March 5, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, +0.92 ft (+0.28 m) below land-surface datum, Nov. 15, 1979; lowest water level measured, a115.1 ft (a35.09 m) below land-surface datum, June 18, 1975.

# WATER LEVEL, IN FRET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date               | Water<br>level   | Date              | Water<br>level  | Date    | Water<br>level | Date   | Water<br>level |
|--------------------|------------------|-------------------|-----------------|---------|----------------|--------|----------------|
| Oct. 23<br>Nov. 19 | a80.60<br>a74.27 | Dec. 6<br>Jan. 15 | a78.50<br>16.60 | Feb. 11 | 17.32          | Mar. 5 | a57.32         |

<sup>+</sup> Above land-surface datum.

a Pumping.

### RIO HERRERA TO RIO ANTON RUIZ BASINS

181217065453000. Local number, 171.
LOCATION.--Lat 18°12'17", long 65°45'30".
Owner: Carlos Arroyo and Roberto Ramirez.
Name: Arroyo well #1.

Name: Arroyo well \$1.

AQUIFER.--Alluvium.

WKILL CHARACTERISTICS.--Test well drilled by the USGS, diameter 4-2 in (0.10-0.05 m), cased 4 in (0.10 m) 0-29 ft (0-8.84 m), 2 in (0.05 m) 29-32 (8.84-9.76 m), 2 in (0.05 m) slotted PVC screen 29-32 ft (8.84-9.76 m).

Depth 32 ft (9.76 m).

DATUM.--Elevation of land-surface datum is about 19.10 ft (5.82 m) above mean sea level, from topographic map. Measuring point: Mark on shelf of gage house, 6.00 ft (1.83 m) above land-surface datum.

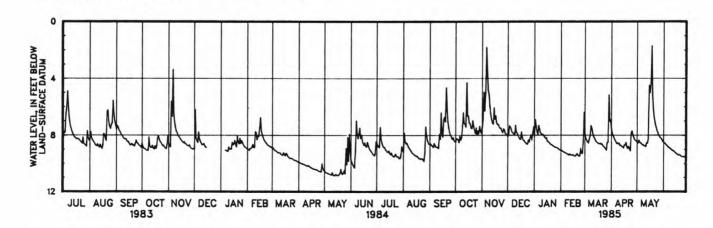
REMARKS.--Recording observation well.

PERIOD OF RECORD.--June 1983 to June 28, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.35 ft (0.41 m) below land-surface datum, May 18, 1985; lowest water level measured, 10.87 ft (3.31 m) below land-surface datum, May 17, 1984.

| WATER LEVEL, | IN | FERT | BRIOM | LAND-SURFACE  | DATUM, | WATER  | YEAR | OCTOBER | 1984 | TO | SEPTEMBER | 1985 |
|--------------|----|------|-------|---------------|--------|--------|------|---------|------|----|-----------|------|
|              |    |      | TNS   | TANTANKOUS OF | REPLAT | ONS AT | 1200 | )       |      |    |           |      |

| DAY    | OCT  | NOV       | DRC  | JAN  | FEB      | MAR  | APR  | MAY  | JUN  | JUL | AUG | SRB |
|--------|------|-----------|------|------|----------|------|------|------|------|-----|-----|-----|
| 1      | 8.46 | 7.43      | 8.08 | 8.04 | 9.08     | 7.88 | 7.56 | 8.49 | 8.49 |     |     |     |
| 2      | 8.22 | 6.93      | 7.89 | 6.90 | 9.09     | 8.20 | 7.87 | 8.55 | 8.54 |     |     |     |
|        | 8.26 | 4.96      | 7.33 | 7.34 |          | 8.34 | 8.04 | 8.34 | 8.59 |     |     |     |
| 3      | 8.31 |           | 7.42 | 7.75 |          | 8.45 | 8.18 | 8.49 | 8.69 |     |     |     |
| 5      | 8.50 |           | 7.58 | 7.92 |          | 8.53 | 8.32 | 8.55 | 8.71 |     |     |     |
| 6      | 8.08 | 1.82      | 7.78 | 7.31 | 9.25     | 8.27 | 8.43 | 8.58 | 8.82 |     |     |     |
| 7      | 8.32 | 3.46      | 7.82 | 7.54 |          | 8.05 | 8.58 | 8.68 | 8.85 |     |     |     |
| 8      | 8.18 | 4.83      | 7.88 | 7.83 |          | 7.33 | 8.53 | 8.66 | 8.90 |     |     |     |
| 9      | 7.31 | 5.10      | 7.94 | 7.88 |          | 7.51 | 8.61 | 8.75 | 8.95 |     |     |     |
| 10     | 6.42 |           | 7.30 | 7.97 |          | 7.81 | 8.56 | 8.74 | 9.01 |     |     |     |
| 11     | 7.17 | 6.56      | 7.77 | 7.93 | 9.32     | 8.04 | 8.73 | 8.80 | 9.07 |     |     |     |
| 12     | 7.20 | 6.90      | 7.85 | 8.05 |          | 8.18 | 8.71 | 8.54 | 9.08 |     |     |     |
| 13     | 7.41 | 7.16      | 8.00 | 8.11 |          | 8.29 | 8.79 | 8.54 | 9.13 |     |     |     |
| 14     | 4.30 |           | 8.15 | 8.21 |          | 8.44 | 8.83 | 8.23 | 9.20 |     |     |     |
| 15     | 6.65 |           | 8.26 | 8.18 |          | 8.49 | 8.90 | 4.50 | 9.26 |     |     |     |
| 16     | 6.67 | 6.87      | 8.28 | 8.39 | 9.45     | 8.54 | 8.68 | 5.01 | 9.32 |     |     |     |
| 17     | 7.15 |           | 7.77 | 8.46 |          | 8.58 | 8.68 | 4.37 | 9.34 |     |     |     |
| 18     | 7.19 | 7.13      | 8.13 | 8.50 |          | 8.60 | 8.50 | 1.72 | 9.40 |     |     |     |
| 19     | 7.49 |           | 8.35 | 8.57 |          | 8.56 | 8.81 | 5.08 | 9.40 |     |     |     |
| 20     | 7.53 |           | 8.36 | 8.64 |          | 8.64 | 8.93 | 6.17 | 9.40 |     |     |     |
| 21     | 6.98 | 7.43      | 8.49 | 8.66 | 9.43     | 8.61 | 8.80 | 6.75 | 9.48 |     |     |     |
| 22     | 7.33 | 7.52      | 8.54 | 8.72 |          | 8.74 | 8.98 | 7.13 | 9.51 |     |     |     |
| 23     | 7.64 | 7.49      | 8.62 | 8.76 | 9.48     | 8.80 | 9.09 | 7.39 | 9.51 |     |     |     |
| 24     | 7.86 |           | 8.61 | 8.80 |          | 8.89 | 7.81 | 7.62 | 9.53 |     |     |     |
| 25     | 7.47 | 7.81      | 8.32 | 8.84 | 9.29     | 8.96 | 7.69 | 7.79 | 9.52 |     |     |     |
| 26     | 7.95 | 7.54      | 8.46 | 8.86 | 9.28     | 9.04 | 7.96 | 7.94 | 9.56 |     |     |     |
| 27     | 7.70 |           | 8.17 | 8.88 | 8.46     | 8.51 | 8.13 | 8.06 | 9.59 |     |     |     |
| 28     | 7.88 | 7.84      | 7.96 | 8.90 | 6.39     | 8.48 | 8.28 | 8.16 | .00  |     |     |     |
| 29     | 7.36 | 7.93      | 8.28 | 8.96 |          | 5.19 | 8.37 | 8.21 |      |     |     |     |
| 30     | 7.69 | 7.97      | 7.81 | 9.03 |          | 7.02 | 8.40 | 8.31 |      |     |     |     |
| 31     | 7.84 |           | 7.39 | 9.06 |          | 6.94 |      | 8.44 |      |     |     |     |
| LOW    | 8.50 | 7.97      | 8.62 | 9.06 | 9.48     | 9.04 | 9.09 | 8.80 | 9.59 |     |     |     |
| HIGH   | 4.30 | 1.82      | 7.30 | 6.90 | 6.39     | 5.19 | 7.56 | 1.72 | .00  |     |     |     |
| WTR YR | 1985 | MBAN 8.04 | LOW  | 9.59 | HIGH .00 |      |      |      |      |     |     |     |



### RIO HERRERA TO RIO ANTON RUIZ BASINS

180908065475000. Local number, 173. LOCATION.--Lat 18°09'08", long 65°47'50". Owner: Squibb Manufacturing, Inc. Name: Squibb observation well \$3. AQUIFER.--Alluvium.

AQUIFER.--Alluvium.

WELL CHARACTERISTICS.--Drilled unused water-table industrial well, diameter 10 in (0.25 m), cased 10 in (0.25 m), perforated 60-110 ft (18.29-33.54 m). Depth 110 ft (33.54 m).

DATUM.--Elevation of land-surface datum is about 21 ft (6.40 m) above mean sea level, from topographic map. Measuring point: Mark on shelf of gage house, 3.00 ft (0.91 m) above land-surface datum.

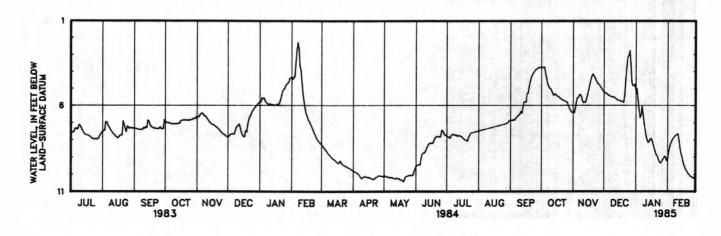
REMARKS.---Recording observation well.

PERIOD OF RECORD.--July 1983 to March 4, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD.---Highest water level measured, 2.77 ft (0.84 m) below land-surface datum, Dec. 26, 1984; lowest water level measured, 10.44 ft (3.18 m) below land-surface datum, May 19, 20, 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS AT 1200

| DAY    | ост  | NOV       | DEC   | JAN   | PEB       | MAR  | APR | MAY | JUN | JUI. | AUG | SEP |
|--------|------|-----------|-------|-------|-----------|------|-----|-----|-----|------|-----|-----|
| 1      | 3.75 | 6.41      | 5.20  | 5.12  | 9.06      | 9.85 |     |     |     |      |     |     |
| 2      | 3.76 |           | 5.24  | 5.03  | 8.68      | 9.81 |     |     |     |      |     |     |
| 3      | 3.75 | 6.19      | 5.28  | 5.63  | 8.39      | 9.83 |     |     |     |      |     |     |
| 4      | 3.74 |           | 5.32  | 6.18  | 8.19      | 9.85 |     |     |     |      |     |     |
| 5      | 4.08 |           | 5.37  | 6.70  | 8.05      |      |     |     |     |      |     |     |
|        |      | 0.0.      | 0.0.  | 0110  | 0.00      |      |     |     |     |      |     |     |
| 6      | 4.41 | 5.52      | 5.41  | 6.52  | 7.93      |      |     |     |     |      |     |     |
| 7      | 4.71 | 5.36      | 5.45  | 6.05  | 7.86      |      |     |     |     |      |     |     |
| 8      | 4.87 | 5.36      | 5.47  | 6.53  | 7.77      |      |     |     |     |      |     |     |
| 9      | 4.99 | 5.47      | 5.49  | 7.01  | 7.72      |      |     |     |     |      |     |     |
| 10     | 5.02 |           | 5.49  | 7.42  | 7.68      |      |     |     |     |      |     |     |
|        |      |           |       |       |           |      |     |     |     |      |     |     |
| 11     | 5.16 | 5.83      | 5.52  | 7.76  | 7.65      |      |     |     |     |      |     |     |
| 12     | 5.30 | 5.80      | 5.56  | 8.00  | 8.01      |      |     |     |     |      |     |     |
| 13     | 5.39 | 5.79      | 5.62  | 8.15  | 8.48      |      |     |     |     |      |     |     |
| 14     | 5.32 |           | 5.67  | 8.08  | 8.78      |      |     |     |     |      |     |     |
| 15     | 5.35 |           | 5.69  | 7.96  | 9.01      |      |     |     |     |      |     |     |
|        |      |           |       |       |           |      |     |     |     |      |     |     |
| 16     | 5.42 | 5.06      | 5.71  | 7.92  | 9.26      |      |     |     |     |      |     |     |
| 17     | 5.46 |           | 5.72  | 8.06  | 9.46      |      |     |     |     |      |     |     |
| 18     | 5.50 |           | 5.75  | 8.28  | 9.62      |      |     |     |     |      |     |     |
| 19     | 5.56 |           | 5.78  | 8.50  | 9.77      |      |     |     |     |      |     |     |
| 20     | 5.60 |           | 5.81  | 8.69  | 9.84      |      |     |     |     |      |     |     |
|        |      |           |       | 0.00  |           |      |     |     |     |      |     |     |
| 21     | 5.66 | 4.22      | 5.39  | 8.86  | 9.96      |      |     |     |     |      |     |     |
| 22     | 5.68 |           | 4.51  | 8.95  | 10.02     |      |     |     |     |      |     |     |
| 23     | 5.71 |           | 3.73  | 9.13  | 10.11     |      |     |     |     |      |     |     |
| 24     | 5.74 |           | 3.13  | 9.27  | 10.14     |      |     |     |     |      |     |     |
| 25     | 5.78 |           | 3.03  | 9.35  | 10.18     |      |     |     |     |      |     |     |
|        |      |           |       |       |           |      |     |     |     |      |     |     |
| 26     | 5.79 | 4.76      | 2.79  | 9.27  | 10.23     |      |     |     |     |      |     |     |
| 27     | 5.97 |           | 3.49  | 9.16  | 10.17     |      |     |     |     |      |     |     |
| 28     | 6.14 |           | 4.63  | 9.07  | 10.03     |      |     |     |     |      |     |     |
| 29     | 6.24 |           | 4.83  | 8.95  |           |      |     |     |     |      |     |     |
| 30     | 6.35 |           | 4.83  | 9.00  |           |      |     |     |     |      |     |     |
| 31     | 6.41 |           | 4.75  | 9.20  |           |      |     |     |     |      |     |     |
|        | 0.41 |           | 4.10  | 3.20  | 3.00      |      |     |     |     |      |     |     |
| LOW    | 6.41 | 6.42      | 5.81  | 9.35  | 10.23     | 9.85 |     |     |     |      |     |     |
| HIGH   | 3.74 |           | 2.79  | 5.03  | 7.65      | 9.81 |     |     |     |      |     |     |
|        |      |           |       | 0.00  |           | 0.01 |     |     |     |      |     |     |
| WTR YR | 1985 | MBAN 6.51 | LOW   | 10.23 | HIGH 2.79 |      |     |     |     |      |     |     |
|        |      |           | ***** |       | 4.10      |      |     |     |     |      |     |     |



#### RIO HUMACAO TO RIO SECO BASINS

339

175735066095900. Local number, 2. LOCATION.--Lat 17°57'35", long 66°09'59". Owner: P.R. Aqueduct and Sewer Authority.

Name: Puente Jobos.

Name: Puente Jobos.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 21 in (0.53 m). Depth 148 ft (45.12 m).

DATUM.--Elevation of land-surface datum is about 26 ft (7.93 m) above mean sea level, from topographic map.

Measuring point: Bottom edge of 0.88 in (0.02 m) pipe, 1.70 ft (0.52 m) above land-surface datum.

REMMARKS.--Observation well. Lowest water level is a pumping level.

PERIOD OF RECORD.--February 1961 to March 7, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.85 ft (0.87 m) below land-surface datum, July 24, 1979; lowest water level measured, 61.78 ft (18.83 m) below land-surface datum, Aug. 6, 1964.

### WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date               | Water<br>level | Date               | Water<br>level | Date    | Water<br>level | Date   | Water<br>level |
|--------------------|----------------|--------------------|----------------|---------|----------------|--------|----------------|
| Oct. 24<br>Nov. 16 | 4.83<br>5.56   | Dec. 11<br>Jan. 29 | 5.77<br>5.63   | Feb. 28 | 6.59           | Mar. 7 | 6.53           |

175735066100400. Local number, 3. LOCATION.--Lat 17°57'35", long 66°10'04". Owner: P.R. Aqueduct and Sewer Authority.

Name: Jobos. AQUIFER. -- Alluvium of Quaternary Age.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Bored unused artesian well, diameter 4 in (0.10 m). Depth 16 ft (4.88 m).

DATUM.--Elevation of land-surface datum is about 25 ft (7.62 m) above mean sea level, from topographic map.

Heasuring point: Top of 5 in (0.13 m) fitting, 0.50 ft (0.15 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD.--November 1959 to December 11, 1984, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.01 ft (0.30 m) below land-surface datum, Jan. 3, 1963; lowest water level measured, dry at 16 ft (4.88 m) below land-surface datum, many days during 1968 and 1969.

# WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 : INSTANTANEOUS OBSERVATIONS

|         | Water |         | Water |         | Water |
|---------|-------|---------|-------|---------|-------|
| Date    | level | Date    | level | Date    | level |
| Oct. 24 | 1.60  | Nov. 16 | 1.21  | Dec. 11 | 1.28  |

#### RIO HUMACAO TO RIO SECO BASINS

175858066100200. Local number, 6. LOCATION.--Lat 17°58'58", long 66°10'02".

Owner: Doctor Bruno.

Juana 5. Name:

HIGH

WTR YR 1985

53.30

44.21

MKAN 48.17

NAME: O'CLUVIUM OF QUATERNAY Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 16 in (0.41 m). Depth 173 ft (52.74 m) reported, 110 ft (33.54 m) measured.

110 ft (33.54 m) measured.

DATUM.--Elevation of land-surface datum is about 127 ft (38.72 m) above mean sea level, from topographic map.

Measuring point: Top of shelter floor, 3.00 ft (0.91 m) above land-surface datum. After Aug. 7, 1981, top of 16 in (0.41 m) casing, 1.55 ft (0.47 m) above land-surface datum.

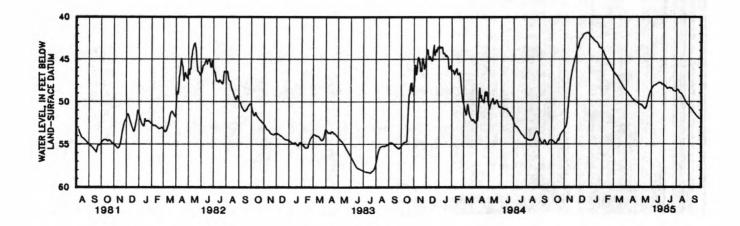
REMARKS.--Recording installed on Jan. 25, 1962.

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 water level measured, 65.95 ft (20.10 m) below land-surface datum, June 2, 1968.

WATER LEVEL. IN PRET BRIOW LAND-SUPPACE DATIM WATER VEAR OCTOBER 1984 TO SEPTEMBER 1985

|     |       | MATER I'R | Kr' IN A |           |       | FACE DATUM<br>B OBSERVAT |       | 1200  | R 1984 | TO SEPTEME | RK 1982 |       |
|-----|-------|-----------|----------|-----------|-------|--------------------------|-------|-------|--------|------------|---------|-------|
| DAY | ост   | NOV       | DEC      | JAN       | FEB   | MAR                      | APR   | MAY   | JUN    | JUL        | AUG     | SEP   |
| 1   | 54.49 | 53.22     | 43.99    | 42.05     | 43.86 | 46.50                    | 48.70 | 50.23 | 48.55  | 48.01      | 48.67   | 50.58 |
| 2   | 54.52 | 53.15     | 43.85    | 42.11     | 43.95 | 46.56                    | 48.77 | 50.28 | 48.47  | 48.05      | 48.61   | 50.62 |
| 3   | 54.55 | 53.09     | 43.74    | 42.19     | 44.03 | 46.62                    | 48.84 | 50.32 | 48.38  | 48.08      | 48.57   | 50.66 |
| 4   | 54.58 | 52.99     | 43.63    | 42.26     | 44.13 | 46.69                    | 48.89 | 50.33 | 48.29  | 48.13      | 48.60   | 50.71 |
| 5   | 54.62 | 52.86     | 43.46    | 42.35     | 44.22 | 46.75                    | 48.95 | 50.32 | 48.21  | 48.18      | 48.64   | 50.77 |
| 6   | 54.67 | 52.68     | 43.25    | 42.40     | 44.34 | 46.80                    | 49.01 | 50.32 | 48.16  | 48.23      | 48.69   | 50.83 |
| 7   | 54.72 | 52.39     | 43.05    | 42.43     | 44.47 | 46.86                    | 49.08 | 50.35 | 48.12  | 48.28      | 48.77   | 50.89 |
| 8   | 54.77 | 51.97     | 42.87    | 42.46     | 44.58 | 46.93                    | 49.16 | 50.39 | 48.09  | 48.33      | 48.86   | 50.95 |
| 9   | 54.83 | 51.36     | 42.73    | 42.52     | 44.67 | 46.99                    | 49.24 | 50.43 | 48.07  | 48.39      | 48.93   | 51.03 |
| 10  | 54.88 | 50.69     | 42.63    | 42.59     | 44.76 | 47.06                    | 49.31 | 50.49 | 48.05  | 48.45      | 48.98   | 51.10 |
| 11  | 54.90 | 50.05     | 42.56    | 42.66     | 44.85 | 47.14                    | 49.32 | 50.54 | 48.02  | 48.46      | 49.03   | 51.17 |
| 12  | 54.88 | 49.47     | 42.52    | 42.71     | 44.95 | 47.22                    | 49.40 | 50.60 | 48.00  |            | 49.01   | 51.24 |
| 13  | 54.82 | 48.96     | 42.45    | 42.76     | 45.05 | 47.31                    | 49.50 | 50.66 | 47.97  | 48.39      | 49.05   | 51.31 |
| 14  | 54.75 | 48.53     | 42.39    | 42.81     | 45.14 | 47.39                    | 49.56 | 50.73 | 47.93  | 48.37      | 49.14   | 51.38 |
| 15  | 54.67 | 48.12     | 42.30    | 42.86     | 45.23 | 47.49                    | 49.61 | 50.79 | 47.90  |            | 49.22   | 51.44 |
| 16  | 54.57 | 47.51     | 42.18    | 42.90     | 45.32 | 47.58                    | 49.66 | 50.83 | 47.88  | 48.36      | 49.27   | 51.51 |
| 17  | 54.46 | 47.17     | 42.06    | 42.92     | 45.41 | 47.68                    | 49.72 | 50.78 | 47.85  | 48.42      | 49.36   | 51.57 |
| 18  | 54.35 | 46.88     | 42.06    | 42.95     | 45.50 | 47.74                    | 49.74 | 50.71 | 47.82  | 48.44      | 49.45   | 51.62 |
| 19  | 54.48 | 46.60     | 42.02    | 42.99     | 45.59 | 47.82                    | 49.80 | 50.62 | 47.78  | 48.41      | 49.55   | 51.68 |
| 20  | 54.31 | 46.34     | 41.97    | 43.04     | 45.66 | 47.90                    | 49.86 | 50.47 | 47.77  | 48.41      | 49.64   | 51.74 |
| 21  | 54.12 | 46.09     | 41.95    | 43.11     | 45.75 | 47.98                    | 49.91 | 50.29 | 47.80  | 48.45      | 49.74   | 51.78 |
| 22  | 53.96 | 45.86     | 41.92    | 43.19     | 45.87 | 48.06                    | 49.95 | 50.08 | 47.80  | 48.52      | 49.84   | 51.82 |
| 23  | 53.85 | 45.65     | 41.90    | 43.30     | 45.96 | 48.15                    | 49.98 | 49.87 | 47.78  | 48.60      | 49.94   | 51.88 |
| 24  | 53.76 | 45.45     | 41.90    | 43.44     | 46.05 | 48.24                    | 50.00 | 49.66 | 47.80  | 48.67      | 50.02   | 51.94 |
| 25  | 53.69 | 45.25     | 41.88    | 43.55     | 46.12 | 48.33                    | 50.02 | 49.45 | 47.84  | 48.72      | 50.11   | 51.98 |
| 26  | 53.62 | 45.00     | 41.87    | 43.61     | 46.21 | 48.40                    | 50.06 | 49.26 | 47.90  | 48.75      | 50.18   | 52.01 |
| 27  | 53.56 | 44.78     | 41.85    | 43.63     | 46.35 | 48.48                    | 50.09 | 49.09 | 47.96  | 48.77      | 50.26   | 52.02 |
| 28  | 53.50 | 44.60     | 41.86    | 43.64     | 46.42 | 48.56                    | 50.12 | 48.95 | 47.97  | 48.79      | 50.32   | 52.02 |
| 29  | 53.44 | 44.43     | 41.89    | 43.65     |       | 48.64                    | 50.16 | 48.82 | 47.97  | 48.79      | 50.38   | 52.02 |
| 30  | 53.37 | 44.21     | 41.94    | 43.70     |       | 48.67                    | 50.19 | 48.72 | 47.98  | 48.78      | 50.45   | 52.02 |
| 31  | 53.30 |           | 41.98    | 43.77     |       | 48.66                    |       | 48.63 |        | 48.74      | 50.52   |       |
| LOW | 54.90 | 53.22     | 43.99    | 43.77     | 46.42 | 48.67                    | 50.19 | 50.83 | 48.55  | 48.79      | 50.52   | 52.02 |
|     | 1000  |           | 17.22    | 1 2 1 1 1 |       |                          | 77.7  | 72121 |        |            |         |       |



46.50

48.01

50.58

48.63

42.05

LOW 54.90

43.86

HIGH 41.85

### RIO HUMACAO TO RIO SECO BASINS

175944066033600. Local number, 15.
LOCATION.--Lat 17°59'44", long 66°03'36".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Pitahaya 1.

WTR YR 1985

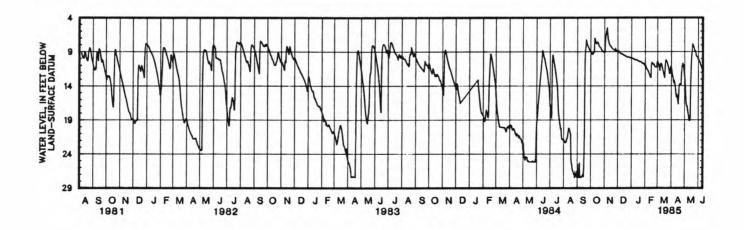
MEAN 10.62

LOW 19.09

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 (0.30 m). Depth 181 ft (55.18 m).
DATUM.---Rlevation of land-surface datum is about 130 ft (39.63 m) above mean sea level, from topographic map.
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 June 11, 1985, discontinued.
EXTREMES FOR PERIOD OF RECORD.---Highest water level recorded, 3.00 ft (0.91 m) below land-surface datum, Oct. 7, 1970; lowest water level recorded, 43.90 ft (13.38 m) below land-surface datum, May 20, 1968.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS AT 1200

|      |      |      |      | 1110  |       | ODDIN |       |       |       |     |     |     |
|------|------|------|------|-------|-------|-------|-------|-------|-------|-----|-----|-----|
| DAY  | OCT  | NOV  | DRC  | JAN   | FKB   | MAR   | APR   | MAY   | JUN   | JUL | AUG | SEP |
| 1    | 8.97 | 9.08 | 9.05 | 9.94  | 11.04 | 10.38 | 11.29 | 12.33 | 10.08 |     |     |     |
| 2    | 9.12 | 8.79 | 9.09 | 9.95  | 11.12 | 10.56 | 11.67 | 13.05 | 10.20 |     |     |     |
| 3    | 9.24 | 7.40 | 8.88 | 9.97  | 11.26 | 10.71 | 12.08 | 14.12 | 10.30 |     |     |     |
| 4    | 9.29 | 6.60 | 9.00 | 9.98  | 11.40 | 10.88 | 12.42 | 15.64 | 10.45 |     |     |     |
| 5    | 9.39 | 6.17 | 9.09 | 10.02 | 11.51 | 11.33 | 12.72 | 16.59 | 10.65 |     |     |     |
| 6    | 9.34 | 5.94 | 9.15 | 10.05 | 11.61 | 11.70 | 13.15 | 16.97 | 10.83 |     |     |     |
| 7    | 9.20 | 5.55 | 9.21 | 10.08 | 11.72 | 11.12 | 13.51 | 16.94 | 11.01 |     |     |     |
| 8    | 9.02 | 6.36 | 9.27 | 10.11 | 11.84 | 10.72 | 13.23 | 17.50 | 11.22 |     |     |     |
| 9    | 8.99 | 6.93 | 9.31 | 10.16 | 12.06 | 10.71 | 13.55 | 17.91 | 11.41 |     |     |     |
| 10   | 7.06 | 7.32 | 9.32 | 10.18 | 12.18 | 10.83 | 13.99 | 18.29 | 11.58 |     |     |     |
| 11   | 7.17 | 7.63 | 9.35 | 10.16 | 12.37 | 11.10 | 14.54 | 18.88 | 11.80 |     |     |     |
| 12   | 7.56 | 7.85 | 9.39 | 10.19 | 12.55 | 11.39 | 15.16 | 19.09 |       |     |     |     |
| 13   | 7.84 | 8.01 | 9.43 | 10.22 | 12.74 | 11.67 | 15.63 | 19.05 |       |     |     |     |
| 14   | 7.85 | 8.10 | 9.48 | 10.23 | 12.71 | 11.95 | 15.26 | 18.58 |       |     |     |     |
| 15   | 7.65 | 8.18 | 9.52 | 10.27 | 10.86 | 12.27 | 15.55 | 13.21 |       |     |     |     |
| 16   | 7.75 | 8.29 | 9.55 | 10.31 | 10.53 | 12.48 | 16.17 | 10.37 |       |     |     |     |
| 17   | 7.67 | 8.39 | 9.58 | 10.35 | 10.59 | 12.69 | 16.50 | 9.41  |       |     |     |     |
| 18   | 7.84 | 8.47 | 9.63 | 10.38 | 10.66 | 11.24 | 15.41 | 8.80  |       |     |     |     |
| 19   | 8.02 | 8.53 | 9.67 | 10.41 | 10.84 | 10.26 | 13.90 | 7.87  |       |     |     |     |
| 20   | 8.18 | 8.58 | 9.69 | 10.43 | 10.88 | 10.20 | 13.71 | 8.00  |       |     |     |     |
| 21   | 8.31 | 8.63 | 9.74 | 10.42 | 10.79 | 10.31 | 13.89 | 8.19  |       |     |     |     |
| 22   | 8.37 | 8.71 | 9.76 | 10.46 | 11.01 | 10.49 | 13.81 | 8.32  |       |     |     |     |
| 23   | 8.46 | 8.73 | 9.79 | 10.50 | 11.20 | 10.68 | 13.86 | 8.68  |       |     |     |     |
| 24   | 8.55 | 8.79 | 9.79 | 10.57 | 11.21 | 10.87 | 12.09 | 8.94  |       |     |     |     |
| 25   | 8.66 | 8.80 | 9.76 | 10.66 | 11.21 | 11.10 | 11.03 | 8.85  |       |     |     |     |
| 26   | 8.76 | 8.56 | 9.80 | 10.69 | 11.21 | 11.46 | 10.96 | 8.97  | 2     |     |     |     |
| 27   | 8.84 | 8.75 | 9.80 | 10.66 | 11.21 | 11.80 | 10.72 | 9.50  |       |     |     |     |
| 28   | 8.92 | 8.86 | 9.84 | 10.75 | 10.44 | 12.16 | 10.87 | 9.64  |       |     |     |     |
| 29   | 8.95 | 8.95 | 9.89 | 10.72 |       | 12.15 | 11.30 | 9.72  |       |     |     |     |
| 30   | 9.02 | 9.00 | 9.91 | 10.87 |       | 11.21 | 11.74 | 9.76  |       |     |     |     |
| 31   | 9.07 |      | 9.92 | 10.96 |       | 11.14 |       | 9.95  |       |     |     |     |
| LOW  | 9.39 | 9.08 | 9.92 | 10.96 | 12.74 | 12.69 | 16.50 | 19.09 | 11.80 |     |     |     |
| HIGH | 7.06 | 5.55 | 8.88 | 9.94  | 10.44 | 10.20 | 10.72 | 7.87  | 10.08 |     |     |     |
|      |      |      |      |       |       |       |       |       |       |     |     |     |



HIGH 5.55

### RIO HUMACAO TO RIO SECO BASINS

180344065523000. Local number, 31.
LOCATION.--Lat 18°03'44", long 65°52'30".
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 (0.51 m), 0-120 ft (0-36.58 cm), 12 in (0.30 m) 120-125 ft (36.58-38.11 m), cased 0-125 ft (0-38.11 m), perforated 40-125 ft (12.20-38.11 m).

Depth 125 ft (38.11 m). Depth 125 ft (38.11 m).

DATUM.--Elevation of land-surface datum is about 41 ft (12.50 m) above mean sea level, from topographic map.

Measuring point: Airline hole in pump base, 4.00 ft (1.22 m) above land-surface datum.

REMARKS.--Observation well. Drilled 5 ft (1.52 m) into rock. Affected by nearby pumping.

PRRIOD OF RECORD.--July 1959 to August 1973; April 1975 to March 4, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.86 ft (1.79 m) below land-surface datum, Sept. 20, 1960; lowest water level measured, a60.57 ft (a16.41 m) below land-surface datum, July 7, 1977.

#### WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date               | Water<br>level   | Date               | Water<br>level   | Date   | Water<br>level | Date |   | Water<br>level |
|--------------------|------------------|--------------------|------------------|--------|----------------|------|---|----------------|
| Oct. 19<br>Nov. 21 | a39.43<br>a35.02 | Dec. 12<br>Jan. 16 | a35.63<br>a30.95 | Feb.12 | a28.28         | Mar. | 4 | a28.40         |

175640066085100. Local number, 89. LOCATION.--Lat 17°56'40", 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 (0.10 m). Depth 114 ft (34.75 m).

DATUM.--Elevation of land-surface datum is about 6 ft (1.8 m) above mean sea level, from topographic map.

Heasuring point: Top of casing, 2.25 ft (0.69 m) above land-surface datum.

REMARKS .-- Observation well.

PERIOD OF RECORD. --October 1968 to December 11, 1984, discontinued; changed to a partial site on Oct. 1, 1981.

EXTREMES FOR PERIOD OF RECORD. --Highest water level measured, +2.70 ft (+0.82 m) above land-surface datum, Jan. 9, 1973; lowest water level measured, 4.32 ft (1.32 m) below land-surface datum, June 5, 1981.

### WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

|         | Water |         | Water |         | Water |
|---------|-------|---------|-------|---------|-------|
| Date    | level | Date    | level | Date    | level |
| Oct. 24 | 0.19  | Nov. 16 | 0.23  | Dec. 11 | 0.28  |

<sup>+</sup> Above land-surface datum.

a Pumping.

### RIO HUMACAO TO RIO SECO BASINS

180415065513900. Local number, 96.
LOCATION.--Lat 18°04'15", long 65°51'39".
Owner: P.R. Aqueduct and Sewer Authority.
Name: USGS TW-2 or Yabucoa 7.

Name: USGS TW-2 or Yabucoa 7.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 16 in (0.41 m), cased 0-10 ft (0-3.05 m), diameter 6 in (0.15 m), cased about 0-183 ft (0-55.79 m), perforated 56-81 ft (17.07-24.70 m), 102-123 ft (31.10-37.50 m), 144-181 ft (43.90-55.18 m). Depth 181 ft (55.18 m).

DATUM.--Elevation of land-surface datum is about 25 ft (7.62 m) above mean sea level, from topographic map.

Measuring point: Top of shelter floor, 4.00 ft (1.22 m) above land-surface.

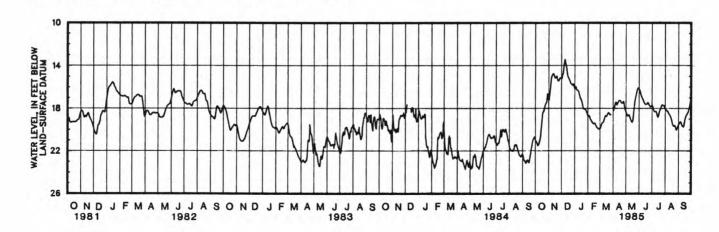
REMARKS.--Observation recording well.

PERIOD OF RECORD.--April 25, 1978 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 15.38 ft (4.08 m) below land-surface datum, Dec. 9, 1984; lowest water level recorded, 28.29 ft (8.62 m) below land-surface datum, Sept. 20, 1980.

WATER LEVEL, IN FRET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS AT 1200

| DAY    | ост   | NOV       | DEC   | JAN   | PEB     | MAR   | APR   | MAY   | JUN   | JUL   | AUG   | SEP   |
|--------|-------|-----------|-------|-------|---------|-------|-------|-------|-------|-------|-------|-------|
| 1      | 20.96 | 17.22     | 15.19 | 16.09 | 18.70   | 19.87 |       | 18.30 | 16.19 | 17.73 | 18.01 | 19.53 |
| 2      | 21.06 |           | 15.17 | 16.15 | 18.73   | 19.83 | 18.21 | 18.43 | 16.28 | 17.75 | 18.10 | 19.46 |
| 3      | 21.11 |           | 14.96 | 15.97 | 18.72   | 19.74 | 18.04 | 18.55 | 16.36 | 17.86 | 18.14 | 19.41 |
| 4      | 21.18 |           | 14.80 | 15.99 | 18.67   | 19.60 | 17.89 | 18.69 | 16.48 | 18.02 | 18.19 | 19.35 |
| 5      | 21.30 |           | 14.74 | 16.15 | 18.81   | 19.48 | 17.76 | 18.72 | 16.67 | 18.15 | 18.22 | 19.27 |
| 6      | 21.45 | 15.66     | 14.32 | 16.26 | 18.88   | 19.40 | 17.57 | 18.66 | 16.80 | 18.26 | 18.24 | 19.28 |
| 7      | 21.51 | 15.22     | 13.93 | 16.31 | 19.03   | 19.36 | 17.42 | 18.64 | 16.89 | 18.31 | 18.30 | 19.36 |
| 8      | 21.43 | 15.02     | 13.67 | 16.32 | 19.09   | 19.33 | 17.44 | 18.61 | 17.01 | 18.29 | 18.37 | 19.48 |
| 9      | 21.35 | 14.91     | 13.44 | 16.34 | 19.17   | 19.28 | 17.54 | 18.67 | 17.10 | 18.29 | 18.45 | 19.60 |
| 10     | 21.19 | 14.83     | 13.49 | 16.42 | 19.24   | 19.18 | 17.66 | 18.76 | 17.17 | 18.29 | 18.52 | 19.66 |
| 11     | 21.05 | 14.77     | 13.83 | 16.50 | 19.29   | 19.05 | 17.58 | 18.89 | 17.26 | 18.32 | 18.60 | 19.70 |
| 12     | 20.87 | 14.75     | 13.98 | 16.66 | 19.36   | 18.92 | 17.46 | 19.05 | 17.38 | 18.43 | 18.66 | 19.74 |
| 13     | 20.58 | 14.79     | 14.15 | 16.83 | 19.42   | 18.78 | 17.40 | 19.17 | 17.47 | 18.61 | 18.75 | 19.66 |
| 14     | 20.09 | 14.93     | 14.47 | 16.99 | 19.45   | 18.70 | 17.32 | 19.24 | 17.53 | 18.76 | 18.86 | 19.46 |
| 15     | 19.71 | 15.08     | 14.76 | 17.10 | 19.42   | 18.71 | 17.27 | 19.30 | 17.59 | 18.82 | 18.98 | 19.24 |
| 16     | 19.26 | 15.14     | 14.98 | 17.12 | 19.38   | 18.75 | 17.26 | 19.25 | 17.63 | 18.72 | 19.11 | 19.03 |
| 17     | 18.84 |           | 15.09 | 17.25 | 19.40   | 18.72 | 17.26 | 19.12 | 17.61 | 18.57 | 19.31 | 18.87 |
| 18     | 18.48 | 15.07     | 15.15 | 17.36 | 19.46   | 18.62 | 17.29 | 18.85 | 17.60 | 18.39 | 19.48 | 18.75 |
| 19     | 18.32 |           | 15.25 | 17.53 | 19.56   | 18.53 | 17.35 | 18.41 | 17.59 | 18.23 | 19.61 | 18.65 |
| 20     | 18.32 | 14.98     | 15.34 | 17.74 | 19.65   | 18.47 | 17.45 | 17.99 | 17.53 | 18.13 | 19.68 | 18.59 |
| 21     | 18.19 |           | 15.44 | 17.91 | 19.72   | 18.40 | 17.48 | 17.59 | 17.47 | 18.04 | 19.68 | 18.52 |
| 22     | 18.01 |           | 15.56 | 18.02 | 19.79   | 18.41 | 17.49 | 17.28 | 17.48 | 17.91 | 19.62 | 18.43 |
| 23     | 17.80 | 15.41     | 15.66 | 18.07 | 19.81   | 18.47 | 17.51 | 17.08 | 17.55 | 17.79 | 19.61 | 18.36 |
| 24     | 17.66 |           | 15.71 | 18.07 | 19.88   | 18.52 | 17.45 | 16.91 | 17.63 | 17.68 | 19.69 | 18.25 |
| 25     | 17.59 | 15.37     | 15.77 | 18.06 | 19.92   | 18.60 | 17.35 | 16.73 | 17.73 | 17.66 | 19.83 | 18.04 |
| 26     | 17.48 | 15.25     | 15.79 | 18.10 | 19.93   | 18.61 | 17.40 | 16.55 | 17.78 | 17.70 | 19.94 | 17.87 |
| 27     | 17.44 | 15.17     | 15.83 | 18.16 | 19.95   | 18.59 | 17.63 | 16.38 | 17.85 | 17.72 | 20.02 | 17.71 |
| 28     | 17.16 | 15.15     | 15.72 | 18.23 | 19.92   |       | 17.88 | 16.23 | 17.83 | 17.74 | 19.95 | 17.50 |
| 29     | 16.64 | 15.19     | 15.71 | 18.33 |         |       | 18.07 | 16.13 | 17.79 | 17.74 | 19.83 | 17.26 |
| 30     | 16.73 | 15.20     | 15.89 | 18.43 |         |       | 18.19 | 16.09 | 17.75 | 17.79 | 19.72 | 17.02 |
| 31     | 17.11 |           | 16.01 | 18.55 |         |       |       | 16.11 |       | 17.90 | 19.63 |       |
| LOW    | 21.51 | 17.22     | 16.01 | 18.55 | 19.95   | 19.87 | 18.21 | 19.30 | 17.85 | 18.82 | 20.02 | 19.74 |
| HIGH   | 16.64 | 14.75     | 13.44 | 15.97 | 18.67   | 18.40 | 17.26 | 16.09 | 16.19 | 17.66 | 18.01 | 17.02 |
| WTR YR | 1985  | MKAN 17.8 | 3 LOW | 21.51 | H1GH 13 | 3.44  |       |       |       |       |       |       |



### RIO HUMACAO TO RIO SECO BASINS

180026065544300. Local number, 122. LOCATION.--Lat 18000'26", long 65°54'43". Owner: P.R. Aqueduct and Sewer Authority. Name: Maunabo Calzada.

AQUIFER . -- Alluvium of Quaternary Age.

AQUIFER. --Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled exploration well, diameter 4 in (0.10 m). Depth 70 ft (21.3 m).

DATUM.--Elevation of land-surface datum is about 28.5 ft (8.7 m) above mean sea level, from topographic map.

Measuring point: Top of shelter floor, 1.4 ft (0.43 m) above land-surface datum.

REMARKS.--Observation well. Water levels affected by pumping nearby well.

PERIOD OF RECORD.--December 1971 to March 4, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD. --Highest water level measured, 2.24 ft (0.68 m) below land-surface datum, July 8, 1976; lowest water level measured, 12.38 ft (3.77 m) below-land surface datum, Aug. 12, 1977.

# WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date               | Water<br>level | Date               | Water<br>level | Date    | Water<br>level | Date   | Water<br>level |
|--------------------|----------------|--------------------|----------------|---------|----------------|--------|----------------|
| Oct. 19<br>Nov. 21 | 6.10<br>07.11  | Dec. 12<br>Jan. 16 | c7.69          | Feb. 12 | c9.73          | Mar. 4 | c9.32          |

180010066004500. 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 (0.41 m), cased 0-45 ft (0-13.7 m);

cased 12 in (0.30 m) 0-49 ft (0-14.9 m); perforated 49-81 ft (14.9 -24.7 m). Depth 90 ft (27.4 m).

DATUM.--Elevation of land-surface datum is about 48 ft (14.6 m) above mean sea level, from topographic map.

Measuring point: Bottom edge of 0.75 in (0.02 m) 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 December 12, 1984, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.83 ft (3.91 m) below land-surface datum, June 17, 1981; lowest water level measured, a52.98 ft (a16.15 m) below land-surface datum, May 24, 1979.

### WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

|         | Water  |         | Water  |         | Water  |  |
|---------|--------|---------|--------|---------|--------|--|
| Date    | level  | Date    | level  | Date    | level  |  |
| Oct. 24 | a47.62 | Nov. 21 | a51.04 | Dec. 12 | a48.65 |  |

a Pumping.

c Pumping nearby well.

#### RIO HUMACAO TO RIO SECO BASIN

180850065493700. Local number, 172.
LOCATION.--Lat 18°08'50", long 65°49'37".
Owner: U.S. Geological Survey, City of Humacao.
Name: Rio Humacao Ground-Water Station.

Name: Rio Humacao Ground-Water Station.

AQUIFER.--Alluvium.

WELL CHARACTERISTICS.--Test well drilled by USGS, diameter 4-2 in (0.10-0.05 m), cased 4 in (0.10 m) 0-40 ft (0-12.20 m), 2 in (0.05 m) 40-43 ft (12.20-13.11 m), 2 in (0.05 m slotted PVC screen 40-43 ft (12.20-13.11 m), 2 in (0.05 m) slotted PVC screen 40-43 ft (12.20-13.11 m). Depth 43 ft (13.11 m).

DATUM.--Elevation of land-surface datum is about 57.4 ft (17.50 m) above mean sea level, from topographic map.

Measuring point: Mark on shelf of gage house, 3.30 ft (1.01 m) above land surface datum.

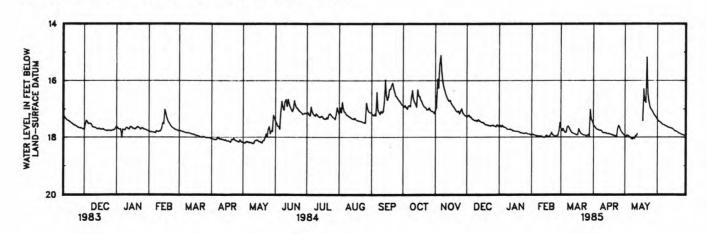
REMARKS.--Recording observation well.

PERIOD OF RECORD.--November 1983 to June 28, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 13.70 ft (4.18 m) below land-surface datum, May 22, 1984; lowest water level measured 18.22 ft (5.55 m) below land-surface datum, May 9, 11, 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS AT 1200

| DAY    | OCT   | NOV        | DEC   | JAN   | FBB   | MAR   | APR   | MAY   | JUN   | JUL | AUG | SEP |
|--------|-------|------------|-------|-------|-------|-------|-------|-------|-------|-----|-----|-----|
| 1      | 16.87 | 17.05      | 17.28 | 17.63 | 17.89 | 17.69 | 17.56 | 17.95 | 17.37 |     |     |     |
| 2      | 16.93 | 16.93      | 17.25 | 17.58 | 17.90 | 17.77 | 17.61 | 17.98 | 17.42 |     |     |     |
| 3      | 16.88 | 15.95      | 17.22 | 17.63 | 17.92 | 17.69 | 17.66 | 17.92 | 17.45 |     |     |     |
| 4      | 16.95 | 16.26      | 17.28 | 17.58 | 17.93 | 17.78 | 17.71 | 17.94 | 17.47 |     |     |     |
| 5      | 17.00 |            | 17.30 | 17.63 | 17.94 | 17.83 | 17.73 | 17.97 | 17.51 |     |     |     |
| 6      | 16.90 |            | 17.35 | 17.65 | 17.95 | 17.82 | 17.74 | 18.01 | 17.54 |     |     |     |
| 7      | 16.88 | 15.68      | 17.38 | 17.66 | 17.95 | 17.63 | 17.76 | 18.04 | 17.56 |     |     |     |
| 8      | 16.91 | 16.03      | 17.40 | 17.69 | 17.96 | 17.60 | 17.75 | 18.07 | 17.58 |     |     |     |
| 9      | 16.60 | 16.24      | 17.42 | 17.72 | 17.96 | 17.67 | 17.79 | 18.02 | 17.60 |     |     |     |
| 10     | 16.35 | 16.37      | 17.40 | 17.73 | 17.96 | 17.75 | 17.84 | 18.04 | 17.61 |     |     |     |
| 11     | 16.64 |            | 17.44 | 17.71 | 17.98 | 17.82 | 17.84 | 17.94 | 17.64 |     |     |     |
| 12     | 16.76 |            | 17.38 | 17.73 | 18.00 | 17.85 | 17.85 | 17.94 | 17.66 |     |     |     |
| 13     | 16.83 | 16.67      | 17.42 | 17.74 | 18.01 | 17.87 | 17.85 | 17.87 | 17.66 |     |     |     |
| 14     | 15.93 | 16.73      | 17.45 | 17.77 | 17.98 | 17.88 | 17.87 |       | 17.68 |     |     |     |
| 15     | 16.33 | 16.70      | 17.47 | 17.78 | 17.93 | 17.90 | 17.88 |       | 17.69 |     |     |     |
| 16     | 16.54 |            | 17.48 | 17.79 | 17.96 | 17.92 | 17.87 |       | 17.72 |     |     |     |
| 17     | 16.56 |            | 17.49 | 17.79 | 17.98 | 17.91 | 17.89 |       | 17.75 |     |     |     |
| 18     | 16.68 | 16.91      | 17.54 | 17.80 | 17.97 | 17.70 | 17.91 | 17.41 | 17.78 |     |     |     |
| 19     | 16.75 |            | 17.55 | 17.80 | 17.91 | 17.80 | 17.91 | 16.30 | 17.79 |     |     |     |
| 20     | 16.84 | 17.02      | 17.57 | 17.81 | 17.83 | 17.86 | 17.94 | 16.71 | 17.81 |     |     |     |
| 21     | 16.91 |            | 17.57 | 17.84 | 17.91 | 17.89 | 17.94 | 16.77 | 17.84 |     |     |     |
| 22     | 16.94 | 17.11      | 17.59 | 17.84 | 17.94 | 17.91 | 17.96 | 15.18 | 17.86 |     |     |     |
| 23     | 16.97 |            | 17.59 | 17.86 | 17.96 | 17.93 | 17.97 | 16.46 | 17.88 |     |     |     |
| 24     | 17.03 | 17.17      | 17.60 | 17.86 | 17.96 | 17.93 | 17.70 | 16.74 | 17.90 |     |     |     |
| 25     | 17.02 | 17.07      | 17.58 | 17.87 | 17.94 | 17.95 | 17.58 | 16.93 | 17.91 |     |     |     |
| 26     | 16.96 |            | 17.57 | 17.85 | 17.93 | 17.94 | 17.65 | 17.01 | 17.93 |     |     |     |
| 27     | 17.03 |            | 17.60 | 17.86 | 17.77 | 17.91 | 17.76 | 17.06 | 17.94 |     |     |     |
| 28     | 17.08 | 17.18      | 17.61 | 17.88 | 17.48 | 17.95 | 17.82 | 17.13 | 17.95 |     |     |     |
| 29     | 17.08 | 17.23      | 17.63 | 17.89 |       | 17.02 | 17.87 | 17.20 |       |     |     |     |
| 30     | 17.11 | 17.25      | 17.56 | 17.89 |       | 17.37 | 17.92 | 17.25 |       |     |     |     |
| 31     | 17.16 |            | 17.60 | 17.92 |       | 17.43 |       | 17.31 |       |     |     |     |
| LOW    | 17.16 |            | 17.63 | 17.73 | 18.01 | 17.95 | 17.97 | 18.07 | 17.95 |     |     |     |
| HIGH   | 16.56 | 15.12      | 17.22 | 17.58 | 17.48 | 17.02 | 17.56 | 15.18 | 17.37 |     |     |     |
| WTR YR | 1985  | MEAN 17.39 | LOW   | 18.07 | HIGH  | 15.12 |       |       |       |     |     |     |



### GROUND-WATER LEVELS RIO SALINAS TO RIO JACAGUAS BASINS

175659066155300. Local number, 1. LOCATION.--Lat 17°56'59", long 66°15'53".

Owner: P.R. Aqueduct and Sewer Authority.

Name: Mar Negro.

AQUIFER .-- Alluvium of Quaternary Age.

AQUIFEK.--Alluvium of Quaternary age.

WELL CHARACTERISTICS.--Bored unused artesian well, diameter 3 in (0.08 m). Depth 23 ft (7.0 m).

DATUM.--Elevation of land-surface datum is about 3 ft (0.91 m) above mean sea level, from topographic map.

Measureing point: Top of 1.5 in (0.04 m) pipe fitting, 3.2 ft (0.98 m) above land-surface datum.

REMARKS.--Observation well. Water levels affected by nearby pumping well.

PERIOD OF RECORD.--September 1959 to December 11, 1984, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, +2.12 ft (+0.65 m) above land-surface datum, Oct. 18, 1984; lowest water level measured, 3.60 ft (1.10 m) below land-surface datum, July 7, 1977.

# WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

|         | Water |         | Water |         | Water |
|---------|-------|---------|-------|---------|-------|
| Date    | level | Date    | level | Date    | level |
| Oct. 18 | +2.12 | Nov. 16 | +0.65 | Dec. 11 | +0.97 |

175851066174600. Local number, 8.
LOCATION.--Lat 17°58'51", long 66°17'46".
Owner: P.R. Aqueduct and Sewer Authority.

Name: Salinas 1.

AQUIFER .-- Alluvium of Quaternary Age.

WELL CHARACTERISTICS. -- Drilled public supply water-table well, diameter 16 to 13 in (0.41-0.33 m); cased 16 in (0.41 m) 0-32 ft (0-9.8 m), 13 in (0.33 m) 25-120 ft (7.6-36.6 m); perforated 25-120 ft (7.6-36.6 m). Depth 125 ft (38.1 m).

DATUM.--Blevation of land-surface datum is about 29 ft (8.8 m) above mean sea level, from topographic map.

Measuring point: Top of 1.0 in (0.02 m) pipe in pump base, 1.2 ft (0.37 m) above land-surface datum.

REMARKS.--Observation well. Water levels affected by pumping.

PRRIOD OF RECORD.--September 1959 to March 7, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.95 ft (3.64 m) below land-surface datum, Dec. 14,

1960; lowest water measured, 42.95 ft (13.09 m) below land-surface datum, Dec. 9, 1975.

### WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date    | Water<br>level | Date    | Water<br>level | Date    | Water<br>level | Date   | Water<br>level |
|---------|----------------|---------|----------------|---------|----------------|--------|----------------|
| Oct. 18 | a23.42         | Dec. 11 | a21.15         | Feb. 20 | a21.77         | Mar. 7 | a25.27         |

180044066153500. Local number, 18. LOCATION.--Lat 18°00'44", long 66°15'35". 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 (0.41 to 0.30 m), cased 16 in (0.41 m) 0-40 ft (0-12-2 m), 12 in (0.30 m) 0-53 ft (0-16.2 m), perforated 32-53 (9.8-16.2 m).

Depth 125 ft (38.1 m).

Depth 125 ft (38.1 m).

DATUM.--Elevation of land-surface datum is about 140 ft (42.7 m) above mean sea level, from topographic map.

Measuring point: Top of 1.0 in (0.02 m) pipe in pump base, 1.25 ft (0.38 m) above land-surface datum.

REMARKS.--Observation well. Water levels affected by nearby pumpage.

PERIOD OF RECORD.--September 1959 to March 7, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 14.67 ft (4.47 m) below land-surface datum, Sept. 20, 1960; lowest water level measured, 79.17 ft (24.13 m) below land-surface datum, June 19, 1968.

| Date    | Water<br>level | Date    | Water | Date    | Water<br>level | Date   | Water<br>level |
|---------|----------------|---------|-------|---------|----------------|--------|----------------|
| Oct. 18 | 25.04<br>18.66 | Dec. 11 | 17.15 | Feb. 20 | 19.06          | Mar. 7 | 19.47          |

<sup>+</sup> Above land-surface datum.

a Pumping.

c Pumping nearby well.

#### RIO SALINAS TO RIO JACAGUAS BASINS

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180023066175400. Local number, 19.
LOCATION.--Lat 18.00'23", long 66.17'54".
LOCATION.--Lat 18°00'23", long 66°17'54".

Owner: U.S. Army.

Name: Theater 1.

AQUIFER.--Volcanic rocks of Cretaceous Age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 16 to 11 in (0.41 to 0.28 m), cased 16 in (0.41 m)

0-64 ft (0-19.5 m), 11 in (0.28 m) 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.--Elevation of land-surface datum is about 140 ft (42.7 m) above mean sea level, from topographic map.

Measuring point: Top of 1.0 in (0.02 m) casing liner, 0.85 ft (0.26 m) above land-surface datum. After Apr. 8, 1983, top of 4.0 in (0.10 m) flat cap on new concrete slab, 3.6 ft (1.10 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD.--December 1958 to December 11, 1984, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 39.38 ft (12.00 m) below land-surface datum, Oct. 15, 1979; lowest water level measured, 79.15 ft (24.12 m) below land-surface datum, Oct. 10, 1973.
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|         | Water |         | Water |         | Water |
|---------|-------|---------|-------|---------|-------|
| Date    | level | Date    | level | Date    | level |
| Oct. 18 | 49.02 | Nov. 23 | 46.85 | Dec. 11 | 41.35 |

#### RIO SALINAS TO RIO JACAGUAS BASINS

175829066232200. Local number, 87. LOCATION.--Lat 17°58'29", long 66°23'22". Owner: Francisco Alomar.

WTR YR 1985

MEAN 24.03

LOW 28.39

Owner: Francisco Alomar.

Name: Alomar 1.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 20 in (0.51 m), iron cased. Depth 112 ft (34.14 m).

DATUM.--Elevation of land-surface datum is 35.32 ft (10.77 m) above mean sea level.

Measuring point: Bottom of clean-out shelter door, 2.50 ft (0.76 m) above land-surface datum. Prior to August 1981, top of recorder shelter floor, 4.00 ft (1.22 m) above land-surface datum.

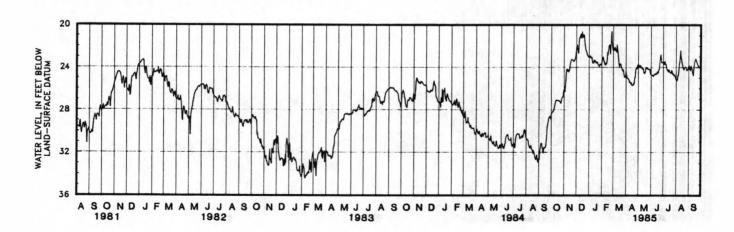
1981, top of recorder shelter floor, 4.00 ft (1.22 m) above land-surface datum.

REMARKS.--Recording observation well.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 8.45 ft (2.58 m) below land-surface datum, Dec. 10, 1970; lowest water level recorded, 49.18 ft (14.99 m) below land-surface datum, July 27, 1974.

| 2       28.29       26.28       21.89       23.03       23.30       22.11       24.68       23.78       24.72       23.51         3       28.25       26.28       21.90       22.98       23.14       22.21       24.88       23.83       24.72       23.70         4       28.17       25.79       22.33       22.91       23.01       22.36       25.01       23.83       24.74       23.58         5       28.17       25.22       22.52       22.30.04       23.16       22.38       25.04       23.93       24.75       23.44         6       28.10       24.54       22.61       23.10       23.39       22.15       25.04       23.84       24.83       23.70         7       27.93       24.26       21.88       23.06       23.41       22.36       25.13       23.87       24.75       23.66         8       27.79       24.16       21.21       23.11       23.62       22.43       25.16       23.97       24.70       23.75         9       27.60       24.33       21.23       23.43       23.74       22.52       25.39       24.06       24.65       24.00         10       27.38       24.22  | AUG<br>25.14<br>25.13<br>25.22<br>25.13<br>24.85<br>24.77<br>24.58<br>24.24<br>23.63 | 23.88<br>23.83<br>24.03<br>24.16<br>24.28<br>23.87<br>23.88<br>24.07 |
|--|--|--|
| 2       28.29       26.28       21.89       23.03       23.30       22.11       24.68       23.78       24.72       23.51         3       28.25       26.28       21.90       22.98       23.14       22.21       24.88       23.83       24.72       23.70         4       28.17       25.79       22.33       22.91       23.01       22.36       25.01       23.83       24.75       23.58         5       28.17       25.22       22.52       22.30.04       23.16       22.38       25.04       23.93       24.75       23.44         6       28.10       24.54       22.61       23.10       23.39       22.15       25.04       23.84       24.83       23.70         7       27.93       24.26       21.88       23.05       23.41       22.36       25.13       23.87       24.75       23.66         8       27.79       24.16       21.21       23.11       23.62       22.43       25.16       23.97       24.70       23.75         9       27.60       24.33       21.23       23.43       23.74       22.52       25.39       24.06       24.65       24.00         10       27.38       24.42  | 25.13<br>25.22<br>25.13<br>24.85<br>24.77<br>24.58<br>24.24<br>23.63                 | 23.83<br>24.03<br>24.16<br>24.28<br>23.87<br>23.88                   |
| 3       28.25       26.28       21.90       22.98       23.14       22.21       24.88       23.83       24.72       23.70         4       28.17       25.79       22.33       22.91       23.01       22.36       25.01       23.83       24.74       23.58         5       28.17       25.22       22.52       23.04       23.16       22.38       25.04       23.93       24.75       23.44         6       28.10       24.54       22.61       23.10       23.39       22.15       25.04       23.84       24.83       23.70         7       27.93       24.26       21.88       23.05       23.41       22.36       25.13       23.87       24.75       23.66         8       27.79       24.16       21.21       23.11       23.62       22.43       25.16       23.97       24.70       23.75         9       27.60       24.33       21.23       23.43       23.74       22.52       25.39       24.06       24.65       24.00         10       27.38       24.22       21.08       23.57       23.60       21.89       25.31       24.05       24.66       24.28         12       27.08       24.40 </td <td>25.22<br/>25.13<br/>24.85<br/>24.77<br/>24.58<br/>24.24<br/>23.63</td> <td>24.03<br/>24.16<br/>24.28<br/>23.87<br/>23.88</td> | 25.22<br>25.13<br>24.85<br>24.77<br>24.58<br>24.24<br>23.63                          | 24.03<br>24.16<br>24.28<br>23.87<br>23.88                            |
| 3       28.25       26.28       21.90       22.98       23.14       22.21       24.88       23.83       24.72       23.70         4       28.17       25.79       22.33       22.91       23.01       22.36       25.01       23.83       24.74       23.58         5       28.17       25.22       22.52       23.04       23.16       22.38       25.04       23.93       24.75       23.44         6       28.10       24.54       22.61       23.10       23.39       22.15       25.04       23.84       24.83       23.70         7       27.93       24.26       21.88       23.05       23.41       22.36       25.13       23.87       24.75       23.66         8       27.79       24.16       21.21       23.11       23.62       22.43       25.16       23.97       24.70       23.75         9       27.60       24.33       21.23       23.43       23.74       22.52       25.39       24.06       24.65       24.00         10       27.38       24.22       21.08       23.57       23.60       21.89       25.31       24.05       24.66       24.28         12       27.08       24.40 </td <td>25.13<br/>24.85<br/>24.77<br/>24.58<br/>24.24<br/>23.63</td> <td>24.16<br/>24.28<br/>23.87<br/>23.88</td>                     | 25.13<br>24.85<br>24.77<br>24.58<br>24.24<br>23.63                                   | 24.16<br>24.28<br>23.87<br>23.88                                     |
| 4       28.17       25.79       22.33       22.91       23.01       22.36       25.01       23.83       24.74       23.58         5       28.17       25.22       22.52       23.04       23.16       22.38       25.04       23.93       24.75       23.44         6       28.10       24.54       22.61       23.10       23.39       22.15       25.04       23.84       24.83       23.70         7       27.93       24.26       21.88       23.06       23.41       22.36       25.13       23.87       24.75       23.62         8       27.79       24.16       21.21       23.11       23.62       22.43       25.16       23.97       24.70       23.75         9       27.60       24.33       21.23       23.43       23.74       22.52       25.39       24.06       24.65       24.00         10       27.38       24.22       21.08       23.57       23.60       21.89       25.31       24.05       24.66       24.21         11       27.24       24.24       20.92       23.57       23.70       22.19       25.45       24.05       24.66       24.28         12       27.08       24.40<  | 25.13<br>24.85<br>24.77<br>24.58<br>24.24<br>23.63                                   | 24.28<br>23.87<br>23.88  |
| 5       28.17       25.22       22.52       23.04       23.16       22.38       25.04       23.93       24.75       23.44         6       28.10       24.54       22.61       23.10       23.39       22.15       25.04       23.84       24.83       23.70         7       27.93       24.26       21.88       23.05       23.41       22.36       25.13       23.87       24.75       23.66         8       27.79       24.16       21.21       23.11       23.62       22.43       25.16       23.97       24.70       23.75         9       27.60       24.33       21.23       23.43       23.74       22.52       25.39       24.06       24.65       24.00         10       27.38       24.22       21.08       23.57       23.60       21.89       25.31       24.05       24.64       24.17         11       27.24       24.24       20.92       23.57       23.70       22.19       25.45       24.05       24.66       24.28         12       27.08       24.40       20.86       23.27       23.61       22.52       25.50       24.18       24.65       24.40         14       27.12       24.23  | 24.77<br>24.58<br>24.24<br>23.63   | 23.87<br>23.88   |
| 7 27.93 24.26 21.88 23.05 23.41 22.36 25.13 23.87 24.75 23.66 8 27.79 24.16 21.21 23.11 23.62 22.43 25.16 23.97 24.70 23.75 9 27.60 24.33 21.23 23.43 23.74 22.52 25.39 24.06 24.65 24.00 10 27.38 24.22 21.08 23.57 23.60 21.89 25.31 24.05 24.64 24.17 11 27.24 24.24 20.92 23.57 23.60 21.89 25.31 24.05 24.66 24.28 12 27.08 24.40 20.86 23.27 23.61 22.52 25.50 24.18 24.58 24.27 13 27.06 24.33 21.22 23.29 23.60 22.90 25.55 24.14 24.65 24.40 14 27.12 24.23 21.19 23.33 23.24 23.26 25.45 24.43 24.56 24.21 15 27.09 23.94 20.66 23.32 22.56 23.71 25.69 24.55 24.58 24.25 16 27.12 23.65 20.92 23.49 22.74 23.89 25.68 24.57 24.42 24.40 17 27.13 23.48 21.14 23.46 22.38 23.75 25.65 24.44 24.41 24.45 18 27.13 23.48 21.14 23.46 22.38 23.75 25.65 24.44 24.41 24.43 18 27.13 23.38 23.24 23.26 25.55 24.44 24.41 24.43 18 27.13 23.32 20.94 23.54 22.03 23.65 25.65 24.44 24.41 24.43 18 27.13 23.32 20.94 23.54 22.03 23.65 25.65 24.44 24.45 24.49 27.11 23.22 20.95 23.48 21.88 23.66 25.55 24.47 24.42 24.49  | 24.58<br>24.24<br>23.63  | 23.88  |
| 8       27.79       24.16       21.21       23.11       23.62       22.43       25.16       23.97       24.70       23.75         9       27.60       24.33       21.23       23.43       23.74       22.52       25.39       24.06       24.65       24.00         10       27.38       24.22       21.08       23.57       23.60       21.89       25.31       24.05       24.64       24.17         11       27.24       24.24       20.92       23.57       23.70       22.19       25.45       24.05       24.66       24.28         12       27.08       24.40       20.86       23.27       23.61       22.52       25.50       24.18       24.58       24.27         13       27.06       24.33       21.22       23.29       23.60       22.90       25.55       24.18       24.58       24.27         14       27.12       24.23       21.19       23.33       23.24       23.26       25.45       24.43       24.56       24.21         15       27.09       23.94       20.66       23.32       22.56       23.71       25.69       24.55       24.58       24.25         16       27.12       23  | 24.24 23.63  |  |
| 9 27.60 24.33 21.23 23.43 23.74 22.52 25.39 24.06 24.65 24.00 27.38 24.22 21.08 23.57 23.60 21.89 25.31 24.05 24.65 24.01 24.17   11 27.24 24.24 20.92 23.57 23.70 22.19 25.45 24.05 24.66 24.28 27.08 24.40 20.86 23.27 23.61 22.52 25.50 24.18 24.58 24.27 23.60 24.33 21.22 23.29 23.60 22.90 25.55 24.14 24.65 24.40 27.12 24.23 21.19 23.33 23.24 23.26 25.45 24.43 24.56 24.21 27.09 23.94 20.66 23.32 22.56 23.71 25.69 24.55 24.58 24.25 27.09 23.94 20.66 23.32 22.56 23.71 25.69 24.55 24.58 24.25 27.13 23.32 23.48 21.14 23.46 22.38 23.75 25.65 24.44 24.41 24.43 27.13 23.32 20.94 23.54 22.38 23.75 25.65 24.44 24.41 24.43 28.25 27.13 23.32 20.94 23.54 22.03 23.65 25.65 24.44 24.41 24.43 24.56 27.13 23.32 20.94 23.55 22.03 23.65 25.65 24.44 24.41 24.43 24.59 27.11 23.22 20.95 23.48 21.88 23.66 25.55 24.07 24.42 24.49   | 23.63  | 24 07  |
| 10     27.38     24.22     21.08     23.57     23.60     21.89     25.31     24.05     24.64     24.17       11     27.24     24.24     20.92     23.57     23.70     22.19     25.45     24.05     24.66     24.28       12     27.08     24.40     20.86     23.27     23.61     22.52     25.50     24.18     24.58     24.27       13     27.06     24.33     21.22     23.29     23.60     22.90     25.55     24.14     24.65     24.40       14     27.12     24.23     21.19     23.33     23.24     23.26     25.45     24.43     24.56     24.21       15     27.09     23.94     20.66     23.32     22.56     23.71     25.69     24.55     24.58     24.25       16     27.12     23.65     20.92     23.49     22.74     23.89     25.68     24.57     24.42     24.40       17     27.13     23.48     21.14     23.46     22.38     23.75     25.65     24.44     24.41     24.43       18     27.13     23.32     20.94     23.54     22.03     23.65     25.69     24.42     24.53     24.52       19     27.11     23.22  |  |  |
| 11     27.24     24.24     20.92     23.57     23.70     22.19     25.46     24.05     24.66     24.28       12     27.08     24.40     20.86     23.27     23.61     22.52     25.50     24.18     24.58     24.27       13     27.06     24.33     21.22     23.29     23.60     22.90     25.55     24.14     24.65     24.40       14     27.12     24.23     21.19     23.33     23.24     23.26     25.45     24.43     24.56     24.21       15     27.09     23.94     20.66     23.32     22.56     23.71     25.69     24.55     24.58     24.25       16     27.12     23.65     20.92     23.49     22.74     23.89     25.68     24.57     24.42     24.40       17     27.13     23.48     21.14     23.46     22.38     23.75     25.65     24.44     24.41     24.43       18     27.13     23.32     20.94     23.54     22.03     23.65     25.69     24.42     24.53     24.52       19     27.11     23.22     20.95     23.48     21.18     23.66     25.55     24.07     24.42     24.49   |  | 24.18  |
| 12     27.08     24.40     20.86     23.27     23.61     22.52     25.50     24.18     24.58     24.27       13     27.06     24.33     21.22     23.29     23.60     22.90     25.55     24.14     24.65     24.40       14     27.12     24.23     21.19     23.33     23.24     23.26     25.45     24.43     24.56     24.21       15     27.09     23.94     20.66     23.32     22.56     23.71     25.69     24.55     24.58     24.25       16     27.12     23.65     20.92     23.49     22.74     23.89     25.68     24.57     24.42     24.40       17     27.13     23.48     21.14     23.46     22.38     23.75     25.65     24.44     24.41     24.43       18     27.13     23.32     20.94     23.54     22.03     23.65     25.69     24.42     24.53     24.52       19     27.11     23.22     20.95     23.48     21.88     23.66     25.55     24.07     24.42     24.49  | 23.46  | 24.46  |
| 13     27.06     24.33     21.22     23.29     23.60     22.90     25.55     24.14     24.65     24.40       14     27.12     24.23     21.19     23.33     23.24     23.26     25.45     24.43     24.56     24.21       15     27.09     23.94     20.66     23.32     22.56     23.71     25.69     24.55     24.58     24.25       16     27.12     23.65     20.92     23.49     22.74     23.89     25.68     24.57     24.42     24.40       17     27.13     23.48     21.14     23.46     22.38     23.75     25.65     24.44     24.41     24.43       18     27.13     23.32     20.94     23.54     22.03     23.65     25.69     24.42     24.53     24.52       19     27.11     23.22     20.95     23.48     21.88     23.66     25.55     24.07     24.42     24.49   | 22.91  | 24.59  |
| 14     27.12     24.23     21.19     23.33     23.24     23.26     25.45     24.43     24.56     24.21       15     27.09     23.94     20.66     23.32     22.56     23.71     25.69     24.55     24.58     24.25       16     27.12     23.65     20.92     23.49     22.74     23.89     25.68     24.57     24.42     24.40       17     27.13     23.48     21.14     23.46     22.38     23.75     25.65     24.44     24.41     24.43       18     27.13     23.32     20.94     23.54     22.03     23.65     25.69     24.42     24.53     24.52       19     27.11     23.22     20.95     23.48     21.88     23.66     25.55     24.07     24.42     24.49  | 22.42  | 24.72  |
| 15     27.09     23.94     20.66     23.32     22.56     23.71     25.69     24.55     24.58     24.25       16     27.12     23.65     20.92     23.49     22.74     23.89     25.68     24.57     24.42     24.40       17     27.13     23.48     21.14     23.46     22.38     23.75     25.65     24.44     24.41     24.43       18     27.13     23.32     20.94     23.54     22.03     23.65     25.69     24.42     24.53     24.52       19     27.11     23.22     20.95     23.48     21.88     23.66     25.55     24.07     24.42     24.49   | 22.96  | 24.27  |
| 16     27.12     23.65     20.92     23.49     22.74     23.89     25.68     24.57     24.42     24.40       17     27.13     23.48     21.14     23.46     22.38     23.75     25.65     24.44     24.41     24.43       18     27.13     23.32     20.94     23.54     22.03     23.65     25.69     24.42     24.53     24.52       19     27.11     23.22     20.95     23.48     21.88     23.66     25.55     24.07     24.42     24.49  | 23.18  | 23.81  |
| 17 27.13 23.48 21.14 23.46 22.38 23.75 25.65 24.44 24.41 24.43 18 27.13 23.32 20.94 23.54 22.03 23.65 25.69 24.42 24.53 24.52 19 27.11 23.22 20.95 23.48 21.88 23.66 25.55 24.07 24.42 24.49   | 23.46  | 23.52  |
| 18   | 23.61  | 23.35  |
| 19 27.11 23.22 20.95 23.48 21.88 23.66 25.55 24.07 24.42 24.49   | 23.79  | 23.33  |
|  | 23.99  | 23.18  |
| 20 27.17 23.24 21.00 23.57 21.87 23.79 25.58 23.99 24.21 24.54   | 24.14  | 23.31  |
|  | 24.21  | 23.43  |
|  | 24.07  | 23.55  |
|  | 24.00  | 23.63  |
|  | 23.97  | 23.78  |
|  | 23.96  | 23.80  |
| 25 27.28 23.42 22.46 23.81 20.62 24.23 24.15 24.15 22.80 24.60   | 23.95  | 23.93  |
|  | 24.11  | 23.91  |
|  | 24.29  | 23.99  |
|  | 24.29  | 23.97  |
|  | 24.21  | 23.96  |
|  | 24.15  | 23.96  |
| 31 26.12 22.98 23.68 24.73 24.63 25.05   | 23.97  |  |
|  | 25.22  | 24.72  |
| HIGH 26.12 22.59 20.66 22.91 20.62 21.89 23.73 23.72 22.80 23.44   | 22.42  | 23.18  |



HIGH 20.62

#### RIO SALINAS TO RIO JACAGUAS BASINS

180052066305000. Local number, 88. LOCATION.--Lat 18°00'52", long 66°30'50". Owner: Luce and Co.

Name: Hacienda Potala.

Name: maclenda rotals.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 19 in (0.48 m). Depth 143 ft (43.6 m).

DATUM.--Elevation of land-surface datum is about 42.65 ft (13 m) above mean sea level, from topographic map.

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 March 7, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD. --Highest water level measured, 4.50 ft (1.37 m) below land-surface datum; Feb. 26, 1971; lowest water level measured, 37.89 ft (11.55 m) below land-surface datum, July 16, 1968.

### WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date    | Water<br>level | Date    | Water<br>level | Date    | Water<br>level | Date   | Water<br>level |
|---------|----------------|---------|----------------|---------|----------------|--------|----------------|
| Oct. 18 | 18.91          | Dec. 10 | 014.17         | Feb. 19 | c23.55         | Mar. 7 | 18.52          |

175822066134800. Local number, 124. LOCATION.--Lat 17°58'22", long 66°13'48". Owner: P.R. Aqueduct and Sewer Authority. Name: Coqui 2.

AQUIFER . -- Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 16 to 12 in (0.40 to 0.30 m), cased 16 in (0.40 m) 20-40 ft (6.1-12.2 m), 12 in (0.30 m) 2-20 ft (0.61-6.1 m); perforated 20-118 ft (6.1-36.0 m). Depth 118 ft (36.0 m).

DATUM.-Elevation of land-surface datum is about 26 ft (7.9 m) above mean sea level, from topographic map. 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 March 7, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD. --Highest water level measured, a9.25 ft (a2.82 m) below land-surface datum, Nov. 29, 1979; lowest water level measured, a54.70 ft (a16.67 m) below land-surface datum, July 7, 1977.

## WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date               | Water<br>level   | Date               | Water<br>level   | Date    | Water<br>level | Date   | Water<br>level |
|--------------------|------------------|--------------------|------------------|---------|----------------|--------|----------------|
| Oct. 18<br>Nov. 16 | a11.41<br>a10.31 | Dec. 11<br>Jan. 29 | a10.04<br>a21.60 | Feb. 20 | a39.57         | Mar. 7 | a37.01         |

175750066225800. Local number, 144.

LOCATION .-- Lat 17057'50", long 66022'58".

Owner: P.R. Aqueduct and Sewer Authority. Name: Jauca south well, site 1. AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in (0.20 m), cased 0-50 ft (0-15.2 m), perforated 45-50 ft (13.7-15.2 m). Depth 50 ft (15.2 m).

DATUM.--Altitude of land-surface datum is 15.98 ft (4.87 m) above mean sea level.

Measuring Point: Hole side of 8 in (0.20 m) casing, 3.2 ft (0.98 m) above land-surface datum.

Measuring Point: nois side of 8 in (0.20 m) Casing, 3.2 it (0.30 m) above land-surface datum.

PERIOD OF RECORD. --September 1980 to March 7, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD. --Highest water level measured, 8.86 ft (2.70 m) below land-surface datum, Dec. 10, 1984; lowest water level measured, 11.90 ft (3.63 m) below land-surface datum, Feb. 9, 1983.

| Date               | Water<br>level | Date               | Water<br>level | Date    | Water<br>level | Date   | Water |
|--------------------|----------------|--------------------|----------------|---------|----------------|--------|-------|
| Oct. 18<br>Nov. 26 | 9.76<br>9.14   | Dec. 10<br>Jan. 29 | 8.86<br>9.54   | Feb. 19 | 9.58           | Mar. 7 | 9.68  |

a Pumping.

c Pumping nearby well.

#### RIO SALINAS TO RIO JACAGUAS BASINS

175750066225801. Local number, 145. LOCATION.--Lat 17°57'50", long 66°22'58". Owner: P.R. Aqueduct and Sewer Authority.

Name: Jauca north well, site 1.

AQUIFER .-- Alluvium of Quaternary Age.

AQUIFEK.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in (0.20 m), cased 0-250 ft (0-76.2 m),
perforated 245-250 ft (74.7-76.2 m). Depth 250 ft (76.2 m).

DATUM.--Elevation of land-surface datum is 16.11 ft (4.91 m) above mean sea level.

Measuring point: Hole side of 8 in (0.20 m) casing, 1.5 ft (0.46 m) above land-surface datum.

REMARKS .-- Observation well.

PERIOD OF RECORD. --September 1980 to March 7, discontinued.

EXTREMES FOR PERIOD OF RECORD. --Highest water level measured, 9.09 ft (2.77 m) below land-surface datum, Dec. 10, 1984; lowest water level measured, 13.23 ft (4.03 m) below land-surface datum, Jan. 6, 1983.

## WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date    | Water<br>level | Date    | Water<br>level | Date    | Water<br>level | Date   | Water<br>level |
|---------|----------------|---------|----------------|---------|----------------|--------|----------------|
| Oct. 18 | 10.48          | Dec. 10 | 9.09           | Feb. 19 | 9.68           | Mar. 7 | 9.92           |

175734066233300. Local number, 146. LOCATION.--Lat 17°57'34", long 66°23'33". Owner: P.R. Aqueduct and Sewer Authority.

Name: Hacienda Alomar west well, site 3.

AQUIFER .-- Alluvium of Quaternary Age.

WELL CHARACTERISTICS.—Drilled unused water-table well, diameter 8 in (0.20 m), cased 0-70 ft (0-21.3 m), perforated 65-70 ft (19.8-21.3 m). Depth 70 ft (21.3 m).

DATUM.—Elevation of land-surface datum is 18.74 ft (5.71 m) above mean sea level.

Measuring point: Hole side of 8 in (0.20 m) casing, 2.5 ft (0.76 m) above land-surface datum.

REMARKS.—Observation well.

PERIOD OF RECORD.--June 1981 to March 7, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 7.43 ft (2.26 m) below land-surface datum, Oct. 18, 1984; lowest water level measured, 12.49 ft (3.81 m) below land-surface datum, Aug. 17, 1981.

### WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date               | Water<br>level | Date               | Water<br>level | Date    | Water<br>level | Date   | Water<br>level |
|--------------------|----------------|--------------------|----------------|---------|----------------|--------|----------------|
| Oct. 18<br>Nov. 23 | 7.43<br>8.78   | Dec. 10<br>Jan. 29 | 8.95<br>9.22   | Feb. 19 | 9.29           | Mar. 7 | 8.37           |

175734066233301. Local number, 147. LOCATION.--Lat 17°57'34", long 66°23'33". Owner: P.R. Aqueduct and Sewer Authority.

Name: Hacienda Alomar east well, site 3. AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS .-- Drilled unused water-table well, diameter 8 in (0.20 m), cased 0-250 ft (0-76.2 m),

perforated 245-250 ft (74.7-76.2 m). Depth 250 ft (76.2 m).

DATUM.--Elevation of land-surface datum is 18.80 ft (5.73 m) above mean sea level.

Measuring point: Top of 8 in (0.20 m) casing, 3.60 ft (1.10 m) above land-surface datum. REMARKS.--Observation well.

PERIOD OF RECORD.--June 1981 to March 7, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.48 ft (3.80 m) below land-surface datum, Oct. 18, 1984; lowest water level measured, 15.05 ft (4.59 m) below land-surface datum, Aug. 7, 1984.

| Date               | Water<br>level | Date               | Water<br>level | Date    | Water<br>level | Date   | Water<br>level |
|--------------------|----------------|--------------------|----------------|---------|----------------|--------|----------------|
| Oct. 18<br>Nov. 23 | 12.48<br>12.88 | Dec. 10<br>Jan. 29 | 12.94          | Feb. 19 | 13.49          | Mar. 7 | 13.30          |

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#### RIO SALINAS TO RIO JACAGUAS BASINS

175756066244000. Local number, 148.
LOCATION.--Lat 17°57'56", long 66°24'40".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Playa Santa Isabel east well, site 2.

AQUIFER .-- Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in (0.20 m), cased 0-250 ft (0-76.2 m), diameter 2 in (0.05 m), cased 0-200 ft (0-61.0 m), perforated 195-200 ft (59.4-61.0 m), concreted 200-250 ft (61.0-76.2 m). Depth 200 ft (61.0 m).

DATUM.--Elevation of land-surface datum is 21.20 ft (6.46 m) above mean sea level.

Measuring point: Hole side of 8 in (0.20 m) casing, 2.8 ft (0.85 m) above land-surface datum.

REMARKS . -- Observation well.

PERIOD OF RECORD.--January 1981 to March 7, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.82 ft (3.91 m) below land-surface datum, Dec. 23, 1981; lowest water level measured, 29.45 (8.98 m) below land-surface datum, Jan. 13, 1981.

#### WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date    | Water<br>level | Date    | Water<br>level | Date    | Water<br>level | Date   | Water<br>level |
|---------|----------------|---------|----------------|---------|----------------|--------|----------------|
| Oct. 18 | 16.55          | Dec. 10 | 14.00          | Feb. 19 | 14.79          | Mar. 7 | 14.81          |

175756066244001. Local number, 149. LOCATION.--Lat 17°57'56", long 66°24'40". Owner: P.R. Aqueduct and Sewer Authority.

Owner: P.R. Aqueduct and Sewer Authority.

Name: Playa Santa Isabel west well, site 2.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in (0.20 m), cased 0-250 ft (0-76.2 m), diameter 2 in (0.05 m), cased 0-250 ft (0-76.2 m), perforated 245-250 ft (74.7-76.2 m), concreted 200-250 ft (61.0-76.2 m). Depth 250 ft (76.2 m).

DATUM.--Elevation of land-surface datum is 21.20 ft (6.46 m) above mean sea level, from topographic map.

Measuring point: Hole side of 8 in (0.20 m) casing, 2.8 ft (0.85 m) above land-surface datum.

Measuring point: Hole side of 8 in (U.20 m) casing, Z.8 ft (U.55 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--January 1981 to March 7, 1985, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.20 ft (3.41 m) below land-surface, Dec. 10,
1984; lowest water level measured, 26.92 ft (8.21 m) below land-surface datum, Jan. 13, 1981.

| Date               | Water<br>level | Date               | Water<br>level | Date    | Water<br>level | Water<br>level |       |
|--------------------|----------------|--------------------|----------------|---------|----------------|----------------|-------|
| Oct. 18<br>Nov. 23 | 14.23<br>12.46 | Dec. 10<br>Jan. 29 | 11.20<br>13.12 | Feb. 19 | 12.34          | Mar. 7         | 13.02 |

#### RIO INABON TO RIO LOCO BASINS

175922066495800. Local number, 16. LOCATION. -- Lat 17°59'22", long 66°49'58".

Owner: Sucesion Lluveras.

Name: Central San Francisco. AQUIFER.--Alluvium of Quaternary Age.

AQUIFKK.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 20 in (0.51 m). Depth 185 ft (56.4).

DATUM.--Elevation of land-surface datum is about 30 ft (9.1 m) above mean sea level, from topographic map.

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

REMARKS.--Recording observation well (not. ), 1985. discontinued.

PERIOD OF RECORD.--November 1960 to March 5, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.35 ft (0.11 m) below land-surface datum, Oct. 15, 1984; lowest water level measured, 35.76 ft (10.90 m) below land-surface datum, Mar. 7, 1975.

### WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date               | Water<br>level | Date   | Date Water level |         | Water<br>Date level Date |        |      |
|--------------------|----------------|--------|------------------|---------|--------------------------|--------|------|
| Oct. 15<br>Nov. 23 | 0.35           | Dec. 6 | 4.68             | Feb. 14 | 6.18                     | Mar. 5 | 7.39 |

180057066361000. 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.

AQUIFER.--Ponce Limestone of Tertiary Age.

WELL CHARACTERISTICS.--Drilled public supply artesian well, diameter 20 in (0.51 m), cased 0-300 ft (0-91.4 m), perforated 80-300 ft (24.4-91.4 m). Depth 300 ft (91.4 m).

DATUM.--Elevation of land-surface datum is about 53 ft (16.2 m) above mean sea level, from topographic map.

Measuring point: Bottom edge 1.5 in (0.04 m) 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 March 7, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 17.43 ft (5.31 m) below land-surface datum, Dec. 14, 1960; lowest water level measured, 97.61 ft (29.75 m) below land-surface datum, Aug. 8, 1967.

### WATER LEVEL, IN FERT BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date               | Water<br>level Date |                   | Water<br>level   | Date    | Water<br>level | Date   | Water<br>level |  |
|--------------------|---------------------|-------------------|------------------|---------|----------------|--------|----------------|--|
| Oct. 17<br>Nov. 23 | a81.79<br>a76.57    | Dec. 5<br>Jan. 22 | a79.50<br>a85.29 | Feb. 14 | a87.70         | Mar. 7 | а84.74         |  |

180150066474900. 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 (0.41 to 0.30 m), cased 16 in (0.41 m) 0-40 ft (0-12.2 m), 12 in (0.30 m) 0-120 ft (0-36.6 m), perforated 40-120 ft (12.2-36.6 m). Depth 120 ft (36.6 m).

120 ft (36.6 m).

DATUM.--Rlevation of land-surface datum is about 59 ft (18.0 m) above mean sea level, from topographic map.

Measuring point: Top of 1.0 in (0.02 m) pipe in pump base, 1.1 ft (0.34 m) above land-surface datum.

REMARKS.--Observation well. Water levels affected by pumpage.

PERIOD OF RECORD.--November 1958 to December 7, 1984, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 25.72 ft (7.84 m) below land-surface datum, Oct. 8, 1959; lowest water level measured, 75.1 ft (22.89 m) below land-surface datum, June 27, 1972.

|         | Water  |         | Water  |        | Water  |
|---------|--------|---------|--------|--------|--------|
| Date    | level  | Date    | level  | Date   | level  |
| Oct. 17 | a37.53 | Nov. 23 | a32.80 | Dec. 7 | a31.72 |

a Pumping.

#### RIO INABON TO RIO LOCO BASINS

180110066473500. 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.

AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 16 in (0.41 m), cased 0-103 ft (0-31.4 m),
perforated 39-103 ft (11.9-31.4 m). Depth 102 ft (31.1 m).

DATUM.--Elevation of land-surface datum is about 34 ft (10.4 m) above mean sea level, from topographic map.
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 March 5, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 8.56 ft (2.61 m) below land-surface datum, Oct. 21,
1960; lowest water level measured, 90.50 ft (27.58 m) below land-surface datum, Aug. 13, 1976.

## WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date               | Water<br>level | Date              | Water<br>level   | Date    | Water<br>level | Date   | Water<br>level |  |
|--------------------|----------------|-------------------|------------------|---------|----------------|--------|----------------|--|
| Oct. 15<br>Nov. 23 | a15.68         | Dec. 6<br>Jan. 24 | a15.25<br>a15.60 | Feb. 14 | a15.20         | Mar. 5 | a15.53         |  |

180058066502700. 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 .- Rievation of land-surface datum is about 66 ft (20.1 m) above mean sea level, from topographic map.

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 December 6, 1984, discontinued.

EXTREMES FOR PERIOD OF RECORD. --Highest water level measured, 0.46 ft (0.14 m) below land-surface datum; June 14, 1979; lowest water level measured, 44.95 ft (13.70 m) below land-surface datum, May 20, 1974.

|         | Water |         | Water |        | Water |
|---------|-------|---------|-------|--------|-------|
| Date    | level | Date    | level | Date   | level |
| Oct. 15 | 11.49 | Nov. 23 | 5.48  | Dec. 6 | 5.38  |

a Pumping.

WTR YR 1985

MBAN 7.49

#### RIO INABON TO RIO LOCO BASINS

180133066503300. Local number, 132. LOCATION.--Lat 18°01'33", long 66°50'33". Owner: Pittsburg Plate Glass 4. Name: Yauco 2.

Owner: Pittsburg Plate Glass 7.

Name: Yauco 2.

AQUIFER.--Limestone of Tertiary Age.

WELL CHARACTERISTICS.--Drilled observation well, cased 20 in (0.51 m) 0-20 ft (0-6.1 m), 12 in (0.30 m) perforated pipe 20-84 ft (6.1-25.61 m), 10 in (0.25 m) perforated pipe 84-190 ft (25.61-57.93 m). Depth 190 ft (57.93 m).

DATUM.--Elevation of land-surface datum is about 75 ft (22.87 m) above mean sea level, from topographic map.

Measuring point: Top of shelter floor, 2.35 ft (0.72 m) above land-surface datum.

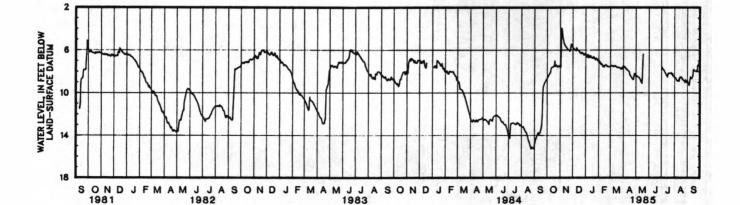
REMARKS.--Recording observation well.

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 water level, 36.91 ft (11.25 m) below land-surface datum, June 27, 1974.

WATER LEVEL, IN FEET BRIOW LAND-SURFACK DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS AT 1200

| DAY  | OCT  | NOV  | DEC  | JAN  | FRB  | MAR  | APR  | MAY  | JUN | JUL  | AUG  | SRP  |
|------|------|------|------|------|------|------|------|------|-----|------|------|------|
| 1    | 8.61 | 7.49 | 5.72 | 6.37 | 7.12 | 7.51 | 7.46 | 8.33 |     |      | 8.54 | 8.86 |
| 2    | 8.55 | 7.56 | 5.80 | 6.45 | 7.03 | 7.50 | 7.51 | 8.38 |     | 7.57 | 8.56 | 9.06 |
| 3    | 8.50 | 5.90 | 5.83 | 6.60 | 7.05 | 7.46 | 7.55 | 8.41 |     | 7.68 | 8.64 | 9.11 |
| 4    | 8.35 | 3.96 | 5.88 | 6.64 | 7.21 | 7.44 | 7.56 | 8.45 |     | 7.75 | 8.57 | 9.17 |
| 5    | 8.30 | 4.01 | 5.92 | 6.45 | 7.15 | 7.46 | 7.60 | 8.48 |     | 7.78 | 8.73 | 9.26 |
| 6    | 8.21 | 4.33 | 5.95 | 6.45 | 7.30 | 7.46 | 7.67 | 8.50 |     | 7.83 | 8.79 | 9.06 |
| 7    | 8.17 | 4.72 | 5.98 | 6.66 | 7.35 | 7.51 | 7.74 | 8.53 |     | 7.87 | 8.85 | 8.71 |
| 8    | 8.13 | 4.95 | 6.01 | 6.48 | 7.27 | 7.54 | 7.75 | 8.56 |     | 7.97 | 8.89 | 8.50 |
| 9    | 8.03 | 5.12 | 6.04 | 6.66 | 7.34 | 7.50 | 7.78 | 8.59 |     | 8.04 | 8.89 | 8.61 |
| 10   | 7.74 | 5.35 | 5.78 | 6.69 | 7.37 | 7.48 | 7.82 | 8.66 |     | 8.12 | 8.87 | 8.66 |
| 11   | 7.64 | 5.40 | 5.86 | 6.66 | 7.53 | 7.51 | 7.89 | 8.71 |     | 8.18 | 8.76 | 8.66 |
| 12   | 7.62 | 5.52 | 5.95 | 6.53 | 7.49 | 7.46 | 7.91 | 8.82 |     | 8.29 | 8.85 | 8.51 |
| 13   | 7.57 | 5.59 | 6.02 | 6.55 | 7.54 | 7.47 | 7.94 | 8.92 |     | 8.38 | 8.58 | 8.46 |
| 14   | 7.54 | 5.67 | 6.02 | 6.68 | 7.56 | 7.52 | 7.97 | 9.02 |     | 8.32 | 8.53 | 8.24 |
| 15   | 7.54 | 5.71 | 6.04 | 6.70 | 7.43 | 7.54 | 8.04 | 9.08 |     | 8.47 | 8.58 | 7.79 |
| 16   | 7.55 | 5.74 | 6.06 | 6.73 | 7.41 | 7.56 | 8.23 | 8.65 |     | 8.34 | 8.47 | 7.83 |
| 17   | 7.45 | 5.81 | 6.15 | 6.73 | 7.38 | 7.62 | 8.35 | 7.34 |     | 8.15 | 8.48 | 7.87 |
| 18   | 7.45 | 5.87 | 6.26 | 6.76 | 7.41 | 7.61 | 8.39 | 6.39 |     | 8.16 | 8.55 | 7.93 |
| 19   | 7.53 | 5.92 | 6.29 | 6.63 | 7.39 | 7.62 | 8.47 |      |     | 8.16 | 8.62 | 7.94 |
| 20   | 7.57 | 5.96 | 6.29 | 6.64 | 7.44 | 7.63 | 8.50 |      |     | 8.14 | 8.74 | 7.96 |
| 21   | 7.49 | 5.97 | 6.33 | 6.67 | 7.50 | 7.61 | 8.57 |      |     | 8.14 | 8.73 | 7.98 |
| 22   | 7.38 | 6.02 | 6.22 | 6.80 | 7.54 | 7.62 | 8.68 |      |     | 8.16 | 8.76 | 7.93 |
| 23   | 7.40 | 6.09 | 6.23 | 6.83 | 7.55 | 7.65 | 8.68 |      |     | 8.17 | 8.87 | 7.95 |
| 24   | 7.46 | 6.08 | 6.25 | 6.90 | 7.55 | 7.68 | 8.74 |      |     | 8.09 | 8.82 | 7.83 |
| 25   | 7.54 | 6.03 | 6.27 | 6.77 | 7.54 | 7.72 | 8.70 | 757  |     | 8.21 | 8.83 | 7.40 |
| 26   | 7.57 | 5.70 | 6.39 | 6.79 | 7.54 | 7.77 | 8.48 |      |     | 8.28 | 9.02 | 7.42 |
| 27   | 7.54 | 5.43 | 6.41 | 6.80 | 7.55 | 7.67 | 8.20 |      |     | 8.34 | 8.96 | 7.48 |
| 28   | 7.46 | 5.44 | 6.47 | 6.82 | 7.56 | 7.68 | 8.18 |      |     | 8.22 | 8.78 | 7.19 |
| 29   | 7.47 | 5.65 | 6.35 | 6.98 |      | 7.74 | 8.36 |      |     | 8.40 | 8.93 | 7.31 |
| 30   | 7.53 | 5.68 | 6.35 | 6.94 |      | 7.56 | 8.28 |      |     | 8.46 | 9.01 | 7.36 |
| 31   | 7.54 |      | 6.41 | 6.98 |      | 7.52 |      |      |     | 8.50 | 8.89 |      |
| LOW  | 8.61 | 7.56 | 6.47 | 6.98 | 7.56 | 7.77 | 8.74 | 9.08 |     | 8.50 | 9.02 | 9.26 |
| HIGH | 7.38 | 3.96 | 5.72 | 6.37 | 7.03 | 7.44 | 7.46 | 6.39 |     | 7.57 | 8.47 | 7.19 |



HIGH 3.96

#### RIO INABON TO RIO LOCO BASINS

180120066503200. 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.

WRILL 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.--Elevation of land-surface datum is about 87 ft (26.5 m) above mean sea level, from topographic map.

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 December 6, 1984, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 7.90 ft (2.41 m) below land-surface datum; June 14, 1979; lowest water level measured, 37.84 ft (11.53 m) below land-surface datum, June 27, 1974.

# WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

|         | Water |         | Water |        | Water |
|---------|-------|---------|-------|--------|-------|
| Date    | level | Date    | level | Date   | level |
| Oct. 15 | 14.60 | Nov. 23 | 10.59 | Dec. 6 | 10.46 |

355

#### RIO INABON TO RIO LOCO BASINS

175950066354200. Local number, 141.
LOCATION.--Lat 17°59'50", long 66°36'42".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Restaurada 8A.
AQUIFRE.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused public supply well, diameter 16-10 in (0.41-0.25 m), cased 16 in (0.41 m)
2-20 ft (0.6-6.1 m), perforated 20-130 ft (6.1-39.6 m), 10 in (0.25 m) 128-165 ft (39.0-50.3 m), perforated.
Depth 165 ft (50.3 m).
DATUM.--Elevation of land-surface datum is about 24 ft (7.3 m) above mean sea level, from topographic map.
measuring point: Bottom edge of hole on side of casing, 1.9 ft (0.58 m) above land-surface datum, 26.15 ft
(7.97 m) above mean sea level.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--October 1981 to current year.

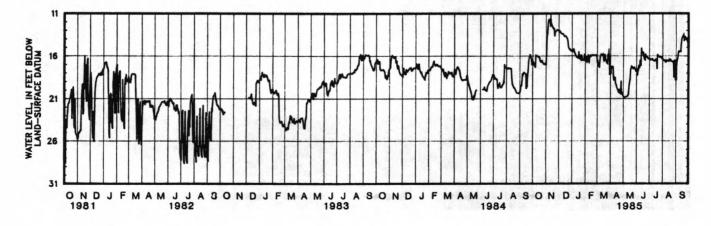
PERIOD OF RECORD. --October 1981 to current year.

EXTREMES FOR PERIOD OF RECORD. --Highest water level, 15.65 ft (4.77 m) below land-surface datum, Aug. 30, 1983; lowest water level, 28.59 ft (8.714 m) below land-surface datum, July 9, 1982.

| WATER LEVEL | , IN F | RRL BELO | LAND-SURF   | ACE DATUM,  | WATER  | YEAR | OCTOBER | 1984 | TO SEPTEMBER | 1985 |
|-------------|--------|----------|-------------|-------------|--------|------|---------|------|--------------|------|
|             |        | IN       | STANTANBOUS | OBSERVATION | TA BNO | 1200 |         |      |              |      |
|             |        |          |             |             |        |      |         |      |              |      |

| DAY  | OCT   | NOV   | DEC   | JAN   | FKB   | MAR   | APR   | MAY   | JUN   | JUL   | AUG   | SEP   |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1    | 16.61 | 17.04 | 13.05 | 15.46 | 16.53 | 16.74 | 17.50 | 20.70 | 17.72 | 16.28 | 16.38 | 18.80 |
| 2    | 16.68 | 15.70 | 13.05 | 15.41 | 16.65 | 16.59 | 18.05 | 20.76 | 17.53 | 16.34 | 16.43 | 18.74 |
| 3    | 16.84 | 13.56 | 13.06 | 15.50 | 16.09 | 16.97 | 17.29 | 20.81 | 18.23 | 16.40 | 16.48 | 16.68 |
| 4    | 16.93 | 13.45 | 13.14 | 15.42 | 16.51 | 17.09 | 17.34 | 20.84 | 17.71 | 16.47 | 16.50 | 16.42 |
| 5    | 17.10 | 12.79 | 13.23 | 15.19 | 16.66 | 17.20 | 17.22 | 20.82 | 17.63 | 16.46 | 16.55 | 16.32 |
| 6    | 17.23 | 12.10 | 13.32 | 15.49 | 16.18 | 17.26 | 17.27 | 20.78 | 17.12 | 16.43 | 16.52 | 15.90 |
| 7    | 17.27 | 11.77 | 13.36 | 15.58 | 16.07 | 16.62 | 17.27 | 20.77 | 17.36 | 16.38 | 16.63 | 15.43 |
| 8    | 15.89 | 11.71 | 13.40 | 15.69 | 15.88 | 16.19 | 18.26 | 20.76 | 17.30 | 16.35 | 16.69 | 15.55 |
| 9    | 15.92 | 11.72 | 13.39 | 15.84 | 16.63 | 15.97 | 18.81 | 20.74 | 16.50 | 16.43 | 16.47 | 15.46 |
| 10   | 15.96 | 11.79 | 13.36 | 15.95 | 16.72 | 15.78 | 18.54 | 20.72 | 16.89 | 16.50 | 16.62 | 15.41 |
| 11   | 15.99 | 12.21 | 13.43 | 16.01 | 16.14 | 15.81 | 18.50 | 20.68 | 16.99 | 16.55 | 16.60 | 15.41 |
| 12   | 16.03 | 11.60 | 13.52 | 16.14 | 15.99 | 15.81 | 18.54 | 20.59 | 15.09 | 16.58 | 16.58 | 15.49 |
| 13   | 16.06 | 12.19 | 13.61 | 16.17 | 15.91 | 15.81 | 19.19 | 20.49 | 15.47 | 16.60 | 16.52 | 14.66 |
| 14   | 16.10 | 12.29 | 13.67 | 16.20 | 16.05 | 15.97 | 19.32 | 19.85 | 15.65 | 16.55 | 16.58 | 14.17 |
| 15   | 16.13 | 12.44 | 13.70 | 16.26 | 16.02 | 15.82 | 19.45 | 19.32 | 15.75 | 16.41 | 16.58 | 13.87 |
| 16   | 16.17 | 12.55 | 13.68 | 16.17 | 15.96 | 16.42 | 19.64 | 18.95 | 15.57 | 16.38 | 16.43 | 13.74 |
| 17   | 16.20 | 12.68 | 13.67 | 15.52 | 15.91 | 16.57 | 19.82 | 18.65 | 15.64 | 16.42 | 16.56 | 13.66 |
| 18   | 16.47 | 12.75 | 13.75 | 16.05 | 15.87 | 16.37 | 19.92 | 17.53 | 16.07 | 16.48 | 16.56 | 13.63 |
| 19   | 16.65 | 12.83 | 13.83 | 16.30 | 15.89 | 15.86 | 20.11 | 17.48 | 16.29 | 17.45 | 16.39 | 13.48 |
| 20   | 16.70 | 12.77 | 13.90 | 16.39 | 15.88 | 15.92 | 20.25 | 17.19 | 16.39 | 15.82 | 16.50 | 14.19 |
| 21   | 16.65 | 13.61 | 14.03 | 16.43 | 15.90 | 16.42 | 20.29 | 17.28 | 16.45 | 16.05 | 16.59 | 14.06 |
| 22   | 16.55 | 13.26 | 14.25 | 15.87 | 15.94 | 16.64 | 19.90 | 17.28 | 15.78 | 16.02 | 16.61 | 13.71 |
| 23   | 16.58 | 13.10 | 14.84 | 16.32 | 15.96 | 16.78 | 20.27 | 17.34 | 16.08 | 16.00 | 16.67 | 13.85 |
| 24   | 16.76 | 13.08 | 15.04 | 15.97 | 15.93 | 16.84 | 20.37 | 17.49 | 16.04 | 16.07 | 16.70 | 14.04 |
| 25   | 16.83 | 13.03 | 15.13 | 16.34 | 15.92 | 16.90 | 20.43 | 17.48 | 16.07 | 16.15 | 16.66 | 14.04 |
| 26   | 16.90 | 13.06 | 15.18 | 16.48 | 15.88 | 15.80 | 18.96 | 17.37 | 16.13 | 16.14 | 16.62 | 13.97 |
| 27   | 16.97 | 12.92 | 15.27 | 16.51 | 15.88 | 16.05 | 20.17 | 17.33 | 16.19 | 16.09 | 18.46 | 14.20 |
| 28   | 16.93 | 12.91 | 15.34 | 16.52 | 15.93 | 15.51 | 20.30 | 17.52 | 16.30 | 16.10 | 18.42 | 14.27 |
| 29   | 16.89 | 12.96 | 15.25 | 16.43 |       | 16.05 | 20.38 | 17.54 | 16.34 | 16.16 | 16.49 | 14.88 |
| 30   | 16.96 | 13.01 | 15.38 | 15.78 |       | 18.15 | 20.64 | 17.74 | 16.32 | 16.27 | 17.43 | 14.65 |
| 31   | 17.03 |       | 15.43 | 16.36 |       | 17.53 |       | 17.83 |       | 16.35 | 18.78 |       |
| LOW  | 17.27 | 17.04 | 15.43 | 16.52 | 16.72 | 18.15 | 20.64 | 20.84 | 18.23 | 17.45 | 18.78 | 18.80 |
| HIGH | 15.89 | 11.60 | 13.05 | 15.19 | 15.87 | 15.51 | 17.22 | 17.19 | 15.09 | 15.82 | 16.38 | 13.48 |

WTR YR 1985 MKAN 16.24 HIGH 11.60 20.84



#### RIO GUANAJIBO BASIN

180934067050800. Local number, 40.
LOCATION.--Lat 18°09'34", long 67°05'08".
Owner: P.R. Aqueduct and Sower Authority.

Name: Rosario.

AQUIFER .-- Alluvium of Quaternary Age.

AQUIFEK.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled public supply artesian well, diameter 16 to 12 in (0.41 to 0.30 m), cased 16 in (0.41 m) 0-30 ft(0-9.1 m), cased 12 in (0.30 m) 0-60 ft (0-18.3 m); perforated 10-60 ft (3.0-18.3 m).

Depth 105 (32.0 m).

DATUM.--Elevation of land-surface datum is about 164 ft (50.0 m) above mean sea level, from topographic map.

Measuring point: Lower edge of 0.75 in (0.02 m) pipe, 2.7 ft (0.82 m) above land-surface datum.

## WATER LEVEL, IN FRET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date    | Water<br>level | Date    | Water<br>level | Date    | Water<br>level |         |        |
|---------|----------------|---------|----------------|---------|----------------|---------|--------|
| Oct. 11 | 11.07          | Nov. 16 | a13.62         | Dec. 19 | a13.92         | Jan. 17 | a10.95 |

181018067091700. Local number, 43.

LOCATION.--Lat 18°10'18", long 67°09'17". Owner: Mayaguez Sugar Co.

Name: Central Rochelaise.
AQUIFER.--Volcanic rocks of Cretaceous Age.

WELL CHARACTERISTICS .-- Drilled unused water-table well, diameter 12 in (0.30 m), cased 0-45 ft (0-13.7 m),

perforated 0-45 ft (0-13.7 m). Depth 80 ft (2.4 m).

DATUM.--Elevation of land-surface datum is about 7 ft (2.1 m) above mean sea level, from topographic map.

Measuring point: Top of 12 in (0.30 m) casing, 1.9 ft (0.58 m) above land-surface datum.

Measuring point: Top of 12 in (0.30 m) casing, 1.9 it (0.38 m) above land-surface datum.

REMARKS.--Observation well.

PERIOD OF RECORD.--August 1959 to January 17, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, +0.60 ft (+0.18 m) above land-surface datum, Oct. 10, 1984; lowest water level measured, 2.70 ft (0.82 m) below land-surface datum, Apr. 15, 1970.

|         | Water |         | Water |         | Water |         | Water |
|---------|-------|---------|-------|---------|-------|---------|-------|
| Date    | level | Date    | level | Date    | level | Date    | level |
| Oct. 10 | +0.60 | Nov. 15 | +0 57 | Dec. 19 | +0.57 | Jan. 17 | +0.40 |

<sup>+</sup> Above land-surface datum.

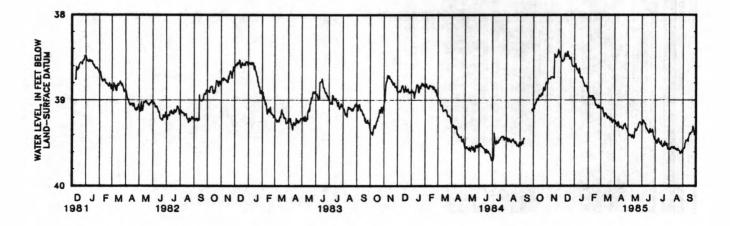
a Pumping.

### GROUND-WATER LEVELS RIO GUANAJIBO BASIN

180132067033800. 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.
WBLL CHARACTERISTICS.--Drilled unused irrigation well, diameter 12 in (0.30 m). Depth 200 ft (60.98 m).
DATUM.--Elevation of land-surface datum is about 52.5 ft (16.0 m) above mean sea level, from topographic map.
Measuring point: Hole side of casing, 0.80 ft (0.24 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--December 1981 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 38.00 ft (11.58 m) below land-surface datum, Sept. 19, 1982; lowest water level, 39.70 ft (12.10 m) below land-surface datum, June. 29, 1984.

| WATER | LEVEL, | IN | PRET | BELOW | LAND- | SURFACE  | DATUM,  | WATER  | YBAR | OCTOBER | 1984 | TO | SEPTEMBER | 1985 |
|-------|--------|----|------|-------|-------|----------|---------|--------|------|---------|------|----|-----------|------|
|       |        |    |      | TMS   | TANTA | NROUS OF | REPVATI | ONG AT | 1200 | )       |      |    |           |      |

| DAY    | OCT   | NOV       | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL   | AUG   | SEP   |
|--------|-------|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1      | 39.10 | 38.81     | 38.50 | 38.60 | 38.91 | 39.10 | 39.24 | 39.37 | 39.27 | 39.46 | 39.56 | 39.59 |
| 2      | 39.09 | 38.79     | 38.51 | 38.61 | 38.94 | 39.09 | 39.24 | 39.39 | 39.28 | 39.48 | 39.57 | 39.56 |
| 3      | 39.10 | 38.75     | 38.53 | 38.60 | 38.95 | 39.09 | 39.25 | 39.39 | 39.25 | 39.46 | 39.56 | 39.56 |
| 4      | 39.05 | 38.75     | 38.54 | 38.58 | 38.95 | 39.10 | 39.27 | 39.41 | 39.23 | 39.48 | 39.57 | 39.56 |
| 5      | 39.05 | 38.75     | 38.55 | 38.61 | 38.97 |       | 39.26 | 39.41 | 39.24 | 39.50 | 39.56 | 39.55 |
| 6      | 39.03 |           | 38.54 | 38.64 | 38.95 | 39.11 | 39.27 | 39.41 | 39.25 | 39.49 | 39.54 | 39.50 |
| 7      | 39.03 |           | 38.53 | 38.63 | 38.96 | 39.14 | 39.30 | 39.40 | 39.26 | 39.46 | 39.54 | 39.49 |
| 8      | 39.00 | 38.75     | 38.53 | 38.64 | 38.95 | 39.16 | 39.29 | 39.41 | 39.27 | 39.45 | 39.54 | 39.46 |
| 9      | 38.99 | 38.73     | 38.51 | 38.66 | 38.95 | 39.19 | 39.25 | 39.43 | 39.27 | 39.44 | 39.54 | 39.47 |
| 10     | 38.98 | 38.73     | 38.47 | 38.68 | 38.96 | 39.16 | 39.26 | 39.43 | 39.31 | 39.48 | 39.55 | 39.47 |
| 11     | 39.00 | 38.73     | 38.45 | 38.65 | 38.98 | 39.15 | 39.29 | 39.40 | 39.33 | 39.49 | 39.56 | 39.47 |
| 12     | 39.00 |           | 38.46 | 38.63 | 38.95 | 39.15 | 39.32 | 39.41 | 39.32 | 39.49 | 39.54 | 39.45 |
| 13     | 38.96 | 38.73     | 38.49 | 38.66 | 38.97 | 39.16 | 39.31 | 39.43 | 39.34 | 39.51 | 39.54 | 39.47 |
| 14     | 38.94 |           | 38.49 | 38.73 | 38.99 | 39.17 | 39.31 | 39.44 | 39.34 | 39.51 | 39.56 | 39.43 |
| 15     | 38.95 | 38.74     | 38.46 | 38.73 | 38.98 | 39.18 | 39.30 | 39.42 | 39.35 | 39.48 | 39.56 | 39.41 |
| 16     | 38.96 | 38.74     | 38.43 | 38.74 | 39.01 | 39.21 | 39.31 | 39.37 | 39.36 | 39.53 | 39.57 | 39.38 |
| 17     | 38.96 |           | 38.43 | 38.73 | 39.04 | 39.20 | 39.32 | 39.33 | 39.38 | 39.53 | 39.56 | 39.38 |
| 18     | 38.93 |           | 38.49 | 38.73 | 39.06 | 39.19 | 39.33 | 39.35 | 39.38 | 39.54 | 39.57 | 39.39 |
| 19     | 38.92 | 38.49     | 38.48 | 38.75 | 39.05 | 39.20 | 39.33 | 39.35 | 39.34 | 39.53 | 39.58 | 39.37 |
| 20     | 38.94 | 38.50     | 38.50 | 38.77 | 39.06 | 39.21 | 39.33 | 39.35 | 39.33 | 39.50 | 39.57 | 39.37 |
| 21     | 38.94 |           | 38.52 | 38.79 | 39.07 | 39.20 | 39.29 | 39.34 | 39.35 | 39.50 | 39.56 | 39.37 |
| 22     | 38.91 |           | 38.52 | 38.80 | 39.09 | 39.23 | 39.29 | 39.32 | 39.37 | 39.52 | 39.58 | 39.35 |
| 23     | 38.86 |           | 38.50 | 38.81 | 39.06 | 39.23 | 39.28 | 39.31 | 39.36 | 39.48 | 39.58 | 39.30 |
| 24     | 38.85 | 38.47     | 38.50 | 38.84 | 39.06 | 39.23 | 39.27 | 39.30 | 39.36 | 39.50 | 39.58 | 39.31 |
| 25     | 38.89 | 38.43     | 38.54 | 38.83 | 39.09 | 39.21 | 39.27 | 39.27 | 39.34 | 39.51 | 39.60 | 39.33 |
| 26     | 38.88 |           | 38.58 | 38.84 | 39.07 | 39.24 | 39.30 | 39.26 | 39.36 | 39.52 | 39.62 | 39.37 |
| 27     | 38.88 |           | 38.60 | 38.83 | 39.08 | 39.26 | 39.32 | 39.25 | 39.41 | 39.50 | 39.60 | 39.39 |
| 28     | 38.83 | 38.43     | 38.60 | 38.83 | 39.08 | 39.24 | 39.33 | 39.25 | 39.42 | 39.51 | 39.61 | 39.39 |
| 29     | 38.80 | 38.46     | 38.61 | 38.85 |       | 39.23 | 39.33 | 39.26 | 39.45 | 39.56 | 39.61 | 39.37 |
| 30     | 38.79 | 38.50     | 38.61 | 38.87 |       | 39.23 | 39.35 | 39.27 | 39.44 | 39.57 | 39.58 | 39.37 |
| 31     | 38.80 |           | 38.60 | 38.90 |       | 39.24 |       | 39.28 |       | 39.57 | 39.59 |       |
| LOW    | 39.10 | 38.81     | 38.61 | 38.90 | 39.09 | 39.26 | 39.35 | 39.44 | 39.45 | 39.57 | 39.62 | 39.59 |
| HIGH   | 38.79 | 38.41     | 38.43 | 38.58 | 38.91 | 39.09 | 39.24 | 39.25 | 39.23 | 39.44 | 39.54 | 39.30 |
| WTR YR | 1985  | MEAN 39.1 | 2 LOW | 39.62 | H1GH  | 38.41 |       |       |       |       |       |       |



#### RIO YAGUEZ AND RIO GRANDE DE ANASCO BASINS

181233067083300. Local number, 45. LOCATION.--Lat 18°12'33", long 67°08'33". Owner: Cerveceria India, Inc. Name: Well 1, Mayaguez.
AQUIFER.--Alluvium of Quaternary Age. WELL CHARACTERISTICS .-- Drilled unused water-table well, diameter 12 in (0.30 m), cased 0-82 ft (0-25.0 m). WELL CHARACTERISTICS. -- Drilled unused water-table well, diameter 12 in (U.30 m), cased U-52 ft (U-25.0 m).

Depth 82 ft (25.0 m).

DATUM. -- Elevation of land-surface datum is about 23 ft (7.0 m) above mean sea level, from topographic map.

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. -- October 1960 to January 17, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD. -- Highest water level measured, 9.41 ft (2.87 m) below land-surface datum, Sept. 15, 1977; lowest water level measured, 29.97 ft (9.13 m) below land-surface datum, Jan. 20, 1966.

### WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

|         | Water |         | Water |         | Water |         | Water |
|---------|-------|---------|-------|---------|-------|---------|-------|
| Date    | level | Date    | level | Date    | level | Date    | level |
| Oct. 10 | 12.81 | Nov. 16 | 11.83 | Dec. 20 | 13.60 | Jan. 17 | 13.00 |

181522067090900. Local number, 53. LOCATION.--Lat 18°15'22", long 67°09'09". Owner: P.R. Ports Authority.

Owner: P.R. Ports Authority.
Name: Mayaguez Airport.
AQUIFER.--Limestone of Tertiary Age.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 8 in (0.20 m), 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.--Elevation of land-surface datum is about 20 ft (6.1 m) above mean sea level, from topographic map.
Measuring point: Slot in pump base, 0.4 ft (0.12 m) above land-surface datum.
REMARKS.--Observation well.
DEPUND OF PROPERTY.

PERIOD OF RECORD. --October 1960 to October 10, 1984, discontinued.

EXTREMES FOR PERIOD OF RECORD. --Highest water level measured, 0.96 ft (0.29 m) below land-surface datum, Oct. 5, 1978; lowest water level measured, 8.70 ft (2.65 m) below land-surface datum, Feb. 14, 1979.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATION

Water Date level 1.93 Oct. 10

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#### RIO CULEBRINAS BASIN

182228067113300. 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.

AQUIFER.--Limestone of Tertiary Age.

WELL CHARACTERISTICS.--Drilled public supply artesian well, diameter 20 to 12 in (0.51-0.30 m), cased 20 in (0.51 m) 0-40 ft (0-12.2 m), 12 in (0.30 m) 0-60 ft (0-18.3 m), perforated 40-60 ft (12.2-18.3 m).

Depth 160 ft (48.8 m).

DATUM.--Elevation of land-surface datum is about 30 ft (9.1 m) above mean sea level, from topographic map.

Measuring point: Lower edge of 0.75 in (.02 m) 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 March 4, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, +0.81 ft (+0.25 m) above land-surface datum, Sept. 12, 1975; lowest water level measured, 83.53 ft (25.46 m) below land-surface datum, Aug. 7, 1974.

### WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date               | Water<br>level | Date               | Water<br>level | Date    | Water<br>level | Date   | Water<br>level |
|--------------------|----------------|--------------------|----------------|---------|----------------|--------|----------------|
| Oct. 10<br>Nov. 15 | 0.18<br>0.75   | Dec. 20<br>Jan. 16 | 2.10           | Feb. 21 | 3.35           | Mar. 4 | 3.20           |

182032066591800. Local number, 83. LOCATION.--Lat 18°20'32", long 66°59'18". Owner: P.R. Water Resources Authority.

Name: San Sebastian.
AQUIFER.--Volcanic rock of Eocene Age.

WELL CHARACTERISTICS .-- Drilled observation well, diameter 6 in (0.15 m). Depth 300 ft (91.4 m).

DATUM.--Elevation of land-surface datum is about 230 ft (70.1 m) above mean sea level, from topographic map. Measuring point: Top of casing, 2.40 ft (0.73 m) above land-surface datum.

REMARKS .-- Observation well.

PERIOD OF RECORD.--May 1967 to January 16, 1985, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 21.95 ft (6.69 m) below land-surface datum, Apr. 15, 1976; lowest water level measured, 40.20 ft (12.25 m) below land-surface datum, July 21, 1970.

| Water | Date   | Water<br>level | Date<br>Water | Water<br>level | Date<br>Water | Water<br>level | Date<br>Water | Water<br>level |
|-------|--------|----------------|---------------|----------------|---------------|----------------|---------------|----------------|
|       | Oct. 1 | 26.77          | Nov. 2        | 27.55          | Dec. 20       | 29.51          | Jan. 16       | 29.93          |

<sup>+</sup> Above land-surface datum.



#### 50252000 BONNE RESOLUTION GUT AT BONNE RESOLUTION, ST. THOMAS, VI

LOCATION.--Lat 18°21'57", long 64°57'34", Hydrologic Unit 21020001, on right bank near Hull Bay Road, 0.5 mi (0.8 km) upstream from Atlantic Ocean, and 2.5 mi (4.02 km) northwest of Fort Christian, Charlotte Amalie.

DRAINAGE AREA. -- 0.49 sq mi (1.27 sq km).

#### WATER-DISCHARGE RECORDS

PERIOD OF RECORD. -- December 1962 to February 1967, March 1979 to April 1981, May 1982 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 280 ft (85 m), from topographic map. December 1962 to February 1967 at site about 100 ft (30 m) downstream at different datum. March 1979 to April 1981 at site about 100 ft (30 m) upstream at different datum.

REMARKS .-- No estimated daily discharges during water year. Records poor.

AVERAGE DISCHARGE.--7 years (1964-66, 1980, 1983-85), 0.25 cu ft/s (0.007 cu m/s), 6.93 in/yr (176 mm/yr), 181 acre-ft/yr (0.223 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD. --Maximum discharge, 1,650 cu ft/s (46.7 cu m/s), Apr. 18, 1983, gage height, 7.00 ft (2.134 m), from floodmarks, from rating curve extended above 1.0 cu ft/s (0.03 cu m/s) on basis of critical-depth analysis and slope-area measurement of peak flow; no flow at times in most years.

EXTREMES FOR CURRENT YEAR .-- Peak discharges greater than base discharge of 50 cu ft/s (1.42 cu m/s) and maximum (\*):

|         |      | Dischar   | rge      | Gage h | eight |        |      | Disch     | arge     | Gage h | eight |
|---------|------|-----------|----------|--------|-------|--------|------|-----------|----------|--------|-------|
| Date    | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   | Date   | Time | (cu ft/s) | (cu m/s) | (ft)   | (=)   |
| Oct. 18 | 0100 | 74        | 2.10     | 1.65   | 0.503 | Nov. 7 | 0630 | *1,060    | 30.0     | *5.59  | 1.704 |
| Nov. 5  | 1645 | 578       | 16.4     | 4.09   | 1.247 |        |      |           |          |        |       |

No flow part of each day, Mar. 25, 26, Aug. 1-3.

|        |      | DISCH  | ARGE, IN | CUBIC FEET | PER SECOND |        | YEAR OCT | OBER 1984 | то ѕертемви | R 1985 |       |      |
|--------|------|--------|----------|------------|------------|--------|----------|-----------|-------------|--------|-------|------|
| DAY    | OCT  | NOV    | DEC      | JAN        | FEB        | MAR    | APR      | MAY       | JUN         | JUL.   | AUG   | SEP  |
| 1      | .03  |        | 1.3      | .05        | .02        | .02    | .01      | .02       | .02         | .02    | .01   | .02  |
| 2      | .02  | .06    | . 36     |            | .02        | .02    | .01      | .02       | .02         | .01    | .01   | .02  |
| 3      | .01  | .11    | .22      | .05        | .03        | .02    | .01      | .01       | .03         | .01    | .01   | .03  |
| 4      | .02  |        | . 16     | .05        | .03        | .02    | .01      | .02       | .02         | .01    | .01   | .06  |
| 5      | .02  | 53     | .13      | .05        | .02        | .02    | .01      | .03       | .02         | .01    | .01   | .06  |
| 6      | .27  | 7.2    | .11      | .13        | .03        | .03    | .02      | .04       | .02         | .01    | .02   | .04  |
| 7      | .19  | 74     | .10      | .09        | .04        | .02    | .02      | .06       | .01         | .01    | .01   | .02  |
| 8      | .07  | 2.4    | .09      | .06        | .05        | .02    | .01      | .06       | .01         | .01    | .02   | .02  |
| 9      | .06  | .95    | .08      | .06        | .05        | .02    | .02      | .06       | .01         | .01    | .02   | .02  |
| 10     | .05  | . 46   | .07      | .08        | .02        | .02    | .02      | .06       | .02         | .02    | .02   | .03  |
| 11     | .03  | .35    | .09      | .05        | .02        | .02    | .02      | .07       | .02         | .02    | .01   | .02  |
| 12     | .03  | .24    | .07      | .05        | .03        | .02    | .03      | .07       | .01         | .01    | .02   | .14  |
| 13     | .04  | .17    | .07      | .05        | .03        | .02    | .05      | .03       | .02         | .01    | .03   | 2.5  |
| 14     | .02  | .19    | .06      | .05        | .03        | .02    | .05      | .05       | .02         | .02    | .01   | .31  |
| 15     | .02  | .13    | .09      | .05        | .02        | .02    | .06      | .06       | .02         | .01    | .01   | .09  |
| 16     | .05  | .13    | .14      | .05        | .03        | .02    | .03      | .06       | .02         | .03    | .01   | .05  |
| 17     | .23  | .17    | .08      | .05        | .03        | .02    | .04      | .06       | .02         | .01    | .01   | .05  |
| 18     | 5.2  | .12    | .07      | .05        | .04        | .02    | .08      | .22       | .02         | .02    | .01   | .03  |
| 19     | .13  | .12    | .07      | .05        | .06        | .02    | .09      | .05       | .02         | .02    | .01   | .02  |
| 20     | .08  | .11    | .07      | .05        | .04        | .02    | .09      | .02       | .02         | .03    | .01   | .02  |
| 21     | .05  |        | .07      | .05        | .02        | .02    | .03      | .01       | .02         | .01    | .01   | .03  |
| 22     | .05  | .09    | .06      | .05        | .02        | .02    | .07      | .01       | .01         | .01    | .02   | .03  |
| 23     | .05  | .09    | .05      | .04        | .03        | .02    | .10      | .01       | .18         | .02    | .02   | .03  |
| 24     | .05  | .09    | .07      | .03        | .05        | .01    | .13      | .02       | .05         | .02    | .01   | .06  |
| 25     | .05  | .61    | .07      | .04        | .05        | .01    | .12      | .02       | .02         | .02    | .01   | .05  |
| 26     | .03  | 1.0    | .06      | .03        | .02        | .01    | .03      | .01       | .02         | .01    | .02   | .02  |
| 27     | .03  | .25    | .05      | .03        | .03        | .02    | .02      | .01       | .02         | .01    | .23   | .03  |
| 28     | .04  | .15    | .05      | .03        | .03        | .02    | .02      | .01       | .02         | .04    | .06   | .22  |
| 29     | .03  | .13    | .05      | .04        |            | .02    | .04      | .01       | .02         | .02    | .06   | .07  |
| 30     | .03  | .12    | .07      | .04        |            | .07    | .05      | .01       | .01         | .01    | .05   | .05  |
| 31     | .03  |        | .05      | .02        |            | .02    |          | .02       |             | .01    | .02   |      |
| TOTAL  | 7.01 | 142.80 | 4.08     | 1.58       | .89        | .65    | 1.29     | 1.21      | .74         | .48    | .78   | 4.14 |
| MEAN   | .23  | 4.76   | .13      | .05        | .03        | .02    | .04      | .04       | .02         | .01    | .02   | .14  |
| MAX    | 5.2  | 74     | 1.3      | .13        | .06        | .07    | .13      | .22       | .18         | .04    | . 23  | 2.5  |
| MIN    | .01  | .06    | .05      | .02        | .02        | .01    | .01      | .01       | .01         | .01    | .01   | .02  |
| CFSM   | . 47 | 9.71   | .27      | .10        | .07        | .04    | .09      | .08       | .05         | .03    | .05   | .29  |
| IN.    | .53  | 10.84  | .31      | .12        | .07        | .05    | .10      | .09       | .06         | .04    | .06   | .31  |
| AC-FT  | 14   | 283    | 8.1      | 3.1        | 1.8        | 1.3    | 2.6      | 2.4       | 1.5         | . 9    | 1.5   | 8.2  |
| CAL YR |      |        | 168.87   | MEAN .46   | MAX        | 74 MII |          | CFSM .9   |             | 12.82  | AC-FT | 335  |
| WTR YR | 1985 | TOTAL  | 165.65   | MRAN .45   | MAX        | 74 MII | N .01    | CFSM .9   | 2 IN.       | 12.58  | AC-FT | 329  |

ST. THOMAS, U.S. VIRGIN ISLANDS

50252000 BONNE RESOLUTION GUT AT BONNE RESOLUTION, ST. THOMAS, VI--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD .-- WATER YEARS MARCH 1983 TO CURRENT YEAR

WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE   | TIME   | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE | TIME | STREAMFI.OW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|--------|--------|---------------------------------------|--------------------------------------|-----------------------------|------|------|--|--------------------------------------|-----------------------------|
| JAN, 2 | 3 1448 | 0.3                                   | 2170                                 | 22.0                        |      |      |  |                                      |                             |

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#### 50276000 TURPENTINE RUN AT MARIENDAL, ST. THOMAS, VI

LOCATION.--Lat 18°19'48", long 64°52'58", Hydrologic Unit 21020001, on left bank, at Mariendal, 1.0 mi (1.6 km) upstream from mouth, and 3.3 mi (5.3 km) southeast of Fort Christian, Charlotte Amalie.

DRAINAGE AREA .-- 2.97 sq mi (7.69 sq km).

#### WATER-DISCHARGE RECORDS

PERIOD OF RECORD .-- January 1963 to April 1969, October 1978 to September 1980, June 1982 to current year.

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

REMARKS.--Estimated daily discharges: Nov. 7-14. Records poor. Since about 1975, low flow augmented by discharges from sewage plant.

AVERAGE DISCHARGES.--10 years (1964-68, 1979-80, 1983-85), 1.22 cu ft/s (0.034 cu m/s), 5.58 in/yr (142 mm/yr), 884 acre-ft/yr (1.09 cu hm/yr); median of yearly mean discharges, 0.54 cu ft/s (0.015 cu m/s), 390 acre-ft/yr (0.48 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD. --Maximum discharge, 9,710 cu ft/s (275 cu m/s), Apr. 18, 1983, gage height, 11.09 ft (3.380 m), from floodmark, from rating curve extended above 500 cu ft/s (14.2 cu m/s) on basis of slope area measurement and step-backwater analysis; no flow many days from 1963 to 1969, and in 1984.

EXTREMES FOR CURRENT YEAR .-- Peak discharges greater than base discharge of 100 cu ft/s (2.83 cu m/s) and maximums (\*):

|         |      | Dischar   | rge      | Gage h | eight |         |      | Discharge     |      | Gage h | eight |
|---------|------|-----------|----------|--------|-------|---------|------|---------------|------|--------|-------|
| Date    | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   | Date    | Time | (cu ft/s) (cu | m/s) | (ft)   | (m)   |
| Oct. 6  | 2030 | 178       | 5.04     | 3.31   | 1.009 | May 18  | 1145 | 104           | 2.95 | 2.40   | 0.732 |
| Oct. 16 | 1800 | 433       | 12.3     | 4.27   | 1.301 | Aug. 27 | 0430 | 176           | 4.98 | 2.97   | 0.905 |
| Nov. 5  | 1715 | *2,600    | 73.6     | *6.80  | 2.073 |         |      |               |      |        |       |

Minimum discharge, 0.02 cu ft/s (0.001 cu m/s). Oct. 5.

|        |       | DISCHARG    | B, IN | CUBIC FRET | PER SECONI |        |       | OBER 1984 T | O SEPTEMBE | R 1985 |       |       |
|--------|-------|-------------|-------|------------|------------|--------|-------|-------------|------------|--------|-------|-------|
| DAY    | oct   | NOV         | DRC   | JAN        | FEB        | MAR    | APR   | MAY         | JUN        | JUL    | AUG   | SKP   |
| 1      | .61   | .67         | 2.2   | .84        | .72        | .95    | .51   | .31         | . 28       | .18    | .20   | .80   |
| 2      | 1.1   | .50         | 2.3   | 1.1        | .70        | .88    | .60   | .35         | .34        | .23    | . 23  | .71   |
| 3      | . 54  | 2.9         | 1.9   | .87        | .73        | .88    | . 45  | . 27        | .22        | .31    | .23   | . 49  |
| 4      | .31   | 3.3         | 1.8   | 1.0        | .66        | .75    | .53   | .41         | . 24       | .21    | .31   | . 45  |
| 5      | .11   | 209         | 1.5   | .87        | .66        | 3.3    | .61   | .55         | .22        | .17    | . 19  | . 48  |
| 6      | 11    | 58          | 1.5   | 1.4        | .66        | .74    | .38   | .27         | .22        | .24    | .20   | .45   |
| 7      | 6.7   | 270         | 1.5   | 1.1        | .67        | .92    | .55   | .31         | . 25       | . 46   | . 19  | . 45  |
| 8      | 1.1   | 70          | 1.5   | .89        | .65        | .66    | . 36  | . 27        | . 35       | . 19   | . 27  | .60   |
| 9      | . 46  | 25          | 1.7   | .83        | .63        | .84    | .45   | . 25        | . 36       | . 22   | . 27  | . 44  |
| 10     | 1.3   | 10          | 1.3   | .83        | .71        | .83    | .35   | .33         | .44        | .21    | .35   | . 44  |
| 11     | .39   |             | 1.3   | .83        | .63        | .50    | .31   | .39         | .83        | .22    | .38   | . 46  |
| 12     | . 56  |             | 1.3   | .82        | .60        | .48    | .43   | .63         | .95        | .24    | . 26  | 5.4   |
| 13     | . 36  |             | 1.3   | .84        | .59        | .43    | .62   | .24         | .97        | .23    | . 24  | 13    |
| 14     | . 56  |             | 1.3   | .75        | . 59       | .39    | .59   | . 29        | .80        | . 37   | . 29  | 2.3   |
| 15     | .28   | 2.2         | 1.2   | .79        | .60        | .42    | .28   | .37         | .65        | .20    | . 26  | .55   |
| 16     | 27    | 1.8         | 1.3   | .74        | .61        | .51    | .38   | . 47        | .86        | .35    | . 26  | . 27  |
| 17     | 6.9   | 2.4         | 1.3   | .76        | .65        | . 40   | .29   | .52         | . 56       | . 27   | . 25  | . 25  |
| 18     | 15    | 1.9         | 1.0   | .75        | .61        | .40    | .38   | 15          | .44        | .22    | . 36  | .21   |
| 19     | 1.8   | 1.7         | 1.2   | .88        | 1.1        | . 40   | .40   | 1.2         | . 49       | .20    | .21   | . 20  |
| 20     | 1.3   | 1.6         | 1.3   | .83        | .72        | . 34   | . 37  | .38         | .50        | .35    | .21   | . 37  |
| 21     | .89   |             | 1.0   | .79        | .68        | .38    | .60   | . 36        | .52        | .47    | .22   | . 23  |
| 22     | .40   |             | 1.0   | .80        | .93        | . 26   | . 26  | .30         | .61        | . 32   | .24   | . 29  |
| 23     | . 48  | 1.6         | 1.0   | .75        | .74        | . 29   | . 41  | . 29        | 2.4        | . 25   | . 28  | . 38  |
| 24     | . 26  |             | .95   | .73        | .97        | . 36   | . 49  | .31         | .71        | .22    | .40   | . 54  |
| 25     | .23   | 6.3         | 1.4   | .73        | .78        | . 25   | .33   | . 29        | .37        | .18    | .67   | . 38  |
| 26     | . 27  | 6.2         | 1.4   | .73        | 1.1        | .42    | . 54  | .33         | .22        | .21    | . 34  | . 33  |
| 27     | .23   | 3.5         | 1.2   | .76        | .99        | 4.1    | . 49  | .35         | .22        | .28    | 16    | .20   |
| 28     | .40   | 2.8         | .97   | .73        | 1.3        | .57    | .50   | .21         | . 28       | .60    | .85   | . 42  |
| 29     | . 28  | 2.4         | .94   | 2.1        |            | 2.2    | . 25  | . 23        | . 27       | . 27   | .69   | .64   |
| 30     | . 29  | 2.2         | 1.4   | .86        |            | 1.4    | .30   | . 24        | .42        | .28    | 4.6   | . 35  |
| 31     | .81   |             | .83   | .75        |            | .95    |       | . 24        |            | .20    | .87   |       |
| TOTAL  | 81.92 | 710.57      | 41.79 |            | 20.98      | 26.20  | 13.01 | 25.96       | 15.99      | 8.35   | 30.32 | 32.08 |
| MRAN   | 2.64  | 23.7        | 1.35  | .89        | .75        | .85    | .43   | .84         | .53        | .27    | .98   | 1.07  |
| MAX    | 27    | 270         | 2.3   | 2.1        | 1.3        | 4.1    | .62   | 15          | 2.4        | .60    | 16    | 13    |
| MIN    | .11   | .50         | .83   | .73        | .59        | .25    | . 25  | .21         | .22        | . 17   | . 19  | . 20  |
| CFSM   | . 89  | 7.98        | .45   | .30        | . 25       | .29    | .14   | . 28        | .18        | .09    | .33   | . 36  |
| IN.    | 1.03  | 8.90        | .52   | .34        | . 26       | . 33   | . 16  | . 33        | .20        | .10    | .38   | .40   |
| AC-FT  | 162   | 1410        | 83    | 54         | 42         | 52     | 26    | 51          | 32         | 17     | 60    | 64    |
| CAL YR |       | TOTAL 1019. |       | MEAN 2.79  |            | 70 MIN |       | CFSM .94    |            | 12.77  | AC-FT | 2020  |
| WTR YR | 1985  | TOTAL 1034. | 62    | MEAN 2.83  | MAX 2      | 70 MIN | .11   | CFSM .95    | IN.        | 12.96  | AC-FT | 2050  |

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### ST. THOMAS, U.S. VIRGIN ISLANDS

### 50276000 TURPENTINE RUN AT MARIENDAL, ST. THOMAS, VI--Continued

#### WATER QUALITY RECORDS

PERIOD OF RECORD .-- WATER YEARS MARCH 1983 TO CURRENT YEAR

### WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE   | TIME   | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|--------|--------|---------------------------------------|--------------------------------------|-----------------------------|------|------|---------------------------------------|--------------------------------------|-----------------------------|
| JAN, 2 | 3 1202 | 0.6                                   | 2140                                 | 23.5                        |      |      |                                       |                                      |                             |

#### 50295000 GUINEA GUT AT BETHANY, ST. JOHN, VI

LOCATION.--Lat. 18°19'55", long 64°46'50", Hydrologic Unit 21020001, 600 ft (183 m) southeast of Bethany Church, and 1.0 mi (1.6 km) east of Government House at Cruz Bay.

DRAINAGE AREA. -- 0.37 sq mi (0.96 sq km).

#### WATER-DISCHARGE RECORDS

PERIOD OF RECORD. -- January 1963 to October 1967, September 1982 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 260 ft (79 m), from topographic map. Prior to September 1982, at datum 1.00 ft (0.30 m) higher.

REMARKS .-- Estimated daily discharges: Nov. 5-14. Records poor.

AVERAGE DISCHARGE.--7 years (1964-67, 1983-85), 0.09 ou ft/s (0.003 ou m/s), 3.41 in/yr (87 mm/yr), 67.38 acre-ft/yr (0.083 ou hm/yr).

EXTREMES FOR PERIOD OF RECORD. --Maximum discharge, 946 cu ft/s (26.8 cu m/s), Apr. 18, 1983, gage height, 5.33 ft (1.625 m), from floodmark, from rating curve extended above 1.0 cu ft/s (0.028 cu m/s) on basis of step-backwater analysis and slope-area measurement of peak flow; no flow many days each year.

EXTREMES FOR CURRENT YEAR .-- Peak discharges greater than base discharge of 10 cu ft/s (0.283 cu m/s) and maximum (\*):

| Discharge      |      |           |          | Gage b | eight |        | Discha | arge      | Gage height |      |       |
|----------------|------|-----------|----------|--------|-------|--------|--------|-----------|-------------|------|-------|
| Date           | Time | (cu ft/s) | (cu m/s) | (ft)   | (m)   | Date   | Time   | (cu ft/s) | (cu m/s)    | (ft) | (m)   |
| Nov. 4         | 2245 | 110       | 3.12     | 2.78   | 0.847 | Nov. 6 | 1415   | 16        | 0.45        | 2.14 | 0.652 |
| Nov. 5         | 1715 | *154      | 4.36     | *3.04  | 0.926 | Nov. 7 | 0615   | 152       | 4.30        | 3.03 | 0.924 |
| No flow many d | avs. |           |          |        |       |        |        |           |             |      |       |

No flow many days.

|          |     | DISCHA | RGE, IN | CUBIC        | FEET | PER | SECOND,<br>MEAN |      |     | TOBER | 1984 | TO SEPTEMBER | 1985 |                |            |  |
|----------|-----|--------|---------|--------------|------|-----|-----------------|------|-----|-------|------|--------------|------|----------------|------------|--|
| DAY      | ост | NOV    | DB      | C            | JAN  |     | FEB             | MAR  | APR |       | MAY  | JUN          | JUL  | AUG            | SEP        |  |
| 1        | .00 | .01    | .1      | 6            | .04  |     | .01             | .01  | .01 |       | .01  | .00          | .01  | .01            | .01        |  |
| 2        | .00 |        | .1      |              | .04  |     | .01             | .01  | .01 |       | .01  | .00          | .01  | .01            | .01        |  |
| 3        | .00 |        | .1      |              | .04  |     | .02             | .01  | .01 |       | .01  | .00          | .01  | .01            | .01        |  |
| 4        | .00 |        | . 1     |              | .04  |     | .02             | .01  | .01 |       | .01  | .00          | .01  | .01            | .01        |  |
| 5        | .00 |        | . 1     |              | .04  |     | .02             | .01  | .01 |       | .01  | .00          | .01  | .01            | .01        |  |
| 6        | .01 | 4.3    | . 1     | 2            | .04  |     | .02             | .01  | .01 |       | .01  | .00          | .01  | .01            | .01        |  |
| 7        | .01 |        | . 1     | 2            | .03  |     | .02             | .01  | .01 |       | .01  | .00          | .01  | .01            | .01        |  |
| 8        | .00 | 2.1    | . 1     |              | .03  |     | .02             | .01  | .00 |       | .01  | .00          | .01  | .01            | .01        |  |
| 9        | .00 | .86    | . 1     | 0            | .03  |     | .02             | .01  | .00 |       | .01  | .00          | .01  | .01            | .01        |  |
| 10       | .00 | .52    | . 1     | 0            | .02  |     | .01             | .01  | .00 |       | .01  | .00          | .01  | .01            | .01        |  |
| 11       | .00 |        | .0      |              | .02  |     | .02             | .01  | .00 |       | .01  | .00          | .01  | .01            | .01        |  |
| 12       | .00 |        | .0      |              | .02  |     | .02             | .01  | .00 |       | .01  | .00          | .01  | .01            | .01        |  |
| 13       | .01 |        | .0      |              | .02  |     | .02             | .01  | .00 |       | .01  | .00          | .01  | .01            | .01        |  |
| 14       | .00 |        | .0      |              | .02  |     | .01             | .00  | .00 |       | .01  | .01          | .01  | .01            | .01        |  |
| 15       | .00 | .16    | .0      | 7            | .04  |     | .01             | .00  | .01 |       | .01  | .01          | .01  | .01            | .01        |  |
| 16       | .00 |        | .0      |              | .04  |     | .01             | .01  | .01 |       | .01  | .00          | .02  | .01            | .01        |  |
| 17       | .00 |        | .0      |              | .04  |     | .01             | .01  | .00 |       | .01  | .00          | .01  | .01            | .01        |  |
| 18       | .01 |        | .0      |              | .04  |     | .01             | .01  | .00 |       | .21  | .00          | .01  | .01            | .01        |  |
| 19       | .01 |        | .0.     |              | .04  |     | .01             | .01  | .00 |       | .01  | .00          | .01  | .01            | .01        |  |
| 20       | .01 | .11    | .0:     | 3            | .04  |     | .01             | .01  | .01 |       | .00  | .00          | .01  | .01            | .01        |  |
| 21       | .01 |        | .0:     |              | .04  |     | .01             | .01  | .01 |       | .00  | .00          | .01  | .01            | .01        |  |
| 22       | .00 |        | .0:     |              | .04  |     | .01             | .01  | .01 |       | .00  | .00          | .01  | .01            | .01        |  |
| 23       | .00 |        | .0:     |              | .04  |     | .01             | .01  | .01 |       | .00  | .00          | .01  | .01            | .01        |  |
| 24       | .00 |        | .0:     |              | .03  |     | .01             | .01  | .02 |       | .00  | .01          | .01  | .01            | .01        |  |
| 25       | .00 | .20    | .0:     | 3            | .02  |     | .01             | .01  | .02 |       | .00  | .01          | .01  | .01            | .01        |  |
| 26       | .00 |        | .00     |              | .02  |     | .01             | .01  | .02 |       | .00  | .01          | .01  | .01            | .01        |  |
| 27       | .00 |        | .00     |              | .01  |     | .01             | .01  | .01 |       | .00  | .01          | .01  | .01            | .01        |  |
| 28       | .00 |        | .00     |              | .01  |     | .01             | .01  | .01 |       | .00  | .01          | .01  | .01            | .01        |  |
| 29       | .01 |        | .00     |              | .01  |     |                 | .01  | .01 |       | .00  | .01          | .01  | .01            | .01        |  |
| 30<br>31 | .00 |        | .04     |              | .02  |     |                 | .01  | .01 |       | .00  | .01          | .01  | .01            | .01        |  |
|          |     |        |         |              |      |     |                 |      |     |       |      |              |      |                |            |  |
| TOTAL    | .09 |        | 2.2     |              | .92  |     | .38             | . 29 | .23 |       | . 39 | .09          | .32  | .31            | .30        |  |
| MEAN     | .00 |        | .01     |              | .03  |     | .01             | .01  | .01 |       | .01  | .00          | .01  | .01            | .01        |  |
| MAX      | .01 |        | . 10    |              | .04  |     | .02             | .01  | .02 |       | .21  | .01          | .02  | .01            | .01        |  |
| MIN      | .00 |        | .03     |              | .01  |     | .01             | .00  | .00 |       | .00  | .00          | .01  | .01            | .01        |  |
| CFSM     | .01 |        | . 20    |              | .08  |     | .04             | .02  | .02 |       | .04  | .01          | .03  | .03            | .03        |  |
| IN.      | .01 |        | . 23    |              | .09  |     | .04             | .03  | .02 |       | .04  | .01          | .03  | .03            | .03        |  |
| AC-FT    | . 2 | 150    | 4.5     | •            | 1.8  |     | . 7             | . 6  | . 5 |       | . 8  | .2           | . 6  | .6             | . 6        |  |
| CAL YR   |     |        |         | 1KAN<br>1KAN | .22  | MA  | X 43            | MIN  | .00 | CFSM  |      |              | 8.01 | AC-FT<br>AC-FT | 158<br>161 |  |

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ST. JOHN, U.S. VIRGIN ISLANDS

50296000 GUINEA GUT AT BETHANY, ST. JOHN, VI--Continued

#### WATER QUALITY RECORDS

PERIOD OF RECORD .-- WATER YEARS MARCH 1983 TO CURRENT YEAR

### WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE   | TIME   | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|--------|--------|---------------------------------------|--------------------------------------|-----------------------------|------|------|---------------------------------------|--------------------------------------|-----------------------------|
| JAN, 2 | 4 0938 | 0.04                                  | 2540                                 | 21.5                        |      |      |                                       |                                      |                             |

#### 50345000 JOLLY HILL GUT AT JOLLY HILL, ST. CROIX, VI

LOCATION. -- Lat 17°44'00", long 64°51'47", Hydrologic Unit 21020002, on Mahogany Road at Jolly Hill, 1.8 mi (2.9 km) northeast of Frederiksted.

DRAINAGE AREA. -- 2.10 sq mi (5.44 sq km).

#### WATER-DISCHARGE RECORDS

PERIOD OF RECORD .-- January 1963 to December 1968. Monthly measurements, 1962, 69. October 1982 to current year.

GAGE.--Water-stage recorder, crest-stage gage and sharp-crested concrete control. Elevation of gage is 140 ft (42.7 m) from topographic map.

REMARKS .-- Estimated daily discharges: Feb. 11 to Mar. 19. Records poor.

AVERAGE DISCHARGE.--8 years (1964-68, 1983-85), 0.071 cu ft/s (0.002 cu m/s), 0.46 in/yr (11.7 mm/yr), 51.4 acre-ft/yr (0.06 cu hm/yr).

EXTREMES FOR PERIOD OF RECORD. -- Maximum discharge, 288 cu ft/s (8.156 cu m/s), Nov. 7, 1984, gage height, 3.62 ft (1.103 m); no flow many days each year.

EXTREMES FOR CURRENT YEAR .-- Peak discharges greater than base discharge of 25 cu ft/s (0.71 cu m/s) and maximum (\*):

|        |      |     | Gage  | height   |      |         |
|--------|------|-----|-------|----------|------|---------|
| Date   | Time | (cu | ft/s) | (cu m/s) | (ft) | (m)     |
| Nov. 7 | 0600 |     | ±491  | 13.905   | *4.3 | 3 1.320 |

No flow Oct. 1-18, 20-31, Nov. 1-4, June 11-22, 26-30, July 1 to Sept.12, 15-30.

|                  |     | DISCH | ARGE, IN | CUBIC FER | T PER SE         | COND, |      | YEAR<br>LUES | остовки | 1984 | то | SEPTEMBER | 1985 |                |            |
|------------------|-----|-------|----------|-----------|------------------|-------|------|--------------|---------|------|----|-----------|------|----------------|------------|
| DAY              | OCT | NOV   | DEC      | JAN       | FB               | В     | MAR  |              | APR     | MAY  |    | JUN       | JUL  | AUG            | SEP        |
| 1                | .00 | .00   | .84      | .33       | .3               | 0     | .17  |              | . 17    | .09  |    | .01       | .00  | .00            | .00        |
| 2                | .00 | .00   | .70      | .33       | . 2              | 6     | .16  |              | . 16    | .09  |    | .01       | .00  | .00            | .00        |
| 3                | .00 | .00   | .60      |           |                  |       | . 16 |              | . 18    | .09  |    | .01       | .00  | .00            | .00        |
| 4                | .00 | .00   | .56      |           |                  |       | . 15 |              | . 17    | .09  |    | .01       | .00  | .00            | .00        |
| 5                | .00 | .12   | . 56     |           |                  |       | .16  |              | . 16    | .08  |    | .01       | .00  | .00            | .00        |
| 6                | .00 | .71   | .52      | .36       | . 2              | 1     | . 15 |              | . 16    | .08  |    | .01       | .00  | .00            | .00        |
| 7                | .00 | 65    | .52      | .37       | . 2              | 6     | . 32 |              | . 16    | .08  |    | .01       | .00  | .00            | .00        |
| 8                | .00 | 4.9   | .52      | .33       | . 2              | 6     | . 25 |              | . 16    | .07  |    | .01       | .00  | .00            | .00        |
| 9                | .00 | 2.2   | .55      | .33       | . 2              | 6     | .20  |              | . 16    | .07  |    | .01       | .00  | .00            | .00        |
| 10               | .00 | 1.6   | .51      | . 33      | . 2              | 1     | .18  |              | . 15    | .07  |    | .01       | .00  | .00            | .00        |
| 11               | .00 | 1.3   | .49      | .33       | .1               | 9     | .17  |              | . 14    | .04  |    | .00       | .00  | .00            | .00        |
| 12               | .00 |       | .46      | .33       | . 1              | 8     | .16  |              | . 14    | .04  |    | .00       | .00  | .00            | .00        |
| 13               | .00 | 1.2   | .46      |           |                  | 2     | .15  |              | . 14    | .03  |    | .00       | .00  | .00            | .08        |
| 14               | .00 |       | .45      |           |                  |       | . 14 |              | . 14    | .05  |    | .00       | .00  | .00            | .01        |
| 15               | .00 | 1.2   | .41      | . 35      | . 1              | 8     | .14  |              | . 14    | .04  |    | .00       | .00  | .00            | .00        |
| 16               | .00 |       | .41      |           | .1               |       | .14  |              | .14     | .04  |    | .00       | .00  | .00            | .00        |
| 17               | .00 | .99   | .41      | .35       | . 1              | 7     | . 14 |              | . 14    | .05  |    | .00       | .00  | .00            | .00        |
| 18               | .00 |       | .39      | . 35      | . 2              | 3     | .14  |              | . 14    | .05  |    | .00       | .00  | .00            | .00        |
| 19               | .08 |       | .37      |           | . 1              | 9     | . 14 |              | . 13    | .04  |    | .00       | .00  | .00            | .00        |
| 20               | .00 | .82   | . 37     | .33       | .1               | 7     | . 14 |              | . 12    | .04  |    | .00       | .00  | .00            | .00        |
| 21               | .00 |       | . 43     | .33       | . 1              | 5     | . 16 |              | . 10    | .02  |    | .00       | .00  | .00            | .00        |
| 22               | .00 |       | .40      |           | . 1              |       | . 17 |              | . 10    | .02  |    | .00       | .00  | .00            | .00        |
| 23               | .00 |       | .39      |           |                  |       | . 15 |              | . 10    | .02  |    | .02       | .00  | .00            | .00        |
| 24               | .00 |       | .39      |           | . 2              |       | . 13 |              | . 10    | .02  |    | .01       | .00  | .00            | .00        |
| 25               | .00 | .67   | . 37     | .45       | . 1              | 8     | .13  |              | . 10    | .02  |    | .01       | .00  | .00            | .00        |
| 26               | .00 |       | . 37     |           | . 2              |       | .13  |              | . 10    | .02  |    | .00       | .00  | .00            | .00        |
| 27               | .00 | .94   | .37      | . 47      | . 1              | 8     | . 14 |              | . 10    | .01  |    | .00       | .00  | .00            | .00        |
| 28               | .00 | .78   | . 37     |           | . 1              | 7     | .32  |              | . 09    | .01  |    | .00       | .00  | .00            | .00        |
| 29               | .00 |       | . 35     |           |                  | -     | . 26 |              | .08     | .01  |    | .00       | .00  | .00            | .00        |
| 30               | .00 | .70   | .42      |           |                  | -     | .18  |              | .09     | .01  |    | .00       | .00  | .00            | .00        |
| 31               | .00 |       | . 40     | .33       |                  | -     | .18  |              |         | .01  |    |           | .00  | .00            |            |
| TOTAL            | .08 | 95.83 | 14.36    |           | 5.7              |       | 5.31 |              | . 96    | 1.40 |    | . 14      | .00  | .00            | .09        |
| MEAN             | .00 | 3.19  | .46      |           | . 2              |       | . 17 |              | . 13    | .04  |    | .00       | .00  | .00            | .00        |
| MAX              | .08 | 65    | .84      |           | . 3              |       | . 32 |              | . 18    | .09  |    | .02       | .00  | .00            | .08        |
| MIN              | .00 | .00   | . 35     |           | . 1              |       | .13  |              | . 08    | .01  |    | .00       | .00  | .00            | .00        |
| CFSM             | .00 | 1.52  | .22      |           | .1               |       | .08  |              | . 06    | .02  |    | .00       | .00  | .00            | .00        |
| IN.              | .00 | 1.70  | .25      |           | .1               |       | .09  |              | . 07    | .02  |    | .00       | .00  | .00            | .00        |
| AC-FT            | .2  | 190   | 28       | 22        | 1                | 1     | 11   | 1            | 7.9     | 2.8  |    | . 3       | .00  | .00            | . 2        |
| CAL YR<br>WTR YR |     |       | 116.61   |           | 32 MAX<br>38 MAX |       | MIM  |              | 00 CFS  |      | 15 | IN.       | 2.07 | AC-FT<br>AC-FT | 231<br>274 |

50345000 JOLLY HILL GUT AT JOLLY HILL, ST. CROIX, VI--Continued

#### WATER QUALITY RECORDS

PERIOD OF RECORD .-- WATER YEARS MARCH 1983 TO CURRENT YEAR

### WATER-QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

| DATE    | TIME   | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) | DATE | TIME | STREAMFLOW,<br>INSTANTANEOUS<br>(CFS) | SPECIFIC CON-<br>DUCTANCE<br>(UMHOS) | TEMPERA-<br>TURE<br>(DEG C) |
|---------|--------|---------------------------------------|--------------------------------------|-----------------------------|------|------|---------------------------------------|--------------------------------------|-----------------------------|
| JAN, 22 | 2 1526 | 0.3                                   | 1010                                 | 22.5                        |      |      |                                       |                                      |                             |

369



372

#### GROUND-WATER LEVELS

#### ST. CROIX, U.S. VIRGIN ISLANDS

174225064471900. Local number, 1.

LOCATION.--Lat 17°42'25", long 64°47'19".

Owner: Virgin Islands Government.

Name: Fairplains 6 (FP6).

AQUIFER.--Alluvium and marl.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m).

DATUM.--Blevation of land-surface datum is about 20 ft (6.10 m) above mean sea level, from topographic map.

Measuring point: Top of pump concrete base, 2.20 ft (0.67 m) above land-surface datum.

REMARKS.--Observation well. Water levels affected by pumping.

PERIOD OF RECORD.-
Water levels: March 1982 to current year.

PERIOD OF RECORD. -Water levels: March 1982 to current year.
Chemical analyses: June 20, 1983 to July 1984, discontinued.

EXTREMES FOR PERIOD OF RECORD. -- Highest water level measured, 15.64 ft (4.77 m) below land-surface datum, Mar. 25, 1982; lowest water level measured, a58.57 ft (a17.9 m) below land-surface datum, June 20, 1983.

| Date              | Water<br>level | Date               | Water<br>level | Date              | Water<br>level | Date     | Water<br>level |
|-------------------|----------------|--------------------|----------------|-------------------|----------------|----------|----------------|
| Oct. 2<br>Nov. 19 | 18.02<br>17.77 | Jan. 22<br>Mar. 19 | 17.86<br>17.70 | May 28<br>July 16 | 18.22<br>17.93 | Sept. 16 | a55.89         |

a Pumping.

WTR YR 1985

MEAN 22.95

LOW 24.24

174225064472000. Local number, 2.

LOCATION.--Lat 17° 42'25", long 64° 47'20".

Owner: U.S. Government, Virgin Islands Government.

Name: USGS-10, Fairplains 2 (FP2).

AQUIFER: Alluvium and marl.

WELL CHARACTERISTICS: Drilled unused water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m).

DATUM.--Elevation of land-surface datum is about 20 ft (6.10 m) above mean sea level, from topographic map.

Measuring point: Top of 0.5 in (0.01 m) hole at concrete base wall, 3.00 ft (0.91 m) above land-surface datum.

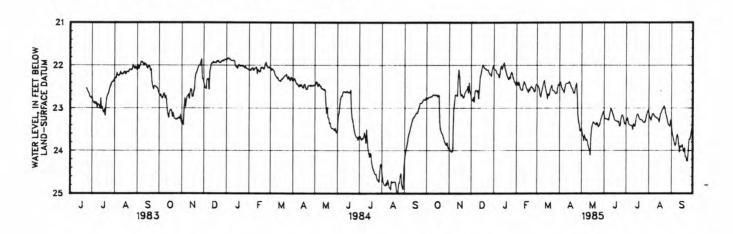
REMARKS.--Observation recording well. Nearby pumping well.

PERIOD OF RECORD.--June 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 21.80 ft (6.65 m) below land-surface datum, Jan. 3, 1984; lowest water level measured, 25.02 ft (7.63 m) below land-surface datum, Aug. 22, 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS AT 1200

| DAY  | OCT   | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL   | AUG   | SEP   |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1    | 22.77 | 23.93 | 22.78 | 22.08 | 22.37 | 22.45 | 22.40 | 23.47 | 23.17 | 23.30 | 23.11 | 23.31 |
| 2    | 22.78 | 23.98 | 22.81 | 22.10 | 22.42 | 22.48 | 22.39 | 23.58 | 23.25 | 23.29 | 23.19 | 23.56 |
| 3    | 22.76 | 24.01 | 22.83 | 22.11 | 22.46 | 22.50 | 22.48 | 23.66 | 23.25 | 23.23 | 23.24 | 23.66 |
| 4    | 22.75 | 24.03 | 22.75 | 22.13 | 22.39 | 22.56 | 22.53 | 23.75 | 23.25 | 23.33 | 23.28 | 23.75 |
| 5    | 22.74 | 24.02 | 22.85 | 22.19 | 22.46 | 22.69 | 22.57 | 23.63 | 23.26 | 23.38 | 23.20 | 23.83 |
| 6    | 22.74 | 23.95 | 22.63 | 22.20 | 22.54 | 22.73 | 22.59 | 23.70 | 23.27 | 23.40 | 23.13 | 23.88 |
| 7    | 22.73 | 23.04 | 22.58 | 22.22 | 22.57 | 22.63 | 22.63 | 23.76 | 23.28 | 23.41 | 23.13 | 23.84 |
| 8    | 22.73 | 22.89 | 22.59 | 22.29 | 22.58 | 22.55 | 22.52 | 23.74 | 23.20 | 23.41 | 23.17 | 23.69 |
| 9    | 22.70 | 22.69 | 22.62 | 22.21 | 22.57 | 22.47 | 22.44 | 23.77 | 23.11 | 23.42 | 23.19 | 23.62 |
| 10   | 22.69 | 22.70 | 22.59 | 22.07 | 22.46 | 22.39 | 22.42 | 23.87 | 23.02 | 23.50 | 23.21 | 23.68 |
| 11   | 22.69 | 22.71 | 22.77 | 22.02 | 22.38 | 22.35 | 22.42 | 23.93 | 23.04 | 23.37 | 23.22 | 23.84 |
| 12   | 22.70 | 22.71 | 22.55 | 22.09 | 22.42 | 22.49 | 22.42 | 23.98 | 23.09 | 23.42 | 23.23 | 24.03 |
| 13   | 22.70 | 22.26 | 22.28 | 22.03 | 22.45 | 22.57 | 22.41 | 24.10 | 23.14 | 23.43 | 23.25 | 23.89 |
| 14   | 22.69 | 22.11 | 22.22 | 21.98 | 22.51 | 22.64 | 22.38 | 23.66 | 23.19 | 23.32 | 23.26 | 23.92 |
| 15   | 22.70 | 22.27 | 22.13 | 21.94 | 22.55 | 22.77 | 22.41 | 23.47 | 23.26 | 23.21 | 23.32 | 23.89 |
| 16   | 22.73 | 22.62 | 22.04 | 22.06 | 22.59 | 22.67 | 22.47 | 23.39 | 23.29 | 23.15 | 23.22 | 23.86 |
| 17   | 22.70 | 22.71 | 21.99 | 22.12 | 22.63 | 22.70 | 22.51 | 23.32 | 23.30 | 23.14 | 23.13 | 23.95 |
| 18   | 22.71 | 22.68 | 22.03 | 22.19 | 22.55 | 22.66 | 22.57 | 23.35 | 23.31 | 23.19 | 23.10 | 24.03 |
| 19   | 23.33 | 22.71 | 22.07 | 22.25 | 22.58 | 22.56 | 22.59 | 23.36 | 23.31 | 23.24 | 23.04 | 23.94 |
| 20   | 23.48 | 22.76 | 22.08 | 22.29 | 22.52 | 22.50 | 22.65 | 23.38 | 23.33 | 23.27 | 23.03 | 24.14 |
| 21   | 23.55 | 22.74 | 22.09 | 22.33 | 22.49 | 22.46 | 22.65 | 23.40 | 23.32 | 23.27 | 22.98 | 24.15 |
| 22   | 23.60 | 22.66 | 22.11 | 22.38 | 22.51 | 22.58 | 22.55 | 23.34 | 23.43 | 23.28 | 22.95 | 24.24 |
| 23   | 23.62 | 22.62 | 22.11 | 22.30 | 22.53 | 22.59 | 22.47 | 23.37 | 23.40 | 23.29 | 23.01 | 24.24 |
| 24   | 23.69 | 22.58 | 22.11 | 22.21 | 22.55 | 22.60 | 22.42 | 23.44 | 23.25 | 23.32 | 23.11 | 24.03 |
| 25   | 23.75 | 22.57 | 22.16 | 22.16 | 22.62 | 22.61 | 22.70 | 23.42 | 23.17 | 23.34 | 23.18 | 23.74 |
| 26   | 23.80 | 22.49 | 22.21 | 22.19 | 22.60 | 22.66 | 23.17 | 23.39 | 23.16 | 23.34 | 23.24 | 23.74 |
| 27   | 23.84 | 22.64 | 22.21 | 22.27 | 22.48 | 22.65 | 23.32 | 23.29 | 23.21 | 23.32 | 23.33 | 23.69 |
| 28   | 23.87 | 22.41 | 22.25 | 22.32 | 22.44 | 22.65 | 23.39 | 23.23 | 23.28 | 23.23 | 23.40 | 23.57 |
| 29   | 23.82 | 22.60 | 22.16 | 22.39 |       | 22.52 | 23.54 | 23.18 | 23.37 | 23.16 | 23.40 | 23.48 |
| 30   | 23.90 | 22.66 | 22.07 | 22.40 |       | 22.45 | 23.52 | 23.13 | 23.38 | 23.10 | 23.43 | 23.41 |
| 31   | 23.96 |       | 22.02 | 22.46 |       | 22.47 |       | 23.08 | 11    | 23.05 | 23.28 |       |
| LOW  | 23.96 | 24.03 | 22.85 | 22.46 | 22.63 | 22.77 | 23.54 | 24.10 | 23.43 | 23.50 | 23.43 | 24.24 |
| HIGH | 22.69 | 22.11 | 21.99 | 21.94 | 22.37 | 22.35 | 22.38 | 23.08 | 23.02 | 23.05 | 22.95 | 23.31 |

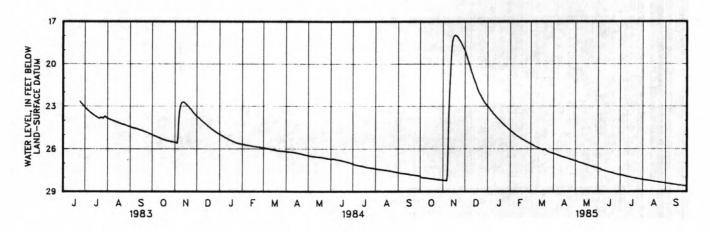


HIGH 21.94

174243064475100. Local number, 3.
LOCATION.--Lat 17°42'43", Long 64°47'51".
Owner: U.S. Government, Virgin Islands Government.
Name: Golden Grove-6 (PW6).
AQUIFER.--Alluvium and marl.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in (0.20 m), cased 8 in (0.20 m).
DATUM.--Elevation of land-surface datum is about 40 ft (12.2 m) above mean sea level, from topographic map.
Measuring point: Upper edge of hole at 8 in (0.20 m) casing, 4.20 ft (1.28 m) above land-surface datum.
REMARKS.--Observation well. Automatic Digital Recorder (ADR) installed on June 22, 1983.
PERIOD OF RECORD.--March 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 14.76 ft (4.50 m) below land-surface datum, Mar. 25, 1982; lowest water level recorded, 28.62 ft (8.72 m) below land-surface datum, Sept. 30, 1985.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS AT 1200

| DAY    | ост   | NOV      | DEC    | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL   | AUG   | SEP   |
|--------|-------|----------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1      | 27.91 | 28.20    | 19.06  | 23.01 | 24.69 | 25.65 | 27.17 | 27.24 | 27.35 | 27.81 | 28.15 | 28.40 |
| 2      | 27.99 | 28.21    | 19.20  | 23.07 | 24.74 | 25.67 | 27.17 | 27.25 | 27.37 | 27.82 | 28.16 | 28.41 |
| 3      | 28.00 | 28.22    | 19.37  | 23.11 | 24.77 | 25.69 | 27.18 | 27.25 | 27.39 | 27.83 | 28.17 | 28.42 |
| 4      | 28.01 | 28.22    | 19.54  | 23.18 | 24.81 | 25.72 | 27.18 | 27.25 | 27.40 | 27.84 | 28.18 | 28.43 |
| 5      | 28.02 | 28.23    | 19.70  | 23.26 | 24.86 | 25.75 | 27.19 | 27.26 | 27.44 | 27.85 | 28.19 | 28.43 |
| 6      | 28.03 | 28.23    | 19.87  | 23.32 | 24.89 | 25.78 | 27.19 | 27.26 | 27.46 | 27.87 | 28.19 | 28.44 |
| 7      | 28.03 | 27.87    | 20.04  | 23.37 | 24.94 | 25.82 | 27.19 | 27.26 | 27.48 | 27.88 | 28.20 | 28.45 |
| 8      | 28.04 | 25.91    | 20.21  | 23.43 | 24.99 | 25.84 | 27.19 | 27.27 | 27.50 | 27.90 | 28.21 | 28.46 |
| 9      | 28.04 | 23.62    | 20.39  | 23.52 | 25.01 | 25.86 | 27.21 | 27.27 | 27.51 | 27.91 | 28.22 | 28.47 |
| 10     | 28.05 | 21.87    | 20.56  | 23.57 | 25.06 | 25.88 | 27.21 | 27.27 | 27.54 | 27.93 | 28.23 | 28.48 |
| 11     | 28.06 | 20.75    | 20.69  | 23.62 | 25.10 | 25.91 | 27.21 | 27.27 | 27.55 | 27.94 | 28.24 | 28.48 |
| 12     | 28.07 | 19.62    | 20.86  | 23.67 | 25.12 | 25.93 | 27.21 | 27.27 | 27.57 | 27.95 | 28.24 | 28.49 |
| 13     | 28.07 | 18.79    | 21.03  | 23.75 | 25.15 | 25.95 | 27.21 | 27.27 | 27.58 | 27.96 | 28.25 | 28.50 |
| 14     | 28.08 | 18.34    | 21.15  | 23.80 | 25.19 | 25.98 | 27.21 | 27.28 | 27.59 | 27.97 | 28.26 | 28.50 |
| 15     | 28.09 | 18.13    | 21.29  | 23.85 | 25.23 | 26.00 | 27.22 | 27.28 | 27.61 | 27.98 | 28.27 | 28.51 |
| 16     | 28.09 | 18.02    | 21.43  | 23.91 | 25.26 | 26.02 | 27.22 | 27.28 | 27.62 | 28.00 | 28.28 | 28.52 |
| 17     | 28.10 | 17.98    | 21.58  | 23.95 | 25.30 | 26.04 | 27.22 | 27.28 | 27.63 | 28.01 | 28.29 | 28.54 |
| 18     | 28.10 | 17.97    | 21.74  | 24.00 | 25.33 | 26.06 | 27.22 | 27.28 | 27.64 | 28.03 | 28.29 | 28.54 |
| 19     | 28.11 | 18.01    | 21.89  | 24.07 | 25.35 |       | 27.22 | 27.28 | 27.66 | 28.03 | 28.30 | 28.55 |
| 20     | 28.12 | 18.04    | 22.01  | 24.12 | 25.38 | 27.07 | 27.22 | 27.29 | 27.67 | 28.04 | 28.31 | 28.55 |
| 21     | 28.12 | 18.10    | 22.11  | 24.17 | 25.42 | 27.08 | 27.23 | 27.29 | 27.69 | 28.05 | 28.32 | 28.55 |
| 22     | 28.13 | 18.17    | 22.21  | 24.22 | 25.45 | 27.12 | 27.23 | 27.29 | 27.70 | 28.06 | 28.33 | 28.56 |
| 23     | 28.14 | 18.26    | 22.28  | 24.27 | 25.47 | 27.13 | 27.23 | 27.29 | 27.72 | 28.07 | 28.34 | 28.57 |
| 24     | 28.14 | 18.33    | 22.41  | 24.32 | 25.50 | 27.14 | 27.23 | 27.29 | 27.74 | 28.08 | 28.34 | 28.58 |
| 25     | 28.15 | 18.42    | 22.49  | 24.37 | 25.53 | 27.15 | 27.23 | 27.29 | 27.75 | 28.09 | 28.35 | 28.58 |
| 26     | 28.16 | 18.52    | 22.58  | 24.42 | 25.56 | 27.16 | 27.24 | 27.30 | 27.77 | 28.10 | 28.36 | 28.59 |
| 27     | 28.16 | 18.63    | 22.66  | 24.45 | 25.59 | 27.16 | 27.24 | 27.30 | 27.78 | 28.11 | 28.37 | 28.60 |
| 28     | 28.17 | 18.71    | 22.74  | 24.50 | 25.61 | 27.17 | 27.24 | 27.30 | 27.79 | 28.12 | 28.38 | 28.60 |
| 29     | 28.18 | 18.85    | 22.80  | 24.55 |       | 27.17 | 27.24 | 27.31 | 27.80 | 28.13 | 28.38 | 28.61 |
| 30     | 28.18 | 18.96    | 22.87  | 24.60 |       | 27.17 | 27.24 | 27.32 | 27.80 | 28.14 | 28.39 | 28.61 |
| 31     | 28.19 |          | 22.94  | 24.65 |       | 27.17 |       | 27.34 |       | 28.14 | 28.40 |       |
| I.OW   | 28.19 | 28.23    | 22.94  | 24.65 | 25.61 | 27.17 | 27.24 | 27.34 | 27.80 | 28.14 | 28.40 | 28.61 |
| HIGH   | 27.91 | 17.97    | 19.06  | 23.01 | 24.69 | .00   | 27.17 | 27.24 | 27.35 | 27.81 | 28.15 | 28.40 |
| WTR YR | 1985  | MEAN 26. | 02 LOW | 28.61 | HIGH  | .00   |       |       |       |       |       |       |



174245064475800. Local number, 4. LOCATION.--Lat 17°42'45", long 64°47'58". Owner: Virgin Islands Government. Name: Golden Grove - 1 (PWI). AQUIFER.--Alluvium and marl.

WELL CHARACTERISTICS. --Drilled production water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m), 0-104 ft (0-31.70 m), perforated 64-104 ft (19.51-31.70 m). Depth 104 ft (31.70).

DATUM.--Elevation of land-surface datum is about 40 ft (12.2 m) above mean sea level, from topographic map. Measuring point: Lower edge of 1 in. (0.02 m) pipe at pump base, 3.40 ft (1.04 m) above land-surface datum. REMARKS.--Observation well. Water levels affected by pumping.

REMARKS.--Observation well. Water levels alleged 2, page 2, pa

## WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date              | Water<br>level  | Date               | Water<br>level | Date              | Water<br>level | Date     | Water<br>level |
|-------------------|-----------------|--------------------|----------------|-------------------|----------------|----------|----------------|
| Oct. 2<br>Nov. 13 | a51.18<br>23.14 | Jan. 22<br>Mar. 19 | 26.95<br>27.92 | May 28<br>July 16 | 28.94<br>28.79 | Sept. 16 | a30.10         |

174336064523200. Local number, 5. LOCATION.--Lat 17°43'36", long 64°52'32". Owner: Virgin Islands Government.

Name: Mahogany Road 3.
AQUIFER. --Alluvium of Quaternary age and volcanic rocks of Cretaceous age.

AQUIFER.--Alluvium of Quaternary age and volcanic rocks of Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m),

0-104 ft (0-31.70 m), perforated 64-104 ft (19.51-31.70 m). Depth 104 ft (31.70 m).

DATUM.--Elevation of land-surface datum is 70 ft (21.3 m) above mean sea level, from topographic map.

Measuring point: Lower edge of 2 in. (0.05 m) pipe at pump base, 3.70 ft (1.13 m) above land-surface datum.

Prior to December 1969, top of instrument platform, 2.57 ft (0.78 m) above land-surface datum.

REMARKS.--Observation well. Water levels affected by nearby pumpage.

PERIOD OF RECORD.--May 1964 to December 1969, discontinued. March 1982 to current year.

RETERMES FOR PERIOD OF RECORD.--Highest water level measured, 26.24 ft (8.00 m) below land-surface datum, Dec. 16, 1969; lowest water level measured, 74.31 ft (22.6 m) below land-surface datum, Marc. 29, 1965.

| Date              | Water<br>level | Date    | Water<br>level | Date    | Water<br>level | Date    | Water<br>level |
|-------------------|----------------|---------|----------------|---------|----------------|---------|----------------|
| Oct. 2<br>Nov. 13 | 72.85<br>63.77 | Jan. 22 | 43.75          | Mar. 19 | 50.27          | July 16 | 67.15          |

a Pumping.

174308064484400. Local number, 6.
LOCATION.--Lat 17°43'03", long 64°48'44".
Owner: U.S. Government, Virgin Islands Government.

Name: Adventure 28.
AQUIFER.--Alluvium of Pleistocene age and marl of Oligocene age.

WELL CHARACTERISTICS .-- Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m). Depth 97 ft (29.6 m).

(29.6 m).

DATUM.--Elevation of land-surface datum is about 80 ft (24.39 m) above mean sea level, from topographic map.

Measuring point: Upper edge of hole at 4 in (0.10 m) casing, 2.00 ft (0.61 m) above land-surface datum. Prior June 20, 1983, top of 4 in (0.10 m) casing, 0.90 ft (0.27 m) above land-surface datum.

REMARKS.--Observation well. Automatic Digital Recorder (ADR) installed on June 20, 1983.

PERIOD OF RECORD.--August 1973 to March 1974, discontinued. March 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 24.90 ft (7.59 m) below land-surface datum, Mar. 25, 1982; lowest water level measured, 40.18 ft (12.25 m) below land-surface datum, Aug. 5, 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS AT 1200

| DAY    | OCT   | NOV        | DEC    | JAN   | FEB     | MAR   | APR   | MAY   | JUN   | JUL   | AUG   | SEP   |
|--------|-------|------------|--------|-------|---------|-------|-------|-------|-------|-------|-------|-------|
| 1      | 37.89 | 39.87      | 37.78  | 37.59 | 37.94   | 38.07 | 37.54 | 37.37 | 38.08 | 38.69 | 39.22 | 39.73 |
| 2      | 39.67 | 39.87      | 37.43  | 37.62 | 37.95   | 38.06 | 37.52 | 37.39 | 38.10 | 38.71 | 39.24 | 39.74 |
| 3      | 39.70 | 39.87      | 37.52  | 37.66 | 37.96   | 38.03 | 37.50 | 37.40 | 38.12 | 38.73 | 39.26 | 39.76 |
| 4      | 39.72 | 39.89      | 37.51- | 37.68 | 37.98   | 38.01 | 37.48 | 37.42 | 38.14 | 38.75 | 39.27 | 39.77 |
| 5      | 39.73 |            | 37.48  | 37.71 | 37.99   | 38.00 | 37.46 | 37.45 | 38.15 | 38.77 | 39.29 | 39.79 |
| 6      | 39.75 | 37.87      | 37.48  | 37.71 | 38.00   | 37.98 | 37.43 | 37.48 | 38.18 | 38.79 | 39.31 | 39.81 |
| 7      | 39.76 | 38.47      | 37.48  | 37.62 | 38.02   | 37.96 | 37.42 | 37.50 | 38.20 | 38.80 | 39.32 | 39.83 |
| 8      | 39.66 | 38.20      | 37.51  | 37.54 | 38.01   | 37.94 | 37.40 | 37.53 | 38.22 | 38.83 | 39.34 | 39.83 |
| 9      | 39.60 | 39.05      | 37.53  | 37.53 | 38.02   | 37.91 | 37.39 | 37.56 | 38.23 | 38.85 | 39.35 | 39.84 |
| 10     | 39.60 | 38.78      | 37.53  | 37.58 | 38.02   | 37.88 | 37.37 | 37.58 | 38.25 | 38.87 | 39.37 | 39.85 |
| 11     | 39.62 | 38.30      | 37.49  | 37.62 | 38.03   | 37.85 | 37.36 | 37.60 | 38.28 | 38.89 | 39.37 | 39.85 |
| 12     | 39.66 | 38.09      | 37.51  | 37.62 | 38.03   | 37.83 | 37.35 | 37.62 | 38.29 | 38.90 | 39.39 | 39.86 |
| 13     | 39.69 | 37.92      | 37.55  | 37.55 | 38.03   | 37.82 | 37.34 | 37.65 | 38.32 | 38.92 | 39.40 | 39.86 |
| 14     | 39.73 | 37.85      | 37.58  | 37.50 | 38.04   | 37.79 | 37.32 | 37.68 | 38.34 | 38.94 | 39.42 | 39.86 |
| 15     | 39.73 |            | 37.60  | 37.50 | 38.04   | 37.77 | 37.30 | 37.69 | 38.36 | 38.95 | 39.44 | 39.86 |
| 16     | 39.66 | 37.79      | 37.63  | 37.56 | 38.05   | 37.76 | 37.30 | 37.70 | 38.37 | 38.98 | 39.46 | 39.86 |
| 17     | 39.59 | 37.78      | 37.63  | 37.61 | 38.07   | 37.74 | 37.30 | 37.72 | 38.40 | 38.98 | 39.47 | 39.87 |
| 18     | 39.59 | 37.78      | 37.61  | 37.66 | 38.09   | 37.72 | 37.30 | 37.75 | 38.42 | 38.98 | 39.49 | 39.87 |
| 19     | 39.62 | 37.79      | 37.64  | 37.72 | 38.09   | 37.70 | 37.30 | 37.77 | 38.44 | 38.99 | 39.51 | 39.87 |
| 20     | 39.68 | 37.79      | 37.68  | 37.76 | 38.08   | 37.69 | 37.30 | 37.78 | 38.47 | 39.00 | 39.53 | 39.87 |
| 21     | 39.74 | 37.79      | 37.72  | 37.76 | 38.08   | 37.68 | 37.30 | 37.80 | 38.49 | 39.01 | 39.55 | 39.87 |
| 22     | 39.79 | 37.79      | 37.75  | 37.77 | 38.08   | 37.67 | 37.30 | 37.82 | 38.52 | 39.03 | 39.56 | 39.87 |
| 23     | 39.83 | 37.79      | 37.76  | 37.78 | 38.08   | 37.66 | 37.32 | 37.85 | 38.53 | 39.08 | 39.58 | 39.87 |
| 24     | 39.85 | 37.80      | 37.75  | 37.82 | 38.08   | 37.64 | 37.32 | 37.87 | 38.55 | 39.10 | 39.60 | 39.88 |
| 25     | 39.88 | 37.80      | 37.65  | 37.85 | 38.08   | 37.63 | 37.32 | 37.89 | 38.57 | 39.12 | 39.62 | 39.91 |
| 26     | 39.90 | 37.80      | 37.57  | 37.87 | 38.08   | 37.63 | 37.32 | 37.91 | 38.59 | 39.14 | 39.64 | 39.93 |
| 21     | 39.91 | 37.78      | 37.50  | 37.89 | 38.08   | 37.62 | 37.32 | 37.95 | 38.62 | 39.15 | 39.66 | 39.95 |
| 28     | 39.91 | 37.78      | 37.50  | 37.90 | 38.08   | 37.62 | 37.32 | 37.98 | 38.64 | 39.17 | 39.68 | 39.95 |
| 29     | 39.91 | 37.78      | 37.56  | 37.91 |         | 37.60 | 37.33 | 38.00 | 38.66 | 39.19 | 39.69 | 39.95 |
| 30     | 39.87 | 37.78      | 37.60  | 37.92 |         | 37.58 | 37.34 | 38.03 | 38.67 | 39.21 | 39.71 | 39.95 |
| 31     | 39.87 |            | 37.60  | 37.93 |         | 37.56 |       | 38.06 |       | 39.22 | 39.73 |       |
| LOW    | 39.91 | 39.89      | 37.78  | 37.93 | 38.09   | 38.07 | 37.54 | 38.06 | 38.67 | 39.22 | 39.73 | 39.95 |
| HIGH   | 37.89 | 36.47      | 32.43  | 37.50 | 36.95   | 37.56 | 37.30 | 37.37 | 38.08 | 37.92 | 39.22 | 38.86 |
| WTR YR | 1985  | MEAN 38.36 | Low    | 39.95 | HIGH 32 | . 43  |       |       |       |       |       |       |

26 WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM 8 75 65 42 S 0 N D J F A M J S 0 D F 1985 1984

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174525064460600. Local number, 7. LOCATION.--Lat 17°45'25", long 64°46'06". Owner: Virgin Islands Government.

Name: Concordia 14.

AQUIFER . -- Sand and gravel .

WELL CHARACTERISTICS .-- Drilled production water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m).

Depth 85 ft (25.91 m).

DATUM.--Elevation of land-surface datum is about 40 ft (12.2 m) above mean sea level, from topographic map.

Measuring point: Top of 0.50 in (0.01 m) pipe on top of pump concrete base, 2.30 ft (0.70 m) above

land-surface datum.

REMARKS . -- Observation well. Water levels affected by pumpage.

PERIOD OF RECORD. --March 1982 to current year.

EXTREMES FOR PERIOD OF RECORD. --Highest water level measured, 15.56 ft (4.74 m) below land-surface datum, Nov. 13, 1984; lowest water level measured, 41.75 ft (12.73 m) below land-surface datum, Feb. 24, 1983.

### WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date              | Water<br>level | Date               | Water<br>level | Date              | Water<br>level | Date     | Water<br>level |
|-------------------|----------------|--------------------|----------------|-------------------|----------------|----------|----------------|
| Oct. 2<br>Nov. 13 | 27.95<br>15.56 | Jan. 22<br>Mar. 19 | 18.91          | May 28<br>July 16 | 25.22<br>25.47 | Sept. 16 | 27.91          |

174527064460100. Local number, 8. LOCATION.--Lat 17°45'27", long 64°46'01". Owner: Virgin Islands Government.

Name: Concordia 1 (Main pump house).

AQUIFER .-- Limestone of Tertiary Age.

WELL CHARACTERISTICS .-- Drilled production water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m).

Depth 82 ft (25.0 m).

DATUM.--Elevation of land-surface datum is about 40 ft (12.2 m) above mean sea level, from topographic map.

Measuring point: Top of 6 in (0.15 m) casing, 2.20 ft (0.67 m) above land-surface datum.

REMARKS.--Observation well. Water levels affected by pumpage.

PERIOD OF RECORD. --

Water levels: March 1982 to current year.

Chemical analyses: June 1983 to July 1984, discontinued.

EXTREMES FOR PERIOD OF RECORD. -- Highest water level measured, 16.68 ft (5.08 m) below land-surface datum, Nov. 13, 1984; lowest water level measured, a28.39 ft (a8.66 m) below land-surface datum, Dec. 8, 1982.

| Date              | Water<br>level | Date               | Water<br>level | Date              | Water<br>level | Date     | Water<br>level |
|-------------------|----------------|--------------------|----------------|-------------------|----------------|----------|----------------|
| Oct. 2<br>Nov. 13 | 25.55<br>16.68 | Jan. 22<br>Mar. 19 | 18.80<br>22.02 | May 28<br>July 16 | 24.21<br>25.00 | Sept. 16 | 25.82          |

a Pumping.

174532064460300. Local number, 9. LOCATION.--Lat 17°45'32", long 64°46'03". Owner: Virgin Islands Government.

Name: Concordia 7.
AQUIFER.--Limestone of Tertiary Age.

WELL CHARACTERISTICS .-- Drilled production water-table well, diameter 6 in (0.15 m), cased 0-81 ft (0-24.7 m).

Depth 81 ft (24.7 m).

DATUM.--Elevation of land-surface datum is 35 ft (10.7 m) above mean sea level, from topographic map.

Measuring point: Hole in pump base, 2.20 ft (0.67 m) above land-surface datum. Previous to Mar. 25, 1982, hole in pump base 2.50 ft (0.76 m) above land-surface datum.

REMARKS .-- Observation well. Water levels affected by pumping. PERIOD OF RECORD. --

Water levels: June 1962 to October 1968, discontinued. March 1982 to current year.

Chemical analyses: October 1964 to October 1967, discontinued.

EXTREMES FOR PERIOD OF RECORD. --Highest water level measured, 1.75 ft (0.53 m) below land-surface datum, May 11, 1966; lowest water level measured, 57.40 ft (17.5 m) below land-surface datum, Mar. 5, 1964.

## WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date              | Water<br>level | Date               | Water<br>level | Date              | Water<br>level | Date     | Water<br>level |
|-------------------|----------------|--------------------|----------------|-------------------|----------------|----------|----------------|
| Oct. 2<br>Nov. 13 | 11.72<br>3.18  | Jan. 22<br>Mar. 19 | 6.62<br>8.68   | May 28<br>July 16 | 10.34          | Sept. 16 | a29.18         |

174329064454700. Local number, 10. LOCATION.--Lat 17°43'29", long 64°45'47". Owner: Virgin Islands Government.

Name: Barren Spot 5 (PWD-5).

Name: Barren apot 5 (rwb-5).

AQUIFER.--Alluvium and marl.

WELL CHARACTERISTICS.--Drilled production water-table well, diameter 6 in (0.15 m), cased 0-130 ft (0-39.63 m), perforated 71-130 ft (21.64-39.63 m). Depth 130 ft (39.63 m).

DATUM.--Elevation of land-surface datum is about 75 ft (22.86 m) above mean sea level, from topographic map.

Measuring point: Hole on top of pump base, 2.00 ft (0.61 m) above land-surface datum. REMARKS.--Observation well. Water levels affected by pumping.

PERIOD OF RECORD . --

Water levels: March 1982 to current year.
Chemical analyses: June 22, 1983 to July 1984, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 61.86 ft (18.86 m) below land-surface datum, Mar. 26, 1982; lowest water level measured, a75.52 ft (a23.02 m) below land-surface datum, Sept. 8, 1982.

| Date              | Water<br>level | Date               | Water<br>level | Date              | Water<br>level | Date     | Water<br>level |
|-------------------|----------------|--------------------|----------------|-------------------|----------------|----------|----------------|
| Oct. 2<br>Nov. 13 | 64.60<br>65.42 | Jan. 22<br>Mar. 19 | 64.50<br>64.62 | May 28<br>July 16 | 65.12<br>68.47 | Sept. 16 | a70.32         |

a Pumping.

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#### ST. THOMAS, U.S. VIRGIN ISLANDS

182050064580400. Local number, 1.
LOCATION.--Lat 18°20'50", long 64°58'04".
Owner: U.S. Government, Virgin Islands Government.
Name: USGS-8 (Family well - Thatch Farm).
AQUIFER.--Volcanic rocks of Cretaceous age.

AQUIFER. --Volcanic rocks of Cretaceous age.

BELL CHARACTERISTICS. --Drilled water-table production well, diameter 6 in (0.15 m), cased 6 in (0.15 m) 0-25 ft (0-7.62 m), open hole 25-80 ft (7.62-24.4 m). Depth 80 ft (24.4 m).

DATUM. --Elevation of land-surface datum is 80 ft (24.4 m) above mean sea level, from topographic map.

Measuring point: Top of 6 in (0.15 m) casing, 2.50 ft (0.76 m) above land-surface datum. Prior to Mar. 23, 1982, top of 6 in (0.15 m) casing, 1.30 ft (0.40 m) above land-surface datum.

REMARKS .-- Non-potable public-water supply and observation well.

PERIOD OF RECORD . --

Water levels: October 1963 to August 1969, discontinued. March 1982 to current year.
Chemical analyses: December 1963, discontinued. June 30, 1983 to July 1984, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.33 ft (0.71 m) below land-surface datum, Nov. 20, 1984; lowest water level measured, 56.44 ft (17.21 m) below land-surface datum, Aug. 24, 1984.

### WATER LEVEL, IN FERT BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date              | Water<br>level | Date    | Water<br>level | Date              | Water<br>level  | Date     | Water<br>level |
|-------------------|----------------|---------|----------------|-------------------|-----------------|----------|----------------|
| Oct. 2<br>Nov. 20 | 53.16          | Jan. 23 | 12.30          | May 29<br>July 17 | 36.20<br>a45.20 | Sept. 18 | a55.41         |

182138064543100. Local number, 2. LOCATION.--Lat 18°21'38", long 64°54'31". Owner: Mahogany Run Resort.

Name: Mahogany 15.

AQUIFER .-- Fractured rocks

WELL CHARACTERISTICS .-- Drilled public supply water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Depth 145 ft (44.21 m).

DATUM .-- Elevation of land-surface datum is 120 ft (36.6 m) above mean sea level, from topographic map.

Measuring point: Top of 6 in (0.15 m) casing, 1.20 ft (0.36 m) below land-surface datum. REMARKS.--Observation well. Water levels affected by nearby pumping well.

PERIOD OF RECORD . -- March 1982 to current year.

EXTREMES FOR PERIOD OF RECORD. -- Highest water level measured, 18.43 ft (5.62 m) below land-surface datum, Nov. 20, 1983; lowest water level measured, 88.62 ft (27.01 m) below land-surface datum, Oct. 4, 1984.

### WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date              | Water<br>level | Date               | Water<br>level | Date              | Water<br>level | Date     | Water |
|-------------------|----------------|--------------------|----------------|-------------------|----------------|----------|-------|
| Oct. 4<br>Nov. 20 | 88.62<br>18.43 | Jan. 23<br>Mar. 21 | 20.38          | May 29<br>July 17 | 46.64<br>50.28 | Sept. 18 | 79.72 |

182138064542500. Local number, 3. LOCATION.--Lat 18°21'38", long 64°54'25". Owner: Mahogany Run Resort.

Name: Mahogany 16.

AQUIFER. -- Fractured rocks

WELL CHARACTERISTICS .-- Drilled water-table production well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Depth 145 ft (44.21 m).

DATUM .-- Elevation of land-surface datum is 130 ft (39.6 m) above mean sea level, from topographic map.

Measuring point: Top of 6 in (0.15 m) casing, 1.30 ft (0.40 m) below land-surface datum. REMARKS.--Water levels affected by nearby pumping well.

PERIOD OF RECORD. --March 1982 to current year.

EXTREMES FOR PERIOD OF RECORD. --Highest water level measured, 23.01 ft (7.01 m) below land-surface datum, Nov. 20, 1984; lowest water level measured, a103.85 ft (31.65 m) below land-surface datum, Oct. 4, 1984.

| Date              | Water<br>level   | Date               | Water<br>level | Date              | Water<br>level | Date     | Water<br>level |
|-------------------|------------------|--------------------|----------------|-------------------|----------------|----------|----------------|
| Oct. 4<br>Nov. 20 | a103.85<br>23.01 | Jan. 23<br>Mar. 21 | 25.89<br>28.90 | May 29<br>July 17 | 48.94<br>48.92 | Sept. 18 | 52.95          |

a Pumping.

#### ST. THOMAS, U.S. VIRGIN ISLANDS

182136064541900. Local number, 4. LOCATION.--Lat 18°21'36", long 64°54'19". Owner: Mahogany Run Resort

Name: Mahogany 17. AQUIFER. -- Fractured rock

WELL CHARACTERISTICS. -- Drilled water-table production well, diameter 6 in (0.15 m), cased 6 in (0.15 m).

Depth 145 ft (44.21 m).

DATUM. -- Blevation of land-surface datum is 140 ft (42.7 m) above mean sea level, from topographic map.

Measuring point: Top of 6 in (0.15 m) casing at land-surface datum.

REMARKS.--Public water supply. Water levels affected by nearby pumping well.

PERIOD OF RECORD.--March 1982 to current year.

EXTREMES FOR PERIOD OF RECORD. -- Highest water level measured, 20.68 ft (6.30 m) below land-surface datum, Nov. 20, 1984; lowest water level measured, a60.40 ft (18.41 m) below land-surface datum, Sept. 10, 1982.

## WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date              | Water<br>level  | Date               | Water<br>level   | Date              | Water<br>level | Date     | Water<br>level |
|-------------------|-----------------|--------------------|------------------|-------------------|----------------|----------|----------------|
| Oct. 4<br>Nov. 20 | a48.19<br>20.68 | Jan. 23<br>Mar. 21 | a58.93<br>a53.24 | May 29<br>July 17 | 43.86<br>44.94 | Sept. 18 | 42.92          |

182029064535200. Local number, 5.
LOCATION.--Lat 18°20'29", long 64°53'52".
Owner: Virgin Islands Government, V.I. Housing Authority.

Owner: Virgin Islands Government, v.1. House, Mane: Donoe 3.

AQUIFER.--Volcanic rock undifferentiated. Fracture at 165 ft (50.3 m), from drilling log.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (0.15 m), cased 0-20 ft (0-6.10 m), open hole 20-400 ft (6.10-122 m). Depth 400 ft (122 m).

DATUM.--Elevation of land-surface datum is about 235 ft (71.6 m) above mean sea level, from topographic map.

Measuring point: Top of 6 in (0.15 m) casing, 2.30 ft (0.70 m) above land-surface datum.

PERIOD OF RECORD . --

Water levels: March 1982 to current year.

Chemical analyses: July 1, 1983 to June 1984, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 54.24 ft (16.53 m) below land-surface datum, Nov. 20, 1984; lowest water level measured, 88.37 ft (26.94 m) below land-surface datum, July 21, 1982.

| Date              | Water<br>level | Date               | Water<br>level | Date              | Water<br>level | Date     | Water<br>level |
|-------------------|----------------|--------------------|----------------|-------------------|----------------|----------|----------------|
| Oct. 4<br>Nov. 20 | 80.34<br>54.24 | Jan. 23<br>Mar. 21 | 79.73<br>85.64 | May 29<br>July 17 | 85.70<br>87.14 | Sept. 18 | 86.82          |

a Pumping.

#### ST. THOMAS, U.S. VIRGIN ISLANDS

182038064550300. Local number, 6.
LOCATION.--Lat 18°20'38", long 64°55'03".
Owner: U.S. Government, Virgin Islands Government.
Name: Grade School 3.

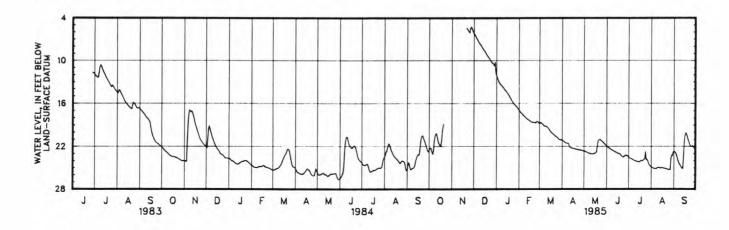
Name: Grade School 3.
AQUIFER.--Volcanic breccia.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Depth 70 ft (21.3 m).

DATUM .- Elevation of land-surface datum is about 60 ft (18.3 m) above mean sea level, from topographic map. Measuring point: Top of 0.5 in (0.01 m) hole at 6 in (0.15 m) casing, 1.30 ft (0.40 m) above land-surface datum. Prior to June 27, 1983, top of 6 in (0.15 m) casing, 2.90 ft (0.88 m) above land-surface datum. REMARKS.--Observation well. Automatic Digital Recorder (ADR) was installed on June 27, 1983.

PERIOD OF RECORD.--Highest water level recorded, 5.19 ft (1.58 m) below land-surface datum, Nov. 27, 1984; lowest water level measured, 35.38 ft (10.79 m) below land-surface datum, July 21, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS AT 1200

| DAY    | OCT   | NOV        | DEC   | JAN   | FEB     | MAR   | APR   | MAY   | JUN   | JUL   | AUG   | SEP   |
|--------|-------|------------|-------|-------|---------|-------|-------|-------|-------|-------|-------|-------|
| 1      | 22.47 |            | 6.22  | 12.03 | 16.92   | 18.76 | 21.13 | 22.63 | 21.93 | 23.50 | 24.87 | 22.64 |
| 2      | 22.29 |            | 6.32  | 12.37 | 17.07   | 18.64 | 21.17 | 22.65 | 22.03 | 23.59 | 24.95 | 22.74 |
| 3      | 22.17 |            | 6.50  | 12.64 | 17.21   | 18.66 | 21.24 | 22.69 | 22.10 | 23.65 | 25.01 | 22.86 |
| 4      | 22.38 |            | 6.71  | 12.90 | 17.31   | 18.75 | 21.33 | 22.76 | 22.17 | 23.66 | 25.07 | 23.04 |
| 5      | 22.76 |            | 6.92  | 13.11 | 17.41   | 18.82 | 21.42 | 22.80 | 22.26 | 23.73 | 25.10 | 23.37 |
| 6      | 23.04 |            | 7.10  | 13.28 | 17.52   | 18.92 | 21.50 | 22.84 | 22.33 | 23.80 | 25.11 | 23.75 |
| 7      | 22.54 |            | 7.32  | 13.42 | 17.62   | 19.05 | 21.52 | 22.89 | 22.41 | 23.87 | 25.12 | 24.09 |
| 8      | 21.22 |            | 7.48  | 13.50 | 17.74   | 19.13 | 21.53 | 22.96 | 22.47 | 23.91 | 25.10 | 24.37 |
| 9      | 20.52 |            | 7.64  | 13.64 | 17.82   | 19.13 | 21.55 | 22.99 | 22.53 | 23.95 | 25.01 | 24.56 |
| 10     | 20.22 |            | 7.76  | 13.78 | 17.93   | 19.15 | 21.66 | 23.01 | 22.58 | 24.00 | 24.94 | 24.76 |
| 11     | 20.17 |            | 7.91  | 13.91 | 18.05   | 19.21 | 22.01 | 23.02 | 22.65 | 24.07 | 24.95 | 24.90 |
| 12     | 20.56 |            | 8.12  | 14.05 | 18.12   | 19.30 | 22.13 | 23.03 | 22.72 | 24.11 | 24.96 | 25.07 |
| 13     | 21.07 |            | 8.27  | 14.18 | 18.18   | 19.43 | 22.17 | 23.03 | 22.77 | 24.09 | 25.00 | 25.06 |
| 14     | 21.44 |            | 8.43  | 14.29 | 18.26   | 19.57 | 22.21 | 23.00 | 22.82 | 24.14 | 25.04 | 23.37 |
| 15     | 21.68 |            | 8.55  | 14.42 | 18.33   | 19.73 | 22.24 | 22.96 | 22.88 | 24.16 | 24.99 | 21.33 |
| 16     | 21.85 |            | 8.70  | 14.57 | 18.39   | 19.87 | 22.27 | 22.91 | 22.93 | 24.17 | 24.98 | 20.40 |
| 17     | 21.82 |            | 8.89  | 14.71 | 18.47   | 19.99 | 22.29 | 22.85 | 22.98 | 24.03 | 25.01 | 20.09 |
| 18     | 21.18 |            | 9.06  | 14.88 | 18.55   | 20.07 | 22.31 | 22.74 | 23.01 | 23.96 | 25.05 | 20.16 |
| 19     | 19.75 |            | 9.24  | 15.06 | 18.62   | 20.18 | 22.34 | 21.93 | 23.05 | 23.95 | 25.07 | 20.53 |
| 20     | 19.14 |            | 9.39  | 15.25 | 18.59   | 20.28 | 22.37 | 21.27 | 23.16 | 24.00 | 25.10 | 20.90 |
| 21     | 18.85 | 5.43       | 9.53  | 15.43 | 18.58   | 20.35 | 22.40 | 21.06 | 23.33 | 23.89 | 25.13 | 21.23 |
| 22     |       | 5.62       | 9.69  | 15.62 | 18.62   | 20.44 | 22.42 | 21.00 | 23.40 | 23.78 | 25.15 | 21.52 |
| 23     |       | 5.75       | 9.82  | 15.78 | 18.65   | 20.55 | 22.44 | 21.04 | 23.46 | 23.72 | 25.17 | 21.79 |
| 24     |       | 5.92       | 10.05 | 15.92 | 18.64   | 20.64 | 22.46 | 21.12 | 23.49 | 22.76 | 25.21 | 22.01 |
| 25     |       | 6.05       | 10.18 | 16.06 | 18.51   | 20.69 | 22.47 | 21.20 | 23.35 | 23.80 | 25.26 | 22.00 |
| 26     |       | 5.47       | 10.30 | 16.17 | 18.46   | 20.78 | 22.50 | 21.30 | 23.24 | 23.83 | 25.28 | 21.88 |
| 27     |       | 5.26       | 10.40 | 16.28 | 18.52   | 20.92 | 22.51 | 21.41 | 23.21 | 23.95 | 25.21 | 21.98 |
| 28     |       | 5.43       | 10.50 | 16.39 | 18.68   | 21.01 | 22.54 | 21.51 | 23.24 | 24.31 | 23.59 | 22.14 |
| 29     |       | 5.71       | 10.74 | 16.50 |         | 21.05 | 22.57 | 21.61 | 23.29 | 24.53 | 23.18 | 22.27 |
| 30     |       | 5.98       | 11.24 | 16.62 |         | 21.06 | 22.61 | 21.74 | 23.36 | 24.68 | 23.27 | 22.39 |
| 31     |       |            | 11.65 | 16.77 |         | 21.08 |       | 21.82 |       | 24.80 | 22.80 |       |
| LOW    | 23.04 | 6.05       | 11.65 | 16.77 | 18.68   | 21.08 | 22.61 | 23.03 | 23.49 | 24.80 | 25.28 | 25.07 |
| HIGH   | 18.85 | 5.26       | 6.22  | 12.03 | 16.92   | 18.64 | 21.13 | 21.00 | 21.93 | 22.76 | 22.80 | 20.09 |
|        |       |            |       |       |         |       | 21.10 | 21.00 | 2     | 22.70 | 22.00 | 20.00 |
| WTR YR | 1985  | MEAN 19.63 | LOW   | 25.28 | HIGH 5. | 26    |       |       |       |       |       |       |



GROUND-WATER LEVELS

#### ST. JOHN. U.S. VIRGIN ISLANDS

182010064472600. Local number, 1.
LOCATION.--Lat 18°20'10", long 64°47'26".
Owner: U.S. Government No.

U.S. Government, National Park Services.

Name: NPS-2 (Cruz Bay).

AQUIFER .-- Volcanic rocks of Cretaceous Age.

AQUIFER.--Volcanic rocks of Cretaceous Age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (0.15 m), 4 in (0.10 m) cased, 0-20 ft (0-6.10 m), open hole 20-99 ft (6.10-30.2 m). Depth 99 ft (30.2 m).

DATUM.--Elevation of land-surface datum is 60 ft (18.3 m) above mean sea level, from topographic map.

Measuring point: Top of 4 in (0.10 m) casing, 4.10 ft (1.25 m) above old land-surface datum after 1.4 ft (0.43 m) land fill and 2.7 ft (0.82 m) casing extension occurred. Prior to June 29, 1983, top of 4 in (0.10 m) casing, 1.4 ft (0.43 m) above land-surface datum.

REMARKS.--Observation well. Water levels affected by pumping nearby well.

PERIOD OF RECORD . --

Water levels: May 1964, discontinued. June 30, 1983 to current year.
Chemical analyses: May 1964, discontinued. June 30, 1983 to July 1984, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.39 ft (1.64 m) below land-surface datum, Aug. 24, 1983; lowest water level measured, 42.56 ft (12.98 m) below land-surface datum, Aug. 30, 1967.

## WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date              | Water<br>level | Date               | Water<br>level | Date              | Water<br>level | Date     | Water<br>level |
|-------------------|----------------|--------------------|----------------|-------------------|----------------|----------|----------------|
| Oct. 2<br>Nov. 20 | 27.52<br>8.72  | Jan. 24<br>Mar. 20 | 22.29<br>28.35 | May 30<br>July 18 | 21.34          | Sept. 19 | 28.00          |

182109064460300. Local number, 2. LOCATION.--Lat 18°21'09", long 64°46'03". Owner: U.S. Government, National Park Service.

Name: NPS-5 (Trunk Bay).

AQUIFER.--Volcanic rocks of Cretaceous Age.

WELL CHARACTERISTICS.--Drilled water-table production well, diameter 6 in (0.15 m), cased 0-12 ft (0-3.66 m), open hole 12-60 ft (3.66-18.3 m). Depth 60 ft (18.3 m).

DATUM.--Elevation of land-surface datum is 60 ft (18.3 m) above mean sea level, from topographic map.

Measuring point: Top of 6 in (0.15 m) casing, 0.70 ft (0.21 m) above land-surface datum. Prior to Mar. 24, 1982 top of 6 in (0.15 m) casing, 1.00 ft (0.30 m) above land-surface datum. REMARKS.--Active water supply well for recreation facilities at Trunk Bay.

PERIOD OF RECORD . --

Water levels: August 1964 to December 1969, discontinued. March 1982 to current year.

Chemical analyses: July 1964 to June 1969, discontinued. June 30, 1983 to July 1984, discontinued.

EXTREMES FOR PERIOD OF RECORD. -- Highest water level measured, 12.83 ft (3.91 m) below land-surface datum, Jan. 24, 1985; lowest water level measured, a57.29 ft (a17.47 m) below land-surface datum, Nov. 27, 1968.

## WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date              | Water<br>level | Date               | Water level    | Date              | Water<br>level   | Date     | Water<br>level |
|-------------------|----------------|--------------------|----------------|-------------------|------------------|----------|----------------|
| Oct. 3<br>Nov. 20 | 36.10<br>12.83 | Jan. 24<br>Mar. 20 | 18.20<br>24.24 | May 30<br>July 18 | a44.96<br>a47.92 | Sept. 19 | a44.39         |

a Pumping.

#### ST. JOHN, U.S. VIRGIN ISLANDS

182116064451000. Local number, 3.
LOCATION.--Lat 18°21'16", long 64°45'10".
Owner: U.S. Government, National Park Service.

Name: NPS-6 (Cinnamon Bay).
AQUIFER.--Volcanic rocks of Cretaceous Age.

AQUIFER.--Volcanic rocks of Cretaceous Age.

WELL CHARACTERISTICS.--Drilled water-table production well, diameter 6-in (0.15 m), cased 0-51 ft (0-15.55 m), open hole 51-70 ft (15.55-21.34 m). Depth 70 ft (21.34 m).

DATUM.--Elevation of land-surface datum is about 60 ft (18.3 m) above mean sea level, from topographic map.

Measuring point: Hole on 6 in (0.15 m) casing, 2.00 ft (0.61 m) above land-surface datum. Prior to June 29, 1983, top of 6 in (0.15 m) casing at land-surface datum.

REMARKS.--Abandoned as production well. Automatic Digital Recorder (ADR) installed on June 29, 1983.

PERIOD OF RECORD:

Water levels: August 1964 to December 1969, discontinued. March 1982 to current year.

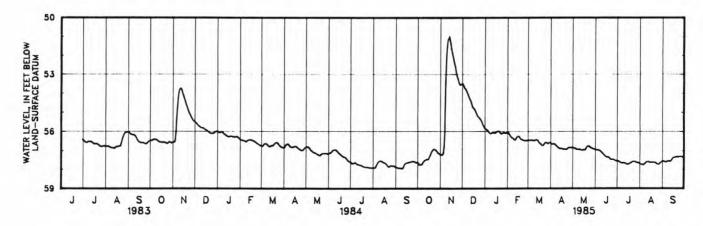
Chemical analyses: August 1964 to June 1969, discontinued. June 29, 1983.

EXTREMES FOR PERIOD OF RECORD. --Highest water level measured, 41.12 ft (12.54 m) below land-surface datum, Aug. 15, 1969; lowest water level measured, 63.15 ft (19.25 m) below land-surface datum, July 1, 1968.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS AT 1200

| DAY  | OCT   | NOV   | DEC   | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL   | AUG   | SEP   |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1    | 57.64 | 57.20 | 53.49 | 55.84 | 56.05 | 56.45 | 56.60 | 56.83 | 56.94 | 57.55 | 57.69 | 57.55 |
| 2    | 57.66 | 57.21 | 53.55 | 55.86 | 56.06 | 56.45 | 56.64 | 56.85 | 56.95 | 57.55 | 57.71 | 57.55 |
| 3    | 57.75 | 57.21 | 53.62 | 55.90 | 56.12 | 56.45 | 56.65 | 56.86 | 56.96 | 57.55 | 57.72 | 57.56 |
| 4    | 57.74 | 57.19 | 53.73 | 55.92 | 56.18 | 56.45 | 56.64 | 56.86 | 56.96 | 57.59 | 57.73 | 57.58 |
| 5    | 57.74 | 57.12 | 53.76 | 55.95 | 56.25 | 56.44 | 56.64 | 56.88 | 56.96 | 57.61 | 57.74 | 57.59 |
| 6    | 57.73 | 56.78 | 53.82 | 56.02 | 56.30 | 56.45 | 56.65 | 56.91 | 56.97 | 57.64 | 57.73 | 57.59 |
| 7    | 57.70 | 55.99 | 53.92 | 56.07 | 56.32 | 56.46 | 56.67 | 56.93 | 56.99 | 57.65 | 57.69 | 57.56 |
| 8    | 57.62 | 53.43 | 54.00 | 56.10 | 56.34 | 56.46 | 56.71 | 56.93 | 57.02 | 57.65 | 57.66 | 57.55 |
| 9    | 57.57 | 52.20 | 54.10 | 56.10 | 56.37 | 56.47 | 56.75 | 56.92 | 57.06 | 57.64 | 57.62 | 57.54 |
| 10   | 57.52 | 51.57 | 54.19 | 56.07 | 56.42 | 56.46 | 56.79 | 56.92 | 57.10 | 57.64 | 57.59 | 57.55 |
| 11   | 57.49 | 51.17 | 54.29 | 56.06 | 56.43 | 56.44 | 56.83 | 56.94 | 57.14 | 57.65 | 57.58 | 57.56 |
| 12   | 57.48 | 51.11 | 54.37 | 56.06 | 56.40 | 56.43 | 56.85 | 56.95 | 57.18 | 57.67 | 57.58 | 57.53 |
| 13   | 57.45 | 51.01 | 54.46 | 56.06 | 56.31 | 56.44 | 56.88 | 56.96 | 57.22 | 57.69 | 57.59 | 57.50 |
| 14   | 57.45 | 51.19 | 54.61 | 56.07 | 56.27 | 56.46 | 56.88 | 56.96 | 57.26 | 57.70 | 57.60 | 57.43 |
| 15   | 57.45 | 51.39 | 54.72 | 56.07 | 56.25 | 56.52 | 56.88 | 56.96 | 57.30 | 57.71 | 57.62 | 57.38 |
| 16   | 57.41 | 51.64 | 54.77 | 56.04 | 56.24 | 56.58 | 56.88 | 56.95 | 57.32 | 57.72 | 57.61 | 57.35 |
| 17   | 57.32 | 51.84 | 54.81 | 55.99 | 56.28 | 56.61 | 56.90 | 56.95 | 57.33 | 57.69 | 57.61 | 57.35 |
| 18   | 57.24 | 52.03 | 54.86 | 55.98 | 56.33 | 56.64 | 56.91 | 56.94 | 57.33 | 57.67 | 57.61 | 57.33 |
| 19   | 57.15 | 52.22 | 54.95 | 55.97 | 56.40 | 56.67 | 56.91 | 56.88 | 57.34 | 57.64 | 57.61 | 57.32 |
| 20   | 57.06 | 52.40 | 55.03 | 55.98 | 56.41 | 56.71 | 56.92 | 56.80 | 57.37 | 57.62 | 57.61 | 57.31 |
| 21   | 56.99 | 52.57 | 55.12 | 56.02 | 56.42 | 56.72 | 56.92 | 56.75 | 57.42 | 57.59 | 57.62 | 57.31 |
| 22   | 56.94 | 52.80 | 55.21 | 56.07 | 56.44 | 56.70 | 56.92 | 56.75 | 57.45 | 57.57 | 57.63 | 57.32 |
| 23   | 56.92 | 53.01 | 55.24 | 56.11 | 56.46 | 56.63 | 56.90 | 56.76 | 57.46 | 57.57 | 57.65 | 57.32 |
| 24   | 56.93 | 53.15 | 55.29 | 56.10 | 56.47 | 56.58 | 56.86 | 56.79 | 57.46 | 57.57 | 57.69 | 57.31 |
| 25   | 56.94 | 53.26 | 55.33 | 56.08 | 56.47 | 56.56 | 56.84 | 56.82 | 57.46 | 57.57 | 57.71 | 57.30 |
| 26   | 56.98 | 53.41 | 55.39 | 56.06 | 56.47 | 56.57 | 56.83 | 56.84 | 57.46 | 57.59 | 57.72 | 57.30 |
| 27   | 57.03 | 53.50 | 55.44 | 56.05 | 56.46 | 56.60 | 56.83 | 56.86 | 57.49 | 57.61 | 57.71 | 57.32 |
| 28   | 57.08 | 53.56 | 55.55 | 56.07 | 56.46 | 56.61 | 56.83 | 56.87 | 57.51 | 57.62 | 57.66 | 57.34 |
| 29   | 57.13 | 53.55 | 55.64 | 56.08 |       | 56.60 | 56.83 | 56.89 | 57.52 | 57.63 | 57.63 | 57.35 |
| 30   | 57.14 | 53.51 | 55.71 | 56.08 |       | 56.57 | 56.82 | 56.91 | 57.54 | 57.64 | 57.60 | 57.37 |
| 31   | 57.18 |       | 55.79 | 56.06 |       | 56.57 |       | 56.91 |       | 57.66 | 57.56 |       |
| LOW  | 57.75 | 57.21 | 55.79 | 56.11 | 56.47 | 56.72 | 56.92 | 56.96 | 57.54 | 57.72 | 57.74 | 57.59 |
| HIGH | 56.92 | 51.01 | 53.49 | 55.84 | 56.05 | 56.43 | 56.60 | 56.75 | 56.94 | 57.55 | 57.56 | 57.30 |

WTR YR 1985 MEAN 56.51 LOW 57.75 HIGH 51.01



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#### ST. JOHN, U.S. VIRGIN ISLANDS

182042066454500. Local number, 5.
LOCATION.--Lat 18°20'42", long 66°45'45".
Owner: Virgin Islands Government.
Name: DPW-6. (Sussanaberg)
AQUIFER.--Louisenhoj Formation.

WELL CHARACTERISTICS .-- Drilled water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Sounded depth

70 ft (21.3 m).

DATUM.--Elevation of land-surface datum is about 640 ft (195 m) above mean sea level, from topographic map.

Measuring point: Top of 6 in (0.15 m) casing, 1.60 ft (0.49 m) above land-surface datum. Prior to June 28, 1983, top of 6 in (0.15 m) casing, 1.30 ft (0.40 m) above land-surface datum.

REMARKS.--Observation well. Automatic Digital Recorder (ADR) installed on June 28, 1983.
PERIOD OF RECORD.--September 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 3.20 ft (0.98 m) below land-surface datum, Nov. 7, 1984; lowest water level recorded, 22.71 ft (6.92 m) below land-surface datum, Sept. 30, 1985.

| WAT | ER LEVEL, | IN | FEET | BELOW | LAND-SURFACE   | SATUM,  | WATER   | YEAR | OCTOBER | 1984 | TO | SEPTEMBER | 1985 |
|-----|-----------|----|------|-------|----------------|---------|---------|------|---------|------|----|-----------|------|
|     |           |    |      | INS   | STANTANEOUS OF | BSERVAT | IONS AT | 1200 | )       |      |    |           |      |

| DAY    | OCT   | NOV        | DEC   | JAN   | FEB      | MAR   | APR   | MAY   | JUN   | JUI.  | AUG   | SEP   |
|--------|-------|------------|-------|-------|----------|-------|-------|-------|-------|-------|-------|-------|
| 1      | 21.88 |            | 8.67  | 12.02 | 14.63    | 16.62 | 18.07 | 19.33 | 19.76 | 20.73 | 21.62 | 22.28 |
| 2      | 21.89 | 21.80      | 8.79  | 12.08 | 14.73    | 16.68 | 18.09 | 19.37 | 19.80 | 20.76 | 21.65 | 22.30 |
| 3      | 21.91 | 21.83      | 8.83  | 12.14 | 14.79    | 16.72 | 18.16 | 19.40 | 19.84 | 20.78 | 21.68 | 22.31 |
| 4      | 21.91 | 21.83      | 8.83  | 12.22 | 14.82    | 16.77 | 18.19 | 19.43 | 19.87 | 20.79 | 21.71 | 22.32 |
| 5      | 21.92 | 17.46      | 8.83  | 12.31 | 14.84    | 16.82 | 18.22 | 19.51 | 19.90 | 20.81 | 21.73 | 22.34 |
| 6      | 21.94 |            | 9.34  | 12.40 | 14.85    | 16.87 | 18.28 | 19.53 | 19.93 | 20.82 | 21.76 | 22.35 |
| 7      | 21.86 | 3.20       | 9.47  | 12.45 | 14.85    | 16.94 | 18.34 | 19.58 | 19.96 | 20.82 | 21.78 | 22.37 |
| 8      | 21.85 | 3.20       | 9.63  | 12.55 | 14.85    | 16.99 | 18.38 | 19.62 | 19.99 | 20.95 | 21.82 | 22.39 |
| 9      | 21.69 | 3.20       | 9.73  | 12.65 | 15.31    | 17.02 | 18.42 | 19.67 | 20.02 | 20.98 | 21.84 | 22.41 |
| 10     | 21.55 |            | 9.82  | 12.72 | 15.40    | 17.05 | 18.46 | 19.70 | 20.05 | 21.02 | 21.86 | 22.42 |
| 11     | 21.45 | 3.20       | 9.95  | 12.78 | 15.48    | 17.08 | 18.51 | 19.73 | 20.08 | 21.06 | 21.88 | 22.44 |
| 12     | 21.40 | 3.20       | 10.09 | 12.88 | 15.55    | 17.12 | 18.57 | 19.77 | 20.11 | 21.09 | 21.90 | 22.46 |
| 13     | 21.38 | 3.20       | 10.20 | 12.99 | 15.63    | 17.18 | 18.62 | 19.81 | 20.15 | 21.12 | 21.92 | 22.47 |
| 14     | 21.37 |            | 10.33 | 13.09 | 15.71    | 17.23 | 18.66 | 19.84 | 20.18 | 21.15 | 21.94 | 22.47 |
| 15     | 21.37 | 3.20       | 10.44 | 13.17 | 15.77    | 17.29 | 18.70 | 19.86 | 20.21 | 21.18 | 21.96 | 22.47 |
| 16     | 21.37 | 3.20       | 10.53 | 13.24 | 15.81    | 17.35 | 18.75 | 19.88 | 20.25 | 21.21 | 21.99 | 22.49 |
| 17     | 21.37 | 3.20       | 10.66 | 13.33 | 15.96    | 17.40 | 18.78 | 19.90 | 20.28 | 21.27 | 22.02 | 22.50 |
| 18     | 21.37 | 9.51       | 10.79 | 13.37 | 16.04    | 17.45 | 18.82 | 19.45 | 20.31 | 21.28 | 22.04 | 22.52 |
| 19     | 21.37 | 9.61       | 10.92 | 13.44 | 16.07    | 17.49 | 18.88 | 19.89 | 20.34 | 21.28 | 22.06 | 22.54 |
| 20     | 21.39 |            | 11.05 | 13.56 | 16.13    | 17.53 | 18.93 | 19.79 | 20.37 | 21.30 | 22.08 | 22.56 |
| 21     | 21.41 | 9.78       | 11.13 | 13.68 | 16.21    | 17.57 | 18.97 | 19.68 | 20.41 | 21.33 | 22.10 | 22.58 |
| 22     | 21.43 | 9.84       | 11.25 | 13.77 | 16.28    | 17.65 | 19.00 | 19.60 | 20.45 | 21.36 | 22.12 | 22.59 |
| 23     | 21.46 | 9.86       | 11.34 | 13.87 | 16.33    | 17.70 | 19.04 | 19.56 | 20.47 | 21.38 | 22.13 | 22.61 |
| 24     | 21.49 | 9.90       | 11.49 | 13.99 | 16.36    | 17.73 | 19.07 | 19.55 | 20.49 | 21.41 | 22.16 | 22.62 |
| 25     | 21.53 | 9.96       | 11.61 | 14.05 | 16.45    | 17.76 | 19.10 | 19.55 | 20.52 | 21.44 | 22.18 | 22.63 |
| 26     | 21.57 | 5.35       | 11.68 | 14.13 | 16.51    | 17.81 | 19.14 | 19.55 | 20.56 | 21.47 | 22.20 | 22.65 |
| 27     | 21.60 | 6.91       | 11.74 | 14.20 | 16.56    | 17.88 | 19.18 | 19.57 | 20.62 | 21.49 | 22.22 | 22.66 |
| 28     | 21.64 | 7.58       | 11.83 | 14.31 | 16.59    | 17.90 | 19.21 | 19.60 | 20.65 | 21.52 | 22.22 | 22.67 |
| 29     | 21.67 | 8.05       | 11.89 | 14.40 |          | 17.93 | 19.25 | 19.64 | 20.67 | 21.55 | 22.24 | 22.69 |
| 30     | 21.71 | 8.41       | 11.97 | 14.47 |          | 17.97 | 19.29 | 19.70 | 20.70 | 21.57 | 22.25 | 22.70 |
| 31     | 21.74 |            | 11.98 | 14.56 |          | 18.02 |       | 19.72 |       | 21.59 | 22.26 |       |
| LOW    | 21.94 | 21.83      | 11.98 | 14.56 | 16.59    | 18.02 | 19.29 | 19.90 | 20.70 | 21.59 | 22.26 | 22.70 |
| HIGH   | 21.37 | 3.18       | 8.67  | 12.02 | 14.63    | 16.62 | 18.07 | 19.33 | 19.76 | 20.73 | 21.62 | .00   |
| WTR YR | 1985  | MEAN 17.57 | I.OW  | 22.70 | HIGH . O | 00    |       |       |       |       |       |       |

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM O F 8 26

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1984

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1985

182044064454600. Local number, 6. LOCATION.--Lat 18°20'44", long 64°45'46". Owner: Virgin Islands Government.

Name: DPW-5

AQUIFER .-- Louisenhoj Formation.

WELL CHARACTERISTICS. --Drilled public supply water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m).

Sounded depth 145 ft (44.2 m).

DATUM.--Elevation of land-surface datum is about 640 ft (195 m) above mean sea level, from topographic map.

Measuring point: Top of 6 in (0.15 m) casing, 1.40 ft (0.43 m) above land-surface datum.

REMARKS.--Observation well. Water levels affected by pumping.

PERIOD OF RECORD . --

Water levels: September 1982 to current year.

Chemical analyses: June 30, 1983 to June 1984, discontinued.

EXTREMES FOR PERIOD OF RECORD. -- Highest water level measured, 32.15 ft (9.80 m) below land-surface datum, Jan. 24, 1985; lowest water level measured, a107.4 ft (a32.7 m) below land-surface datum, Sept. 19, 1985.

# WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date              | Water<br>level | Date    | Water<br>level | Date              | Water<br>level | Date     | Water<br>level |
|-------------------|----------------|---------|----------------|-------------------|----------------|----------|----------------|
| Oct. 3<br>Nov. 17 | 45.77          | Jan. 24 | 32.15          | May 30<br>July 18 | 37.50<br>41.44 | Sept. 19 | a109.4         |

182044064454800. Local number, 7. LOCATION.--Lat 18°20'44, long 64°45'48".

Owner: Virgin Islands Government.

Name: DPW-4

AQUIFER .-- Louisenhoj Formation.

WELL CHARACTERISTICS .-- Drilled public supply water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m).

Sounded depth 60 ft (18.3 m).

DATUM. -- Elevation of land-surface datum is about 640 ft (195 m) above mean sea level, from topographic map. Measuring point: Top of 6 in (0.15 m) casing, 0.60 ft (0.18 m) above land-surface datum.

REMARKS . -- Observation well.

PERIOD OF RECORD. --September 1982 to current year.

EXTREMES FOR PERIOD OF RECORD. --Highest water level measured, 23.13 ft (7.05 m) below land-surface datum, Jan. 24, 1985; lowest water level measured, 49.10 ft (14.97 m) below land-surface datum, Oct. 26, 1982.

#### WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANROUS OBSERVATIONS

| Date              | Water<br>level | Date               | Water<br>level | Date              | Water<br>level | Date     | Water<br>level |
|-------------------|----------------|--------------------|----------------|-------------------|----------------|----------|----------------|
| Oct. 3<br>Nov. 17 | 34.57<br>29.89 | Jan. 24<br>Mar. 20 | 23.13<br>24.08 | May 30<br>July 18 | 26.63<br>30.42 | Sept. 19 | 45.61          |

182044064454900. Local number, 8.

LOCATION. -- Lat 18°20'44", long 64°45'49". Owner: Virgin Islands Government.

Name: DPW-3.

AQUIFER .-- Louisenhoj Formation .

WELL CHARACTERISTICS .-- Drilled public supply water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m).

Sounded depth 110 ft (33.5 m).

DATUM.--Elevation of land-surface datum is about 640 ft (195 m) above mean sea level, from topographic mpa. Measuring point: Top of 6 in (0.15 m) casing, 1.80 ft (0.55 m) above land-surface datum.

REMARKS .-- Observation well.

PERIOD OF RECORD .-- September 1982 to current year.

EXTREMES FOR PERIOD OF RECORD. --Highest water level measured, 19.33 ft (5.89 m) below land-surface datum, Jan. 24, 1985; lowest water level measured, 69.10 ft (21.06 m) below land-surface datum, Sept. 19, 1985.

# WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date              | Water<br>level | Date               | Water<br>level | Date              | Water<br>level | Date     | Water<br>level |
|-------------------|----------------|--------------------|----------------|-------------------|----------------|----------|----------------|
| Oct. 3<br>Nov. 17 | 29.88<br>25.15 | Jan. 24<br>Mar. 20 | 19.33<br>20.01 | May 30<br>July 18 | 22.30<br>25.94 | Sept. 19 | 69.10          |

a Pumping.

CHOUND-WATER LEVELS

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#### ST. JOHN, U.S. VIRGIN ISLANDS

182044064455000. Local number, 9. LOCATION.--Lat 18°20'44", long 64°45'50". Owner: Virgin Islands Government.

Name: DPW-2.

AQUIFER.--Louisenhoj Formation.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 6 in (0.16 m), cased 6 in (0.15 m).

Sounded depth 65 ft (19.8 m).

DATUM.--Elevation of land-surface datum is about 640 ft (195 m) above mean sea level, from topographic map.

Measuring point: Top of 6 in (0.15 m) casing, 2.00 ft (0.61 m) above land-surface datum.

REMARKS .-- Observation well.

PERIOD OF RECORD. --September 1982 to current year.

EXTREMES FOR PERIOD OF RECORD. --Highest water level measured, 26.07 ft (7.95 m) below land-surface datum, Jan. 24, 1985; lowest water level measured, 52.44 ft (15.99 m) below land-surface datum, May 19, 1983.

## WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANEOUS OBSERVATIONS

| Date              | Water<br>level | Date               | Water<br>level | Date              | Water<br>level | Date     | Water<br>level |
|-------------------|----------------|--------------------|----------------|-------------------|----------------|----------|----------------|
| Oct. 3<br>Nov. 17 | 40.29          | Jan. 24<br>Mar. 20 | 26.07<br>27.67 | May 30<br>July 18 | 32.77<br>36.04 | Sept. 19 | 49.07          |

182044064455200. Local number, 10. LOCATION.--Lat 18°20'44", long 64°45'52". Owner: Virgin Islands Government.

Name: DPW-1.

AQUIFER .-- Louisenhoj Formation.

WELL CHARACTERISTICS .-- Drilled public supply water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m).

Sounded depth 60 ft (18.3 m).

DATUM.--Blevation of land-surface datum about 640 ft (195 m) above mean sea level.

Measuring point: Top of 6 in (0.15 m) casing, 2.00 ft (0.61 m) above land-surface datum.

REMARKS.--Observation well. Water levels affected by pumping.

PERIOD OF RECORD.--September 1982 to current year.

EXTREMES FOR PERIOD OF RECORD. -- Highest water level measured, 23.75 ft (7.24 m) below land-surface datum, Jan. 24, 1985; lowest water level measured, 38.86 ft (11.84 m) below land-surface datum, Sept. 19, 1985.

#### WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985 INSTANTANROUS OBSERVATIONS

| Date              | Water<br>level | Date               | Water<br>level | Date              | Water<br>level | Date     | Water<br>level |
|-------------------|----------------|--------------------|----------------|-------------------|----------------|----------|----------------|
| Oct. 3<br>Nov. 17 | 36.16<br>24.33 | Jan. 24<br>Mar. 20 | 23.75<br>25.45 | May 30<br>July 18 | 28.30<br>32.80 | Sept. 19 | 38.86          |

#### ST. JOHN, U.S. VIRGIN ISLANDS

181956064464500. Local number, 11.
LOCATION.--Lat 18°19'56", long 64°46'45".
Owner: Virgin Islands Government.
Name: Guinea Gut Well.
AQUIFER.--Louisenhoj Formation (Donnelly, 1959).
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Depth 85 ft

(25.9 m).

DATUM.--Elevation of land-surface datum is about 280 ft (85.36 m) above mean sea level, from topographic map.

Measuring point: Bottom of 0.5 in (0.01 m) hole at 6 in (0.15 m) casing, 1.50 ft (0.46 m) above land-surface datum. Prior to June 28, 1983, top of 6 in (0.15 m) casing, 1.80 ft (0.55 m) above land-surface datum.

REMARKS.--Observation well. Automatic Digital Recorder (ADR) installed on June 28, 1983. PERIOD OF RECORD:

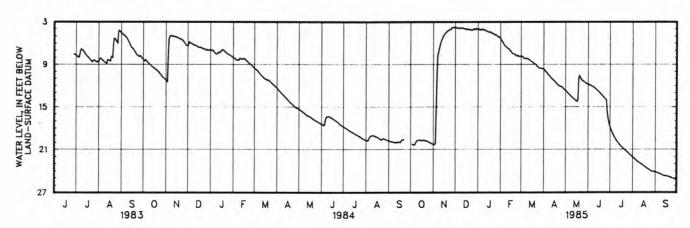
PERIOD OF RECORD:
Water levels: March 1982 to current year.
Chemical analyses: June 30, 1983 to June 27, 1984, discontinued.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.34 ft (1.02 m) below land-surface datum, May 25, 1982; lowest water level recorded, 25.19 ft (7.68 m) below land-surface datum, Sept. 30, 1985.

| WATER LEVEL,                       | IN | FEET | BELOW | LAND-SURFACE | DATUM, | WATER | YEAR | OCTOBER | 1984 | TO | SEPTEMBER | 1985 |
|------------------------------------|----|------|-------|--------------|--------|-------|------|---------|------|----|-----------|------|
| INSTANTANEOUS OBSERVATIONS AT 1200 |    |      |       |              |        |       |      |         |      |    |           |      |

| DAY  | OCT   | NOV   | DEC  | JAN  | FEB  | MAR  | APR   | MAY   | JUN   | JUL   | AUG   | SEP   |
|------|-------|-------|------|------|------|------|-------|-------|-------|-------|-------|-------|
| 1    |       | 20.30 | 3.78 | 4.03 | 5.33 | 7.81 | 9.70  | 12.69 | 11.82 | 17.77 | 22.07 | 24.17 |
| 2    |       | 20.33 | 3.80 | 4.04 | 5.52 | 7.86 | 9.80  | 12.79 | 11.87 | 18.08 | 22.16 | 24.20 |
| 3    | 20.27 | 20.25 | 3.84 | 4.07 | 5.70 | 7.91 | 9.93  | 12.89 | 11.90 | 18.37 | 22.25 | 24.23 |
| 4    | 20.29 | 20.07 | 3.86 | 4.09 | 5.85 | 8.00 | 10.03 | 13.01 | 11.94 | 18.62 | 22.34 | 24.27 |
| 5    | 20.34 | 15.01 | 3.87 | 4.13 | 6.05 | 8.09 | 10.14 | 13.12 | 11.99 | 18.85 | 22.43 | 24.30 |
| 6    | 20.38 | 10.19 | 3.89 | 4.11 | 6.22 | 8.16 | 10.27 | 13.23 | 12.05 | 19.05 | 22.53 | 24.33 |
| 7    | 20.25 | 7.64  | 3.91 | 4.01 | 6.38 | 8.21 | 10.42 | 13.33 | 12.11 | 19.25 | 22.61 | 24.38 |
| 8    | 20.03 | 7.28  | 3.87 | 4.07 | 6.48 | 8.14 | 10.53 | 13.45 | 12.17 | 19.43 | 22.69 | 24.43 |
| 9    | 19.87 | 6.77  | 3.88 | 4.14 | 6.58 | 8.16 | 10.65 | 13.57 | 12.24 | 19.61 | 22.76 | 24.46 |
| 10   | 19.76 | 6.31  | 3.83 | 4.14 | 6.67 | 8.18 | 10.78 | 13.66 | 12.32 | 19.77 | 22.84 | 24.53 |
| 11   | 19.70 | 5.90  | 3.88 | 4.19 | 6.73 | 8.25 | 10.91 | 13.76 | 12.41 | 19.93 | 22.90 | 24.58 |
| 12   | 19.67 | 5.60  | 3.91 | 4.24 | 6.81 | 8.31 | 11.02 | 13.84 | 12.51 | 20.07 | 22.97 | 24.63 |
| 13   | 19.65 | 5.33  | 3.94 | 4.29 | 6.92 | 8.41 | 11.11 | 13.92 | 12.61 | 20.20 | 23.04 | 24.66 |
| 14   | 19.67 | 5.07  | 3.97 | 4.36 | 7.03 | 8.47 | 11.21 | 14.01 | 12.71 | 20.33 | 23.10 | 24.68 |
| 15   | 19.72 | 4.92  | 4.02 | 4.38 | 7.14 | 8.57 | 11.30 | 14.09 | 12.81 | 20.45 | 23.20 | 24.69 |
| 16   | 19.74 | 4.77  | 4.06 | 4.45 | 7.27 | 8.64 | 11.41 | 14.15 | 12.90 | 20.56 | 23.27 | 24.71 |
| 17   | 19.71 | 4.60  | 4.00 | 4.46 | 7.43 | 8.69 | 11.50 | 14.24 | 13.02 | 20.65 | 23.35 | 24.73 |
| 18   | 19.70 | 4.49  | 4.03 | 4.42 | 7.50 | 8.79 | 11.63 | 13.91 | 13.14 | 20.74 | 23.43 | 24.75 |
| 19   | 19.70 | 4.40  | 4.05 | 4.50 | 7.53 | 8.88 | 11.75 | 10.97 | 13.23 | 20.83 | 23.51 | 24.79 |
| 20   | 19.73 | 4.30  | 4.08 | 4.57 | 7.53 | 8.96 | 11.84 | 10.58 | 13.35 | 20.93 | 23.58 | 24.82 |
| 21   | 19.76 | 4.22  | 4.11 | 4.63 | 7.61 | 9.03 | 11.94 | 10.81 | 13.48 | 21.05 | 23.66 | 24.86 |
| 22   | 19.79 | 4.15  | 4.14 | 4.67 | 7.73 | 9.16 | 12.04 | 11.02 | 13.60 | 21.12 | 23.73 | 24.90 |
| 23   | 19.82 | 4.08  | 4.15 | 4.72 | 7.82 | 9.26 | 12.09 | 11.16 | 13.71 | 21.23 | 23.79 | 24.94 |
| 24   | 19.85 | 4.07  | 4.12 | 4.78 | 7.71 | 9.36 | 12.09 | 11.27 | 13.80 | 21.32 | 23.87 | 24.99 |
| 25   | 19.91 | 4.02  | 4.14 | 4.86 | 7.79 | 9.46 | 12.14 | 11.35 | 13.91 | 21.42 | 23.93 | 25.02 |
| 26   | 19.96 | 3.80  | 4.01 | 4.87 | 7.84 | 9.55 | 12.20 | 11.44 | 14.04 | 21.52 | 23.98 | 25.05 |
| 27   | 20.01 | 3.79  | 3.94 | 4.94 | 7.87 | 9.57 | 12.30 | 11.51 | 15.60 | 21.62 | 24.07 | 25.09 |
| 28   | 20.07 | 3.77  | 3.99 | 5.03 | 7.85 | 9.56 | 12.41 | 11.59 | 16.38 | 21.71 | 24.06 | 25.12 |
| 29   | 20.13 | 3.78  | 4.06 | 5.13 | 1222 | 9.57 | 12.51 | 11.66 | 16.94 | 21.81 | 24.08 | 25.17 |
| 30   | 20.18 | 3.79  | 3.95 | 5.12 |      | 9.59 | 12.59 | 11.73 | 17.39 | 21.88 | 24.10 | 25.18 |
| 31   | 20.25 |       | 3.98 | 5.23 |      | 9.61 |       | 11.78 |       | 21.98 | 24.12 |       |
| LOW  | 20.38 | 20.33 | 4.15 | 5.23 | 7.87 | 9.61 | 12.59 | 14.24 | 17.39 | 21.98 | 24.12 | 25.18 |
| HIGH | 19.65 | 3.77  | 3.78 | 4.01 | 5.33 | 7.81 | 9.70  | 10.58 | 11.82 | 17.77 | 22.07 | 24.17 |

WTR YR 1985 MEAN 13.07 I.OW 25.18 HIGH 3.77



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# FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI). This report contains both the inch-pound and SI unit equivalents in the station manuscript descriptions.

| Multiply inch-pound units                  | Ву   | To obtain SI units   |
|--|--|--|
|  | Length   |  |
| inches (in)                                | 2.54x10 <sup>1</sup>                             | millimeters (mm)   |
| feet (ft)                                  | 2.54x10 <sup>-2</sup><br>3.048x10 <sup>-1</sup>  | meters (m) meters (m)  |
| miles (mi)                                 | 1.609x10°  | kilometers (km)  |
|  | Area   |  |
| acres                                      | $4.047x10^3$                                     | square meters (m <sup>2</sup> )  |
|  | 4.047x10 <sup>-1</sup>                           | square hectometers (hm²)   |
| square miles (mi <sup>2</sup> )            | 4.047x10 <sup>-3</sup><br>2.590x10 <sup>0</sup>  | square kilometers (km²)  |
| square lines (IIII-)                       | 2.390X10°  | square kilometers (km²)  |
|  | Volume   |  |
| gallons (gal)                              | 3.785×10 <sup>0</sup>                            | liters (L)   |
|  | 3.785x10°  | cubic decimeters (dm³)   |
| million gallons                            | 3.785x10 <sup>-3</sup><br>3.785x10 <sup>3</sup>  | cubic meters (m <sup>3</sup> )   |
| minon ganons                               | $3.785 \times 10^{-3}$                           | cubic meters (m <sup>3</sup> )<br>cubic hectometers (hm <sup>3</sup> )                       |
| cubic feet (ft <sup>3</sup> )              | $2.832 \times 10^{1}$                            | cubic decimeters (dm <sup>3</sup> )  |
|  | 2.832x10 <sup>-2</sup>                           | cubic meters (m <sup>3</sup> )   |
| acre-feet (acre-ft)                        | $1.233 \times 10^{3}$                            | cubic meters (m <sup>3</sup> )   |
|  | 1.233x10 <sup>-3</sup><br>1.233x10 <sup>-6</sup> | cubic hectometers (hm <sup>3</sup> )   |
|  | 1.255X10   | cubic kilometers (km³)   |
|  | Flow   |  |
| cubic feet per second (ft <sup>3</sup> /s) | 2.832x10 <sup>1</sup>                            | liters per second (L/s)  |
|  | 2.832x10 <sup>1</sup>                            | cubic decimeters per second (dm <sup>3</sup> /s)   |
|  | 2.832x10 <sup>-2</sup>                           | cubic meters per second (m³/s)   |
| gallons per minute (gal/min)               | $6.309 \times 10^{-2}$                           | liters per second (L/s)  |
|  | 6.309x10 <sup>-2</sup><br>6.309x10 <sup>-5</sup> | cubic decimeters per second (dm <sup>3</sup> /s) cubic meters per second (m <sup>3</sup> /s) |
| million gallons per day                    | 4.381x10 <sup>1</sup>                            | cubic decimeters per second (dm <sup>3</sup> /s)   |
|  | 4.381x10 <sup>-2</sup>                           | cubic meters per second (m³/s)   |
|  | Mass   |  |
| tons (short)                               | 9.072x10 <sup>-1</sup>                           | megagrams (Mg) or metric tons  |

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