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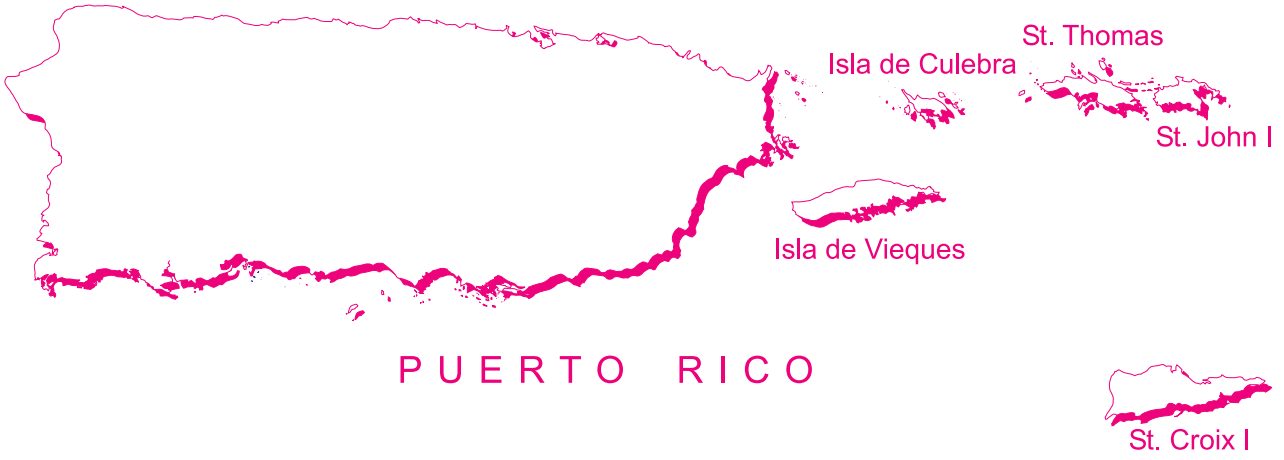
Water Resources Data
Puerto Rico and the U.S. Virgin Islands
Water Year 2002



U.S. Department of the Interior
U.S. Geological Survey

Prepared in cooperation with the
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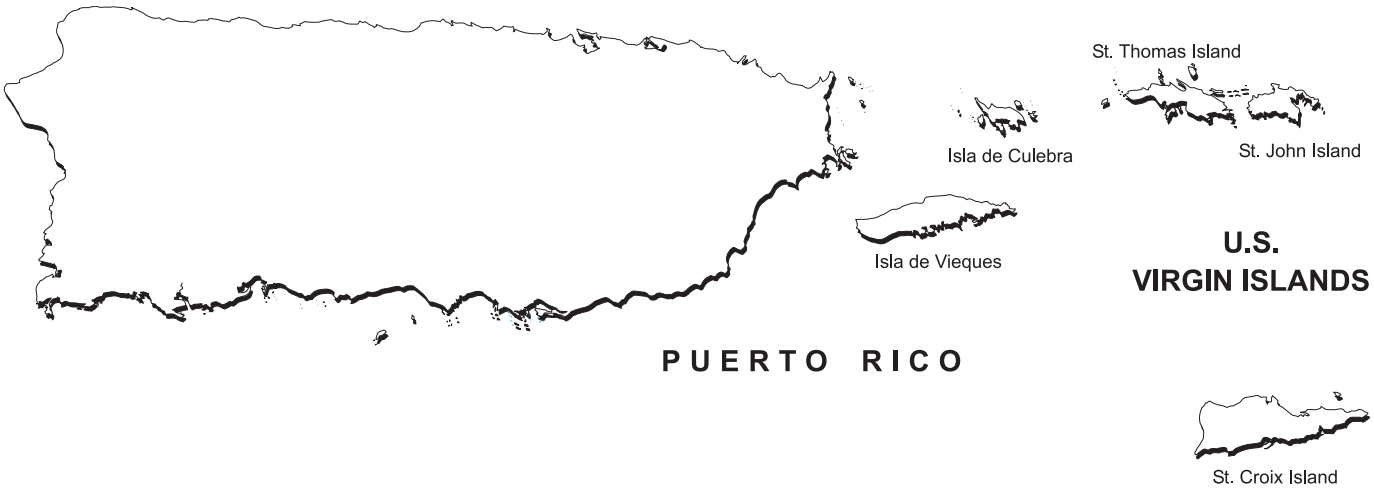
U.S. Geological Survey

Water Resources Data Puerto Rico and the U.S. Virgin Islands Water Year 2002

By Pedro L. Díaz, Zaida Aquino, Carlos Figueroa-Alamo, René García, and Ana V. Sánchez

Water-Data Report PR-02-1



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U.S. DEPARTMENT OF THE INTERIOR
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U.S. GEOLOGICAL SURVEY
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2004

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 the U.S. Geological Survey policy and established guidelines, the following personnel contributed significantly to the collection, processing, and tabulations of the data:

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Francisco Maldonado prepared the illustrations and and Ruth I. Guzmán typed the text of the report and was mainly responsible for the assemble of the book using Automated Annual Report (AAR) Scripts for Surface-Water Discharge and Water-Quality Stations.

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 Pedro L. Díaz, Caribbean District Chief, San Juan, Puerto Rico.

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Water resources data for surface-water, quality-of-water, and ground-water records for the 2002 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 95 streamflow-gaging stations; daily sediment records for 28 streamflow stations; 27 partial record or miscellaneous streamflow stations; stage records for 17 reservoirs; water-quality records for 17 streamflow-gaging stations, 42 ungaged streamsites, 11 lake sites, 2 lagoons, and 1 bay; and water-level records for 102 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.

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SURFACE-WATER AND WATER-QUALITY STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME

(Letter after station name designates type of data: (d) discharge, (c) chemical, (b) biological, (s) sediment, (p) pesticide, (e) elevation, gage heights)

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ST. CROIX, U.S. VIRGIN ISLANDS		
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GROUND-WATER WELLS, BY BASIN, FOR WHICH RECORDS ARE PUBLISHED

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RÍO GUAJATACA BASIN
Well 182422067015100 Local number 165 500
Well 182647066552400 Local number 202 501

RÍO CAMUY BASIN
Well 182723066511200 Local number 1026 502

RÍO GRANDE DE ARECIBO BASIN
Well 182756066454700 Local number 1051 503
Well 182616066364100 Local number 1052 504
Well 182626066345100 Local number 1053 505
Well 182603066333601 Local number 1054 506
Well 182642066394900 Local number 1055 507
Well 182209066340600 Local number 1057 508

RÍO GRANDE DE MANATÍ BASIN
Well 182544066341500 Local number 205 509
Well 182757066325600 Local number 206 510
Well 182549066304300 Local number 166 511
Well 182506066280200 Local number 1076 512
Well 182308066260400 Local number 210 513

RÍO CIBUCO BASIN
Well 182614066261500 Local number 1101 514
Well 182712066251700 Local number 1102 515
Well 182615066235300 Local number 211 516
Well 182647066201700 Local number 70 517
Well 182515066194000 Local number 212 519
Well 182330066185700 Local number 213 521
Well 182426066260400 Local number 1103 522

RÍO DE LA PLATA BASIN
Well 182526066165001 Local number 1127 523
Well 182548066164401 Local number 1128 524
Well 182620066163400 Local number 1129 526
Well 182620066163403 Local number 1130 527
Well 182657066162700 Local number 1131 529
Well 182657066162701 Local number 1132 530
Well 182654066150600 Local number 1133 531
Well 182530066135400 Local number 216 532
Well 182655066142400 Local number 217 533
Well 180649066095500 Local number 1134 534

GROUND-WATER WELLS, BY BASIN, FOR WHICH RECORDS ARE PUBLISHED--Continued

Page

RÍO HONDO TO RÍO PUERTO NUEVO BASINS
Well 182441066082600 Local number 219 535
Well 182531066075900 Local number 652 536
Well 182511066045401 Local number 1152 537
Well 182435066052700 Local number 1153 538
Well 182445066043401 Local number 1154 539
Well 182443066041502 Local number 1155 540
Well 182417066042700 Local number 1156 541
Well 182349066032600 Local number 1157 542
Well 182406066034700 Local number 1158 544
Well 182451066080200 Local number 1159 545

RÍO GRANDE DE LOÍZA BASIN
Well 181352066025300 Local number 1176 546
Well 181311066022500 Local number 1177 547
Well 181446066013400 Local number 1178 548
Well 181539066014500 Local number 1179 549
Well 181550065593200 Local number 50 550
Well 182515065594100 Local number 222 551
Well 181540065580300 Local number 1180 552
Well 181513065554600 Local number 1181 554

RÍO HERRERA TO RÍO ANTÓN RUIZ BASINS
Well 182344065490801 Local number 1201 555
Well 182223065455900 Local number 1202 556
Well 181230065444900 Local number 1203 558
Well 182131065421100 Local number 1205 559
Well 181823065401900 Local number 1206 560
Well 181917065382701 Local number 1207 561
Well 182234065440000 Local number 1208 562

RÍO HUMACAO TO QUEBRADA AGUAS VERDES BASINS
Well 180358065503600 Local number 1226 563
Well 180415065513900 Local number 96 564
Well 175855066023100 Local number 1227 565
Well 175855066050500 Local number 1228 566
Well 175728066072200 Local number 1229 567
Well 175719066085500 Local number 1230 568
Well 175858066100200 Local number 6 570
Well 180002066132200 Local number 1231 571
Well 180001066122002 Local number 1232 572
Well 175947066130601 Local number 1233 573
Well 175957066123400 Local number 1234 574
Well 175841066104500 Local number 1238 575
Well 175814066102200 Local number 1239 576

GROUND-WATER WELLS, BY BASIN, FOR WHICH RECORDS ARE PUBLISHED--Continued

Page

RÍO SALINAS TO RÍO JACAGUAS BASINS
Well 175809066133100 Local number 1251 577
Well 180206066135500 Local number 1252 579
Well 180104066152300 Local number 1253 580
Well 175910066155500 Local number 1254 581
Well 175903066165000 Local number 1256 582
Well 175943066224800 Local number 1257 583
Well 175829066232200 Local number 87 584
Well 180020066261500 Local number 1258 585
Well 180602066133100 Local number 1260 586
Well 175833066145800 Local number 1261 587
Well 175735066151800 Local number 1262 588

RÍO INABÓN TO RÍO LOCO BASINS
Well 175950066354200 Local number 141 610
Well 175934066364800 Local number 1276 611
Well 180045066381600 Local number 1277 612
Well 180156066434000 Local number 1278 613
Well 180133066503300 Local number 132 614

RÍO GUANAJIBO BASIN
Well 180132067033800 Local number 143 616
Well 180542067084000 Local number 1301 617
Well 180628067084300 Local number 1302 619
Well 180628067084301 Local number 1303 620

RÍO YAGÜEZ TO RÍO GRANDE DE AÑASCO BASINS
Well 181232067083700 Local number 1326 622

RÍO CULEBRINAS BASIN
Well 182017067143300 Local number 1352 624
Well 182442067091700 Local number 200 625

ST. CROIX, U.S. VIRGIN ISLANDS
Well 174225064472000 Local number 2 638
Well 174243064475100 Local number 3 639
Well 174316064480800 Local number 13 641

ST. THOMAS, U.S. VIRGIN ISLANDS
Well 182038064550300 Local number 6 643
Well 182038064580000 Local number 8 644

ST. JOHN, U.S. VIRGIN ISLANDS
Well 181956064464500 Local number 11 645

DISCONTINUED STREAMFLOW STATIONS

The following continuous-record streamflow stations in Puerto Rico and the U.S. Virgin Islands have been discontinued or converted to partial-record stations. Daily streamflow or stage records were collected for the period of record shown for each station.

Station number	Station name	Drainage area (mi^2)	Period of record
50007000	Quebrada de los Cedros near Isabela	6.91	1970
50010600	Río Guajataca above Lago de Guajataca	--	1984-89
50011000	Canal Diversion Lago Guajataca	--	1970
50011200	Río Guajataca below Lago Guajataca	--	1969-70,1984-87
50011400	Río Guajataca above mouth near Quebradillas	--	1969-70,1984-89
50013000	Río Camuy near Lares	7.62	1969-71
50014000	Río Criminales near Lares	4.68	1969-70
50014600	Río Camuy at Tres Pueblos Sinkhole	--	1990-96
50015700	Río Camuy near Hatillo	--	1984-96
50016000	Río Camuy near Camuy	--	1969-73
50021050	Río Pellejas below Central Pellejas	7.89	1972-75
50021500	Río Pellejas near Utuado	9.55	1969-71
50023000	Río Viví near Central Pellejas	5.66	1969-75
50027200	Río Grande de Arecibo blw. Lago dos Bocas	169	1970-71
50031500	Río Sana Muerto near Orocovis	3.68	1965-70
50035200	Río Grande de Manatí at Hwy 145 at Ciales	132	1972
50035950	Río Cialitos at Hwy 649 at Ciales	17	1970-82
50038360	Río Mavilla near Corozal	9.51	1969-70
50038600	Río Unibón near Morovis	5.29	1969-70
50038700	Río Morovis at Morovis	1.26	1968
50038900	Río Indio at Vega Baja	--	1963,66,71
50039600	Río Cibuco at Central San Vicente	--	1969-72
50043200	Río Usabon near Barranquitas	9.15	1968-69,71
50043400	Río Aibonito Tributary near Aibonito	1.13	1968-71
50044600	Río Guadiana near Naranjito	1.73	1971
50044650	Quebrada del Toro near Naranjito	0.54	1971
50044800	Quebrada Anones near Naranjito	2.32	1971
50045700	Río Lajas at Toa Alta	8.65	1966-75
50047820	Río de Bayamón at Hwy 174 near Bayamón	31.90	1966
50048000	Río de Bayamón at Bayamón	71.90	1963-67
50049000	Río Piedras at Río Piedras	12.5	1971-82, 1987-93
50049310	Quebrada Josefina at Piñero Avenue	3.84	1988-91
50053050	Río Turabo at Borinquen	7.89	1984-90
50054000	Quebrada de las Quebradillas near Caguas	6.25	1969-71,73
50055170	Río Cagüitas near Caguas	8.27	1992-97
50055390	Río Bairoa at Bairoa	5.08	1990-2001
50055650	Quebrada Caimito near Juncos	0.82	1984-87
50056000	Río Valenciano near Las Piedras	6.85	1971
50056900	Quebrada Mamey near Gurabo	2.30	1984-92
50058300	Quebrada Arena near Caguas	--	1971

DISCONTINUED STREAMFLOW STATIONS--Continued

Station number	Station name	Drainage area (mi^2)	Period of record
50061300	Río Canovanillas near Loíza	14.40	1968-73
50062500	Río Herrera near Colonia Dolores	2.75	1968-72
50063300	Río Espíritu Santo near El Verde	2.23	1968-73
50063500	Quebrada Toronja at El Verde	0.064	1983-96
50065700	Río Mameyes at Hwy 191 at Mameyes	11.80	1967-85
50070500	Río Fajardo above Fajardo	3.69	1995-2001
50072000	Río Fajardo at Fajardo	21.60	1960-63
50073200	Río Daguao at Daguao	2.26	1966-82
50073400	Quebrada Palma at Daguao	4.84	1972-77
50074000	Río Santiago at Naguabo	4.99	1966-82
50075500	Río Blanco at Florida	11.00	1966-82
50077000	Río Blanco at Río Blanco	17.60	1973-77
50077400	Río Blanco at Colonia La Fe	18.80	1967-70
50078500	Río Anton Ruíz at Central Pasto Viejo	4.33	1968
50081500	Río Humacao near Humacao	9.23	1973
50082000	Río Humacao at Hwy 3 at Humacao	17.30	1983-85
50082200	Río Humacao near La Suiza	19.90	1965-66, 1969-71
50082800	Río Guayanés near Colonia Laura	4.69	1969-82
50083500	Río Guayanés near Yabucoa	17.20	1969-71
50084000	Río Limones near Yabucoa	7.89	1969-71
50085100	Río Guayanés at Central Roig	26.60	1965-66, 1968,70
50086100	Río del Ingenio at Comunas	5.50	1965-66, 1968-69
50086500	Río Guayanés at Playa Guayanés	34.00	1965-66, 1968-71
50087200	Caño Santiago near Central Roig	6.04	1965-71
50091000	Río Maunabo at Maunabo	12.40	1965,67, 1969-82
50091200	Río Maunabo near Maunabo	12.70	1971-72
50091400	Río Jacaboa near Lamboglia	4.13	1965-73
50091700	Río Chico at Patillas	6.82	1965, 1969-72
50091800	Río Chico at Providencia	4.90	1965, 1967-69, 1971
50094200	Río Grande de Patillas at Patillas	27.90	1967, 1969, 1971
50094300	Río Grande de Patillas at Providencia	29.00	1971
50094400	Río Nigua at Pitahaya	5.86	1965, 1969, 1970-71, 1973
50095200	Río Guamaní at Guayama	8.22	1969-71
50095500	Río Guamaní near Guayama	12.30	1969-70
50099000	Quebrada Aguas Verdes near Salinas	0.39	1989
50106500	Río Coamo near Coamo	46.00	1967-68, 1984-85, 1986
50106900	Río Coamo below Lago Coamo near Coamo	65.40	1967-68
50107200	Río Coamo at mouth near Santa Isabel	69.30	1967-68
50108200	Río Descalabrado at Las Ollas	13.90	1965, 1967-71
50108500	Río Descalabrado near Santa Isabel	18.10	1966-67

DISCONTINUED STREAMFLOW STATIONS--Continued

Station number	Station name	Drainage area (mi^2)	Period of record
50111200	Río Toa Vaca near Villalba	21.40	1966-70
50111700	Río Jacaguas near Juana Díaz	53.20	1966-68
50111750	Río Jacaguas below Quebrada Guanábana	56.30	1989
50112100	Río Jacaguas near Arús	59.60	1966-67
50112600	Río Inabón at Coto Laurel	--	1967-71
50113100	Río Guayo near Coto Laurel	11.80	1965, 1968-71
50113500	Río Inabón near Arús	30.20	1964-65
50114400	Río Bucaná near Ponce	25.60	1965-81
50114700	Río Bucaná near Playa de Ponce	28.40	1964-67
50115000	Río Portugués near Ponce	8.82	1964-97
50116500	Río Portugués at Highway 2 Bypass at Ponce	20.50	1964-65
50119000	Río Matilde at Ponce	19.40	1965-66
50121000	Río Tallaboa at Peñuelas	24.20	1959-82
50122000	Río Tallaboa at Tallaboa	31.50	1959-63
50124000	Río Guayanilla nr Guayanilla	18.50	1961-69
50124500	Río Guayanilla at Guayanilla	20.80	1971-82
50125900	Río Duey above Diversion near Yauco	8.93	1977-80
50126150	Río Yauco above Diversion Monserrate near Yauco	27.20	1978-85
50128000	Río Yauco near Yauco	45.50	1962-64, 1977-85
50129000	Río Loco near Yauco	8.50	1963-67
50129500	Río Loco near Guánica	21.00	1963-69
50129900	Laguna Cartagena near Boquerón	--	1984-86
50130320	Quebrada Mamey at Joyuda	0.38	1986-88
50136000	Río Rosario at Rosario	16.40	1975-86
50141000	Río Yahuecas near Adjuntas	15.40	1980-85
50145000	Río Grande de Añasco at El Espino	108.00	1959-66, 1961-63
50147000	Río Culebrinas at San Sebastian	16.70	1960-82
50214500	Quebrada Resaca near Monte Resaca, Culebra	0.23	1991-93
50215000	Drainage Canal at Culebra Airport, Culebra	0.08	1991-93
50231000	Quebrada Confresí Tributary near Isabel II, Vieques	0.28	1991-93
50232000	Quebrada La Mina near Esperanza, Vieques	0.68	1991-96
50233000	Quebrada Pilón at Colonia Puerto Real, Vieques	0.67	1991-96
50276000	Turpentine Run at Mariendal, St.Thomas	2.97	1963-69, 1978-86
50292600	Lameshur Bay Gut at Lameshur, St. John	0.38	1992-94
50294000	Fish Bay Gut at Fish Bay, St. John	1.48	1992-94
50295500	Cruz Bay Gut at Cruz Bay, St. John, VI	0.09	1992-93
50332000	River Gut at River	1.42	1991-93
50333500	River Gut near Golden Grove	5.40	1990-93
50333700	River Gut at Hwy 66 at Fairplanes	5.89	1990-96
50334500	Bethehem Gut at Hwy 66 at Fairplanes	4.11	1990-96
50337500	Gut 4.5 at Cane Valley	0.2	1991-93
50348000	Salt River at Canaan	0.36	1991-93
50349000	Gut 10 near Altona	0.13	1991-93

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WATER RESOURCES DATA FOR PUERTO RICO AND THE U.S. VIRGIN ISLANDS, 2002

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 U.S. Geological Survey, the data are published annually in this report series entitled "Water Resources Data for Puerto Rico and the U.S. Virgin Islands, 2002."

This report includes records on both surface and ground water. Specifically, it contains: (1) discharge records for 95 streamflow gaging stations, daily sediment records for 28 streamflow stations, 27 partial-record or miscellaneous streamflow stations, stage records for 17 reservoirs, and (2) water-quality records for 17 streamflow-gaging stations, and for 42 ungaged stream sites, 11 lake sites, 2 lagoons, and 1 bay, and (3) water-level records for 102 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 to 2001 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 U.S. 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-02-1." 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 the title page or by telephone (787) 749-4346.

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 U.S. Geological 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 Highway Authority
Puerto Rico Department of Natural and Environmental Resources
Puerto Rico Department of Health
Puerto Rico Electric Power Authority
Puerto Rico Solid Waste Management Authority
Puerto Rico Legislature
Puerto Rico Emergency Management Agency
U.S. Virgin Islands Department of Planning and Natural Resources
Puerto Rico Infrastructure Financing Authority

Funds were also provided by the U.S. Army, Corps of Engineers, for the collection of records at six gaging stations published in this report.

SUMMARY OF HYDROLOGIC CONDITIONS

Rainfall

During water year 2002 (October 2001 to September 2002), total rainfall throughout Puerto Rico was slightly above normal. Rainfall above normal was registered during November, December, April, and June. During these months, rainfall was between 9 to 135 percent above normal. These above normal rainfall conditions were produced mainly by tropical waves and cold fronts which passed through the island. The most significant rainfall event was produced by a cold front which affected the island during early November. This cold front produced heavy rain mainly over the northern, central, and eastern regions of the island during November 7-9, 2001. In spite of the excessive rainfall resulted from these rain-producing weather systems, monthly rainfall was below normal values during most of the water year 2002. Monthly rainfall below normal values ranged from 3 to 49 percent. Normal rainfall is defined as the mean monthly rainfall for certain period of time. In Puerto Rico, the reference period used to define the monthly normal rainfall is 1971-2000 (table 1).

In the U.S. Virgin Islands, annual rainfall was deficient, with an average of 89 percent of normal. During eight months of water year 2002, rainfall was below normal with averages that ranged from 2 to 75 percent below normal. Only during October, December, March, and April rainfall was above normal ranging from 1 to 145 above normal.

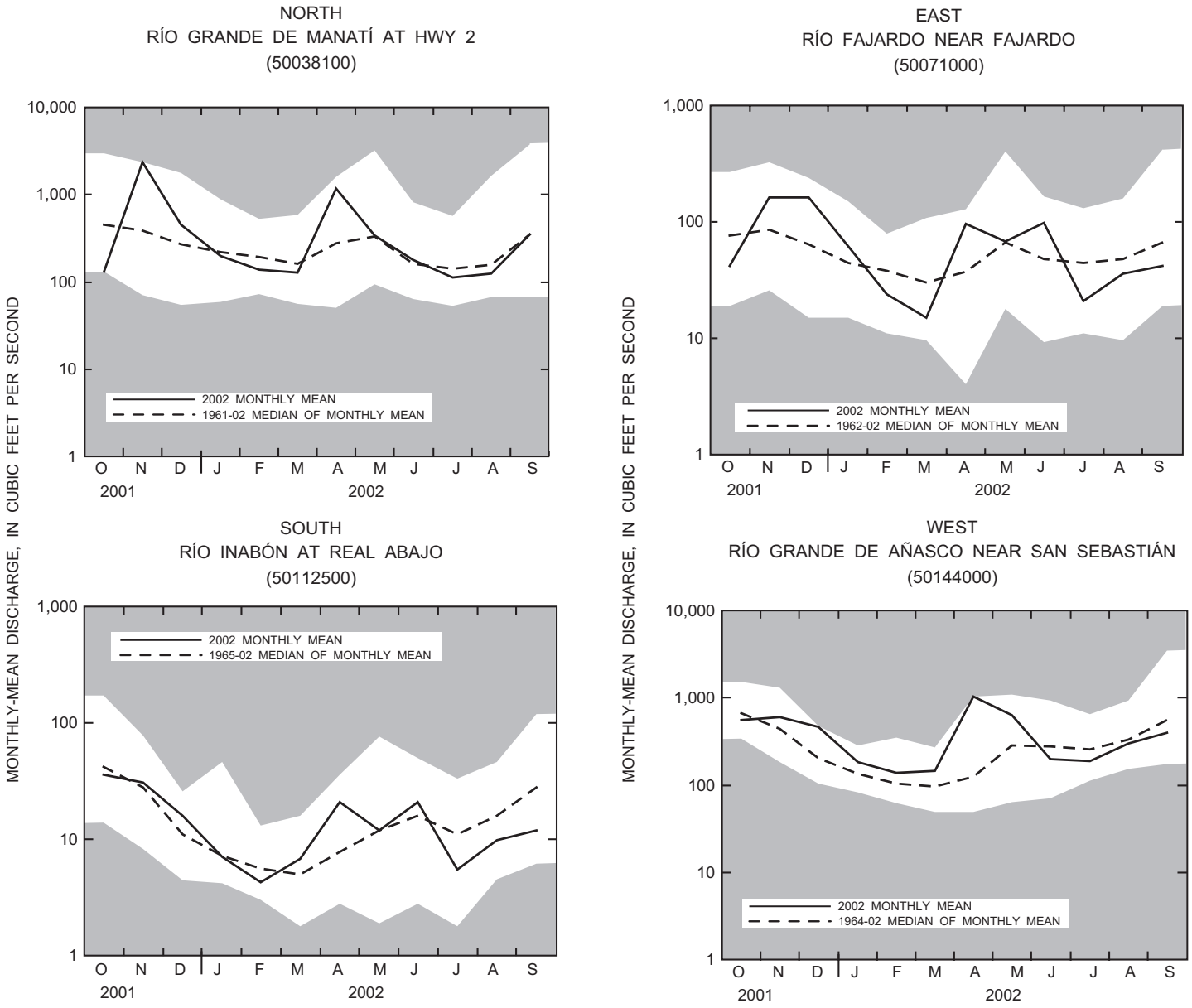
Table 1. Islandwide monthly rainfall for the water year 2002 and monthly normal rainfall for the 30-year reference period, 1971-2000.

Data from the National Oceanographic and Atmospheric Administration

Month	2002 Water Year (inches)	30-year normal (inches)
October	6.03	7.98
November	8.20	6.53
December	7.57	4.05
January	2.60	3.20
February	1.49	2.90
March	2.86	2.96
April	9.84	4.19
May	4.72	6.67
June	4.85	4.46
July	3.46	4.88
August	5.86	6.51
September	6.33	7.91
TOTAL	63.81	62.24

Surface Water

Streamflow in Puerto Rico during water year 2002 was within normal, as recorded by the four index stations compared with the long-term median of the monthly mean flows. Tropical disturbances and cold fronts passing through the area produced excessive rainfall that caused riverine flooding throughout the island. A cold front that passed through the island during November 7-9 produced heavy rain that caused extensive flooding mainly at the northern, central, and eastern areas of the island. This flood event produced the annual peak flows at most of the streamflow gaging stations throughout Puerto Rico. Comparisons of the monthly mean flows during water year 2002 with the long-term minimum, median, and maximum of the monthly mean flows, for the period of record at the index stations on the Río Grande de Manatí (northern area), the Río Fajardo (eastern area), the Río Inabón (southern area), and the Río Grande de Añasco (western area) are shown in figure 1. The following overview of the four areas, describes in more detail, the hydrologic conditions prevailing in Puerto Rico for the 2002 water year.



Unshaded area indicates range between highest and lowest monthly-mean discharges for the period of record to water year 2002.

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

In the northern area, represented by the Río Grande de Manatí index station, monthly mean flows were below the long-term median of the monthly mean flows during six months and well above the long-term median of the monthly mean flows during the other six months. The monthly mean flows for October, January, February, March, July, and August fluctuated between 11 to 71 percent below the long-term median of the monthly mean flows. During October, the four index stations registered monthly mean flows that ranged from 14 to 71 percent below the long-term median of the monthly mean flows. Historical minimum monthly mean flow was recorded during October at the Río Grande de Manatí index station. At the northern area, above normal monthly mean flows were recorded during November, December, April, May, June, and September. The monthly mean flows for these months ranged from 1 to 511 percent above the long-term median of the monthly mean flows. A historical maximum monthly mean flow was set for November at the Río Grande de Manatí index station.

In general, the streamflow conditions at the eastern area were very similar to the streamflow conditions at the northern area. As shown by the Río Fajardo near Fajardo index station in figure 1, during six months the monthly mean flows were below the long-term median of the monthly mean flows, while the other six months the monthly mean flows were above the long-term median of the monthly mean flows. The monthly mean flows ranged from 25 to 52 percent below the long-term median and from 3 to 162 percent above the long-term median of the monthly mean flows.

The monthly mean flows registered at the Río Inabón at Real Abajo index station were near the long-term median of the monthly mean flows during the first six months of water year 2002. A significant increase in streamflow was observed at this index station during April, when the monthly mean flow was above the long-term median of the monthly mean flows by 169 percent. The monthly mean flows for the rest of the water year was, in general, below the long-term median of the monthly mean flows.

The western area was the wettest of this water year, as shown by the index station at Río Grande de Añasco (figure 1). Monthly mean flows were above the long-term median of the monthly mean flows during November, December, January, February, March, April, and May ranging from 33 to 729 percent. A historical maximum monthly mean flow for April was set at the Río Grande de Añasco index station. Monthly mean flows ranging from 11 to 29 percent below the long-term median of the monthly mean flows were observed during the last four months of the water year.

In the U.S. Virgin Islands, the monthly mean flows were below the long-term median of the monthly mean flows during most of the water year 2002. Streamflow records from the U.S. Virgin Islands network of stations shown that monthly mean flows during December were above the long-term median of the monthly mean flows.

Ground Water

In general, the water-levels trends and fluctuations during the water year 2002 followed a seasonal pattern, resulting from a slightly above normal rainfall accumulation combined with continuous and mostly moderate ground-water withdrawals (fig. 2). The net seasonal change in water level reported as feet below land surface for all the index wells in figure 2 during water year 2002 is near or slightly above zero. This is an indication that, in general, there was no significant net change in storage in the limestone and alluvial aquifers of Puerto Rico, and the fractured-rock volcanic aquifers in St. John, U.S. Virgin Islands, during the year 2002.

The highest water level recorded during the year 2002 was slightly above the historic high at three of the ground-water monitoring stations (table 2). The highest water-level recorded in the remaining ground-water monitoring stations during the year 2002 was slightly below the historic high. In areas where ground-water withdrawals constitute an important resource for drinking water purposes, the lowest water level recorded was below the historic low in 6 of the ground-water monitoring stations (table 3). During most of water year 2002, rainfall ranged from 3 to 49 percent below the normal range except for the months of November, December, April, and June. For water year 2002, rainfall distribution in Puerto Rico climatic subdivisions at which the principal aquifer systems are found was as follow: North coast limestone, 108 percent of normal; South coastal plain, 87 percent of normal; Eastern alluvial valleys, 106 percent of normal; Western alluvial valleys, 108 percent of normal. For water year 2002, rainfall distribution in the U.S. Virgin Islands climatic subdivisions at which the principal aquifers are found was about 89 percent of normal.

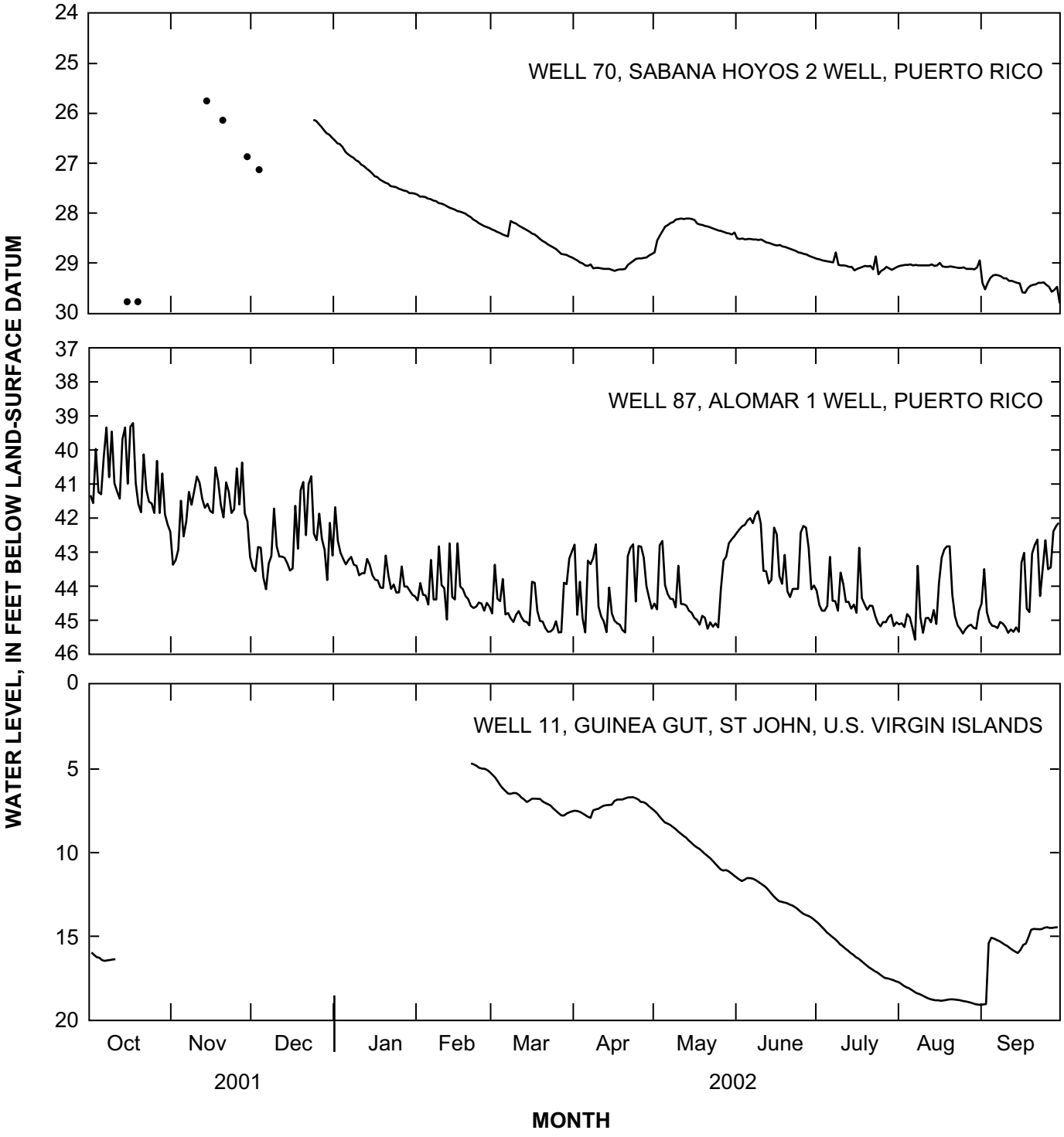


Figure 2. Ground-water levels at selected wells in Puerto Rico and the U.S. Virgin Islands.

Table 2. Highest ground-water levels recorded during 2002 water year and previous highest ground-water levels at selected wells in Puerto Rico.

[PR, Puerto Rico; +, water level above land-surface datum; ft-blsd, feet below land-surface datum; mm-dd-yy, month-day-year; mm-yy, month-year]

Well name	Local number	Location	2002 highest water level (ft-blsd)	Date (mm-dd-yy)	Previous highest water level (ft-blsd)	Date (mm-dd-yy)	Period of record (mm-yy)
Saltos 1	165	PR	35.17	06-06-02	38.24	10-16-98	01-82 to 09-02
PRASA Florida 1	1057	PR	137.07	11-08-01	137.91	09-22-98	08-96 to 09-02
Piezometer Higuillar USGS 1	1129	PR	33.83	11-17-01	35.29	01-15-99	02-00 to 09-02
Piezometer Monserrate 2	217	PR	+0.08	11-09-01	0.02	05-16-86	11-85 to 09-02
Piezometer USGS Bldg. 652	652	PR	3.10	09-24-02	4.59	05-28-00	05-97 to 09-02
Piezometer Fort Buchanan 1	1159	PR	25.54	09-15-02	27.56	09-29-01 09-30-01	09-97 to 09-02
Piezometer Caguas-Juncos 18	1180	PR	10.65	05-09-02	10.71	01-21-00	08-95 to 09-02
Piezometer Qda. Mata de Plátanos 1	1208	PR	+3.02	09-18-02	+1.60	09-21-98 09-22-98	06-97 to 06-02
Piezometer Yabucoa USGS Brackish	1226	PR	+2.44	01-07-02 01-08-02	+0.29	11-17-99	09-97 to 09-02
Yabucoa 7	96	PR	6.74	06-07-02	8.75	10-31-99	04-78 to 09-02
Piezometer Cabo Rojo	1303	PR	4.42	05-10-02	4.88	09-28-01	05-96 to 09-02

Table 3. Lowest ground-water levels recorded during 2002 water year and previous lowest ground-water levels at selected wells in Puerto Rico.

[PR, Puerto Rico; ft-blsd, feet below land-surface datum; mm-dd-yy, month-day-year; mm-yy, month-year]

Well name	Local number	Location	2002 lowest water level (ft-blsd)	Date (mm-dd-yy)	Previous lowest water level (ft-blsd)	Date (mm-dd-yy)	Period of record (mm-yy)
NC-5 Cruce Dávila	205	PR	96.61	08-27-02	92.21	08-06-01	12-86 to 09-02
Piezometer Río Mameyes 2	1202	PR	14.63	09-11-02	14.52	08-22-00 08-23-00	09-97 to 09-02
Piezometer USGS RF 12	1207	PR	13.74	04-15-02	12.40	08-17-99 08-18-99	08-95 to 09-02
PRASA Villodas	1238	PR	38.67	09-15-02	32.96	07-22-98	03-98 to 09-02
Jobos Well	1239	PR	32.63	09-30-02	31.42	08-06-98	04-97 to 09-02
Bauzá 1	1260	PR	219.21	08-26-02	215.70	06-08-98	10-97 to 09-02
Rincón 4	1352	PR	36.71	08-05-02	35.62	06-12-00 to 06-15-00	05-96 to 09-02

The period of record of many of the ground-water monitoring sites dates back to 1997, when the ground-water monitoring network was established. Fluctuations in water levels observed at these monitoring sites during water year 2002 were of the same order of magnitude as the historic ground-water levels at the index stations obtained since the 1960's. Figures 7 and 9 show the locations of the ground-water stations maintained by the USGS in Puerto Rico and the U.S. Virgin Islands.

Water Quality

The U.S. Geological Survey, in cooperation with several Commonwealth agencies, collected water-quality data at 74 surface-water stations during water year 2002. Water-quality data collected at these stations included major ions, trace elements, nutrients, pesticides, as well as fecal indicator bacteria and physical parameters. The presence of high concentrations of fecal coliform (fig. 3) and fecal streptococcal (fig. 4) bacteria during water year 2002 continued to be one of the principal water-quality problems in Puerto Rico. The Río de Bayamón and the Río Grande de Loíza basins have the higher fecal coliform and fecal streptococci bacteria concentrations. Cities with high population are located within these basins. Although water pollution control measures are being implemented to decrease the concentrations of these bacteria, the values are still above the established water-quality standards for natural waters. Areas drained by major rivers where there is intense land use (agriculture, industry, urbanization) have, in general, fairly high concentrations of fecal indicator bacteria. These include the municipios of Aguadilla, Añasco, Arecibo, Humacao, and Manatí. The ability of communities to treat drinking water for bacteria is often inhibited by runoff with high suspended-sediment concentration and the associated turbidity problems. This is generally the principal cause in streams which suffer from intense resource utilization (agriculture and urban development) where soil movement is involved.

The U.S. Geological Survey, in cooperation with various Commonwealth and Federal agencies, collected suspended-sediment samples at 28 stations in Puerto Rico during the 2002 water year. High suspended-sediment concentrations are a common problem in many streams in Puerto Rico. Most of the streams with high suspended-sediment concentrations are related to land use, especially urban development, agriculture, and activities which disturb soil cover. High suspended-sediment concentrations affect the operation of public surface-water supply filtration plants and contribute with the storage depletion capacities of reservoirs. Table 4 summarizes the annual sediment discharge (in tons) and sediment yield (in tons/mi^2), for some of the monitored stations. Calculated sediment yields varied from a minimum of 390 tons/mi^2 at station 50114900, Río Portugués at Tibes, to a maximum of 7,690 tons/mi^2 at station 50048770, Río Piedras at El Señorial. The average sediment yield was 2,140 tons/mi^2 and the median was 1,310 tons/mi^2.

Table 4. Sediment yields in selected sediment stations for water year 2002.

[mi², square miles; tons/mi², tons per square miles]

Station number	Station name	Drainage area, in mi²	Annual sediment discharge, in tons	Sediment yields, in tons/mi²
50020500	Río Grande de Arecibo near Adjuntas	12.7	24,200	1,910
50021030	Río Pellejas above Central Pellejas	6.83	4,590	672
50021700	Río Grande de Arecibo Above Utuado	36.0	28,300	786
50022810	Río Viví below Hacienda El Progreso	2.99	5,980	2,000
50024950	Río Grande de Arecibo below Utuado	65.6	169,000	2,580
50025155	Río Saliente at Coabey near Jayuya	9.25	6,250	675
50025850	Río Jauca at Paso Palma	6.89	2,750	399
50026025	Río Caonillas at Paso Palma	37.9	61,200	1,610
50026400	Río Yunes at Hwy 140 near Florida	13.9	49,500	3,560
50027000	Río Limón above Lago Dos Bocas	33.2	92,300	2,780
50028000	Río Tanamá near Utuado	18.4	116,000	6,300
50031200	Río Grande de Manatí near Morovis	55.2	107,000	1,940
50043800	Río de la Plata at Comerío	109	140,000	1,290
50048770	Río Piedras at El Señorial	7.49	57,600	7,690
50051800	Río Grande de Loíza at Hwy 183 near San Lorenzo	25.0	32,000	1,280
50055000	Río Grande de Loíza at Caguas	89.8	78,900	879
50055750	Río Gurabo below El Mangó	22.3	19,400	870
50056400	Río Valenciano near Juncos	16.4	102,000	6,220
50065500	Río Mameyes near Sabana	6.88	4,160	605
50071000	Río Fajardo near Fajardo	14.9	19,900	1,340
50110900	Río Toa Vaca above Lago Toa Vaca	14.2	13,800	972
50114900	Río Portugués near Tibes	7.27	2,840	390
50136400	Río Rosario near Hormigueros	18.3	14,400	787
50148890	Río Culebrinas at Margarita Dam near Aguada	94.6	369,000	3,900

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Bench-Mark Network is a network of 57 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

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 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.

The National Trends Network (NTN) is a 150-station 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).

The National Water-Quality Assessment (NAWQA) Program of the U.S. Geological Survey is a long-term program with goals to describe the status and trends of water-quality conditions for a large, diverse, and geographically distributed part of the Nation's ground- and surface-water resources, and to identify, describe, and explain the major natural and human factors that affect these observed conditions and trends.

Assessment activities have begun in more than one-third of the study units and ultimately will be conducted in 60 study units (major watersheds and aquifer systems) that represent a wide range of environmental settings nationwide and that account for a large percentage of the Nation's water use. A wide array of chemical constituents will be measured in ground water, surface water, streambed sediments, and fish tissues. The coordinated application of comparative hydrologic studies at a wide range of spatial and temporal scales will provide information for decision making by water-resources managers and a foundation for aggregation and comparison of findings to address water-quality issues of regional and national interest.

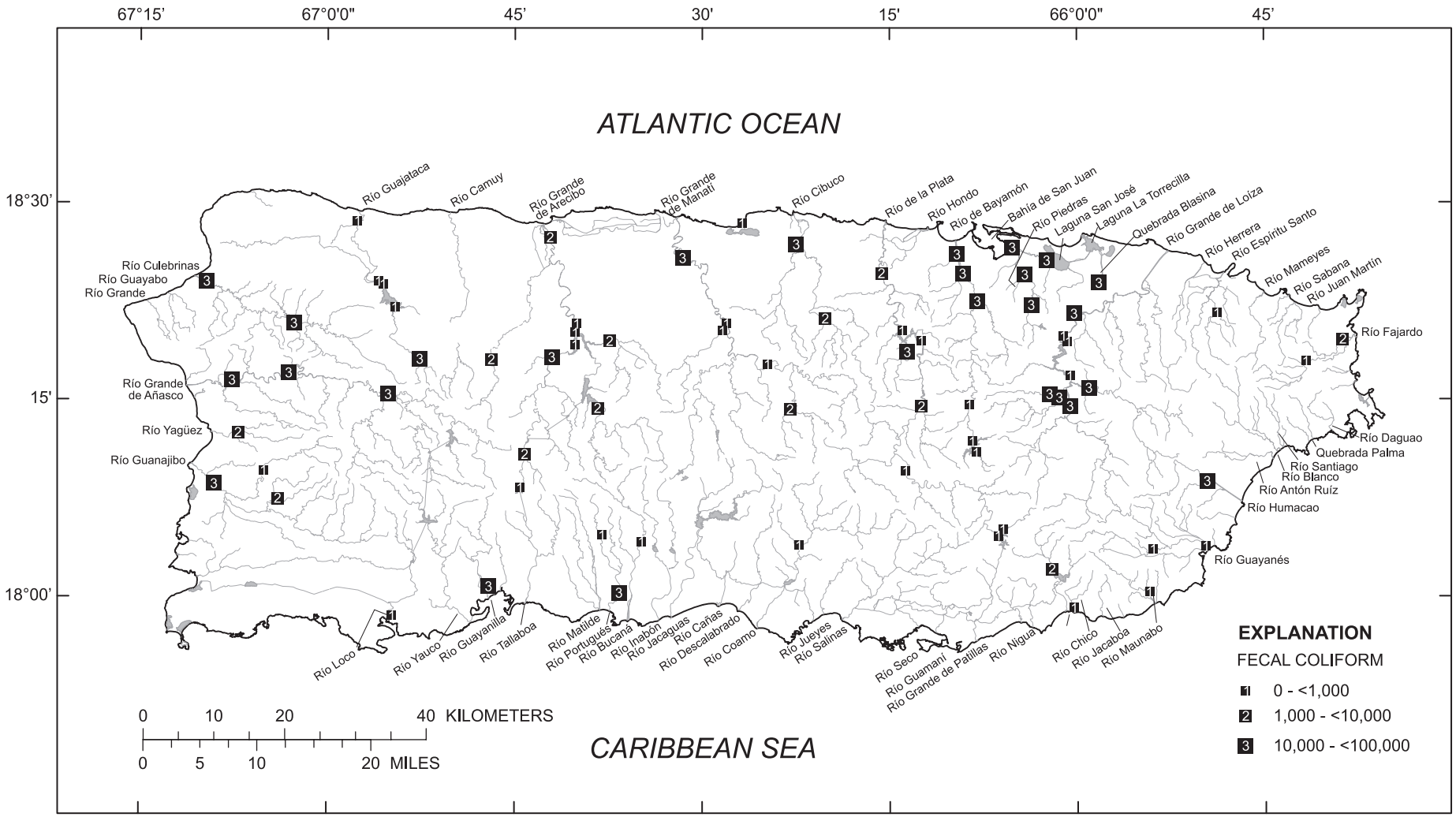


Figure 3. Location of maximum concentrations of fecal coliform bacteria at the water-quality sampling sites in Puerto Rico.

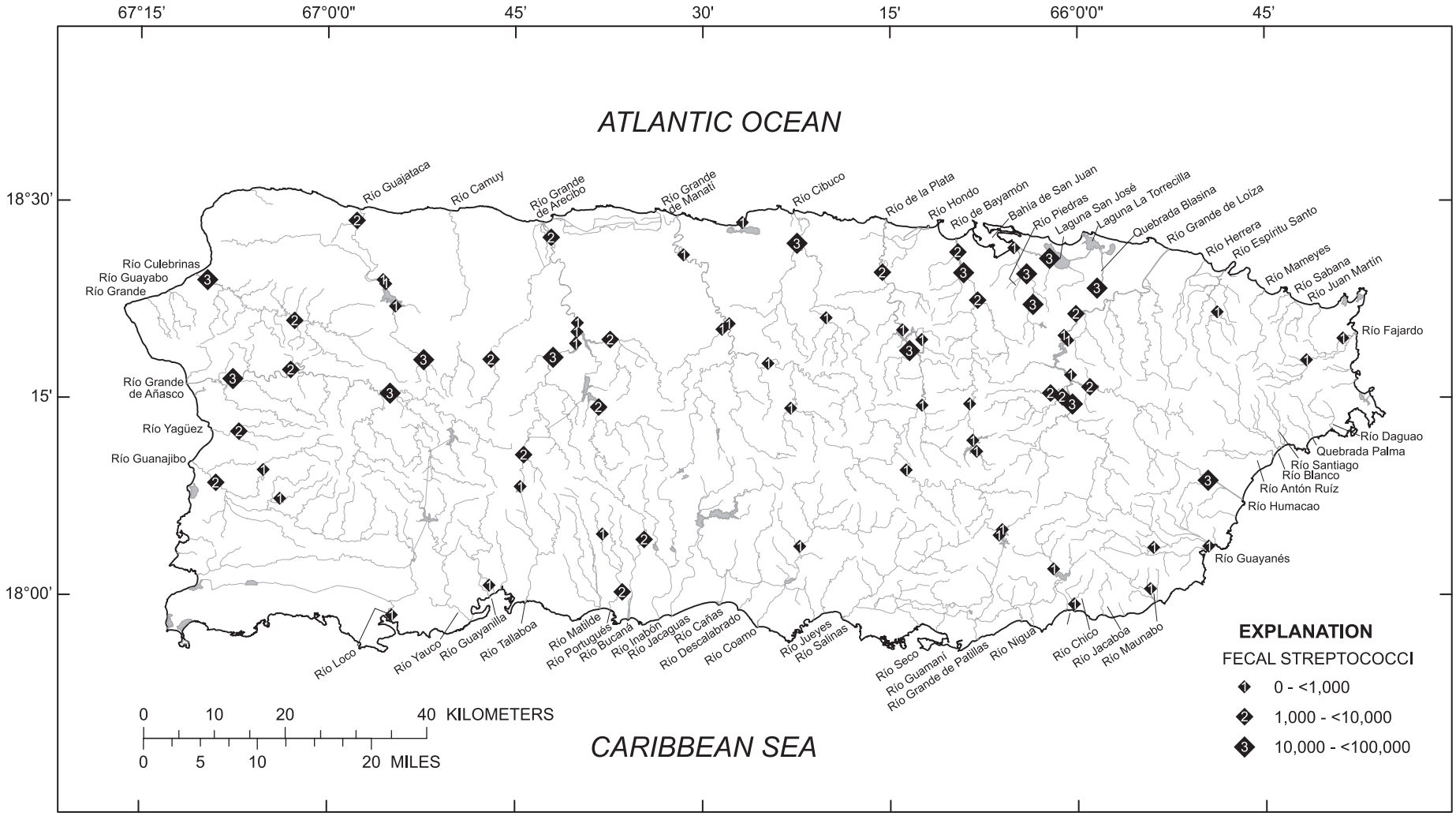


Figure 4. Location of maximum concentrations of fecal streptococci bacteria at the water-quality sampling sites in Puerto Rico.

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

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

EXPLANATION OF RECORDS

The surface- and ground-water records published in this report are for the 2002 water year that began October 1, 2001 and ended September 30, 2002. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, 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 3 to 9. 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 stream site 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."

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 of 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. 10).

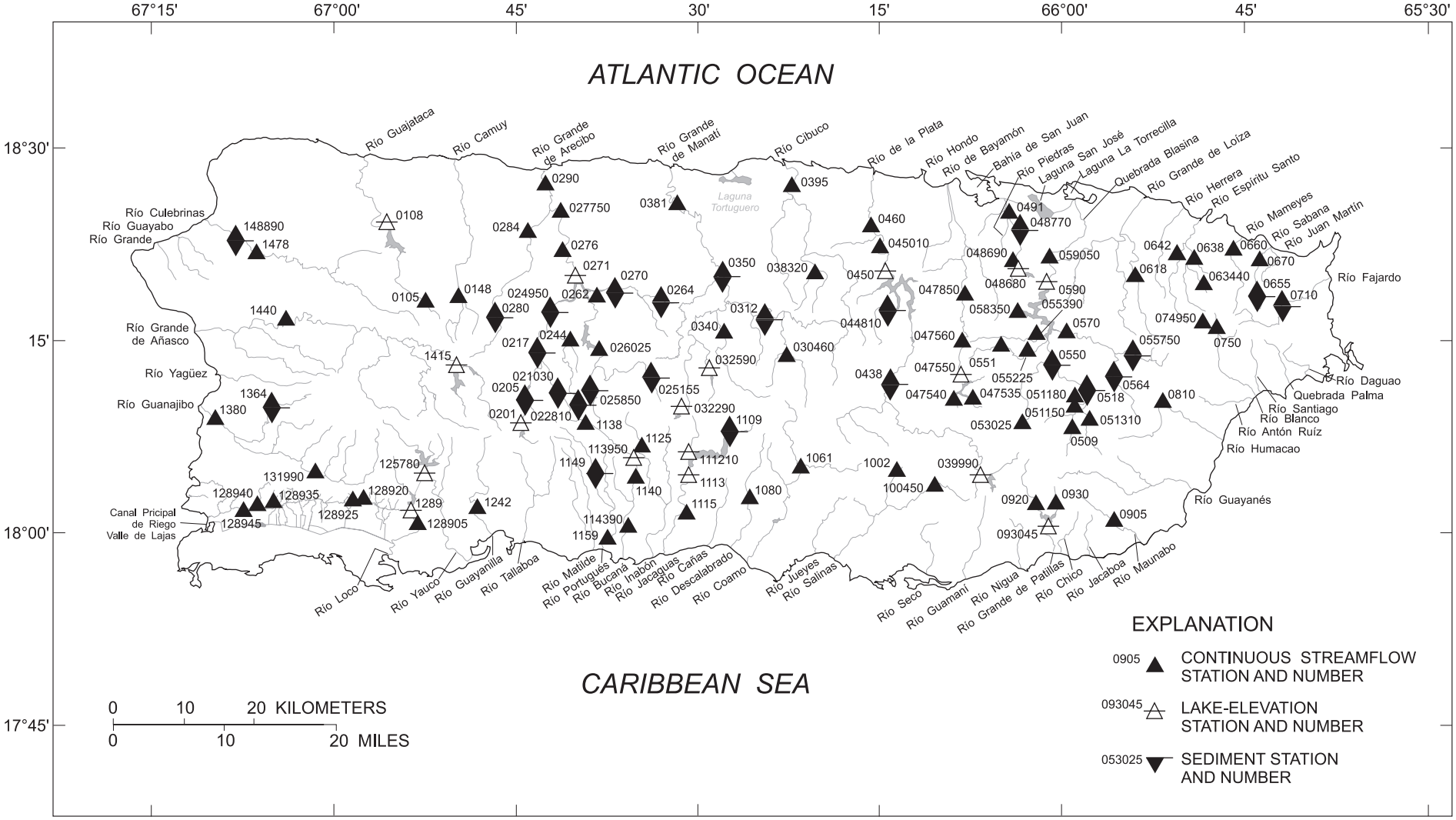
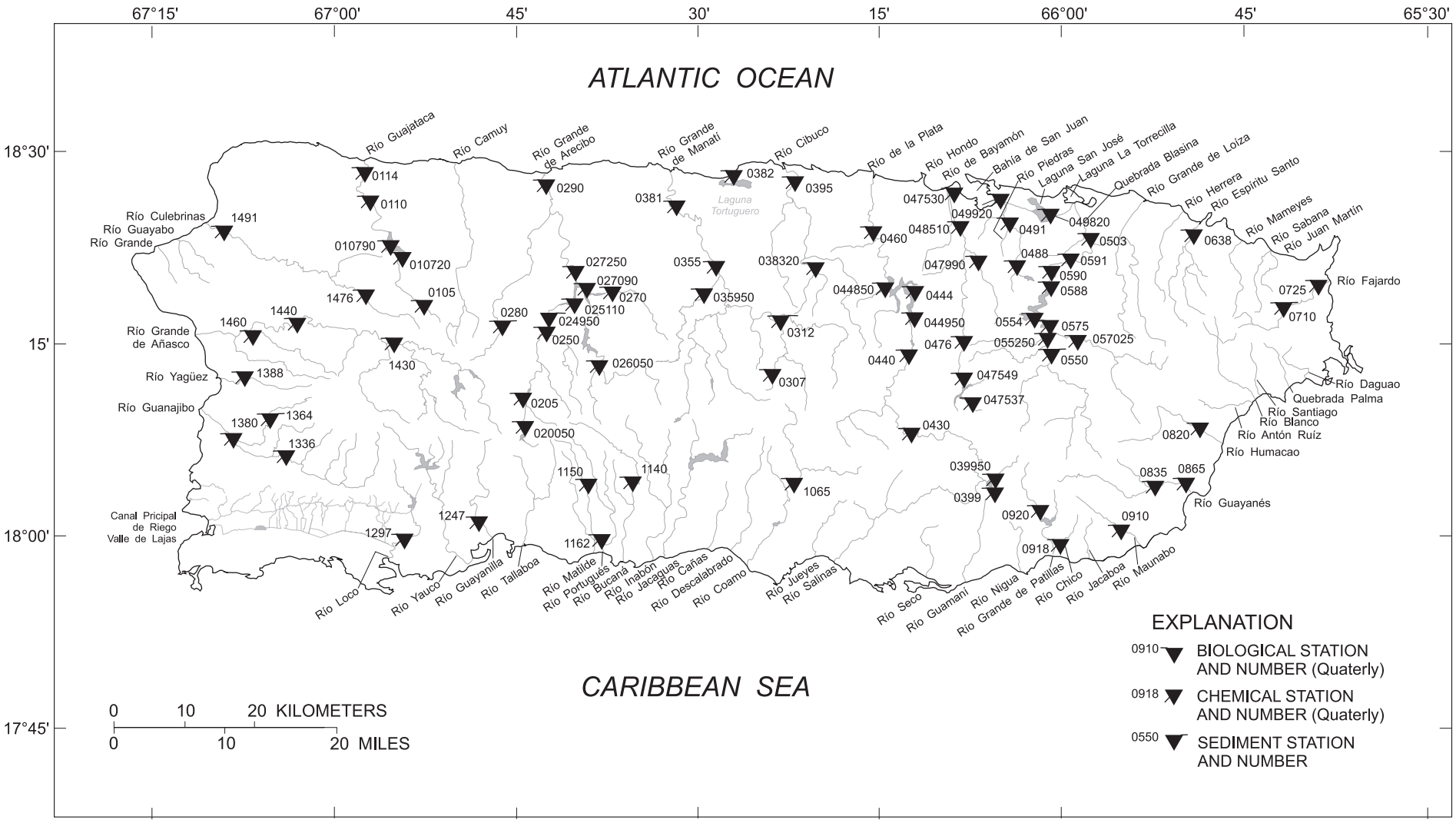


Figure 5. Location of surface-water stations in Puerto Rico.



EXPLANATION

0910 BIOLOGICAL STATION AND NUMBER (Quaterly)

0918 CHEMICAL STATION AND NUMBER (Quaterly)

0550 SEDIMENT STATION AND NUMBER

0 10 20 KILOMETERS

0 10 20 MILES

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

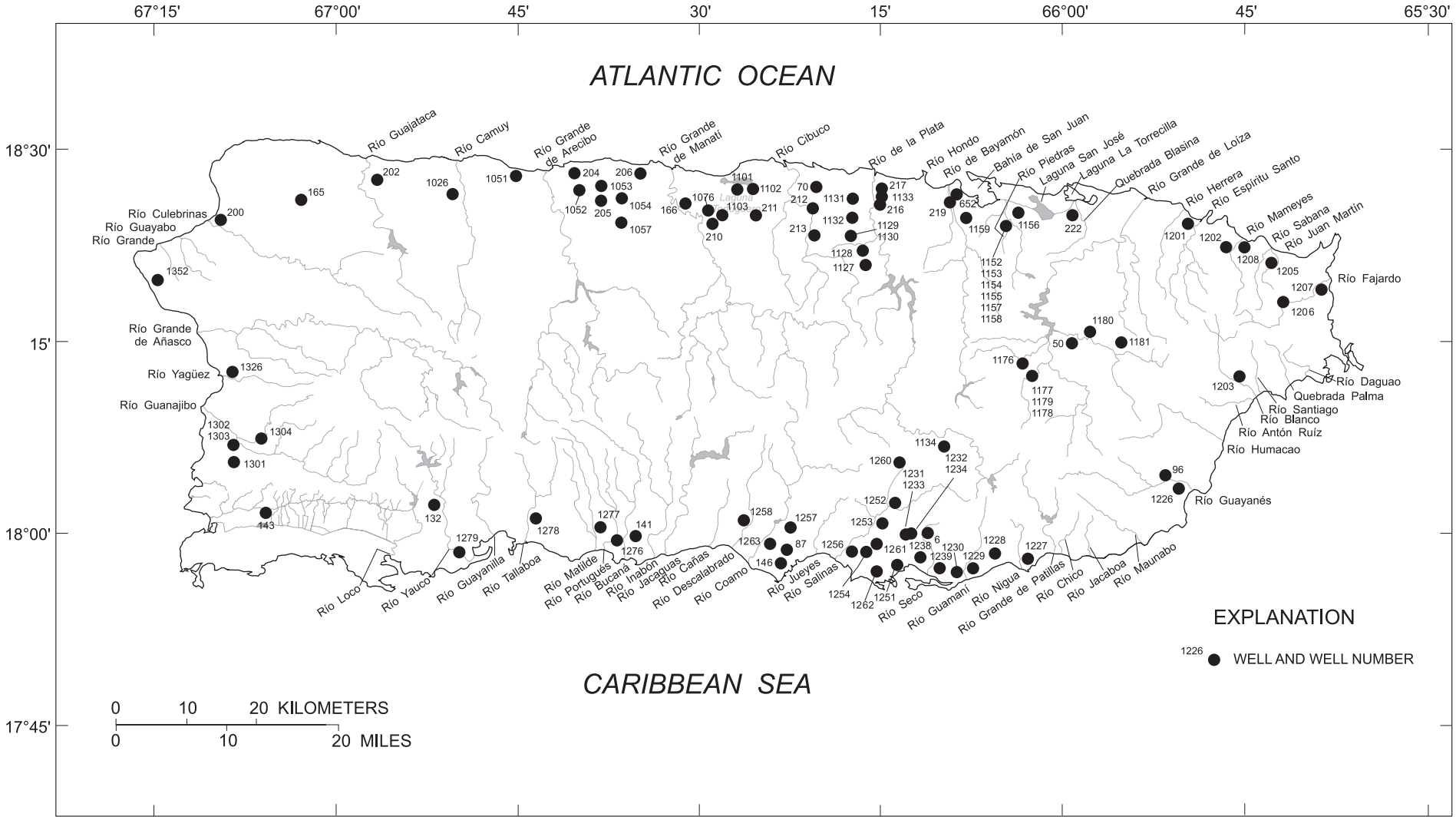


Figure 7. Location of ground-water stations in Puerto Rico.

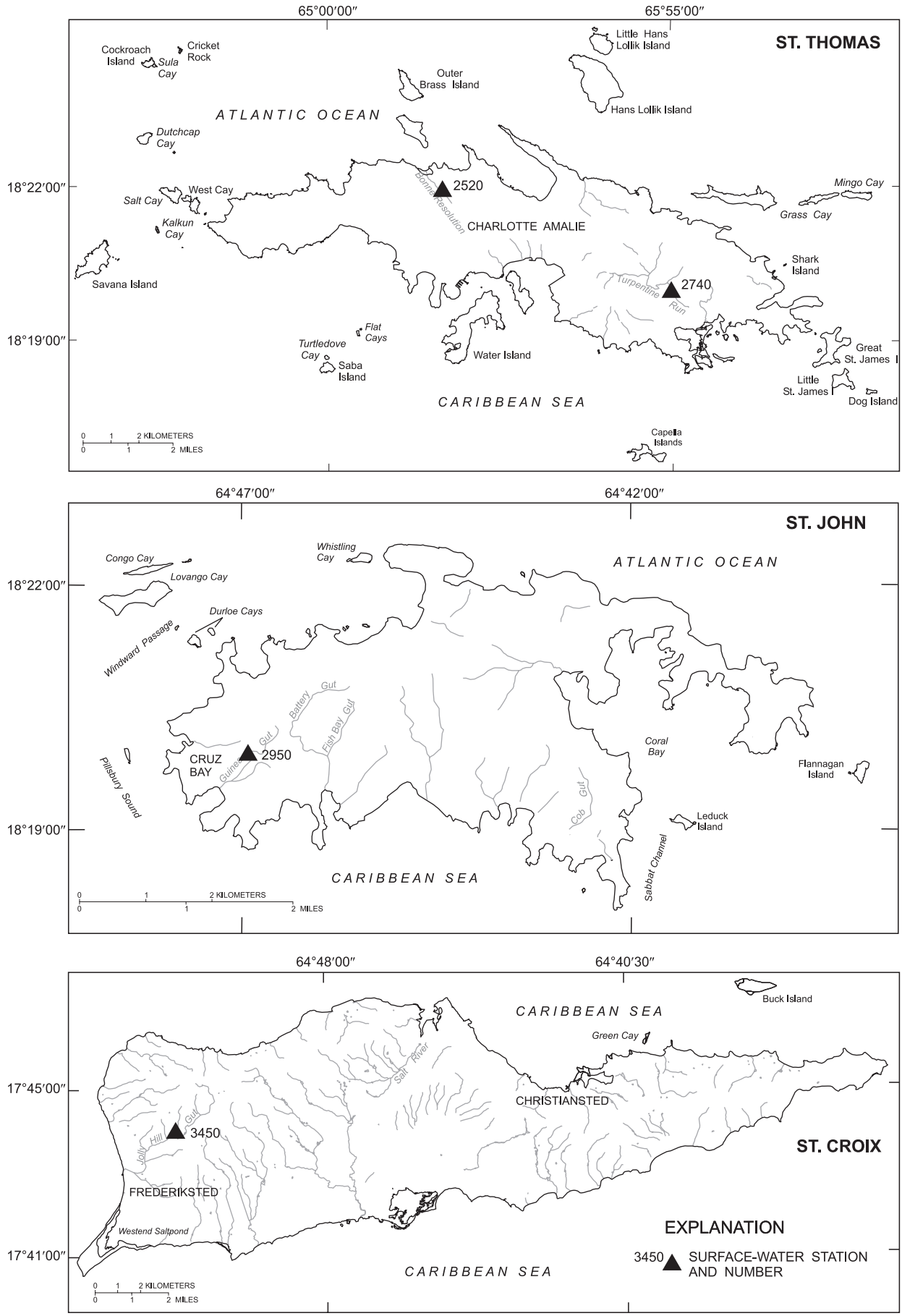


Figure 8. Location of surface-water stations in the U.S. Virgin Islands.

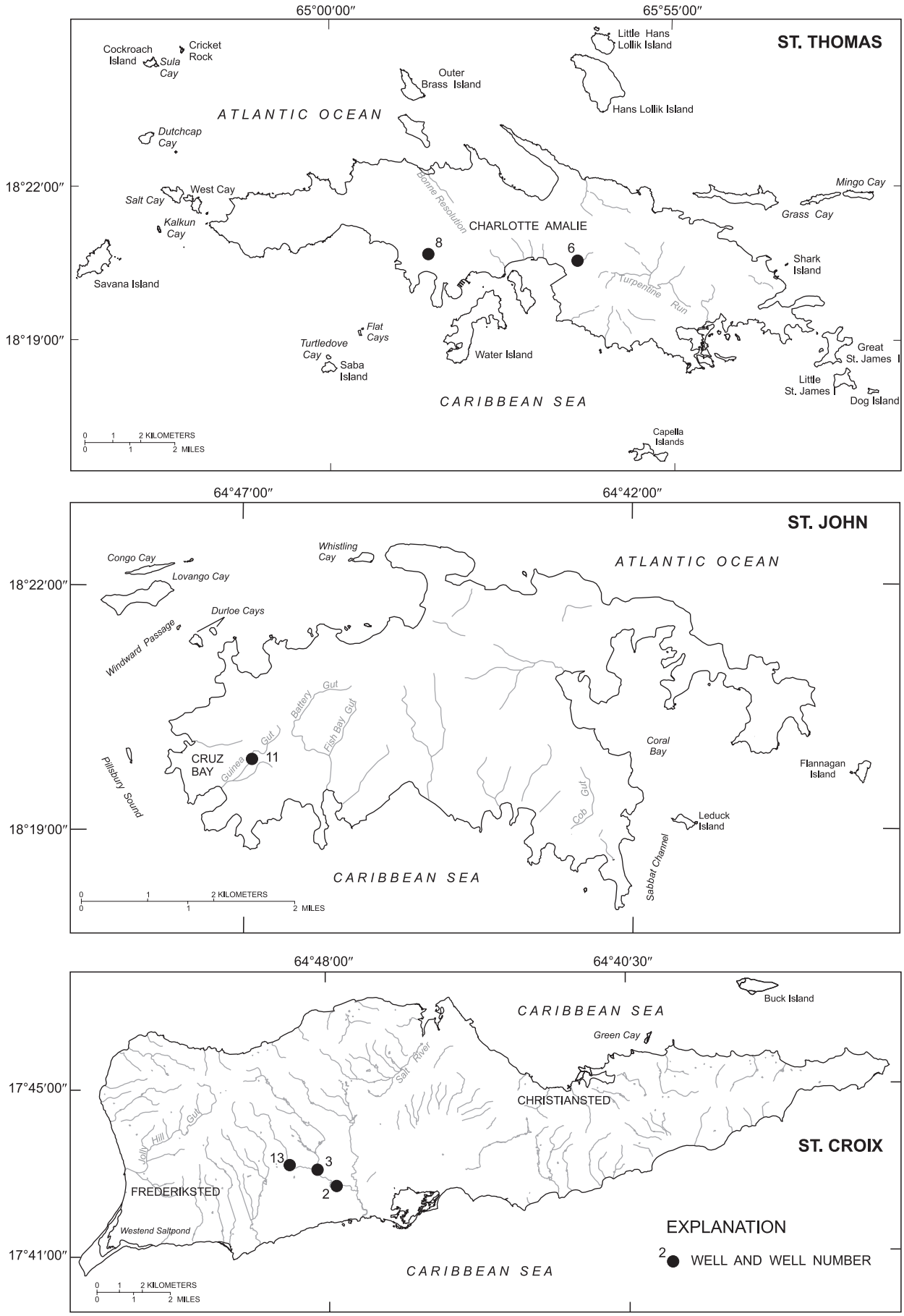


Figure 9. Location of ground-water stations in the U.S. Virgin Islands.

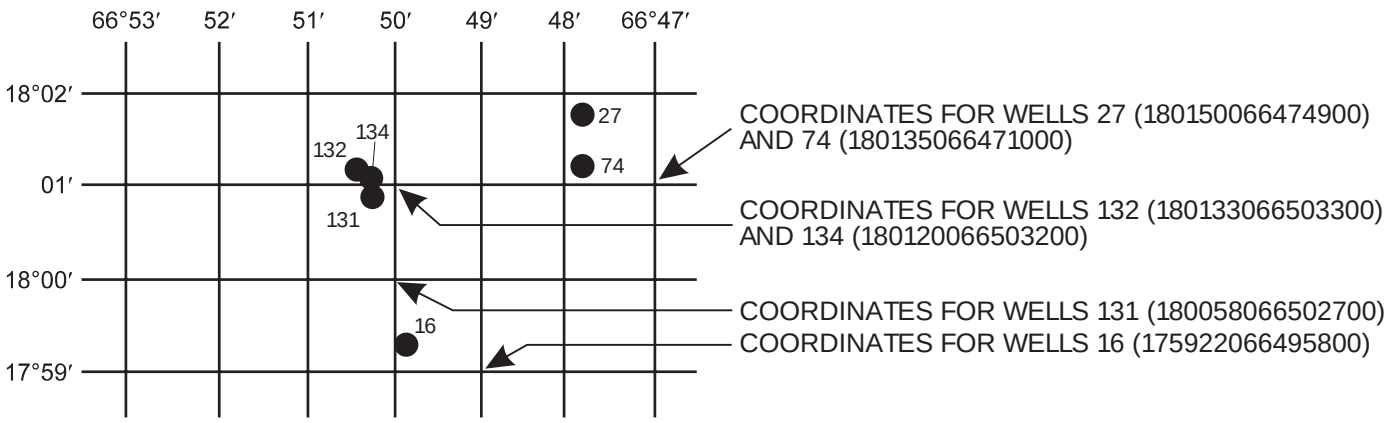


Figure 10. Grid showing system for numbering wells and miscellaneous sites (latitude and longitude).

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 obtained 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 "Low-flow 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 type of report. Location of all complete-record stations for which data are given in this report are shown in figures 5 and 8.

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 or electronic satellite data collector platforms that receive stage values 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 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 surveys may be necessary to redefine it. Even when this is done, as time between the last survey increases, the contents computed may increase in error. 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, inflow-outflow 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

Steamflow data in this report are presented in a new format that is considerably different from the format in data reports prior to the 1992 water year. The major changes are that statistical characteristics of discharge now appear in tabular summaries following the water-year data table and less information is provided in the text or station manuscript above the table. These changes represent the results of a pilot program to reformat the annual water-data report to meet current user needs and data preferences.

The records published for each continuous-record surface-water discharge station (gaging station) now consist of four parts, the manuscript or station description; the data table of daily mean values of discharge for the current water year with summary data; a tabular statistical summary of monthly mean flow data for a designated period, by water year; and a summary statistics table that includes statistical data of annual, daily, and instantaneous flows as well as data pertaining to annual runoff, 7-day low-flow minimum, and flow duration.

Station Manuscript

The manuscript provides, under various headings, descriptive information, such as station location; period of record; historical extremes outside the period of record; 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 stations descriptions.

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.--Because of new information, published records 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.

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.

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.

Data Table of Daily Mean Values

The daily table of discharge records for stream gaging stations gives mean discharge for each day of the water year. In the monthly summary for the table, the line headed "TOTAL" gives the sum of the daily figures for each month; the line headed "MEAN" gives the average flow in cubic feet per second for the month; and the lines headed "MAX" and "MIN" give the maximum and minimum daily mean discharges, respectively, for each 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 or in acre-feet may be omitted if there is extensive regulations or diversion or if the drainage area includes large noncontributing areas.

Statistics of Monthly Mean Data

A tabular summary of the mean (line headed "MEAN"), maximum (line headed "MAX"), and minimum (line headed "MIN") of monthly mean flows for each month for a designated period is provided below the mean values table. The water years of the first occurrence of the maximum and minimum monthly flow are provided immediately below those figures. The designated period will be expressed as "FOR WATER YEARS ____-____, BY WATER YEAR (WY)," and will list the first and last water years of the range of years selected from the PERIOD OF RECORD paragraph in the station manuscript. It will consist of all of the station records within the specified water years, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be consecutive, unless a break in the station record is indicated in the manuscript.

Summary Statistics

A table titled "SUMMARY STATISTICS" follows the statistics of monthly mean data tabulation. This table consists of four columns, with the first column containing the line headings of the statistics being reported. The table provides a statistical summary of yearly, daily, and instantaneous flows, not only for the current water year but also for the previous calendar year and for a designated period, as appropriate. The designated period selected, "WATER YEARS ____-____," will consist of all of the station records within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be consecutive, unless a break in the station record is indicated in the manuscript. All of the calculations for the statistical characteristics designated ANNUAL (see line headings below), except for the "ANNUAL 7-DAY MINIMUM" statistic, are calculated for the designated period using complete water years. The other statistical characteristics may be calculated using partial water years.

The date or water year, as appropriate, of the first occurrence of each statistic reporting extreme values of discharge is provided adjacent to the statistic. Repeated occurrences may be noted in the REMARKS paragraph of the manuscript or in footnotes. Because the designated period may not be the same as the station period of record published in the manuscript, occasionally the dates of occurrence listed for the daily and instantaneous extremes in the designated-period column may not be within the selected water years listed in the heading. When this occurs, it will be noted in the REMARKS paragraph or in footnotes. Selected streamflow duration curve statistics and runoff data are also given. Runoff data may be omitted if there is extensive regulation or diversion of flow in the drainage basin.

The following summary statistics data, as appropriate, are provided with each continuous record of discharge. Comments to follow clarify information presented under the various line headings of the summary statistics table.

ANNUAL TOTAL.--The sum of the daily mean values of discharge for the year. At some stations the annual total discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes.

ANNUAL MEAN.--The arithmetic mean of the individual daily mean discharges for the year noted or for the designated period. At some stations the yearly mean discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes.

HIGHEST ANNUAL MEAN.--The maximum annual mean discharge occurring for the designated period.

LOWEST ANNUAL MEAN.--The minimum annual mean discharge occurring for the designated period.

HIGHEST DAILY MEAN.--The maximum daily mean discharge for the year or for the designated period.

LOWEST DAILY MEAN.--The minimum daily mean discharge for the year or for the designated period.

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

MAXIMUM PEAK FLOW.--The maximum instantaneous discharge occurring for the water year or for the designated period. Note that secondary instantaneous peak discharges above a selected base discharge are stored in District computer files for stations meeting certain criteria. Those discharge values may be obtained by writing to the District Office. (See address on back of the title page of this report.)

MAXIMUM PEAK STAGE.--The maximum instantaneous stage occurring for the water year or for the designated period. If the dates of occurrence for the instantaneous peak flow and instantaneous peak stage differ, the REMARKS paragraph in the manuscript or a footnote may be used to provide further information.

INSTANTANEOUS LOW FLOW.--The minimum instantaneous discharge occurring for the water year or for the designated period.

ANNUAL RUNOFF.--Indicates the total quantity of water in runoff for a drainage area for the year. Data reports may use any of the following units of measurements in presenting annual runoff data:

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

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 the runoff is distributed uniformly in time and area.

Inches (INCHES) indicates the depth to which the drainage area would be covered if all of the runoff for given time period were uniformly distributed on it.

10 PERCENT EXCEEDS.--The discharge that is exceeded 10 percent of the time for the designated period.

50 PERCENT EXCEEDS.--The discharge that is exceeded 50 percent of the time for the designated period.

90 PERCENT EXCEEDS.--The discharge that is exceeded 90 percent of the time for the designated period.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in a table of discharge measurements at low-flow partial-record stations. These measurements are generally made in times of drought to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Identifying Estimated Daily Discharge

Estimated daily-discharge values published in the water-discharge tables are identified by flagging individual daily values with the letter symbol "e" and printing a table footnote, "e Estimated."

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 ft^3/s; to the nearest tenth between 1.0 and 10 ft^3/s; to whole numbers between 10 and 1,000 ft^3/s; and to 3 significant figures for more than 1,000 ft^3/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.

Classification of Records

Water-quality data for surface-water sites are grouped into one of three classifications. A continuing-record station 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 partial-record station 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 miscellaneous 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, when available, (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 and pumping sediment samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross sections.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or 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, suspended-sediment loads for other periods of similar discharge, and computed by the subdivided-day method using the transport curves.

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 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 Denver, Co. or Ocala, Fla. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chap. C1. 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, and tables of "daily values" of specific conductance, pH, water temperature, dissolved oxygen, and suspended sediment then follow in sequence, when these parameters are studied.

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
M	Presence verified, not quantified

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 easy reference. See figure 10.

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 day and as an instantaneous observation at noon.

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 three parts, the station description, the data table of water levels observed during the water year and a graph of the water levels for the current water year and other selected period. 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 of the well description.

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 geological 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 (or below) sea level; it is reported with a 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, daily values tables are published for the instantaneous water-level observation at noon. The highest and lowest water levels of the water year and their dates of occurrence are shown on a line below the 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. A hydrograph for a selected period of record follows each water-level table.

Records of Ground-Water Quality

Records of ground-water quality in this type of 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 type of 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 are obtained by trained personnel. The wells sampled are pumped long enough to assure that the water collected comes directly from the aquifer and has 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, when available, 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 U.S. GEOLOGICAL SURVEY WATER DATA

The U.S. Geological Survey provides near real-time stage and discharge data for many of the gaging stations equipped with the necessary telemetry and historic daily-mean and peak-flow discharge data for most current or discontinued gaging stations through the world wide web (WWW). These data may be accessed at

http://water.usgs.gov

Some water-quality and ground-water data also are available through the WWW. In addition, data can be provided in various machine-readable formats on magnetic tape or 3-1/2 inch floppy disk. Information about the availability of specific types of data or products, and user charges, can be obtained locally from each of the Water Resources Division District Offices (see address on the back of the title page).

DEFINITION OF TERMS

Specialized technical terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. Definitions of common terms such as algae, water level, and precipitation are given in standard dictionaries. Not all terms defined in this alphabetical list apply to every State. See also table for converting inch/pound units to International System (SI) units on the inside of the back cover.

Acid neutralizing capacity (ANC) is the equivalent sum of all bases or base-producing materials, solutes plus particulates, in an aqueous system that can be titrated with acid to an equivalence point. This term designates titration of an "unfiltered" sample (formerly reported as alkalinity).

Acre-foot (AC-FT, acre-ft) is a unit of volume, commonly used to measure quantities of water used or stored, equivalent to the volume of water required to cover 1 acre to a depth of 1 foot and equivalent to 43,560 cubic feet, 325,851 gallons, or 1,233 cubic meters. (See also "Annual runoff")

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

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

Alkalinity is the capacity of solutes in an aqueous system to neutralize acid. This term designates titration of a "filtered" sample.

Annual runoff is the total quantity of water that is discharged ("runs off") from a drainage basin in a year. Data reports may present annual runoff data as volumes in acre-feet, as discharges per unit of drainage area in cubic feet per second per square mile, or as depths of water on the drainage basin in inches.

Annual 7-day minimum is the lowest mean value for any 7-consecutive-day period in a year. Annual 7-day minimum values are reported herein for the calendar year and the water year (October 1 through September 30). Most low-flow frequency analyses use a climatic year (April 1-March 31), which tends to prevent the low-flow period from being artificially split between adjacent years. The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day, 10-year low-flow statistic.)

Aroclor is the registered trademark for a group of poly-chlorinated biphenyls that were manufactured by the Monsanto Company prior to 1976. Aroclors are assigned specific 4-digit reference numbers dependent upon molecular type and degree of substitution of the biphenyl ring hydrogen atoms by chlorine atoms. The first two digits of a numbered aroclor represent the molecular type, and the last two digits represent the percentage weight of the hydrogen-substituted chlorine.

Artificial substrate is a device that 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 collected. 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 collection. (See also "Substrate")

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500 °C for 1 hour. Ash mass of zooplankton and phytoplankton is expressed in grams per cubic meter (g/m^3), and periphyton and benthic organisms in grams per square meter (g/m^2). (See also "Biomass" and "Dry mass")

Aspect is the direction toward which a slope faces with respect to the compass.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, whereas 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.

Bankfull stage, as used in this report, is the stage at which a stream first overflows its natural banks formed by floods with 1- to 3-year recurrence intervals.

Base discharge (for peak discharge) is a discharge value, determined for selected stations, above which peak discharge data are published. The base discharge at each station is selected so that an average of about three peak flows per year will be published. (See also "Peak flow")

Base flow is sustained flow of a stream in the absence of direct runoff. It includes natural and human-induced streamflows. Natural base flow is sustained largely by ground-water discharge.

Bedload is material in transport that is supported primarily by the streambed. In this report, bedload is considered to consist of particles in transit from the bed to an elevation equal to the top of the bedload sampler nozzle (ranging from 0.25 to 0.5 foot) that are retained in the bedload sampler. A sample collected with a pressure-differential bedload sampler also may contain a component of the suspended load.

Bedload discharge (tons per day) is the rate of sediment moving as bedload, reported as dry weight, that passes through a cross section in a given time. NOTE: Bedload discharge values in this report may include a component of the suspended-sediment discharge. A correction may be necessary when computing the total sediment discharge by summing the bedload discharge and the suspended-sediment discharge. (See also "Bedload," "Dry weight," "Sediment," and "Suspended-sediment discharge")

Bed material is the sediment mixture of which a stream-bed, lake, pond, reservoir, or estuary bottom is composed. (See also "Bedload" and "Sediment")

Benthic organisms are the group of organisms inhabiting the bottom of an aquatic environment. They include a number of types of organisms, such as bacteria, fungi, insect larvae and nymphs, snails, clams, and crayfish. They are useful as indicators of water quality.

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

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

Biomass pigment ratio is an indicator of the total proportion of periphyton that are autotrophic (plants). This is also called the Autotrophic Index.

Blue-green algae (*Cyanophyta*) 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. Concentrations are expressed as a number of cells per milliliter (cells/mL) of sample. (See also "Phytoplankton")

Bottom material (See "Bed material")

Bulk electrical conductivity is the combined electrical conductivity of all material within a doughnut-shaped volume surrounding an induction probe. Bulk conductivity is affected by different physical and chemical properties of the material including the dissolved solids content of the pore water and lithology and porosity of the rock.

Cells/volume refers to the number of cells of any organism that 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 volume, and are generally reported as cells or units per milliliter (mL) or liter (L).

Cells volume (biovolume) determination is one of several common methods used to estimate biomass of algae in aquatic systems. Cell members of algae are frequently used in aquatic surveys as an indicator of algal production. However, cell numbers alone cannot represent true biomass because of considerable cell-size variation among the algal species. Cell volume (μm^3) is determined by obtaining critical cell measurements or cell dimensions (for example, length, width, height, or radius) for 20 to 50 cells of each important species to obtain an average biovolume per cell. Cells are categorized according to the correspondence of their cellular shape to the nearest geometric solid or combinations of simple solids (for example, spheres, cones, or cylinders). Representative formulae used to compute biovolume are as follows:

$$\text{sphere } 4/3\ \pi r^3 \quad \text{cone } 1/3\ \pi r^2 h \quad \text{cylinder } \pi r^2 h.$$

pi (π) is the ratio of the circumference to the diameter of a circle; pi = 3.14159….

From cell volume, total algal biomass expressed as biovolume (μm^3/mL) is thus determined by multiplying the number of cells of a given species by its average cell volume and then summing these volumes for all species.

Cfs-day (See "Cubic foot per second-day")

Channel bars, as used in this report, are the lowest prominent geomorphic features higher than the channel bed.

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 BOD or with carbonaceous organic pollution from sewage or industrial wastes. [See also "Biochemical oxygen demand (BOD)"]

Clostridium perfringens *(C. perfringens)* is a spore-forming bacterium that is common in the feces of human and other warmblooded animals. Clostridial spores are being used experimentally as an indicator of past fecal contamination and presence of microorganisms that are resistant to disinfection and environmental stresses. (See also "Bacteria")

Coliphages are viruses that infect and replicate in coliform bacteria. They are indicative of sewage contamination of water and of the survival and transport of viruses in the environment.

Color unit is produced by 1 milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

Confined aquifer is a term used to describe an aquifer containing water between two relatively impermeable boundaries. The water level in a well tapping a confined aquifer stands above the top of the confined aquifer and can be higher or lower than the water table that may be present in the material above it. In some cases, the water level can rise above the ground surface, yielding a flowing well.

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.

Continuous-record station is a site where data are collected with sufficient frequency to define daily mean values and variations within a day.

Control designates a feature in the channel that physically affects the water-surface elevation and thereby determines the stage-discharge relation at the gage. This feature may be a constriction of the channel, a bedrock outcrop, a gravel bar, an artificial structure, or a uniform cross section over a long reach of the channel.

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

Cubic foot per second (CFS, ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point in 1 second. It is equivalent to approximately 7.48 gallons per second or approximately 449 gallons per minute, or 0.02832 cubic meters per second. The term "second-foot" sometimes is used synonymously with "cubic foot per second" but is now obsolete.

Cubic foot per second-day (CFS-DAY, Cfs-day, [(ft^3/s)/d]) is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.98347 acre-feet, 646,317 gallons, or 2,446.6 cubic meters. The daily mean discharges reported in the daily value data tables are numerically equal to the daily volumes in cfs-days, and the totals also represent volumes in cfs-days.

Cubic foot per second per square mile [CFSM, (ft^3/s)/mi^2] is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming the runoff is distributed uniformly in time and area. (See also "Annual runoff")

Daily mean suspended-sediment concentration is the time-weighted concentration of suspended sediment passing a stream cross section during a 24-hour day. (See also "Sediment" and "Suspended-sediment concentration")

Daily-record station is a site where data are collected with sufficient frequency to develop a record of one or more data values per day. The frequency of data collection can range from continuous recording to periodic sample or data collection on a daily or near-daily basis.

Data collection platform (DCP) is an electronic instrument that collects, processes, and stores data from various sensors, and transmits the data by satellite data relay, line-of-sight radio, and/or landline telemetry.

Data logger is a microprocessor-based data acquisition system designed specifically to acquire, process, and store data. Data are usually downloaded from onsite data loggers for entry into office data systems.

Datum is a surface or point relative to which measurements of height and/or horizontal position are reported. A vertical datum is a horizontal surface used as the zero point for measurements of gage height, stage, or elevation; a horizontal datum is a reference for positions given in terms of latitude-longitude, State Plane coordinates, or UTM coordinates. (See also "Gage datum," "Land-surface datum," "National Geodetic Vertical Datum of 1929," and "North American Vertical Datum of 1988")

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

Diel is of or pertaining to a 24-hour period of time; a regular daily cycle.

Discharge, or **flow**, is the rate that matter passes through a cross section of a stream channel or other water body per unit of time. The term commonly refers to the volume of water (including, unless otherwise stated, any sediment or other constituents suspended or dissolved in the water) that passes a cross section in a stream channel, canal, pipeline, etc., within a given period of time (cubic feet per second). Discharge also can apply to the rate at which constituents, such as suspended sediment, bedload, and dissolved or suspended chemicals, pass through a cross section, in which cases the quantity is expressed as the mass of constituent that passes the cross section in a given period of time (tons per day).

Dissolved refers to that material in a representative water sample that passes through a 0.45-micrometer membrane filter. This is a convenient operational definition used by Federal and State agencies that collect water-quality data. Determinations of "dissolved" constituent concentrations are made on sample water that has been filtered.

Dissolved oxygen (DO) is the molecular oxygen (oxygen gas) dissolved in water. The concentration in water is a function of atmospheric pressure, temperature, and dissolved-solids concentration of the water. The ability of water to retain oxygen decreases with increasing temperature or dissolved-solids concentration. Photosynthesis and respiration by plants commonly cause diurnal variations in dissolved-oxygen concentration in water from some streams.

Dissolved-solids concentration in water is the quantity of dissolved material in a sample of water. It 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, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. In the mathematical calculation, the bicarbonate value, in milligrams per liter, is multiplied by 0.4926 to convert it to carbonate. Alternatively, alkalinity concentration (as mg/L $CaCO_3$) can be converted to carbonate concentration by multiplying by 0.60.

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

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

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

Drainage area of a stream at a specific location is that area upstream from the location, measured in a horizontal plane, that has a common outlet at the site for its surface runoff from precipitation that normally drains by gravity into a stream. Drainage areas given herein include all closed basins, or noncontributing areas, within the area unless otherwise specified.

Drainage basin is a part of the Earth's surface that contains a drainage system with a common outlet for its surface runoff. (See "Drainage area")

Dry mass refers to the mass of residue present after drying in an oven at 105 °C, 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. (See also "Ash mass," "Biomass," and "Wet mass")

Dry weight refers to the weight of animal tissue after it has been dried in an oven at 65 °C until a constant weight is achieved. Dry weight represents total organic and inorganic matter in the tissue. (See also "Wet weight")

Embeddedness is the degree to which gravel-sized and larger particles are surrounded or enclosed by finer-sized particles. (See also "Substrate embeddedness class")

Enterococcus bacteria are commonly found in the feces of humans and other warmblooded animals. Although some strains are ubiquitous and not related to fecal pollution, the presence of enterococci in water is an indication of fecal pollution and the possible presence of enteric pathogens. Enterococcus bacteria are those bacteria that produce pink to red colonies with black or reddish-brown precipitate after incubation at 41 °C on mE agar (nutrient medium for bacterial growth) and subsequent transfer to EIA medium. Enterococci include *Streptococcus feacalis, Streptococcus feacium, Streptococcus avium,* and their variants. (See also "Bacteria")

EPT Index is the total number of distinct taxa within the insect orders Ephemeroptera, Plecoptera, and Trichoptera. This index summarizes the taxa richness within the aquatic insects that are generally considered pollution sensitive; the index usually decreases with pollution.

Escherichia coli *(E. coli)* are bacteria present in the intestine and feces of warmblooded animals. *E. coli* are a member species of the fecal coliform group of indicator bacteria. In the laboratory, they are defined as those bacteria that produce yellow or yellow-brown colonies on a filter pad saturated with urea substrate broth after primary culturing for 22 to 24 hours at 44.5 °C on mTEC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also "Bacteria")

Estimated (E) concentration value is reported when an analyte is detected and all criteria for a positive result are met. If the concentration is less than the method detection limit (MDL), an 'E' code will be reported with the value. If the analyte is qualitatively identified as present, but the quantitative determination is substantially more uncertain, the National Water Quality Laboratory will identify the result with an 'E' code even though the measured value is greater than the MDL. A value reported with an 'E' code should be used with caution. When no analyte is detected in a sample, the default reporting value is the MDL preceded by a less than sign (<).

Euglenoids (*Euglenophyta*) are a group of algae that are usually free-swimming and rarely creeping. They have the ability to grow either photosynthetically in the light or heterotrophically in the dark. (See also "Phytoplankton")

Extractable organic halides (EOX) are organic compounds that contain halogen atoms such as chlorine. These organic compounds are semivolatile and extractable by ethyl acetate from air-dried streambed sediment. The ethyl acetate extract is combusted, and the concentration is determined by microcoulometric determination of the halides formed. The concentration is reported as micrograms of chlorine per gram of the dry weight of the streambed sediment.

Fecal coliform bacteria are present in the intestines or feces of warmblooded animals. They often are used as indicators of the sanitary quality of the water. In the laboratory, they are defined as all organisms that produce blue colonies within 24 hours when incubated at 44.5 °C plus or minus 0.2 °C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also "Bacteria")

Fecal streptococcal bacteria are present in the intestines of warmblooded animals and are ubiquitous in the environment. They are characterized as gram-positive, cocci bacteria that are capable of growth in brain-heart infusion broth. In the laboratory, they are defined as all the organisms that produce red or pink colonies within 48 hours at 35 °C plus or minus 1.0 °C on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also "Bacteria")

Fire algae (*Pyrrhophyta*) are free-swimming unicells characterized by a red pigment spot. (See also "Phytoplankton")

Flow-duration percentiles are values on a scale of 100 that indicate the percentage of time for which a flow is not exceeded. For example, the 90th percentile of river flow is greater than or equal to 90 percent of all recorded flow rates.

Gage datum is a horizontal surface used as a zero point for measurement of stage or gage height. This surface usually is located slightly below the lowest point of the stream bottom such that the gage height is usually slightly greater than the maximum depth of water. Because the gage datum itself is not an actual physical object, the datum usually is defined by specifying the elevations of permanent reference marks such as bridge abutments and survey monuments, and the gage is set to agree with the reference marks. Gage datum is a local datum that is maintained independently of any national geodetic datum. However, if the elevation of the gage datum relative to the national datum (North American Vertical Datum of 1988 or National Geodetic Vertical Datum of 1929) has been determined, then the gage readings can be converted to elevations above the national datum by adding the elevation of the gage datum to the gage reading.

Gage height (G.H.) is the water-surface elevation, in feet above the gage datum. If the water surface is below the gage datum, the gage height is negative. Gage height often is used interchangeably with the more general term "stage," although gage height is more appropriate when used in reference to a reading on a gage.

Gage values are values that are recorded, transmitted, and/or computed from a gaging station. Gage values typically are collected at 5-, 15-, or 30-minute intervals.

Gaging station is a site on a stream, canal, lake, or reservoir where systematic observations of stage, discharge, or other hydrologic data are obtained.

Gas chromatography/flame ionization detector (GC/FID) is a laboratory analytical method used as a screening technique for semivolatile organic compounds that are extractable from water in methylene chloride.

Geomorphic channel units, as used in this report, are fluvial geomorphic descriptors of channel shape and stream velocity. Pools, riffles, and runs are types of geomorphic channel units considered for National Water-Quality Assessment (NAWQA) Program habitat sampling.

Green algae 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. (See also "Phytoplankton")

Habitat, as used in this report, includes all nonliving (physical) aspects of the aquatic ecosystem, although living components like aquatic macrophytes and riparian vegetation also are usually included. Measurements of habitat are typically made over a wider geographic scale than are measurements of species distribution.

Habitat quality index is the qualitative description (level 1) of instream habitat and riparian conditions surrounding the reach sampled. Scores range from 0 to 100 percent with higher scores indicative of desirable habitat conditions for aquatic life. Index only applicable to wadable streams.

Hardness of water is a physical-chemical characteristic that commonly is recognized by the increased quantity of soap required to produce lather. It is computed as the sum of equivalents of polyvalent cations (primarily calcium and magnesium) and is expressed as the equivalent concentration of calcium carbonate ($CaCO_3$).

High tide is the maximum height reached by each rising tide. The high-high and low-high tides are the higher and lower of the two high tides, respectively, of each tidal day. *See NOAA web site: http://www.co-ops.nos.noaa.gov/tideglos.html*

Hilsenhoff's Biotic Index (HBI) is an indicator of organic pollution that uses tolerance values to weight taxa abundances; usually increases with pollution. It is calculated as follows:

$$HBI = sum\frac{(n)(a)}{N} \quad ,$$

where n is the number of individuals of each taxon, a is the tolerance value of each taxon, and N is the total number of organisms in the sample.

Horizontal datum (See "Datum")

Hydrologic index stations referred to in this report are continuous-record gaging stations that have been selected as representative of streamflow patterns for their respective regions. Station locations are shown on index maps.

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as defined by the former Office of Water Data Coordination and delineated on the State Hydrologic Unit Maps by the USGS. Each hydrologic unit is identified by an 8-digit number.

Inch (IN., in.), as used in this report, refers to the depth to which the drainage area would be covered with water if all of the runoff for a given time period were uniformly distributed on it. (See also "Annual runoff")

Instantaneous discharge is the discharge at a particular instant of time. (See also "Discharge")

Island, as used in this report, is a mid-channel bar that has permanent woody vegetation, is flooded once a year on average, and remains stable except during large flood events.

Laboratory reporting level (LRL) is generally equal to twice the yearly determined long-term method detection level (LT-MDL). The LRL controls false negative error. The probability of falsely reporting a nondetection for a sample that contained an analyte at a concentration equal to or greater than the LRL is predicted to be less than or equal to 1 percent. The value of the LRL will be reported with a "less than" (<) remark code for samples in which the analyte was not detected. The National Water Quality Laboratory (NWQL) collects quality-control data from selected analytical methods on a continuing basis to determine LT-MDLs and to establish LRLs. These values are reevaluated annually on the basis of the most current quality-control data and, therefore, may change. [Note: In several previous NWQL documents (NWQL Technical Memorandum 98.07, 1998), the LRL was called the nondetection value or NDV—a term that is no longer used.]

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

Latent heat flux (often used interchangeably with latent heat-flux density) is the amount of heat energy that converts water from liquid to vapor (evaporation) or from vapor to liquid (condensation) across a specified cross-sectional area per unit time. Usually expressed in watts per square meter.

Light-attenuation coefficient, also known as the extinction coefficient, is a measure of water clarity. Light is attenuated according to the Lambert-Beer equation:

$$I = I_o e^{-\lambda L} ,$$

where I_o is the source light intensity, I is the light intensity at length L (in meters) from the source, λ is the light-attenuation coefficient, and e is the base of the natural logarithm. The light-attenuation coefficient is defined as

$$\lambda = -\frac{1}{L}\log_e \frac{I}{I_o} .$$

Lipid is any one of a family of compounds that are insoluble in water and that make up one of the principal components of living cells. Lipids include fats, oils, waxes, and steroids. Many environmental contaminants such as organochlorine pesticides are lipophilic.

Long-term method detection level (LT-MDL) is a detection level derived by determining the standard deviation of a minimum of 24 method detection limit (MDL) spike sample measurements over an extended period of time. LT-MDL data are collected on a continuous basis to assess year-to-year variations in the LT-MDL. The LT-MDL controls false positive error. The chance of falsely reporting a concentration at or greater than the LT-MDL for a sample that did not contain the analyte is predicted to be less than or equal to 1 percent.

Low tide is the minimum height reached by each falling tide. The high-low and low-low tides are the higher and lower of the two low tides, respectively, of each tidal day. *See NOAA web site: http://www.co-ops.nos.noaa.gov/tideglos.html*

Macrophytes are the macroscopic plants in the aquatic environment. The most common macrophytes are the rooted vascular plants that usually are arranged in zones in aquatic ecosystems and restricted in the area by the extent of illumination through the water and sediment deposition along the shoreline.

Mean concentration of suspended sediment (Daily mean suspended-sediment concentration) is the time-weighted concentration of suspended sediment passing a stream cross section during a given time period. (See also "Daily mean suspended-sediment concentration" and "Suspended-sediment concentration")

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

Mean high or **low tide** is the average of all high or low tides, respectively, over a specific period.

Mean sea level is a local tidal datum. It is the arithmetic mean of hourly heights observed over the National Tidal Datum Epoch. Shorter series are specified in the name; for example, monthly mean sea level and yearly mean sea level. In order that they may be recovered when needed, such datums are referenced to fixed points known as benchmarks. (See also "Datum")

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

Membrane filter is a thin microporous material of specific pore size used to filter bacteria, algae, and other very small particles from water.

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.

Method detection limit (MDL) is the minimum concentration of a substance that can be measured and reported with 99-percent confidence that the analyte concentration is greater than zero. It is determined from the analysis of a sample in a given matrix containing the analyte. At the MDL concentration, the risk of a false positive is predicted to be less than or equal to 1 percent.

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.

Micrograms per gram (UG/G, µg/g) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the element per unit mass (gram) of material analyzed.

Micrograms per kilogram (UG/KG, µg/kg) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the constituent per unit mass (kilogram) of the material analyzed. One microgram per kilogram is equivalent to 1 part per billion.

Micrograms per liter (UG/L, µg/L) is a unit expressing the concentration of chemical constituents in water as mass (micrograms) of constituent per unit volume (liter) of water. One thousand micrograms per liter is equivalent to 1 milligram per liter. One microgram per liter is equivalent to 1 part per billion.

Microsiemens per centimeter (US/CM, µS/cm) is a unit expressing the amount of electrical conductivity of a solution as measured between opposite faces of a centimeter cube of solution at a specified temperature. Siemens is the International System of Units nomenclature. It is synonymous with mhos and is the reciprocal of resistance in ohms.

Milligrams per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in water as the mass (milligrams) of constituent per unit volume (liter) of water. Concentration of suspended sediment also is expressed in milligrams per liter and is based on the mass of dry sediment per liter of water-sediment mixture.

Minimum reporting level (MRL) is the smallest measured concentration of a constituent that may be reliably reported by using a given analytical method.

Miscellaneous site, miscellaneous station, or miscellaneous sampling site is a site where streamflow, sediment, and/or water-quality data or water-quality or sediment samples are collected once, or more often on a random or discontinuous basis to provide better areal coverage for defining hydrologic and water-quality conditions over a broad area in a river basin.

Most probable number (MPN) is an index of the number of coliform bacteria that, more probably than any other number, would give the results shown by the laboratory examination; it is not an actual enumeration. MPN is determined from the distribution of gas-positive cultures among multiple inoculated tubes.

Multiple-plate samplers are artificial substrates of known surface area used for obtaining benthic invertebrate samples. They consist of a series of spaced, hardboard plates on an eyebolt.

Nanograms per liter (NG/L, ng/L) is a unit expressing the concentration of chemical constituents in solution as mass (nanograms) of solute per unit volume (liter) of water. One million nanograms per liter is equivalent to 1 milligram per liter.

National Geodetic Vertical Datum of 1929 (NGVD of 1929) is a fixed reference adopted as a standard geodetic datum for elevations determined by leveling. It was formerly called "Sea Level Datum of 1929" or "mean sea level." Although the datum was derived from the mean sea level at 26 tide stations**,** it does not necessarily represent local mean sea level at any particular place. *See NOAA web site: http://www.ngs.noaa.gov/faq.shtml#WhatVD29VD88* (See "North American Vertical Datum of 1988")

Natural substrate refers to any naturally occurring immersed or submersed solid surface, such as a rock or tree, upon which an organism lives. (See also "Substrate")

Nekton are the consumers in the aquatic environment and consist of large free-swimming organisms that are capable of sustained, directed mobility.

Nephelometric turbidity unit (NTU) is the measurement for reporting turbidity that is based on use of a standard suspension of formazin. Turbidity measured in NTU uses nephelometric methods that depend on passing specific light of a specific wavelength through the sample.

North American Vertical Datum of 1988 (NAVD 1988) is a fixed reference adopted as the official civilian vertical datum for elevations determined by Federal surveying and mapping activities in the United States. This datum was established in 1991 by minimum-constraint adjustment of the Canadian**,** Mexican, and United States first-order terrestrial leveling networks.

Open or **screened interval** is the length of unscreened opening or of well screen through which water enters a well, in feet below land surface.

Organic carbon (OC) is a measure of organic matter present in aqueous solution, suspension, or bottom sediment. May be reported as dissolved organic carbon (DOC), particulate organic carbon (POC), or total organic carbon (TOC).

Organic mass or **volatile mass** of a living substance is the difference between the dry mass and ash mass and represents the actual mass of the living matter. Organic mass is expressed in the same units as for ash mass and dry mass. (See also "Ash mass," "Biomass," and "Dry mass")

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square meter (m^2), acre, 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 milliliter (mL) or liter (L). Numbers of planktonic organisms can be expressed in these terms.

Organochlorine compounds are any chemicals that contain carbon and chlorine. Organochlorine compounds that are important in investigations of water, sediment, and biological quality include certain pesticides and industrial compounds.

Parameter code is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property.

Partial-record station is a site where discrete measurements of one or more hydrologic parameters are obtained over a period of time without continuous data being recorded or computed. A common example is a crest-stage gage partial-record station at which only peak stages and flows are recorded.

Particle size is the diameter, in millimeters (mm), of a particle determined by sieve or sedimentation methods. The sedimentation method utilizes the principle of Stokes law to calculate sediment particle sizes. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube, sedigraph) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification, as used in this report, agrees with the recommendation 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	>0.004 - 0.062	Sedimentation
Sand	>0.062 - 2.0	Sedimentation/sieve
Gravel	>2.0 - 64.0	Sieve
Cobble	>64 - 256	Manual measurement
Boulder	>256	Manual measurement

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. For the sedimentation method, 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.

Peak flow (peak stage) is an instantaneous local maximum value in the continuous time series of streamflows or stages, preceded by a period of increasing values and followed by a period of decreasing values. Several peak values ordinarily occur in a year. The maximum peak value in a year is called the annual peak; peaks lower than the annual peak are called secondary peaks. Occasionally, the annual peak may not be the maximum value for the year; in such cases, the maximum value occurs at midnight at the beginning or end of the year, on the recession from or rise toward a higher peak in the adjoining year. If values are recorded at a discrete series of times, the peak recorded value may be taken as an approximation of the true peak, which may occur between the recording instants. If the values are recorded with finite precision, a sequence of equal recorded values may occur at the peak; in this case, the first value is taken as the peak.

Percent composition or **percent of total** 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, weight, mass, or volume.

Percent shading is a measure of the amount of sunlight potentially reaching the stream. A clinometer is used to measure left and right bank canopy angles. These values are added together, divided by 180, and multiplied by 100 to compute percentage of shade.

Periodic-record station is a site where stage, discharge, sediment, chemical, physical, or other hydrologic measurements are made one or more times during a year but at a frequency insufficient to develop a daily record.

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

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

pH of water is the negative logarithm of the hydrogen-ion activity. Solutions with pH less than 7.0 standard units are termed "acidic," and solutions with a pH greater than 7.0 are termed "basic." Solutions with a pH of 7.0 are neutral. The presence and concentration of many dissolved chemical constituents found in water are affected, in part, by the hydrogen-ion activity of water. Biological processes including growth, distribution of organisms, and toxicity of the water to organisms also are affected, in part, by the hydrogen-ion activity of water.

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

Picocurie (PC, pCi) is one trillionth (1×10^{-12}) of the amount of radioactive nuclide represented by a curie (Ci). A curie is the quantity of radioactive nuclide that yields 3.7×10^{10} radioactive disintegrations per second (dps). A picocurie yields 0.037 dps, or 2.22 dpm (disintegrations per minute).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers. Concentrations are expressed as a number of cells per milliliter (cells/mL) of sample.

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

Polychlorinated naphthalenes (PCNs) are industrial chemicals that are mixtures of chlorinated naphthalene compounds. They have properties and applications similar to polychlorinated biphenyls (PCBs) and have been identified in commercial PCB preparations.

Pool, as used in this report, is a small part of a stream reach with little velocity, commonly with water deeper than surrounding areas.

Primary productivity is a measure of the rate at which new organic matter is formed and accumulated through photo-synthetic 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 (carbon method) by the plants.

Primary productivity (carbon method) is expressed as milligrams of carbon per area per unit time [mg C/(m^2/time)] for periphyton and macrophytes or per volume [mg C/(m^3/time)] for phytoplankton. The carbon method defines 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 with unenriched water samples. Unit time may be either the hour or day, depending on the incubation period. (See also "Primary productivity")

Primary productivity (oxygen method) is expressed as milligrams of oxygen per area per unit time [mg O/(m^2/time)] for periphyton and macrophytes or per volume [mg O/(m^3/time)] for phytoplankton. The oxygen method defines 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. (See also "Primary productivity")

Radioisotopes are isotopic forms of elements that exhibit radioactivity. Isotopes are varieties of a chemical element that differ in atomic weight but are very nearly alike in chemical properties. The difference arises because the atoms of the isotopic forms of an element differ in the number of neutrons in the nucleus; for example, ordinary chlorine is a mixture of isotopes having atomic weights of 35 and 37, and the natural mixture has an atomic weight of about 35.453. Many of the elements similarly exist as mixtures of isotopes, and a great many new isotopes have been produced in the operation of nuclear devices such as the cyclotron. There are 275 isotopes of the 81 stable elements, in addition to more than 800 radioactive isotopes.

Reach, as used in this report, is a length of stream that is chosen to represent a uniform set of physical, chemical, and biological conditions within a segment. It is the principal sampling unit for collecting physical, chemical, and biological data.

Recoverable from bed (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. (See also "Bed material")

Recurrence interval, also referred to as return period, is the average time, usually expressed in years, between occurrences of hydrologic events of a specified type (such as exceedances of a specified high flow or nonexceedance of a specified low flow). The terms "return period" and "recurrence interval" do not imply regular cyclic occurrence. The actual times between occurrences vary randomly, with most of the times being less than the average and a few being substantially greater than the average. For example, the 100-year flood is the flow rate that is exceeded by the annual maximum peak flow at intervals whose average length is 100 years (that is, once in 100 years, on average); almost two-thirds of all exceedances of the 100-year flood occur less than 100 years after the previous exceedance, half occur less than 70 years after the previous exceedance, and about one-eighth occur more than 200 years after the previous exceedance. Similarly, the 7-day, 10-year low flow ($7Q_{10}$) is the flow rate below which the annual minimum 7-day-mean flow dips at intervals whose average length is 10 years (that is, once in 10 years, on average); almost two-thirds of the nonexceedances of the $7Q_{10}$ occur less than 10 years after the previous nonexceedance, half occur less than 7 years after, and about one-eighth occur more than 20 years after the previous nonexceedance. The recurrence interval for annual events is the reciprocal of the annual probability of occurrence. Thus, the 100-year flood has a 1-percent chance of being exceeded by the maximum peak flow in any year, and there is a 10-percent chance in any year that the annual minimum 7-day-mean flow will be less than the $7Q_{10}$.

Replicate samples are a group of samples collected in a manner such that the samples are thought to be essentially identical in composition.

Return period (See "Recurrence interval")

Riffle, as used in this report, is a shallow part of the stream where water flows swiftly over completely or partially submerged obstructions to produce surface agitation.

River mileage is the curvilinear distance, in miles, measured upstream from the mouth along the meandering path of a stream channel in accordance with Bulletin No. 14 (October 1968) of the Water Resources Council and typically is used to denote location along a river.

Run, as used in this report, is a relatively shallow part of a stream with moderate velocity and little or no surface turbulence.

Runoff is the quantity of water that is discharged ("runs off") from a drainage basin during a given time period. Runoff data may be presented as volumes in acre-feet, as mean discharges per unit of drainage area in cubic feet per second per square mile, or as depths of water on the drainage basin in inches. (See also "Annual runoff")

Sea level, as used in this report, refers to one of the two commonly used national vertical datums (NGVD 1929 or NAVD 1988). See separate entries for definitions of these datums.

Sediment is solid material that originates mostly from disintegrated rocks; when transported by, suspended in, or deposited from water, it is referred to as "fluvial sediment." Sediment 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 affected by environmental and land-use factors. Some major factors are topography, soil characteristics, land cover, and depth and intensity of pre-cipitation.

Sensible heat flux (often used interchangeably with latent sensible heat-flux density) is the amount of heat energy that moves by turbulent transport through the air across a specified cross-sectional area per unit time and goes to heating (cooling) the air. Usually expressed in watts per square meter.

Seven-day, 10-year low flow ($7Q_{10}$) is the discharge below which the annual 7-day minimum flow falls in 1 year out of 10 on the long-term average. The recurrence interval of the $7Q_{10}$ is 10 years; the chance that the annual 7-day minimum flow will be less than the $7Q_{10}$ is 10 percent in any given year. (See also "Annual 7-day minimum" and "Recurrence interval")

Shelves, as used in this report, are streambank features extending nearly horizontally from the flood plain to the lower limit of persistent woody vegetation.

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. Sodium hazard in water is an index that can be used to evaluate the suitability of water for irrigating crops.

Soil heat flux (often used interchangeably with soil heat-flux density) is the amount of heat energy that moves by conduction across a specified cross-sectional area of soil per unit time and goes to heating (or cooling) the soil. Usually expressed in watts per square meter.

Soil-water content is the water lost from the soil upon drying to constant mass at 105 °C; expressed either as mass of water per unit mass of dry soil or as the volume of water per unit bulk volume of soil.

Specific electrical conductance (conductivity) is a measure of the capacity of water (or other media) to conduct an electrical current. It is expressed in microsiemens per centimeter at 25 °C. Specific electrical conductance is a function of the types and quantity of dissolved substances in water and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is from 55 to 75 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stable isotope ratio (per MIL) is a unit expressing the ratio of the abundance of two radioactive isotopes. Isotope ratios are used in hydrologic studies to determine the age or source of specific water, to evaluate mixing of different water, as an aid in determining reaction rates, and other chemical or hydrologic processes.

Stage (See "Gage height")

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

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.

Substrate embeddedness class is a visual estimate of riffle streambed substrate larger than gravel that is surrounded or covered by fine sediment (<2mm, sand or finer). Below are the class categories expressed as the percentage covered by fine sediment:

0	no gravel or larger substrate	3	26-50 percent
1	> 75 percent	4	5-25 percent
2	51-75 percent	5	< 5 percent

Surface area of a lake is that area (acres) encompassed by the boundary of the lake as shown on USGS topographic maps, or other available maps or photographs. Because surface area changes with lake stage, surface areas listed in this report represent those determined for the stage at the time the maps or photographs were obtained.

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

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of undissolved material in a water-sediment mixture. It is defined operationally as 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 suspended water-sediment sample that is retained on a 0.45-micrometer membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures 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 directly analyzing the suspended mate-rial collected on the filter or, more commonly, by difference, on the basis of determinations of (1) dissolved and (2) total recoverable concentrations of the constituent. (See also "Suspended")

Suspended sediment is the sediment maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid. (See also "Sediment")

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 foot above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L). The analytical technique uses the mass of all of the sediment and the net weight of the water-sediment mixture in a sample to compute the suspended-sediment concentration. (See also "Sediment" and "Suspended sediment")

Suspended-sediment discharge (tons/d) is the rate of sediment transport, as measured by dry mass or volume, that passes a cross section in a given time. It is calculated in units of tons per day as follows: concentration (mg/L) x discharge (ft^3/s) x 0.0027. (See also "Sediment," "Suspended sediment," and "Suspended-sediment concentration")

Suspended-sediment load is a general term that refers to a given characteristic of the material in suspension that passes a point during a specified period of time. The term needs to be qualified, such as "annual suspended-sediment load" or "sand-size suspended-sediment load," and so on. It is not synonymous with either suspended-sediment discharge or concentration. (See also "Sediment")

Suspended, total is the total amount of a given constituent in the part of a water-sediment sample that is retained on a 0.45-micrometer membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. 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 directly analyzing portions of the suspended material collected on the filter or, more commonly, by difference, on the basis of determinations of (1) dissolved and (2) total concentrations of the constituent. (See also "Suspended")

Suspended solids, total residue at 105 °C concentration is the concentration of inorganic and organic material retained on a filter, expressed as milligrams of dry material per liter of water (mg/L). An aliquot of the sample is used for this analysis.

Synoptic studies are short-term investigations of specific water-quality conditions during selected seasonal or hydrologic periods to provide improved spatial resolution for critical water-quality conditions. For the period and conditions sampled, they assess the spatial distribution of selected water-quality conditions in relation to causative factors, such as land use and contaminant sources.

Taxa (Species) richness is the number of species (taxa) present in a defined area or sampling unit.

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, *Hexagenia limbata,* is the following:

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

Thalweg is the line formed by connecting points of minimum streambed elevation (deepest part of the channel).

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

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water resulting from the mixing of flow proportionally to the duration of the concentration.

Tons per acre-foot (T/acre-ft) is the dry mass (tons) of a constituent per unit volume (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, tons/d) is a common chemical or sediment discharge unit. It is the quantity of a substance in solution, in suspension, or as bedload that passes a stream section during a 24-hour period. It is equivalent to 2,000 pounds per day, or 0.9072 metric tons per day.

Total is the amount of a given constituent in a representative whole-water (unfiltered) 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 at least 95 percent of the constituent in the sample.)

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. This group includes coliforms that inhabit the intestine of warmblooded animals and those that inhabit soils. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria that ferment lactose with gas formation within 48 hours at 35 °C. In the laboratory, these bacteria are defined as all the organisms that produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35 °C plus or minus 1.0 °C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 milliliters of sample. (See also "Bacteria")

Total discharge is the quantity of a given constituent, measured as dry mass or volume, that passes a stream cross section per unit of time. When referring to constituents other than water, this term needs to be qualified, such as "total sediment discharge," "total chloride discharge," and so on.

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

Total length (fish) is the straight-line distance from the anterior point of a fish specimen's snout, with the mouth closed, to the posterior end of the caudal (tail) fin, with the lobes of the caudal fin squeezed together.

Total load refers to all of a constituent in transport. When referring to sediment, it includes suspended load plus bed load.

Total organism count is the number of organisms collected and enumerated in any particular sample. (See also "Organism count/volume")

Total recoverable is the amount of a given constituent in a whole-water sample after a 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 for whole-water samples, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures may produce different analytical results.

Total sediment discharge is the mass of suspended-sediment plus bed-load transport, measured as dry weight, that passes a cross section in a given time. It is a rate and is reported as tons per day. (See also "Bedload," "Bedload discharge," "Sediment," "Suspended sediment," and "Suspended-sediment concentration")

Total sediment load or **total load** is the sediment in transport as bedload and suspended-sediment load. The term may be qualified, such as "annual suspended-sediment load" or "sand-size suspended-sediment load," and so on. It differs from total sediment discharge in that load refers to the material, whereas discharge refers to the quantity of material, expressed in units of mass per unit time. (See also "Sediment," "Suspended-sediment load," and "Total load")

Transect, as used in this report, is a line across a stream perpendicular to the flow and along which measurements are taken, so that morphological and flow characteristics along the line are described from bank to bank. Unlike a cross section, no attempt is made to determine known elevation points along the line.

Turbidity is the reduction in the transparency of a solution due to the presence of suspended and some dissolved substances. The measurement technique records the collective optical properties of the solution that cause light to be scattered and attenuated rather than transmitted in straight lines; the higher the intensity of scattered or attenuated light, the higher the value of the turbidity. Turbidity is expressed in nephelometric turbidity units (NTU). Depending on the method used, the turbidity units as NTU can be defined as the intensity of light of a specified wavelength scattered or attenuated by suspended particles or absorbed at a method specified angle, usually 90 degrees, from the path of the incident light. Currently approved methods for the measurement of turbidity in the USGS include those that conform to U.S. EPA Method 180.1, ASTM D1889-00, and ISO 7027. Measurements of turbidity by these different methods and different instruments are unlikely to yield equivalent values.

Ultraviolet (UV) absorbance (absorption) at 254 or 280 nanometers is a measure of the aggregate concentration of the mixture of UV absorbing organic materials dissolved in the analyzed water, such as lignin, tannin, humic substances, and various aromatic compounds. UV absorbance (absorption) at 254 or 280 nanometers is measured in UV absorption units per centimeter of pathlength of UV light through a sample.

Unconfined aquifer is an aquifer whose upper surface is a water table free to fluctuate under atmospheric pressure. (See "Water-table aquifer")

Vertical datum (See "Datum")

Volatile organic compounds (VOCs) are organic compounds that can be isolated from the water phase of a sample by purging the water sample with inert gas, such as helium, and subsequently analyzed by gas chromatography. Many VOCs are human-made chemicals that are used and produced in the manufacture of paints, adhesives, petroleum products, pharmaceuticals, and refrigerants. They are often components of fuels, solvents, hydraulic fluids, paint thinners, and dry cleaning agents commonly used in urban settings. VOC contamination of drinking-water supplies is a human health concern because many are toxic and are known or suspected human carcinogens.

Water table is that surface in a ground-water body at which the water pressure is equal to the atmospheric pressure.

Water-table aquifer is an unconfined aquifer within which the water table is found.

Water year in USGS 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, 2002, is called the "2002 water year."

WDR 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.)

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.

Wet mass is the mass of living matter plus contained water. (See also "Biomass" and "Dry mass")

Wet weight refers to the weight of animal tissue or other substance including its contained water. (See also "Dry weight")

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

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column and often are 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. (See also "Plankton")

TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS OF THE U.S. GEOLOGICAL SURVEY

The USGS publishes a series of manuals, the Techniques of Water-Resources Investigations, describing procedures for planning and conducting specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, section A of book 3 (Applications of Hydraulics) pertains to surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises.

Reports in the Techniques of Water-Resources Investigations series, which are listed below, are online at *http://water.usgs.gov/pubs/twri/*. Printed copies are for sale by the USGS, Information Services, Box 25286, Federal Center, Denver, Colorado 80225 (authorized agent of the Superintendent of Documents, Government Printing Office), telephone 1-888-ASK-USGS. Please telephone 1-888-ASK-USGS for current prices, and refer to the title, book number, chapter number, and mention the "U.S. Geological Survey Techniques of Water-Resources Investigations." Products can then be ordered by telephone, or online at http://www.usgs.gov/sales.html, or by FAX to (303)236-469 of an order form available online at *http://mac.usgs.gov/isb/pubs/forms/*. Prepayment by major credit card or by a check or money order payable to the "U.S. Geological Survey" is required.

Book 1. Collection of Water Data by Direct Measurement

Section D. Water Quality

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Section A. Statistical Analysis

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Section C. Computer Programs

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Book 8. Instrumentation

Section A. Instruments for Measurement of Water Level

8-A1. *Methods of measuring water levels in deep wells,* by M.S. Garber and F.C. Koopman: USGS–TWRI book 8, chap. A1. 1968. 23 p.

8-A2. *Installation and service manual for U.S. Geological Survey manometers*, by J.D. Craig: USGS–TWRI book 8, chap. A2. 1983. 57 p.

Section B. Instruments for Measurement of Discharge

8-B2. *Calibration and maintenance of vertical-axis type current meters,* by G.F. Smoot and C.E. Novak: USGS–TWRI book 8, chap. B2. 1968. 15 p.

Book 9. Handbooks for Water-Resources Investigations

Section A. National Field Manual for the Collection of Water-Quality Data

9-A1. *National Field Manual for the Collection of Water-Quality Data: Preparations for Water Sampling*, by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A1. 1998. 47 p.

9-A2. *National Field Manual for the Collection of Water-Quality Data: Selection of Equipment for Water Sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A2. 1998. 94 p.

9-A3. *National Field Manual for the Collection of Water-Quality Data: Cleaning of Equipment for Water Sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A3. 1998. 75 p.

9-A4. *National Field Manual for the Collection of Water-Quality Data: Collection of Water Samples*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A4. 1999. 156 p.

9-A5. *National Field Manual for the Collection of Water-Quality Data: Processing of Water Samples*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A5. 1999, 149 p.

9-A6. *National Field Manual for the Collection of Water-Quality Data: Field Measurements*, edited by F.D. Wilde and D.B. Radtke: USGS–TWRI book 9, chap. A6. 1998. Variously paginated.

9-A7. *National Field Manual for the Collection of Water-Quality Data: Biological Indicators*, edited by D.N. Myers and F.D. Wilde: USGS–TWRI book 9, chap. A7. 1997 and 1999. Variously paginated.

9-A8. *National Field Manual for the Collection of Water-Quality Data: Bottom-material samples*, by D.B. Radtke: USGS–TWRI book 9, chap. A8. 1998. 48 p.

9-A9. *National Field Manual for the Collection of Water-Quality Data: Safety in Field Activities*, by S.L. Lane and R.G. Fay: USGS–TWRI book 9, chap. A9. 1998. 60 p.

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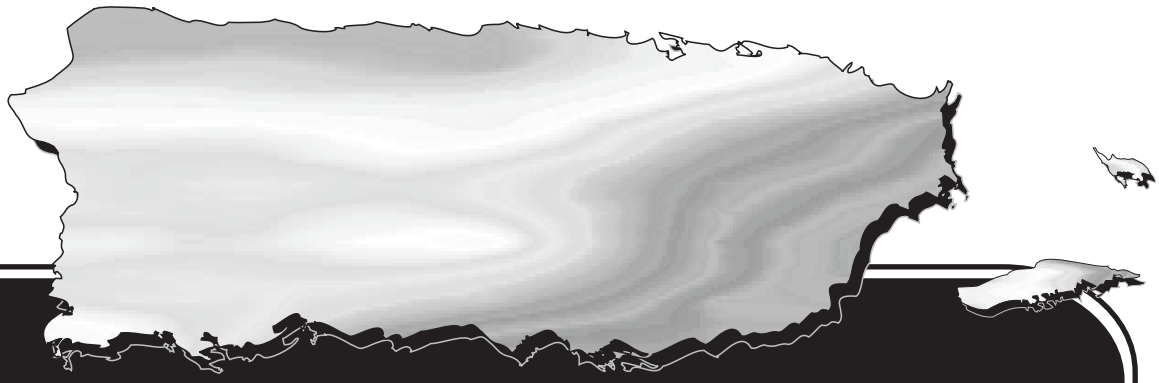

Surface and Quality-of-Water Records for Puerto Rico

Surface and Quality-of-Water Records for Puerto Rico

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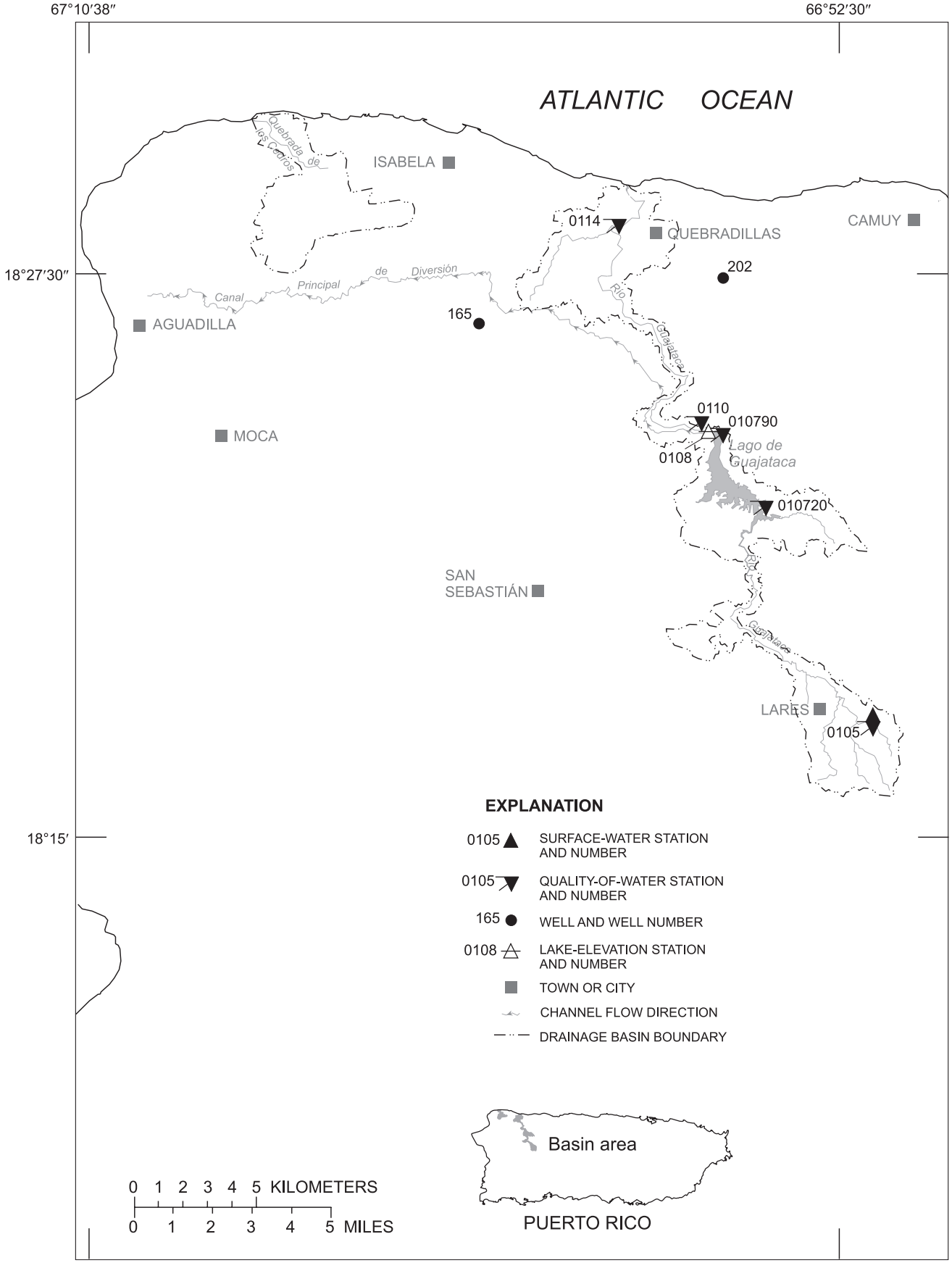


Figure 11. Río Guajataca basin.

RIO GUAJATACA BASIN

50010500 RIO GUAJATACA AT LARES, PR

LOCATION.--Lat 18°18'01", long 66°52'24", Hydrologic Unit 21010001, at bridge on Highway 111, 0.1 mi (0.2 km) upstream from Quebrada Anón, and 0.4 mi (0.6 km) east of Lares.

DRAINAGE AREA.--3.16 mi^2 (8.18 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1959 to February 1962 (annual low-flow measurements only), January 1963 to April 1969 (monthly measurements only), May 1969 to December 1970 (February to May 1971 and March 1974 to November 1989, monthly measurements only), December 1989 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 935 ft (285 m), from topographic map.

REMARKS.--Records poor. Gage-height and precipitation satellite telemetry at station. Small diversion above station for sewage treatment plant; effluent re-enters stream below station. Record affected by domestic discharges entering upstream right bank of bridge.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	e93	6.8	3.4	2.2	1.8	33	27	e9.4	e2.2	e5.8	e2.8
2	9.8	e22	15	2.7	1.2	1.7	6.5	23	e14	e2.2	e11	e17
3	18	e13	19	2.4	1.0	1.6	2.5	19	e26	e2.1	e8.8	e42
4	8.3	e12	8.8	2.4	1.1	1.6	20	17	e18	e3.0	e10	e125
5	7.8	e9.6	6.3	4.2	1.4	1.5	37	15	e12	e2.2	e8.4	e44
6	6.9	e9.8	5.4	3.7	1.7	2.2	9.2	14	e8.5	e2.7	e5.5	e15
7	7.8	e12	5.2	11	1.7	1.6	19	13	e7.3	e4.9	e3.3	e9.4
8	12	170	4.7	4.6	2.0	1.9	60	12	e6.6	e3.7	e2.4	e7.0
9	6.0	46	4.4	3.7	1.2	2.0	13	e54	e6.3	e7.2	e2.2	e5.9
10	e112	29	4.2	3.4	1.0	2.2	9.7	e48	e6.0	e5.4	e16	e22
11	e51	24	4.9	2.2	1.0	10	6.7	e23	e5.5	e3.9	e17	e23
12	e82	30	5.6	2.0	1.1	3.4	5.1	e15	e9.4	e8.4	e12	e6.9
13	e34	19	7.6	1.7	1.7	1.9	4.2	e13	e9.8	e12	e6.3	e5.8
14	e19	52	4.4	1.5	1.5	0.89	3.6	e11	e6.1	e6.3	e6.4	e6.1
15	e14	23	4.8	1.5	1.5	1.7	3.5	e21	e5.4	e7.8	e5.7	e6.4
16	e13	18	9.9	1.4	1.1	3.6	5.4	e82	e4.8	e4.3	e4.2	e14
17	e15	16	5.4	1.2	1.3	2.8	3.5	e42	e4.8	e2.7	e3.7	e5.7
18	e19	14	3.6	1.1	1.3	1.6	9.2	e25	e4.5	e1.9	e15	e59
19	e14	13	3.7	1.3	9.9	1.7	28	e20	e4.2	e2.1	e20	e8.3
20	e12	12	3.2	0.96	2.0	1.7	22	e17	e3.9	e1.8	e8.8	e28
21	e12	11	31	1.3	1.3	1.3	14	e15	e3.7	e1.8	e5.7	e6.4
22	e14	11	7.2	1.8	1.4	1.6	53	e13	e3.4	e1.6	e3.1	e4.1
23	e25	10	8.0	1.5	1.7	1.7	75	e12	e3.1	e2.7	e7.2	e3.5
24	e34	10	5.8	1.6	1.4	1.8	32	e11	e3.0	e1.6	e24	e3.4
25	e33	9.7	4.4	1.2	1.5	1.4	48	e10	e3.9	e1.6	e19	e3.2
26	e18	9.1	3.9	1.4	1.9	1.7	23	e10	e6.7	e1.3	e14	e3.7
27	e36	8.8	3.6	1.3	2.0	3.8	92	e9.3	e4.8	e1.3	e20	e3.4
28	e26	8.2	3.4	1.4	2.0	4.9	31	e9.1	e3.4	e4.8	e11	e3.0
29	e24	8.4	3.2	1.2	---	1.8	75	e9.6	e3.0	e6.9	e5.3	e2.5
30	e20	7.5	3.1	1.3	---	1.8	50	e11	e2.7	e3.0	e7.2	e2.6
31	e21	---	3.0	1.6	---	15	---	e10	---	e1.6	e3.5	---
TOTAL	734.6	731.1	209.5	71.96	50.1	84.19	794.1	631.0	210.2	115.0	292.5	489.1
MEAN	23.7	24.4	6.76	2.32	1.79	2.72	26.5	20.4	7.01	3.71	9.44	16.3
MAX	112	170	31	11	9.9	15	92	82	26	12	24	125
MIN	6.0	7.5	3.0	0.96	1.0	0.89	2.5	9.1	2.7	1.3	2.2	2.5
AC-FT	1460	1450	416	143	99	167	1580	1250	417	228	580	970
CFSM	7.50	7.71	2.14	0.73	0.57	0.86	8.38	6.44	2.22	1.17	2.99	5.16
IN.	8.65	8.61	2.47	0.85	0.59	0.99	9.35	7.43	2.47	1.35	3.44	5.76

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2002, BY WATER YEAR (WY)

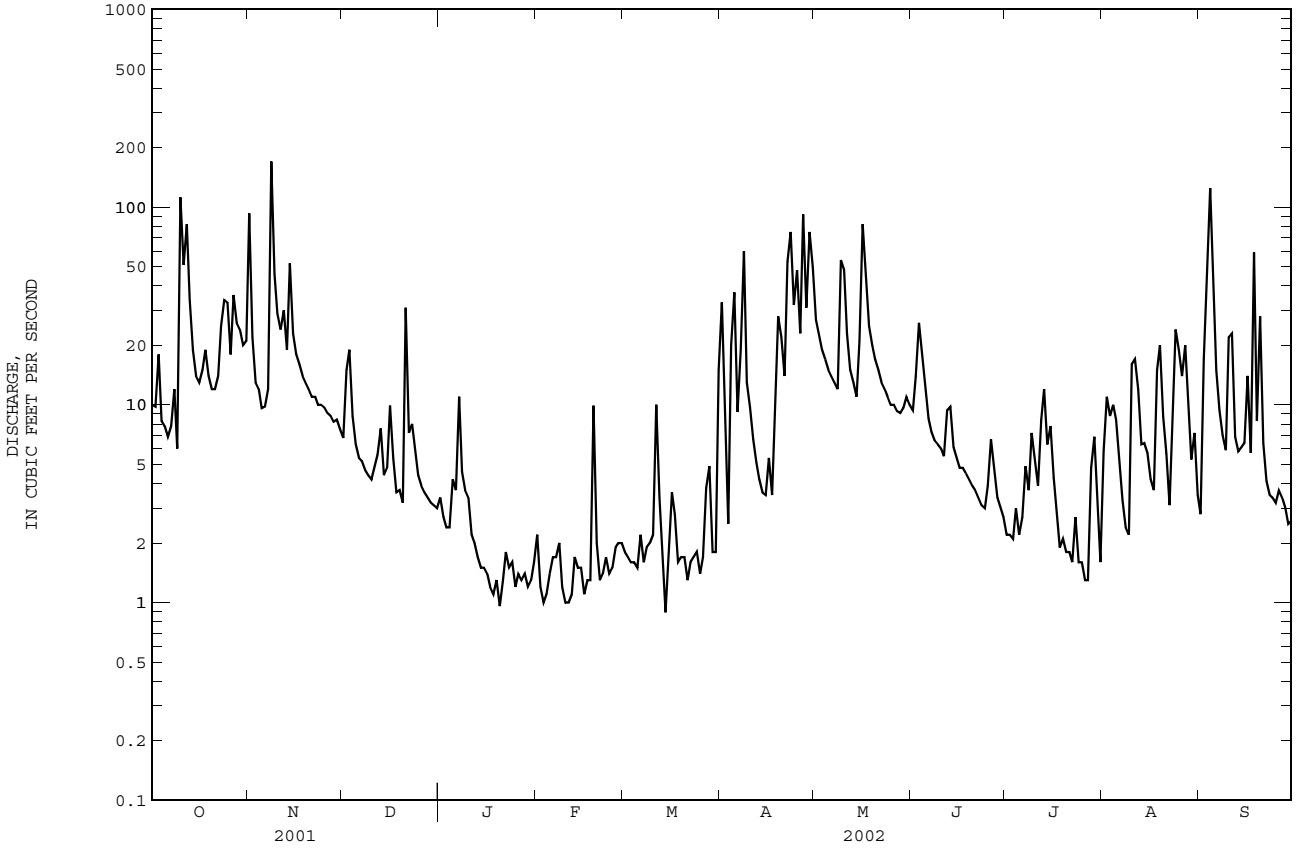
MEAN	18.0	10.6	4.20	3.21	2.89	2.77	5.14	11.7	8.17	4.92	7.11	15.1
MAX	33.7	25.8	8.32	8.91	7.21	10.6	26.5	25.4	23.4	9.85	11.8	45.2
(WY)	1991	2000	2000	1997	1996	1999	2002	1999	1999	1969	2001	1998
MIN	8.52	2.42	1.35	0.66	0.93	0.92	1.09	2.37	1.70	1.73	3.34	5.95
(WY)	1995	1998	1991	1991	1992	1994	1994	1997	1997	1997	1970	1993

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1969 - 2002	
ANNUAL TOTAL	3678.26		4413.35			
ANNUAL MEAN	10.1		12.1		7.82	
HIGHEST ANNUAL MEAN					12.6	1999
LOWEST ANNUAL MEAN					4.13	1994
HIGHEST DAILY MEAN	170	Nov 8	170	Nov 8	505	Sep 22 1998
LOWEST DAILY MEAN	0.84	Apr 20	0.89	Mar 14	0.47	Jan 13 1991
ANNUAL SEVEN-DAY MINIMUM	0.94	Apr 14	1.3	Jan 15	0.51	Jan 9 1991
MAXIMUM PEAK FLOW			2840	Oct 10	5300	Oct 7 1990
MAXIMUM PEAK STAGE			17.25	Oct 10	21.30	Oct 7 1990
ANNUAL RUNOFF (AC-FT)	7300		8750		5660	
ANNUAL RUNOFF (CFSM)	3.19		3.83		2.47	
ANNUAL RUNOFF (INCHES)	43.30		51.95		33.61	
10 PERCENT EXCEEDS	24		26		18	
50 PERCENT EXCEEDS	4.8		6.1		3.6	
90 PERCENT EXCEEDS	1.4		1.5		1.1	

e Estimated

RIO GUAJATACA BASIN

50010500 RIO GUAJATACA AT LARES, PR--Continued



RIO GUAJATACA BASIN

50010500 RIO GUAJATACA AT LARES, PR--Continued

WATER-QUALITY RECORDS

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

DRAINAGE AREA.--3.16 mi^2 (8.18 km^2).

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
DEC													
11...	1130	4.2	232	6.9	22.3	2.8	8.2	98	<10	220	490	87	25.0
FEB													
19...	1355	18	178	6.7	21.2	300	7.8	92	20	22000	75000	--	--
SEP													
11...	1205	7.3	210	6.8	24.0	9.3	8.1	98	<10	2700	E1900	83	24.7

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
DEC													
11...	5.96	11.3	.5	2.07	82	<1.0	4.3	10.9	<.1	33.6	142	1.60	<10
FEB													
19...	--	--	--	--	49	--	--	--	--	--	--	--	98
SEP													
11...	5.16	10.1	.5	2.35	72	<.1	6.1	10.2	E.07	27.8	129	2.56	<10

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
DEC													
11...	.02	2.10	.05	<.20	E.06	E1	20.3	20	<.1	<.8	<10	70	<1
FEB													
19...	.01	1.80	.08	1.0	.17	--	--	--	--	--	--	--	--
SEP													
11...	<.01	1.10	.02	.20	.06	<2	23.8	E20	<.1	<.8	<10	210	<1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
DEC								
11...	13.9	<.01	E1	<.3	<20	<.01	<16	<.05
FEB								
19...	--	--	--	--	--	--	--	--
SEP								
11...	32.3	E.01	<2	<.3	<20	<.01	<16	<.05

< -- Less than
E -- Estimated value

RIO GUAJATACA BASIN

50010800 LAGO GUAJATACA AT DAMSITE NEAR QUEBRADILLAS, PR

LOCATION.--Lat 18°24'02", long 66°55'25", Hydrologic Unit 21010002, on right bank, in a concrete intake tower at Damsite, 5.2 mi (8.4 km) southeast from Quebradillas Plaza, 0.5 mi (0.8 km) northeast from Iglesia San Antonio de Padua and 2.8 mi (4.5 km) from Escuela Segunda Unidad Baldorioty de Castro.

DRAINAGE AREA.--24.6 mi^2 (63.71 km^2)

ELEVATION RECORDS

PERIOD OF RECORD.--April 1995 to current year.

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

REMARKS.--Lago Guajataca was completed in 1928. The dam is a semihydraulic earthfill structure about 123 ft (37 m) high, a top width of 31 ft (9.5 m) at crest elevation of 664 ft (202.5 m), a base width of 623 ft (190 m), a crest length of 1,036 ft (316 m) and has a maximum storage capacity of 49,200 acre-feet (60.6 hm^3). The Guajataca Dam is owned by the Puerto Rico Electric Power Authority (PREPA) and provides water for the municipalities of Aguadilla, Isabela, Moca, Aguada, and Quebradillas although its primary purpose is for agricultural irrigation for the flatlands of the area. Gage-height and precipitation satellite telemetry at station. New capacity table based on U.S. Geological Survey Water-Resources Investigations Report 00-4044, January 1999.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation 648.3 ft (197.60 m), September 23, 1998; minimum elevation, 608.07 ft (185.34 m) May 17, 1998.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 646.29 ft (196.99 m), November 9; minimum elevation, 631.15 ft (192.37 m), March 31.

Capacity Table
(based on data from U.S. Geological Survey Water-Resources Investigations Report 00-4044, Puerto Rico, 1999)

Elevation, in feet	Contents, in acre-feet	Elevation, in feet	Contents, in acre-feet
557	0	616	13,393
577	916	636	26,332
597	5,253	646	34,277

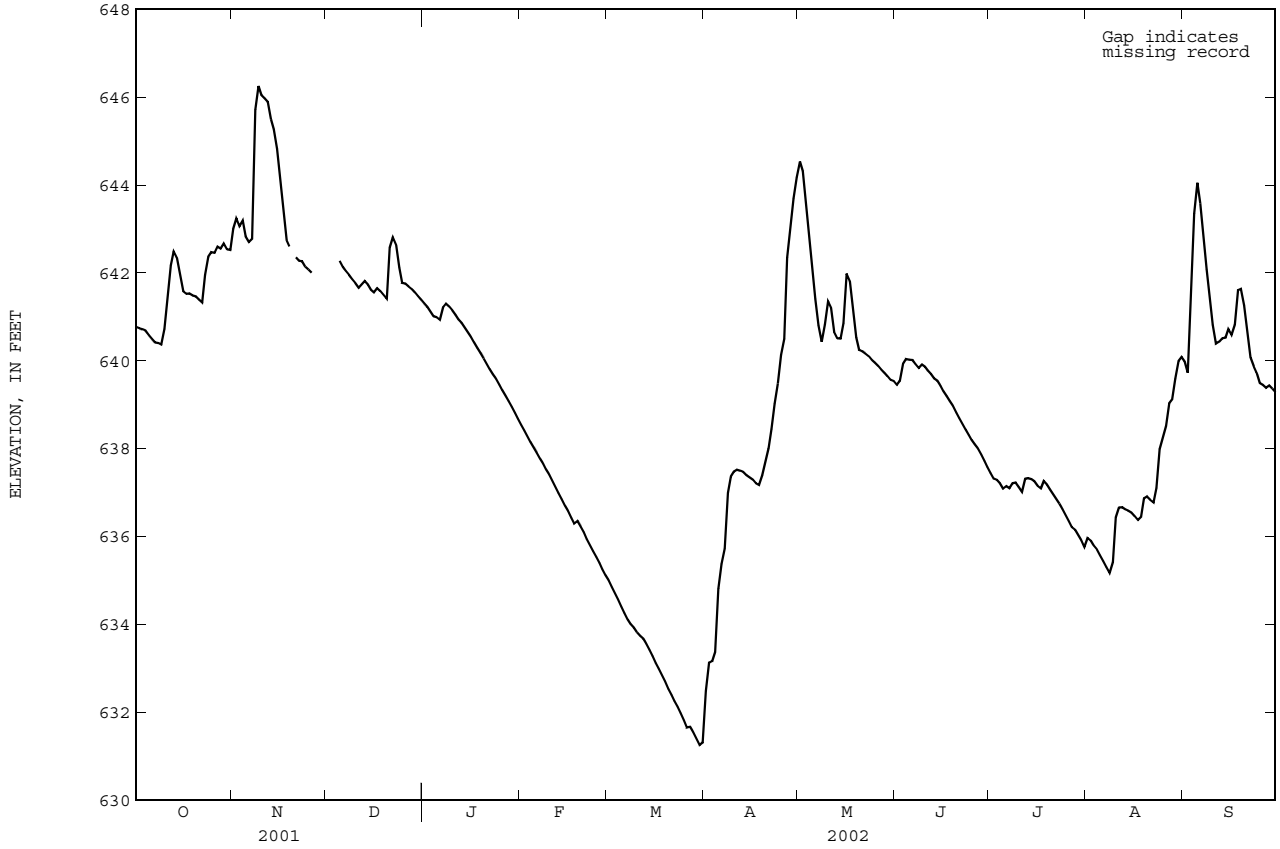
Elevation above NGVD 1929, feet
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	640.77	643.01	A	641.31	638.55	635.00	632.49	644.54	639.45	637.45	635.97	639.99
2	640.74	643.25	A	641.23	638.42	634.85	633.13	644.32	639.54	637.32	635.91	639.73
3	640.72	643.07	A	641.13	638.28	634.72	633.17	643.69	639.93	637.29	635.79	641.39
4	640.69	643.19	A	641.02	638.16	634.57	633.37	642.97	640.04	637.22	635.70	643.36
5	640.59	642.83	642.28	641.00	638.03	634.41	634.81	642.21	640.03	637.09	635.58	644.06
6	640.50	642.71	642.14	640.94	637.91	634.26	635.38	641.41	640.02	637.15	635.45	643.59
7	640.42	642.78	642.05	641.22	637.78	634.11	635.73	640.81	639.93	637.10	635.31	642.88
8	640.41	645.72	641.96	641.30	637.66	634.01	637.00	640.44	639.84	637.22	635.18	642.08
9	640.37	646.26	641.86	641.24	637.53	633.93	637.36	640.83	639.92	637.23	635.42	641.43
10	640.73	646.05	641.77	641.15	637.41	633.82	637.48	641.36	639.87	637.13	636.44	640.82
11	641.42	645.98	641.67	641.05	637.27	633.74	637.52	641.22	639.78	637.02	636.66	640.39
12	642.18	645.90	641.74	640.95	637.12	633.68	637.50	640.66	639.70	637.32	636.67	640.44
13	642.50	645.50	641.82	640.87	636.99	633.57	637.47	640.52	639.60	637.33	636.62	640.52
14	642.35	645.27	641.74	640.76	636.85	633.43	637.40	640.51	639.55	637.31	636.59	640.53
15	641.96	644.83	641.62	640.65	636.71	633.28	637.35	640.86	639.43	637.26	636.55	640.73
16	641.59	644.09	641.56	640.54	636.58	633.12	637.30	641.99	639.31	637.16	636.47	640.60
17	641.53	643.37	641.65	640.42	636.43	633.00	637.21	641.82	639.20	637.10	636.38	640.82
18	641.54	642.75	641.59	640.30	636.30	632.85	637.17	641.14	639.08	637.27	636.45	641.61
19	641.49	642.61	641.50	640.18	636.36	632.71	637.39	640.53	638.97	637.19	636.87	641.64
20	641.47	A	641.41	640.06	636.23	632.54	637.70	640.25	638.83	637.07	636.91	641.27
21	641.40	642.36	642.58	639.93	636.10	632.40	638.01	640.22	638.70	636.96	636.84	640.70
22	641.33	642.28	642.82	639.81	635.95	632.26	638.45	640.17	638.57	636.86	636.78	640.08
23	641.96	642.27	642.65	639.69	635.81	632.13	639.03	640.11	638.44	636.75	637.11	639.88
24	642.37	642.15	642.13	639.59	635.67	631.98	639.49	640.03	638.32	636.63	637.99	639.74
25	642.48	642.08	641.78	639.46	635.54	631.82	640.14	639.96	638.20	636.49	638.26	639.50
26	642.46	642.01	641.76	639.34	635.40	631.66	640.50	639.89	638.10	636.35	638.51	639.45
27	642.60	A	641.70	639.21	635.26	631.67	642.35	639.80	638.00	636.22	639.03	639.39
28	642.56	A	641.64	639.09	635.12	631.55	642.98	639.73	637.87	636.16	639.12	639.44
29	642.67	A	641.56	638.96	---	631.40	643.70	639.66	637.73	636.04	639.60	639.37
30	642.54	A	641.48	638.82	---	631.26	644.18	639.57	637.59	635.91	639.99	639.29
31	642.53	A	641.40	638.69	---	631.31	---	639.54	---	635.77	640.09	---
MAX	642.67	---	---	641.31	638.55	635.00	644.18	644.54	640.04	637.45	640.09	644.06
MIN	640.37	---	---	638.69	635.12	631.26	632.49	639.54	637.59	635.77	635.18	639.29

A No gage-height record

RIO GUAJATACA BASIN

50010800 LAGO GUAJATACA AT DAMSITE NEAR QUEBRADILLAS, PR--Continued



RIO GUAJATACA BASIN

50011000 CANAL PRINCIPAL DE DIVERSIONES AT LAGO DE GUAJATACA, PR

WATER-QUALITY RECORDS

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

DRAINAGE AREA.--Indeterminate.

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
DEC													
17...	1630	108	320	7.2	24.9	1.9	.7	9	<10	83	E14	150	52.7
FEB													
19...	1600	108	307	7.6	25.2	2.8	1.3	17	<10	E2	E2	--	--
SEP													
13...	0800	--	290	6.6	25.5	5.2	2.3	28	<10	E29	E16	140	51.6

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
DEC													
17...	3.37	5.31	.2	1.66	139	<1.0	7.4	6.84	.2	7.4	168	31.7	<10
FEB													
19...	--	--	--	--	139	--	--	--	--	--	--	--	<10
SEP													
13...	3.23	4.63	.2	1.94	120	<.1	7.7	6.59	E.10	6.7	154	--	<10

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
DEC													
17...	<.01	.270	.21	.20	<.02	M	19.6	E10	<.1	<.8	<10	50	<1
FEB													
19...	<.01	<.020	.02	.30	.04	--	--	--	--	--	--	--	--
SEP													
13...	<.01	.320	.02	.30	<.02	<2	15.7	M	<.1	<.8	<10	80	<1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
DEC								
17...	59.7	<.01	<2	<.3	<20	<.01	--	<.05
FEB								
19...	--	--	--	--	--	--	--	--
SEP								
13...	47.9	<.01	<2	<.3	<20	<.01	<16	<.05

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

RIO GUAJATACA BASIN

50011400 RIO GUAJATACA ABOVE MOUTH NEAR QUEBRADILLAS, PR

WATER-QUALITY RECORDS

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 Atlantic Ocean, and 6.6 mi (10.6 km) downstream from Lago Guajataca.

DRAINAGE AREA.--Indeterminate

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
DEC													
19...	1100	25	445	7.6	24.2	7.6	7.3	87	<10	600	E1080	200	71.1
MAR													
11...	1030	20	509	7.5	23.5	1.6	6.5	77	<10	108	96	--	--
SEP													
13...	1205	30	374	6.9	26.2	4.2	7.3	91	<10	E164	E164	180	64.8

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
DEC													
19...	5.13	10.9	.3	1.44	189	<1.0	7.2	18.7	<.1	6.7	234	16.0	12
MAR													
11...	--	--	--	--	207	--	--	--	--	--	--	--	<10
SEP													
13...	5.10	8.40	.3	1.55	160	<.1	7.6	12.9	E.09	7.3	204	16.4	<10

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV--ABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
DEC													
19...	<.01	1.40	.03	.20	<.02	E1	11.4	30	E.1	E.7	<10	120	<1
MAR													
11...	<.01	2.40	<.01	<.20	<.02	--	--	--	--	--	--	--	--
SEP													
13...	<.01	1.80	.02	.20	<.02	<2	13.5	E10	<.1	E.4	<10	60	<1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
DEC								
19...	17.6	<.01	<2	<.3	<20	<.01	--	<.05
MAR								
11...	--	--	--	--	--	--	--	--
SEP								
13...	22.8	<.01	<2	<.3	E20	<.01	<16	<.05

< -- Less than
E -- Estimated value

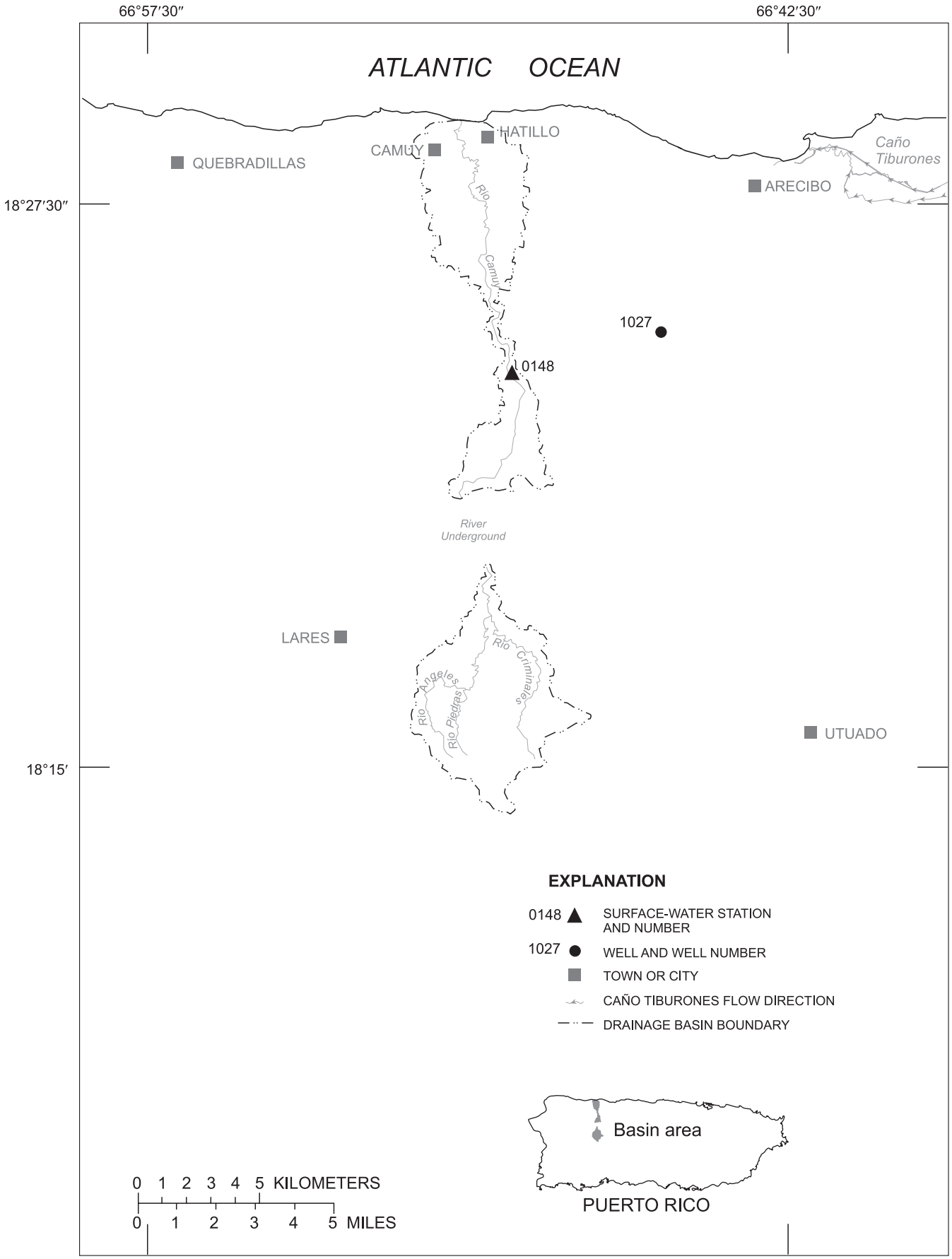


Figure 12. Río Camuy basin.

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 mouth.

DRAINAGE AREA.--Indeterminate.

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

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

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	77	125	77	78	45	37	168	462	89	47	68	172
2	72	227	128	75	44	37	222	336	114	47	102	252
3	75	184	188	73	44	36	85	243	186	47	86	564
4	78	198	151	71	44	36	58	201	137	53	94	391
5	67	184	141	73	43	35	493	172	103	49	83	252
6	65	132	94	94	42	34	370	154	85	50	66	182
7	62	155	87	85	43	33	268	139	77	62	54	119
8	65	3580	82	102	42	35	791	127	73	55	48	98
9	78	1050	78	76	42	41	280	376	70	74	48	107
10	e682	491	76	71	42	39	169	347	70	63	129	158
11	e374	338	74	66	41	50	123	193	67	57	135	212
12	e510	267	81	64	41	65	100	146	90	82	103	155
13	e307	221	88	63	41	46	86	130	91	103	70	95
14	e177	253	78	62	40	34	77	120	71	71	71	81
15	e121	230	74	60	40	30	73	175	66	80	68	98
16	e107	173	89	59	40	31	74	538	63	61	59	132
17	e95	152	199	58	39	38	81	308	62	51	55	97
18	e93	139	118	56	39	29	72	202	61	48	118	280
19	98	130	94	56	48	30	247	151	60	46	152	210
20	97	121	84	54	58	28	245	132	58	45	84	181
21	79	114	660	52	43	28	242	121	57	45	68	160
22	74	107	334	51	40	27	248	112	55	44	54	104
23	206	103	252	50	39	26	379	106	53	50	96	90
24	315	102	234	51	40	26	427	100	52	46	192	85
25	162	96	148	50	39	27	471	95	57	45	164	86
26	106	92	120	49	39	29	326	93	72	44	132	77
27	158	88	106	48	39	32	708	90	61	43	181	72
28	427	86	96	48	38	53	511	90	54	62	107	68
29	255	90	89	49	---	50	544	91	51	76	139	66
30	206	83	84	48	---	34	722	100	49	52	129	92
31	155	---	80	46	---	35	---	93	---	45	147	---
TOTAL	5443	9311	4284	1938	1175	1111	8660	5743	2254	1743	3102	4736
MEAN	176	310	138	62.5	42.0	35.8	289	185	75.1	56.2	100	158
MAX	682	3580	660	102	58	65	791	538	186	103	192	564
MIN	62	83	74	46	38	26	58	90	49	43	48	66

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2002, BY WATER YEAR (WY)

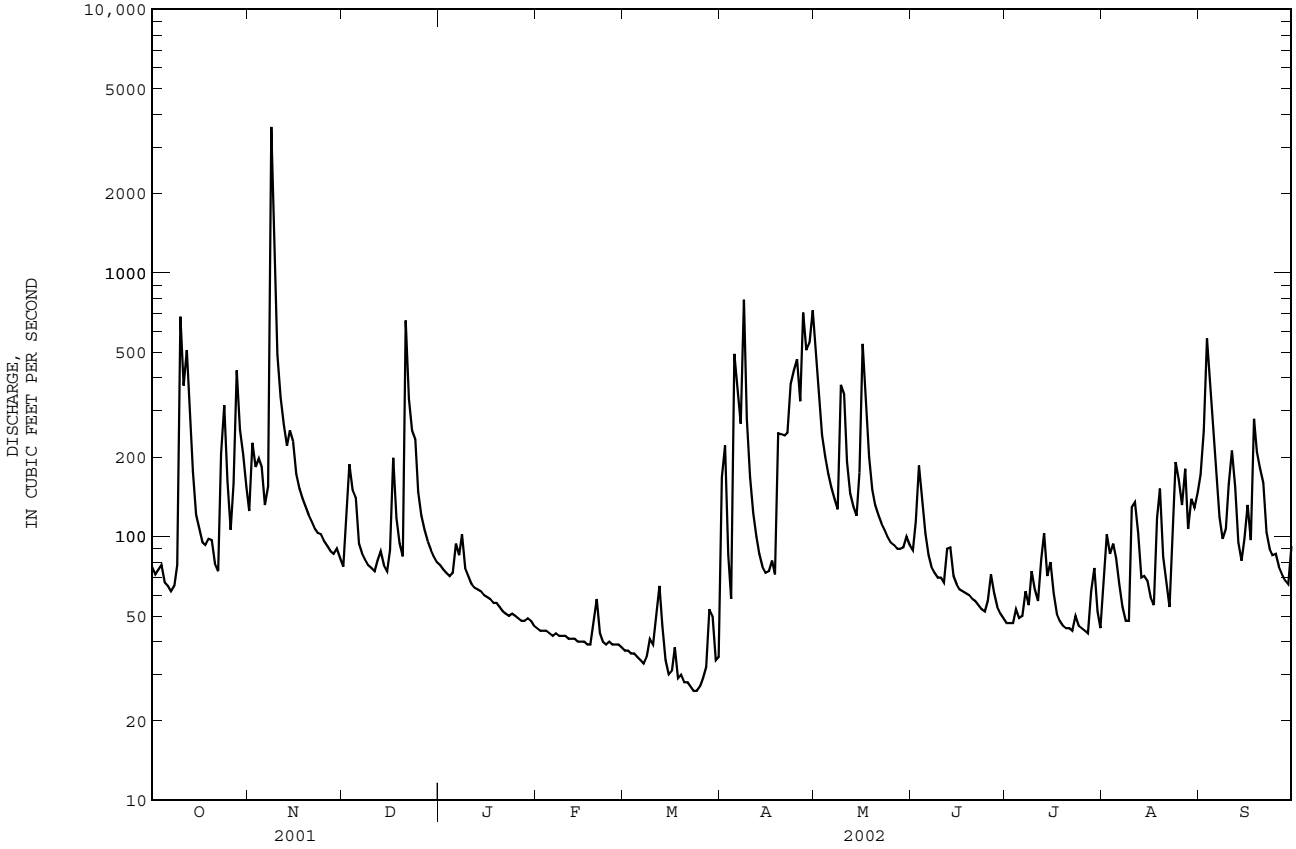
MEAN	201	138	76.8	59.0	50.3	47.8	93.2	167	115	74.5	97.1	188
MAX	427	310	179	163	96.4	93.7	289	624	322	109	187	726
(WY)	1986	2002	2000	1997	1996	1999	2002	1986	1999	1989	1998	1998
MIN	81.6	53.4	30.2	33.1	29.1	23.7	28.0	43.2	42.7	38.8	47.9	61.8
(WY)	1988	1998	2001	1991	1998	1994	1994	1989	1997	1994	1993	1997

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1984 - 2002	
ANNUAL TOTAL	38522		49500			
ANNUAL MEAN	106		136		109	
HIGHEST ANNUAL MEAN					179	1986
LOWEST ANNUAL MEAN					61.5	1994
HIGHEST DAILY MEAN	3580	Nov 8	3580	Nov 8	9010	Sep 22 1998
LOWEST DAILY MEAN	24	Mar 18	26	Mar 23	16	Mar 18 1994
ANNUAL SEVEN-DAY MINIMUM	24	Mar 16	27	Mar 20	17	Mar 16 1994
MAXIMUM PEAK FLOW			7430	Nov 8	11600	Sep 22 1998
MAXIMUM PEAK STAGE			18.52	Nov 8	21.69	Sep 22 1998
INSTANTANEOUS LOW FLOW			24	Mar 25	15	Mar 22 1994
10 PERCENT EXCEEDS	190		254		212	
50 PERCENT EXCEEDS	67		83		68	
90 PERCENT EXCEEDS	29		40		33	

e Estimated

RIO CAMUY BASIN

50014800 RIO CAMUY NEAR BAYANEY, PR--Continued



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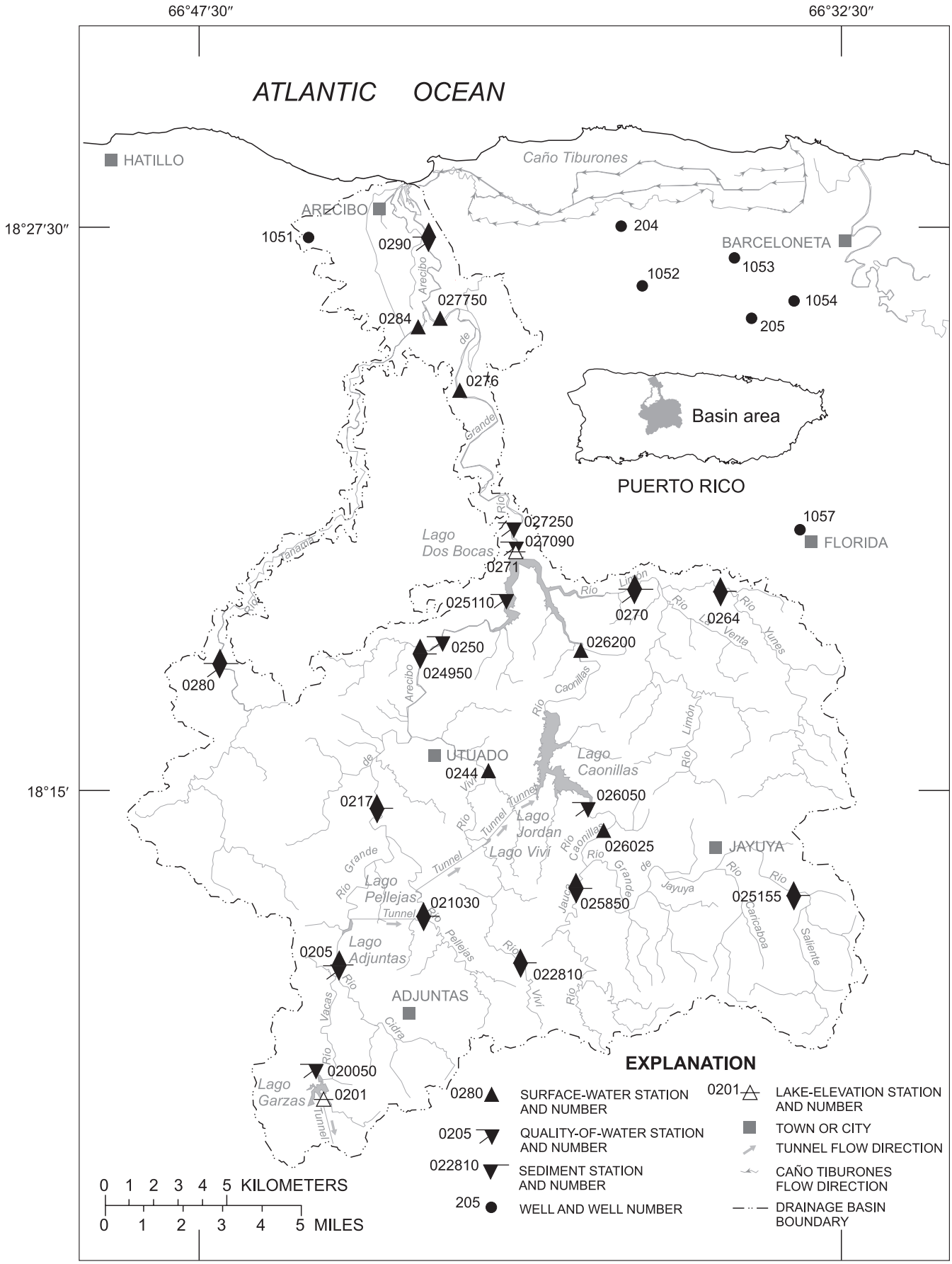


Figure 13. Río Grande de Arecibo basin.

RIO GRANDE DE ARECIBO BASIN

50020100 LAGO GARZAS NEAR ADJUNTAS, PR

LOCATION.--Lat 18°08'20", long 66°44'29", Hydrologic Unit 21010002, in power gate tower of Garzas Dam on Río Vacas, 1.7 mi (2.7 km) upstream from Río Garzas, and 2.2 mi (3.5 km) southwest of Adjuntas.

DRAINAGE AREA.--15.6 mi^2 (40.4 km^2).

ELEVATION RECORDS

PERIOD OF RECORD.--January 1988 to May 1989, March 1993 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,400.00 ft (731.520 m) above mean sea level. Prior to May 25, 1988, at datum 2,376.80 ft (724.45 m), May 25 to July 13, 1988, at datum 2,338.08 ft (712.65 m), July 14, 1988, to May 25, 1989, at datum 2,337.82 ft (712.56 m), above mean sea level.

REMARKS.--Lake is formed by earthfill dam completed in 1943. Outflow from lake controlled by vertical-lift sluice gate and fixed-crest concrete spillway. Spillway elevation, 2,415.00 ft (736.09 m).Lake is used for irrigation and power production. Operated by Puerto Rico Electric Power Authorithy. Gage-height and precipitation satellite telemetry at station. New capacity table based on U.S. Geological Survey Water-Resources Investigations Report 99-4143, September 1996.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation 2,418.28 ft (737.09 m), September 22, 1998; minimum elevation, 2,364.79 ft (720.79 m), August 23, 1988.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 2,415.98 ft (736.39 m), September 24; minimum elevation, 2,411.89 ft (735.14 m), December 28.

Capacity Table
(based on data from U.S. Geological Survey Water-Resources Investigations Report 99-4143, 1996)

Elevation, in feet	Contents, in acre-feet	Elevation, in feet	Contents, in acre-feet
2,317	0	2,376	1,419
2,336	243	2,399	2,700
2,359	794	2,415	4,143

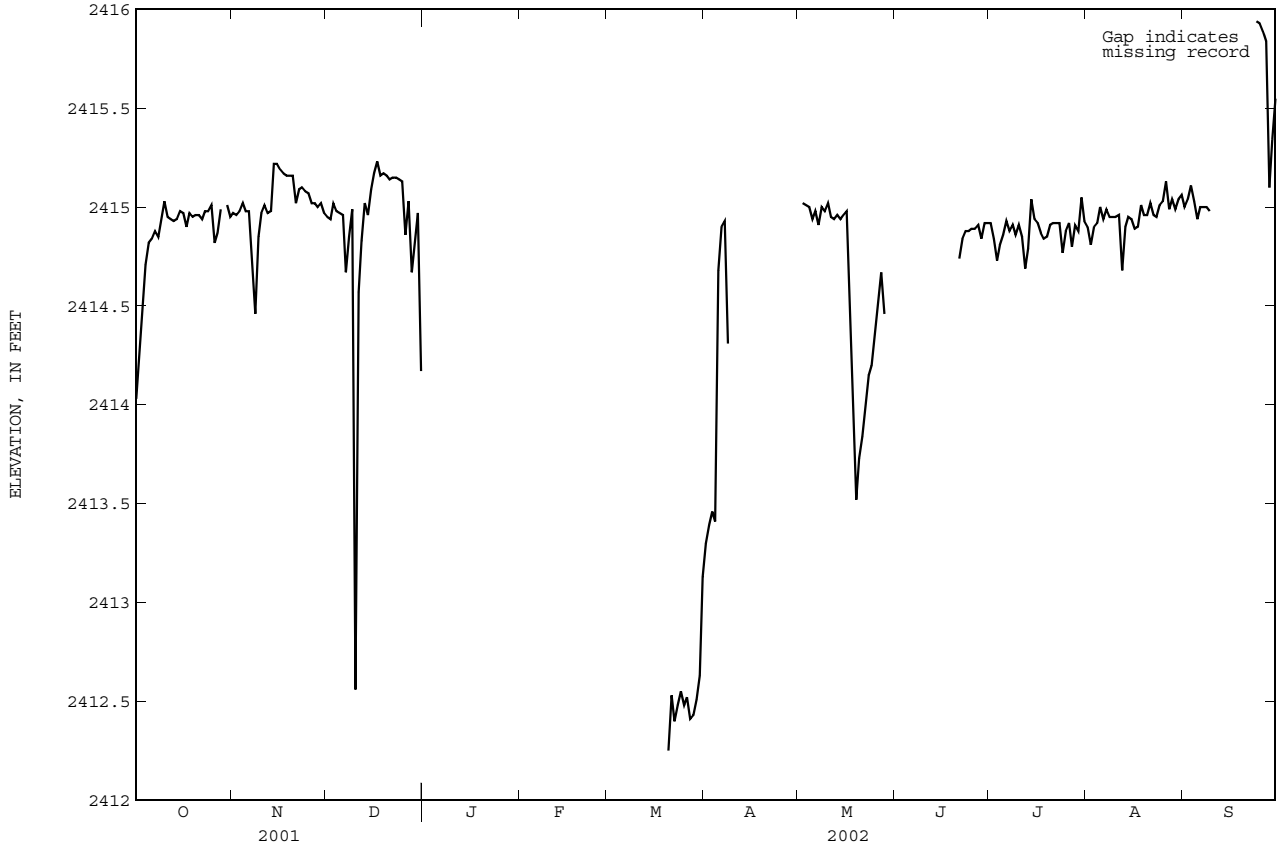
Elevation above NGVD 1929, feet
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2414.03	2414.97	2414.95	A	A	A	2413.30	A	A	2414.92	2414.90	2415.00
2	2414.27	2414.96	2414.94	A	A	A	2413.39	2415.02	A	2414.84	2414.81	2415.04
3	2414.51	2414.98	2415.02	A	A	A	2413.46	2415.01	A	2414.73	2414.90	2415.11
4	2414.71	2415.02	2414.98	A	A	A	2413.41	2415.00	A	2414.81	2414.92	2415.03
5	2414.82	2414.98	2414.97	A	A	A	2414.68	2414.94	A	2414.86	2415.00	2414.94
6	2414.84	2414.98	2414.96	A	A	A	2414.90	2414.98	A	2414.93	2414.94	2415.00
7	2414.88	2414.72	2414.67	A	A	A	2414.93	2414.91	A	2414.88	2414.99	2415.00
8	2414.85	2414.46	2414.85	A	A	A	2414.31	2415.00	A	2414.91	2414.95	2415.00
9	2414.94	2414.85	2414.99	A	A	A	A	2414.98	A	2414.86	2414.95	2414.98
10	2415.03	2414.97	2412.56	A	A	A	A	2415.02	A	2414.91	2414.95	A
11	2414.95	2415.01	2414.57	A	A	A	A	2414.95	A	2414.85	2414.96	A
12	2414.94	2414.97	2414.83	A	A	A	A	2414.94	A	2414.69	2414.68	A
13	2414.93	2414.98	2415.02	A	A	A	A	2414.96	A	2414.79	2414.90	A
14	2414.94	2415.22	2414.96	A	A	A	A	2414.94	A	2415.04	2414.95	A
15	2414.98	2415.22	2415.09	A	A	A	A	2414.96	A	2414.94	2414.94	A
16	2414.97	2415.19	2415.17	A	A	A	A	2414.98	A	2414.92	2414.89	A
17	2414.90	2415.17	2415.23	A	A	A	A	2414.29	A	2414.87	2414.90	A
18	2414.97	2415.16	2415.16	A	A	A	A	2413.87	A	2414.84	2415.01	A
19	2414.95	2415.16	2415.17	A	A	A	A	2413.52	A	2414.85	2414.96	A
20	2414.96	2415.16	2415.16	A	A	2412.25	A	2413.73	A	2414.91	2414.96	A
21	2414.96	2415.02	2415.14	A	A	2412.53	A	2413.84	2414.74	2414.92	2415.02	A
22	2414.94	2415.09	2415.15	A	A	2412.40	A	2414.00	2414.84	2414.92	2414.96	A
23	2414.98	2415.10	2415.15	A	A	2412.48	A	2414.15	2414.88	2414.92	2414.95	A
24	2414.98	2415.08	2415.14	A	A	2412.55	A	2414.20	2414.88	2414.77	2415.01	2415.94
25	2415.01	2415.07	2415.13	A	A	2412.48	A	2414.35	2414.89	2414.88	2415.03	2415.93
26	2414.82	2415.02	2414.86	A	A	2412.52	A	2414.51	2414.89	2414.92	2415.13	2415.89
27	2414.87	2415.02	2415.03	A	A	2412.41	A	2414.67	2414.91	2414.80	2414.99	2415.84
28	2414.99	2415.00	2414.67	A	A	2412.43	A	2414.46	2414.84	2414.91	2415.04	2415.10
29	A	2415.02	2414.82	A	---	2412.51	A	A	2414.92	2414.88	2414.99	2415.34
30	2415.01	2414.97	2414.97	A	---	2412.63	A	A	2414.92	2415.05	2415.04	2415.55
31	2414.95	---	2414.17	A	---	2413.13	---	A	---	2414.93	2415.06	---
MAX	---	2415.22	2415.23	---	---	---	---	---	---	2415.05	2415.13	---
MIN	---	2414.46	2412.56	---	---	---	---	---	---	2414.69	2414.68	---

A No gage-height record

RIO GRANDE DE ARECIBO BASIN

50020100 LAGO GARZAS NEAR ADJUNTAS, PR--Continued



RIO GRANDE DE ARECIBO BASIN

50020500 RIO GRANDE DE ARECIBO NEAR ADJUNTAS, PR

LOCATION.--Lat 18°10'54", long 66°44'12", Hydrologic Unit 21010002, at Highway 135 bridge junction with Highway 10, 1.4 mi (2.2 km) south from Lago Adjuntas and 1.5 mi (2.4 km) northwest of Adjuntas Plaza.

DRAINAGE AREA.--12.7 mi^2 (32.9 km^2), this does not include 6.0 mi^2 (15.6 km^2) above Lago Garzas.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1946 to April 1950 (operated by Puerto Rico Water Resources Authority), March 2000 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,443 ft (440 m), from topographic map.

REMARKS.--Records poor. Flow affected by Lago Garzas, 2.63 mi (4.23 km) and sewage treatment plant 1.1 mi (1.77 km) upstream from gage. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	34	26	22	18	12	19	49	17	19	15	65
2	25	73	14	26	14	11	14	75	22	17	13	152
3	25	40	91	28	16	11	12	52	51	12	11	287
4	23	59	43	25	19	11	11	56	146	9.9	13	154
5	27	47	31	24	14	11	192	43	72	11	54	47
6	33	65	28	25	15	10	83	45	53	21	29	29
7	37	44	24	23	16	10	42	45	43	22	31	34
8	31	287	16	26	14	11	40	35	36	15	36	31
9	33	101	19	26	15	11	32	40	34	16	24	28
10	155	55	20	20	15	9.9	24	59	31	12	23	40
11	57	70	97	24	14	49	19	42	29	14	27	37
12	35	61	48	20	14	17	18	31	30	10	21	32
13	33	63	24	24	14	11	13	29	28	8.7	19	212
14	30	100	22	26	14	11	13	30	22	15	34	68
15	49	65	19	23	13	11	17	26	18	40	21	159
16	34	53	84	22	13	13	19	30	20	19	32	131
17	29	43	173	23	13	13	53	27	23	15	13	61
18	29	40	e78	16	14	11	23	16	29	11	e63	55
19	32	38	54	16	35	11	18	15	23	9.4	32	38
20	29	39	41	15	16	10	230	15	27	9.6	21	34
21	30	34	65	16	13	10	149	15	13	14	30	34
22	157	25	39	19	12	9.5	54	14	12	21	29	34
23	114	31	41	22	12	8.9	302	14	14	18	18	32
24	47	38	36	22	11	8.7	245	14	18	15	17	e33
25	39	32	32	23	11	8.7	344	13	17	8.6	38	41
26	36	31	27	23	14	8.9	317	14	24	11	91	32
27	33	29	20	22	13	8.8	245	14	19	13	64	29
28	65	29	20	21	12	9.1	161	15	19	17	98	21
29	75	44	18	16	---	59	82	18	14	14	45	12
30	93	31	18	16	---	17	62	32	19	45	103	11
31	45	---	18	16	---	38	---	25	---	41	87	---
TOTAL	1506	1701	1286	670	414	451.5	2853	948	923	524.2	1152	1973
MEAN	48.6	56.7	41.5	21.6	14.8	14.6	95.1	30.6	30.8	16.9	37.2	65.8
MAX	157	287	173	28	35	59	344	75	146	45	103	287
MIN	23	25	14	15	11	8.7	11	13	12	8.6	11	11
AC-FT	2990	3370	2550	1330	821	896	5660	1880	1830	1040	2280	3910
CFSM	2.60	3.03	2.22	1.16	0.79	0.78	5.09	1.64	1.65	0.90	1.99	3.52
IN.	3.00	3.38	2.56	1.33	0.82	0.90	5.68	1.89	1.84	1.04	2.29	3.92

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 2002, BY WATER YEAR (WY)

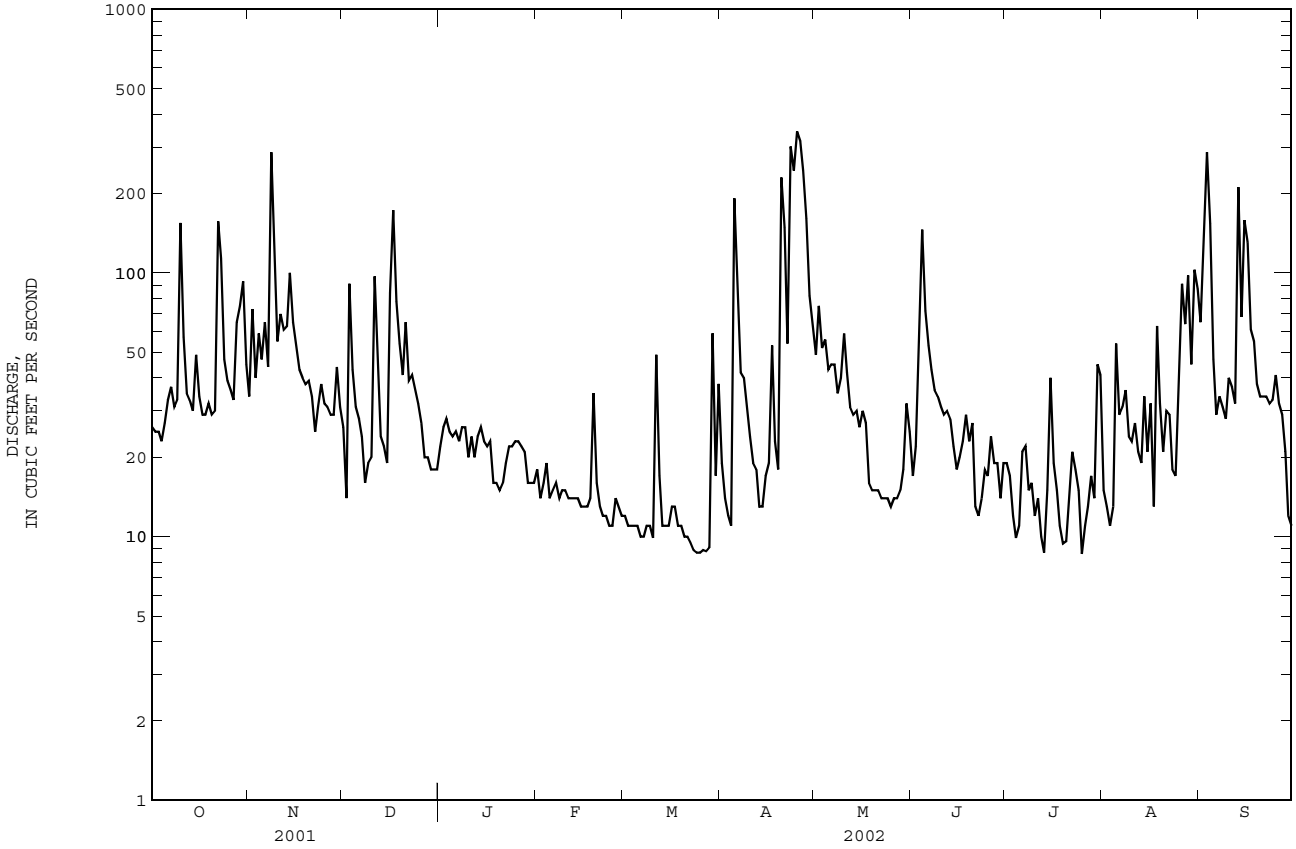
MEAN	77.4	52.9	36.7	22.1	24.3	15.5	27.9	36.8	27.1	27.5	48.7	84.8
MAX	119	75.2	41.5	29.6	56.9	21.6	95.1	72.2	36.0	49.3	94.5	129
(WY)	2001	2001	2002	1949	1950	1949	2002	2001	2000	1949	2000	2000
MIN	48.6	27.3	30.8	19.7	14.8	10.2	10.4	12.2	14.7	16.9	24.1	55.8
(WY)	2002	1950	1947	1948	2002	2001	1948	1948	2001	2002	2001	1947

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1947 - 2002	
ANNUAL TOTAL	12541.5		14401.7			
ANNUAL MEAN	34.4		39.5		40.8	
HIGHEST ANNUAL MEAN					41.4	1948
LOWEST ANNUAL MEAN					39.5	2002
HIGHEST DAILY MEAN	1240	May 6	344	Apr 25	1510	Aug 23 2000
LOWEST DAILY MEAN	6.8	Mar 31	8.6	Jul 25	6.8	Mar 31 2001
ANNUAL SEVEN-DAY MINIMUM	7.1	Mar 27	8.9	Mar 22	7.1	Mar 27 2001
MAXIMUM PEAK FLOW			2120	Apr 23	12000	May 6 2001
MAXIMUM PEAK STAGE			9.22	Apr 23	15.49	May 6 2001
ANNUAL RUNOFF (AC-FT)	24880		28570		29550	
ANNUAL RUNOFF (CFSM)	2.71		2.11		2.18	
ANNUAL RUNOFF (INCHES)	36.74		28.65		29.64	
10 PERCENT EXCEEDS	65		74		77	
50 PERCENT EXCEEDS	19		25		23	
90 PERCENT EXCEEDS	9.8		11		12	

e Estimated

RIO GRANDE DE ARECIBO BASIN

50020500 RIO GRANDE DE ARECIBO NEAR ADJUNTAS, PR--Continued



RIO GRANDE DE ARECIBO BASIN

50020500 RIO GRANDE DE ARECIBO NEAR ADJUNTAS, PR--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 2000 to current year.

INSTRUMENTATION.--USDH-48 and automatic sediment samplers since 2000.

REMARKS.-- Sediment samples were collected by a local observer on a weekly basis. During high flow events sediment samples were collected with automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 1,390 mg/L April 23, 2002; Minimum daily mean, 1 mg/L several days during 2001 and 2002.

SEDIMENT LOADS: Maximum daily mean, 14,400 tons (13,064 tonnes) May 6, 2001; Minimum daily mean, 0.03 ton (0.03 tonne) June 1, 2, 2001.

EXTREMES FOR CURRENT YEAR 2002.--
SEDIMENT CONCENTRATION: Maximum daily mean, 1,390 mg/L April 23, 2002; Minimum daily mean, 1 mg/L several days.

SEDIMENT LOADS: Maximum daily mean, 3,780 tons (3,429 tonnes) April 23, 2002; Minimum daily mean, 0.04 ton (0.04 tonne) December 8, 2002.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTANTANEOUS DISCHARGE, CFS (00061)	SPECIF. CONDUCTANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPERATURE, WATER, DEG C (00010)	TURBIDITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DISSOLVED OXYGEN, MG/L (00300)	DISSOLVED OXYGEN, PERCENT OF SATURATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLIFORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREPTOCOCCI KF MF, COL/ 100 ML (31673)	HARDNESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
DEC													
17...	1255	40	245	7.2	23.4	6.0	8.3	104	<10	3600	480	87	22.7
MAR													
12...	0800	15	277	7.4	19.1	1.9	7.9	91	<10	E1180	3200	--	--
SEP													
10...	0905	--	186	6.8	24.0	26	8.0	99	<10	330	310	100	27.6

DATE	MAGNESIUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLORIDE, WATER, FLTRD, MG/L (00940)	FLUORIDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTITUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED, MG/L (00530)
DEC													
17...	7.39	11.7	.5	1.72	88	<1.0	6.5	12.7	.1	27.2	143	15.6	10
MAR													
12...	--	--	--	--	97	--	--	--	--	--	--	--	<10
SEP													
10...	8.34	17.0	.7	1.66	87	<.1	6.4	20.9	E.08	27.3	161	--	50

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOSPHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOVERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOVERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROMIUM, WATER, UNFLTRD RECOVERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOVERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOVERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOVERABLE, UG/L (01051)
DEC													
17...	<.01	.950	.05	.20	.07	<2	14.7	E10	<.1	E.5	<10	160	M
MAR													
12...	<.01	1.20	.03	<.20	.10	--	--	--	--	--	--	--	--
SEP													
10...	.02	.590	.03	.30	.09	2	12.1	140	<.1	2.1	<10	M	<1

DATE	MANGANESE, WATER, UNFLTRD RECOVERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOVERABLE, UG/L (71900)	SELENIUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOVERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOVERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHENOLIC COMPOUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
DEC								
17...	22.7	<.01	<4	<.3	<20	<.01	<16	<.05
MAR								
12...	--	--	--	--	--	--	--	--
SEP								
10...	E2.3	<.01	<2	<.3	<20	<.01	<16	<.05

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

RIO GRANDE DE ARECIBO BASIN

50020500 RIO GRANDE DE ARECIBO NEAR ADJUNTAS, PR--Continued

WATER-QUALITY RECORDS

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	26	18	1.3	34	8	0.70	26	21	1.4
2	25	7	0.45	73	178	132	14	20	0.75
3	25	6	0.42	40	36	4.0	91	180	110
4	23	6	0.38	59	81	20	43	51	6.7
5	27	17	1.4	47	45	6.0	31	25	2.1
6	33	35	3.1	65	95	25	28	14	1.1
7	37	43	4.6	44	10	1.3	24	3	0.24
8	31	19	1.7	287	637	790	16	1	0.04
9	33	12	1.1	101	148	53	19	7	0.65
10	155	491	575	55	32	4.8	20	1	0.05
11	57	91	17	70	84	22	97	471	364
12	35	29	2.7	61	84	15	48	62	14
13	33	23	2.1	63	105	28	24	7	0.44
14	30	23	1.8	100	240	180	22	6	0.36
15	49	101	31	65	58	11	19	6	0.29
16	34	15	1.4	53	20	2.9	84	160	125
17	29	4	0.35	43	18	2.1	173	468	773
18	29	3	0.27	40	17	1.8	e78	e128	e33.0
19	32	4	0.33	38	15	1.6	54	71	10
20	29	4	0.31	39	10	0.99	41	48	5.4
21	30	4	0.33	34	4	0.34	65	128	71
22	157	479	1060	25	3	0.21	39	45	4.7
23	114	694	825	31	7	0.61	41	38	4.2
24	47	61	7.9	38	29	3.2	36	31	3.0
25	39	42	4.4	32	18	1.5	32	25	2.1
26	36	32	3.1	31	16	1.3	27	18	1.3
27	33	40	4.5	29	15	1.2	20	16	0.85
28	65	190	102	29	15	1.2	20	16	0.86
29	75	141	48	44	45	6.0	18	16	0.79
30	93	236	119	31	27	2.3	18	16	0.79
31	45	39	5.6	---	---	---	18	16	0.80
TOTAL	1506	---	2826.54	1701	---	1320.05	1286	---	1538.91

RIO GRANDE DE ARECIBO BASIN

50020500 RIO GRANDE DE ARECIBO NEAR ADJUNTAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	22	16	0.97	18	9	0.44	12	9	0.28
2	26	15	1.1	14	12	0.48	11	8	0.24
3	28	14	1.0	16	16	0.68	11	6	0.19
4	25	12	0.85	19	19	0.98	11	5	0.15
5	24	11	0.71	14	22	0.86	11	4	0.13
6	25	10	0.65	15	19	0.81	10	4	0.11
7	23	9	0.52	16	15	0.67	10	3	0.09
8	26	7	0.52	14	11	0.43	11	3	0.09
9	26	9	0.65	15	11	0.44	11	3	0.09
10	20	12	0.64	15	12	0.49	9.9	3	0.08
11	24	14	0.92	14	14	0.53	49	160	89
12	20	12	0.62	14	15	0.58	17	18	0.91
13	24	8	0.50	14	17	0.64	11	11	0.34
14	26	4	0.29	14	19	0.69	11	8	0.25
15	23	3	0.21	13	19	0.69	11	6	0.16
16	22	4	0.23	13	19	0.65	13	5	0.16
17	23	5	0.31	13	19	0.66	13	4	0.14
18	16	6	0.29	14	19	0.73	11	4	0.11
19	16	10	0.42	35	55	7.6	11	3	0.10
20	15	13	0.56	16	22	0.97	10	5	0.13
21	16	17	0.71	13	15	0.53	10	7	0.18
22	19	20	1.0	12	9	0.29	9.5	7	0.18
23	22	16	0.95	12	10	0.33	8.9	7	0.16
24	22	11	0.65	11	14	0.44	8.7	7	0.15
25	23	6	0.39	11	18	0.54	8.7	6	0.15
26	23	5	0.29	14	16	0.61	8.9	6	0.15
27	22	4	0.26	13	12	0.42	8.8	6	0.15
28	21	4	0.22	12	10	0.32	9.1	8	0.20
29	16	3	0.15	---	---	---	59	387	255
30	16	3	0.14	---	---	---	17	14	0.72
31	16	6	0.24	---	---	---	38	74	26
TOTAL	670	---	16.96	414	---	23.50	451.5	---	375.79

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	19	15	0.92	49	12	1.6	17	101	4.7
2	14	10	0.41	75	136	44	22	100	6.0
3	12	14	0.46	52	38	5.8	51	115	17
4	11	18	0.52	56	56	11	146	219	156
5	192	607	1380	43	54	6.3	72	72	14
6	83	157	59	45	105	25	53	64	9.2
7	42	37	4.6	45	44	4.9	43	57	6.6
8	40	30	3.7	35	12	1.1	36	49	4.8
9	32	8	0.68	40	14	1.5	34	42	3.8
10	24	8	0.52	59	280	110	31	38	3.1
11	19	8	0.43	42	87	10	29	59	4.5
12	18	9	0.42	31	59	4.9	30	53	4.2
13	13	9	0.33	29	57	4.5	28	35	2.7
14	13	10	0.36	30	55	4.5	22	17	1.1
15	17	10	0.49	26	53	3.8	18	15	0.74
16	19	11	0.54	30	58	4.8	20	20	1.1
17	53	144	78	27	66	4.8	23	24	1.5
18	23	20	1.3	16	74	3.1	29	27	2.1
19	18	16	0.79	15	81	3.3	23	30	1.9
20	230	478	554	15	89	3.6	27	47	5.4
21	149	265	162	15	97	3.8	13	24	0.87
22	54	66	9.9	14	112	4.3	12	24	0.80
23	302	1390	3780	14	129	5.0	14	24	0.93
24	245	938	1110	14	127	4.8	18	24	1.2
25	344	1320	2220	13	116	4.2	17	24	1.1
26	317	1290	2050	14	105	3.9	24	34	3.2
27	245	755	638	14	94	3.7	19	27	1.4
28	161	359	183	15	83	3.3	19	25	1.3
29	82	95	24	18	73	3.5	14	23	0.83
30	62	34	6.3	32	81	7.1	19	20	1.0
31	---	---	---	25	97	6.5	---	---	---
TOTAL	2853	---	12270.67	948	---	308.6	923	---	263.07

RIO GRANDE DE ARECIBO BASIN

50020500 RIO GRANDE DE ARECIBO NEAR ADJUNTAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	19	18	0.93	15	22	0.88	65	109	25
2	17	22	1.0	13	22	0.75	152	472	514
3	12	28	0.87	11	22	0.65	287	1120	2070
4	9.9	29	0.77	13	21	0.76	154	503	389
5	11	29	0.84	54	149	51	47	58	8.7
6	21	34	2.2	29	31	2.8	29	21	1.6
7	22	10	0.79	31	34	4.0	34	21	1.9
8	15	1	0.06	36	63	6.2	31	21	1.7
9	16	20	0.79	24	46	2.9	28	21	1.6
10	12	34	1.1	23	34	2.1	40	49	7.9
11	14	20	0.80	27	36	3.0	37	38	4.2
12	10	16	0.44	21	13	0.82	32	21	1.8
13	8.7	15	0.35	19	29	3.7	212	723	1180
14	15	23	2.5	34	94	32	68	138	34
15	40	43	7.0	21	3	0.18	159	409	328
16	19	5	0.27	32	108	48	131	201	90
17	15	6	0.24	13	11	0.39	61	7	1.2
18	11	6	0.18	e63	e58	e19.0	55	5	0.70
19	9.4	6	0.15	32	32	3.5	38	5	0.48
20	9.6	6	0.15	21	9	0.49	34	6	0.53
21	14	6	0.22	30	26	3.9	34	7	0.62
22	21	16	1.5	29	30	2.7	34	8	0.71
23	18	14	0.70	18	17	0.83	32	9	0.77
24	15	11	0.45	17	14	0.66	e33	e10	e0.86
25	8.6	9	0.21	38	37	6.3	41	9	0.98
26	11	7	0.20	91	50	25	32	7	0.61
27	13	6	0.20	64	19	3.6	29	5	0.43
28	17	31	2.9	98	198	130	21	5	0.29
29	14	8	0.31	45	e58	8.2	12	5	0.16
30	45	29	12	103	245	248	11	5	0.14
31	41	53	7.4	87	184	54	---	---	---
TOTAL	524.2	---	47.52	1152	---	666.31	1973	---	4667.88
YEAR	14401.7		24325.80						

e Estimated

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

Date	Time	Instan-taneous dis-charge, cfs (00061)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment load, tons/d (80155)	Suspnd. sedi-ment, sieve diametr percent <.062mm (70331)
OCT					
22...	1706	1440	5680	22100	82
DEC					
11...	1635	467	3730	4700	95
MAR					
29...	1600	480	4240	5490	98

RIO GRANDE DE ARECIBO BASIN

50021030 RIO PELLEJAS ABOVE CENTRAL PELLEJAS, PR

LOCATION.--Lat 18°12'17",long 66°42'13", Hydrologic Unit 21010002, 0.2 mi (0.3 km) southeast from Escuela Lucas Valdivieso, 3.0 mi (4.8 km) north from Adjuntas Hospital and 2.0 mi (3.2 km) west from Lago Adjuntas.

DRAINAGE AREA.--2.99 mi^2 (7.74 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 2000 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,148 ft (350 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	13	15	13	10	22	28	24	23	22	e22	e25
2	14	25	15	13	10	22	27	34	23	23	e22	e39
3	14	17	34	13	10	21	26	26	24	23	25	e59
4	14	14	17	13	10	21	25	26	e25	22	21	e50
5	14	15	15	14	10	21	60	25	e22	22	22	e27
6	13	21	14	15	9.9	21	35	24	e21	24	21	e20
7	13	16	14	14	9.9	21	28	25	e21	23	21	e23
8	13	110	14	13	9.8	21	28	23	e21	22	21	e21
9	14	35	16	13	9.7	21	25	22	e21	22	21	e20
10	16	22	14	12	9.6	21	23	34	e21	22	23	e24
11	14	27	47	12	10	30	23	23	22	21	23	e24
12	13	21	21	12	28	24	22	22	23	21	23	e21
13	13	33	16	12	20	23	22	22	e21	21	26	e44
14	13	22	15	12	21	23	22	22	22	22	27	e26
15	18	20	14	12	21	23	23	22	e20	23	22	e40
16	14	18	28	12	21	23	24	21	e20	22	21	e35
17	13	18	53	12	23	23	28	21	e21	22	21	e25
18	12	17	e23	12	24	23	42	21	e24	21	e32	e24
19	12	17	20	11	29	23	33	21	e25	20	23	e20
20	12	16	17	11	25	22	73	21	22	20	22	e18
21	12	16	34	11	24	22	50	22	21	20	e22	e18
22	25	15	18	11	24	21	38	23	21	20	e23	e18
23	28	15	18	11	23	21	59	23	21	21	e22	e17
24	16	16	16	11	23	21	59	23	21	20	21	e17
25	13	15	15	11	23	22	58	23	20	20	22	e22
26	13	15	14	11	23	22	84	23	21	20	e23	e20
27	14	15	14	11	23	22	54	23	21	20	e23	e20
28	21	15	13	11	22	23	38	23	21	23	30	e18
29	25	19	13	11	---	39	29	22	21	e22	e25	e17
30	16	15	13	11	---	25	26	23	21	e21	e27	e17
31	14	---	13	11	---	32	---	23	---	e21	e27	---
TOTAL	470	653	603	372	505.9	719	1112	730	651	666	724	769
MEAN	15.2	21.8	19.5	12.0	18.1	23.2	37.1	23.5	21.7	21.5	23.4	25.6
MAX	28	110	53	15	29	39	84	34	25	24	32	59
MIN	12	13	13	11	9.6	21	22	21	20	20	21	17
AC-FT	932	1300	1200	738	1000	1430	2210	1450	1290	1320	1440	1530
CFSM	2.22	3.19	2.85	1.76	2.65	3.40	5.43	3.45	3.18	3.15	3.42	3.75
IN.	2.56	3.56	3.28	2.03	2.76	3.92	6.06	3.98	3.55	3.63	3.94	4.19

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2002, BY WATER YEAR (WY)

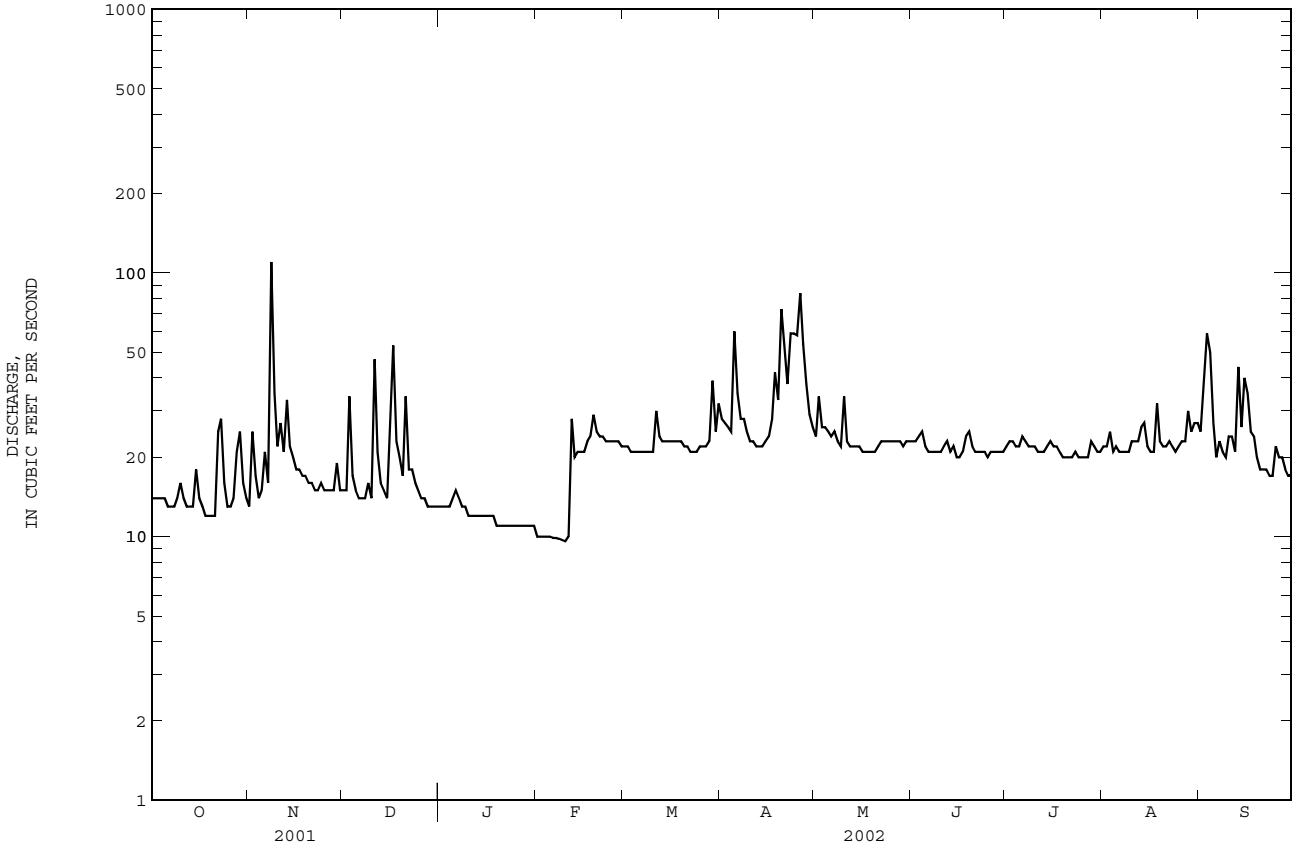
MEAN	39.2	30.6	24.9	21.2	20.4	21.0	27.8	29.1	35.7	29.5	26.1	33.2
MAX	63.2	39.5	30.3	30.4	22.8	23.2	37.1	34.6	57.2	36.7	33.7	49.0
(WY)	2001	2001	2001	2001	2001	2002	2002	2001	2000	2000	2000	2000
MIN	15.2	21.8	19.5	12.0	18.1	18.9	18.6	23.5	21.7	21.5	21.3	24.9
(WY)	2002	2002	2002	2002	2002	2001	2001	2002	2002	2002	2001	2001

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 2000 - 2002	
ANNUAL TOTAL	8707		7974.9			
ANNUAL MEAN	23.9		21.8		26.1	
HIGHEST ANNUAL MEAN					30.3	2001
LOWEST ANNUAL MEAN					21.8	2002
HIGHEST DAILY MEAN	232	May 6	110	Nov 8	232	May 6 2001
LOWEST DAILY MEAN	12	Oct 18	9.6	Feb 10	9.6	Feb 10 2002
ANNUAL SEVEN-DAY MINIMUM	13	Oct 15	9.8	Feb 4	9.8	Feb 4 2002
MAXIMUM PEAK FLOW			824	Dec 17	2290	May 6 2001
MAXIMUM PEAK STAGE			7.23	Dec 17	9.42	May 6 2001
INSTANTANEOUS LOW FLOW					14	Apr 17 2001
ANNUAL RUNOFF (AC-FT)	17270		15820		18890	
ANNUAL RUNOFF (CFSM)	3.49		3.20		3.82	
ANNUAL RUNOFF (INCHES)	47.42		43.44		51.88	
10 PERCENT EXCEEDS	33		28		37	
50 PERCENT EXCEEDS	21		21		23	
90 PERCENT EXCEEDS	15		12		14	

e Estimated

RIO GRANDE DE ARECIBO BASIN

50021030 RIO PELLEJAS ABOVE CENTRAL PELLEJAS, PR--Continued



RIO GRANDE DE ARECIBO BASIN

50021030 RIO PELLEJAS ABOVE CENTRAL PELLEJAS, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 2000 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 2000 to current year.

INSTRUMENTATION.-- USDH-48 and automatic sediment samplers since 2000.

REMARKS.-- Sediment samples were collected by a local observer on a weekly basis. During high flow events sediment samples were collected with automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, e1,070 mg/L September 3, 2002; Minimum daily mean, 2.0 mg/L several days during Water Year 2002.

SEDIMENT LOADS: Maximum daily mean, 2,810 tons (2,549 tonnes) May 6, 2001; Minimum daily mean, 0.06 ton (0.05 tonne) several days during Water Year 2002.

EXTREMES FOR CURRENT YEAR 2002.--
SEDIMENT CONCENTRATION: Maximum daily mean, e1,070 mg/L September 3, 2002; Minimum daily mean, 2.0 mg/L several days.

SEDIMENT LOADS: Maximum daily mean, e1,210 tons (e1,098 tonnes) September 3, 2002; Minimum daily mean, 0.06 ton (0.05 tonne) several days.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	14	15	0.56	13	15	0.54	15	6	0.24
2	14	9	0.33	25	88	18	15	6	0.24
3	14	8	0.31	17	24	1.2	34	81	19
4	14	10	0.36	14	15	0.58	17	9	0.42
5	14	9	0.34	15	13	0.52	15	6	0.26
6	13	8	0.30	21	31	2.1	14	6	0.23
7	13	7	0.26	16	8	0.34	14	6	0.23
8	13	6	0.22	110	639	354	14	6	0.21
9	14	5	0.19	35	78	8.2	16	14	0.85
10	16	13	0.59	22	37	2.2	14	15	0.56
11	14	7	0.28	27	55	7.3	47	298	118
12	13	5	0.17	21	27	1.6	21	37	2.2
13	13	5	0.16	33	81	18	16	17	0.74
14	13	4	0.15	22	18	1.1	15	15	0.60
15	18	26	2.2	20	13	0.71	14	13	0.51
16	14	4	0.16	18	22	1.1	28	87	16
17	13	5	0.17	18	32	1.5	53	395	360
18	12	7	0.24	17	30	1.4	e23	e27	e1.9
19	12	8	0.24	17	23	1.1	20	11	0.61
20	12	8	0.25	16	17	0.76	17	10	0.45
21	12	8	0.24	16	11	0.48	34	140	34
22	25	110	29	15	5	0.22	18	25	1.2
23	28	122	25	15	4	0.15	18	19	0.93
24	16	29	1.2	16	3	0.14	16	14	0.58
25	13	26	0.92	15	3	0.13	15	9	0.35
26	13	24	0.85	15	3	0.14	14	6	0.25
27	14	23	0.85	15	4	0.15	14	5	0.18
28	21	52	6.3	15	4	0.16	13	3	0.12
29	25	76	12	19	5	0.24	13	3	0.12
30	16	22	0.96	15	6	0.24	13	4	0.14
31	14	19	0.70	---	---	---	13	5	0.16
TOTAL	470	---	85.50	653	---	424.30	603	---	561.28

RIO GRANDE DE ARECIBO BASIN

50021030 RIO PELLEJAS ABOVE CENTRAL PELLEJAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	13	5	0.18	10	3	0.09	22	61	3.6
2	13	7	0.25	10	4	0.11	22	83	4.9
3	13	10	0.33	10	3	0.09	21	75	4.4
4	13	11	0.39	10	3	0.08	21	62	3.5
5	14	10	0.37	10	2	0.06	21	48	2.7
6	15	7	0.30	9.9	3	0.07	21	39	2.2
7	14	5	0.17	9.9	3	0.09	21	31	1.8
8	13	3	0.09	9.8	4	0.10	21	24	1.4
9	13	4	0.13	9.7	4	0.10	21	22	1.3
10	12	6	0.20	9.6	3	0.09	21	22	1.2
11	12	8	0.26	10	6	0.28	30	22	1.8
12	12	8	0.25	28	121	12	24	22	1.5
13	12	7	0.23	20	70	3.7	23	36	2.3
14	12	7	0.22	21	79	4.5	23	50	3.1
15	12	6	0.20	21	89	5.2	23	60	3.7
16	12	6	0.19	21	99	5.7	23	53	3.3
17	12	5	0.16	23	88	5.6	23	44	2.7
18	12	4	0.13	24	71	4.5	23	35	2.1
19	11	4	0.12	29	67	5.3	23	35	2.1
20	11	3	0.10	25	61	4.1	22	93	5.6
21	11	3	0.09	24	54	3.5	22	124	7.4
22	11	2	0.07	24	47	3.0	21	146	8.4
23	11	2	0.06	23	41	2.6	21	169	9.6
24	11	2	0.06	23	40	2.5	21	187	11
25	11	2	0.06	23	40	2.5	22	157	9.2
26	11	2	0.06	23	41	2.6	22	112	6.7
27	11	2	0.06	23	41	2.5	22	69	4.2
28	11	2	0.06	22	42	2.5	23	43	2.7
29	11	2	0.06	---	---	---	39	132	25
30	11	2	0.06	---	---	---	25	37	2.5
31	11	3	0.08	---	---	---	32	81	12
TOTAL	372	---	4.99	505.9	---	73.46	719	---	153.9

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	28	76	6.7	24	10	0.65	23	10	0.59
2	27	50	3.7	34	62	11	23	10	0.64
3	26	41	2.9	26	25	1.7	24	11	0.71
4	25	37	2.5	26	26	1.8	e25	e12	e0.87
5	60	453	184	25	25	1.6	e22	e17	e1.0
6	35	103	13	24	27	1.9	e21	e17	e1.0
7	28	29	2.2	25	29	2.1	e21	e17	e1.0
8	28	28	2.1	23	19	1.2	e21	e17	e1.0
9	25	28	1.9	22	16	0.94	e21	e17	e1.0
10	23	23	1.5	34	62	17	e21	e17	e1.0
11	23	19	1.2	23	16	1.0	22	17	1.0
12	22	18	1.1	22	13	0.80	23	18	1.1
13	22	17	1.0	22	12	0.71	e21	e19	e1.1
14	22	17	0.97	22	11	0.63	22	19	1.1
15	23	16	1.0	22	10	0.57	e20	e20	e1.2
16	24	16	1.0	21	8	0.49	e20	e20	e1.2
17	28	38	3.6	21	7	0.42	e21	e20	e1.2
18	42	254	64	21	7	0.42	e24	e21	e1.3
19	33	84	7.8	21	8	0.44	e25	e21	e1.3
20	73	397	124	21	8	0.47	22	21	1.3
21	50	204	33	22	9	0.52	21	20	1.2
22	38	86	8.8	23	9	0.59	21	20	1.2
23	59	353	162	23	11	0.71	21	23	1.3
24	59	391	183	23	14	0.83	21	27	1.5
25	58	343	116	23	16	0.97	20	31	1.7
26	84	893	699	23	25	1.5	21	35	2.0
27	54	273	80	23	35	2.2	21	39	2.3
28	38	57	7.0	23	46	2.8	21	43	2.5
29	29	15	1.2	22	56	3.4	21	47	2.7
30	26	8	0.59	23	49	3.0	21	45	2.5
31	---	---	---	23	29	1.8	---	---	---
TOTAL	1112	---	1716.76	730	---	64.16	651	---	39.51

RIO GRANDE DE ARECIBO BASIN

50021030 RIO PELLEJAS ABOVE CENTRAL PELLEJAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	22	40	2.4	e22	e24	e1.3	e25	e24	e1.5
2	23	36	2.2	e22	e23	e1.3	e39	e101	e15
3	23	31	1.9	25	35	2.7	e59	e1070	e1210
4	22	27	1.6	21	24	1.4	e50	e204	e33
5	22	30	1.8	22	33	2.0	e27	e55	e4.3
6	24	34	2.2	21	46	2.6	e20	e27	e1.4
7	23	33	2.1	21	37	2.1	e23	e27	e1.4
8	22	32	1.9	21	21	1.2	e21	e27	e1.4
9	22	30	1.8	21	16	0.92	e20	e27	e1.4
10	22	28	1.7	23	16	0.96	e24	e35	e2.7
11	21	26	1.5	23	15	0.96	e24	e35	e2.7
12	21	25	1.4	23	15	0.94	e21	e35	e2.7
13	21	26	1.4	26	33	2.8	e44	e57	e7.0
14	22	28	1.6	27	55	4.3	e26	e35	e2.7
15	23	30	1.8	22	65	3.9	e40	e57	e7.0
16	22	31	1.9	21	44	2.5	e35	e57	e7.0
17	22	32	1.9	21	42	2.4	e25	e35	e2.7
18	21	31	1.8	e32	e72	e6.7	e24	e35	e2.7
19	20	30	1.7	23	73	4.5	e20	e27	e1.4
20	20	30	1.6	22	69	4.0	e18	e27	e1.4
21	20	29	1.6	e22	e43	e2.5	e18	e27	e1.4
22	20	29	1.6	e23	e34	e2.0	e18	e27	e1.4
23	21	28	1.6	e22	e35	e2.0	e17	e27	e1.4
24	20	28	1.5	21	37	2.1	e17	e49	e3.1
25	20	27	1.4	22	60	3.6	e22	e27	e1.5
26	20	27	1.4	e23	e73	e4.2	e20	e34	e1.7
27	20	26	1.4	e23	e78	e4.5	e20	e41	e1.9
28	23	26	1.6	30	97	9.6	e18	e41	e2.0
29	e22	e25	e1.4	e25	e29	e1.9	e17	e41	e2.0
30	e21	e25	e1.3	e27	e29	e2.1	e17	e40	e2.0
31	e21	e24	e1.3	e27	e36	e2.8	---	---	---
TOTAL	666	---	52.3	724	---	86.78	769	---	1327.8
YEAR	7974.9		4590.74						

e Estimated

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

Date	Time	Instan-taneous dis-charge, cfs (00061)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment load, tons/d (80155)	Suspnd. sedi-ment, sieve diametr percent <.063mm (70331)
APR					
05...	1800	144	1660	644	96
24...	1825	227	2910	1790	99

RIO GRANDE DE ARECIBO BASIN

50021700 RIO GRANDE DE ARECIBO ABOVE UTUADO, PR

LOCATION.--Lat 18°14'39", long 66°43'20", Hydrologic Unit 21010001, 0.4 mi (0.6 km) southwest from Escuela Segunda Unidad Salto Arriba, 2.2 mi (3.5 km) southwest from Utuado Plaza, 1.1 mi (1.8 km) west from Escuela Arenas Abajo and 1.0 mi (1.7 km) northwest from Escuela Puente Blanco.

DRAINAGE AREA.--36.0 mi^2 (93.2 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1989 to May 1999, monthly measurements and peak flow above 5,000 ft^3/s (142 m^3/s), June 1999 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 508 ft (155 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Flow regulated by Lago Adjuntas 2.55 mi (4.10 km). Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	41	41	36	e17	6.1	52	94	24	23	20	74
2	49	136	47	39	e15	6.0	20	173	26	20	13	171
3	47	74	140	41	e15	5.9	8.0	101	39	17	12	363
4	47	60	80	41	e16	5.9	6.2	84	96	15	16	213
5	47	63	51	39	e14	5.8	379	73	66	14	30	82
6	56	79	46	43	e13	5.7	187	63	50	17	34	35
7	59	69	42	37	e13	5.5	73	70	42	30	17	34
8	58	905	33	38	e13	6.0	109	53	35	22	31	30
9	54	324	33	41	e11	6.2	55	75	36	33	22	27
10	185	120	36	33	e11	7.0	37	83	33	20	22	26
11	97	108	231	36	e10	61	29	68	31	29	32	38
12	51	110	92	32	e18	27	28	46	34	31	27	26
13	58	101	49	35	8.4	6.5	22	42	34	18	24	138
14	48	153	43	36	7.8	5.0	20	42	30	16	41	84
15	69	99	38	34	7.5	4.8	22	40	24	31	26	93
16	47	79	140	32	7.3	5.6	53	40	26	23	25	133
17	43	66	320	e34	6.8	7.9	64	42	27	20	18	58
18	38	60	143	e27	6.8	5.0	69	30	30	17	55	89
19	44	57	70	e25	18	4.7	66	27	28	15	44	89
20	40	56	53	e24	17	4.5	373	27	30	17	40	39
21	42	53	117	e23	8.3	4.4	377	28	22	16	24	36
22	215	40	73	e23	7.2	4.3	112	26	18	24	52	34
23	207	45	70	e25	6.7	4.3	556	25	18	27	29	30
24	80	56	64	e25	6.6	4.3	526	24	22	22	26	30
25	53	47	54	e24	6.5	4.3	508	24	22	18	24	36
26	44	46	49	e23	6.4	4.5	502	23	33	15	31	30
27	43	43	39	e23	6.3	4.3	379	23	29	18	70	28
28	84	45	37	e23	6.1	6.9	284	23	25	42	53	24
29	94	63	35	e19	---	38	147	23	20	32	50	16
30	103	51	33	e17	---	25	119	34	21	21	58	13
31	62	---	33	e16	---	28	---	33	---	73	93	---
TOTAL	2215	3249	2332	944	299.7	320.4	5182.2	1559	971	736	1059	2119
MEAN	71.5	108	75.2	30.5	10.7	10.3	173	50.3	32.4	23.7	34.2	70.6
MAX	215	905	320	43	18	61	556	173	96	73	93	363
MIN	38	40	33	16	6.1	4.3	6.2	23	18	14	12	13
AC-FT	4390	6440	4630	1870	594	636	10280	3090	1930	1460	2100	4200
CFSM	1.98	3.01	2.09	0.85	0.30	0.29	4.80	1.40	0.90	0.66	0.95	1.96
IN.	2.29	3.36	2.41	0.98	0.31	0.33	5.35	1.61	1.00	0.76	1.09	2.19

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2002, BY WATER YEAR (WY)

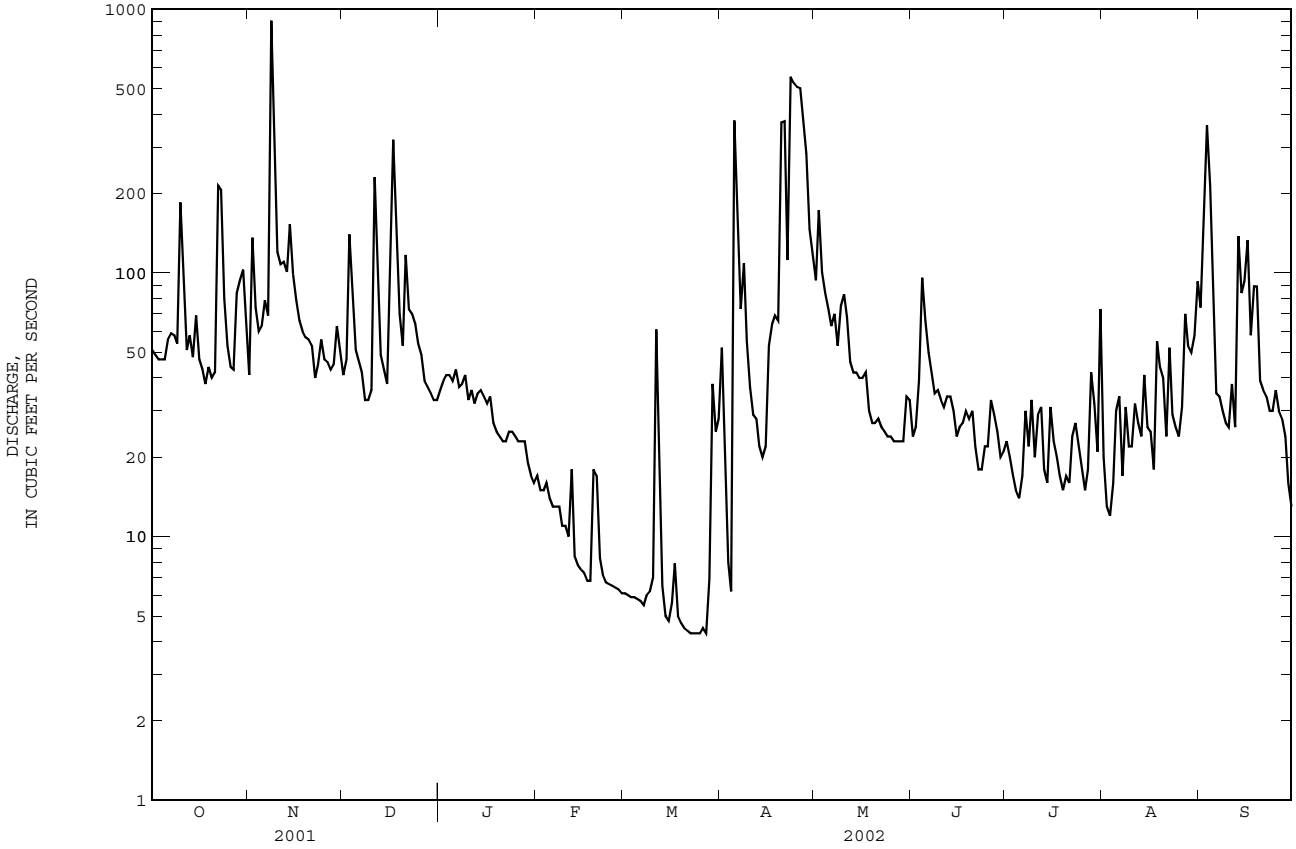
MEAN	161	147	61.1	20.3	9.19	7.17	67.8	84.0	48.2	25.4	78.1	148
MAX	239	220	75.2	30.5	10.8	10.3	173	102	90.2	31.5	135	224
(WY)	2001	2000	2002	2002	2000	2002	2002	2001	2000	2000	2000	1999
MIN	71.5	108	43.4	8.38	6.06	4.55	9.58	50.3	10.2	21.7	30.0	70.6
(WY)	2002	2002	2001	2001	2001	2001	2000	2002	2001	2001	2001	2002

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1999 - 2002	
ANNUAL TOTAL	17500.9		20986.3			
ANNUAL MEAN	47.9		57.5		68.2	
HIGHEST ANNUAL MEAN					87.2	2000
LOWEST ANNUAL MEAN					57.5	2002
HIGHEST DAILY MEAN	1760	May 6	905	Nov 8	2210	Aug 23 2000
LOWEST DAILY MEAN	3.7	Mar 30	4.3	Mar 22	3.7	Mar 30 2001
ANNUAL SEVEN-DAY MINIMUM	3.8	Mar 27	4.3	Mar 21	3.8	Mar 27 2001
MAXIMUM PEAK FLOW			3520	Apr 23	45600	Sep 22 1998
MAXIMUM PEAK STAGE			7.33	Apr 23	19.72	Sep 22 1998
ANNUAL RUNOFF (AC-FT)	34710		41630		49440	
ANNUAL RUNOFF (CFSM)	1.33		1.60		1.90	
ANNUAL RUNOFF (INCHES)	18.08		21.69		25.75	
10 PERCENT EXCEEDS	103		105		155	
50 PERCENT EXCEEDS	12		34		30	
90 PERCENT EXCEEDS	5.0		7.4		5.7	

e Estimated

RIO GRANDE DE ARECIBO BASIN

50021700 RIO GRANDE DE ARECIBO ABOVE UTUADO, PR--Continued



RIO GRANDE DE ARECIBO BASIN

50021700 RIO GRANDE DE ARECIBO ABOVE UTUADO, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--June 1999 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 2000 to current year.

INSTRUMENTATION.-- USDH-48 and automatic sediment samplers since 1999.

REMARKS.-- Sediment samples were collected by a local observer on a weekly basis. During high flow events sediment samples were collected with automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, e1,600 mg/L May 6, 2001; Minimum daily mean, 1 mg/L several days during water years 2001 and 2002.

SEDIMENT LOADS: Maximum daily mean, e32,200 tons (e29,210 tonnes) May 6, 2001; Minimum daily mean, 0.01 ton (0.01 tonne) April 13-15, 2001.

EXTREMES FOR CURRENT YEAR 2002.--
SEDIMENT CONCENTRATION: Maximum daily mean, 1,370 mg/L November 8, 2001; Minimum daily mean, 1 mg/L several days.

SEDIMENT LOADS: Maximum daily mean, 4,830 tons (4,382 tonnes) November 8, 2001; Minimum daily mean, 0.03 ton (0.03 tonne) March 22, 24, 2002.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	OCTOBER			NOVEMBER			DECEMBER		
1	51	28	3.8	41	72	8.0	41	1	0.11
2	49	25	3.3	136	222	239	47	30	5.2
3	47	23	2.9	74	139	36	140	211	255
4	47	20	2.6	60	109	21	80	115	33
5	47	18	2.3	63	110	19	51	2	0.26
6	56	15	2.3	79	143	36	46	2	0.22
7	59	27	4.9	69	120	27	42	2	0.18
8	58	44	7.3	905	1370	4830	33	1	0.13
9	54	12	1.8	324	494	477	33	1	0.12
10	185	288	382	120	226	76	36	1	0.11
11	97	150	56	108	202	67	231	318	533
12	51	11	1.5	110	201	66	92	178	53
13	58	52	10	101	187	67	49	84	12
14	48	11	1.4	153	297	232	43	69	8.0
15	69	46	19	99	181	50	38	69	7.1
16	47	11	1.4	79	123	26	140	251	260
17	43	10	1.2	66	84	15	320	545	1240
18	38	10	0.98	60	45	7.3	143	158	96
19	44	9	1.1	57	10	1.6	70	63	12
20	40	8	0.90	56	4	0.61	53	47	6.6
21	42	8	0.88	53	2	0.25	117	210	155
22	215	383	915	40	1	0.16	73	77	19
23	207	376	550	45	2	0.23	70	35	6.7
24	80	138	35	56	45	7.6	64	28	4.9
25	53	93	14	47	1	0.13	54	21	3.1
26	44	73	8.7	46	1	0.13	49	14	1.8
27	43	71	9.0	43	1	0.12	39	8	0.87
28	84	153	57	45	1	0.12	37	8	0.80
29	94	175	60	63	62	13	35	8	0.75
30	103	200	79	51	29	4.6	33	8	0.71
31	62	114	21	---	---	---	33	8	0.69
TOTAL	2215	---	2256.26	3249	---	6327.85	2332	---	2716.35

RIO GRANDE DE ARECIBO BASIN

50021700 RIO GRANDE DE ARECIBO ABOVE UTUADO, PR--Continued

EDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	36	8	0.75	e17	e5	e0.21	6.1	6	0.11
2	39	8	0.81	e15	e4	e0.18	6.0	8	0.12
3	41	8	0.84	e15	e4	e0.17	5.9	7	0.11
4	41	8	0.84	e16	e4	e0.18	5.9	5	0.08
5	39	8	0.79	e14	e4	e0.16	5.8	4	0.07
6	43	8	0.87	e13	e5	e0.17	5.7	5	0.07
7	37	7	0.74	e13	e5	e0.19	5.5	5	0.08
8	38	7	0.76	e13	e6	e0.20	6.0	6	0.10
9	41	7	0.81	e11	e6	e0.17	6.2	6	0.10
10	33	7	0.65	e11	e5	e0.16	7.0	6	0.11
11	36	7	0.71	e10	e5	e0.14	61	117	56
12	32	7	0.63	e18	e28	e2.5	27	51	6.6
13	35	7	0.67	8.4	13	0.29	6.5	8	0.14
14	36	7	0.70	7.8	12	0.26	5.0	8	0.11
15	34	7	0.66	7.5	12	0.25	4.8	5	0.07
16	32	7	0.60	7.3	12	0.24	5.6	5	0.08
17	e34	e7	e0.64	6.8	12	0.22	7.9	6	0.12
18	e27	e7	e0.50	6.8	12	0.22	5.0	6	0.08
19	e25	e7	e0.46	18	20	1.1	4.7	5	0.07
20	e24	e7	e0.42	17	13	0.74	4.5	4	0.05
21	e23	e6	e0.40	8.3	4	0.10	4.4	3	0.04
22	e23	e6	e0.39	7.2	4	0.07	4.3	3	0.03
23	e25	e6	e0.41	6.7	3	0.06	4.3	3	0.04
24	e25	e6	e0.39	6.6	3	0.05	4.3	3	0.03
25	e24	e6	e0.37	6.5	2	0.04	4.3	3	0.04
26	e23	e6	e0.35	6.4	2	0.04	4.5	3	0.04
27	e23	e5	e0.33	6.3	3	0.06	4.3	3	0.04
28	e23	e5	e0.32	6.1	5	0.08	6.9	7	0.21
29	e19	e5	e0.26	---	---	---	38	66	28
30	e17	e5	e0.23	---	---	---	25	43	6.2
31	e16	e5	e0.21	---	---	---	28	49	18
TOTAL	944	---	17.51	299.7	---	8.25	320.4	---	116.94

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	52	94	24	94	13	3.3	24	3	0.21
2	20	28	2.3	173	272	270	26	4	0.25
3	8.0	7	0.14	101	115	36	39	13	2.2
4	6.2	7	0.11	84	26	6.8	96	125	59
5	379	867	2860	73	8	1.7	66	75	16
6	187	409	316	63	19	5.2	50	9	1.2
7	73	130	28	70	33	7.1	42	7	0.84
8	109	211	67	53	9	1.4	35	7	0.63
9	55	53	8.5	75	59	30	36	6	0.57
10	37	11	1.1	83	117	53	33	5	0.45
11	29	8	0.61	68	97	20	31	4	0.36
12	28	4	0.31	46	52	6.5	34	3	0.31
13	22	3	0.18	42	30	3.5	34	3	0.25
14	20	3	0.16	42	13	1.5	30	2	0.16
15	22	3	0.18	40	10	1.1	24	1	0.08
16	53	100	23	40	9	0.92	26	2	0.14
17	64	109	44	42	7	0.80	27	3	0.24
18	69	130	52	30	5	0.44	30	5	0.37
19	66	128	34	27	5	0.35	28	5	0.37
20	373	287	482	27	4	0.32	30	5	0.41
21	377	162	211	28	4	0.31	22	8	0.45
22	112	35	11	26	4	0.26	18	14	0.69
23	556	755	2920	25	3	0.24	18	10	0.47
24	526	552	1240	24	3	0.20	22	6	0.34
25	508	853	1540	24	3	0.18	22	2	0.12
26	502	878	1970	23	3	0.16	33	36	5.6
27	379	671	872	23	2	0.14	29	10	0.88
28	284	136	178	23	2	0.13	25	1	0.07
29	147	14	5.8	23	2	0.14	20	1	0.05
30	119	14	4.4	34	3	0.23	21	1	0.06
31	---	---	---	33	3	0.26	---	---	---
TOTAL	5182.2	---	12895.79	1559	---	452.18	971	---	92.77

RIO GRANDE DE ARECIBO BASIN

50021700 RIO GRANDE DE ARECIBO ABOVE UTUADO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	23	1	0.06	20	23	1.5	74	134	30
2	20	2	0.09	13	9	0.31	171	332	351
3	17	20	0.90	12	7	0.24	363	642	1410
4	15	19	0.79	16	15	0.91	213	482	383
5	14	7	0.26	30	33	5.9	82	319	89
6	17	3	0.14	34	57	6.1	35	19	1.8
7	30	36	3.2	17	25	1.2	34	16	1.5
8	22	24	1.4	31	19	1.6	30	15	1.3
9	33	46	6.8	22	17	0.97	27	15	1.1
10	20	24	1.3	22	16	0.97	26	15	1.1
11	29	46	6.8	32	44	5.7	38	44	5.5
12	31	46	5.7	27	40	3.0	26	9	0.61
13	18	25	1.2	24	34	4.0	138	218	313
14	16	21	0.93	41	73	10	84	128	50
15	31	37	3.6	26	45	3.3	93	141	80
16	23	18	1.1	25	40	3.6	133	264	100
17	20	17	0.92	18	21	1.1	58	96	16
18	17	17	0.75	55	91	24	89	135	61
19	15	16	0.67	44	61	10	89	168	78
20	17	16	0.73	40	47	11	39	9	1.1
21	16	15	0.68	24	8	0.55	36	2	0.20
22	24	35	3.0	52	72	21	34	3	0.28
23	27	34	2.7	29	73	5.8	30	4	0.35
24	22	14	0.84	26	54	3.8	30	6	0.46
25	18	13	0.64	24	36	2.3	36	5	0.49
26	15	12	0.49	31	19	1.6	30	4	0.31
27	18	10	0.47	70	109	35	28	2	0.18
28	42	48	9.8	53	81	28	24	1	0.08
29	32	32	3.4	50	82	16	16	1	0.04
30	21	8	0.45	58	86	42	13	1	0.04
31	73	102	29	93	288	95	---	---	---
TOTAL	736	---	88.81	1059	---	346.45	2119	---	2977.44
YEAR	20986.3		28296.60						

e Estimated

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

Date	Time	Instan-taneous dis-charge, cfs (00061)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment load, tons/d (80155)	Suspnd. sedi-ment, sieve diametr percent <.063mm (70331)
SEP					
05...	0640	91	494	121	100

RIO GRANDE DE ARECIBO BASIN

50021700 RIO GRANDE DE ARECIBO ABOVE UTUADO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

PARTICLE SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

Date	Time	Instantaneous discharge, cfs (00061)	Suspended sediment concentration mg/L (80154)	Suspended sediment load, tons/d (80155)	Suspnd. sediment, falldia nat wat percent <.002mm (70326)	Suspnd. sediment, falldia nat wat percent <.004mm (70327)	Suspnd. sediment, falldia nat wat percent <.008mm (70328)	Suspnd. sediment, falldia nat wat percent <.016mm (70329)	Suspnd. sediment, falldia nat wat percent <.031mm (70330)	Suspnd. sediment, sieve diametr percent <.063mm (70331)	Suspnd. sediment, sieve diametr percent <.125mm (70332)	Suspnd. sediment, sieve diametr percent <.25mm (70333)	Suspnd. sediment, sieve diametr percent <.5 mm (70334)
DEC 17...	2045	875	1640	3870	52	65	82	86	94	96	98	99	99

Date	Suspnd. sediment, sieve diametr percent <1 mm (70335)
DEC 17...	100

RIO GRANDE DE ARECIBO BASIN

50022810 RIO VIVI BELOW HACIENDA EL PROGRESO, PR

LOCATION.--Lat 18°11'21", long 66°40'20", Hydrologic Unit 21010001, 4.05 mi (6.52 km) east from Lago Adjuntas Dam, 2.90 mi (4.66 km) south of Lago Viví Dam, 3.80 mi (6.11 km) northeast from Adjuntas Plaza, 2.76 mi (4.44 km) northwest from Escuela de San Patricio.

DRAINAGE AREA.--2.99 mi^2 (7.74 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 2000 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,710 ft (521 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e9.0	e9.8	8.1	7.8	3.9	2.8	3.1	11	5.0	e3.1	e3.7	e5.6
2	e8.5	e19	8.0	7.6	3.8	2.7	3.4	15	4.8	e3.2	e5.5	e11
3	e8.7	e12	18	7.3	4.1	2.6	e2.9	10	5.5	e3.1	4.1	e9.8
4	e8.9	e9.9	9.1	7.1	3.9	2.6	e2.6	11	14	e3.1	3.5	e7.9
5	e9.3	e14	8.3	8.4	3.7	2.5	e15	8.9	9.9	e3.0	3.5	e5.9
6	e7.7	e23	8.2	9.0	3.6	2.5	e19	8.2	e6.6	e7.8	3.4	e4.6
7	e7.4	e10	8.7	7.0	3.6	2.5	e7.2	8.8	e5.3	e8.0	3.5	e4.3
8	e7.4	85	8.1	6.6	3.5	2.6	e6.0	7.7	4.8	e4.2	4.0	e4.3
9	e7.5	36	8.0	6.4	3.5	2.5	e5.2	7.4	4.6	e3.8	4.3	e4.0
10	e18	22	8.0	6.1	3.4	2.6	e4.5	8.9	4.4	e3.8	5.1	e4.1
11	e8.3	23	34	6.0	3.3	10	e4.4	7.4	4.3	e3.4	6.6	e4.2
12	e7.5	18	13	5.8	3.2	3.9	e4.1	6.8	4.6	e3.3	4.8	e4.5
13	e6.9	51	11	5.7	3.2	2.7	e3.4	6.6	4.2	e3.4	5.3	e3.9
14	e6.6	20	9.6	5.6	3.1	2.5	e3.3	6.4	4.0	e3.3	5.2	e3.6
15	e9.2	24	9.3	5.4	3.0	2.5	e4.0	6.2	4.0	e4.3	3.9	e5.1
16	e6.8	14	21	5.4	3.0	4.9	5.0	6.5	3.9	e3.0	4.1	e8.9
17	e7.0	12	52	5.2	2.9	3.5	7.3	6.2	4.1	e3.0	3.7	e4.7
18	e6.9	11	e14	5.0	3.3	2.6	14	6.0	4.3	e3.0	e6.4	e7.4
19	e6.6	11	11	4.9	8.9	2.6	7.5	5.8	4.5	e2.9	4.5	e5.5
20	e6.3	10	8.5	4.8	3.7	2.3	42	5.6	3.9	e2.4	3.9	e4.3
21	e6.7	9.4	79	4.7	3.2	2.3	21	5.5	3.7	e2.7	e3.5	e4.0
22	e13	8.9	25	4.8	3.0	2.2	10	5.4	3.8	e3.2	e4.8	e3.8
23	e16	8.9	21	4.5	2.9	2.2	16	5.3	3.7	e4.5	e4.4	e3.6
24	e10	11	14	4.5	2.9	2.1	49	5.2	3.7	e3.0	5.5	e3.7
25	e8.2	8.8	12	4.3	2.9	2.1	61	5.1	3.7	e2.7	4.4	e4.6
26	e8.1	8.6	11	4.2	3.2	2.1	69	5.0	3.9	e2.6	3.7	e4.0
27	e13	8.6	10	4.2	2.9	2.1	44	5.2	4.0	e2.6	3.5	3.4
28	e26	8.3	9.3	4.2	2.7	2.1	26	5.0	e3.9	e6.2	26	3.5
29	e27	9.6	9.0	4.1	---	9.5	18	5.0	e3.3	e5.4	e5.9	3.4
30	e14	8.4	8.5	3.9	---	3.5	14	5.1	e3.2	e2.9	e7.2	3.3
31	e11	---	8.1	4.0	---	4.5	---	4.9	---	e3.5	e8.1	---
TOTAL	317.5	525.2	482.8	174.5	98.3	98.1	491.9	217.1	143.6	114.4	166.0	150.9
MEAN	10.2	17.5	15.6	5.63	3.51	3.16	16.4	7.00	4.79	3.69	5.35	5.03
MAX	27	85	79	9.0	8.9	10	69	15	14	8.0	26	11
MIN	6.3	8.3	8.0	3.9	2.7	2.1	2.6	4.9	3.2	2.4	3.4	3.3
AC-FT	630	1040	958	346	195	195	976	431	285	227	329	299
CFSM	3.43	5.86	5.21	1.88	1.17	1.06	5.48	2.34	1.60	1.23	1.79	1.68
IN.	3.95	6.53	6.01	2.17	1.22	1.22	6.12	2.70	1.79	1.42	2.07	1.88

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2002, BY WATER YEAR (WY)

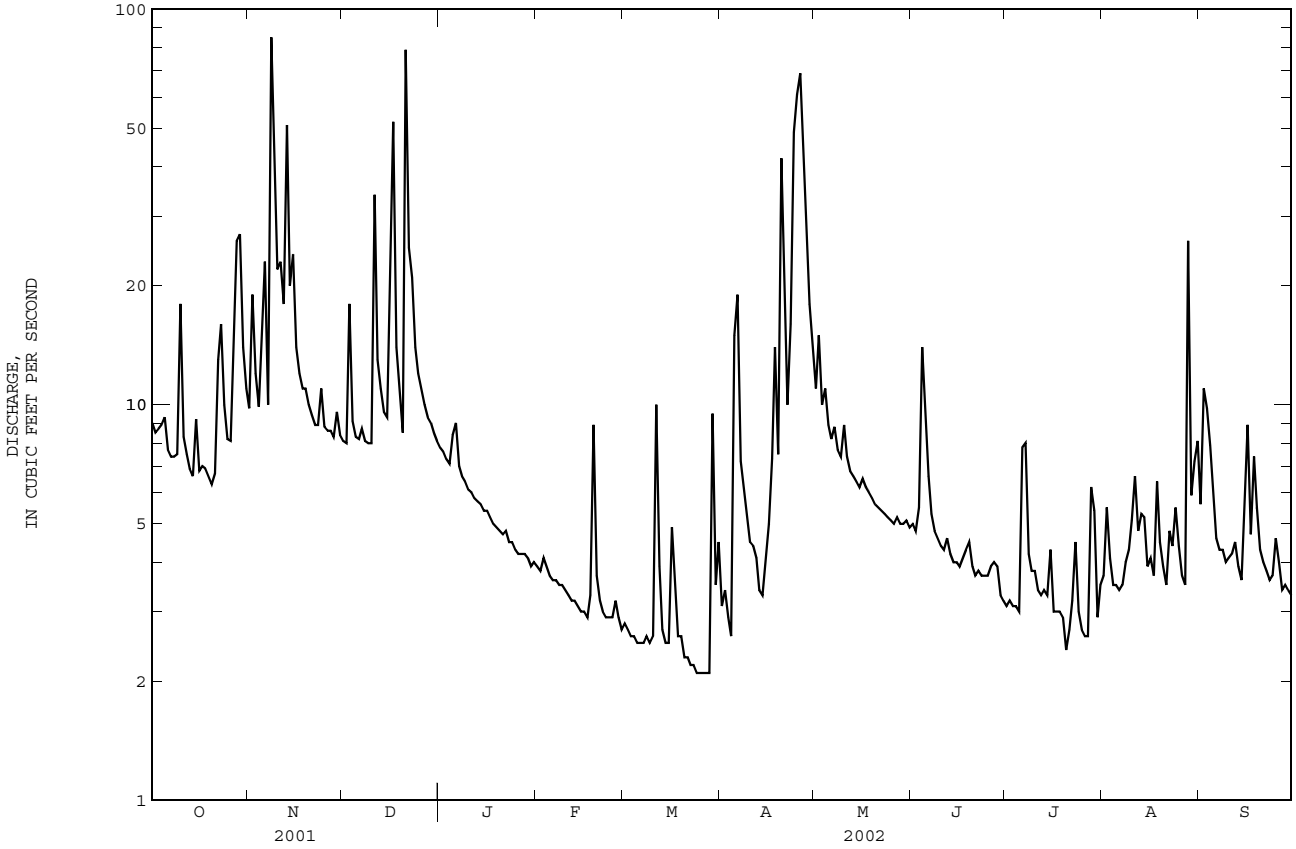
MEAN	10.2	17.5	15.6	4.37	2.98	2.81	9.75	8.91	4.72	6.75	7.02	11.9
MAX	10.2	17.5	15.6	5.63	3.51	3.16	16.4	10.8	4.79	9.80	8.69	18.8
(WY)	2002	2002	2002	2002	2002	2002	2002	2001	2002	2001	2001	2001
MIN	10.2	17.5	15.6	3.12	2.45	2.45	3.10	7.00	4.66	3.69	5.35	5.03
(WY)	2002	2002	2002	2001	2001	2001	2001	2002	2001	2002	2002	2002

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 2001 - 2002	
ANNUAL TOTAL	3270.8		2980.3			
ANNUAL MEAN	8.96		8.17		8.17	
HIGHEST ANNUAL MEAN					8.17	2002
LOWEST ANNUAL MEAN					8.17	2002
HIGHEST DAILY MEAN	108	May 6	85	Nov 8	108	May 6 2001
LOWEST DAILY MEAN	1.6	Mar 17	2.1	Mar 24	1.6	Mar 17 2001
ANNUAL SEVEN-DAY MINIMUM	1.7	Mar 13	2.1	Mar 22	1.7	Mar 13 2001
MAXIMUM PEAK FLOW			1150	Dec 21	1150	Dec 21 2001
MAXIMUM PEAK STAGE			6.51	Dec 21	6.51	Dec 21 2001
INSTANTANEOUS LOW FLOW			1.9	Mar 27	1.6	Mar 17 2001
ANNUAL RUNOFF (AC-FT)	6490		5910		5920	
ANNUAL RUNOFF (CFSM)	3.00		2.73		2.73	
ANNUAL RUNOFF (INCHES)	40.69		37.08		37.10	
10 PERCENT EXCEEDS	18		14		14	
50 PERCENT EXCEEDS	5.4		5.2		5.2	
90 PERCENT EXCEEDS	2.1		2.9		2.9	

e Estimated

RIO GRANDE DE ARECIBO BASIN

50022810 RIO VIVI BELOW HACIENDA EL PROGRESO,PR--Continued



RIO GRANDE DE ARECIBO BASIN

50022810 RIO VIVI BELOW HACIENDA EL PROGRESO, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 2000 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: December 2000 to current year.

INSTRUMENTATION.-- USDH-48 and automatic sediment sampler since 2000.

REMARKS.--Sediment samples were collected by a local observer on a weekly basis. During high flow events sediment samples were collected with automatic sediment sampler.

EXTREMES OBSERVED FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 2,180 mg/L May 06, 2001; Minimum daily mean, 1 mg/L several days during Water Years 2001 and 2002.

SEDIMENT LOADS: Maximum daily mean, 2,980 tons (2,703 tonnes) May 6, 2001; Minimum daily mean, <0.01 ton (<0.01 tonne) several days.

EXTREMES OBSERVED FOR CURRENT YEAR 2002.--
SEDIMENT CONCENTRATION: Maximum daily mean, 1,220 mg/L December 21, 2001; Minimum daily mean, 1 mg/L several days.

SEDIMENT LOADS: Maximum daily mean, 1,120 tons (1,016 tonnes) December 21, 2001; Minimum daily mean, <0.01 ton (<0.01 tonne) several days.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	OCTOBER			NOVEMBER			DECEMBER		
1	e9.0	e40	e0.99	e9.8	e42	e1.1	8.1	6	0.14
2	e8.5	e28	e0.64	e19	e221	e41	8.0	6	0.12
3	e8.7	e21	e0.49	e12	e61	e2.0	18	135	15
4	e8.9	e14	e0.33	e9.9	e46	e1.2	9.1	16	0.42
5	e9.3	e8	e0.19	e14	e67	e3.4	8.3	5	0.10
6	e7.7	e9	e0.19	e23	e238	e30	8.2	4	0.09
7	e7.4	e13	e0.27	e10	e51	e1.4	8.7	14	0.37
8	e7.4	e17	e0.34	85	866	414	8.1	36	0.77
9	e7.5	e18	e0.36	36	310	32	8.0	28	0.59
10	e18	e239	e44	22	139	8.5	8.0	20	0.44
11	e8.3	e11	e0.25	23	141	13	34	928	426
12	e7.5	e7	e0.14	18	33	1.6	13	14	0.52
13	e6.9	e7	e0.12	51	848	459	11	9	0.25
14	e6.6	e6	e0.11	20	44	2.6	9.6	8	0.20
15	e9.2	e61	e2.6	24	62	8.2	9.3	7	0.19
16	e6.8	e17	e0.32	14	7	0.26	21	180	28
17	e7.0	e15	e0.28	12	6	0.19	52	660	482
18	e6.9	e9	e0.17	11	5	0.16	e14	e84	e3.5
19	e6.6	e4	e0.08	11	5	0.14	11	42	1.2
20	e6.3	e3	e0.06	10	5	0.13	8.5	17	0.40
21	e6.7	e4	e0.07	9.4	7	0.18	79	1220	1120
22	e13	e92	e8.7	8.9	7	0.16	25	165	15
23	e16	e170	e20	8.9	7	0.17	21	76	6.9
24	e10	e31	e0.88	11	26	1.2	14	10	0.38
25	e8.2	e18	e0.41	8.8	5	0.13	12	7	0.23
26	e8.1	e16	e0.35	8.6	5	0.12	11	5	0.14
27	e13	e75	e4.9	8.6	5	0.12	10	3	0.07
28	e26	e435	e154	8.3	5	0.11	9.3	2	0.05
29	e27	e447	e128	9.6	13	0.36	9.0	2	0.05
30	e14	e71	e2.9	8.4	11	0.24	8.5	2	0.05
31	e11	e46	e1.3	---	---	---	8.1	2	0.04
TOTAL	317.5	---	373.44	525.2	---	1022.67	482.8	---	2103.21

RIO GRANDE DE ARECIBO BASIN

50022810 RIO VIVI BELOW HACIENDA EL PROGRESO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	7.8	2	0.04	3.9	5	0.06	2.8	5	0.04
2	7.6	1	0.03	3.8	5	0.06	2.7	6	0.04
3	7.3	1	0.03	4.1	6	0.06	2.6	6	0.05
4	7.1	5	0.10	3.9	6	0.06	2.6	7	0.05
5	8.4	5	0.12	3.7	6	0.06	2.5	6	0.04
6	9.0	3	0.08	3.6	6	0.06	2.5	5	0.03
7	7.0	1	0.03	3.6	6	0.06	2.5	3	0.02
8	6.6	3	0.05	3.5	6	0.06	2.6	3	0.02
9	6.4	4	0.07	3.5	7	0.06	2.5	3	0.02
10	6.1	6	0.09	3.4	7	0.07	2.6	3	0.02
11	6.0	5	0.09	3.3	8	0.07	10	97	8.7
12	5.8	5	0.07	3.2	7	0.06	3.9	9	0.11
13	5.7	4	0.06	3.2	5	0.05	2.7	7	0.05
14	5.6	3	0.05	3.1	5	0.04	2.5	14	0.09
15	5.4	3	0.04	3.0	5	0.04	2.5	20	0.14
16	5.4	2	0.03	3.0	4	0.03	4.9	40	0.87
17	5.2	5	0.08	2.9	3	0.03	3.5	12	0.13
18	5.0	5	0.07	3.3	2	0.02	2.6	4	0.03
19	4.9	4	0.05	8.9	56	2.5	2.6	2	0.02
20	4.8	2	0.03	3.7	4	0.04	2.3	2	0.01
21	4.7	2	0.02	3.2	2	0.02	2.3	1	<0.01
22	4.8	5	0.07	3.0	2	0.02	2.2	1	<0.01
23	4.5	11	0.13	2.9	3	0.02	2.2	1	<0.01
24	4.5	16	0.19	2.9	4	0.03	2.1	2	<0.01
25	4.3	15	0.18	2.9	5	0.04	2.1	2	0.01
26	4.2	13	0.14	3.2	5	0.04	2.1	2	<0.01
27	4.2	10	0.11	2.9	5	0.04	2.1	1	<0.01
28	4.2	8	0.09	2.7	5	0.04	2.1	1	<0.01
29	4.1	6	0.07	---	---	---	9.5	64	5.6
30	3.9	6	0.06	---	---	---	3.5	4	0.05
31	4.0	5	0.06	---	---	---	4.5	14	0.40
TOTAL	174.5	---	2.33	98.3	---	3.74	98.1	---	16.61

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

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	3.1	11	0.10	11	11	0.33	5.0	5	0.06
2	3.4	9	0.08	15	55	4.5	4.8	4	0.06
3	e2.9	e8	e0.06	10	11	0.30	5.5	4	0.06
4	e2.6	e7	e0.05	11	13	0.38	14	989	107
5	e15	e151	e24	8.9	15	0.36	9.9	62	2.5
6	e19	e220	e32	8.2	17	0.39	e6.6	e17	e0.29
7	e7.2	e8	e0.18	8.8	19	0.46	e5.3	e10	e0.14
8	e6.0	e3	e0.06	7.7	21	0.43	4.8	8	0.10
9	e5.2	e5	e0.06	7.4	22	0.44	4.6	8	0.10
10	e4.5	e7	e0.08	8.9	28	0.97	4.4	10	0.12
11	e4.4	e9	e0.10	7.4	13	0.26	4.3	11	0.13
12	e4.1	e11	e0.12	6.8	12	0.22	4.6	7	0.09
13	e3.4	e14	e0.13	6.6	10	0.19	4.2	4	0.04
14	e3.3	e17	e0.15	6.4	9	0.16	4.0	3	0.03
15	e4.0	e19	e0.21	6.2	8	0.13	4.0	3	0.03
16	5.0	16	0.21	6.5	6	0.11	3.9	2	0.02
17	7.3	38	1.5	6.2	5	0.09	4.1	2	0.02
18	14	221	40	6.0	4	0.07	4.3	2	0.03
19	7.5	53	1.1	5.8	3	0.05	4.5	3	0.03
20	42	683	139	5.6	2	0.03	3.9	3	0.03
21	21	204	20	5.5	2	0.03	3.7	3	0.03
22	10	23	0.68	5.4	2	0.03	3.8	4	0.04
23	16	111	9.6	5.3	2	0.03	3.7	4	0.04
24	49	721	386	5.2	3	0.04	3.7	5	0.05
25	61	772	387	5.1	4	0.06	3.7	6	0.06
26	69	1070	929	5.0	6	0.07	3.9	7	0.08
27	44	626	158	5.2	7	0.09	4.0	9	0.09
28	26	123	10	5.0	6	0.07	e3.9	e9	e0.09
29	18	12	0.58	5.0	4	0.05	e3.3	e6	e0.06
30	14	11	0.42	5.1	3	0.05	e3.2	e6	e0.06
31	---	---	---	4.9	5	0.06	---	---	---
TOTAL	491.9	---	2140.47	217.1	---	10.45	143.6	---	111.48

RIO GRANDE DE ARECIBO BASIN

50022810 RIO VIVI BELOW HACIENDA EL PROGRESO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	e3.1	e5	e0.04	e3.7	e4	e0.03	e5.6	e12	e0.25
2	e3.2	e5	e0.04	e5.5	e5	e0.04	e11	e13	e0.38
3	e3.1	e5	e0.04	4.1	4	0.04	e9.8	e11	e0.30
4	e3.1	e5	e0.04	3.5	3	0.03	e7.9	e13	e0.26
5	e3.0	e5	e0.04	3.5	2	0.02	e5.9	e3	e0.05
6	e7.8	e21	e0.43	3.4	4	0.03	e4.6	e8	e0.10
7	e8.0	e17	e0.39	3.5	6	0.05	e4.3	e11	e0.15
8	e4.2	e4	e0.04	4.0	7	0.08	e4.3	e11	e0.15
9	e3.8	e3	e0.03	4.3	11	0.15	e4.0	e4	e0.04
10	e3.8	e3	e0.03	5.1	13	0.24	e4.1	e4	e0.04
11	e3.4	e7	e0.07	6.6	21	0.54	e4.2	e4	e0.04
12	e3.3	e7	e0.07	4.8	11	0.16	e4.5	e11	e0.15
13	e3.4	e7	e0.07	5.3	12	0.25	e3.9	e11	e0.15
14	e3.3	e7	e0.07	5.2	5	0.07	e3.6	e3	e0.03
15	e4.3	e4	e0.04	3.9	4	0.05	e5.1	e13	e0.24
16	e3.0	e5	e0.04	4.1	4	0.04	e8.9	e19	e0.46
17	e3.0	e5	e0.04	3.7	3	0.03	e4.7	e8	e0.10
18	e3.0	e5	e0.04	e6.4	e30	e1.1	e7.4	e13	e0.26
19	e2.9	e6	e0.04	4.5	8	0.10	e5.5	e27	e0.66
20	e2.4	e6	e0.04	3.9	3	0.03	e4.3	e11	e0.15
21	e2.7	e6	e0.04	e3.5	e2	e0.02	e4.0	e4	e0.04
22	e3.2	e5	e0.04	e4.8	e1	e0.01	e3.8	e4	e0.05
23	e4.5	e4	e0.04	e4.4	e1	e0.01	e3.6	e3	e0.03
24	e3.0	e5	e0.04	5.5	27	0.66	e3.7	e3	e0.03
25	e2.7	e6	e0.04	4.4	6	0.08	e4.6	e11	e0.16
26	e2.6	e6	e0.04	3.7	2	0.02	e4.0	e20	e0.18
27	e2.6	e6	e0.04	3.5	2	0.02	3.4	19	0.17
28	e6.2	e21	e0.54	26	390	183	3.5	16	0.15
29	e5.4	e12	e0.25	e5.9	e37	e0.54	3.4	13	0.12
30	e2.9	e5	e0.04	e7.2	e37	e0.75	3.3	10	0.09
31	e3.5	e6	e0.06	e8.1	e39	e0.79	---	---	---
TOTAL	114.4	---	2.81	166.0	---	188.98	150.9	---	4.98
YEAR	2980.3		5981.17						

e Estimated

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

Date	Time	Instan-taneous dis-charge, cfs (00061)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment load, tons/d (80155)	Suspnd. sedi-ment, sieve diametr percent <.063mm (70331)
OCT					
28...	1630	234	5570	3520	98
DEC					
21...	1645	563	4630	7040	88

RIO GRANDE DE ARECIBO BASIN

50024950 RIO GRANDE DE ARECIBO BELOW UTUADO, PR

LOCATION.--Lat 18°18'07", long 66°42'15", Hydrologic Unit 21010001, 2.4 mi (3.9 km) north of Utuado Plaza, 3.4 mi (5.5 km) southwest from Lago Dos Bocas Dam, 3.5 mi (5.6 km) northwest from Lago Caonillas Dam.

DRAINAGE AREA.--65.6 mi^2 (170 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1996 to September 1998, June 1999 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 295.28 ft (90 m), from topographic map.

REMARKS.--Records poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	105	139	106	93	54	41	229	362	64	e58	186	e96
2	100	150	111	95	52	40	167	470	62	e58	146	e877
3	116	176	192	96	51	38	77	379	74	e48	104	659
4	104	110	196	94	55	38	57	e285	e170	e47	195	559
5	96	115	130	99	54	35	480	244	e155	e42	115	398
6	102	154	103	e98	51	34	598	202	e119	e87	132	260
7	99	213	95	99	51	33	457	198	e94	e82	72	216
8	128	2390	84	99	50	e44	650	165	e79	e62	87	178
9	100	864	77	95	48	e37	383	235	e77	e168	99	153
10	395	446	83	84	48	e53	258	238	e70	e77	143	193
11	282	307	181	83	47	159	204	217	e67	e123	203	204
12	148	277	168	80	57	128	177	156	e73	e283	156	e130
13	126	248	110	80	43	60	151	136	e79	91	85	e194
14	110	324	86	81	41	47	136	125	e64	61	145	229
15	118	266	75	79	40	42	135	153	e56	70	108	e145
16	110	204	137	74	41	50	278	275	e54	62	75	e200
17	105	176	293	73	41	59	222	178	e59	60	65	159
18	93	159	262	68	42	42	319	128	e69	57	119	430
19	89	150	176	64	97	41	482	111	e63	51	136	441
20	76	142	154	62	71	e37	687	104	e69	61	121	222
21	73	137	223	60	53	e34	687	98	e61	60	83	146
22	171	123	191	60	49	31	360	93	e48	122	253	119
23	236	123	197	63	47	28	767	90	e45	91	167	98
24	176	140	166	65	45	26	865	86	e50	67	172	111
25	111	121	133	61	43	26	1210	81	e63	58	134	111
26	91	119	121	60	46	26	853	78	e79	47	127	91
27	239	114	109	59	46	25	934	77	e83	48	159	81
28	275	115	103	59	42	39	680	77	e69	148	120	72
29	274	141	100	60	---	49	717	65	e59	e140	172	60
30	210	124	96	55	---	109	490	74	e54	e68	118	e58
31	145	---	94	54	---	107	---	76	---	171	204	---
TOTAL	4603	8267	4352	2352	1405	1558	13710	5256	2228	2668	4201	6890
MEAN	148	276	140	75.9	50.2	50.3	457	170	74.3	86.1	136	230
MAX	395	2390	293	99	97	159	1210	470	170	283	253	877
MIN	73	110	75	54	40	25	57	65	45	42	65	58
AC-FT	9130	16400	8630	4670	2790	3090	27190	10430	4420	5290	8330	13670
CFSM	2.26	4.20	2.14	1.16	0.76	0.77	6.96	2.58	1.13	1.31	2.07	3.50
IN.	2.61	4.69	2.47	1.33	0.80	0.88	7.77	2.98	1.26	1.51	2.38	3.91

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2002, BY WATER YEAR (WY)

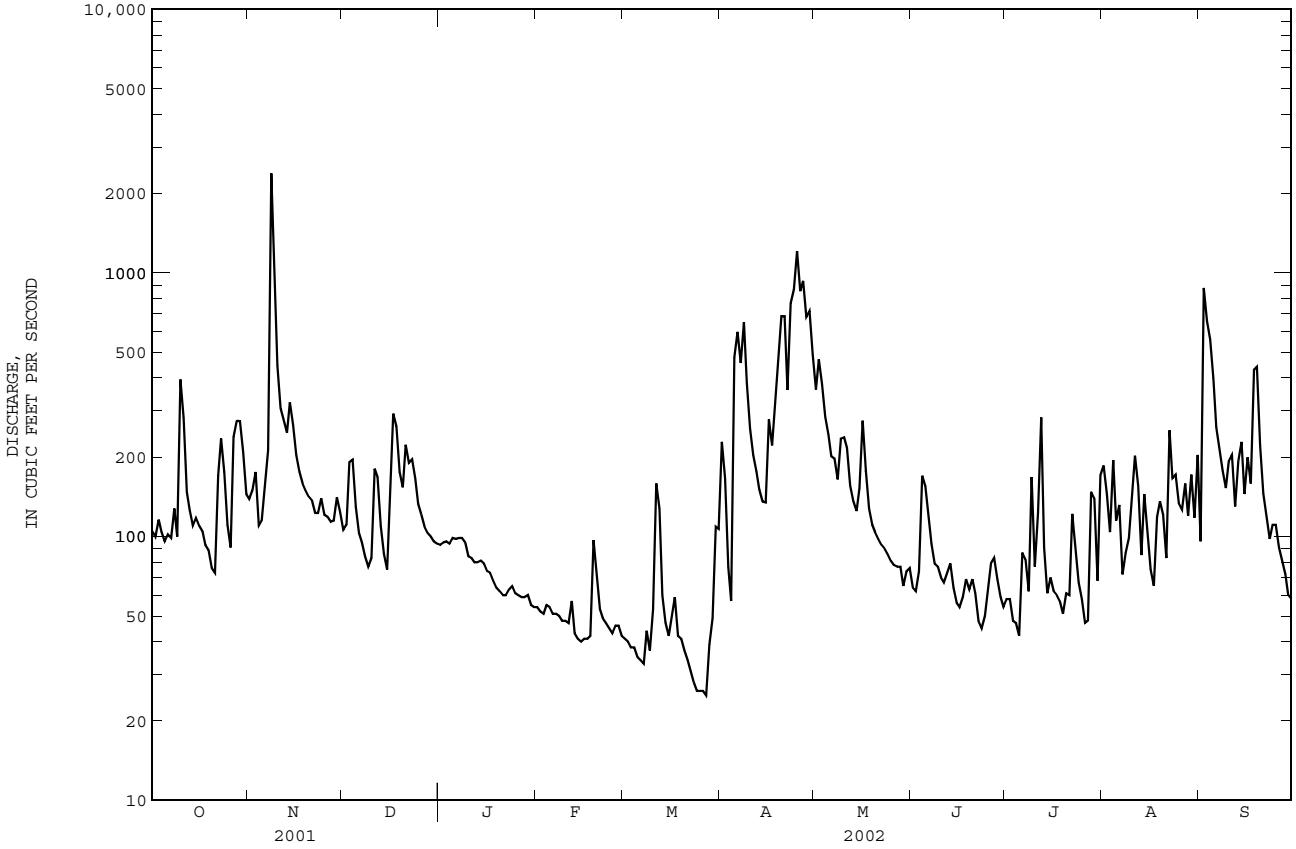
MEAN	280	308	130	92.3	66.2	53.2	145	158	91.6	101	175	413
MAX	490	766	242	166	102	76.7	457	249	130	184	393	1100
(WY)	2000	2000	2000	2000	2000	2000	2002	2000	2000	1998	1998	1998
MIN	148	84.8	53.0	39.5	46.6	33.8	46.2	50.8	40.8	36.6	77.0	87.3
(WY)	2002	1998	1998	1998	1998	1998	1997	1997	1997	1997	1997	1997

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1996 - 2002	
ANNUAL TOTAL	44968		57490			
ANNUAL MEAN	123		158		164	
HIGHEST ANNUAL MEAN					233	2000
LOWEST ANNUAL MEAN					99.6	1997
HIGHEST DAILY MEAN	2390	Nov 8	2390	Nov 8	17900	Sep 22 1998
LOWEST DAILY MEAN	25	Apr 19	25	Mar 27	22	Mar 20 1998
ANNUAL SEVEN-DAY MINIMUM	28	Apr 14	28	Mar 21	23	Mar 19 1998
MAXIMUM PEAK FLOW			7000	Nov 8	76400	Sep 22 1998
MAXIMUM PEAK STAGE			12.14	Nov 8	32.92	Sep 22 1998
INSTANTANEOUS LOW FLOW			23	Mar 24	13	Jul 3 2002
ANNUAL RUNOFF (AC-FT)	89190		114000		119000	
ANNUAL RUNOFF (CFSM)	1.88		2.40		2.50	
ANNUAL RUNOFF (INCHES)	25.49		32.59		34.01	
10 PERCENT EXCEEDS	220		282		326	
50 PERCENT EXCEEDS	87		102		87	
90 PERCENT EXCEEDS	35		47		39	

e Estimated

RIO GRANDE DE ARECIBO BASIN

50024950 RIO GRANDE DE ARECIBO BELOW UTUADO, PR--Continued



RIO GRANDE DE ARECIBO BASIN

50024950 RIO GRANDE DE ARECIBO BELOW UTUADO, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORDS.--April 1996 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: April 1996 to current year.

INSTRUMENTATION.--USDH-48 and automatic sediment samplers since 1996.

REMARKS.-- Sediment samples were collected by a local observer on a weekly basis. During high flow events sediment samples were collected with automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 10,600 mg/L September 10, 1996; Minimum daily mean, 3 mg/L August 6, 1996.

SEDIMENT LOADS: Maximum daily mean, e768,000 tons (e698,000 tonnes) September 22,1998; Minimum daily mean, 0.50 ton (0.45 tonne) August 6, 1996.

EXTREMES FOR CURRENT YEAR 2002.--
SEDIMENT CONCENTRATION: Maximum daily mean, 6,000 mg/L November 8, 2001; Minimum daily mean, 6 mg/L May 7, 8, 2002.

SEDIMENT LOADS: Maximum daily mean, 59,800 tons (54,250 tonnes) November 8, 2001; Minimum daily mean, .85 ton (.77 tonne) March 27, 2002.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	105	54	15	139	118	56	106	45	13
2	100	52	14	150	140	117	111	42	12
3	116	82	30	176	306	151	192	176	172
4	104	37	10	110	305	91	196	151	92
5	96	35	9.0	115	326	101	130	108	40
6	102	28	7.8	154	342	142	103	79	22
7	99	22	5.8	213	469	425	95	74	19
8	128	61	30	2390	6000	59800	84	65	15
9	100	16	4.4	864	1610	4040	77	55	11
10	395	588	1760	446	616	778	83	46	10
11	282	345	313	307	188	158	181	233	284
12	148	97	40	277	113	85	168	264	127
13	126	86	30	248	163	136	110	149	45
14	110	64	19	324	336	457	86	96	22
15	118	86	35	266	221	170	75	91	18
16	110	67	21	204	78	43	137	164	112
17	105	62	20	176	61	29	293	399	750
18	93	52	14	159	45	19	262	245	206
19	89	34	8.3	150	31	12	176	96	46
20	76	32	6.5	142	31	12	154	100	43
21	73	31	6.1	137	32	12	223	250	291
22	171	214	374	123	34	11	191	163	96
23	236	439	388	123	35	12	197	154	89
24	176	174	98	140	35	13	166	107	49
25	111	77	24	121	36	12	133	75	27
26	91	60	15	119	36	12	121	59	19
27	239	333	724	114	36	11	109	43	13
28	275	373	505	115	35	11	103	30	8.4
29	274	309	287	141	91	37	100	31	8.3
30	210	231	138	124	55	19	96	33	8.6
31	145	123	51	---	---	---	94	36	9.0
TOTAL	4603	---	5002.9	8267	---	66972	4352	---	2677.3

RIO GRANDE DE ARECIBO BASIN

50024950 RIO GRANDE DE ARECIBO BELOW UTUADO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	93	36	9.0	54	25	3.7	41	24	2.7
2	95	36	9.1	52	23	3.3	40	23	2.5
3	96	35	9.1	51	21	2.9	38	22	2.3
4	94	35	8.9	55	19	2.8	38	21	2.1
5	99	35	9.3	54	17	2.5	35	19	1.8
6	e98	e35	e9.1	51	15	2.1	34	18	1.6
7	99	34	9.1	51	14	1.9	33	17	1.5
8	99	52	15	50	12	1.6	e44	e24	e3.6
9	95	71	18	48	12	1.5	e37	e18	e2.0
10	84	62	14	48	12	1.6	e53	e28	e4.7
11	83	57	13	47	12	1.5	159	182	185
12	80	49	11	57	50	9.1	128	104	43
13	80	41	8.8	43	12	1.4	60	27	4.5
14	81	33	7.2	41	11	1.2	47	13	1.7
15	79	28	5.8	40	12	1.3	42	11	1.3
16	74	32	6.4	41	16	1.7	50	26	4.7
17	73	35	6.9	41	20	2.2	59	33	5.3
18	68	27	5.0	42	23	2.6	42	21	2.4
19	64	24	4.1	97	79	23	41	17	1.8
20	62	21	3.5	71	48	9.7	e37	e16	e1.6
21	60	20	3.2	53	30	4.3	e34	e16	e1.4
22	60	22	3.5	49	28	3.7	31	15	1.3
23	63	24	4.1	47	23	2.9	28	15	1.1
24	65	26	4.6	45	17	2.1	26	14	1.0
25	61	28	4.6	43	12	1.4	26	14	0.95
26	60	29	4.7	46	8	0.93	26	13	0.91
27	59	30	4.7	46	12	1.5	25	13	0.85
28	59	30	4.8	42	19	2.2	39	21	3.1
29	60	31	4.9	---	---	---	49	36	7.2
30	55	29	4.3	---	---	---	109	85	36
31	54	27	3.9	---	---	---	107	94	74
TOTAL	2352	---	229.6	1405	---	96.63	1558	---	403.91

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	229	231	233	362	116	128	64	60	10
2	167	136	88	470	580	1420	62	54	9.0
3	77	12	2.6	379	280	304	74	48	9.4
4	57	10	1.5	e285	e152	e116	e170	e435	e277
5	480	1910	10100	244	98	65	e155	e299	e149
6	598	867	1630	202	34	19	e119	e40	e13
7	457	422	600	198	6	3.5	e94	e35	e9.0
8	650	640	1410	165	6	2.6	e79	e30	e6.4
9	383	79	82	235	188	303	e77	e25	e5.1
10	258	84	58	238	191	137	e70	e20	e3.9
11	204	93	51	217	178	118	e67	e20	e3.6
12	177	93	45	156	75	32	e73	e20	e3.9
13	151	67	28	136	42	15	e79	e19	e4.1
14	136	39	14	125	36	12	e64	e19	e3.3
15	135	16	5.8	153	119	80	e56	e19	e2.9
16	278	337	491	275	566	974	e54	e22	e3.2
17	222	179	120	178	151	75	e59	e25	e3.9
18	319	375	428	128	40	14	e69	e27	e5.0
19	482	779	1390	111	35	11	e63	e23	e4.0
20	687	1220	3100	104	32	8.8	e69	e17	e3.2
21	687	1220	2540	98	28	7.4	e61	e13	e2.1
22	360	372	375	93	24	6.0	e48	e15	e1.9
23	767	1900	9340	90	20	5.0	e45	e17	e2.0
24	865	1440	4250	86	22	5.0	e50	e19	e2.5
25	1210	2210	13000	81	45	9.8	e63	e33	e7.3
26	853	921	3270	78	71	15	e79	e55	e15
27	934	1390	5470	77	90	19	e83	e37	e8.4
28	680	744	1750	77	86	18	e69	e26	e4.9
29	717	1730	7730	65	79	14	e59	e22	e3.3
30	490	184	259	74	73	15	e54	e17	e2.5
31	---	---	---	76	67	14	---	---	---
TOTAL	13710	---	67861.9	5256	---	3966.1	2228	---	578.8

RIO GRANDE DE ARECIBO BASIN

50024950 RIO GRANDE DE ARECIBO BELOW UTUADO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	e58	e20	e3.1	186	196	132	e96	e78	e27
2	e58	e25	e3.9	146	131	73	e877	e953	e3940
3	e48	e26	e3.4	104	51	16	659	1220	3210
4	e47	e27	e3.4	195	201	213	559	689	1170
5	e42	e28	e3.2	115	45	16	398	404	469
6	e87	e102	e44	132	108	43	260	72	52
7	e82	e57	e13	72	27	5.4	216	30	18
8	e62	e49	e12	87	15	3.5	178	22	10
9	e168	e261	e432	99	54	21	153	18	7.6
10	e77	e59	e14	143	488	332	193	196	157
11	e123	e168	e175	203	491	358	204	211	134
12	e283	e492	e1470	156	137	64	e130	e81	e29
13	91	81	22	85	61	14	e194	e189	e217
14	61	40	6.6	145	145	59	229	258	206
15	70	46	9.0	108	83	27	e145	e102	e45
16	62	35	5.9	75	42	9.2	e200	e268	e182
17	60	30	4.8	65	33	6.5	159	122	55
18	57	26	4.0	119	98	61	430	794	2890
19	51	22	3.0	136	115	51	441	868	2280
20	61	29	5.9	121	104	62	222	210	132
21	60	32	5.3	83	54	13	146	52	21
22	122	114	72	253	393	743	119	33	11
23	91	79	20	167	152	76	98	32	8.5
24	67	31	5.7	172	171	123	111	30	9.1
25	58	21	3.3	134	107	40	111	29	8.6
26	47	15	1.9	127	98	34	91	26	6.5
27	48	14	1.9	159	137	73	81	24	5.2
28	148	150	134	120	87	51	72	21	4.2
29	e140	e77	e26	172	157	83	60	19	3.1
30	e68	e23	e3.7	118	90	33	e58	e17	e3.0
31	171	190	165	204	193	129	---	---	---
TOTAL	2668	---	2677.0	4201	---	2964.6	6890	---	15310.8
YEAR	57490		168741.54						

e Estimated

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

Date	Time	Instan-taneous dis-charge, cfs (00061)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment load, tons/d (80155)	Suspnd. sedi-ment, sieve diametr percent <.062mm (70331)
APR					
25...	1700	2900	12100	94400	89
SEP					
10...	1850	326	1000	881	99

RIO GRANDE DE ARECIBO BASIN

50025000 RIO GRANDE DE ARECIBO NEAR UTUADO, PR

WATER-QUALITY RECORDS

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

DRAINAGE AREA.--66.0 mi^2 (170.9 km^2) this excludes 6.0 mi^2 (15.5 km^2) upstream from Lago Garzas to Río Guayanes in the Río Tallaboa basin.

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
DEC													
13...	1330	127	250	7.4	25.4	33	8.1	100	<10	21000	520	93	25.2
FEB													
21...	1110	54	295	7.5	22.3	13	8.2	96	<10	E955	310	--	--
SEP													
05...	0830	--	186	6.6	24.0	300	8.0	95	<10	E13000	E12000	75	20.3

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
DEC													
13...	7.31	11.1	.5	2.31	79	<1.0	18.5	10.8	<.1	25.9	148	50.8	48
FEB													
21...	--	--	--	--	--	--	--	--	--	--	--	--	20
SEP													
05...	5.78	9.57	.5	2.03	62	<.1	15.6	8.27	E.10	23.0	122	--	196

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
DEC													
13...	.02	1.10	.03	E.40	E.10	E1	47.1	E10	<.1	<.8	E10	1150	1
FEB													
21...	.05	1.50	.09	.30	.11	--	--	--	--	--	--	--	--
SEP													
05...	.04	.930	.04	.90	.22	<2	88.4	<20	<.1	2.8	20	5660	3

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
DEC								
13...	86.1	<.01	<2	<.3	<20	<.01	<16	<.05
FEB								
21...	--	--	--	--	--	--	--	--
SEP								
05...	259	.02	<2	<.3	E30	<.01	<16	<.05

E -- Estimated value
< -- Less than

RIO GRANDE DE ARECIBO BASIN

50025155 RIO SALIENTE AT COABEY NEAR JAYUYA, PR

LOCATION.--Lat 18°12'48", long 66°33'49", Hydrologic Unit 21010002, 2.0 mi (3.2 km) southeast of Jayuya, 1.4 mi (2.2 km) northeast of Hacienda Gripiñas.

DRAINAGE AREA.--9.25 mi^2 (24.0 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1989 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,706 ft (520 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e23	19	17	18	11	9.7	20	81	19	13	e21	38
2	e22	76	45	17	10	9.8	26	91	15	13	e14	42
3	24	51	85	16	10	9.5	17	71	94	13	11	47
4	21	30	43	16	11	9.2	12	56	42	12	e12	38
5	22	33	29	25	10	9.0	36	48	274	12	18	24
6	20	64	24	30	9.7	8.7	37	43	121	20	13	18
7	18	51	22	21	9.8	8.6	25	40	74	16	11	15
8	18	487	20	18	9.6	9.3	39	36	48	12	11	13
9	22	179	19	17	9.5	9.5	58	32	38	23	9.5	13
10	e68	101	18	16	9.3	16	36	30	32	16	26	13
11	46	69	31	16	8.9	77	31	28	29	12	47	12
12	28	53	25	15	8.7	35	25	26	26	12	30	11
13	25	45	21	15	8.7	17	21	24	24	11	15	10
14	23	42	20	14	8.4	14	18	22	23	12	14	9.9
15	25	37	19	14	8.3	e12	20	21	21	13	11	13
16	22	33	21	13	8.1	54	30	24	20	11	12	34
17	25	30	24	13	8.0	34	25	20	20	10	10	13
18	25	28	29	13	10	18	77	19	20	10	10	29
19	e21	26	41	12	23	18	101	18	21	9.5	10	19
20	20	25	24	12	18	14	143	17	18	9.2	9.7	e13
21	18	23	120	12	12	13	132	16	17	9.0	8.9	e11
22	20	22	56	13	11	12	72	15	17	10	21	11
23	18	21	40	12	10	12	80	15	16	10	21	9.9
24	17	22	43	14	10	11	82	14	16	8.9	18	12
25	17	21	33	12	9.8	11	146	14	15	8.4	17	16
26	16	20	28	12	11	10	200	13	19	8.2	12	12
27	29	20	25	11	11	e10	214	14	17	8.4	10	e10
28	42	21	22	12	9.7	13	147	13	15	12	13	10
29	49	23	21	12	---	140	166	13	14	11	15	9.9
30	26	19	19	11	---	53	121	38	14	8.5	20	9.3
31	21	---	18	11	---	32	---	25	---	15	25	---
TOTAL	791	1691	1002	463	294.5	709.3	2157	937	1139	369.1	496.1	536.0
MEAN	25.5	56.4	32.3	14.9	10.5	22.9	71.9	30.2	38.0	11.9	16.0	17.9
MAX	68	487	120	30	23	140	214	91	274	23	47	47
MIN	16	19	17	11	8.0	8.6	12	13	14	8.2	8.9	9.3
AC-FT	1570	3350	1990	918	584	1410	4280	1860	2260	732	984	1060
CFSM	2.76	6.09	3.49	1.61	1.14	2.47	7.77	3.27	4.10	1.29	1.73	1.93
IN.	3.18	6.80	4.03	1.86	1.18	2.85	8.67	3.77	4.58	1.48	2.00	2.16

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2002, BY WATER YEAR (WY)

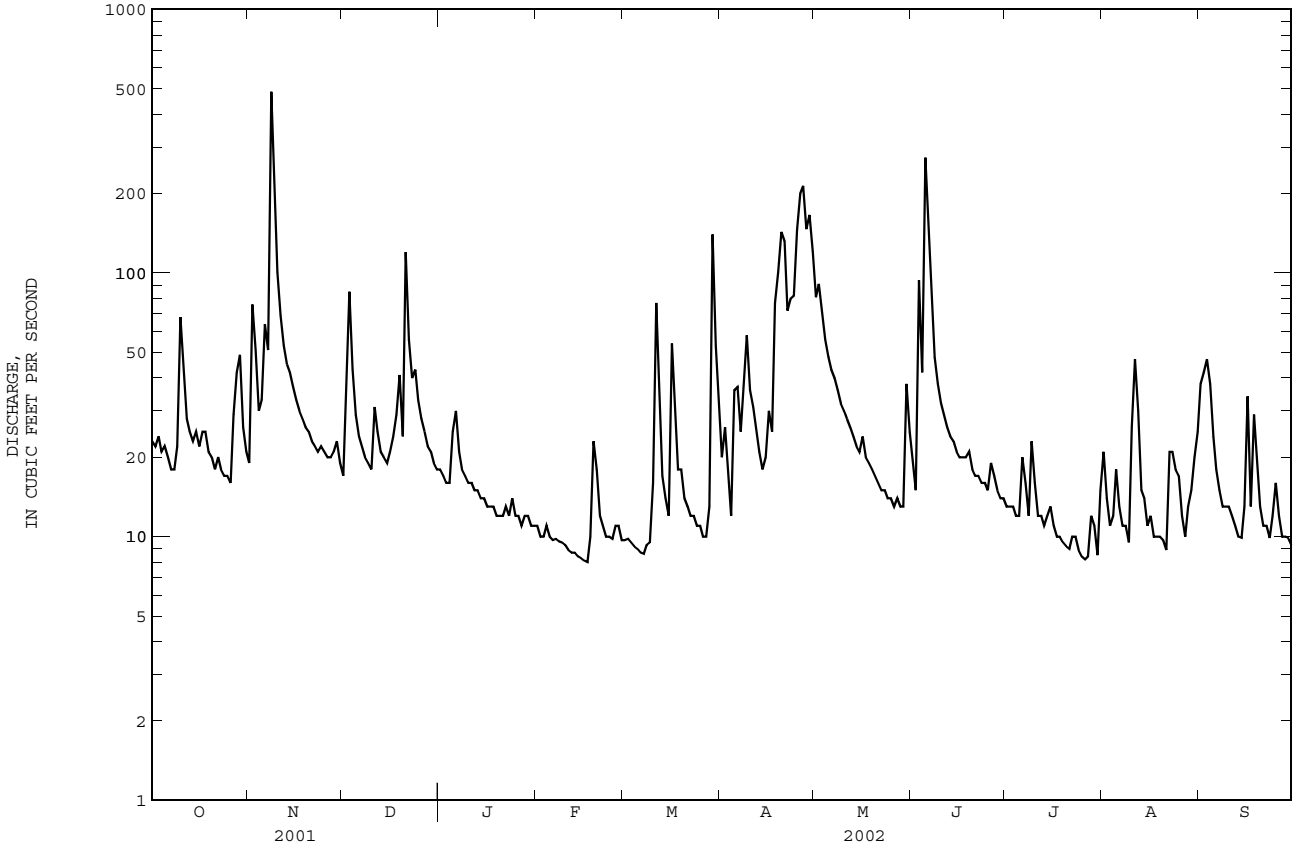
MEAN	42.3	34.5	17.6	17.2	15.3	12.1	24.5	36.2	24.6	16.7	27.7	90.4
MAX	72.0	91.5	39.3	48.1	44.4	22.9	71.9	98.6	41.5	50.9	74.5	365
(WY)	1996	2000	2000	1992	1996	2002	2002	1995	1999	1996	1998	1996
MIN	11.6	10.0	5.41	4.13	4.67	4.79	5.95	5.35	5.30	2.83	9.82	10.8
(WY)	1992	1994	1998	1995	1994	1994	1994	1990	1997	1994	1994	1994

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1989 - 2002	
ANNUAL TOTAL	9209.7		10585.0			
ANNUAL MEAN	25.2		29.0		29.9	
HIGHEST ANNUAL MEAN					64.0	1996
LOWEST ANNUAL MEAN					10.9	1994
HIGHEST DAILY MEAN	487	Nov 8	487	Nov 8	4700	Sep 10 1996
LOWEST DAILY MEAN	3.9	Mar 18	8.0	Feb 17	2.3	Jul 27 1994
ANNUAL SEVEN-DAY MINIMUM	4.1	Mar 14	8.4	Feb 11	2.5	Jul 23 1994
MAXIMUM PEAK FLOW			2140	Mar 29	18500	Sep 21 1998
MAXIMUM PEAK STAGE			9.81	Mar 29	20.00	Sep 21 1998
INSTANTANEOUS LOW FLOW			7.5	Feb 17	2.1	Jul 26 1994
ANNUAL RUNOFF (AC-FT)	18270		21000		21650	
ANNUAL RUNOFF (CFSM)	2.73		3.14		3.23	
ANNUAL RUNOFF (INCHES)	37.04		42.57		43.89	
10 PERCENT EXCEEDS	50		53		56	
50 PERCENT EXCEEDS	17		18		14	
90 PERCENT EXCEEDS	5.7		9.9		5.1	

e Estimated

RIO GRANDE DE ARECIBO BASIN

50025155 RIO SALIENTE AT COABEY NEAR JAYUYA, PR--Continued



RIO GRANDE DE ARECIBO BASIN

50025155 RIO SALIENTE AT COABEY NEAR JAYUYA, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1989 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 2000 to current year.

INSTRUMENTATION.--USDH-48 and automatic sediment samplers since October 2000.

REMARKS.--Sediment samples were collected by a local observer on a weekly basis. During high flow events sediment samples were collected with automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 693 mg/L July 14, 2001; Minimum daily mean, 1 mg/L several days during water years 2001 and 2002.

SEDIMENT LOADS: Maximum daily mean, 2,480 tons (2,250 tonnes) July 14, 2001; Minimum daily mean, 0.01 ton (0.01 tonne) March 19, 2001.

EXTREMES FOR CURRENT YEAR 2002.--
SEDIMENT CONCENTRATION: Maximum daily mean, 681 mg/L November 11, 2001; Minimum daily mean, 1 mg/L several days during water years 2001 and 2002.

SEDIMENT LOADS: Maximum daily mean, 1,250 tons (1,134 tonnes) November 8, 2001; Minimum daily mean, 0.03 ton (0.03 tonne) several days.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	e23	e6	e0.33	19	1	0.07	17	5	0.23
2	e22	e6	e0.33	76	133	96	45	63	13
3	24	7	0.47	51	44	9.0	85	149	75
4	21	6	0.34	30	3	0.21	43	35	5.0
5	22	4	0.21	33	14	1.6	29	5	0.40
6	20	1	0.08	64	60	13	24	4	0.27
7	18	1	0.05	51	19	4.2	22	3	0.19
8	18	1	0.05	487	681	1250	20	3	0.15
9	22	1	0.06	179	178	94	19	3	0.13
10	e68	e276	e346	101	26	7.2	18	2	0.11
11	46	45	6.8	69	17	3.3	31	27	4.7
12	28	8	0.57	53	12	1.7	25	29	1.9
13	25	6	0.39	45	12	1.4	21	22	1.2
14	23	4	0.25	42	12	1.4	20	20	1.1
15	25	2	0.16	37	13	1.3	19	19	0.94
16	22	2	0.12	33	14	1.2	21	21	1.3
17	25	2	0.14	30	12	0.99	24	24	1.6
18	25	2	0.13	28	11	0.80	29	36	4.8
19	e21	e2	e0.13	26	9	0.63	41	53	7.5
20	20	5	0.26	25	7	0.48	24	25	1.6
21	18	8	0.40	23	6	0.35	120	282	301
22	20	8	0.39	22	4	0.23	56	76	13
23	18	6	0.28	21	3	0.16	40	4	0.44
24	17	4	0.18	22	8	0.49	43	4	0.46
25	17	2	0.11	21	15	0.87	33	4	0.35
26	16	2	0.09	20	21	1.1	28	4	0.30
27	29	25	3.4	20	18	0.99	25	4	0.26
28	42	56	18	21	15	0.84	22	4	0.24
29	49	72	26	23	12	0.70	21	4	0.25
30	26	13	0.99	19	8	0.43	19	5	0.25
31	21	2	0.10	---	---	---	18	5	0.26
TOTAL	791	---	406.81	1691	---	1494.64	1002	---	437.93

RIO GRANDE DE ARECIBO BASIN

50025155 RIO SALIENTE AT COABEY NEAR JAYUYA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	18	6	0.27	11	3	0.09	9.7	3	0.08
2	17	6	0.28	10	3	0.08	9.8	3	0.08
3	16	7	0.32	10	3	0.09	9.5	3	0.08
4	16	8	0.36	11	3	0.10	9.2	3	0.07
5	25	10	0.66	10	3	0.09	9.0	3	0.07
6	30	8	0.64	9.7	4	0.09	8.7	3	0.07
7	21	5	0.28	9.8	4	0.10	8.6	3	0.07
8	18	3	0.13	9.6	4	0.10	9.3	3	0.08
9	17	4	0.20	9.5	4	0.10	9.5	3	0.08
10	16	7	0.29	9.3	4	0.09	16	51	4.0
11	16	9	0.36	8.9	4	0.08	77	219	118
12	15	8	0.32	8.7	3	0.08	35	55	7.4
13	15	7	0.27	8.7	3	0.07	17	15	0.67
14	14	4	0.17	8.4	3	0.07	14	10	0.38
15	14	2	0.08	8.3	3	0.07	e12	e7	e0.26
16	13	3	0.10	8.1	3	0.07	54	98	41
17	13	3	0.10	8.0	3	0.06	34	54	6.4
18	13	3	0.10	10	3	0.08	18	18	0.87
19	12	3	0.10	23	13	1.0	18	11	0.53
20	12	3	0.10	18	12	0.63	14	4	0.16
21	12	3	0.10	12	4	0.13	13	2	0.06
22	13	3	0.10	11	3	0.07	12	1	0.05
23	12	3	0.10	10	3	0.08	12	1	0.03
24	14	4	0.15	10	4	0.10	11	1	0.04
25	12	5	0.17	9.8	3	0.07	11	1	0.04
26	12	6	0.19	11	2	0.04	10	2	0.05
27	11	6	0.19	11	1	0.03	e10	e2	e0.05
28	12	7	0.21	9.7	3	0.08	13	2	0.07
29	12	7	0.21	---	---	---	140	456	914
30	11	5	0.14	---	---	---	53	87	17
31	11	3	0.09	---	---	---	32	32	3.0
TOTAL	463	---	6.78	294.5	---	3.74	709.3	---	1114.74

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	20	8	0.49	81	10	2.1	19	8	0.43
2	26	29	4.9	91	104	38	15	6	0.25
3	17	4	0.23	71	49	10	94	174	175
4	12	2	0.08	56	6	0.96	42	24	2.9
5	36	67	18	48	4	0.51	274	584	764
6	37	40	4.6	43	2	0.19	121	210	84
7	25	14	0.91	40	1	0.11	74	47	11
8	39	44	5.2	36	1	0.10	48	6	0.81
9	58	61	10	32	1	0.09	38	5	0.48
10	36	16	1.6	30	1	0.08	32	3	0.30
11	31	9	0.78	28	1	0.07	29	2	0.17
12	25	3	0.21	26	1	0.07	26	1	0.09
13	21	5	0.28	24	1	0.06	24	2	0.11
14	18	10	0.50	22	1	0.06	23	2	0.15
15	20	15	0.81	21	1	0.06	21	4	0.21
16	30	35	3.6	24	11	1.2	20	8	0.45
17	25	11	0.79	20	10	0.57	20	13	0.73
18	77	59	29	19	8	0.42	20	15	0.84
19	101	119	41	18	7	0.32	21	10	0.66
20	143	161	86	17	5	0.23	18	4	0.19
21	132	70	34	16	4	0.16	17	4	0.17
22	72	9	1.8	15	2	0.09	17	3	0.15
23	80	85	29	15	2	0.09	16	3	0.14
24	82	105	28	14	3	0.10	16	3	0.13
25	146	279	235	14	3	0.11	15	3	0.12
26	200	419	373	13	3	0.12	19	9	0.61
27	214	422	318	14	4	0.13	17	4	0.19
28	147	248	106	13	4	0.14	15	4	0.15
29	166	219	205	13	5	0.16	14	3	0.12
30	121	21	7.5	38	45	9.8	14	3	0.10
31	---	---	---	25	26	2.0	---	---	---
TOTAL	2157	---	1546.28	937	---	68.10	1139	---	1044.65

RIO GRANDE DE ARECIBO BASIN

50025155 RIO SALIENTE AT COABEY NEAR JAYUYA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	13	2	0.08	e21	e24	e2.2	38	45	6.5
2	13	2	0.07	e14	e14	e0.59	42	53	9.0
3	13	1	0.05	11	10	0.30	47	65	12
4	12	1	0.03	e12	e9	e0.29	38	52	6.1
5	12	1	0.03	18	19	1.6	24	24	1.7
6	20	17	1.8	13	13	0.47	18	10	0.51
7	16	11	0.59	11	9	0.28	15	8	0.31
8	12	1	0.03	11	9	0.25	13	7	0.26
9	23	22	3.1	9.5	8	0.20	13	7	0.23
10	16	9	0.44	26	38	6.3	13	6	0.22
11	12	2	0.08	47	95	34	12	6	0.18
12	12	3	0.08	30	36	3.9	11	6	0.16
13	11	3	0.09	15	5	0.20	10	5	0.15
14	12	3	0.11	14	1	0.04	9.9	5	0.14
15	13	3	0.12	11	1	0.03	13	9	0.46
16	11	4	0.11	12	1	0.03	34	39	5.0
17	10	4	0.11	10	8	0.21	13	11	0.38
18	10	4	0.12	10	18	0.48	29	36	6.0
19	9.5	5	0.12	10	14	0.37	19	19	1.1
20	9.2	5	0.13	9.7	9	0.24	e13	e13	e0.46
21	9.0	5	0.13	8.9	5	0.12	e11	e13	e0.39
22	10	6	0.16	21	23	3.1	11	12	0.34
23	10	6	0.17	21	14	1.0	9.9	11	0.30
24	8.9	6	0.14	18	9	0.78	12	11	0.35
25	8.4	6	0.14	17	10	0.60	16	10	0.42
26	8.2	6	0.13	12	2	0.05	12	9	0.29
27	8.4	6	0.14	10	1	0.04	e10	e8	e0.24
28	12	6	0.20	13	8	0.49	10	8	0.22
29	11	6	0.17	15	1	0.05	9.9	7	0.19
30	8.5	6	0.14	20	12	1.4	9.3	6	0.16
31	15	21	2.6	25	24	1.7	---	---	---
TOTAL	369.1	---	11.41	496.1	---	61.31	536.0	---	53.76
YEAR	10585.0		6250.15						

e Estimated

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

PARTICLE SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

Date	Time	Instan-taneous dis-charge, cfs (00061)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment load, tons/d (80155)	Suspnd. sedi-ment, falldia nat wat percent <.002mm (70326)	Suspnd. sedi-ment, falldia nat wat percent <.004mm (70327)	Suspnd. sedi-ment, falldia nat wat percent <.008mm (70328)	Suspnd. sedi-ment, falldia nat wat percent <.016mm (70329)	Suspnd. sedi-ment, falldia nat wat percent <.031mm (70330)	Suspnd. sedi-ment, sieve diametr percent <.062mm (70331)	Suspnd. sedi-ment, sieve diametr percent <.125mm (70332)	Suspnd. sedi-ment, sieve diametr percent <.25mm (70333)	Suspnd. sedi-ment, sieve diametr percent <.5 mm (70334)
NOV 08...	0630	1220	4460	14700	22	27	38	45	61	74	97	99	99

Date	Suspnd. sedi-ment, sieve diametr percent <1 mm (70335)
NOV 08...	100

RIO GRANDE DE ARECIBO BASIN

50025850 RIO JAUCA AT PASO PALMA, PR

LOCATION.--Lat 18°12'50", long 66°38'44", Hydrologic Unit 21010001, 5.13 mi (8.2 km) southeast from Utuado Plaza, 4.5 mi (7.24 km) south of Lago Caonillas Dam and 6.15 mi (9.89 km) northeast from Adjuntas Plaza.

DRAINAGE AREA.--6.89 mi^2 (17.8 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 2000 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,197 ft (365 m), from topographic map.

REMARKS.--Records fair except those for June 28 to July 23 and estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	15	15	14	8.6	5.8	10	28	8.9	5.9	6.2	11
2	20	37	16	14	8.6	5.7	8.6	29	8.4	6.0	6.5	22
3	19	32	31	14	8.9	5.6	8.7	25	10	5.9	8.7	20
4	18	19	21	13	8.8	5.4	6.9	24	19	5.9	8.1	16
5	18	20	16	15	8.0	5.3	25	21	21	5.8	6.3	12
6	17	31	16	17	7.6	5.2	43	19	14	11	6.5	8.8
7	17	22	15	14	7.4	5.2	25	19	12	12	5.9	7.9
8	16	151	14	13	7.2	5.4	18	17	10	7.3	8.0	8.1
9	17	65	14	13	7.1	5.5	15	16	9.9	6.8	6.8	7.3
10	37	39	14	12	7.1	5.4	12	16	9.0	6.6	8.8	7.6
11	23	31	43	12	6.9	13	11	15	8.6	6.3	8.9	7.8
12	18	28	22	12	6.7	11	10	14	8.8	6.1	9.9	8.6
13	17	54	16	11	6.7	6.6	9.2	13	8.8	6.1	8.8	7.2
14	16	37	15	11	6.6	5.8	8.6	13	8.4	6.1	9.3	6.6
15	18	34	14	11	6.5	5.6	8.6	12	7.8	7.4	7.0	9.9
16	16	28	22	11	6.4	6.9	14	13	7.7	5.8	6.8	18
17	16	25	48	11	6.3	9.5	13	12	8.0	5.8	6.6	9.0
18	17	23	e25	10	7.2	6.6	14	11	8.3	5.8	9.3	15
19	15	22	23	10	15	6.4	29	11	7.9	5.7	7.8	11
20	14	21	18	10	9.5	5.7	61	11	7.6	5.1	6.2	8.1
21	14	20	75	9.8	6.8	5.4	59	10	7.2	5.3	5.8	7.4
22	14	19	37	9.8	6.2	5.3	29	9.8	6.9	5.9	7.1	e6.9
23	18	18	30	9.6	6.0	5.1	43	9.7	6.7	7.4	6.6	e6.5
24	15	21	24	9.8	5.9	5.1	62	9.4	6.7	5.8	8.8	e6.7
25	14	17	21	9.4	5.8	4.9	83	9.0	6.5	5.4	11	8.7
26	13	17	19	9.2	6.4	4.8	76	8.8	7.2	5.3	6.7	7.4
27	21	17	17	9.0	6.5	4.8	80	8.8	7.2	e5.2	5.9	6.9
28	27	16	17	9.1	5.9	5.1	62	8.8	6.8	9.5	24	6.5
29	34	17	16	9.3	---	21	70	8.7	6.2	8.5	12	6.5
30	22	16	15	9.3	---	15	48	9.0	6.0	5.7	14	6.2
31	16	---	15	9.0	---	12	---	9.0	---	e5.4	16	---
TOTAL	578	912	704	351.3	206.6	220.1	962.6	440.0	271.5	202.8	270.3	291.6
MEAN	18.6	30.4	22.7	11.3	7.38	7.10	32.1	14.2	9.05	6.54	8.72	9.72
MAX	37	151	75	17	15	21	83	29	21	12	24	22
MIN	13	15	14	9.0	5.8	4.8	6.9	8.7	6.0	5.1	5.8	6.2
AC-FT	1150	1810	1400	697	410	437	1910	873	539	402	536	578

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2002, BY WATER YEAR (WY)

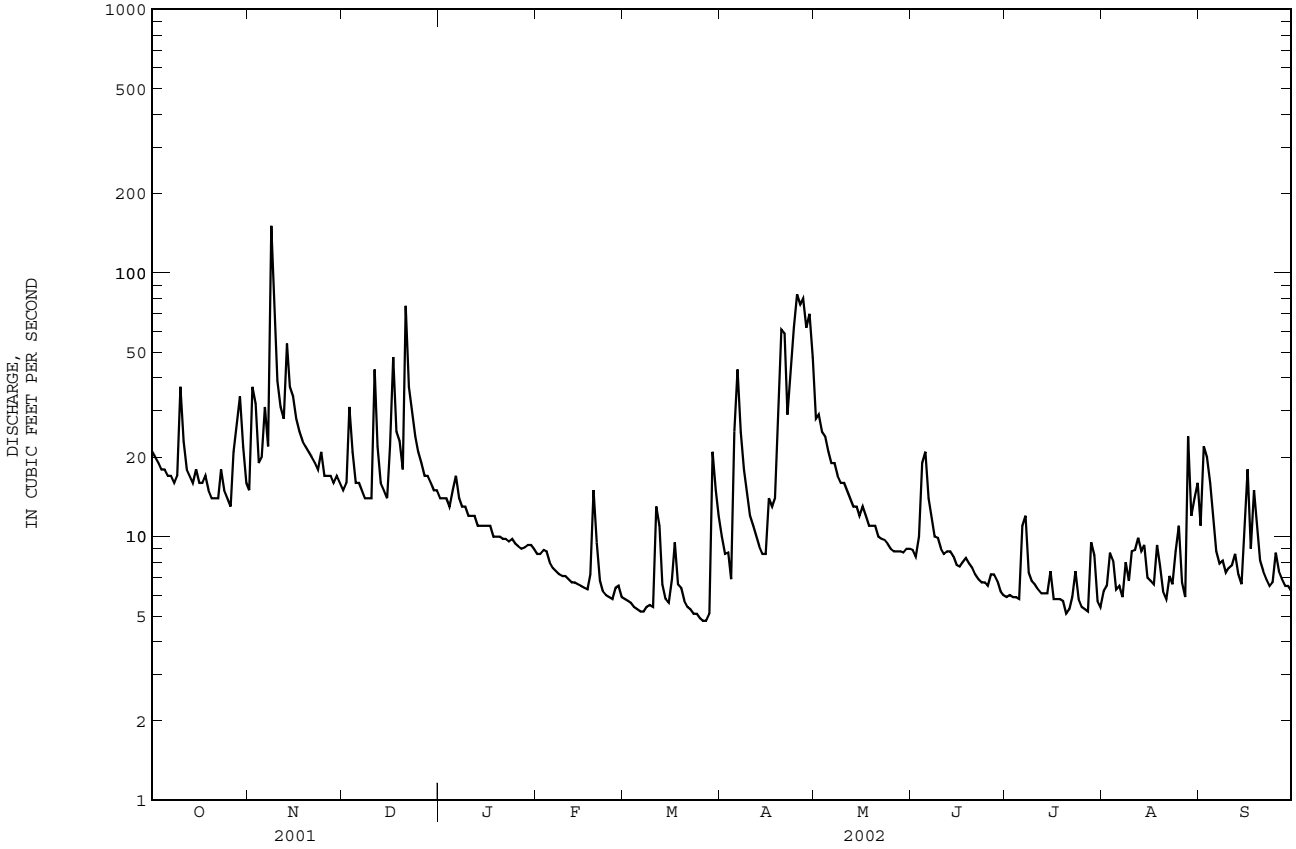
MEAN	32.3	27.3	16.7	8.83	6.21	6.23	19.3	18.0	8.76	8.58	14.1	29.4
MAX	45.9	30.4	22.7	11.3	7.38	7.10	32.1	21.9	9.12	13.7	18.9	43.4
(WY)	2001	2002	2002	2002	2002	2002	2002	2001	2001	2001	2000	2000
MIN	18.6	24.2	10.7	6.34	5.04	5.36	6.60	14.2	8.11	5.54	8.72	9.72
(WY)	2002	2001	2001	2001	2001	2001	2001	2002	2000	2000	2002	2002

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 2000 - 2002	
ANNUAL TOTAL	5773.8		5410.8			
ANNUAL MEAN	15.8		14.8		15.7	
HIGHEST ANNUAL MEAN					16.6	2001
LOWEST ANNUAL MEAN					14.8	2002
HIGHEST DAILY MEAN	193	May 6	151	Nov 8	235	Aug 23 2000
LOWEST DAILY MEAN	3.5	Mar 17	4.8	Mar 26	3.5	Mar 17 2001
ANNUAL SEVEN-DAY MINIMUM	3.6	Mar 14	5.0	Mar 22	3.6	Mar 14 2001
MAXIMUM PEAK FLOW			466	Dec 11	1590	May 6 2001
MAXIMUM PEAK STAGE			3.88	Dec 11	6.59	May 6 2001
INSTANTANEOUS LOW FLOW					3.2	Mar 17 2001
ANNUAL RUNOFF (AC-FT)	11450		10730		11380	
10 PERCENT EXCEEDS	30		26		32	
50 PERCENT EXCEEDS	9.7		10		9.6	
90 PERCENT EXCEEDS	4.7		5.9		5.2	

e Estimated

RIO GRANDE DE ARECIBO BASIN

50025850 RIO JAUCA AT PASO PALMA, PR--Continued



RIO GRANDE DE ARECIBO BASIN

50025850 RIO JAUCA AT PASO PALMA, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 2000 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 2000 to current year.

INSTRUMENTATION.--USDH-48 and automatic sediment samplers since 2000.

REMARKS.--Sediment samples were collected by a local observer on a weekly basis. During high flow events sediment samples were collected with automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 911 mg/L September 21, 2001; Minimum daily mean, 1 mg/L during water years 2001 and 2002.

SEDIMENT LOADS: Maximum daily mean, 1,050 tons (952 tonnes) September 21, 2001; Minimum daily mean, 0.01 ton (0.01 tonne) several days during water year 2001.

EXTREMES FOR CURRENT YEAR 2002.--
SEDIMENT CONCENTRATION: Maximum daily mean, 842 mg/L September 8, 2001; Minimum daily mean, 1 mg/L several days.

SEDIMENT LOADS: Maximum daily mean, 514 tons (466 tonnes) September 8, 2001; Minimum daily mean, 0.02 ton (0.02 tonne) July 24, 2002.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	21	4	0.20	15	8	0.31	15	12	0.50
2	20	4	0.20	37	616	184	16	12	0.49
3	19	5	0.25	32	96	11	31	96	15
4	18	6	0.30	19	33	1.7	21	32	2.1
5	18	7	0.35	20	37	2.1	16	5	0.21
6	17	8	0.40	31	77	7.1	16	3	0.14
7	17	10	0.44	22	24	1.4	15	3	0.13
8	16	11	0.48	151	842	514	14	3	0.13
9	17	11	0.52	65	110	21	14	4	0.14
10	37	132	22	39	25	2.7	14	4	0.18
11	23	34	2.5	31	17	1.4	43	293	148
12	18	7	0.31	28	16	1.2	22	87	5.3
13	17	6	0.27	54	342	129	16	84	3.7
14	16	6	0.23	37	101	10	15	81	3.3
15	18	34	1.9	34	77	8.6	14	78	3.0
16	16	14	0.63	28	48	3.8	22	93	6.4
17	16	13	0.58	25	22	1.5	48	263	96
18	17	16	0.75	23	16	1.0	e25	e70	e5.4
19	15	6	0.22	22	11	0.64	23	51	3.3
20	14	7	0.28	21	7	0.39	18	16	0.81
21	14	9	0.34	20	6	0.34	75	347	194
22	14	11	0.42	19	6	0.31	37	110	12
23	18	30	2.1	18	7	0.34	30	45	3.7
24	15	14	0.62	21	28	1.7	24	9	0.60
25	14	9	0.34	17	10	0.45	21	5	0.31
26	13	9	0.31	17	7	0.30	19	6	0.29
27	21	44	4.0	17	5	0.21	17	5	0.26
28	27	82	12	16	7	0.31	17	5	0.22
29	34	113	20	17	10	0.44	16	4	0.18
30	22	33	2.2	16	12	0.52	15	4	0.15
31	16	9	0.39	---	---	---	15	4	0.14
TOTAL	578	---	75.53	912	---	907.76	704	---	506.08

RIO GRANDE DE ARECIBO BASIN

50025850 RIO JAUCA AT PASO PALMA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	14	4	0.17	8.6	4	0.09	5.8	6	0.09
2	14	4	0.14	8.6	4	0.09	5.7	6	0.09
3	14	3	0.12	8.9	4	0.10	5.6	7	0.10
4	13	4	0.14	8.8	4	0.09	5.4	7	0.11
5	15	5	0.21	8.0	3	0.07	5.3	8	0.11
6	17	6	0.29	7.6	3	0.06	5.2	7	0.10
7	14	8	0.30	7.4	2	0.04	5.2	6	0.08
8	13	9	0.31	7.2	2	0.04	5.4	4	0.06
9	13	7	0.24	7.1	2	0.05	5.5	3	0.05
10	12	5	0.16	7.1	3	0.05	5.4	2	0.03
11	12	3	0.08	6.9	3	0.05	13	48	3.6
12	12	2	0.07	6.7	3	0.05	11	21	0.81
13	11	3	0.08	6.7	2	0.04	6.6	4	0.07
14	11	3	0.09	6.6	2	0.04	5.8	4	0.06
15	11	4	0.10	6.5	2	0.03	5.6	4	0.07
16	11	3	0.09	6.4	2	0.03	6.9	7	0.15
17	11	3	0.07	6.3	2	0.03	9.5	11	0.30
18	10	3	0.09	7.2	2	0.04	6.6	6	0.10
19	10	4	0.11	15	37	2.0	6.4	4	0.07
20	10	6	0.15	9.5	11	0.29	5.7	2	0.04
21	9.8	8	0.20	6.8	7	0.13	5.4	3	0.04
22	9.8	10	0.25	6.2	6	0.10	5.3	3	0.05
23	9.6	10	0.26	6.0	5	0.09	5.1	6	0.08
24	9.8	10	0.27	5.9	5	0.08	5.1	8	0.12
25	9.4	10	0.25	5.8	4	0.07	4.9	8	0.10
26	9.2	8	0.19	6.4	4	0.07	4.8	7	0.09
27	9.0	5	0.12	6.5	5	0.08	4.8	6	0.08
28	9.1	3	0.06	5.9	5	0.08	5.1	6	0.08
29	9.3	3	0.07	---	---	---	21	76	13
30	9.3	3	0.08	---	---	---	15	30	1.7
31	9.0	4	0.09	---	---	---	12	19	0.66
TOTAL	351.3	---	4.85	206.6	---	3.98	220.1	---	22.09

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	10	14	0.39	28	79	6.0	8.9	5	0.12
2	8.6	10	0.22	29	85	7.2	8.4	5	0.11
3	8.7	5	0.12	25	53	3.6	10	11	0.38
4	6.9	4	0.07	24	41	2.6	19	48	3.4
5	25	106	20	21	38	2.2	21	44	3.1
6	43	171	28	19	35	1.8	14	17	0.70
7	25	57	4.4	19	33	1.7	12	5	0.16
8	18	25	1.2	17	30	1.4	10	2	0.05
9	15	14	0.57	16	27	1.2	9.9	1	0.03
10	12	9	0.32	16	24	1.0	9.0	2	0.05
11	11	6	0.20	15	21	0.86	8.6	3	0.08
12	10	4	0.12	14	19	0.69	8.8	5	0.11
13	9.2	4	0.09	13	16	0.57	8.8	5	0.11
14	8.6	3	0.08	13	13	0.45	8.4	4	0.10
15	8.6	3	0.08	12	10	0.34	7.8	4	0.09
16	14	255	13	13	13	0.51	7.7	4	0.08
17	13	43	1.9	12	18	0.61	8.0	4	0.08
18	14	19	0.89	11	16	0.49	8.3	3	0.07
19	29	143	21	11	15	0.45	7.9	3	0.07
20	61	294	67	11	14	0.41	7.6	4	0.08
21	59	276	59	10	14	0.38	7.2	5	0.10
22	29	69	5.6	9.8	13	0.34	6.9	7	0.12
23	43	206	38	9.7	12	0.32	6.7	6	0.10
24	62	525	158	9.4	11	0.29	6.7	4	0.07
25	83	513	216	9.0	11	0.26	6.5	2	0.04
26	76	407	146	8.8	10	0.23	7.2	3	0.05
27	80	260	74	8.8	9	0.21	7.2	4	0.07
28	62	279	54	8.8	8	0.20	6.8	5	0.09
29	70	348	128	8.7	7	0.18	6.2	5	0.08
30	48	209	33	9.0	7	0.16	6.0	4	0.07
31	---	---	---	9.0	6	0.14	---	---	---
TOTAL	962.6	---	1071.25	440.0	---	36.79	271.5	---	9.76

RIO GRANDE DE ARECIBO BASIN

50025850 RIO JAUCA AT PASO PALMA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	5.9	2	0.03	6.2	3	0.06	11	59	1.7
2	6.0	2	0.03	6.5	2	0.04	22	144	24
3	5.9	2	0.04	8.7	9	0.30	20	94	5.4
4	5.9	3	0.05	8.1	9	0.21	16	32	1.5
5	5.8	4	0.06	6.3	4	0.07	12	14	0.46
6	11	26	1.9	6.5	3	0.05	8.8	11	0.26
7	12	23	0.97	5.9	3	0.05	7.9	10	0.22
8	7.3	3	0.06	8.0	5	0.11	8.1	10	0.22
9	6.8	3	0.05	6.8	8	0.14	7.3	10	0.19
10	6.6	3	0.05	8.8	12	0.28	7.6	9	0.19
11	6.3	3	0.05	8.9	15	0.36	7.8	9	0.19
12	6.1	3	0.05	9.9	12	0.32	8.6	9	0.21
13	6.1	4	0.07	8.8	13	0.36	7.2	9	0.18
14	6.1	6	0.11	9.3	6	0.15	6.6	10	0.17
15	7.4	8	0.17	7.0	5	0.09	9.9	15	0.53
16	5.8	10	0.16	6.8	4	0.07	18	33	1.9
17	5.8	9	0.15	6.6	3	0.06	9.0	10	0.25
18	5.8	7	0.12	9.3	10	0.37	15	28	2.4
19	5.7	5	0.08	7.8	14	0.29	11	18	0.51
20	5.1	4	0.06	6.2	12	0.21	8.1	17	0.38
21	5.3	3	0.05	5.8	12	0.19	7.4	17	0.34
22	5.9	2	0.04	7.1	12	0.23	e6.9	e16	e0.31
23	7.4	1	0.03	6.6	12	0.21	e6.5	e16	e0.28
24	5.8	1	0.02	8.8	20	1.0	e6.7	e15	e0.27
25	5.4	2	0.03	11	17	0.62	8.7	6	0.14
26	5.3	3	0.04	6.7	7	0.12	7.4	4	0.07
27	e5.2	e3	e0.04	5.9	6	0.10	6.9	3	0.06
28	9.5	14	0.51	24	169	43	6.5	3	0.06
29	8.5	9	0.23	12	132	4.2	6.5	5	0.08
30	5.7	5	0.08	14	113	5.2	6.2	5	0.08
31	e5.4	e3	e0.05	16	80	4.0	---	---	---
TOTAL	202.8	---	5.38	270.3	---	62.46	291.6	---	42.55
YEAR	5410.8		2748.48						

e Estimated

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

Date	Time	Instan-taneous dis-charge, cfs (00061)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment load, tons/d (80155)	Suspnd. sedi-ment, sieve diametr percent <.062mm (70331)
DEC					
21...	1900	184	1160	578	98
APR					
25...	1603	383	1780	1850	94
27...	1959	183	467	231	96

RIO GRANDE DE ARECIBO BASIN

50026025 RIO CAONILLAS AT PASO PALMA, PR

LOCATION.--Lat 18°13'53", long 66°38'14", Hydrologic Unit 21010001, 3.5 mi (5.6 km) south of Lago Caonillas Dam, 4.8 mi (7.72 km) southeast of Utuado Plaza and 2.78 mi (4.47 km) east of Lago Viví Dam.

DRAINAGE AREA.--37.9 mi^2 (98.2 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1995 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 984 ft (300 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67	57	69	58	33	24	101	225	55	33	71	70
2	63	199	94	57	32	24	95	252	47	32	60	161
3	63	170	183	56	31	23	85	192	123	31	86	123
4	59	82	124	54	33	22	65	154	98	31	53	167
5	58	83	89	72	e32	21	119	131	308	30	45	e101
6	56	139	78	88	e31	21	217	118	161	37	42	e66
7	52	102	72	68	e29	21	150	111	114	52	31	e57
8	51	1280	68	59	e28	21	158	103	82	33	34	e52
9	55	436	64	56	e28	22	168	93	71	58	31	e46
10	104	233	62	53	e28	46	126	89	63	50	53	e53
11	103	173	99	51	e26	178	111	84	59	33	63	e45
12	74	146	85	50	e25	97	96	79	57	31	79	e39
13	66	167	68	48	e25	42	85	75	54	30	47	e37
14	59	142	64	47	25	33	78	72	51	30	47	e35
15	62	127	60	46	24	30	76	70	48	35	35	e39
16	58	114	69	45	24	59	104	73	46	29	37	e80
17	58	103	104	44	23	81	96	71	49	29	32	e46
18	63	97	81	43	31	40	124	64	49	27	33	e68
19	56	92	95	42	68	41	218	61	48	26	31	e65
20	50	88	68	41	49	32	334	59	45	25	28	e44
21	47	85	210	40	31	29	357	56	42	25	26	e36
22	47	81	149	41	27	27	197	54	40	28	100	e34
23	55	79	118	40	25	26	406	52	38	31	66	e35
24	48	91	112	42	25	24	352	51	38	26	43	e39
25	44	78	93	39	24	23	523	49	37	24	52	e49
26	44	75	83	37	26	23	492	47	43	23	34	e40
27	70	75	76	35	27	23	727	48	44	23	30	e35
28	96	76	70	35	24	29	434	48	39	39	56	e33
29	111	78	66	36	---	229	599	46	35	38	54	e31
30	78	74	63	35	---	162	362	59	34	26	53	e29
31	58	---	61	34	---	120	---	64	---	36	73	---
TOTAL	1975	4822	2797	1492	834	1593	7055	2750	2018	1001	1525	1755
MEAN	63.7	161	90.2	48.1	29.8	51.4	235	88.7	67.3	32.3	49.2	58.5
MAX	111	1280	210	88	68	229	727	252	308	58	100	167
MIN	44	57	60	34	23	21	65	46	34	23	26	29
AC-FT	3920	9560	5550	2960	1650	3160	13990	5450	4000	1990	3020	3480
CFSM	1.68	4.24	2.38	1.27	0.79	1.35	6.20	2.34	1.77	0.85	1.30	1.54
IN.	1.94	4.73	2.74	1.46	0.82	1.56	6.92	2.70	1.98	0.98	1.50	1.72

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2002, BY WATER YEAR (WY)

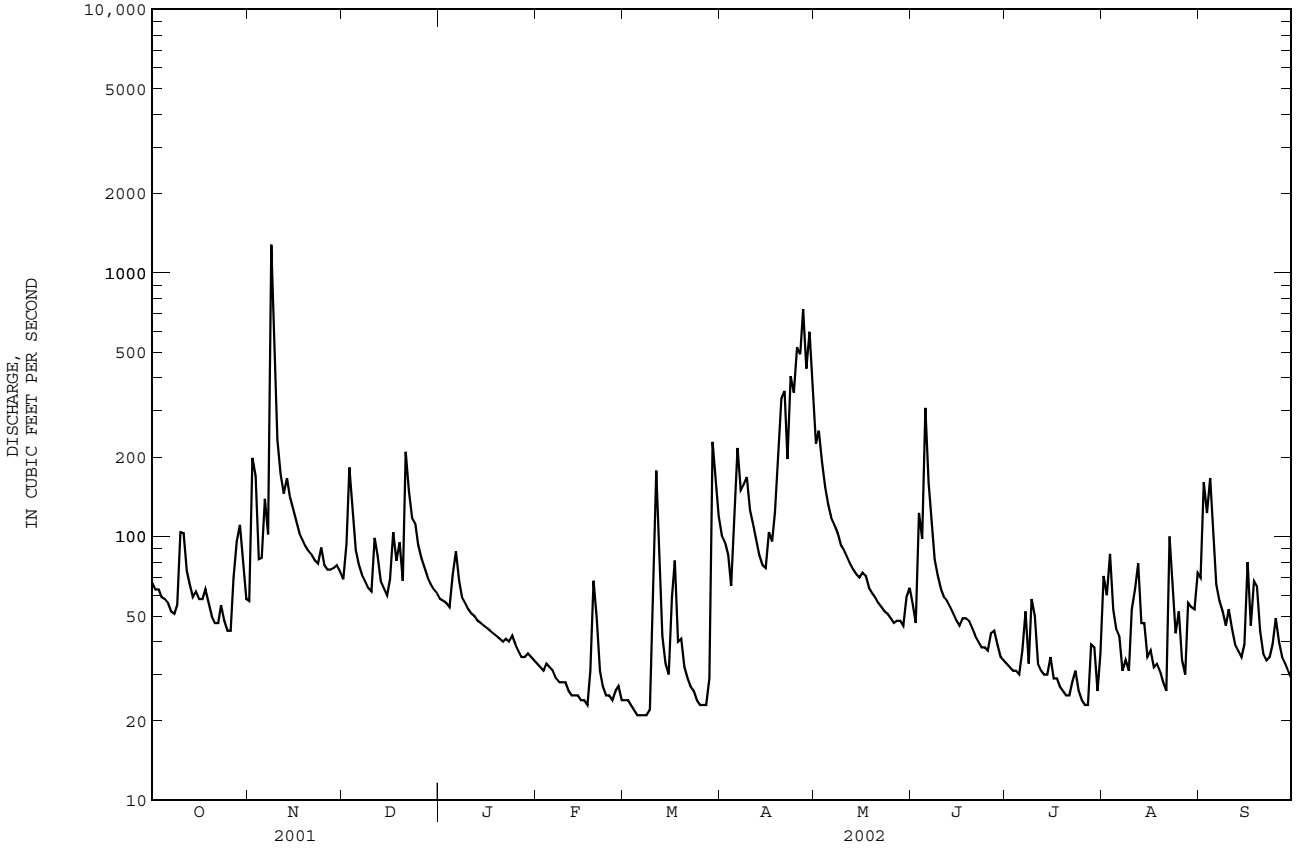
MEAN	156	141	77.0	56.8	48.3	38.6	77.1	87.5	69.6	52.6	85.4	273
MAX	248	292	143	89.8	86.0	51.4	235	130	161	117	156	815
(WY)	1999	2000	2000	1997	1996	2002	2002	1998	1999	1996	1998	1998
MIN	63.7	44.2	21.0	19.6	24.0	25.7	17.0	29.1	16.1	15.5	47.9	33.2
(WY)	2002	1998	1998	1998	2001	1997	1997	1997	1997	1997	1996	1997

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1996 - 2002	
ANNUAL TOTAL	25782		29617			
ANNUAL MEAN	70.6		81.1		96.8	
HIGHEST ANNUAL MEAN					137	1998
LOWEST ANNUAL MEAN					49.9	1997
HIGHEST DAILY MEAN	1280	Nov 8	1280	Nov 8	13000	Sep 22 1998
LOWEST DAILY MEAN	15	Apr 19	21	Mar 5	10	Jul 4 1997
ANNUAL SEVEN-DAY MINIMUM	16	Mar 12	22	Mar 3	11	Jul 1 1997
MAXIMUM PEAK FLOW			5020	Nov 8	36000	Sep 22 1998
MAXIMUM PEAK STAGE			14.47	Nov 8	31.15	Sep 22 1998
INSTANTANEOUS LOW FLOW			19	Mar 7	9.5	Jul 6 1997
ANNUAL RUNOFF (AC-FT)	51140		58750		70140	
ANNUAL RUNOFF (CFSM)	1.86		2.14		2.55	
ANNUAL RUNOFF (INCHES)	25.28		29.04		34.67	
10 PERCENT EXCEEDS	134		149		191	
50 PERCENT EXCEEDS	50		55		52	
90 PERCENT EXCEEDS	20		27		22	

e Estimated

RIO GRANDE DE ARECIBO BASIN

50026025 RIO CAONILLAS AT PASO PALMA, PR--Continued



RIO GRANDE DE ARECIBO BASIN

50026025 RIO CAONILLAS AT PASO PALMA, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORDS.--October 1995 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 1995 to current year.

INSTRUMENTATION.--USDH-48 sediment sampler and automatic sediment sampler since 1996.

REMARKS.--Sediment samples were collected by a local observer on a weekly basis. During high flow events sediments samples were collected with automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 24,800 mg/L September 22, 1998; Minimum daily mean, 1 mg/L several years.

SEDIMENT LOADS: Maximum daily mean, e952,000 tons (e864,000 tonnes) September 22, 1998; Minimum daily mean, 0.04 ton (0.03 tonne) December 29-30, 1998.

EXTREMES FOR CURRENT YEAR 2001.--
SEDIMENT CONCENTRATION: Maximum daily mean, 2,140 mg/L May 6, 2001; Minimum daily mean, 1 mg/L several days.

SEDIMENT LOADS: Maximum daily mean, 15,100 tons (13,700 tonnes) May 6, 2001; Minimum daily mean, 0.05 ton (0.04 tonne) March 14, 2001.

EXTREMES FOR CURRENT YEAR 2002.--
SEDIMENT CONCENTRATION: Maximum daily mean, 2,470 mg/L April 29, 2002; Minimum daily mean, 1 mg/L June 23, 2002.

SEDIMENT LOADS: Maximum daily mean, 11,700 tons (10,614 tonnes) November 8, 2001; Minimum daily mean, 0.13 ton (0.12 tonne) June 23, 2002.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	242	336	311	253	1400	2740	62	45	7.7
2	211	248	158	266	409	335	53	27	3.9
3	260	473	534	249	243	185	50	11	1.6
4	201	142	84	178	32	16	49	9	1.2
5	161	94	41	148	25	9.8	48	8	1.0
6	175	193	116	129	22	7.8	48	7	0.92
7	238	408	313	117	21	6.6	47	7	0.86
8	259	321	262	108	19	5.6	47	6	0.82
9	191	384	200	101	17	4.6	46	6	0.77
10	164	265	117	93	15	3.7	45	6	0.71
11	274	1310	2710	87	13	2.9	e45	e4	e0.54
12	176	178	84	245	1250	2260	45	4	0.45
13	151	142	58	153	255	128	45	7	0.81
14	133	92	33	108	39	12	44	9	1.1
15	125	55	18	98	32	8.6	49	11	1.4
16	286	1700	3880	90	30	7.3	47	12	1.6
17	208	222	147	81	22	4.8	47	13	1.7
18	161	95	44	76	14	2.9	45	10	1.3
19	145	54	21	72	8	1.5	44	7	0.80
20	259	1450	2750	69	7	1.2	43	4	0.48
21	226	272	203	67	6	1.1	42	4	0.42
22	336	688	1180	67	6	1.2	40	3	0.38
23	365	685	994	64	8	1.4	40	3	0.35
24	282	452	365	65	10	1.8	39	3	0.32
25	268	376	331	59	12	2.0	39	3	0.32
26	209	264	152	56	13	2.0	42	8	0.96
27	192	191	106	55	10	1.6	45	18	2.3
28	186	200	103	54	7	1.1	39	15	1.6
29	172	162	94	53	5	0.72	38	12	1.3
30	176	219	113	61	21	4.1	38	10	1.0
31	142	48	18	---	---	---	38	7	0.71
TOTAL	6574	---	15540	3322	---	5760.32	1389	---	39.32

RIO GRANDE DE ARECIBO BASIN

50026025 RIO CAONILLAS AT PASO PALMA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	37	6	0.64	30	7	0.59	23	1	0.06
2	36	7	0.66	30	10	0.79	28	1	0.08
3	36	8	0.74	27	12	0.87	23	1	0.06
4	35	10	1.0	29	13	1.0	21	1	0.06
5	35	13	1.3	25	12	0.78	21	2	0.10
6	35	16	1.5	25	9	0.62	e20	e2	e0.13
7	34	18	1.6	25	7	0.48	e18	e3	e0.14
8	34	13	1.2	23	6	0.36	21	3	0.15
9	33	8	0.74	23	4	0.27	17	2	0.12
10	33	4	0.37	22	3	0.19	17	2	0.10
11	33	3	0.30	22	2	0.14	17	2	0.09
12	33	3	0.26	21	3	0.18	16	2	0.07
13	33	2	0.22	21	3	0.19	16	1	0.06
14	33	2	0.18	21	3	0.19	17	1	0.05
15	32	2	0.18	21	4	0.22	16	2	0.09
16	33	2	0.18	21	4	0.24	16	3	0.13
17	36	12	1.1	20	5	0.25	16	4	0.17
18	32	11	0.95	20	6	0.34	16	5	0.22
19	31	8	0.70	20	11	0.61	17	7	0.33
20	31	6	0.48	20	17	0.88	17	10	0.45
21	30	3	0.28	19	20	1.0	17	13	0.60
22	29	3	0.26	24	15	0.97	23	17	1.0
23	32	4	0.32	29	11	0.78	53	36	8.7
24	31	4	0.33	32	6	0.52	188	1070	1830
25	29	4	0.28	31	2	0.18	65	166	41
26	28	3	0.24	26	2	0.12	31	33	2.8
27	32	9	0.82	23	1	0.08	27	14	1.0
28	38	7	0.76	22	1	0.06	24	13	0.85
29	46	29	4.5	---	---	---	22	15	0.91
30	57	42	6.9	---	---	---	20	14	0.76
31	33	11	0.99	---	---	---	19	12	0.62
TOTAL	1060	---	29.98	672	---	12.90	862	---	1890.90

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	18	11	0.54	23	18	1.2	30	11	0.92
2	18	10	0.47	20	13	0.68	29	9	0.71
3	20	8	0.44	18	12	0.58	128	333	246
4	21	7	0.40	17	12	0.56	90	66	21
5	38	14	2.0	16	12	0.52	63	44	8.8
6	43	19	2.3	527	2140	15100	40	14	1.5
7	31	13	1.1	449	975	2460	33	12	1.1
8	25	11	0.73	162	265	163	30	11	0.93
9	24	10	0.64	134	233	98	28	11	0.82
10	21	9	0.50	199	503	536	27	10	0.73
11	22	8	0.50	160	277	145	26	10	0.69
12	20	10	0.54	91	85	22	25	9	0.64
13	19	12	0.59	67	21	3.9	24	9	0.59
14	18	14	0.67	57	13	2.0	26	9	0.65
15	18	14	0.68	50	9	1.2	26	10	0.66
16	17	12	0.55	46	11	1.4	26	10	0.68
17	16	9	0.40	42	11	1.2	31	15	1.7
18	16	7	0.30	45	18	2.6	52	31	5.5
19	15	7	0.28	58	33	5.5	33	27	2.4
20	15	6	0.26	39	12	1.3	25	19	1.3
21	19	15	0.86	36	9	0.86	23	17	1.0
22	25	21	1.5	35	8	0.75	47	50	11
23	31	24	2.1	34	7	0.64	61	64	12
24	28	28	2.1	32	7	0.60	55	45	7.8
25	24	24	1.5	31	7	0.59	42	27	3.3
26	69	196	161	30	7	0.57	44	34	4.1
27	e119	e377	e201	51	58	15	29	23	1.8
28	e29	e75	e6.5	50	27	4.2	81	104	40
29	29	38	2.8	36	17	1.6	60	34	6.0
30	28	26	2.0	32	15	1.3	127	211	152
31	---	---	---	32	14	1.2	---	---	---
TOTAL	836	---	395.25	2619	---	18573.95	1361	---	536.32

RIO GRANDE DE ARECIBO BASIN

50026025 RIO CAONILLAS AT PASO PALMA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	74	57	13	62	44	11	148	202	145
2	45	26	3.3	54	21	3.5	110	100	30
3	37	14	1.5	137	293	245	160	319	242
4	34	5	0.50	89	27	8.6	119	36	14
5	33	5	0.41	56	10	1.5	86	1	0.35
6	29	4	0.34	52	6	0.86	113	81	41
7	27	4	0.30	50	5	0.67	115	102	39
8	25	4	0.26	45	3	0.43	184	575	619
9	24	3	0.23	42	3	0.34	191	264	166
10	54	133	42	40	3	0.33	135	170	66
11	55	99	14	53	28	8.2	100	53	14
12	89	159	110	45	10	1.4	119	161	90
13	104	203	98	37	3	0.30	91	52	13
14	344	1250	3230	73	90	41	78	29	6.1
15	207	321	266	65	100	22	76	21	4.2
16	85	23	5.4	41	14	1.5	74	14	2.8
17	62	16	2.7	42	12	1.4	132	291	233
18	62	9	1.5	45	11	1.3	138	358	149
19	57	7	1.1	72	42	13	95	48	13
20	46	5	0.66	55	23	3.7	260	1610	2720
21	43	3	0.40	44	12	1.4	301	1530	2320
22	89	50	25	56	17	3.3	199	254	150
23	76	54	12	426	917	1430	319	501	905
24	69	53	10	142	104	43	209	257	170
25	51	10	1.4	101	16	4.6	132	54	20
26	69	56	19	136	97	49	115	7	2.2
27	72	38	9.2	89	29	7.0	104	25	8.7
28	48	7	0.94	77	16	3.3	94	51	14
29	48	14	2.0	72	11	2.1	80	8	1.8
30	60	26	4.4	73	11	2.1	72	6	1.1
31	44	6	0.70	96	54	24	---	---	---
TOTAL	2162	---	3876.24	2467	---	1935.83	4149	---	8200.25
YEAR	27473		56791.26						

e Estimated

RIO GRANDE DE ARECIBO BASIN

50026025 RIO CAONILLAS AT PASO PALMA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	67	5	0.87	57	13	2.1	69	5	1.0
2	63	4	0.74	199	529	1130	94	49	17
3	63	4	0.70	170	239	158	183	272	232
4	59	5	0.76	82	34	7.7	124	110	42
5	58	6	0.87	83	17	3.7	89	18	4.4
6	56	6	0.95	139	8	2.9	78	10	2.1
7	52	7	0.94	102	7	2.0	72	9	1.7
8	51	6	0.81	1280	1690	11700	68	8	1.5
9	55	5	0.74	436	149	252	64	7	1.2
10	104	75	33	233	29	19	62	7	1.2
11	103	60	17	173	29	13	99	80	41
12	74	37	7.4	146	26	10	85	71	19
13	66	29	5.1	167	23	10	68	5	0.92
14	59	25	4.0	142	20	7.5	64	5	0.87
15	62	22	3.7	127	13	4.3	60	5	0.80
16	58	17	2.7	114	6	1.8	69	21	5.3
17	58	9	1.3	103	4	1.2	104	67	27
18	63	11	1.9	97	6	1.5	81	56	12
19	56	14	2.0	92	6	1.5	95	58	16
20	50	13	1.7	88	6	1.5	68	27	5.1
21	47	11	1.4	85	5	1.2	210	560	933
22	47	9	1.1	81	5	1.1	149	297	136
23	55	14	2.4	79	5	1.1	118	76	24
24	48	16	2.1	91	5	1.2	112	62	19
25	44	12	1.4	78	5	1.1	93	48	12
26	44	8	0.98	75	5	1.0	83	35	7.7
27	70	39	13	75	5	1.0	76	24	4.8
28	96	97	33	76	6	1.3	70	22	4.2
29	111	120	47	78	6	1.3	66	21	3.8
30	78	37	9.4	74	6	1.2	63	20	3.5
31	58	9	1.4	---	---	---	61	19	3.2
TOTAL	1975	---	200.36	4822	---	13341.2	2797	---	1583.29

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	58	19	2.9	33	5	0.43	24	3	0.19
2	57	18	2.7	32	4	0.38	24	3	0.19
3	56	17	2.6	31	4	0.33	23	3	0.19
4	54	16	2.4	33	4	0.32	22	3	0.21
5	72	15	3.0	e32	e4	e0.38	21	4	0.21
6	88	14	3.4	e31	e4	e0.33	21	4	0.22
7	68	14	2.5	e29	e4	e0.33	21	4	0.21
8	59	13	2.0	e28	e40	e0.33	21	3	0.20
9	56	12	1.8	e28	e4	e0.33	22	3	0.20
10	53	11	1.6	e28	e4	e0.33	46	28	7.7
11	51	10	1.4	e26	e4	e0.32	178	442	655
12	50	9	1.3	e25	e5	e0.14	97	145	54
13	48	9	1.1	e25	e5	e0.23	42	36	4.1
14	47	8	0.98	25	5	0.34	33	28	2.5
15	46	7	0.85	24	5	0.32	30	19	1.6
16	45	6	0.68	24	5	0.32	59	41	16
17	44	6	0.65	23	5	0.31	81	70	20
18	43	6	0.70	31	5	0.42	40	16	1.8
19	42	7	0.74	68	40	8.7	41	15	1.6
20	41	7	0.76	49	24	3.2	32	14	1.2
21	40	7	0.72	31	13	1.1	29	13	1.0
22	41	6	0.70	27	11	0.79	27	13	0.93
23	40	6	0.67	25	9	0.59	26	12	0.82
24	42	6	0.67	25	8	0.50	24	11	0.73
25	39	6	0.59	24	9	0.60	23	10	0.65
26	37	5	0.52	26	11	0.80	23	9	0.59
27	35	5	0.48	27	7	0.53	23	9	0.53
28	35	5	0.52	24	3	0.19	29	8	0.62
29	36	6	0.56	---	---	---	229	1100	3390
30	35	6	0.55	---	---	---	162	385	217
31	34	5	0.49	---	---	---	120	97	33
TOTAL	1492	---	40.53	834	---	22.89	1593	---	4413.19

RIO GRANDE DE ARECIBO BASIN

50026025 RIO CAONILLAS AT PASO PALMA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	101	72	21	225	49	30	55	8	1.2
2	95	63	17	252	303	297	47	9	1.1
3	85	53	13	192	201	106	123	189	172
4	65	33	5.8	154	105	44	98	50	13
5	119	128	85	131	42	15	308	710	1030
6	217	351	258	118	33	10	161	170	87
7	150	140	59	111	28	8.5	114	93	30
8	158	149	65	103	25	6.9	82	36	8.0
9	168	176	81	93	22	5.5	71	9	1.8
10	126	107	37	89	20	4.7	63	7	1.3
11	111	85	26	84	17	3.9	59	8	1.2
12	96	63	16	79	15	3.2	57	8	1.2
13	85	51	12	75	14	2.9	54	6	0.90
14	78	49	10	72	14	2.7	51	5	0.65
15	76	46	9.5	70	13	2.5	48	3	0.42
16	104	78	25	73	13	2.6	46	2	0.30
17	96	70	19	71	13	2.5	49	4	0.53
18	124	120	69	64	13	2.3	49	6	0.73
19	218	344	256	61	13	2.1	48	7	0.85
20	334	638	751	59	12	1.9	45	5	0.65
21	357	656	768	56	12	1.8	42	4	0.43
22	197	90	52	54	11	1.6	40	2	0.25
23	406	1450	4830	52	10	1.5	38	1	0.13
24	352	989	1510	51	10	1.4	38	2	0.18
25	523	2180	7260	49	9	1.2	37	2	0.24
26	492	1400	3110	47	9	1.2	43	2	0.21
27	727	2270	7370	48	10	1.3	44	2	0.26
28	434	521	860	48	11	1.5	39	3	0.33
29	599	2470	10300	46	8	0.99	35	4	0.40
30	362	258	333	59	7	1.1	34	5	0.44
31	---	---	---	64	8	1.3	---	---	---
TOTAL	7055	---	38228.3	2750	---	569.09	2018	---	1355.70

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	33	5	0.41	71	149	32	70	40	9.0
2	32	4	0.37	60	44	7.3	161	322	311
3	31	4	0.33	86	111	64	123	112	42
4	31	4	0.31	53	83	12	167	385	445
5	30	3	0.27	45	65	8.0	e101	e75	e22.0
6	37	9	1.4	42	50	5.8	e66	e40	e7.2
7	52	22	3.6	31	37	3.1	e57	e24	e3.6
8	33	12	1.1	34	34	3.1	e52	e12	e1.7
9	58	56	18	31	33	2.7	e46	e16	e2.0
10	50	36	5.3	53	44	7.8	e53	e22	e3.1
11	33	10	0.93	63	55	12	e45	e24	e3.0
12	31	8	0.67	79	113	33	e39	e19	e2.0
13	30	6	0.51	47	43	5.6	e37	e13	e1.3
14	30	5	0.40	47	40	5.0	e35	e8	e0.73
15	35	4	0.40	35	29	2.8	e39	e4	e0.37
16	29	4	0.28	37	21	2.0	e80	e50	e11.0
17	29	3	0.23	32	12	1.1	e46	e18	e2.3
18	27	3	0.20	33	5	0.42	e68	e34	e10.0
19	26	2	0.18	31	5	0.40	e65	e37	e7.0
20	25	2	0.15	28	5	0.40	e44	e13	e1.5
21	25	2	0.14	26	6	0.41	e36	e7	e0.66
22	28	2	0.18	100	242	242	e34	e4	e0.41
23	31	3	0.23	66	55	10	e35	e6	e0.53
24	26	3	0.21	43	41	4.8	e39	e7	e0.74
25	24	3	0.21	52	34	4.8	e49	e10	e1.3
26	23	4	0.22	34	41	3.8	e40	e18	e1.9
27	23	4	0.24	30	48	3.9	e35	e26	e2.5
28	39	4	0.42	56	80	19	e33	e35	e3.1
29	38	4	0.41	54	35	5.2	e31	e50	e4.2
30	26	4	0.28	53	39	6.4	e29	e48	e3.8
31	36	34	6.9	73	42	9.2	---	---	---
TOTAL	1001	---	44.48	1525	---	518.03	1755	---	904.94
YEAR	29617		61221.99						

e Estimated

RIO GRANDE DE ARECIBO BASIN

50026025 RIO CAONILLAS AT PASO PALMA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

Date	Time	Instantaneous discharge, cfs (00061)	Suspended sediment concentration mg/L (80154)	Suspended sediment load, tons/d (80155)	Suspnd. sediment, sieve diametr percent <.062mm (70331)
NOV					
08...	1704	1220	754	2480	84
MAR					
29...	1910	1400	6620	25000	76
APR					
23...	1650	1900	8070	41400	76
27...	2034	2770	8300	62000	75

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

PARTICLE SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

Date	Time	Instantaneous discharge, cfs (00061)	Suspended sediment concentration mg/L (80154)	Suspended sediment load, tons/d (80155)	Suspnd. sediment, falldia nat wat percent <.002mm (70326)	Suspnd. sediment, falldia nat wat percent <.004mm (70327)	Suspnd. sediment, falldia nat wat percent <.008mm (70328)	Suspnd. sediment, falldia nat wat percent <.016mm (70329)	Suspnd. sediment, falldia nat wat percent <.031mm (70330)	Suspnd. sediment, sieve diametr percent <.062mm (70331)	Suspnd. sediment, sieve diametr percent <.125mm (70332)	Suspnd. sediment, sieve diametr percent <.25mm (70333)	Suspnd. sediment, sieve diametr percent <.5 mm (70334)
NOV													
08...	0819	4300	12200	142000	17	22	28	37	47	59	84	98	100

Date	Suspnd. sediment, sieve diametr percent <1 mm (70335)
NOV	
08...	100

RIO GRANDE DE ARECIBO BASIN

50026050 RIO CAONILLAS ABOVE LAGO CAONILLAS NEAR JAYUYA, PR

WATER-QUALITY RECORDS

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

DRAINAGE AREA.--40.4 mi^2 (104.6 km^2).

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
DEC													
17...	0945	81	198	7.1	21.9	27	8.4	100	<10	4600	2100	71	19.0
MAR													
12...	1120	110	187	7.0	21.7	29	8.3	99	<10	4900	5900	--	--
SEP													
17...	0845	48	191	7.1	23.8	24	8.3	101	10	E1730	490	73	19.4

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
DEC													
17...	5.76	9.47	.5	1.73	63	<1.0	11.5	9.66	E.1	22.4	117	25.6	30
MAR													
12...	--	--	--	--	54	--	--	--	--	--	--	--	32
SEP													
17...	5.99	10.2	.5	1.65	80	<.1	11.8	9.71	E.07	23.1	130	16.6	<10

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
DEC													
17...	<.01	.880	.04	.30	.06	<2	23.3	20	<.1	<.8	M	560	<1
MAR													
12...	.01	1.30	.02	.20	.10	--	--	--	--	--	--	--	--
SEP													
17...	.01	.590	.02	<.20	.06	<2	24.3	<20	<.1	<.8	M	400	<1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
DEC								
17...	46.8	<.01	<2	<.3	<20	<.01	--	<.05
MAR								
12...	--	--	--	--	--	--	--	--
SEP								
17...	22.6	<.01	<2	<.3	E20	<.01	<16	<.05

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

RIO GRANDE DE ARECIBO BASIN

50026200 RIO CAONILLAS BLW LAGO CAONILLAS TUNNEL, PR

LOCATION.--Lat 18°17'57", long 66°38'36", Hydrologic Unit 21010001, on left bank at Río Caonillas Tunnel 1.6 mi (2.6 km) downstream of Lago Caonillas Dam, 3.1 mi (5.0 km) southeast from Central Hidroelétrica of Lago Dos Bocas, 2.6 mi (4.2 km) west from Escuela Segunda Unidad de Mameyes.

DRAINAGE AREA.--Indeterminate.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 2000 to current year.

GAGE.--Water-stage recorder. Elevation of gage 295 ft (90 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	263	55	169	49	57	53	98	538	84	145	62	117
2	169	332	263	57	56	53	103	333	84	145	66	68
3	52	175	304	52	56	53	100	362	84	130	64	131
4	98	78	274	67	55	53	99	480	84	133	63	66
5	37	43	282	60	55	53	101	477	84	130	63	65
6	115	23	270	61	77	51	105	476	84	137	61	61
7	68	7.7	316	61	57	49	105	474	85	123	60	57
8	297	256	288	64	49	50	119	440	85	125	60	56
9	263	67	307	57	49	62	106	342	85	126	61	119
10	115	26	323	72	155	72	99	439	85	119	61	116
11	77	15	340	91	58	72	220	258	196	134	65	122
12	36	11	254	108	58	71	234	330	127	128	66	118
13	47	8.8	59	71	58	70	277	353	262	128	188	122
14	50	9.1	59	83	58	70	147	156	229	133	194	95
15	72	7.9	56	115	58	63	148	471	85	147	256	119
16	90	6.4	56	268	58	53	281	477	84	126	251	120
17	85	5.5	132	291	58	53	288	291	137	129	91	83
18	36	5.5	59	128	57	54	91	117	135	152	126	64
19	57	13	196	210	62	54	159	132	164	189	116	61
20	40	85	151	200	67	53	137	197	146	123	122	61
21	40	169	70	205	62	54	106	135	145	123	228	133
22	40	181	65	252	56	70	159	137	129	123	102	64
23	77	179	70	e132	55	74	252	265	120	130	117	63
24	71	198	136	e70	55	74	238	189	141	121	116	67
25	33	125	71	e64	54	85	164	179	140	59	59	126
26	33	213	64	e61	54	88	119	84	143	59	83	134
27	34	205	87	e60	54	83	532	133	143	59	123	200
28	40	183	46	e58	55	83	1140	129	146	59	128	108
29	42	186	46	e57	---	84	791	258	145	60	118	82
30	58	190	46	e57	---	84	970	155	158	59	55	61
31	141	---	49	57	---	84	---	83	---	59	53	---
TOTAL	2676	3058.9	4908	3238	1703	2025	7488	8890	3819	3613	3278	2859
MEAN	86.3	102	158	104	60.8	65.3	250	287	127	117	106	95.3
MAX	297	332	340	291	155	88	1140	538	262	189	256	200
MIN	33	5.5	46	49	49	49	91	83	84	59	53	56
AC-FT	5310	6070	9740	6420	3380	4020	14850	17630	7570	7170	6500	5670
CFSM	1.70	2.01	3.12	2.06	1.20	1.29	4.91	5.65	2.51	2.29	2.08	1.88
IN.	1.96	2.24	3.59	2.37	1.25	1.48	5.48	6.51	2.80	2.65	2.40	2.09

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2002, BY WATER YEAR (WY)

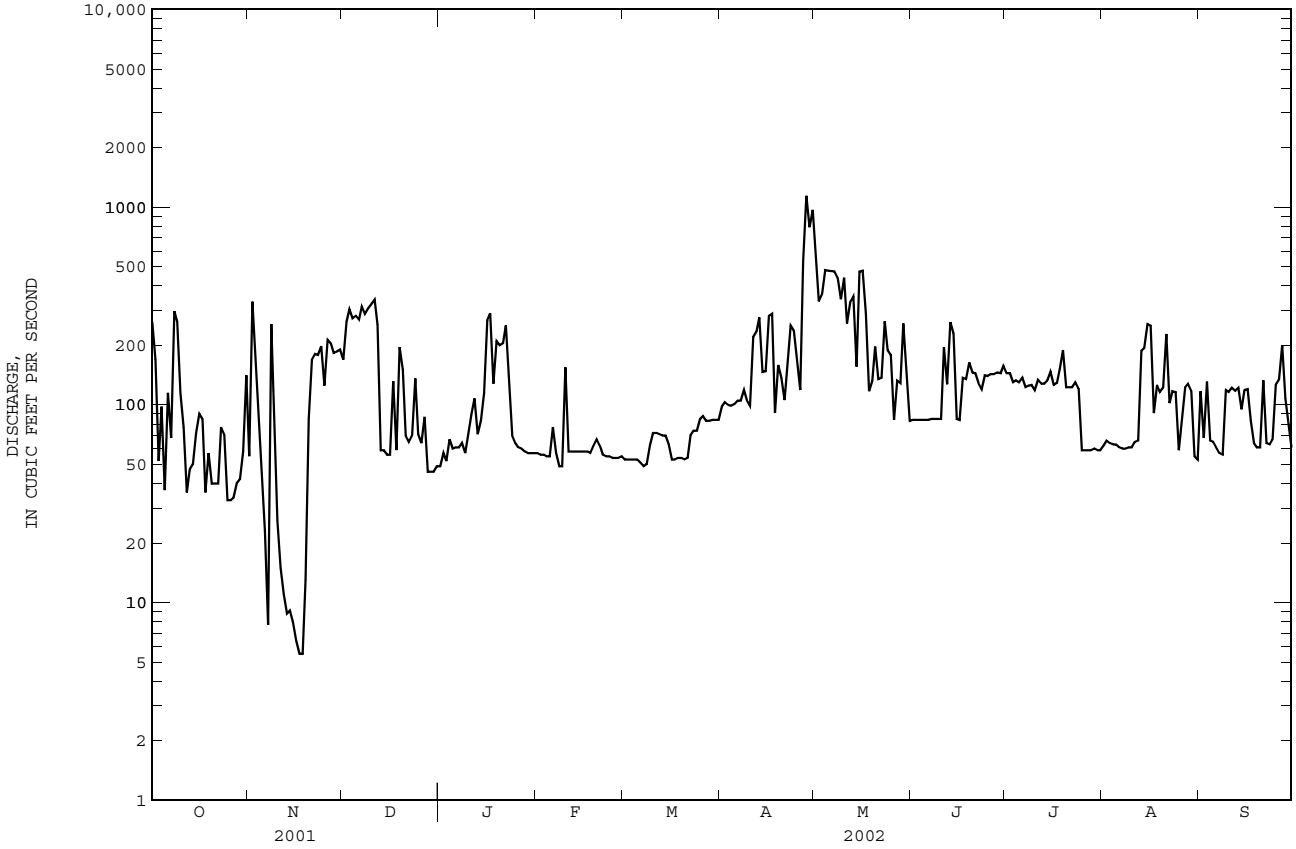
MEAN	86.3	102	158	86.5	53.5	64.1	169	209	137	122	135	119
MAX	86.3	102	158	104	60.8	65.3	250	287	148	127	164	143
(WY)	2002	2002	2002	2002	2002	2002	2002	2002	2001	2001	2001	2001
MIN	86.3	102	158	68.5	46.1	63.0	88.8	132	127	117	106	95.3
(WY)	2002	2002	2002	2001	2001	2001	2001	2001	2002	2002	2002	2002

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 2001 - 2002	
ANNUAL TOTAL	40491.9		47555.9			
ANNUAL MEAN	111		130		130	
HIGHEST ANNUAL MEAN					130	2002
LOWEST ANNUAL MEAN					130	2002
HIGHEST DAILY MEAN	340	Dec 11	1140	Apr 28	1140	Apr 28 2002
LOWEST DAILY MEAN	5.5	Nov 17	5.5	Nov 17	5.5	Nov 17 2001
ANNUAL SEVEN-DAY MINIMUM	7.7	Nov 12	7.7	Nov 12	7.7	Nov 12 2001
MAXIMUM PEAK FLOW			1990	Apr 27	1990	Apr 27 2002
MAXIMUM PEAK STAGE			7.45	Apr 27	7.45	Apr 27 2002
ANNUAL RUNOFF (AC-FT)	80320		94330		94390	
ANNUAL RUNOFF (CFSM)	2.18		2.56		2.56	
ANNUAL RUNOFF (INCHES)	29.65		34.82		34.85	
10 PERCENT EXCEEDS	196		264		264	
50 PERCENT EXCEEDS	104		87		87	
90 PERCENT EXCEEDS	27		52		52	

e Estimated

RIO GRANDE DE ARECIBO BASIN

50026200 RIO CAONILLAS BLW LAGO CAONILLAS TUNNEL, PR--Continued



RIO GRANDE DE ARECIBO BASIN

50026200 RIO CAONILLAS BLW LAGO CAONILLAS TUNNEL, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 2000 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: January 2001 to current year.

INSTRUMENTATION.--USDH-48 and automatic sediment samplers since 2000.

REMARKS.-- Sediment samples were collected by a local observer on a weekly basis. During high flow events sediment samples were collected with automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 268 mg/L November 8, 2001; Minimum daily mean, <1 mg/L several days during Water Year 2001.

SEDIMENT LOADS: Maximum daily mean, 723 tons (656 tonnes) April 28, 2002; Minimum daily mean, 0.02 ton (0.02 tonne) several days during Water Year 2001.

EXTREMES FOR WATER YEAR 2001.--
SEDIMENT CONCENTRATION: Maximum daily mean, e77 mg/L May 10, 2001; Minimum daily mean,<1 mg/L several days.

SEDIMENT LOADS: Maximum daily mean, e60 tons (e54 tonnes) May 10, 2001; Minimum daily mean, 0.02 ton (0.02 tonne) several days.

EXTREMES FOR CURRENT YEAR 2002.--
SEDIMENT CONCENTRATION: Maximum daily mean, 268 mg/L November 8, 2001; Minimum daily mean, 1 mg/L several days.

SEDIMENT LOADS: Maximum daily mean, 723 tons (656 tonnes) April 28, 2002; Minimum daily mean, 0.15 ton (0.14 tonne) several days.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	21	e1	e0.05	71	3	1.0	70	1	0.55
2	21	e1	e0.05	82	3	1.2	29	1	0.11
3	21	e1	e0.05	74	3	1.1	39	3	0.36
4	69	e1	e0.32	80	3	1.3	31	<1	0.02
5	58	e1	e0.32	78	3	1.3	26	1	0.04
6	59	e1	e0.32	64	3	1.0	142	2	1.1
7	21	e1	e0.05	20	2	0.10	32	1	0.09
8	35	e2	e0.17	24	1	0.09	27	1	0.07
9	113	e4	e1.6	23	1	0.07	97	2	0.68
10	94	e3	e1.3	21	1	0.06	27	1	0.07
11	64	e1	e0.32	73	2	0.65	25	1	0.07
12	121	e4	e1.6	64	2	0.46	140	2	1.1
13	164	e3	e1.9	24	1	0.07	29	1	0.08
14	157	e3	e1.9	24	1	0.06	29	1	0.08
15	92	e2	e0.90	53	2	0.73	67	1	0.38
16	66	e1	e0.32	22	1	0.05	31	1	0.06
17	58	e1	e0.32	40	1	0.16	29	1	0.04
18	67	e1	e0.32	67	1	0.18	29	<1	0.02
19	64	1	0.32	66	1	0.30	73	1	0.40
20	81	1	0.35	26	1	0.07	26	1	0.07
21	79	2	0.68	25	<1	0.03	124	1	0.64
22	104	2	0.91	35	4	0.48	e35	e1	e0.07
23	23	2	0.12	24	5	0.31	e35	e2	e0.16
24	112	4	1.6	57	4	0.46	e40	e2	e0.21
25	54	3	0.68	27	1	0.07	28	1	0.08
26	32	3	0.27	28	1	0.07	155	2	0.81
27	28	2	0.15	69	2	0.57	153	1	0.62
28	102	4	1.7	31	1	0.05	64	1	0.45
29	30	2	0.16	---	---	---	114	1	0.57
30	82	3	1.3	---	---	---	142	1	0.56
31	32	2	0.17	---	---	---	e64	<1	e0.02
TOTAL	2124	---	20.22	1292	---	11.99	1952	---	9.58

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

RIO GRANDE DE ARECIBO BASIN

50026200 RIO CAONILLAS BLW LAGO CAONILLAS TUNNEL, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	e64	e1	e0.40	e80	e3	e1.5	169	13	6.4
2	e108	e2	e1.2	e180	e4	e2.1	152	13	5.5
3	159	3	1.9	e170	e5	e2.9	77	13	3.3
4	105	1	0.50	e80	e5	e3.5	136	13	5.0
5	81	1	0.38	e83	e5	e3.5	154	13	5.7
6	71	1	0.40	e54	e1	e0.40	166	11	5.1
7	130	1	0.77	e26	e44	e25	174	10	5.2
8	26	<1	0.02	e82	e53	e22	149	13	5.7
9	68	1	0.40	e157	e67	e45	147	13	5.6
10	e141	e3	e1.5	e254	e77	e60	137	11	4.9
11	e170	e2	e0.83	e277	e73	e56	154	12	5.7
12	106	2	0.69	e29	e9	e1.9	151	12	5.7
13	e30	e1	e0.08	e27	e9	e1.9	107	11	3.8
14	e107	e2	e0.62	e107	e22	e12	157	12	5.8
15	e61	e1	e0.34	85	30	10	152	11	5.6
16	71	1	0.42	74	19	7.0	151	11	5.5
17	e118	e2	e1.1	129	29	14	157	11	5.8
18	e138	e3	e1.5	107	24	11	164	11	5.9
19	e147	e3	e1.7	167	31	19	167	11	6.1
20	e148	e3	e1.3	168	31	19	159	12	5.8
21	e29	e1	e0.08	122	17	7.4	150	11	5.5
22	e81	e2	e0.79	126	16	7.2	149	11	5.5
23	e81	e3	e1.4	172	19	11	147	11	5.3
24	e27	e1	e0.20	167	18	10	149	11	5.5
25	e144	e4	e2.2	172	18	9.8	159	11	5.8
26	e31	e1	e0.24	148	18	8.8	156	11	5.6
27	e30	e2	e0.38	154	18	9.2	141	11	5.2
28	e86	e3	e2.0	176	19	11	143	11	5.4
29	e79	e4	e2.4	159	19	9.7	113	10	3.9
30	e26	e2	e0.29	177	19	11	142	11	5.2
31	---	---	---	178	19	11	---	---	---
TOTAL	2663	---	26.03	4087	---	423.80	4429	---	161.0

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	67	9	2.3	153	13	5.7	160	12	6.3
2	153	11	5.6	157	13	5.9	155	11	6.1
3	190	11	6.3	192	8	4.1	154	11	5.4
4	195	12	6.8	118	8	2.5	96	13	3.8
5	190	11	6.3	66	8	1.4	186	13	7.9
6	225	12	7.4	164	12	6.0	130	13	5.4
7	102	10	3.8	107	10	3.8	150	8	4.6
8	116	11	4.5	159	11	5.9	39	6	0.64
9	133	11	4.8	162	12	6.0	94	7	3.2
10	151	11	5.5	151	13	5.7	231	10	8.7
11	163	12	6.0	139	13	5.3	137	7	3.9
12	158	11	5.8	128	13	4.8	136	8	4.2
13	153	11	5.4	126	13	4.8	268	10	7.7
14	59	9	1.9	111	13	4.4	112	4	1.2
15	64	9	2.2	159	13	6.0	98	4	1.0
16	76	10	2.7	211	14	8.3	59	4	0.56
17	74	12	2.6	230	13	9.1	31	3	0.28
18	132	12	4.4	106	13	4.3	57	3	0.47
19	93	13	3.7	105	13	4.2	59	3	0.48
20	150	13	5.6	182	13	7.7	124	5	3.1
21	86	12	3.3	104	10	3.9	89	3	0.72
22	35	11	1.0	144	10	5.2	146	3	1.2
23	50	14	2.0	322	12	12	246	9	6.9
24	110	16	4.7	133	10	4.9	121	37	15
25	101	13	4.1	185	11	7.2	136	29	15
26	161	13	6.0	185	11	7.3	163	32	21
27	151	13	5.7	211	11	8.3	216	32	26
28	170	13	6.4	251	11	9.3	265	33	32
29	131	12	4.8	196	11	7.5	293	36	37
30	142	13	5.4	219	11	8.5	143	26	15
31	152	13	5.7	199	11	7.1	---	---	---
TOTAL	3933	---	142.7	5075	---	187.1	4294	---	244.75

e Estimated

RIO GRANDE DE ARECIBO BASIN

50026200 RIO CAONILLAS BLW LAGO CAONILLAS TUNNEL, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	263	37	36	55	12	1.8	169	15	8.3
2	169	24	21	332	12	11	263	15	13
3	52	12	1.7	175	12	5.7	304	16	15
4	98	18	9.7	78	12	2.5	274	15	13
5	37	12	1.2	43	12	1.4	282	16	14
6	115	20	14	23	12	0.73	270	15	13
7	68	16	6.2	7.7	12	0.25	316	16	15
8	297	38	45	256	268	264	288	15	14
9	263	37	38	67	71	18	307	16	15
10	115	21	11	26	12	0.83	323	16	15
11	77	20	6.9	15	12	0.48	340	16	16
12	36	16	1.6	11	12	0.35	254	15	12
13	47	16	2.0	8.8	12	0.28	59	12	1.9
14	50	16	2.2	9.1	12	0.29	59	12	1.9
15	72	19	6.7	7.9	12	0.25	56	12	1.8
16	90	21	9.5	6.4	12	0.21	56	12	1.8
17	85	20	8.8	5.5	12	0.18	132	13	5.9
18	36	16	1.5	5.5	12	0.18	59	12	1.9
19	57	17	4.4	13	12	0.41	196	16	9.6
20	40	15	1.6	85	14	4.6	151	13	6.0
21	40	15	1.6	169	19	11	70	12	2.2
22	40	15	1.6	181	20	12	65	11	1.9
23	77	19	7.1	179	20	12	70	10	1.8
24	71	18	6.7	198	20	13	136	12	5.6
25	33	14	1.2	125	17	7.8	71	9	1.7
26	33	14	1.2	213	21	15	64	6	0.97
27	34	14	1.2	205	21	14	87	8	2.7
28	40	13	1.4	183	20	12	46	7	0.86
29	42	13	1.5	186	19	12	46	6	0.69
30	58	16	4.5	190	19	12	46	4	0.46
31	141	24	17	---	---	---	49	3	0.39
TOTAL	2676	---	274.0	3058.9	---	434.24	4908	---	213.37

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	49	3	0.40	57	1	0.15	53	4	0.64
2	57	3	0.46	56	1	0.15	53	6	0.80
3	52	3	0.42	56	1	0.15	53	5	0.72
4	67	3	0.54	55	1	0.15	53	4	0.64
5	60	4	0.65	55	1	0.15	53	4	0.56
6	61	10	1.6	77	1	0.30	51	3	0.46
7	61	8	1.3	57	2	0.34	49	3	0.37
8	64	7	1.2	49	3	0.34	50	2	0.30
9	57	19	2.9	49	3	0.38	62	4	0.68
10	72	20	3.7	155	6	3.6	72	7	1.3
11	91	14	3.5	58	4	0.63	72	10	1.9
12	108	9	2.5	58	4	0.63	71	13	2.4
13	71	4	0.85	58	4	0.65	70	16	3.1
14	83	4	1.0	58	6	0.91	70	22	4.3
15	115	4	1.6	58	8	1.2	63	29	4.8
16	268	6	4.3	58	10	1.6	53	26	3.7
17	291	6	4.7	58	12	1.8	53	18	2.5
18	128	6	2.1	57	13	2.0	54	12	1.8
19	210	6	3.4	62	12	2.0	54	8	1.1
20	200	6	3.2	67	3	0.63	53	2	0.32
21	205	6	3.2	62	2	0.33	54	2	0.25
22	252	e6	e3.2	56	2	0.30	70	1	0.27
23	e132	e9	e2.5	55	2	0.30	74	1	0.24
24	e70	e4	e0.85	55	2	0.30	74	1	0.25
25	e64	e4	e0.85	54	2	0.29	85	2	0.55
26	e61	e4	e0.85	54	2	0.29	88	4	0.84
27	e60	e4	e0.85	54	2	0.29	83	4	0.83
28	e58	e1	e0.15	55	2	0.30	83	6	1.4
29	e57	e1	e0.15	---	---	---	84	9	2.1
30	e57	e1	e0.16	---	---	---	84	12	2.8
31	57	1	0.15	---	---	---	84	23	5.3
TOTAL	3238	---	53.23	1703	---	20.16	2025	---	47.22

RIO GRANDE DE ARECIBO BASIN

50026200 RIO CAONILLAS BLW LAGO CAONILLAS TUNNEL, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	98	22	5.9	538	138	202	84	19	4.4
2	103	15	4.2	333	81	72	84	20	4.5
3	100	14	3.8	362	25	26	84	21	4.7
4	99	30	8.0	480	19	24	84	17	3.9
5	101	48	13	477	27	35	84	12	2.7
6	105	65	18	476	27	35	84	7	1.5
7	105	78	22	474	27	35	85	5	1.1
8	119	66	21	440	25	31	85	5	1.1
9	106	24	7.0	342	19	23	85	5	1.1
10	99	16	4.2	439	26	32	85	5	1.1
11	220	11	6.2	258	15	16	196	9	6.9
12	234	4	2.6	330	34	41	127	7	3.5
13	277	9	8.0	353	46	55	262	11	10
14	147	11	4.4	156	15	15	229	10	8.6
15	148	9	3.6	471	44	56	85	5	1.2
16	281	7	5.4	477	44	57	84	5	1.1
17	288	12	11	291	22	26	137	5	1.8
18	91	13	3.3	117	6	3.5	135	7	3.7
19	159	9	3.5	132	7	5.0	164	8	5.3
20	137	5	1.7	197	12	11	146	7	4.2
21	106	20	5.7	135	8	5.2	145	7	4.1
22	159	21	8.9	137	8	5.2	129	7	3.6
23	252	113	132	265	3	2.1	120	6	3.2
24	238	62	42	189	3	1.5	141	7	4.2
25	164	56	28	179	8	6.1	140	7	4.3
26	119	54	18	84	6	1.4	143	7	4.3
27	532	199	602	133	5	1.9	143	7	4.3
28	1140	230	723	129	5	1.7	146	7	4.2
29	791	260	678	258	4	2.8	145	7	4.4
30	970	251	721	155	12	6.2	158	8	5.1
31	---	---	---	83	19	4.1	---	---	---
TOTAL	7488	---	3115.4	8890	---	838.7	3819	---	114.1

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	145	7	4.3	62	7	1.1	117	22	7.0
2	145	7	4.3	66	7	1.2	68	22	4.0
3	130	7	4.0	64	7	1.2	131	22	7.6
4	133	7	4.1	63	7	1.2	66	21	3.7
5	130	7	4.0	63	7	1.2	65	21	3.6
6	137	7	4.2	61	7	1.2	61	20	3.3
7	123	7	3.6	60	7	1.1	57	20	3.1
8	125	7	4.0	60	7	1.1	56	20	2.9
9	126	7	4.0	61	7	1.1	119	19	6.1
10	119	7	3.6	61	7	1.1	116	19	6.0
11	134	7	4.4	65	7	1.2	122	19	6.3
12	128	7	4.1	66	7	1.2	118	20	6.9
13	128	7	4.0	188	7	3.6	122	49	17
14	133	7	4.0	194	7	3.7	95	30	6.3
15	147	8	5.0	256	12	11	119	17	5.5
16	126	7	4.1	251	12	10	120	17	5.5
17	129	7	4.1	91	7	1.7	83	17	3.8
18	152	8	5.2	126	9	4.2	64	9	1.6
19	189	9	6.8	116	9	4.1	61	8	1.4
20	123	8	4.0	122	9	4.3	61	7	1.2
21	123	8	4.0	228	11	9.5	133	7	3.0
22	123	8	3.9	102	8	3.2	64	7	1.2
23	130	8	4.3	117	9	4.0	63	6	1.1
24	121	8	3.7	116	9	3.9	67	6	1.1
25	59	6	0.97	59	7	1.1	126	7	2.6
26	59	6	0.99	83	11	3.6	134	7	2.7
27	59	6	1.0	123	25	8.3	200	7	4.5
28	59	6	1.0	128	24	8.4	108	6	2.2
29	60	7	1.1	118	24	7.6	82	6	1.6
30	59	7	1.1	55	23	3.5	61	7	1.2
31	59	7	1.1	53	23	3.3	---	---	---
TOTAL	3613	---	108.96	3278	---	112.9	2859	---	124.0
YEAR	47555.9		5456.28						

e Estimated

RIO GRANDE DE ARECIBO BASIN

50026200 RIO CAONILLAS BLW LAGO CAONILLAS TUNNEL, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

Date	Time	Instantaneous discharge, cfs (00061)	Suspended sediment concentration mg/L (80154)	Suspended sediment load, tons/d (80155)	Suspnd. sediment, sieve diametr percent <.063mm (70331)
APR					
27...	2141	1880	661	3360	85
28...	0541	1450	225	881	89

RIO GRANDE DE ARECIBO BASIN

50026400 RIO YUNES AT HWY 140 NEAR FLORIDA, PR

LOCATION.--Lat 18°19'27", long 66°35'13", Hydrologic Unit 21010002, on left bank, 600 ft downstream from bridge on Highway 140, 3.1 mi (4.9 km) southwest from Florida Plaza, 2.4 mi (3.9 km) northwest from Escuela Segunda Unidad de Frontón, 1.9 mi (3.1 km) northeast from Escuela Segunda Unidad de Mameyes.

DRAINAGE AREA.--13.9 mi^2 (36.1 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 2000 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 492 ft (150 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.8	107	23	24	15	16	55	197	25	12	54	22
2	9.6	53	23	23	14	16	28	166	25	12	34	77
3	26	20	30	22	14	16	13	101	28	12	28	62
4	17	16	30	22	15	16	11	74	28	12	171	130
5	15	15	25	37	14	15	85	63	32	12	47	104
6	11	14	23	44	14	14	78	60	25	18	26	50
7	10	32	22	38	15	14	55	51	21	16	20	33
8	22	1660	20	30	13	16	101	46	20	11	18	27
9	28	325	19	27	13	14	60	44	19	47	55	25
10	192	155	19	24	12	26	36	40	19	e27	31	22
11	77	88	19	23	11	52	29	38	18	e18	147	21
12	33	68	25	22	11	40	23	36	18	e30	52	19
13	21	56	26	21	11	19	19	34	19	e15	26	18
14	19	51	30	20	11	16	18	33	18	e14	28	26
15	16	45	25	20	10	14	20	53	16	e13	23	48
16	14	40	70	21	10	14	26	36	16	12	20	39
17	14	37	56	20	10	17	24	31	18	e13	19	25
18	14	35	43	20	9.9	13	92	30	20	e15	18	192
19	12	33	33	19	40	14	52	28	17	e11	18	150
20	12	32	28	19	22	12	88	26	16	11	17	58
21	12	30	33	18	16	11	101	25	16	e11	16	36
22	11	29	35	18	16	11	43	23	15	e16	18	30
23	11	28	128	18	18	10	254	22	14	13	33	27
24	11	31	80	22	18	9.7	258	21	15	11	24	31
25	11	28	45	17	17	9.0	193	20	14	e10	21	30
26	11	26	36	16	20	8.9	134	19	14	e10	17	29
27	11	27	32	16	18	8.9	156	20	16	10	16	27
28	63	28	30	17	17	16	107	19	14	19	15	24
29	28	28	28	17	---	14	267	18	13	e15	21	23
30	16	25	26	16	---	11	151	17	13	e10	27	21
31	12	---	25	16	---	21	---	19	---	15	31	---
TOTAL	769.4	3162	1087	687	424.9	504.5	2577	1410	562	471	1091	1426
MEAN	24.8	105	35.1	22.2	15.2	16.3	85.9	45.5	18.7	15.2	35.2	47.5
MAX	192	1660	128	44	40	52	267	197	32	47	171	192
MIN	9.6	14	19	16	9.9	8.9	11	17	13	10	15	18
AC-FT	1530	6270	2160	1360	843	1000	5110	2800	1110	934	2160	2830
CFSM	1.77	7.53	2.51	1.58	1.08	1.16	6.14	3.25	1.34	1.09	2.52	3.40
IN.	2.05	8.41	2.89	1.83	1.13	1.34	6.85	3.75	1.49	1.25	2.90	3.79

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2002, BY WATER YEAR (WY)

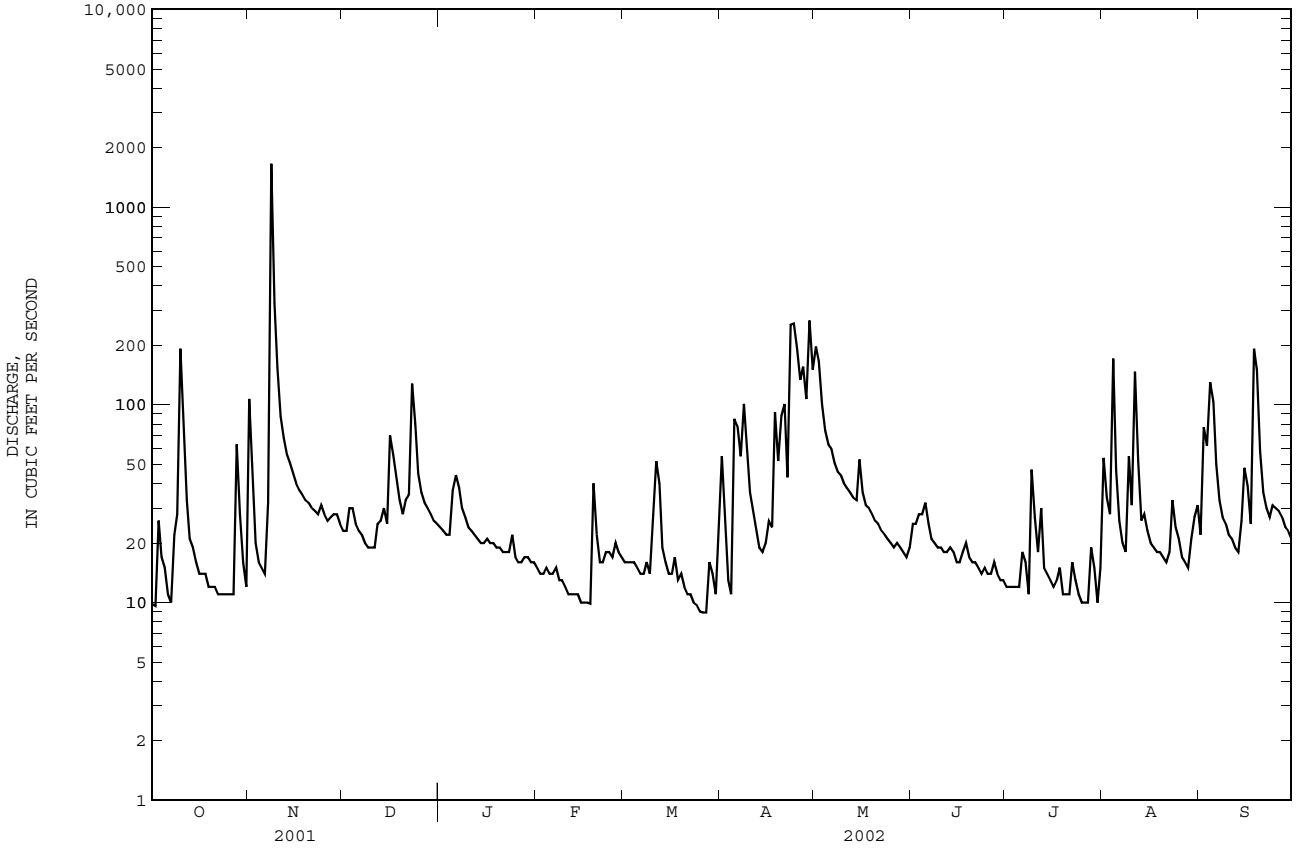
MEAN	32.9	70.6	24.4	16.4	12.2	11.6	49.4	35.0	14.0	14.8	22.0	33.1
MAX	41.1	105	35.1	22.2	15.2	16.3	85.9	45.5	18.7	20.9	35.2	47.5
(WY)	2001	2002	2002	2002	2002	2002	2002	2002	2002	2001	2002	2002
MIN	24.8	35.8	13.8	10.7	9.14	7.00	12.9	24.4	9.34	8.39	11.0	25.8
(WY)	2002	2001	2001	2001	2001	2001	2001	2001	2001	2000	2000	2000

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 2000 - 2002		
ANNUAL TOTAL	9293.2		14171.8				
ANNUAL MEAN	25.5		38.8		29.1		
HIGHEST ANNUAL MEAN					38.8		2002
LOWEST ANNUAL MEAN					19.3		2001
HIGHEST DAILY MEAN	1660	Nov 8	1660	Nov 8	1660	Nov 8	2001
LOWEST DAILY MEAN	5.3	Apr 4	8.9	Mar 26	4.7	Aug 12	2000
ANNUAL SEVEN-DAY MINIMUM	5.9	Mar 29	9.8	Mar 21	5.2	Aug 12	2000
MAXIMUM PEAK FLOW			5070	Nov 8	5070	Nov 8	2001
MAXIMUM PEAK STAGE			12.37	Nov 8	12.37	Nov 8	2001
INSTANTANEOUS LOW FLOW			8.2	Mar 28	4.4	Aug 12	2000
ANNUAL RUNOFF (AC-FT)	18430		28110		21060		
ANNUAL RUNOFF (CFSM)	1.82		2.78		2.08		
ANNUAL RUNOFF (INCHES)	24.71		37.68		28.23		
10 PERCENT EXCEEDS	44		65		52		
50 PERCENT EXCEEDS	11		21		16		
90 PERCENT EXCEEDS	6.5		12		7.2		

e Estimated

RIO GRANDE DE ARECIBO BASIN

50026400 RIO YUNES AT HWY 140 NEAR FLORIDA, PR--Continued



RIO GRANDE DE ARECIBO BASIN

50026400 RIO YUNES AT HWY 140 NEAR FLORIDA, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--June 2000 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: June 2000 to current year.

INSTRUMENTATION.--USDH-48 and automatic sediment samplers since 2000.

REMARKS.--Sediment samples were collected by a local observer on a weekly basis. During high flow events sediment samples were collected with automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 4,940 mg/L November 8, 2001; Minimum daily mean, 1 mg/L several days during Water Year 2001.

SEDIMENT LOADS: Maximum daily mean, 30,700 tons (27,850 tonnes) November 8, 2001; Minimum daily mean, 0.02 ton (0.02 tonne) several days during Water Year 2001.

EXTREMES FOR WATER YEAR 2001.--
SEDIMENT CONCENTRATION: Maximum daily mean, 740 mg/L November 1, 2000; Minimum daily mean, 1 mg/L several days.

SEDIMENT LOADS: Maximum daily mean, 2,580 tons (2,340 tonnes) August 3, 2001; Minimum daily mean, 0.02 ton (0.02 tonne) several days.

EXTREMES FOR CURRENT YEAR 2002.--
SEDIMENT CONCENTRATION: Maximum daily mean, 4,940 mg/L November 8, 2001; Minimum daily mean, 2 mg/L several days.

SEDIMENT LOADS: Maximum daily mean, 30,700 tons (27,850 tonnes) November 8, 2001; Minimum daily mean, 0.07 ton (0.06 tonne) several days.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	OCTOBER			NOVEMBER			DECEMBER		
1	13	4	0.14	194	740	1190	17	10	0.47
2	20	4	0.21	97	196	65	16	10	0.42
3	42	72	24	122	100	53	15	8	0.35
4	34	30	4.5	50	12	1.6	15	7	0.30
5	19	9	0.48	39	15	1.6	15	6	0.24
6	16	9	0.39	34	19	1.7	14	5	0.19
7	15	9	0.36	31	22	1.8	14	4	0.15
8	17	8	0.38	30	16	1.3	13	3	0.11
9	15	8	0.33	29	9	0.71	13	2	0.09
10	16	8	0.35	27	4	0.26	13	2	0.07
11	72	163	126	26	3	0.23	13	2	0.05
12	31	12	1.5	26	4	0.24	14	1	0.04
13	17	6	0.29	e25	e4	e0.25	15	10	0.38
14	15	6	0.24	24	4	0.25	14	11	0.42
15	15	6	0.24	24	3	0.20	18	4	0.18
16	31	28	4.3	23	2	0.13	19	3	0.16
17	37	44	9.5	22	1	0.07	20	3	0.16
18	35	57	7.6	21	2	0.09	16	3	0.13
19	218	464	1340	21	2	0.12	e13	e3	e0.10
20	62	84	20	21	2	0.14	e12	e2	e0.08
21	28	33	2.5	22	3	0.17	12	2	0.05
22	25	27	1.8	22	3	0.16	12	1	0.04
23	86	244	148	20	2	0.13	11	2	0.06
24	70	91	24	19	2	0.11	11	3	0.08
25	38	20	2.1	18	3	0.15	11	3	0.10
26	27	19	1.4	19	4	0.20	14	9	0.63
27	23	20	1.2	18	5	0.24	16	15	0.76
28	22	18	1.1	17	6	0.28	11	7	0.23
29	20	16	0.86	17	5	0.25	11	5	0.14
30	119	303	241	17	7	0.30	10	9	0.24
31	75	148	33	---	---	---	10	13	0.35
TOTAL	1273	---	1997.77	1075	---	1320.68	428	---	6.77

RIO GRANDE DE ARECIBO BASIN

50026400 RIO YUNES AT HWY 140 NEAR FLORIDA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	9.9	17	0.46	9.7	9	0.24	8.6	13	0.30
2	9.7	21	0.56	8.8	7	0.17	8.4	15	0.33
3	9.8	26	0.68	8.1	6	0.14	7.9	13	0.28
4	9.1	30	0.73	7.5	6	0.11	7.7	11	0.24
5	8.8	38	0.90	7.3	5	0.09	7.7	10	0.20
6	8.7	56	1.3	7.3	4	0.08	7.4	8	0.16
7	8.6	58	1.3	7.2	4	0.08	7.1	7	0.14
8	8.5	56	1.3	6.9	5	0.09	6.7	7	0.12
9	8.3	55	1.2	7.0	5	0.09	6.5	6	0.10
10	8.4	54	1.2	6.9	5	0.09	6.1	6	0.09
11	8.0	52	1.1	9.1	5	0.12	6.0	5	0.09
12	7.9	51	1.1	9.1	5	0.12	6.0	5	0.08
13	8.0	48	1.0	9.2	5	0.12	6.2	5	0.09
14	8.4	46	1.0	7.4	4	0.09	6.6	6	0.10
15	8.8	44	1.0	8.1	4	0.09	6.0	6	0.09
16	7.9	40	0.86	7.9	4	0.08	5.9	7	0.11
17	7.8	30	0.62	8.2	4	0.09	5.7	10	0.15
18	7.2	18	0.35	7.0	4	0.08	5.6	13	0.19
19	6.9	9	0.16	6.9	4	0.08	5.6	16	0.24
20	6.7	7	0.13	6.7	4	0.07	6.6	19	0.34
21	6.8	6	0.11	7.4	6	0.14	7.2	22	0.43
22	6.7	5	0.09	23	32	2.1	7.2	25	0.50
23	6.9	4	0.08	11	22	0.67	9.0	28	0.68
24	6.8	3	0.06	12	16	0.51	11	25	0.75
25	6.6	2	0.04	15	11	0.45	9.6	20	0.51
26	7.0	4	0.07	12	7	0.22	6.5	15	0.27
27	11	3	0.10	9.8	8	0.22	6.6	14	0.26
28	23	29	2.0	9.3	11	0.27	6.8	14	0.26
29	45	72	16	---	---	---	7.1	13	0.26
30	31	33	3.7	---	---	---	5.9	13	0.20
31	12	12	0.38	---	---	---	5.9	9	0.14
TOTAL	330.2	---	39.58	255.8	---	6.70	217.1	---	7.70

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	5.7	5	0.07	13	21	0.73	12	13	0.40
2	5.7	2	0.03	9.0	15	0.36	9.7	9	0.23
3	5.7	5	0.08	7.9	12	0.25	8.7	5	0.13
4	5.3	9	0.13	7.4	9	0.19	12	4	0.12
5	13	21	1.2	7.1	9	0.17	8.6	2	0.05
6	21	31	3.3	75	236	337	8.0	3	0.06
7	13	14	0.62	130	330	359	7.1	3	0.07
8	7.3	4	0.08	55	101	50	7.0	4	0.07
9	6.9	2	0.05	50	42	9.1	6.9	4	0.07
10	6.4	4	0.07	75	200	89	6.6	4	0.07
11	7.0	6	0.11	56	22	5.6	6.4	4	0.07
12	6.4	7	0.13	24	4	0.25	6.2	4	0.08
13	6.4	9	0.15	16	4	0.15	6.3	4	0.08
14	8.3	8	0.18	18	3	0.17	7.0	2	0.04
15	5.9	7	0.11	15	3	0.13	6.3	1	0.02
16	5.9	6	0.10	12	3	0.10	6.2	1	0.02
17	5.7	6	0.09	11	3	0.09	14	13	0.80
18	5.4	6	0.08	11	3	0.09	33	66	17
19	5.4	6	0.08	17	3	0.12	18	28	2.0
20	5.5	5	0.08	9.8	2	0.07	8.5	6	0.14
21	8.5	5	0.12	8.8	2	0.05	7.2	4	0.08
22	17	24	2.2	8.5	4	0.10	6.6	4	0.06
23	25	34	2.6	8.7	9	0.22	6.4	3	0.05
24	14	19	0.73	7.6	10	0.20	6.8	3	0.05
25	22	32	4.8	7.2	10	0.19	7.9	2	0.05
26	72	192	65	7.0	10	0.19	7.0	2	0.04
27	40	57	7.3	28	54	11	6.7	2	0.04
28	15	29	1.2	27	12	1.6	8.0	3	0.06
29	11	19	0.55	11	6	0.18	13	3	0.10
30	12	14	0.53	9.4	8	0.21	12	2	0.08
31	---	---	---	15	17	0.99	---	---	---
TOTAL	388.4	---	91.77	757.4	---	867.50	280.1	---	22.13

RIO GRANDE DE ARECIBO BASIN

50026400 RIO YUNES AT HWY 140 NEAR FLORIDA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	9.5	2	0.04	10	2	0.05	18	20	1.3
2	7.8	1	0.02	10	2	0.06	17	19	1.0
3	6.5	1	0.02	205	722	2580	13	11	0.39
4	14	12	0.74	46	90	13	11	9	0.29
5	11	8	0.24	20	49	2.7	10	10	0.28
6	6.8	4	0.08	16	27	1.1	9.7	11	0.29
7	6.2	4	0.06	14	6	0.25	9.5	12	0.30
8	5.8	3	0.05	12	2	0.07	9.2	11	0.28
9	5.6	2	0.04	12	3	0.09	9.0	10	0.25
10	5.7	2	0.03	13	3	0.10	9.0	10	0.23
11	51	539	389	11	3	0.09	9.0	9	0.22
12	121	425	300	10	3	0.08	9.3	9	0.23
13	48	78	18	9.9	3	0.08	11	10	0.28
14	31	42	9.1	9.6	3	0.08	8.4	10	0.23
15	25	23	2.6	9.7	3	0.07	42	78	25
16	12	6	0.20	9.5	2	0.06	16	17	0.97
17	9.9	6	0.17	14	10	0.57	36	76	22
18	16	7	0.28	17	14	0.76	25	69	4.7
19	14	7	0.26	13	9	0.29	13	11	0.40
20	8.9	7	0.16	11	4	0.11	66	144	78
21	8.1	6	0.14	9.4	3	0.08	134	353	349
22	8.0	6	0.14	9.7	3	0.08	148	457	575
23	88	268	193	26	29	2.5	51	80	14
24	33	38	4.5	12	12	0.40	26	9	0.59
25	15	13	0.50	10	9	0.25	17	3	0.15
26	11	10	0.32	15	14	0.84	16	5	0.20
27	10	8	0.21	17	17	0.95	13	6	0.20
28	9.6	6	0.14	11	6	0.18	10	6	0.16
29	17	3	0.13	11	7	0.21	9.1	5	0.13
30	19	1	0.07	11	9	0.27	8.4	5	0.11
31	12	1	0.04	11	11	0.30	---	---	---
TOTAL	646.4	---	920.28	615.8	---	2605.67	783.6	---	1076.18
YEAR	7050.8		8962.73						

e Estimated

RIO GRANDE DE ARECIBO BASIN

50026400 RIO YUNES AT HWY 140 NEAR FLORIDA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	9.8	6	0.17	107	341	426	23	4	0.25
2	9.6	6	0.17	53	88	17	23	4	0.25
3	26	30	5.4	20	34	1.9	30	19	2.4
4	17	13	0.67	16	17	0.78	30	26	2.1
5	15	13	0.55	15	9	0.37	25	20	1.4
6	11	7	0.20	14	10	0.39	23	18	1.1
7	10	5	0.13	32	34	5.1	22	15	0.86
8	22	21	2.8	1660	4940	30700	20	12	0.65
9	28	25	2.7	325	1090	1020	19	9	0.46
10	192	551	1310	155	489	212	19	6	0.30
11	77	171	54	88	249	61	19	3	0.17
12	33	15	1.4	68	90	16	25	14	1.2
13	21	15	0.84	56	60	9.2	26	20	1.4
14	19	15	0.78	51	33	4.5	30	26	2.2
15	16	14	0.61	45	9	1.1	25	14	0.96
16	14	7	0.26	40	5	0.53	70	170	91
17	14	5	0.20	37	5	0.49	56	72	11
18	14	6	0.21	35	5	0.45	43	30	3.8
19	12	6	0.20	33	5	0.43	33	5	0.43
20	12	6	0.18	32	5	0.40	28	4	0.33
21	12	5	0.17	30	5	0.38	33	21	2.7
22	11	5	0.16	29	5	0.36	35	35	3.4
23	11	6	0.17	28	5	0.34	128	300	184
24	11	9	0.26	31	5	0.38	80	128	32
25	11	12	0.34	28	4	0.34	45	73	8.8
26	11	12	0.35	26	4	0.31	36	66	6.4
27	11	12	0.35	27	4	0.31	32	60	5.2
28	63	134	83	28	4	0.33	30	54	4.3
29	28	30	2.9	28	4	0.32	28	47	3.6
30	16	13	0.58	25	4	0.28	26	41	2.9
31	12	8	0.28	---	---	---	25	34	2.3
TOTAL	769.4	---	1470.03	3162	---	32480.99	1087	---	377.86

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	24	28	1.8	15	4	0.14	16	4	0.17
2	23	22	1.3	14	3	0.13	16	4	0.16
3	22	15	0.92	14	3	0.13	16	4	0.15
4	22	9	0.52	15	3	0.14	16	3	0.15
5	37	35	4.8	14	3	0.12	15	3	0.13
6	44	42	5.1	14	3	0.13	14	3	0.12
7	38	28	3.1	15	3	0.14	14	3	0.11
8	30	12	1.0	13	3	0.12	16	2	0.09
9	27	8	0.59	13	3	0.11	14	2	0.08
10	24	6	0.36	12	3	0.11	26	30	4.9
11	23	5	0.32	11	3	0.10	52	76	31
12	22	5	0.29	11	3	0.10	40	49	7.4
13	21	5	0.26	11	3	0.09	19	14	0.74
14	20	4	0.24	11	3	0.09	16	9	0.40
15	20	4	0.22	10	3	0.09	14	7	0.27
16	21	4	0.22	10	3	0.09	14	5	0.17
17	20	4	0.22	10	3	0.08	17	4	0.17
18	20	4	0.21	9.9	3	0.08	13	3	0.11
19	19	4	0.20	40	44	5.9	14	3	0.10
20	19	4	0.19	22	17	1.1	12	2	0.07
21	18	4	0.19	16	7	0.31	11	3	0.09
22	18	4	0.19	16	5	0.21	11	4	0.11
23	18	4	0.18	18	5	0.23	10	5	0.13
24	22	4	0.22	18	5	0.22	9.7	4	0.10
25	17	4	0.17	17	4	0.21	9.0	3	0.08
26	16	4	0.16	20	4	0.24	8.9	3	0.07
27	16	4	0.16	18	4	0.21	8.9	3	0.07
28	17	4	0.17	17	4	0.18	16	13	1.3
29	17	4	0.16	---	---	---	14	9	0.42
30	16	4	0.15	---	---	---	11	8	0.28
31	16	4	0.15	---	---	---	21	32	14
TOTAL	687	---	23.76	424.9	---	10.80	504.5	---	63.14

RIO GRANDE DE ARECIBO BASIN

50026400 RIO YUNES AT HWY 140 NEAR FLORIDA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	55	96	42	197	483	731	25	11	1.0
2	28	28	2.6	166	387	338	25	9	0.59
3	13	16	0.59	101	172	48	28	17	1.5
4	11	11	0.32	74	104	21	28	6	0.48
5	85	326	260	63	74	13	32	18	1.7
6	78	166	61	60	69	11	25	6	0.45
7	55	69	12	51	49	6.7	21	3	0.19
8	101	168	57	46	38	4.8	20	4	0.22
9	60	73	13	44	9	1.1	19	5	0.26
10	36	43	4.2	40	7	0.74	19	6	0.31
11	29	29	2.3	38	8	0.87	18	7	0.34
12	23	27	1.7	36	10	1.0	18	8	0.38
13	19	26	1.3	34	12	1.1	19	8	0.43
14	18	26	1.2	33	12	1.1	18	9	0.44
15	20	25	1.3	53	65	29	16	10	0.43
16	26	15	1.1	36	13	1.2	16	8	0.35
17	24	14	1.0	31	10	0.86	18	6	0.30
18	92	267	258	30	11	0.92	20	5	0.25
19	52	62	9.9	28	12	0.94	17	3	0.15
20	88	173	80	26	14	0.95	16	4	0.17
21	101	215	76	25	15	0.97	16	5	0.21
22	43	108	13	23	16	0.98	15	5	0.23
23	254	852	2330	22	14	0.86	14	6	0.24
24	258	812	1570	21	12	0.69	15	7	0.28
25	193	519	640	20	11	0.59	14	8	0.30
26	134	314	271	19	15	0.77	14	9	0.33
27	156	371	278	20	19	1.0	16	9	0.40
28	107	209	65	19	22	1.1	14	10	0.39
29	267	844	2390	18	18	0.84	13	10	0.35
30	151	232	122	17	12	0.58	13	4	0.15
31	---	---	---	19	6	0.31	---	---	---
TOTAL	2577	---	8565.51	1410	---	1221.97	562	---	12.82

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	12	7	0.23	54	110	56	22	28	1.7
2	12	10	0.32	34	52	7.6	77	199	142
3	12	10	0.33	28	24	1.9	62	98	21
4	12	11	0.34	171	646	1440	130	351	499
5	12	11	0.34	47	208	28	104	235	152
6	18	16	1.0	26	70	5.3	50	65	9.8
7	16	12	0.61	20	19	1.0	33	15	1.4
8	11	8	0.25	18	25	1.2	27	11	0.84
9	47	97	59	55	124	74	25	12	0.77
10	e27	e33	e2.7	31	47	4.4	22	12	0.72
11	e18	e10	e0.44	147	477	534	21	12	0.70
12	e30	e36	e3.3	52	209	31	19	12	0.65
13	e15	e16	e1.0	26	118	8.4	18	13	0.63
14	e14	e11	e0.40	28	39	2.8	26	31	3.3
15	e13	e10	e0.34	23	19	1.2	48	64	14
16	12	9	0.29	20	17	0.92	39	38	4.2
17	e13	e9	e0.34	19	17	0.84	25	19	1.3
18	e15	e9	e0.30	18	16	0.79	192	550	1430
19	e11	e9	e0.26	18	15	0.74	150	447	716
20	11	9	0.26	17	15	0.67	58	98	16
21	e11	e9	e0.25	16	14	0.60	36	19	2.0
22	e16	e9	e0.34	18	14	0.74	30	10	0.85
23	13	9	0.30	33	33	3.9	27	10	0.72
24	11	8	0.25	24	20	1.4	31	22	2.2
25	e10	e8	e0.23	21	17	0.94	30	13	1.1
26	e10	e8	e0.22	17	14	0.66	29	16	1.4
27	10	8	0.22	16	13	0.55	27	10	0.75
28	19	15	1.0	15	12	0.47	24	9	0.58
29	e15	e11	e0.49	21	18	1.6	23	8	0.50
30	e10	e8	e0.22	27	24	1.9	21	7	0.42
31	15	16	1.8	31	30	3.1	---	---	---
TOTAL	471	---	77.37	1091	---	2216.62	1426	---	3026.53
YEAR	14171.8		49547.40						

e Estimated

RIO GRANDE DE ARECIBO BASIN

50027000 RIO LIMON ABOVE LAGO DOS BOCAS, PR

LOCATION.--Lat 18°19'32", long 66°37'24", Hydrologic Unit 21010002, on right bank off Highway 146, 2.2 mi (3.5 km) northwest from Escuela Segunda Unidad de Mameyes, 3.0 mi (4.8 km) southwest from Lago Dos Bocas Dam, 3.8 mi (6.0 km) northeast from Lago Caonillas Dam.

DRAINAGE AREA.--33.2 mi^2 (86.0 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1999 to current year.

GAGE.--Water-stage recorder. Datum of gage is 311.6 ft (94.9 m), from topographic map.

REMARKS.--Records fair. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	269	62	54	40	34	229	421	74	49	140	49
2	39	117	61	52	37	34	127	360	74	49	99	121
3	61	57	97	49	36	33	59	238	77	48	76	136
4	56	51	97	48	38	32	46	194	78	48	195	389
5	50	46	75	80	35	31	247	174	80	47	90	236
6	41	44	65	113	36	30	217	166	73	58	63	118
7	38	107	61	97	41	30	138	149	68	59	55	86
8	60	3990	57	75	33	33	246	140	67	48	52	74
9	67	662	54	70	33	32	157	133	66	72	83	69
10	369	293	53	64	32	48	102	127	65	64	71	65
11	240	198	52	61	32	101	83	123	63	57	231	64
12	94	162	72	59	31	91	69	120	62	68	103	60
13	62	142	71	57	31	42	60	118	63	53	64	58
14	56	138	78	55	30	36	55	116	61	48	65	69
15	50	121	65	53	29	33	59	181	59	47	58	103
16	46	111	142	52	28	32	81	122	58	45	52	83
17	44	103	124	51	27	43	74	106	60	47	49	62
18	43	98	95	49	27	32	198	100	63	45	49	357
19	40	93	76	47	118	35	122	95	60	43	50	193
20	38	89	64	46	68	30	168	91	58	42	45	93
21	38	85	117	46	45	30	200	89	58	41	42	66
22	38	80	99	45	40	29	107	86	55	49	48	57
23	36	78	252	44	38	28	685	85	54	49	79	53
24	36	91	163	55	36	27	720	82	56	43	64	58
25	35	76	103	44	35	26	639	81	54	41	51	56
26	35	72	82	42	42	26	305	79	53	40	42	53
27	35	73	72	42	39	26	479	79	55	41	38	50
28	140	74	65	45	35	45	261	78	54	54	37	47
29	69	73	62	44	---	46	876	75	52	51	47	45
30	48	66	59	42	---	36	383	74	50	42	51	44
31	40	---	56	41	---	116	---	72	---	52	57	---
TOTAL	2086	7659	2651	1722	1092	1247	7192	4154	1870	1540	2246	3014
MEAN	67.3	255	85.5	55.5	39.0	40.2	240	134	62.3	49.7	72.5	100
MAX	369	3990	252	113	118	116	876	421	80	72	231	389
MIN	35	44	52	41	27	26	46	72	50	40	37	44
AC-FT	4140	15190	5260	3420	2170	2470	14270	8240	3710	3050	4450	5980
CFSM	2.03	7.69	2.58	1.67	1.17	1.21	7.22	4.04	1.88	1.50	2.18	3.03
IN.	2.34	8.58	2.97	1.93	1.22	1.40	8.06	4.65	2.10	1.73	2.52	3.38

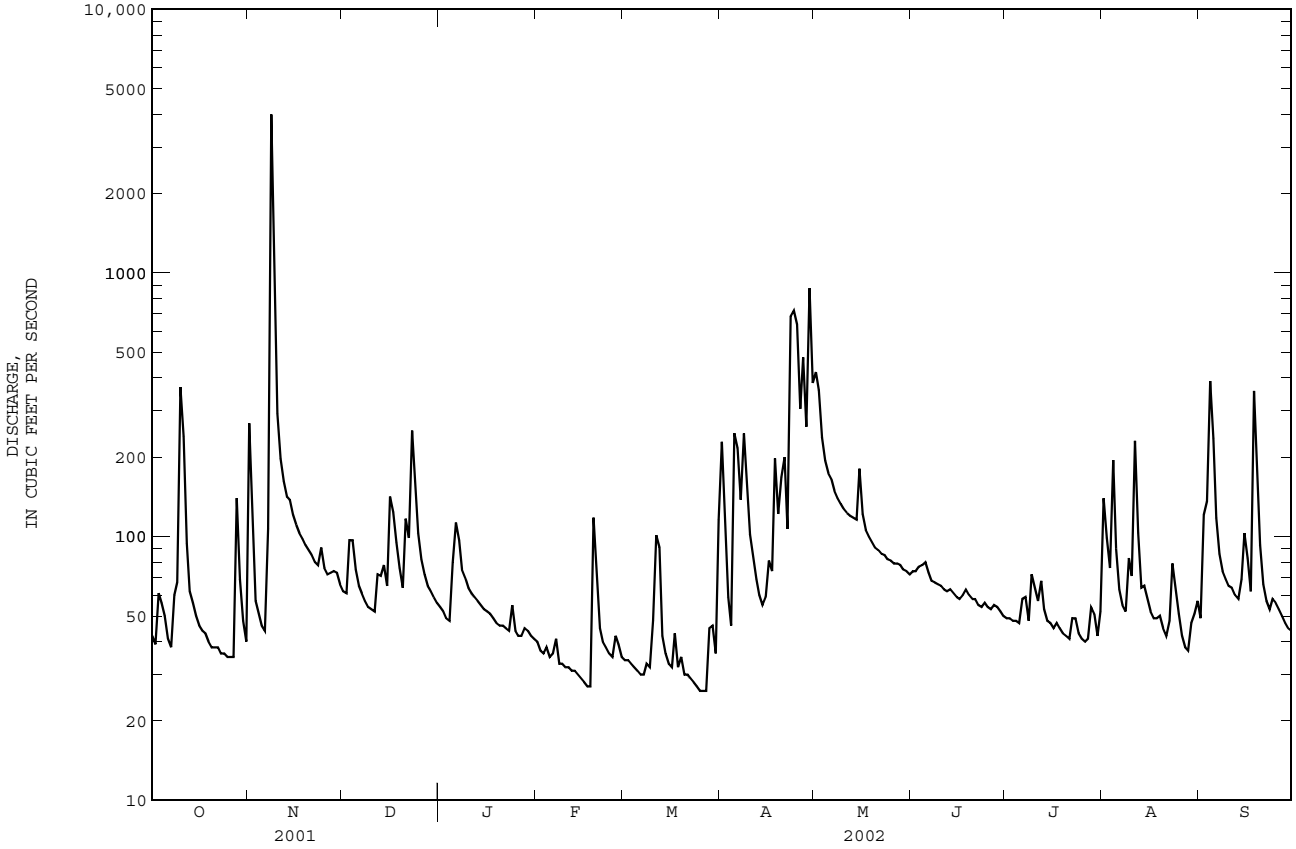
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2002, BY WATER YEAR (WY)

MEAN	85.7	164	60.8	64.6	42.4	35.5	102	95.4	42.3	39.0	51.0	76.2
MAX	104	255	85.5	108	60.8	45.7	240	134	62.3	49.7	72.5	100
(WY)	2001	2002	2002	2000	2000	2000	2002	2002	2002	2002	2002	2002
MIN	67.3	72.8	36.1	30.1	26.9	20.5	29.7	54.7	27.4	31.0	31.7	57.3
(WY)	2002	2001	2001	2001	2001	2001	2001	2001	2001	2000	2000	2000

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 2000 - 2002		
ANNUAL TOTAL	22889		36473				
ANNUAL MEAN	62.7		99.9		73.3		
HIGHEST ANNUAL MEAN					99.9		2002
LOWEST ANNUAL MEAN					46.6		2001
HIGHEST DAILY MEAN	3990	Nov 8	3990	Nov 8	3990	Nov 8	2001
LOWEST DAILY MEAN	14	Apr 18	26	Mar 25	14	Apr 18	2001
ANNUAL SEVEN-DAY MINIMUM	16	Apr 15	27	Mar 21	16	Apr 15	2001
MAXIMUM PEAK FLOW			11500	Nov 8	11500	Nov 8	2001
MAXIMUM PEAK STAGE			15.63	Nov 8	15.63	Nov 8	2001
INSTANTANEOUS LOW FLOW			25	Mar 25	13	Apr 18	2001
ANNUAL RUNOFF (AC-FT)	45400		72340		53090		
ANNUAL RUNOFF (CFSM)	1.89		3.01		2.21		
ANNUAL RUNOFF (INCHES)	25.65		40.87		29.99		
10 PERCENT EXCEEDS	106		164		123		
50 PERCENT EXCEEDS	30		59		46		
90 PERCENT EXCEEDS	19		35		22		

RIO GRANDE DE ARECIBO BASIN

50027000 RIO LIMON ABOVE LAGO DOS BOCAS, PR--Continued



RIO GRANDE DE ARECIBO BASIN

50027000 RIO LIMON ABOVE LAGO DOS BOCAS, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 1999 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: December 1999 to current year.

INSTRUMENTATION.--USDH-48 and automatic sediment samplers since 2000.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 2,420 mg/L November 8, 2001; Minimum daily mean, 1 mg/L several days during water year 2001.

SEDIMENT LOADS: Maximum daily mean, 42,800 tons (38,830 tonnes) November 8, 2001; Minimum daily mean, 0.08 ton (0.07 tonne) February 6, 7, 2001.

EXTREMES FOR CURRENT YEAR 2002.--
SEDIMENT CONCENTRATION: Maximum daily mean, 2,420 mg/L November 8, 2001; Minimum daily mean, 2 mg/L several days.

SEDIMENT LOADS: Maximum daily mean, 42,800 tons (38,830 tonnes) November 8, 2001; Minimum daily mean, 0.20 ton (0.18 tonne) October 27, 2001.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
DEC													
12...	1325	53	201	7.3	24.2	2.4	8.5	102	<10	E45	E150	73	19.6
MAR													
12...	1425	54	154	7.1	25.0	120	7.9	98	10	E8820	9700	--	--
SEP													
05...	1155	134	129	6.5	25.5	50	8.0	99	<10	2900	3300	49	12.9

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
DEC													
12...	5.80	8.66	.4	1.97	71	<1.0	3.8	9.66	E.1	27.6	120	17.0	<10
MAR													
12...	--	--	--	--	49	--	--	--	--	--	--	--	60
SEP													
05...	4.02	6.60	.4	2.33	42	.2	5.6	7.39	E.08	21.6	86	31.0	22

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
DEC													
12...	<.01	1.20	<.01	<.20	E.03	4	40.1	E10	<.1	<.8	<10	50	<1
MAR													
12...	.02	1.60	.03	.60	.12	--	--	--	--	--	--	--	--
SEP													
05...	.01	1.20	.01	.30	.06	<2	43.6	E10	<.1	1.0	M	810	M

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
DEC								
12...	4.0	<.01	5	<.3	<20	<.01	<17	<.05
MAR								
12...	--	--	--	--	--	--	--	--
SEP								
05...	37.2	<.01	<2	<.3	<20	<.01	<16	<.05

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

RIO GRANDE DE ARECIBO BASIN

50027000 RIO LIMON ABOVE LAGO DOS BOCAS, PR--Continued

WATER-QUALITY RECORDS

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	42	3	0.34	269	601	1450	62	2	0.34
2	39	3	0.32	117	76	39	61	2	0.33
3	61	12	3.1	57	9	1.5	97	17	8.8
4	56	15	2.4	51	4	0.61	97	12	4.1
5	50	13	1.9	46	4	0.46	75	2	0.49
6	41	10	1.1	44	3	0.37	65	2	0.35
7	38	9	0.97	107	49	35	61	2	0.33
8	60	17	3.9	3990	2420	42800	57	2	0.31
9	67	18	3.5	662	382	786	54	2	0.29
10	369	974	3530	293	60	53	53	2	0.29
11	240	348	599	198	22	12	52	4	0.53
12	94	33	9.5	162	10	4.5	72	8	1.6
13	62	9	1.6	142	8	3.0	71	9	1.8
14	56	9	1.3	138	9	3.2	78	11	2.2
15	50	8	1.0	121	7	2.2	65	11	1.9
16	46	6	0.69	111	5	1.4	142	541	499
17	44	5	0.61	103	4	1.2	124	377	127
18	43	4	0.51	98	4	1.0	95	183	50
19	40	4	0.40	93	3	0.85	76	47	10
20	38	3	0.32	89	3	0.71	64	25	4.3
21	38	3	0.34	85	3	0.58	117	284	160
22	38	4	0.37	80	2	0.46	99	82	22
23	36	4	0.38	78	2	0.50	252	260	343
24	36	4	0.35	91	3	0.70	163	27	13
25	35	3	0.29	76	4	0.72	103	11	3.0
26	35	3	0.24	72	4	0.81	82	9	2.0
27	35	2	0.20	73	5	0.94	72	8	1.6
28	140	320	368	74	4	0.83	65	7	1.3
29	69	18	3.8	73	3	0.59	62	6	1.1
30	48	12	1.7	66	2	0.37	59	6	0.90
31	40	6	0.67	---	---	---	56	5	0.78
TOTAL	2086	---	4538.80	7659	---	45202.50	2651	---	1262.64

RIO GRANDE DE ARECIBO BASIN

50027000 RIO LIMON ABOVE LAGO DOS BOCAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	54	6	0.80	40	6	0.68	34	6	0.51
2	52	6	0.83	37	7	0.68	34	5	0.47
3	49	6	0.86	36	7	0.73	33	5	0.41
4	48	7	0.89	38	8	0.82	32	4	0.35
5	80	20	5.5	35	8	0.76	31	4	0.35
6	113	30	9.2	36	8	0.77	30	4	0.36
7	97	26	6.9	41	8	0.88	30	5	0.38
8	75	18	3.6	33	8	0.69	33	5	0.45
9	70	12	2.3	33	7	0.62	32	5	0.46
10	64	11	1.8	32	7	0.58	48	9	1.8
11	61	9	1.5	32	6	0.53	101	37	26
12	59	8	1.2	31	6	0.50	91	22	7.4
13	57	6	0.94	31	6	0.49	42	8	0.91
14	55	5	0.68	30	6	0.48	36	7	0.65
15	53	3	0.40	29	6	0.47	33	5	0.48
16	52	2	0.32	28	6	0.46	32	5	0.41
17	51	3	0.36	27	6	0.44	43	4	0.51
18	49	3	0.39	27	6	0.43	32	4	0.36
19	47	3	0.42	118	116	56	35	4	0.42
20	46	4	0.46	68	20	3.7	30	5	0.40
21	46	4	0.50	45	11	1.4	30	5	0.43
22	45	4	0.52	40	6	0.61	29	6	0.46
23	44	4	0.53	38	4	0.38	28	6	0.44
24	55	5	0.70	36	3	0.33	27	6	0.41
25	44	5	0.59	35	3	0.30	26	5	0.38
26	42	5	0.54	42	4	0.49	26	5	0.36
27	42	4	0.50	39	6	0.62	26	5	0.36
28	45	4	0.50	35	7	0.66	45	11	2.5
29	44	5	0.63	---	---	---	46	13	1.8
30	42	7	0.79	---	---	---	36	10	0.98
31	41	8	0.85	---	---	---	116	276	696
TOTAL	1722	---	46.00	1092	---	75.50	1247	---	747.20

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	229	526	645	421	536	1350	74	14	2.7
2	127	167	103	360	375	673	74	14	2.8
3	59	27	4.3	238	73	47	77	15	3.1
4	46	23	2.8	194	59	31	78	16	3.3
5	247	509	1290	174	46	21	80	13	2.9
6	217	246	234	166	32	15	73	10	2.0
7	138	41	16	149	19	7.6	68	7	1.3
8	246	74	54	140	8	3.2	67	6	1.0
9	157	42	18	133	13	4.6	66	5	0.91
10	102	27	7.4	127	12	4.2	65	5	0.81
11	83	18	4.0	123	9	2.9	63	4	0.71
12	69	10	1.9	120	8	2.6	62	4	0.74
13	60	8	1.4	118	8	2.5	63	5	0.85
14	55	9	1.3	116	8	2.5	61	6	0.91
15	59	9	1.5	181	536	535	59	6	0.96
16	81	15	4.7	122	29	9.7	58	6	0.99
17	74	20	4.3	106	16	4.7	60	6	1.0
18	198	279	668	100	11	2.9	63	7	1.1
19	122	36	12	95	9	2.2	60	7	1.1
20	168	175	165	91	8	2.0	58	8	1.2
21	200	188	168	89	7	1.8	58	9	1.4
22	107	30	8.6	86	7	1.6	55	10	1.5
23	685	1000	6570	85	6	1.4	54	11	1.6
24	720	927	4850	82	6	1.3	56	12	1.9
25	639	718	3710	81	5	1.1	54	14	2.0
26	305	194	254	79	6	1.3	53	12	1.7
27	479	798	2240	79	8	1.7	55	10	1.4
28	261	94	74	78	9	1.8	54	7	1.1
29	876	984	9140	75	9	1.9	52	6	0.87
30	383	292	369	74	10	2.0	50	9	1.2
31	---	---	---	72	11	2.2	---	---	---
TOTAL	7192	---	30622.2	4154	---	2741.7	1870	---	45.05

RIO GRANDE DE ARECIBO BASIN

50027000 RIO LIMON ABOVE LAGO DOS BOCAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	49	12	1.6	140	170	226	49	23	3.1
2	49	15	1.9	99	31	11	121	153	234
3	48	17	2.2	76	41	8.5	136	135	113
4	48	14	1.8	195	256	598	389	324	1730
5	47	9	1.1	90	30	8.0	236	259	400
6	58	9	1.9	63	18	3.1	118	50	17
7	59	16	2.6	55	15	2.2	86	11	2.5
8	48	13	1.7	52	14	2.0	74	6	1.3
9	72	20	5.9	83	23	8.2	69	7	1.3
10	64	17	3.1	71	20	3.9	65	7	1.3
11	57	15	2.7	231	328	698	64	8	1.4
12	68	18	3.4	103	28	8.8	60	12	2.0
13	53	14	2.0	64	9	1.6	58	18	2.8
14	48	12	1.5	65	4	0.73	69	25	4.9
15	47	10	1.2	58	3	0.51	103	28	9.2
16	45	9	1.1	52	2	0.32	83	16	3.8
17	47	10	1.2	49	3	0.35	62	9	1.6
18	45	10	1.2	49	3	0.45	357	554	2430
19	43	10	1.2	50	4	0.57	193	244	402
20	42	11	1.2	45	5	0.61	93	21	5.7
21	41	11	1.2	42	6	0.65	66	16	2.8
22	49	11	1.5	48	9	1.4	57	18	2.8
23	49	12	1.5	79	22	5.4	53	20	2.9
24	43	12	1.4	64	18	3.4	58	22	3.5
25	41	12	1.4	51	13	1.9	56	19	2.9
26	40	13	1.4	42	12	1.3	53	14	2.0
27	41	13	1.4	38	12	1.2	50	9	1.3
28	54	13	2.0	37	11	1.1	47	5	0.63
29	51	14	1.9	47	13	1.8	45	5	0.65
30	42	14	1.6	51	14	1.9	44	6	0.71
31	52	17	2.8	57	36	5.7	---	---	---
TOTAL	1540	---	58.6	2246	---	1608.59	3014	---	5387.09
YEAR	36473		92335.87						

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

Date	Time	Instan-taneous dis-charge, cfs (00061)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment load, tons/d (80155)	Suspnd. sedi-ment, sieve diametr percent <.062mm (70331)
NOV					
01...	1700	1380	4940	18400	99
DEC					
16...	1915	463	1420	1770	99
APR					
01...	0140	475	1110	1420	99

RIO GRANDE DE ARECIBO BASIN

50027000 RIO LIMON ABOVE LAGO DOS BOCAS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

PARTICLE SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

Date	Time	Instantaneous discharge, cfs (00061)	Suspended sediment concentration mg/L (80154)	Suspended sediment load, tons/d (80155)	Suspnd. sediment, falldia nat wat percent <.002mm (70326)	Suspnd. sediment, falldia nat wat percent <.004mm (70327)	Suspnd. sediment, falldia nat wat percent <.008mm (70328)	Suspnd. sediment, falldia nat wat percent <.016mm (70329)	Suspnd. sediment, falldia nat wat percent <.031mm (70330)	Suspnd. sediment, sieve diametr percent <.062mm (70331)	Suspnd. sediment, sieve diametr percent <.125mm (70332)	Suspnd. sediment, sieve diametr percent <.25mm (70333)	Suspnd. sediment, sieve diametr percent <.5 mm (70334)
NOV													
08...	0705	9110	4590	113000	45	54	67	79	89	94	98	99	99
DEC													
23...	1403	728	1380	2710	51	61	76	86	96	97	99	99	100

Date	Suspnd. sediment, sieve diametr percent <1 mm (70335)
NOV	
08...	100
DEC	
23...	100

RIO GRANDE DE ARECIBO BASIN

50027100 LAGO DOS BOCAS AT DAMSITE NEAR UTUADO, PR

LOCATION.--Lat 18°20'16", long 66°40'05", Hydrologic Unit 21010001, on upstream side of road 146 over damsite, close to the center of dam, 10 mi (16 km) southeast of the city of Arecibo, 4.1 mi (6.6 km) north of Lago Caonillas Dam, 5.3 mi (8.5 km) northeast of Utuado Plaza, and 3.8 mi (6.1 km) southeast of Escuela Antonio Sánchez de Padilla.

DRAINAGE AREA.--169.45 mi^2 (438.87 km^2).

ELEVATION RECORDS

PERIOD OF RECORD.--March 1999 to current year.

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

REMARKS.--Lago Dos Bocas was completed in 1942. The dam is a concrete gravity structure with a total length of 1,317 ft (401.4 m), a maximum height of 188 ft (57.3 m), and a maximum base width of 158 ft (48.2 m). No-overflow sections on each abutment have a total lenght of 957 ft (292 m). The dam and the powerplant comprise the Dos Bocas Hydroelectric Project, and provides 32,000 acre-feet (39.456 km^3). A three-unit powerplant is located on the right bank of the slitting basin. The dam is owned by Puerto Rico Electric Power Authority. The capacity of Lago Dos Bocas was computed to be 714.40 million ft^3 (20.23 million m^3) for June 1997. Gage-height and precipitation satellite telemetry at station.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation, 298.81 ft (91.08 m), November 8, 2001; minimum elevation, 283.88 ft (86.526 m), August 21, 2000.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 298.81 ft (91.08 m), November 8, 2001; minimum elevation, 286.40 ft (87.29 m), March 26.

Capacity Table
(based on data from Puerto Rico Electric Power Authority)

Elevation, in feet	Contents, in acre-feet	Elevation, in feet	Contents, in acre-feet
216	0	275	9,283
236	1,403	288	13,684
256	4,491	295	16,400

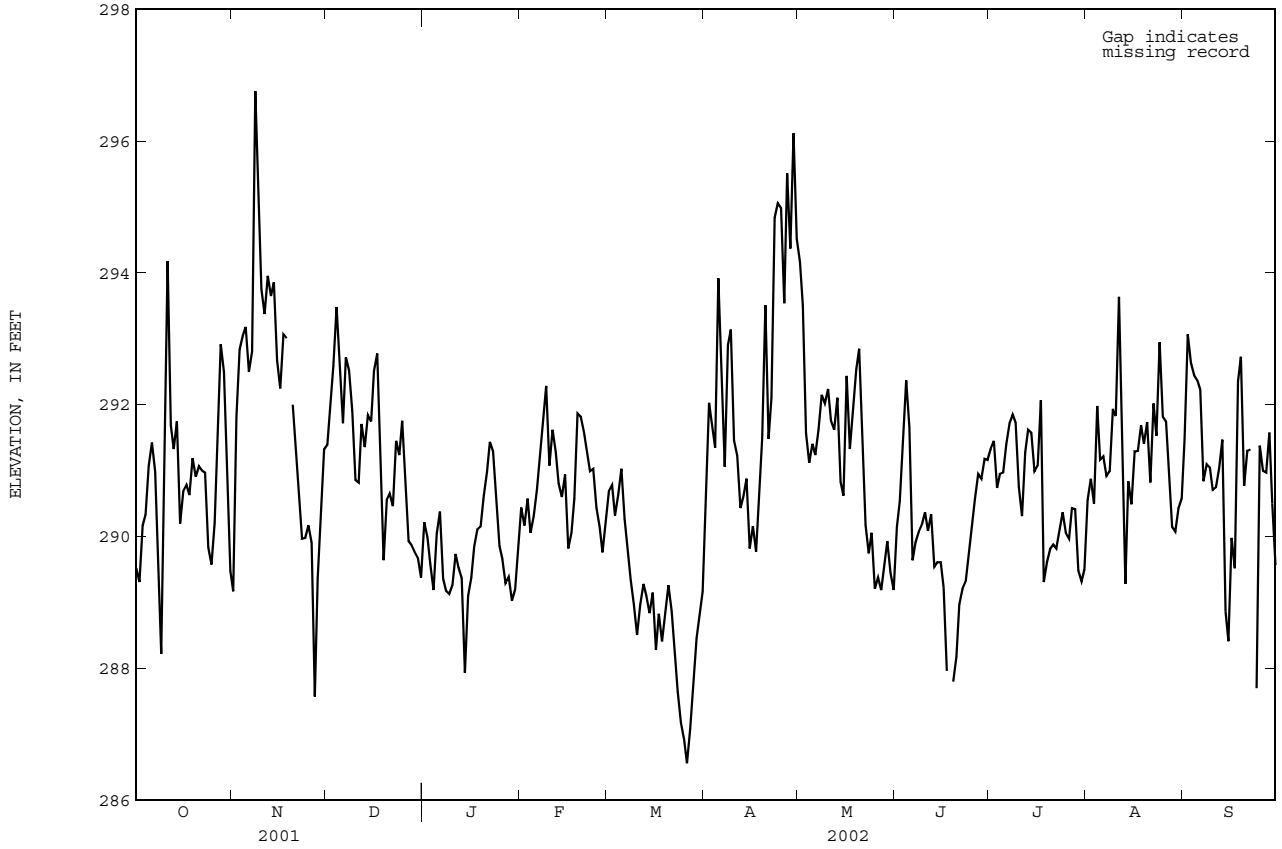
Elevation above NGVD 1929, feet
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	289.52	289.17	291.39	290.22	290.44	290.69	290.58	294.17	290.15	291.33	290.56	291.48
2	289.31	291.81	292.00	289.99	290.17	290.78	292.03	293.51	290.54	291.45	290.88	293.07
3	290.17	292.84	292.60	289.58	290.58	290.32	291.66	291.57	291.45	290.74	290.50	292.63
4	290.33	293.05	293.48	289.19	290.06	290.63	291.35	291.12	292.37	290.95	291.98	292.45
5	291.08	293.18	292.71	290.05	290.31	291.03	293.92	291.41	291.66	290.97	291.17	292.37
6	291.43	292.50	291.72	290.38	290.71	290.27	292.48	291.24	289.64	291.41	291.22	292.23
7	290.99	292.81	292.72	289.36	291.29	289.77	291.06	291.62	289.91	291.72	290.92	290.84
8	289.46	296.76	292.52	289.18	291.80	289.35	292.91	292.15	290.07	291.85	290.99	291.10
9	288.22	295.02	291.91	289.13	292.29	288.97	293.14	292.02	290.18	291.73	291.94	291.05
10	291.90	293.76	290.86	289.26	291.08	288.51	291.46	292.24	290.37	290.76	291.83	290.71
11	294.18	293.38	290.82	289.74	291.62	288.97	291.23	291.76	290.09	290.31	293.64	290.75
12	291.69	293.96	291.71	289.53	291.28	289.28	290.43	291.62	290.34	291.28	291.07	291.04
13	291.33	293.65	291.36	289.37	290.80	289.10	290.60	292.11	289.54	291.62	289.28	291.47
14	291.75	293.86	291.85	287.93	290.60	288.84	290.88	290.83	289.61	291.58	290.84	288.87
15	290.20	292.68	291.75	289.10	290.94	289.15	289.82	290.62	289.61	290.99	290.49	288.41
16	290.69	292.25	292.52	289.38	289.82	288.28	290.16	292.44	289.23	291.08	291.29	289.98
17	290.78	293.07	292.78	289.85	290.06	288.83	289.77	291.33	287.96	292.07	291.30	289.52
18	290.63	293.01	291.45	290.11	290.58	288.41	290.54	291.96	A	289.31	291.69	292.36
19	291.19	A	289.64	290.15	291.87	288.84	291.49	292.54	287.80	289.61	291.41	292.73
20	290.91	292.00	290.56	290.62	291.82	289.26	293.51	292.85	288.18	289.81	291.74	290.77
21	291.07	291.29	290.65	290.98	291.59	288.88	291.48	291.38	288.97	289.88	290.82	291.30
22	291.00	290.64	290.46	291.44	291.31	288.34	292.11	290.18	289.21	289.82	292.02	291.32
23	290.97	289.97	291.45	291.29	290.99	287.65	294.84	289.75	289.32	290.10	291.53	A
24	289.84	289.98	291.24	290.62	291.03	287.18	295.06	290.06	289.77	290.37	292.95	287.70
25	289.58	290.17	291.76	289.86	290.44	286.92	294.99	289.21	290.13	290.06	291.82	291.38
26	290.21	289.91	290.89	289.66	290.15	286.56	293.54	289.38	290.58	289.97	291.75	291.00
27	291.55	287.57	289.93	289.29	289.76	287.08	295.51	289.19	290.95	290.43	290.86	290.97
28	292.92	289.37	289.87	289.39	290.25	287.83	294.37	289.57	290.88	290.42	290.15	291.58
29	292.50	290.37	289.76	289.03	---	288.46	296.12	289.93	291.18	289.48	290.08	290.50
30	290.84	291.32	289.68	289.20	---	288.84	294.52	289.45	291.16	289.32	290.43	289.57
31	289.48	---	289.38	289.84	---	289.17	---	289.19	---	289.50	290.58	---
MAX	294.18	---	293.48	291.44	292.29	291.03	296.12	294.17	---	292.07	293.64	---
MIN	288.22	---	289.38	287.93	289.76	286.56	289.77	289.19	---	289.31	289.28	---

A No gage-height record

RIO GRANDE DE ARECIBO BASIN

50027100 LAGO DOS BOCAS AT DAMSITE NEAR UTUADO, PR--Continued



RIO GRANDE DE ARECIBO BASIN

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

LOCATION.--Lat 18°20'50", long 66°40'02", Hydrologic Unit 21010001, at pedestrian bridge, 0.7 mi (1.1 km) downstream from Lago Dos Bocas and 6.6 mi, (6.6 km), west of Florida Plaza.

DRAINAGE AREA.--170 mi^2 (440 km^2) does not include 6.0 mi^2 (15.6 km^2) above Lago Garzas.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 2000 to September 2002. (discontinued)

GAGE.--Water-stage recorder. Elevation of gage is 101.6 ft (40 m), from topographic map.

REMARKS.--Records poor. Regulation at all stages by Puerto Rico Electric Power Authority reservoir upstream from gage. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	875	775	488	68	33	60	356	2110	40	301	188	259
2	506	36	478	404	298	161	34	2000	193	297	332	709
3	89	318	708	448	113	319	436	2020	45	543	389	1620
4	328	398	654	453	381	93	389	1570	196	301	382	1360
5	36	325	996	157	134	45	403	1310	670	301	618	1020
6	252	599	990	356	130	404	1620	1400	993	269	288	537
7	425	574	447	705	45	308	1280	1230	259	254	354	817
8	1160	8360	730	415	34	303	945	1080	275	314	220	246
9	1030	3450	862	348	34	301	613	1070	283	586	33	449
10	293	1680	1070	300	739	412	994	1180	259	677	406	558
11	160	1150	868	208	39	304	649	989	582	601	297	530
12	1230	585	559	456	321	295	799	918	308	511	1310	305
13	487	e500	539	355	356	287	558	744	890	278	1060	307
14	221	e1000	231	750	277	289	284	894	536	386	122	1230
15	846	999	364	35	102	106	718	1350	289	574	756	745
16	273	641	387	508	577	460	640	791	387	311	366	209
17	357	191	870	507	130	46	805	1250	788	36	306	565
18	325	419	1150	295	41	304	486	284	445	1180	302	384
19	137	510	1210	488	38	65	637	288	452	346	610	988
20	342	676	364	339	304	36	624	468	331	239	302	1160
21	206	808	724	363	305	305	1950	914	164	273	852	362
22	406	767	707	403	299	347	615	808	291	401	202	351
23	539	783	680	376	300	377	1320	772	304	272	789	1050
24	796	645	893	503	193	312	2400	421	281	221	358	726
25	357	439	361	513	387	285	2800	734	255	272	875	27
26	82	663	716	331	300	334	2200	245	258	203	376	272
27	61	1220	726	375	316	51	2130	504	300	27	724	594
28	364	42	379	291	43	33	3410	278	418	301	622	186
29	706	337	379	366	---	60	3030	564	265	575	531	646
30	989	289	345	193	---	182	3350	603	367	248	236	548
31	559	---	434	34	---	314	---	408	---	243	399	---
TOTAL	14437	29179	20309	11343	6269	7198	36475	29197	11124	11341	14605	18760
MEAN	466	973	655	366	224	232	1216	942	371	366	471	625
MAX	1230	8360	1210	750	739	460	3410	2110	993	1180	1310	1620
MIN	36	36	231	34	33	33	34	245	40	27	33	27
AC-FT	28640	57880	40280	22500	12430	14280	72350	57910	22060	22490	28970	37210
CFSM	2.74	5.72	3.85	2.15	1.32	1.37	7.15	5.54	2.18	2.15	2.77	3.68
IN.	3.16	6.39	4.44	2.48	1.37	1.58	7.98	6.39	2.43	2.48	3.20	4.11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2002, BY WATER YEAR (WY)

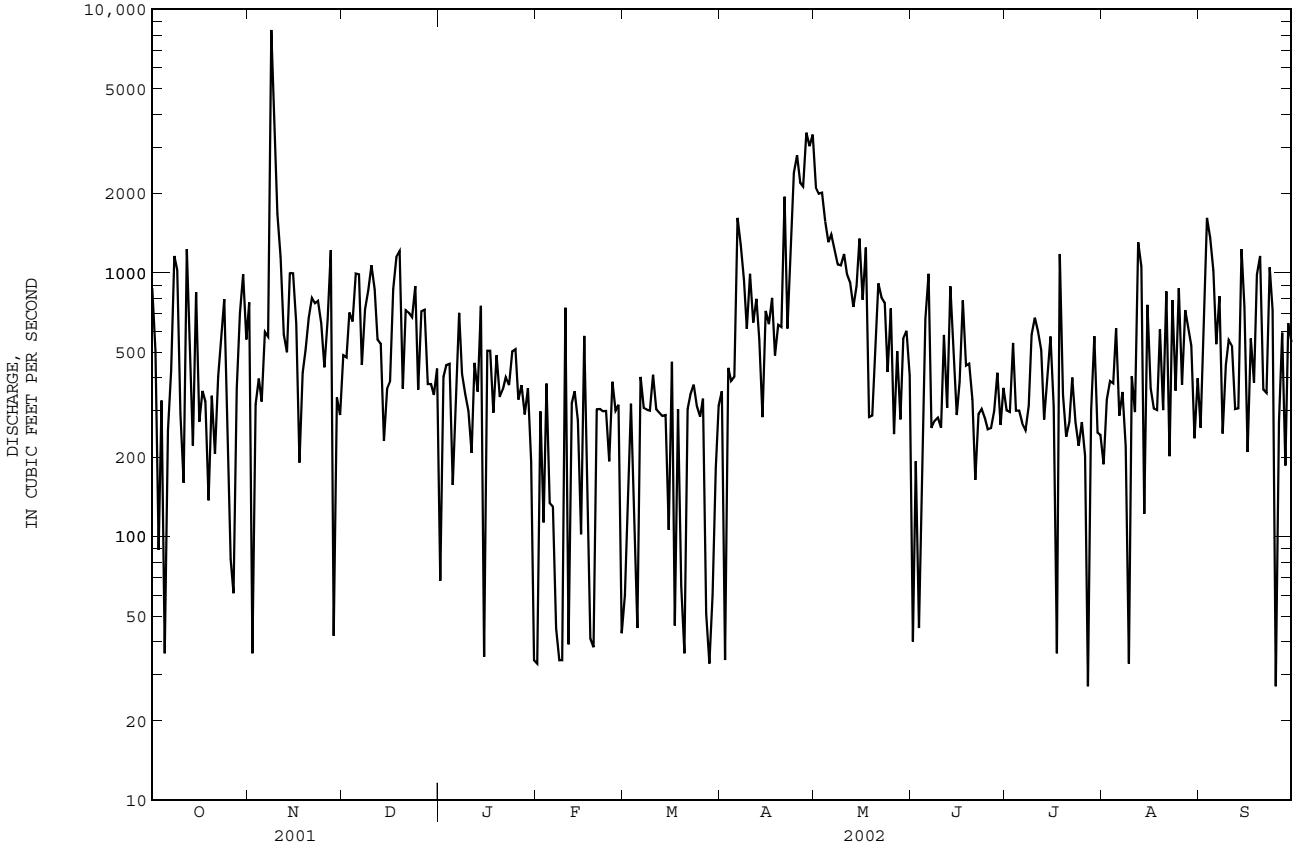
MEAN	813	768	490	303	206	221	697	784	376	338	488	753
MAX	1161	973	655	366	224	232	1216	942	393	429	503	996
(WY)	2001	2002	2002	2002	2002	2002	2002	2002	2001	2001	2001	2000
MIN	466	563	326	240	188	209	177	626	363	220	471	625
(WY)	2002	2001	2001	2001	2001	2001	2001	2001	2000	2000	2002	2002

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 2000 - 2002	
ANNUAL TOTAL	167684		210237			
ANNUAL MEAN	459		576		516	
HIGHEST ANNUAL MEAN					576	2002
LOWEST ANNUAL MEAN					457	2001
HIGHEST DAILY MEAN	8360	Nov 8	8360	Nov 8	8360	Nov 8 2001
LOWEST DAILY MEAN	26	Mar 31	27	Jul 27	21	Jul 3 2000
ANNUAL SEVEN-DAY MINIMUM	88	Apr 4	124	Feb 3	68	Jul 2 2000
MAXIMUM PEAK FLOW			16200	Nov 8	16200	Nov 8 2001
MAXIMUM PEAK STAGE			18.85	Nov 8	18.85	Nov 8 2001
ANNUAL RUNOFF (AC-FT)	332600		417000		374100	
ANNUAL RUNOFF (CFSM)	2.70		3.39		3.04	
ANNUAL RUNOFF (INCHES)	36.69		46.00		41.27	
10 PERCENT EXCEEDS	916		1110		1050	
50 PERCENT EXCEEDS	360		389		374	
90 PERCENT EXCEEDS	32		118		39	

e Estimated

RIO GRANDE DE ARECIBO BASIN

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



RIO GRANDE DE ARECIBO BASIN

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

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 mi^2 (436 km^2). This does not include 6.0 mi^2 (15.5 km^2) above Lago Garzas.

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
DEC													
12...	1000	--	206	6.8	24.6	17	6.8	82	<10	E60	E90	73	19.9
MAR													
11...	1310	29	229	7.3	26.0	2.6	6.5	80	<10	<10	E10	--	--
SEP													
06...	0900	--	174	6.8	26.1	130	5.3	66	<10	450	430	67	18.2

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)	NITRITE WATER, UNFLTRD MG/L AS N (00615)
DEC													
12...	5.54	8.47	.4	2.07	66	<1.0	9.9	8.93	E.1	21.6	116	10	<.01
MAR													
11...	--	--	--	--	82	--	--	--	--	--	--	<10	.02
SEP													
06...	5.30	8.40	.4	2.20	59	<.1	9.7	8.66	E.09	19.4	107	54	.02

DATE	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)
DEC													
12...	.770	<.01	E.30	E.02	<2	37.2	20	<.1	<.8	<10	300	<1	61.6
MAR													
11...	.400	.07	<.20	<.02	--	--	--	--	--	--	--	--	--
SEP													
06...	.540	.10	.40	.10	<2	7.3	30	<.1	1.9	<10	M	M	<2.4

DATE	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
DEC							
12...	<.01	<2	<.3	<20	<.01	<16	<.05
MAR							
11...	--	--	--	--	--	--	--
SEP							
06...	.01	<2	<.3	<20	<.01	<16	<.05

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

RIO GRANDE DE ARECIBO BASIN

50027600 RIO GRANDE DE ARECIBO NEAR SAN PEDRO, PR

LOCATION.--Lat 18°23'55", long 66°41'29", Hydrologic Unit 21010002, on left side of old Highway 10, 7.2 mi (11.6 km) north of Lago Dos Bocas Dam, 5.4 mi (8.69 km) from Plaza Rosario at Arecibo town and 3.8 mi (6.11 km) east from La Esperanza School.

DRAINAGE AREA.--173.7 mi^2 (449 km^2) approximately, of which an undetermined amount does not contribute directly to surface runoff.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1959 to February 1962 yearly measurements only, May 2001 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 49.2 ft (15 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Flow affected by Lago Dos Bocas Dam 7.2 mi (11.6 km) upstream from gage. Gage-height satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	609	502	270	123	52	63	237	1540	147	271	165	205
2	457	e384	318	202	113	115	141	1400	67	225	245	319
3	100	195	458	299	159	134	188	1390	138	379	230	1200
4	153	337	438	323	265	171	262	1140	88	234	347	901
5	163	256	655	179	108	53	272	851	437	232	488	669
6	109	465	633	200	94	164	931	882	638	216	238	485
7	239	531	296	485	64	211	950	742	202	205	260	462
8	824	7130	477	260	54	210	692	692	197	280	e278	189
9	783	3370	519	243	50	210	447	704	203	357	e230	335
10	332	1330	691	238	367	286	660	775	180	466	225	338
11	141	717	554	133	150	219	456	677	366	385	261	334
12	757	489	411	283	132	204	567	630	210	399	962	228
13	322	449	363	238	235	204	331	520	545	180	678	229
14	215	454	229	e301	220	196	224	531	348	275	229	741
15	603	620	216	e280	123	178	469	967	197	e340	443	607
16	202	418	281	e200	280	229	438	522	197	e326	300	176
17	280	213	659	e136	146	112	524	798	529	176	173	348
18	175	218	1070	e236	103	96	343	234	286	613	e213	162
19	e228	347	517	e351	62	155	437	222	244	320	365	651
20	e159	439	195	e333	120	58	382	330	247	185	e222	752
21	162	519	534	e281	211	114	1360	606	142	202	575	273
22	300	457	507	e231	206	212	432	548	154	232	192	246
23	390	584	484	250	209	247	782	525	190	e283	472	670
24	571	416	600	322	150	213	1640	392	182	201	246	578
25	e493	302	280	e430	242	264	2000	401	e174	181	566	80
26	e259	473	474	e338	213	203	1610	202	e193	264	290	146
27	101	683	484	e289	218	66	1400	344	e163	57	508	302
28	221	162	281	e341	142	51	2640	204	279	130	371	162
29	553	198	264	e178	---	52	2040	385	193	393	e408	412
30	757	203	255	e283	---	57	2850	387	203	192	e282	370
31	449	---	317	96	---	210	---	299	---	189	303	---
TOTAL	11107	22861	13730	8082	4488	4957	25705	19840	7339	8388	10765	12570
MEAN	358	762	443	261	160	160	857	640	245	271	347	419
MAX	824	7130	1070	485	367	286	2850	1540	638	613	962	1200
MIN	100	162	195	96	50	51	141	202	67	57	165	80
AC-FT	22030	45340	27230	16030	8900	9830	50990	39350	14560	16640	21350	24930
CFSM	2.06	4.39	2.55	1.50	0.92	0.92	4.93	3.68	1.41	1.56	2.00	2.41
IN.	2.38	4.90	2.94	1.73	0.96	1.06	5.51	4.25	1.57	1.80	2.31	2.69

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2002, BY WATER YEAR (WY)

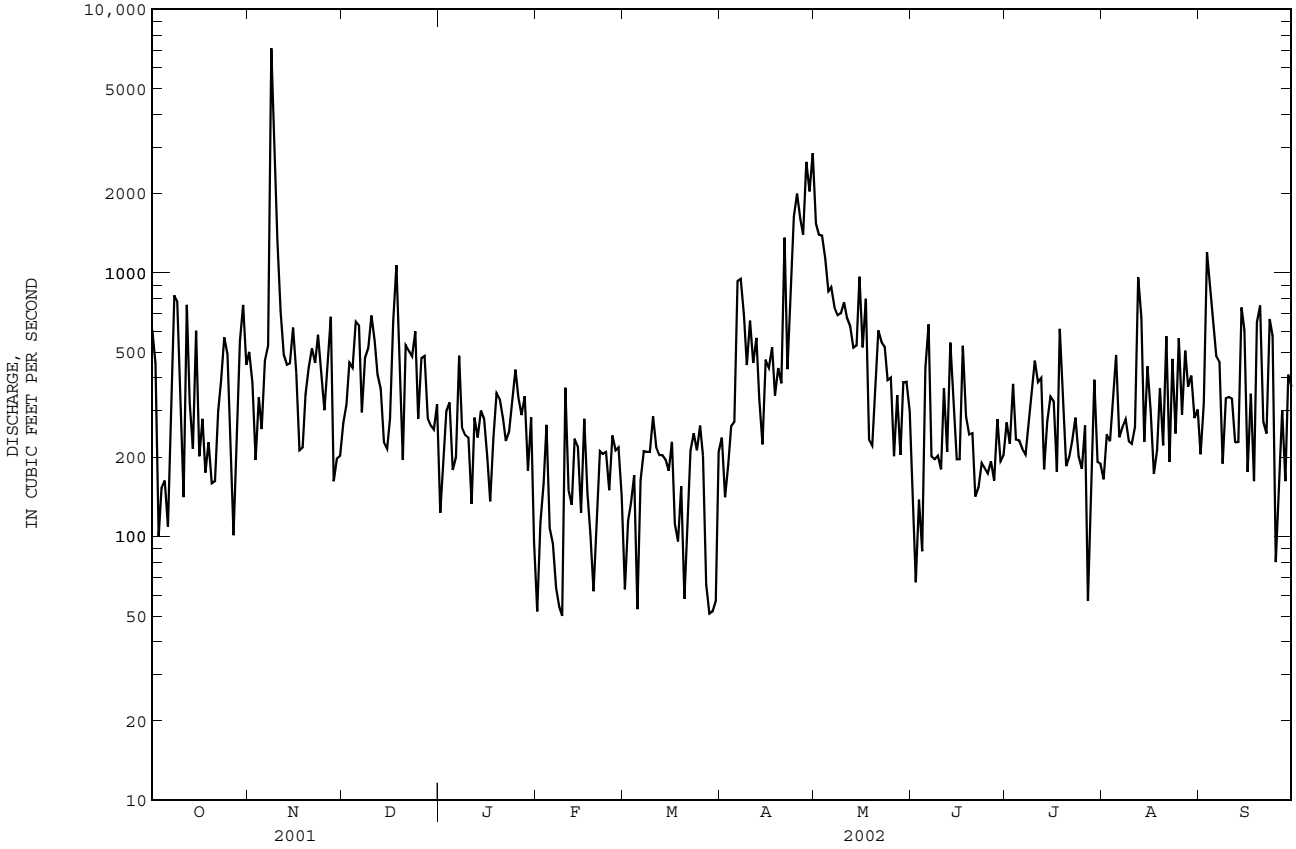
MEAN	358	762	443	261	160	160	857	640	261	287	344	441
MAX	358	762	443	261	160	160	857	640	278	303	347	464
(WY)	2002	2002	2002	2002	2002	2002	2002	2002	2001	2001	2002	2001
MIN	358	762	443	261	160	160	857	640	245	271	341	419
(WY)	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2001	2002

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 2001 - 2002
ANNUAL TOTAL		149832	
ANNUAL MEAN		410	410
HIGHEST ANNUAL MEAN			410 2002
LOWEST ANNUAL MEAN			410 2002
HIGHEST DAILY MEAN		7130 Nov 8	7130 Nov 8 2001
LOWEST DAILY MEAN		50 Feb 9	47 Jun 1 2001
ANNUAL SEVEN-DAY MINIMUM		113 Feb 3	113 Feb 3 2002
MAXIMUM PEAK FLOW		14900 Nov 8	14900 Nov 8 2001
MAXIMUM PEAK STAGE		14.72 Nov 8	14.72 Nov 8 2001
ANNUAL RUNOFF (AC-FT)		297200	297400
ANNUAL RUNOFF (CFSM)		2.36	2.36
ANNUAL RUNOFF (INCHES)		32.09	32.11
10 PERCENT EXCEEDS		697	678
50 PERCENT EXCEEDS		280	284
90 PERCENT EXCEEDS		137	127

e Estimated

RIO GRANDE DE ARECIBO BASIN

50027600 RIO GRANDE DE ARECIBO NEAR SAN PEDRO, PR--Continued



RIO GRANDE DE ARECIBO BASIN

50027600 RIO GRANDE DE ARECIBO NEAR SAN PEDRO, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 1959 to February 1962 yearly measurements only, May 2001 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 2001 to September 2002.

INSTRUMENTATION.-- USDH-48 sediment sampler and automatic sediment sampler since 2001.

REMARKS.--Sediment samples were collected by local observer on a weekly basis. During high flow events sediment samples were collected with automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 671 mg/L November 9, 2001; Minimum daily mean, 1 mg/L several days.

SEDIMENT LOADS: Maximum daily mean, 14,700 tons (13,336 tonnes) November 8, 2001; Minimum daily mean, 0.19 ton (0.17 tonne) July 27, 2002.

EXTREMES FOR CURRENT YEAR 2002.--
SEDIMENT CONCENTRATION: Maximum daily mean, 671 mg/L November 9, 2001; Minimum daily mean, 1 mg/L several days.

SEDIMENT LOADS: Maximum daily mean, 14,700 tons (13,336 tonnes) November 8, 2001; Minimum daily mean, 0.19 ton (0.17 tonne) July 27, 2002.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	609	6	11	502	8	15	270	61	113
2	457	6	8.6	e384	e5	e1.9	318	88	127
3	100	7	1.8	195	5	2.6	458	59	98
4	153	4	2.4	337	5	4.5	438	90	194
5	163	4	2.4	256	5	3.5	655	143	389
6	109	4	1.4	465	24	67	633	120	319
7	239	4	3.7	531	32	79	296	57	74
8	824	6	15	7130	512	14700	477	88	201
9	783	5	11	3370	671	6920	519	136	260
10	332	4	4.1	1330	219	824	691	127	341
11	141	4	1.5	717	133	296	554	98	247
12	757	5	14	489	118	213	411	78	159
13	322	5	4.7	449	116	219	363	56	117
14	215	4	3.1	454	125	213	229	46	63
15	603	7	15	620	156	347	216	34	61
16	202	6	5.6	418	119	198	281	48	88
17	280	11	8.3	213	78	61	659	108	295
18	175	5	4.0	218	79	98	1070	144	633
19	e228	e8	e4.6	347	95	152	517	48	109
20	e159	e7	e4.6	439	121	247	195	10	4.7
21	162	8	4.6	519	119	268	534	6	8.0
22	300	8	8.4	457	115	236	507	5	6.8
23	390	7	9.8	584	124	288	484	5	6.5
24	571	9	21	416	103	198	600	5	8.1
25	e493	e8	e5.6	302	85	114	280	5	3.6
26	e259	e6	e1.4	473	133	270	474	5	5.8
27	101	6	1.6	683	144	453	484	4	5.5
28	221	6	3.6	162	42	47	281	4	4.1
29	553	6	9.0	198	45	53	264	5	4.9
30	757	9	25	203	52	49	255	5	4.7
31	449	7	10	---	---	---	317	7	6.6
TOTAL	11107	---	226.8	22861	---	26637.5	13730	---	3957.3

RIO GRANDE DE ARECIBO BASIN

50027600 RIO GRANDE DE ARECIBO NEAR SAN PEDRO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	123	5	1.9	52	5	0.66	63	4	0.69
2	202	4	3.4	113	4	1.8	115	4	1.4
3	299	6	5.8	159	5	2.5	134	15	6.7
4	323	6	6.8	265	6	5.5	171	23	11
5	179	10	5.1	108	4	1.0	53	19	2.8
6	200	8	4.9	94	4	1.0	164	17	11
7	485	9	12	64	4	0.69	211	29	17
8	260	6	4.9	54	4	0.58	210	29	17
9	243	6	4.9	50	4	0.54	210	30	17
10	238	6	5.0	367	5	6.5	286	32	25
11	133	7	2.6	150	6	3.0	219	34	19
12	283	5	3.8	132	6	2.7	204	35	18
13	238	7	8.1	235	6	5.0	204	36	19
14	e301	e20	e19	220	5	4.2	196	38	23
15	e280	e4	e3.1	123	4	1.6	178	39	21
16	e200	e6	e8.2	280	4	3.8	229	31	18
17	e136	e3	e2.7	146	4	2.7	112	28	8.5
18	e236	e5	e4.1	103	4	1.1	96	28	8.9
19	e351	e5	e5.1	62	4	0.67	155	33	21
20	e333	e5	e4.3	120	4	1.9	58	29	4.5
21	e281	e4	e2.9	211	6	4.0	114	34	11
22	e231	e3	e3.7	206	5	3.6	212	33	25
23	250	e3	e3.6	209	4	3.1	247	35	34
24	322	e3	e4.5	150	5	2.3	213	32	24
25	e430	e8	e10	242	4	3.8	264	31	25
26	e338	e6	e6.8	213	6	4.2	203	31	20
27	e289	e5	e3.8	218	7	4.8	66	24	4.4
28	e341	e6	e6.8	142	6	3.2	51	23	3.1
29	e178	e5	e2.5	---	---	---	52	22	3.1
30	e283	e4	e3.8	---	---	---	57	21	3.3
31	96	e5	1.3	---	---	---	210	23	18
TOTAL	8082	---	165.4	4488	---	76.44	4957	---	441.39

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	237	26	24	1540	241	1010	147	14	6.0
2	141	32	15	1400	226	857	67	18	3.3
3	188	23	16	1390	221	829	138	23	8.1
4	262	26	26	1140	203	642	88	23	5.3
5	272	27	30	851	106	290	437	35	63
6	931	26	63	882	79	238	638	64	167
7	950	24	62	742	58	150	202	24	27
8	692	24	48	692	62	143	197	19	23
9	447	23	30	704	64	174	203	17	23
10	660	26	52	775	58	157	180	18	19
11	456	23	31	677	51	153	366	26	46
12	567	24	41	630	49	123	210	14	19
13	331	24	22	520	41	90	545	38	86
14	224	27	16	531	40	92	348	13	15
15	469	29	38	967	64	190	197	5	2.4
16	438	29	35	522	36	77	197	4	2.1
17	524	26	38	798	39	128	529	30	72
18	343	22	21	234	22	33	286	42	37
19	437	26	33	222	22	33	244	28	20
20	382	27	28	330	27	42	247	25	20
21	1360	27	100	606	42	102	142	19	9.0
22	432	28	32	548	45	104	154	16	7.2
23	782	171	654	525	30	68	190	15	9.9
24	1640	268	1220	392	16	28	182	12	8.1
25	2000	259	1510	401	8	18	e174	e10	e5.3
26	1610	253	1160	202	5	6.0	e193	e6	e0.57
27	1400	208	788	344	7	12	e163	e6	e3.0
28	2640	331	2400	204	6	6.4	279	9	11
29	2040	283	2030	385	9	9.6	193	35	24
30	2850	370	3150	387	13	19	203	20	14
31	---	---	---	299	12	12	---	---	---
TOTAL	25705	---	13713	19840	---	5836.0	7339	---	756.27

RIO GRANDE DE ARECIBO BASIN

50027600 RIO GRANDE DE ARECIBO NEAR SAN PEDRO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	271	17	20	165	4	2.9	205	9	9.4
2	225	13	12	245	5	5.0	319	11	23
3	379	11	15	230	4	4.5	1200	69	249
4	234	9	8.9	347	5	7.8	901	44	146
5	232	7	8.0	488	6	13	669	30	58
6	216	8	8.2	238	5	5.2	485	21	37
7	205	7	7.1	260	7	5.4	462	13	27
8	280	7	7.0	e278	e4	e2.8	189	9	8.3
9	357	9	12	e230	e3	e0.29	335	11	15
10	466	11	18	225	4	4.5	338	9	14
11	385	10	14	261	4	5.2	334	11	14
12	399	11	15	962	94	366	228	9	11
13	180	8	4.4	678	93	244	229	9	11
14	275	9	7.9	229	36	66	741	55	181
15	e340	e7	e3.6	443	67	170	607	57	164
16	e326	e6	e3.1	300	50	76	176	8	6.0
17	176	6	3.6	173	11	24	348	27	47
18	613	8	19	e213	e49	e66	162	11	13
19	320	6	8.2	365	37	72	651	72	197
20	185	3	2.9	e222	e25	e37	752	83	249
21	202	3	3.8	575	69	171	273	25	40
22	232	1	1.7	192	19	26	246	28	53
23	e283	e1	e1.4	472	257	464	670	65	161
24	201	3	3.5	246	28	51	578	70	180
25	181	2	2.8	566	89	154	80	6	1.3
26	264	3	4.2	290	33	56	146	5	2.1
27	57	1	0.19	508	58	140	302	9	12
28	130	2	2.5	371	57	74	162	8	7.0
29	393	4	6.7	e408	e7	e2.0	412	11	18
30	192	4	3.9	e282	e6	e1.2	370	14	20
31	189	5	4.0	303	25	50	---	---	---
TOTAL	8388	---	232.59	10765	---	2366.79	12570	---	1974.1
YEAR	149832		56383.58						

e Estimated

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

Date	Time	Instan- taneous dis- charge, cfs (00061)	Sus- pended sedi- ment concen- tration mg/L (80154)	Sus- pended sedi- ment load, tons/d (80155)	Suspnd. sedi- ment, sieve diametr percent <.063mm (70331)
APR 25...	0113	2360	236	1500	88

RIO GRANDE DE ARECIBO BASIN

50027750 RIO GRANDE DE ARECIBO ABOVE ARECIBO, PR

LOCATION.--Lat 18°25'22", long 66°41'58", Hydrologic Unit 21010002, 0.5 mi (0.8 km) upstream from Río Tanamá, 3.6 mi (5.8 km), south of Arecibo and 4.9 mi (7.9 km) above mouth, and 10.4 mi (16.7 km) downstream from Lago Dos Bocas.

DRAINAGE AREA.--174 mi^2 (451 km^2), approximately, of which an undetermined amount does not contribute directly to surface runoff.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1982 to September 2002. (discontinued)

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

REMARKS.--Records poor. Flow regulated by Lago Dos Bocas Dam 10.4 mi (16.7 km) upstream from gage. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	355	355	144	149	11	9.5	90	1690	e139	e99	e83	e134
2	357	236	250	33	9.7	10	189	1580	e63	e82	e80	e148
3	86	16	358	160	23	9.5	55	1500	e66	e118	e123	e706
4	15	175	387	209	57	52	250	e1070	e73	e119	e151	e518
5	86	144	541	150	20	6.6	298	e481	e159	e88	e159	e483
6	5.8	175	498	63	8.1	11	923	e533	e277	e85	e198	e340
7	28	395	334	298	7.4	67	1000	e460	e187	e91	e105	e204
8	369	1690	342	199	6.7	109	967	e403	e105	e105	e112	e187
9	473	1830	418	164	9.7	102	714	e397	e102	e113	e82	e144
10	379	1030	510	154	32	148	716	e560	e103	e211	e71	e148
11	159	582	449	109	127	164	652	e333	e121	e191	e147	e215
12	404	409	353	95	14	112	576	e378	e140	e227	e358	e171
13	294	252	291	181	73	94	482	e191	e212	e129	e357	e118
14	203	385	253	272	131	91	390	e180	e217	e112	e231	e250
15	252	462	136	200	89	106	574	e300	e119	e154	e108	e429
16	214	290	204	160	87	23	641	e525	e98	e145	e209	e142
17	158	208	474	75	134	112	730	e539	e204	e103	e90	e159
18	49	80	512	167	36	8.2	640	e293	e165	e160	e98	e204
19	87	198	573	158	21	47	808	e175	e134	e221	e149	e362
20	17	227	327	148	17	11	913	e184	e126	e106	e166	e446
21	80	320	394	119	193	18	1580	e314	e92	e76	e212	e298
22	42	259	498	135	191	36	898	e327	e51	e88	e157	e143
23	182	386	416	142	172	109	1030	e301	e71	e121	e176	e279
24	325	223	501	151	130	168	1470	e269	e77	e83	e126	e343
25	263	118	271	201	79	192	1680	e211	e73	e70	e244	e136
26	125	281	333	155	134	139	1620	e166	e84	e112	e165	e66
27	17	307	361	112	97	51	1440	e187	e66	e44	e214	e98
28	20	273	234	135	106	5.8	2050	e138	e101	e33	e221	e161
29	302	82	187	55	---	5.7	1580	e176	e94	e129	e233	e134
30	461	148	183	103	---	5.6	2340	e200	e72	e122	e144	e181
31	332	---	203	43	---	23	---	e179	---	e75	e158	---
TOTAL	6139.8	11536	10935	4495	2015.6	2045.9	27296	14240	3591	3612	5127	7347
MEAN	198	385	353	145	72.0	66.0	910	459	120	117	165	245
MAX	473	1830	573	298	193	192	2340	1690	277	227	358	706
MIN	5.8	16	136	33	6.7	5.6	55	138	51	33	71	66
AC-FT	12180	22880	21690	8920	4000	4060	54140	28250	7120	7160	10170	14570
CFSM	1.14	2.21	2.03	0.83	0.41	0.38	5.23	2.64	0.69	0.67	0.95	1.41
IN.	1.31	2.47	2.34	0.96	0.43	0.44	5.84	3.04	0.77	0.77	1.10	1.57

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 2002, BY WATER YEAR (WY)

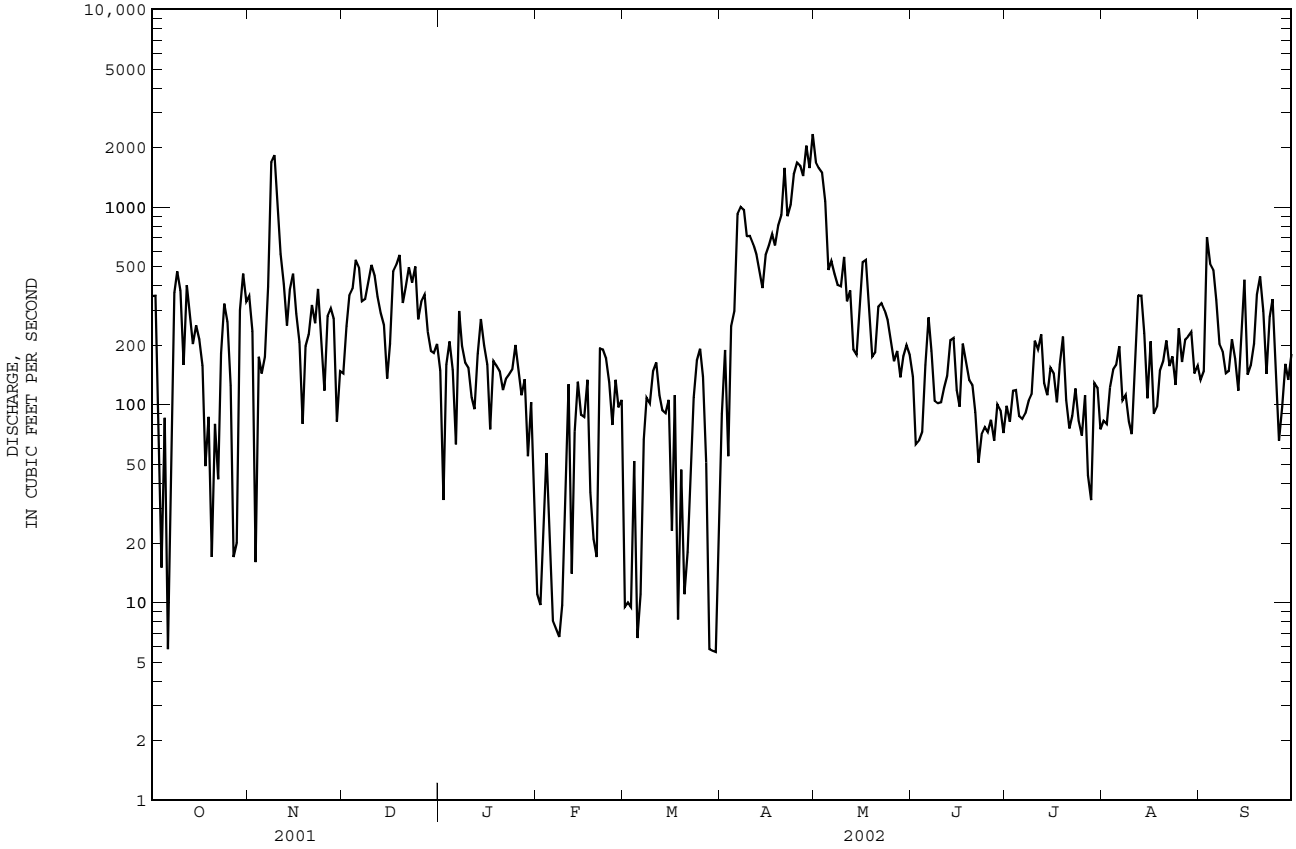
MEAN	558	493	289	229	204	193	334	511	322	229	254	498
MAX	1984	1413	570	437	428	351	910	2000	683	374	474	1479
(WY)	1986	1986	1988	1988	1988	1985	2002	1986	1987	1987	1988	1996
MIN	171	123	72.4	54.8	36.9	46.8	28.8	178	69.3	62.7	82.8	99.9
(WY)	1995	1995	1995	2001	2001	2001	2001	1994	1994	1994	1994	1994

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1982 - 2002	
ANNUAL TOTAL	66802.5		98380.3			
ANNUAL MEAN	183		270		342	
HIGHEST ANNUAL MEAN					729	1986
LOWEST ANNUAL MEAN					132	1994
HIGHEST DAILY MEAN	1830	Nov 9	2340	Apr 30	14800	May 18 1985
LOWEST DAILY MEAN	1.2	Jan 8	5.6	Mar 30	0.91	Dec 25 2000
ANNUAL SEVEN-DAY MINIMUM	9.0	Apr 5	19	Feb 2	9.0	Apr 5 2001
MAXIMUM PEAK FLOW			3250	Apr 30	45800	May 18 1985
MAXIMUM PEAK STAGE			11.21	Apr 30	18.22	May 18 1985
ANNUAL RUNOFF (AC-FT)	132500		195100		247900	
ANNUAL RUNOFF (CFSM)	1.05		1.55		1.97	
ANNUAL RUNOFF (INCHES)	14.28		21.03		26.72	
10 PERCENT EXCEEDS	408		535		710	
50 PERCENT EXCEEDS	136		161		222	
90 PERCENT EXCEEDS	7.5		40		52	

e Estimated

RIO GRANDE DE ARECIBO BASIN

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



RIO GRANDE DE ARECIBO BASIN

50028000 RIO TANAMA NEAR UTUADO, PR

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

DRAINAGE AREA.--18.4 mi^2 (47.7 km^2).

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 and crest-stage gage. Datum of gage is 938.3 ft (286.0 m) above mean sea level. Datum of gage was increased by 3.0 ft (0.91 m) on October 1978.

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

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	105	61	41	27	20	121	181	63	33	64	37
2	40	89	61	42	26	20	72	225	62	31	77	98
3	48	81	108	41	26	19	46	147	64	33	48	217
4	41	72	116	41	26	19	40	125	66	31	55	102
5	38	70	75	50	27	19	209	113	63	29	48	92
6	37	74	61	56	25	19	240	115	61	37	43	62
7	37	119	57	45	25	19	136	104	58	34	36	50
8	44	841	54	42	24	22	279	97	55	37	34	47
9	37	333	53	44	24	20	109	265	54	50	66	45
10	215	189	52	40	24	55	80	173	52	46	53	62
11	133	150	84	39	24	60	68	132	53	55	71	51
12	62	133	85	36	23	39	60	115	60	80	50	43
13	56	120	63	35	22	29	55	108	55	45	86	41
14	48	243	59	35	22	23	51	101	47	62	58	40
15	49	138	54	34	23	22	54	166	47	48	43	52
16	42	114	120	34	22	31	78	e182	46	38	37	60
17	42	105	67	34	21	42	71	e103	46	37	35	43
18	46	96	56	33	22	23	148	e94	45	35	78	162
19	41	90	53	33	43	24	217	e90	46	34	42	78
20	37	86	48	31	26	21	231	e88	44	34	46	68
21	35	83	104	32	23	20	149	e84	41	34	39	50
22	100	79	54	31	21	20	107	e81	38	40	41	46
23	171	76	72	31	21	20	229	e78	37	36	45	44
24	202	81	69	33	21	19	271	e75	35	34	47	45
25	127	72	54	30	21	18	277	e74	43	33	39	43
26	78	70	50	30	21	20	195	e71	45	31	61	40
27	173	68	47	30	21	22	305	e69	42	30	39	40
28	150	67	44	29	20	26	199	e67	36	58	35	39
29	108	75	43	29	---	23	235	e65	33	42	35	38
30	81	65	42	28	---	23	212	e65	33	33	44	37
31	73	---	42	27	---	117	---	e62	---	44	48	---
TOTAL	2433	3984	2008	1116	671	874	4544	3515	1470	1244	1543	1872
MEAN	78.5	133	64.8	36.0	24.0	28.2	151	113	49.0	40.1	49.8	62.4
MAX	215	841	120	56	43	117	305	265	66	80	86	217
MIN	35	65	42	27	20	18	40	62	33	29	34	37
AC-FT	4830	7900	3980	2210	1330	1730	9010	6970	2920	2470	3060	3710
CFSM	4.27	7.22	3.52	1.96	1.30	1.53	8.23	6.16	2.66	2.18	2.71	3.39
IN.	4.92	8.05	4.06	2.26	1.36	1.77	9.19	7.11	2.97	2.52	3.12	3.78

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2002, BY WATER YEAR (WY)

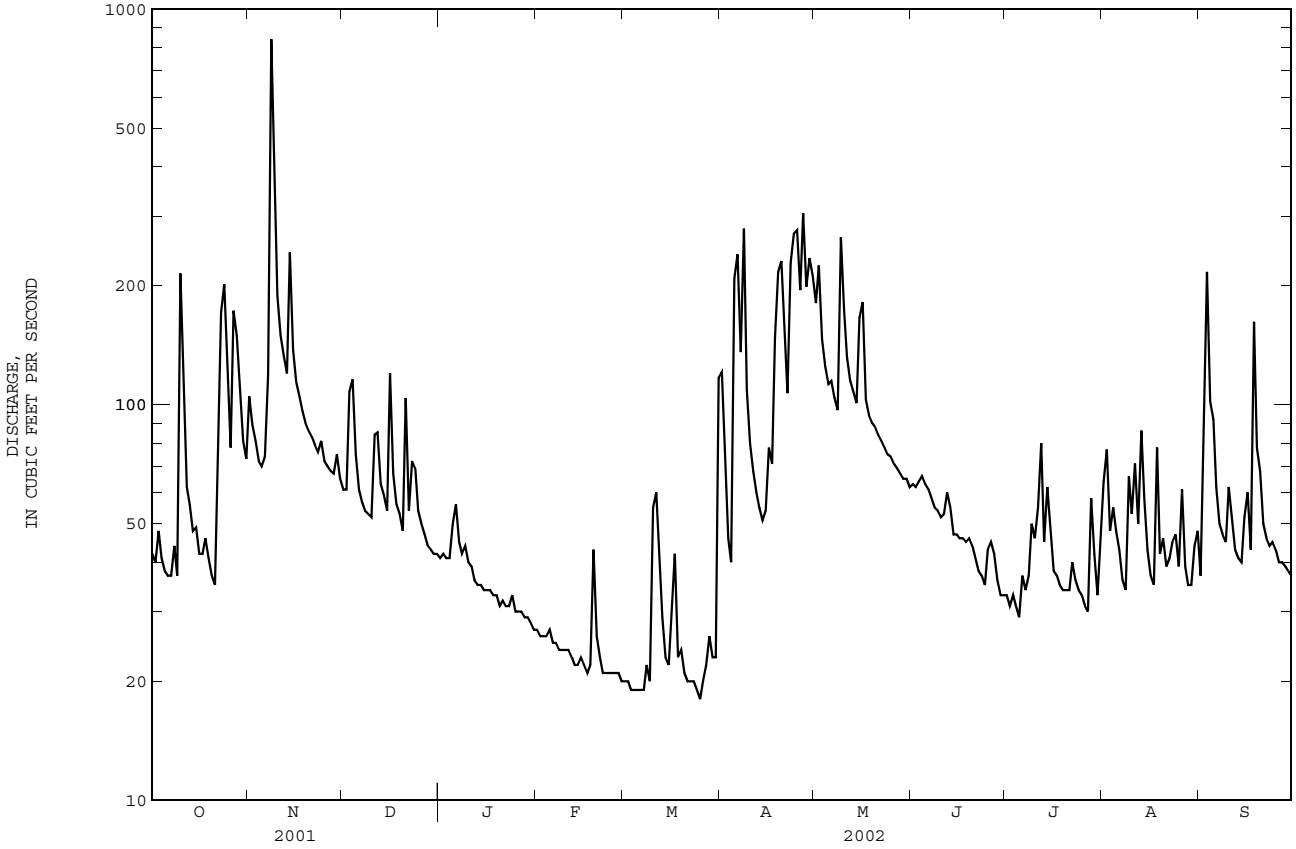
MEAN	81.7	70.5	43.8	30.4	26.0	25.1	38.3	58.4	44.3	36.3	47.7	78.2
MAX	195	159	121	71.0	50.8	71.2	151	193	117	65.7	110	208
(WY)	1990	1969	1966	1997	1996	1972	2002	1963	1999	1981	1979	1998
MIN	25.4	25.1	18.1	14.7	13.2	11.0	9.70	12.4	15.6	9.18	15.9	25.0
(WY)	1963	1995	1998	1998	1965	1984	1984	1977	1994	1994	1994	1994

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1960 - 2002	
ANNUAL TOTAL	18697		25202			
ANNUAL MEAN	51.2		69.0		48.5	
HIGHEST ANNUAL MEAN					71.7	1999
LOWEST ANNUAL MEAN					20.7	1994
HIGHEST DAILY MEAN	841	Nov 8	841	Nov 8	3260	Sep 22 1998
LOWEST DAILY MEAN	12	Mar 31	18	Mar 25	5.4	Aug 4 1994
ANNUAL SEVEN-DAY MINIMUM	13	Mar 27	19	Mar 1	6.4	Jul 29 1994
MAXIMUM PEAK FLOW			3400	Nov 8	23500	Sep 22 1998
MAXIMUM PEAK STAGE			12.44	Nov 8	21.24	Sep 22 1998
INSTANTANEOUS LOW FLOW					5.4	Aug 4 1994
ANNUAL RUNOFF (AC-FT)	37090		49990		35110	
ANNUAL RUNOFF (CFSM)	2.78		3.75		2.63	
ANNUAL RUNOFF (INCHES)	37.80		50.95		35.78	
10 PERCENT EXCEEDS	99		133		87	
50 PERCENT EXCEEDS	35		48		34	
90 PERCENT EXCEEDS	16		23		16	

e Estimated

RIO GRANDE DE ARECIBO BASIN

50028000 RIO TANAMA NEAR UTUADO, PR--Continued



RIO GRANDE DE ARECIBO BASIN

50028000 RIO TANAMA NEAR UTUADO, PR

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: January 1968 to current year.

INSTRUMENTATION.--USDH-48 sediment sampler since October 1968. Automatic sediment sampler since 1990.

REMARKS.--Sediment samples were collected by a local observer on a weekly basis. During high flow events sediment samples were collected with automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 20,400 mg/L November 27, 1968; Minimum daily mean, 1 mg/L several days during several years.
SEDIMENT LOADS: Maximum daily mean, 240,000 tons (218,000 tonnes) September 22, 1998; Minimum daily mean, <0.01 ton (<0.01 tonne) several days during several years.

EXTREMES FOR CURRENT YEAR 2002.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 9,390 mg/L November 8, 2001; Minimum daily mean, 3 mg/L February 27, 28, 2002.
SEDIMENT LOADS: Maximum daily mean, 36,000 tons (32,659 tonnes) November 8, 2001; Minimum daily mean, 0.17 ton (0.15 tonne) February 28, 2002.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
DEC													
13...	1115	62	154	6.8	22.2	69	8.3	100	10	5900	4800	54	13.6
FEB													
21...	0910	24	176	7.1	19.0	26	7.8	87	<10	180	280	--	--
SEP													
11...	0940	48	138	6.4	23.0	120	8.6	102	<10	5600	7900	51	12.8

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
DEC													
13...	4.92	6.63	.4	2.11	44	<1.0	8.8	7.28	<.1	21.9	92	15.5	88
FEB													
21...	--	--	--	--	52	--	--	--	--	--	--	--	20
SEP													
11...	4.64	6.63	.4	1.94	41	.2	9.1	6.97	<.10	20.8	87	11.4	74

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
DEC													
13...	<.01	.550	.03	E.30	E.04	<2	37.1	E20	<.1	1.8	M	1500	M
FEB													
21...	<.01	1.10	<.01	<.20	.05	--	--	--	--	--	--	--	--
SEP													
11...	.01	.920	.02	.40	.08	<2	38.5	E20	<.1	2.5	E10	1570	1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
DEC								
13...	96.3	<.01	<2	<.3	E10	<.01	<16	<.05
FEB								
21...	--	--	--	--	--	--	--	--
SEP								
11...	95.6	.01	<2	<.3	E30	<.01	<16	<.05

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

RIO GRANDE DE ARECIBO BASIN

50028000 RIO TANAMA NEAR UTUADO, PR--Continued

WATER-QUALITY RECORDS

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	42	36	4.1	105	288	176	61	7	1.2
2	40	32	3.5	89	181	58	61	7	1.1
3	48	96	14	81	82	22	108	204	115
4	41	134	15	72	19	3.7	116	525	634
5	38	51	5.3	70	18	3.4	75	139	35
6	37	39	3.9	74	18	3.6	61	39	6.3
7	37	39	3.8	119	498	283	57	36	5.6
8	44	59	7.9	841	9390	36000	54	33	4.8
9	37	38	3.8	333	1340	1310	53	29	4.1
10	215	2010	5550	189	412	212	52	25	3.6
11	133	801	581	150	222	91	84	249	138
12	62	107	19	133	60	22	85	202	60
13	56	87	17	120	29	9.4	63	96	17
14	48	62	8.5	243	918	1460	59	75	12
15	49	57	9.2	138	332	133	54	70	10
16	42	51	5.7	114	162	50	120	722	865
17	42	34	3.8	105	109	31	67	136	27
18	46	48	7.0	96	57	15	56	60	9.4
19	41	45	5.1	90	14	3.5	53	43	6.2
20	37	34	3.4	86	10	2.3	48	29	3.9
21	35	26	2.5	83	10	2.2	104	535	592
22	100	466	508	79	10	2.1	54	84	13
23	171	1360	2170	76	10	2.1	72	144	35
24	202	1530	3120	81	10	2.2	69	121	23
25	127	514	248	72	11	2.1	54	80	12
26	78	145	32	70	12	2.3	50	54	7.3
27	173	1490	2050	68	13	2.3	47	31	4.0
28	150	861	665	67	11	2.1	44	24	2.9
29	108	223	83	75	10	2.0	43	21	2.4
30	81	32	7.2	65	8	1.4	42	17	2.0
31	73	17	3.3	---	---	---	42	13	1.5
TOTAL	2433	---	15160.0	3984	---	39909.7	2008	---	2654.3

RIO GRANDE DE ARECIBO BASIN

50028000 RIO TANAMA NEAR UTUADO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	41	10	1.2	27	7	0.50	20	4	0.23
2	42	8	0.93	26	7	0.48	20	6	0.30
3	41	8	0.90	26	7	0.47	19	7	0.35
4	41	9	0.97	26	6	0.46	19	8	0.41
5	50	10	1.3	27	6	0.46	19	9	0.46
6	56	10	1.6	25	6	0.43	19	10	0.52
7	45	11	1.4	25	6	0.41	19	11	0.57
8	42	12	1.3	24	6	0.40	22	6	0.38
9	44	12	1.4	24	7	0.43	20	6	0.32
10	40	12	1.3	24	7	0.46	55	357	195
11	39	10	1.1	24	8	0.49	60	294	104
12	36	8	0.78	23	9	0.52	39	55	6.9
13	35	6	0.55	22	11	0.66	29	25	2.1
14	35	4	0.39	22	12	0.73	23	13	0.80
15	34	4	0.38	23	9	0.53	22	13	0.79
16	34	4	0.40	22	8	0.48	31	35	4.7
17	34	5	0.45	21	8	0.46	42	90	12
18	33	5	0.47	22	8	0.48	23	41	2.6
19	33	6	0.52	43	50	7.0	24	26	1.7
20	31	6	0.53	26	17	1.3	21	18	1.0
21	32	7	0.57	23	5	0.30	20	11	0.58
22	31	7	0.60	21	5	0.27	20	10	0.53
23	31	8	0.64	21	4	0.25	20	11	0.56
24	33	8	0.71	21	4	0.24	19	11	0.58
25	30	9	0.69	21	4	0.22	18	12	0.60
26	30	9	0.73	21	4	0.21	20	12	0.64
27	30	10	0.77	21	3	0.19	22	12	0.70
28	29	10	0.78	20	3	0.17	26	12	0.84
29	29	9	0.70	---	---	---	23	11	0.70
30	28	8	0.61	---	---	---	23	10	0.62
31	27	7	0.52	---	---	---	117	1220	1470
TOTAL	1116	---	25.19	671	---	19.00	874	---	1811.48

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	121	1130	763	181	748	475	63	11	1.9
2	72	239	67	225	1420	1790	62	14	2.3
3	46	41	5.3	147	189	80	64	16	2.7
4	40	21	2.2	125	55	19	66	15	2.6
5	209	1860	3980	113	37	11	63	14	2.4
6	240	2140	2640	115	86	34	61	13	2.1
7	136	753	317	104	30	8.5	58	11	1.7
8	279	2410	2390	97	20	5.2	55	9	1.4
9	109	90	29	265	2060	5250	54	7	1.1
10	80	39	8.5	173	796	405	52	6	0.86
11	68	33	6.1	132	75	30	53	6	0.85
12	60	30	4.8	115	20	6.2	60	63	14
13	55	27	3.9	108	17	4.8	55	38	6.1
14	51	24	3.2	101	14	3.8	47	15	1.9
15	54	21	3.1	166	1440	1540	47	11	1.4
16	78	190	64	e182	e1230	e1250	46	8	0.98
17	71	171	36	e103	e382	e147	46	5	0.67
18	148	1270	1540	e94	e51	e13.0	45	6	0.75
19	217	1560	2510	e90	e11	e2.8	46	7	0.89
20	231	1730	1990	e88	e11	e2.6	44	8	0.97
21	149	586	255	e84	e11	e2.4	41	9	1.0
22	107	68	20	e81	e10	e2.3	38	10	1.1
23	229	1850	3060	e78	e10	e2.1	37	11	1.1
24	271	1690	3450	e75	e10	e2.0	35	12	1.1
25	277	1980	4010	e74	e9	e1.8	43	65	12
26	195	968	870	e71	e9	e1.6	45	59	11
27	305	2570	3740	e69	e8	e1.5	42	44	5.0
28	199	1020	660	e67	e7	e1.3	36	31	3.0
29	235	1300	1730	e65	e7	e1.2	33	27	2.4
30	212	1170	1080	e65	e6	e1.1	33	22	2.0
31	---	---	---	e62	e8	e1.4	---	---	---
TOTAL	4544	---	35238.1	3515	---	11096.6	1470	---	87.27

RIO GRANDE DE ARECIBO BASIN

50028000 RIO TANAMA NEAR UTUADO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	33	19	1.7	64	112	24	37	8	0.82
2	31	18	1.5	77	238	132	98	541	687
3	33	23	2.3	48	51	6.5	217	1990	5670
4	31	17	1.4	55	90	17	102	353	135
5	29	16	1.3	48	122	15	92	262	120
6	37	36	4.8	43	32	3.7	62	92	16
7	34	16	1.6	36	7	0.61	50	30	4.2
8	37	14	1.4	34	6	0.54	47	10	1.2
9	50	65	14	66	207	128	45	9	1.1
10	46	54	7.1	53	73	18	62	83	20
11	55	121	33	71	192	89	51	102	14
12	80	258	103	50	56	8.1	43	75	8.6
13	45	62	8.0	86	427	427	41	72	7.8
14	62	184	63	58	81	13	40	71	7.8
15	48	142	19	43	35	3.8	52	88	14
16	38	109	11	37	31	2.9	60	90	15
17	37	97	9.6	35	30	2.8	43	49	5.6
18	35	80	7.6	78	296	214	162	1260	1980
19	34	41	3.8	42	44	4.9	78	171	43
20	34	8	0.75	46	51	7.8	68	136	36
21	34	7	0.61	39	18	1.9	50	66	9.0
22	40	33	4.5	41	26	3.4	46	61	7.7
23	36	16	1.7	45	33	4.9	44	58	6.8
24	34	8	0.71	47	50	8.6	45	54	6.7
25	33	7	0.65	39	46	4.8	43	51	6.0
26	31	7	0.59	61	178	114	40	48	5.2
27	30	7	0.58	39	28	3.0	40	44	4.7
28	58	122	42	35	9	0.85	39	41	4.2
29	42	52	6.4	35	8	0.76	38	37	3.8
30	33	7	0.63	44	46	10	37	34	3.3
31	44	45	9.1	48	51	7.3	---	---	---
TOTAL	1244	---	363.32	1543	---	1278.16	1872	---	8844.52
YEAR	25274		116487.64						

e Estimated

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

Date	Time	Instan-taneous dis-charge, cfs (00061)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment load, tons/d (80155)	Suspnd. sedi-ment, sieve diametr percent <.062mm (70331)
OCT					
22...	1900	698	4570	8610	93
APR					
24...	1825	675	2820	5130	89

RIO GRANDE DE ARECIBO BASIN

50028400 RIO TANAMA AT CHARCO HONDO, PR

LOCATION.--Lat 18°24'52", long 66°42'52", Hydrologic Unit 21010002, 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.--22.2 mi^2 (57.5 km^2).

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

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

REMARKS.--Records poor. Diversion 0.8 mi (1.3 km) upstream for municipal supply of Arecibo. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	172	100	86	53	39	167	384	83	e53	92	168
2	72	159	97	86	56	40	173	361	95	e52	111	195
3	75	142	138	83	54	39	77	269	80	e55	106	358
4	98	130	169	80	55	40	59	204	e83	e53	94	244
5	74	117	265	83	54	40	197	172	e86	e50	147	225
6	67	113	121	102	53	41	358	153	e80	e57	99	167
7	65	189	103	95	53	42	241	144	e76	e53	76	e112
8	71	1620	95	122	50	41	541	125	e74	e57	75	97
9	73	850	91	89	50	46	276	261	e73	e70	93	93
10	331	560	85	78	51	56	179	211	e72	e66	141	104
11	298	408	94	75	53	74	139	157	e71	e90	174	127
12	267	314	127	69	51	87	100	127	e82	e120	172	105
13	174	242	126	71	50	57	81	115	e74	e80	106	81
14	130	318	103	66	47	46	78	109	e68	e100	136	79
15	104	248	93	71	47	43	76	146	e66	e78	90	95
16	106	201	134	72	45	45	87	227	e65	e70	71	124
17	91	188	208	71	47	68	98	237	e65	e64	70	107
18	97	177	152	65	46	48	119	133	e64	e60	e107	204
19	91	158	129	e63	66	46	328	110	e66	e58	157	234
20	82	143	154	57	72	42	351	101	e63	e56	130	218
21	77	139	242	e60	48	40	292	97	e60	e56	119	174
22	97	132	235	e58	44	40	189	93	e58	e68	77	114
23	228	123	189	e58	42	39	287	90	e57	e62	79	102
24	291	122	203	e62	41	40	336	84	e56	e60	99	98
25	203	111	148	e60	41	39	381	82	e64	56	148	105
26	150	110	119	e57	42	40	265	85	e70	52	102	97
27	195	108	107	e58	43	40	313	87	e63	52	111	98
28	262	107	97	e59	41	44	383	89	e56	66	84	94
29	249	113	94	e57	---	56	314	88	e54	96	83	89
30	192	110	89	e56	---	47	462	86	e53	57	97	89
31	158	---	87	e55	---	83	---	86	---	52	134	---
TOTAL	4543	7624	4194	2224	1395	1488	6947	4713	2077	2019	3380	4197
MEAN	147	254	135	71.7	49.8	48.0	232	152	69.2	65.1	109	140
MAX	331	1620	265	122	72	87	541	384	95	120	174	358
MIN	65	107	85	55	41	39	59	82	53	50	70	79
AC-FT	9010	15120	8320	4410	2770	2950	13780	9350	4120	4000	6700	8320
CFSM	6.60	11.4	6.09	3.23	2.24	2.16	10.4	6.85	3.12	2.93	4.91	6.30
IN.	7.61	12.78	7.03	3.73	2.34	2.49	11.64	7.90	3.48	3.38	5.66	7.03

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2002, BY WATER YEAR (WY)

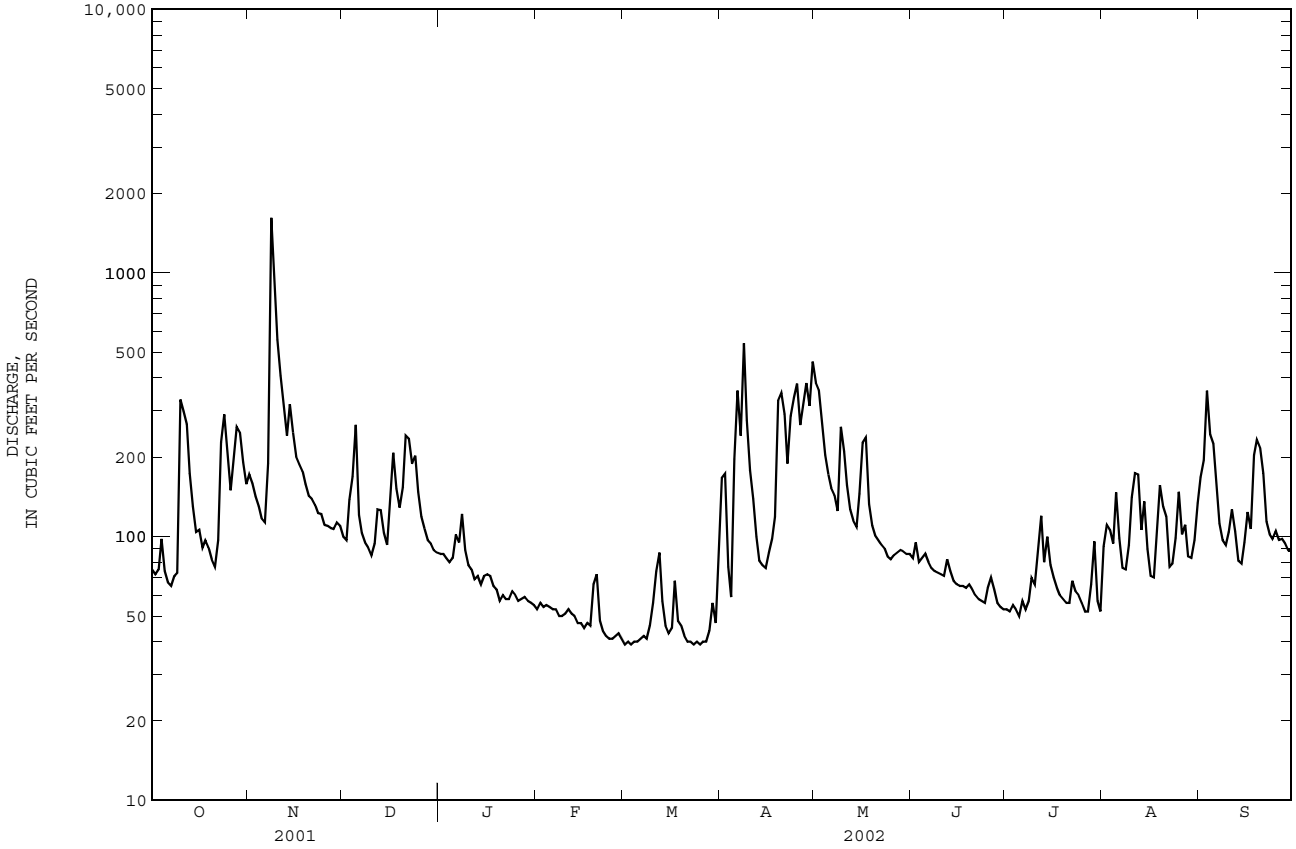
MEAN	168	142	87.9	63.1	51.3	45.0	72.8	128	92.5	67.1	85.8	141
MAX	335	260	219	167	106	76.1	232	371	236	120	168	448
(WY)	1990	1982	1982	1997	1996	1999	2002	1986	1999	1969	1998	1998
MIN	72.1	50.4	36.4	22.3	16.8	16.6	25.9	15.8	23.3	22.0	35.1	44.9
(WY)	1983	1995	1989	1989	1989	1988	1989	1989	1989	1989	1994	1994

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1969 - 2002	
ANNUAL TOTAL	37454		44801			
ANNUAL MEAN	103		123		94.1	
HIGHEST ANNUAL MEAN					133	1999
LOWEST ANNUAL MEAN					46.9	1994
HIGHEST DAILY MEAN	1620	Nov 8	1620	Nov 8	6400	Sep 22 1998
LOWEST DAILY MEAN	30	Apr 2	39	Mar 1	4.2	May 28 1989
ANNUAL SEVEN-DAY MINIMUM	32	Mar 12	40	Mar 21	5.4	May 22 1989
MAXIMUM PEAK FLOW			6730	Nov 8	not determined	Sep 22 1998
MAXIMUM PEAK STAGE			14.67	Nov 8	24.56	Sep 22 1998
ANNUAL RUNOFF (AC-FT)	74290		88860		68140	
ANNUAL RUNOFF (CFSM)	4.62		5.53		4.24	
ANNUAL RUNOFF (INCHES)	62.76		75.07		57.57	
10 PERCENT EXCEEDS	189		241		180	
50 PERCENT EXCEEDS	71		90		66	
90 PERCENT EXCEEDS	36		48		30	

e Estimated

RIO GRANDE DE ARECIBO BASIN

50028400 RIO TANAMA AT CHARCO HONDO, PR--Continued



RIO GRANDE DE ARECIBO BASIN

50029000 RIO GRANDE DE ARECIBO AT CENTRAL CAMBALACHE, PR

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

DRAINAGE AREA.--200 mi^2 (520 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1963 to January 1965 (monthly measurements only), February 1965 to April 1969 (occasional measurements only), May 1969 to September 1983, October 1996 to September 1997.

GAGE.--Water-stage recorder. Datum of gage is 3.73 ft (1.14 m) above mean sea level.

REMARKS.--Records poor. Flow regulated by Lago Dos Bocas dam, 13.9 mi (22.4 km) upstream. Gage-height satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	453	543	e270	230	67	43	196	1630	257	193	167	251
2	462	463	e330	120	63	43	257	e1590	134	165	163	272
3	199	214	384	228	75	41	96	e1470	141	223	230	1000
4	134	281	450	272	105	e89	197	e1210	150	224	273	773
5	197	278	655	229	76	e38	259	700	285	176	284	724
6	98	277	586	165	57	38	899	777	458	171	344	541
7	111	532	416	346	52	101	1010	687	327	181	203	354
8	456	5050	359	301	45	e90	985	e607	204	203	214	330
9	600	5270	442	237	43	e140	e820	e599	199	215	165	266
10	543	1780	446	218	e60	e177	e800	789	199	358	147	272
11	371	977	e500	183	e230	236	532	529	227	330	269	370
12	580	766	e400	147	42	197	e520	589	257	381	567	306
13	479	510	e340	235	89	163	e510	e330	362	240	565	226
14	339	596	e300	293	131	150	e480	e315	368	213	394	425
15	333	739	e200	274	101	153	e600	e477	225	277	208	663
16	337	513	e330	201	90	66	e700	e753	192	264	359	263
17	266	436	e520	139	136	189	e800	e770	351	199	178	289
18	173	278	e560	233	43	63	e700	480	293	291	191	354
19	208	365	e650	e217	48	95	e900	312	247	377	269	574
20	114	397	446	e205	57	55	e1000	325	235	205	296	686
21	188	523	458	e180	156	50	e2000	507	182	156	363	489
22	132	454	583	e193	157	53	e1100	524	112	175	284	266
23	329	558	486	e201	147	120	e1200	489	148	227	311	466
24	467	424	597	e212	124	168	1590	443	158	168	236	553
25	448	332	382	e260	83	185	1930	363	150	145	405	255
26	268	472	381	e212	165	150	1770	297	169	213	296	142
27	159	473	415	e170	132	90	1330	328	139	99	365	195
28	227	e411	320	e195	132	49	2530	256	197	78	375	294
29	439	e253	253	e110	---	68	e1810	311	185	240	393	253
30	588	e300	248	e160	---	54	3140	347	149	229	266	323
31	555	---	260	106	---	54	---	315	---	154	287	---
TOTAL	10253	24465	12967	6472	2706	3208	30661	19119	6700	6770	9067	12175
MEAN	331	816	418	209	96.6	103	1022	617	223	218	292	406
MAX	600	5270	655	346	230	236	3140	1630	458	381	567	1000
MIN	98	214	200	106	42	38	96	256	112	78	147	142
AC-FT	20340	48530	25720	12840	5370	6360	60820	37920	13290	13430	17980	24150
CFSM	1.65	4.08	2.09	1.04	0.48	0.52	5.11	3.08	1.12	1.09	1.46	2.03
IN.	1.91	4.55	2.41	1.20	0.50	0.60	5.70	3.56	1.25	1.26	1.69	2.26

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2002, BY WATER YEAR (WY)

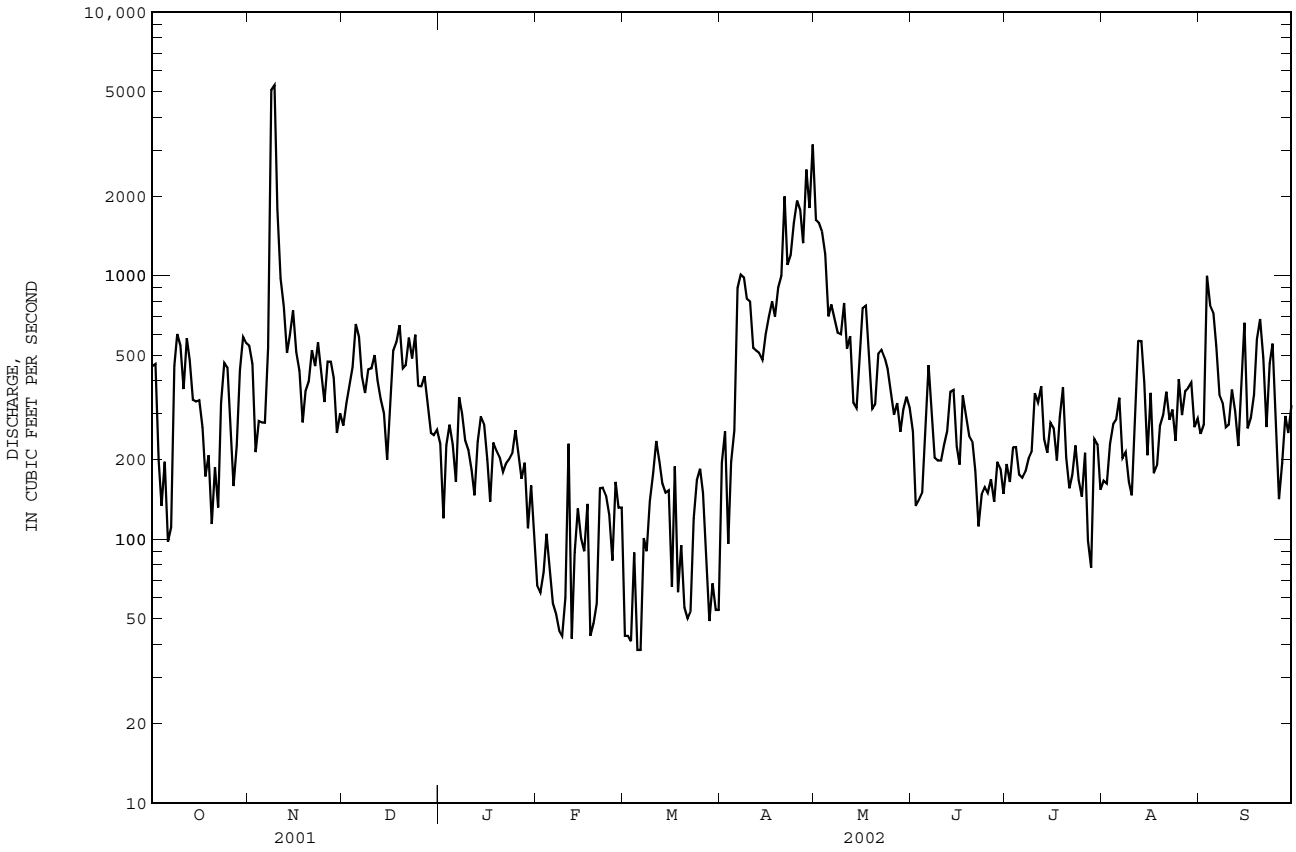
MEAN	782	745	524	340	277	291	386	543	441	359	428	677
MAX	1577	1529	1327	651	425	627	1022	1192	1220	854	1269	1866
(WY)	1971	2000	1982	1997	1997	1972	2002	1980	1979	1979	1979	1979
MIN	331	201	150	108	85.4	95.4	89.7	188	139	189	218	271
(WY)	2002	1998	1998	2001	2001	2001	2001	1977	1977	1997	1974	1997

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1969 - 2002	
ANNUAL TOTAL	104821		144563			
ANNUAL MEAN	287		396		489	
HIGHEST ANNUAL MEAN					691	1979
LOWEST ANNUAL MEAN					261	2001
HIGHEST DAILY MEAN	5270	Nov 9	5270	Nov 9	15900	Aug 31 1979
LOWEST DAILY MEAN	42	Apr 15	38	Mar 5	38	Mar 5 2002
ANNUAL SEVEN-DAY MINIMUM	56	Mar 14	56	Mar 1	56	Mar 14 2001
MAXIMUM PEAK FLOW			10300	Nov 8	Not determined	Sep 22 1998
MAXIMUM PEAK STAGE			12.05	Nov 8	19.28	Sep 22 1998
ANNUAL RUNOFF (AC-FT)	207900		286700		354500	
ANNUAL RUNOFF (CFSM)	1.44		1.98		2.45	
ANNUAL RUNOFF (INCHES)	19.50		26.89		33.25	
10 PERCENT EXCEEDS	516		700		951	
50 PERCENT EXCEEDS	214		270		344	
90 PERCENT EXCEEDS	59		97		131	

e Estimated

RIO GRANDE DE ARECIBO BASIN

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



RIO GRANDE DE ARECIBO BASIN

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 Lago Dos Bocas, 1.9 mi (3.1 km) downstream from Río Tanamá, and 1.6 mi (2.6 km) southeast of Arecibo.

DRAINAGE AREA.--200 mi^2 (520 km^2), approximately, and excludes 6.0 mi^2 (15.6km^2) above Lago Garzas.

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
DEC													
20...	0930	--	271	7.4	24.1	43	7.0	84	10	2600	964	110	36.3
MAR													
07...	0945	147	273	7.4	23.8	5.9	7.4	88	<10	340	340	--	--
SEP													
06...	1115	--	230	6.7	26.6	170	6.4	80	<10	3000	2200	94	29.8

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)	NITRITE WATER, UNFLTRD MG/L AS N (00615)
DEC													
20...	5.21	7.76	.3	1.84	105	<1.0	10.0	9.37	<.1	17.1	151	38	<.01
MAR													
07...	--	--	--	--	108	--	--	--	--	--	--	<10	<.01
SEP													
06...	4.79	9.63	.4	2.11	77	<.1	10.5	10.6	E.09	15.6	129	112	.02

DATE	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)
DEC													
20...	.890	.05	.50	.08	M	34.4	E20	E.1	1.1	<10	700	M	77.2
MAR													
07...	.500	.01	<.20	<.02	--	--	--	--	--	--	--	--	--
SEP													
06...	.660	.03	.50	.09	<2	48.6	20	.1	3.7	E10	2870	3	155

DATE	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
DEC							
20...	E.01	<2	<.3	<20	<.01	--	<.05
MAR							
07...	--	--	--	--	--	--	--
SEP							
06...	.02	<2	<.3	<20	<.01	<16	<.05

RIO GRANDE DE ARECIBO BASIN

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

PESTICIDE ANALYSES

DATE	TIME	DI-CHLOR-PROP, WATER, UNFLTRD UG/L (82183)	2,4,5-T WATER UNFLTRD UG/L (39740)	2,4-D WATER UNFLTRD UG/L (39730)	ALDRIN, WATER, UNFLTRD UG/L (39330)	CARBO-PHENO-THION, WATER, UNFLTRD UG/L (39786)	CHLOR-DANE, TECH-NICAL, WATER, UNFLTRD UG/L (39350)	CHLOR-PYRIFOS WATER UNFLTRD UG/L (38932)	TRIBU-PHOS, WATER, UNFLTRD UG/L (39040)	DIAZI-NON, WATER, UNFLTRD UG/L (39570)	DIEL-DRIN, WATER, UNFLTRD UG/L (39380)	DISUL-FOTON, WATER, UNFLTRD UG/L (39011)	ALPHA-ENDO-SULFAN, WATER, UNFLTRD UG/L (39388)
SEP													
06...	1115	<.02	<.01	.05	<.01	<.02	<.1	<.01	<.02	<.02	<.006	<.10	<.02

DATE	ENDRIN, WATER, UNFLTRD UG/L (39390)	ETHION, WATER, UNFLTRD UG/L (39398)	FONOFOS WATER UNFLTRD UG/L (82614)	HEPTA-CHLOR EPOXIDE WATER UNFLTRD UG/L (39420)	HEPTA-CHLOR, WATER, UNFLTRD UG/L (39410)	LINDANE WATER, UNFLTRD UG/L (39340)	MALA-THION, WATER, UNFLTRD UG/L (39530)	P,P'-METH-OXY-CHLOR, WATER, UNFLTRD UG/L (39480)	METHYL PARA-THION, WATER, UNFLTRD UG/L (39600)	MIREX, WATER, UNFLTRD UG/L (39755)	P,P'-DDD, WATER, UNFLTRD UG/L (39360)	P,P'-DDE, WATER, UNFLTRD UG/L (39365)	P,P'-DDT, WATER, UNFLTRD UG/L (39370)
SEP													
06...	<.01	<.01	<.01	<.009	<.01	<.006	<.10	<.020	<.01	<.006	<.007	<.006	<.009

DATE	PARA-THION, WATER, UNFLTRD UG/L (39540)	PCBS, WATER, UNFLTRD UG/L (39516)	PHORATE WATER UNFLTRD UG/L (39023)	SILVEX, WATER, UNFLTRD UG/L (39760)	TOXA-PHENE, WATER, UNFLTRD UG/L (39400)
SEP					
06...	<.01	<.1	<.02	<.02	<1

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

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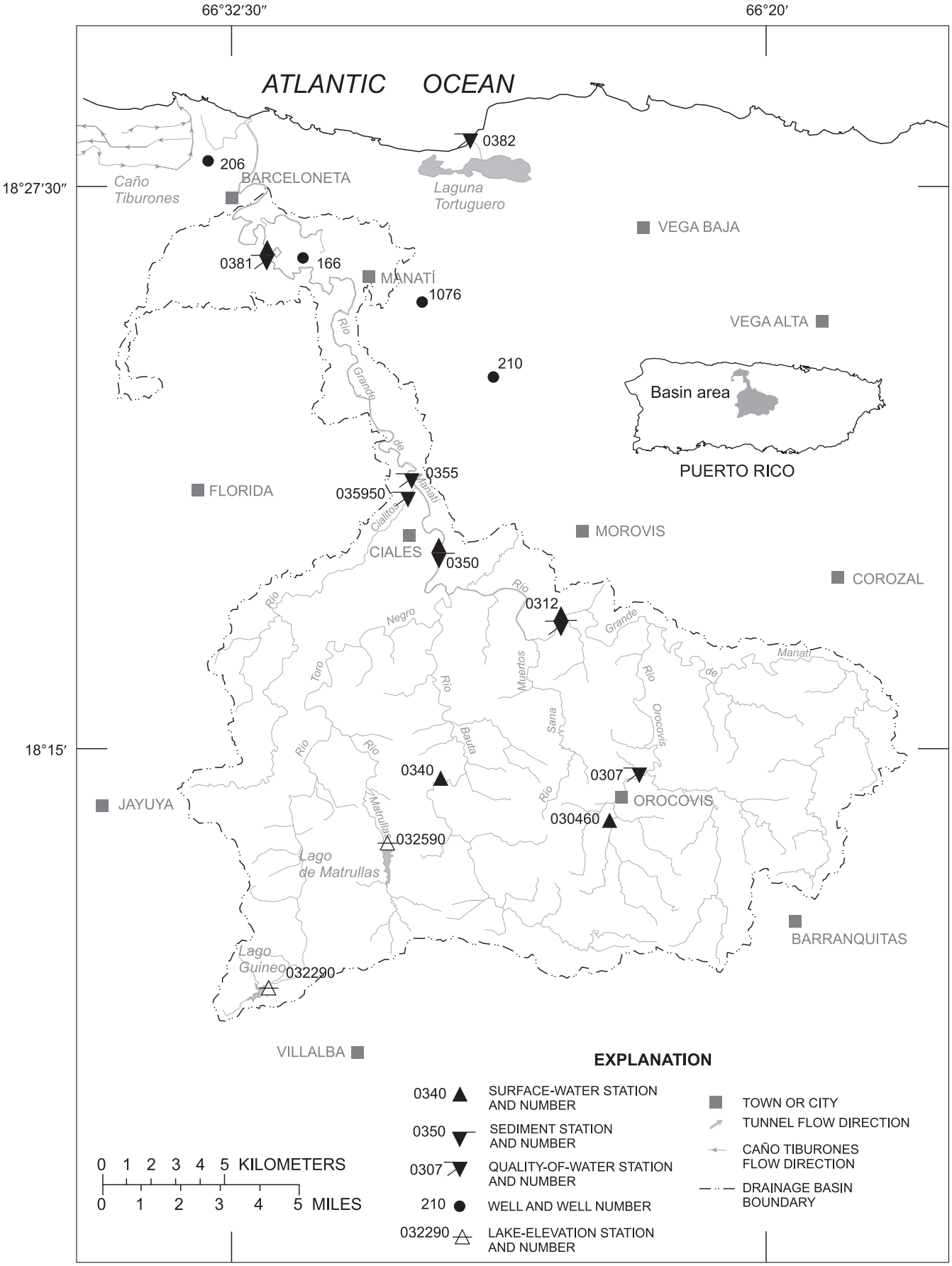


Figure 14. Río Grande de Manatí basin.

RIO GRANDE DE MANATI BASIN

50030460 RIO OROCOVIS AT OROCOVIS, PR

LOCATION.--Lat 18°13'25", long 66°23'34", Hydrologic Unit 21010001, on right bank, 0.4 mi (0.6 km) south of junction of Highways 155 and 156 in Orocovis, 2.1 mi (3.4 km) upstream from Río Botijas, and 250 ft (76 m) upstream from bridge on Highway 599.

DRAINAGE AREA.--5.03 mi^2 (13.0 km^2).

PERIOD OF RECORD.--April 1981 to September 1982, October 1988 to current year.

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

REMARKS.--Records poor. Low flow affected by diversions for water supply. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	1.1	7.6	8.1	5.0	6.0	4.7	11	5.2	2.7	6.8	2.0
2	2.4	8.3	104	8.0	4.9	6.2	3.2	12	5.0	2.8	2.2	7.5
3	1.9	5.2	32	8.1	6.4	5.1	2.3	12	5.2	2.4	1.8	14
4	2.0	2.1	18	7.9	6.0	5.4	2.9	11	5.2	2.4	1.6	5.9
5	2.6	7.3	10	9.9	5.3	4.6	4.9	11	18	2.6	2.2	3.4
6	2.4	10	7.3	15	5.2	4.1	12	10	9.6	2.9	1.7	2.8
7	2.0	4.8	5.8	9.4	5.1	4.2	8.9	10	4.6	3.3	1.5	2.8
8	2.0	340	5.8	8.1	4.6	4.8	38	8.8	4.5	3.1	1.4	2.6
9	3.4	67	6.3	7.8	4.9	4.4	30	6.8	4.0	2.4	1.2	2.7
10	3.6	38	7.2	7.0	4.3	5.9	18	5.5	3.2	2.2	2.5	2.3
11	3.1	25	7.7	6.9	4.3	5.7	11	5.2	3.5	2.2	3.7	2.4
12	2.0	19	8.2	7.7	4.0	4.3	8.0	e6.2	3.5	7.1	1.9	2.3
13	1.7	15	7.5	7.8	4.2	4.6	4.4	e6.8	2.9	2.2	1.5	2.2
14	1.6	14	7.3	7.2	4.2	4.4	3.8	e6.5	3.5	2.2	1.3	3.5
15	2.7	14	7.9	6.1	3.6	4.1	5.8	e6.3	2.8	2.3	1.4	4.8
16	3.1	12	14	6.0	3.4	3.8	10	e6.4	3.2	1.9	1.2	10
17	2.3	11	11	6.1	3.2	4.1	6.7	e5.3	3.2	1.8	1.1	3.1
18	2.2	11	10	5.9	3.9	4.3	18	e4.6	4.3	2.3	1.3	5.7
19	1.7	10	11	5.9	20	5.4	11	e4.5	3.7	2.3	1.5	4.5
20	1.5	8.9	8.7	6.8	9.3	4.0	39	e5.0	3.4	2.2	1.2	29
21	1.3	8.4	13	6.2	4.5	3.7	36	e4.4	3.8	2.3	1.3	12
22	1.3	8.7	20	6.3	4.6	3.3	14	e4.4	3.5	2.3	1.7	4.1
23	1.3	8.5	41	6.0	4.4	3.4	57	e4.1	2.5	2.1	1.8	2.4
24	1.3	9.0	41	6.7	3.9	3.4	70	e3.0	3.4	2.0	1.6	8.6
25	1.3	9.3	20	6.3	4.8	3.3	116	3.7	3.7	2.1	1.7	7.2
26	1.1	8.9	13	6.0	6.7	3.2	43	3.9	2.9	2.0	1.8	5.0
27	1.2	8.3	10	5.9	5.8	3.6	25	3.8	3.3	1.9	1.8	3.4
28	2.7	8.6	9.8	6.4	5.3	3.0	16	4.0	3.0	2.1	2.0	10
29	1.8	11	9.1	5.2	---	20	13	5.3	3.1	2.2	2.1	7.2
30	1.3	8.0	8.4	5.2	---	9.1	12	6.5	3.0	1.6	2.5	4.0
31	1.1	---	8.3	5.3	---	4.1	---	5.4	---	2.0	2.9	---
TOTAL	62.1	712.4	490.9	221.2	151.8	155.5	644.6	203.4	130.7	75.9	60.2	177.4
MEAN	2.00	23.7	15.8	7.14	5.42	5.02	21.5	6.56	4.36	2.45	1.94	5.91
MAX	3.6	340	104	15	20	20	116	12	18	7.1	6.8	29
MIN	1.1	1.1	5.8	5.2	3.2	3.0	2.3	3.0	2.5	1.6	1.1	2.0
AC-FT	123	1410	974	439	301	308	1280	403	259	151	119	352
CFSM	0.40	4.72	3.15	1.42	1.08	1.00	4.27	1.30	0.87	0.49	0.39	1.18
IN.	0.46	5.27	3.63	1.64	1.12	1.15	4.77	1.50	0.97	0.56	0.45	1.31

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 2002, BY WATER YEAR (WY)

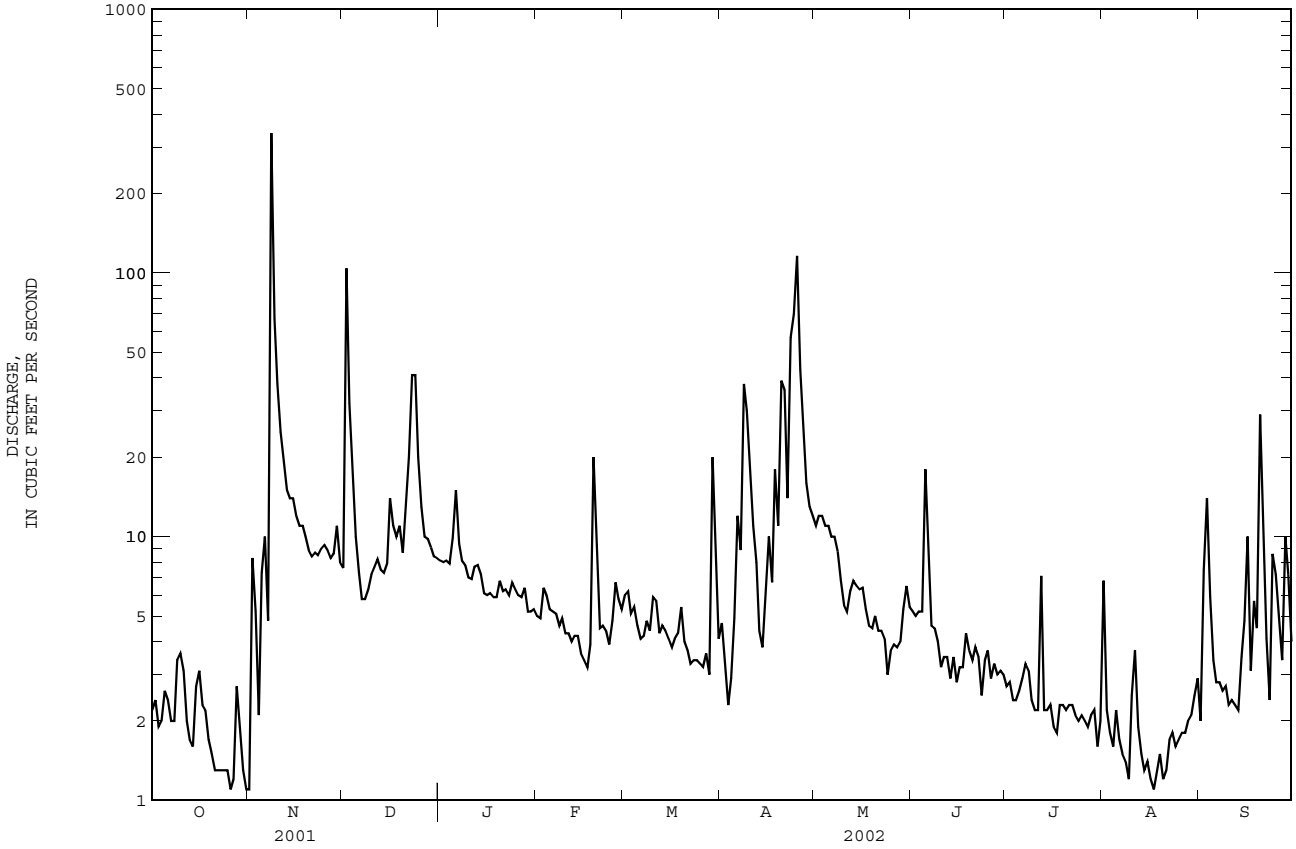
MEAN	16.4	11.9	7.05	6.33	4.31	2.16	6.08	12.7	4.70	3.05	4.53	22.5
MAX	58.0	39.9	17.9	34.3	15.7	5.02	21.5	45.9	17.1	9.07	12.3	83.0
(WY)	1990	2000	2000	1992	1996	2002	2002	1995	1999	1996	1989	1998
MIN	1.95	0.93	0.53	0.77	0.96	0.90	0.93	0.86	0.88	0.88	1.03	0.88
(WY)	1994	1998	1998	1995	1995	1994	1995	1997	1994	1994	1982	1994

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1981 - 2002	
ANNUAL TOTAL	2244.22		3086.1			
ANNUAL MEAN	6.15		8.46		8.39	
HIGHEST ANNUAL MEAN					13.3	1999
LOWEST ANNUAL MEAN					1.49	1994
HIGHEST DAILY MEAN	340	Nov 8	340	Nov 8	1570	Sep 10 1996
LOWEST DAILY MEAN	0.76	Jun 20	1.1	Oct 26	0.20	Oct 4 1992
ANNUAL SEVEN-DAY MINIMUM	0.80	Jun 19	1.3	Oct 21	0.33	Oct 11 1992
MAXIMUM PEAK FLOW			1450	Dec 2	8890	Sep 10 1996
MAXIMUM PEAK STAGE			10.23	Dec 2	17.38	Sep 10 1996
ANNUAL RUNOFF (AC-FT)	4450		6120		6080	
ANNUAL RUNOFF (CFSM)	1.22		1.68		1.67	
ANNUAL RUNOFF (INCHES)	16.60		22.82		22.67	
10 PERCENT EXCEEDS	11		13		14	
50 PERCENT EXCEEDS	2.2		4.6		2.2	
90 PERCENT EXCEEDS	1.1		1.8		0.86	

e Estimated

RIO GRANDE DE MANATI BASIN

50030460 RIO OROCOVIS AT OROCOVIS, PR--Continued



RIO GRANDE DE MANATI BASIN

50030700 RIO OROCOVIS NEAR OROCOVIS, PR

WATER-QUALITY RECORDS

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

DRAINAGE AREA.--10.1 mi^2 (26.2 km^2).

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
NOV													
26...	0915	11	282	7.4	20.4	2.1	8.3	97	<10	2000	430	110	27.6
MAR													
18...	1320	8.1	321	7.8	23.2	2.4	8.1	101	<10	230	E36	--	--
AUG													
29...	0830	7.6	313	7.0	23.5	3.0	8.2	101	<10	5100	710	150	38.1

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
NOV													
26...	10.9	12.2	.5	1.64	109	<1.0	6.8	15.9	<.1	32.7	173	5.34	<10
MAR													
18...	--	--	--	--	133	--	--	--	--	--	--	--	<10
AUG													
29...	13.0	13.2	.5	1.29	140	<.1	7.0	15.7	E.09	34.7	207	4.22	<10

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
NOV													
26...	<.01	1.10	.03	<.20	E.09	<2	45.4	30	<.1	<.8	<10	50	<1
MAR													
18...	.01	.700	.02	<.20	.06	--	--	--	--	--	--	--	--
AUG													
29...	<.01	.740	.01	.30	.13	<2	47.7	30	E.1	E.4	<10	130	<1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
NOV								
26...	6.0	<.01	<2	<.3	<20	<.01	E107	<.05
MAR								
18...	--	--	--	--	--	--	--	--
AUG								
29...	14.1	<.01	<2	<.3	E20	<.01	<16	<.05

< -- Less than
E -- Estimated value

RIO GRANDE DE MANATI BASIN

50031200 RIO GRANDE DE MANATI NEAR MOROVIS, PR

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

DRAINAGE AREA.--55.2 mi^2 (143.0 km^2).

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. February 2, 1966, to April 27, 1967, staff gage read twice daily.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Public water-supply pumpage, about 1,000 ft (305 m) upstream from the station, influences low-flow discharges. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.7	9.8	41	71	50	33	37	142	39	17	e109	39
2	8.5	10	200	67	45	35	34	126	38	17	e148	71
3	9.2	59	155	65	45	31	27	139	38	20	e62	317
4	9.7	26	121	63	63	31	25	121	40	22	e69	193
5	11	25	100	77	47	30	31	98	55	21	e65	76
6	16	57	73	163	46	27	70	108	69	22	e37	44
7	11	46	59	131	44	27	108	99	43	25	e27	31
8	10	4030	59	100	41	30	279	133	38	22	e31	27
9	17	e1300	50	83	41	31	186	87	37	21	e39	23
10	72	381	47	74	39	36	118	74	35	21	e67	22
11	44	158	47	69	39	45	81	68	35	21	e122	22
12	41	81	71	67	36	33	59	64	32	42	e207	21
13	20	75	72	65	35	30	47	61	29	65	e55	19
14	16	62	87	64	35	30	41	60	26	24	e44	28
15	57	62	72	62	33	25	44	56	25	23	e39	46
16	76	58	94	65	30	27	103	56	23	21	e26	103
17	40	59	171	60	29	24	118	54	26	21	e30	46
18	27	52	136	58	29	24	89	52	50	20	19	88
19	19	62	114	59	98	42	111	52	35	19	24	120
20	15	48	89	54	82	29	230	49	30	16	19	106
21	12	45	81	56	53	24	338	47	25	17	16	115
22	12	42	166	53	41	23	143	45	27	17	15	51
23	11	38	437	58	39	22	151	44	22	17	21	39
24	11	43	347	74	37	21	285	44	21	18	22	49
25	9.8	43	178	59	35	22	515	44	21	16	15	93
26	9.5	41	134	51	38	21	494	44	21	16	14	83
27	9.1	42	112	49	40	21	342	44	21	21	13	108
28	11	43	95	54	34	24	168	44	21	26	13	57
29	14	53	85	60	---	58	129	41	19	31	14	111
30	11	57	78	53	---	104	116	46	18	e24	21	61
31	9.8	---	74	50	---	43	---	43	---	e24	58	---
TOTAL	649.3	7107.8	3645	2134	1224	1003	4519	2185	959	707	1461	2209
MEAN	20.9	237	118	68.8	43.7	32.4	151	70.5	32.0	22.8	47.1	73.6
MAX	76	4030	437	163	98	104	515	142	69	65	207	317
MIN	8.5	9.8	41	49	29	21	25	41	18	16	13	19
AC-FT	1290	14100	7230	4230	2430	1990	8960	4330	1900	1400	2900	4380
CFSM	0.38	4.29	2.13	1.25	0.79	0.59	2.73	1.28	0.58	0.41	0.85	1.33
IN.	0.44	4.79	2.46	1.44	0.82	0.68	3.05	1.47	0.65	0.48	0.98	1.49

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2002, BY WATER YEAR (WY)

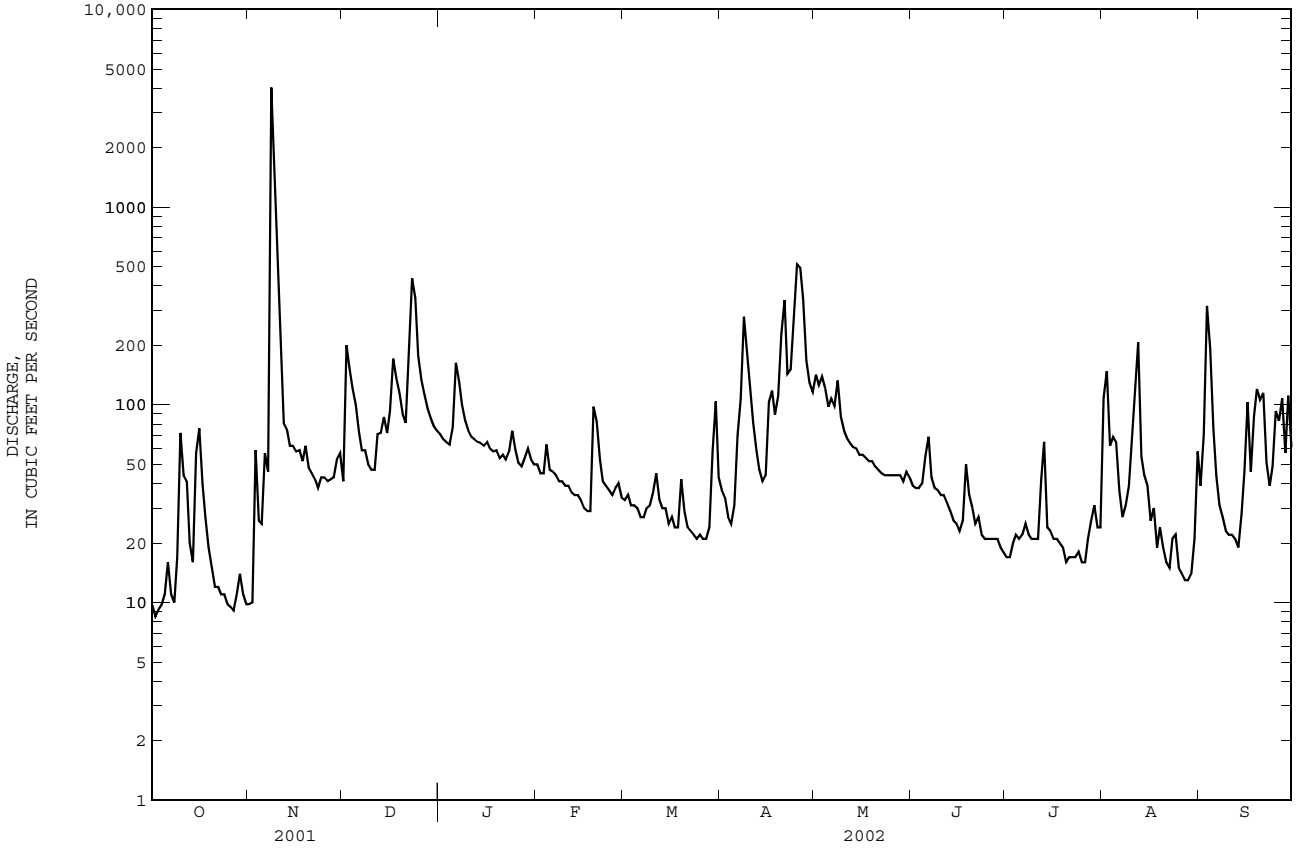
MEAN	145	148	111	81.3	63.2	60.9	100	147	58.9	43.6	52.1	108
MAX	1037	491	522	228	179	226	412	915	173	157	435	432
(WY)	1971	1971	1966	1997	1969	1972	1969	1985	1987	1979	1979	1996
MIN	20.9	11.4	8.65	10.4	15.3	12.7	8.80	15.7	6.75	5.54	9.70	6.87
(WY)	2002	1995	1995	1995	1994	1984	1995	1994	1994	1994	1984	1994

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1965 - 2002	
ANNUAL TOTAL	18579.0		27803.1			
ANNUAL MEAN	50.9		76.2		93.0	
HIGHEST ANNUAL MEAN					248	1971
LOWEST ANNUAL MEAN					24.2	1994
HIGHEST DAILY MEAN	4030	Nov 8	4030	Nov 8	17100	May 18 1985
LOWEST DAILY MEAN	7.5	Jul 17	8.5	Oct 2	3.5	May 1 1995
ANNUAL SEVEN-DAY MINIMUM	8.6	Jul 11	10	Oct 22	4.0	Jul 22 1994
MAXIMUM PEAK FLOW			12800	Nov 8	48000	May 18 1985
MAXIMUM PEAK STAGE			10.37	Nov 8	17.89	May 18 1985
ANNUAL RUNOFF (AC-FT)	36850		55150		67360	
ANNUAL RUNOFF (CFSM)	0.92		1.38		1.68	
ANNUAL RUNOFF (INCHES)	12.52		18.74		22.89	
10 PERCENT EXCEEDS	75		121		169	
50 PERCENT EXCEEDS	21		44		48	
90 PERCENT EXCEEDS	9.8		17		19	

e Estimated

RIO GRANDE DE MANATI BASIN

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



RIO GRANDE DE MANATI BASIN

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

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 2001 to September 2002.

INSTRUMENTATION.--USDH-48 and automatic sediment sampler since 2001.

REMARKS.--Sediment samples were collected by a local observer on a weekly basis. During high flow events sediment samples were collected with automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 4,350 mg/L November 8, 2001; Minimum daily mean, 10 mg/L several days.

SEDIMENT LOADS: Maximum daily mean, 60,000 tons (54,432 tonnes) November 8, 2001; Minimum daily mean, .59 ton (.54 tonne) March 26, 27, 2002.

EXTREMES FOR CURRENT YEAR 2002.--
SEDIMENT CONCENTRATION: Maximum daily mean, 4,350 mg/L November 8, 2001; Minimum daily mean, 10 mg/L several days.

SEDIMENT LOADS: Maximum daily mean, 60,000 tons (54,432 tonnes) November 8, 2001; Minimum daily mean, .59 ton (.54 tonne) March 26, 27, 2002 .

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
NOV													
26...	1145	41	270	7.8	24.3	2.1	9.8	119	<10	270	E136	110	25.9
MAR													
18...	1510	24	282	7.9	27.5	4.5	8.7	112	<10	E40	E30	--	--
AUG													
29...	1025	14	274	7.6	27.7	4.2	10.1	129	<10	270	E80	120	29.4

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
NOV													
26...	10.8	12.3	.5	2.48	106	<1.0	7.8	15.9	<.1	23.4	162	18.1	<10
MAR													
18...	--	--	--	--	116	--	--	--	--	--	--	--	<10
AUG													
29...	12.5	12.9	.5	1.54	123	<.1	6.8	15.4	E.10	28.8	181	6.94	<10

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
NOV													
26...	.01	.450	<.01	<.20	E.03	<2	45.3	30	<.1	<.8	<10	50	<1
MAR													
18...	<.01	.390	.02	<.20	.04	--	--	--	--	--	--	--	--
AUG													
29...	<.01	.130	.02	.30	.06	<2	47.8	30	<.1	<.8	<10	110	M

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
NOV								
26...	10.9	<.01	E1	<.3	<20	<.01	E35	<.05
MAR								
18...	--	--	--	--	--	--	--	--
AUG								
29...	12.8	<.01	<2	<.3	<20	<.01	<16	<.05

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

RIO GRANDE DE MANATI BASIN

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

WATER-QUALITY RECORDS

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	9.7	51	1.3	9.8	56	1.5	41	224	25
2	8.5	50	1.2	10	55	1.6	200	838	1130
3	9.2	50	1.2	59	290	52	155	745	330
4	9.7	50	1.3	26	138	9.9	121	588	203
5	11	49	1.4	25	128	8.8	100	469	128
6	16	73	3.1	57	274	44	73	368	73
7	11	58	1.7	46	231	30	59	289	46
8	10	49	1.3	4030	4350	60000	59	268	43
9	17	86	4.1	e1300	e2870	e6830	50	221	30
10	72	334	127	381	1430	1550	47	220	28
11	44	207	26	158	743	328	47	232	29
12	41	205	26	81	330	73	71	337	68
13	20	116	6.4	75	304	62	72	347	68
14	16	82	3.6	62	299	50	87	415	99
15	57	270	63	62	295	49	72	357	70
16	76	361	80	58	289	45	94	437	137
17	40	200	22	59	270	43	171	805	380
18	27	144	11	52	249	35	136	641	235
19	19	103	5.4	62	236	40	114	536	166
20	15	84	3.4	48	230	30	89	431	104
21	12	78	2.6	45	224	27	81	379	84
22	12	72	2.3	42	219	25	166	750	392
23	11	66	2.0	38	215	22	437	1700	2850
24	11	60	1.8	43	211	25	347	1570	1570
25	9.8	54	1.4	43	208	24	178	862	419
26	9.5	54	1.4	41	204	22	134	651	236
27	9.1	55	1.4	42	200	23	112	535	162
28	11	56	1.7	43	196	23	95	419	107
29	14	57	2.1	53	257	39	85	304	69
30	11	58	1.7	57	297	47	78	188	40
31	9.8	57	1.5	---	---	---	74	73	15
TOTAL	649.3	---	410.3	7107.8	---	69559.8	3645	---	9336

RIO GRANDE DE MANATI BASIN

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

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	71	15	2.8	50	49	6.6	33	18	1.6
2	67	14	2.6	45	48	5.9	35	19	1.8
3	65	14	2.4	45	48	5.8	31	19	1.6
4	63	13	2.3	63	47	8.0	31	19	1.6
5	77	156	41	47	47	5.9	30	20	1.6
6	163	773	345	46	46	5.7	27	20	1.4
7	131	630	226	44	46	5.4	27	19	1.4
8	100	473	127	41	45	5.0	30	19	1.5
9	83	358	80	41	45	4.9	31	18	1.5
10	74	244	49	39	44	4.7	36	97	14
11	69	129	24	39	44	4.7	45	85	13
12	67	29	5.3	36	43	4.2	33	33	2.9
13	65	14	2.5	35	43	4.1	30	30	2.3
14	64	14	2.4	35	42	4.0	30	26	2.1
15	62	24	4.1	33	42	3.7	25	23	1.6
16	65	40	7.0	30	41	3.4	27	20	1.4
17	60	36	5.9	29	41	3.2	24	16	1.1
18	58	32	4.9	29	40	3.1	24	13	0.85
19	59	27	4.3	98	427	151	42	166	22
20	54	22	3.2	82	234	65	29	32	2.8
21	56	17	2.5	53	243	35	24	11	0.72
22	53	12	1.7	41	189	21	23	11	0.69
23	58	10	1.6	39	136	15	22	11	0.65
24	74	22	4.5	37	90	9.0	21	11	0.60
25	59	26	4.1	35	43	4.1	22	10	0.63
26	51	25	3.4	38	15	1.6	21	10	0.59
27	49	23	3.1	40	14	1.6	21	10	0.59
28	54	23	3.3	34	16	1.5	24	10	0.67
29	60	26	4.2	---	---	---	58	136	83
30	53	31	4.4	---	---	---	104	475	146
31	50	39	5.3	---	---	---	43	228	27
TOTAL	2134	---	979.8	1224	---	393.1	1003	---	339.19

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	37	168	17	142	674	292	39	166	18
2	34	155	14	126	594	206	38	157	16
3	27	141	10	139	656	252	38	147	15
4	25	128	8.6	121	564	187	40	139	15
5	31	157	14	98	467	124	55	201	33
6	70	403	137	108	501	147	69	336	66
7	108	543	193	99	473	136	43	213	25
8	279	1250	1070	133	632	241	38	174	18
9	186	853	432	87	414	97	37	167	17
10	118	555	182	74	364	73	35	202	19
11	81	381	83	68	340	63	35	203	19
12	59	293	47	64	323	56	32	204	18
13	47	254	32	61	306	51	29	206	16
14	41	222	25	60	296	48	26	208	15
15	44	220	26	56	283	43	25	240	17
16	103	430	122	56	277	42	23	282	18
17	118	557	182	54	272	40	26	278	19
18	89	433	126	52	266	38	50	201	27
19	111	532	173	52	261	36	35	174	17
20	230	1050	1090	49	255	33	30	145	12
21	338	1530	1620	47	249	32	25	119	8.2
22	143	665	261	45	244	30	27	123	8.9
23	151	753	759	44	238	29	22	136	8.1
24	285	1140	1750	44	233	28	21	149	8.7
25	515	1850	3630	44	227	27	21	165	9.3
26	494	1770	3280	44	221	26	21	183	10
27	342	1530	1730	44	215	25	21	201	12
28	168	813	372	44	206	24	21	217	12
29	129	601	211	41	196	22	19	189	9.8
30	116	556	178	46	186	23	18	145	7.2
31	---	---	---	43	176	20	---	---	---
TOTAL	4519	---	17774.6	2185	---	2491	959	---	514.2

RIO GRANDE DE MANATI BASIN

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

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	17	104	4.9	e109	e190	e34	39	202	22
2	17	109	5.2	e148	e364	e82	71	333	157
3	20	126	6.8	e62	e227	e32	317	1240	1730
4	22	143	8.5	e69	e213	e28	193	875	547
5	21	160	9.1	e65	e142	e9.8	76	343	71
6	22	177	11	e37	e131	e9.1	44	225	27
7	25	194	13	e27	e121	e6.6	31	164	14
8	22	199	12	e31	e112	e6.3	27	137	9.9
9	21	172	9.8	e39	e128	e8.8	23	126	7.9
10	21	144	8.5	e67	e109	e6.1	22	116	6.9
11	21	116	6.5	e122	e149	e13	22	106	6.5
12	42	185	38	e207	e219	e29	21	102	5.7
13	65	309	67	e55	e122	e7.9	19	97	4.9
14	24	130	8.6	e44	e110	e7.6	28	142	14
15	23	123	7.6	e39	e106	e8.0	46	238	31
16	21	135	7.6	e26	e103	e5.8	103	482	153
17	21	151	8.9	e30	e102	e7.3	46	234	31
18	20	168	8.9	19	102	5.3	88	424	186
19	19	186	9.4	24	101	6.5	120	564	192
20	16	216	9.3	19	96	4.9	106	507	189
21	17	249	11	16	91	4.0	115	548	189
22	17	280	13	15	86	3.6	51	256	36
23	17	268	13	21	82	4.5	39	195	21
24	18	240	12	22	79	4.7	49	238	36
25	16	212	9.3	15	75	3.2	93	445	116
26	16	184	7.9	14	72	2.7	83	399	106
27	21	156	8.8	13	69	2.5	108	509	158
28	26	166	12	13	70	2.5	57	290	45
29	31	168	14	14	72	2.8	111	518	167
30	e24	e101	e5.3	21	109	7.6	61	289	48
31	e24	e89	e3.9	58	286	47	---	---	---
TOTAL	707	---	370.8	1461	---	403.1	2209	---	4327.8
YEAR	27803.1		106899.69						

e Estimated

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

Date	Time	Instan-taneous dis-charge, cfs (00061)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment load, tons/d (80155)	Suspnd. sedi-ment, sieve diametr percent <.063mm (70331)
APR					
24...	1855	1150	6870	21300	96
26...	2255	1580	5470	23300	93

RIO GRANDE DE MANATI BASIN

50032290 LAGO EL GUINEO AT DAMSITE NEAR VILLALBA, PR

LOCATION.--Lat 18°09'41", long 66°31'36", Hydrologic Unit 21010001, at damsite on Río Toro Negro, 3.0 mi (4.8 km) northwest from Villalba Plaza and 1.9 mi (3.1 km) northeast of Cerro Maravillas. The reservoir itself fixes the territorial limits between the municipality of Ciales and Orocovis.

DRAINAGE AREA.--1.64 mi^2 (4.25 km^2).

ELEVATION RECORDS

PERIOD OF RECORD.--May 1988 to current year. Prior to October 1994, published as Lago El Guineo at Damsite.

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

REMARKS.--Lago El Guineo was completed in 1931. It provides a maximum storage of approximately 2,180 acre-ft (2.688 hm^3) for power and irrigation. Waters are discharged through an outlet power tunnel into the Río Toro Negro and conveyed to the head water works of Toro Negro Hydroelectric Plant No. 2, for energy generation at Toro Negro Hydroelectric plant No. 1, and are discharged into the Guayabal Reservoir to be later used for irrigation at South Coast Irrigation System. The dam is rockfill with a vertical concrete corewall, rock toes, and riprap facing of upstream slope, with a total length of 565 ft (172 m), a maximum structural height of 125 ft (38 m) to top of corewall. At a maximum reservoir water surface elevation the uncontrolled morning-glory tunnel spillway crest has an elevation of 2,960 ft (902 m) above mean sea level and a design capacity of 7,000 ft^3/s. The dam is owned by Puerto Rico Electric Power Authority. Gage-height and precipitation satellite telemetry at station.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation 2,964.40 ft (905.55 m), September 22, 1998; minimun elevation, 2,919.79 ft (899.95 m), May 27, 1988.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 2,961.84 ft (902.77 m), April 25; minimun elevation, 2,948.63 ft (896.74 m), October 10.

Capacity Table
(based on data from Puerto Rico Electric Power Authority)

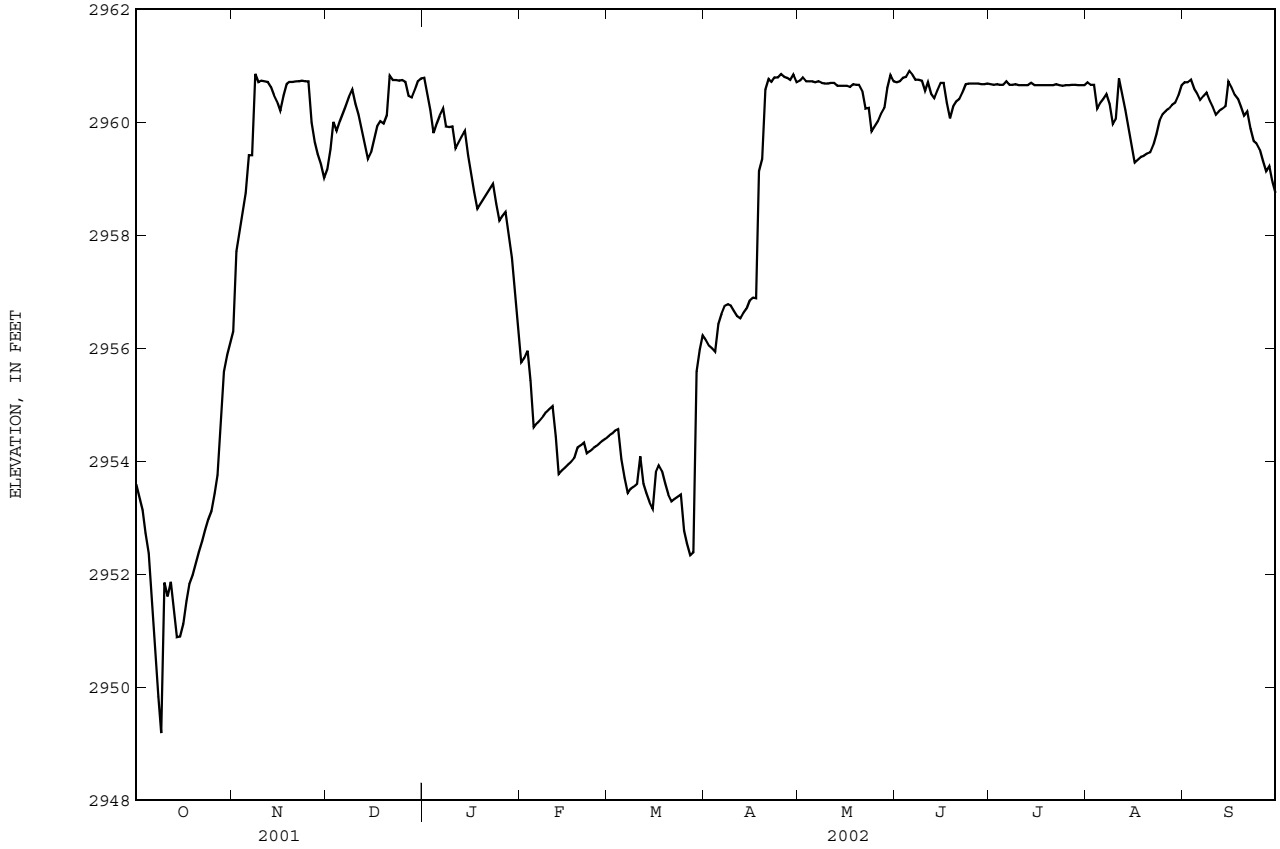
Elevation, in feet	Contents, in acre-feet	Elevation, in feet	Contents, in acre-feet
2,872	0	2,950	1,308
2,919	361	2,961	1,852
2,925	491	2,966	2,180
2,943	1,029		

Elevation above NGVD 1929, feet
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2953.59	2956.30	2959.17	2960.79	2955.75	2954.45	2956.15	2960.74	2960.71	2960.68	2960.71	2960.71
2	2953.35	2957.72	2959.53	2960.48	2955.83	2954.49	2956.05	2960.80	2960.73	2960.67	2960.67	2960.71
3	2953.13	2958.08	2960.01	2960.22	2955.96	2954.54	2956.00	2960.73	2960.79	2960.68	2960.67	2960.76
4	2952.73	2958.44	2959.85	2959.81	2955.43	2954.57	2955.94	2960.73	2960.81	2960.67	2960.24	2960.60
5	2952.37	2958.75	2960.02	2959.98	2954.60	2954.04	2956.43	2960.73	2960.91	2960.67	2960.34	2960.51
6	2951.64	2959.42	2960.17	2960.13	2954.67	2953.71	2956.61	2960.71	2960.84	2960.73	2960.41	2960.40
7	2950.78	2959.42	2960.30	2960.25	2954.73	2953.44	2956.75	2960.73	2960.76	2960.67	2960.50	2960.47
8	2949.84	2960.86	2960.46	2959.93	2954.80	2953.51	2956.78	2960.70	2960.76	2960.67	2960.32	2960.53
9	2949.19	2960.71	2960.58	2959.92	2954.87	2953.55	2956.76	2960.69	2960.74	2960.68	2959.97	2960.39
10	2951.85	2960.74	2960.33	2959.93	2954.93	2953.60	2956.66	2960.69	2960.56	2960.66	2960.06	2960.28
11	2951.61	2960.73	2960.13	2959.54	2954.98	2954.09	2956.57	2960.70	2960.71	2960.66	2960.78	2960.14
12	2951.87	2960.72	2959.89	2959.64	2954.44	2953.60	2956.53	2960.70	2960.51	2960.66	2960.51	2960.20
13	2951.39	2960.63	2959.63	2959.75	2953.78	2953.44	2956.62	2960.65	2960.43	2960.66	2960.22	2960.24
14	2950.89	2960.49	2959.35	2959.85	2953.84	2953.28	2956.70	2960.65	2960.57	2960.70	2959.92	2960.29
15	2950.90	2960.37	2959.47	2959.42	2953.89	2953.16	2956.85	2960.65	2960.70	2960.66	2959.60	2960.73
16	2951.12	2960.21	2959.68	2959.09	2953.95	2953.81	2956.90	2960.65	2960.70	2960.66	2959.29	2960.62
17	2951.53	2960.47	2959.93	2958.77	2954.00	2953.93	2956.89	2960.63	2960.35	2960.66	2959.34	2960.49
18	2951.83	2960.68	2960.02	2958.47	2954.06	2953.83	2959.14	2960.68	2960.07	2960.66	2959.39	2960.42
19	2951.98	2960.72	2959.98	2958.56	2954.24	2953.61	2959.35	2960.67	2960.28	2960.66	2959.41	2960.28
20	2952.19	2960.72	2960.13	2958.65	2954.28	2953.41	2960.58	2960.67	2960.37	2960.66	2959.45	2960.12
21	2952.40	2960.73	2960.83	2958.74	2954.33	2953.29	2960.77	2960.56	2960.41	2960.66	2959.47	2960.19
22	2952.59	2960.73	2960.75	2958.82	2954.14	2953.33	2960.72	2960.25	2960.53	2960.68	2959.61	2959.89
23	2952.78	2960.74	2960.75	2958.91	2954.18	2953.37	2960.80	2960.26	2960.68	2960.66	2959.79	2959.67
24	2952.97	2960.73	2960.74	2958.56	2954.23	2953.41	2960.80	2959.84	2960.69	2960.65	2960.03	2959.63
25	2953.12	2960.73	2960.75	2958.26	2954.27	2952.77	2960.86	2959.93	2960.69	2960.66	2960.15	2959.52
26	2953.43	2960.00	2960.72	2958.34	2954.32	2952.54	2960.81	2960.02	2960.69	2960.66	2960.21	2959.32
27	2953.76	2959.65	2960.47	2958.41	2954.36	2952.34	2960.79	2960.16	2960.69	2960.67	2960.25	2959.13
28	2954.67	2959.44	2960.44	2957.99	2954.40	2952.39	2960.75	2960.26	2960.68	2960.67	2960.31	2959.22
29	2955.59	2959.26	2960.58	2957.60	---	2955.59	2960.85	2960.61	2960.68	2960.66	2960.35	2958.96
30	2955.88	2959.02	2960.73	2956.99	---	2955.98	2960.71	2960.84	2960.69	2960.66	2960.48	2958.75
31	2956.10	---	2960.78	2956.39	---	2956.23	---	2960.73	---	2960.66	2960.66	---
MAX	2956.10	2960.86	2960.83	2960.79	2955.96	2956.23	2960.86	2960.84	2960.91	2960.73	2960.78	2960.76
MIN	2949.19	2956.30	2959.17	2956.39	2953.78	2952.34	2955.94	2959.84	2960.07	2960.65	2959.29	2958.75

RIO GRANDE DE MANATI BASIN

50032290 LAGO EL GUINEO AT DAMSITE NEAR VILLALBA, PR--Continued



RIO GRANDE DE MANATI BASIN

50032590 LAGO DE MATRULLAS AT DAMSITE NEAR OROCOVIS, PR

LOCATION.--Lat 18°12'46", long 66°28'50", Hydrologic Unit 21010001, in shelter house at damsite, and 5.8 mi (9.3 km) southwest of Orocovis.

DRAINAGE AREA.--4.46 mi^2 (11.6 km^2).

ELEVATION RECORDS

PERIOD OF RECORD.--May 1988 to current year. Prior to October 1994, published as Lago de Matrullas at Damsite.

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

REMARKS.--Lago Matrullas was completed in 1934. The dam is an earthfill structure about 120 ft (37 m) height, a top width of 30 ft (9 m) and a length of 710 ft (216 m), and has a maximum storage capacity of about 4,274 acre-ft (5.220 hm^3) at top of dam elevation. The Matrullas Dam is owned by the Puerto Rico Electric Power Authority and is part of the Toro Negro Hydroelectric Project; a project developed by the PREPA. for the primary purpose of generating electric power. Discharges from the power plants are collected by the Jacaguas River which flows into Guayabal Dam, at which dam they are regulated for irrigation of lands served by the Juana Díaz Canal. Gage-height and precipitation satellite telemetry at station.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation 2,419.90 ft (737.58 m), September 10, 1996; minimum elevation, 2,375.55 ft (724.06 m), September 24 and 25, 1994.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 2,416.43 ft (736.54 m); November 15; minimum elevation, 2,404.72 ft (732.95 m) October 30.

Capacity Table
(based on data from Puerto Rico Electric Power Authority)

Elevation, in feet	Contents, in acre-feet	Elevation, in feet	Contents, in acre-feet
2,338	2	2,399	1,845
2,360	302	2,420	3,331

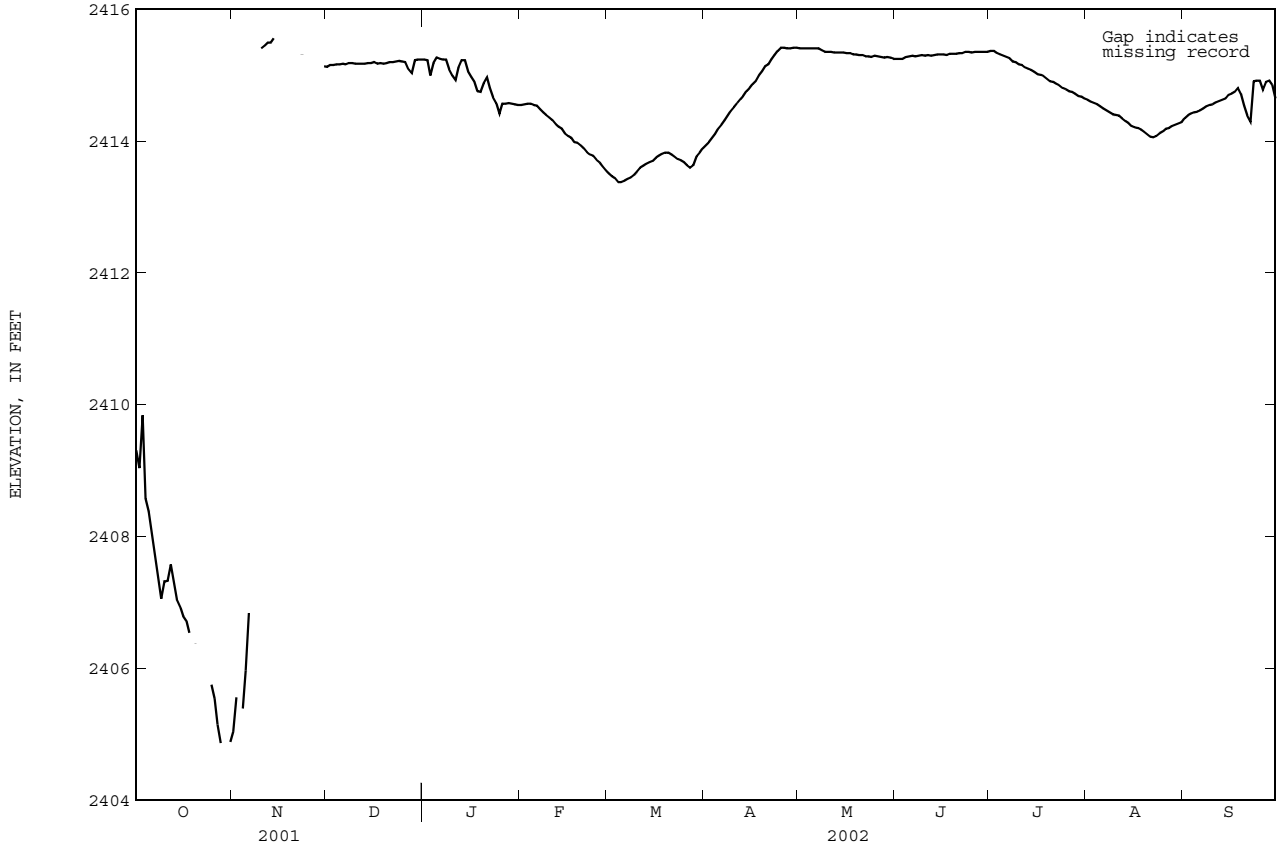
Elevation above NGVD 1929, feet
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2409.31	2405.04	2415.13	2415.24	2414.55	2413.51	2413.94	2415.41	2415.25	2415.37	2414.63	2414.35
2	2409.04	2405.56	2415.16	2415.23	2414.56	2413.47	2413.99	2415.41	2415.25	2415.37	2414.60	2414.39
3	2409.84	A	2415.16	2415.00	2414.57	2413.44	2414.05	2415.41	2415.25	2415.34	2414.58	2414.42
4	2408.58	2405.39	2415.17	2415.19	2414.57	2413.38	2414.11	2415.41	2415.28	2415.32	2414.56	2414.44
5	2408.38	2405.97	2415.17	2415.27	2414.55	2413.38	2414.19	2415.41	2415.29	2415.30	2414.53	2414.45
6	2408.05	2406.84	2415.18	2415.25	2414.54	2413.40	2414.25	2415.41	2415.30	2415.28	2414.50	2414.47
7	2407.70	A	2415.17	2415.24	2414.49	2413.43	2414.32	2415.41	2415.29	2415.26	2414.47	2414.50
8	2407.36	A	2415.19	2415.24	2414.44	2413.45	2414.39	2415.38	2415.30	2415.21	2414.44	2414.53
9	2407.06	A	2415.19	2415.09	2414.40	2413.49	2414.46	2415.36	2415.31	2415.20	2414.41	2414.55
10	2407.32	2415.41	2415.18	2415.00	2414.36	2413.54	2414.52	2415.36	2415.30	2415.17	2414.40	2414.56
11	2407.33	2415.45	2415.18	2414.93	2414.32	2413.60	2414.58	2415.36	2415.31	2415.16	2414.39	2414.59
12	2407.58	2415.50	2415.18	2415.12	2414.26	2413.63	2414.64	2415.35	2415.30	2415.12	2414.35	2414.61
13	2407.34	2415.50	2415.18	2415.23	2414.22	2413.66	2414.69	2415.35	2415.31	2415.10	2414.31	2414.63
14	2407.05	2415.56	2415.19	2415.23	2414.19	2413.68	2414.76	2415.35	2415.32	2415.08	2414.28	2414.65
15	2406.94	A	2415.19	2415.06	2414.12	2413.70	2414.81	2415.35	2415.32	2415.05	2414.23	2414.70
16	2406.79	A	2415.20	2414.98	2414.08	2413.75	2414.87	2415.34	2415.32	2415.02	2414.21	2414.72
17	2406.72	A	2415.18	2414.91	2414.05	2413.78	2414.92	2415.34	2415.31	2415.01	2414.20	2414.75
18	2406.54	A	2415.19	2414.76	2413.99	2413.81	2415.00	2415.32	2415.33	2414.99	2414.18	2414.81
19	A	A	2415.18	2414.75	2413.98	2413.83	2415.06	2415.32	2415.33	2414.95	2414.15	2414.72
20	2406.38	A	2415.19	2414.88	2413.94	2413.83	2415.14	2415.31	2415.33	2414.91	2414.11	2414.54
21	A	A	2415.20	2414.97	2413.89	2413.80	2415.17	2415.31	2415.34	2414.90	2414.07	2414.39
22	A	A	2415.20	2414.81	2413.84	2413.77	2415.24	2415.29	2415.34	2414.87	2414.06	2414.30
23	A	2415.31	2415.21	2414.67	2413.80	2413.73	2415.31	2415.29	2415.36	2414.85	2414.08	2414.91
24	A	A	2415.22	2414.58	2413.78	2413.71	2415.37	2415.28	2415.36	2414.81	2414.12	2414.92
25	2405.75	A	2415.21	2414.42	2413.72	2413.68	2415.42	2415.30	2415.35	2414.79	2414.15	2414.92
26	2405.54	A	2415.20	2414.57	2413.68	2413.64	2415.42	2415.29	2415.36	2414.76	2414.19	2414.78
27	2405.15	A	2415.09	2414.57	2413.62	2413.60	2415.41	2415.28	2415.36	2414.75	2414.20	2414.90
28	2404.87	A	2415.03	2414.58	2413.56	2413.64	2415.41	2415.27	2415.36	2414.72	2414.23	2414.92
29	A	A	2415.23	2414.57	---	2413.77	2415.42	2415.28	2415.36	2414.69	2414.25	2414.86
30	A	2415.14	2415.24	2414.56	---	2413.83	2415.42	2415.27	2415.36	2414.68	2414.27	2414.65
31	2404.88	---	2415.24	2414.55	---	2413.89	---	2415.25	---	2414.65	2414.29	---
MAX	---	---	2415.24	2415.27	2414.57	2413.89	2415.42	2415.41	2415.36	2415.37	2414.63	2414.92
MIN	---	---	2415.03	2414.42	2413.56	2413.38	2413.94	2415.25	2415.25	2414.65	2414.06	2414.30

A No gage-height record

RIO GRANDE DE MANATI BASIN

50032590 LAGO DE MATRULLAS AT DAMSITE NEAR OROCOVIS, PR--Continued



RIO GRANDE DE MANATI BASIN

50034000 RIO BAUTA NEAR OROCOVIS, PR

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

DRAINAGE AREA.--16.7 mi^2 (43.3 km^2).

PERIOD OF RECORD.--February 1959 to April 1966 (annual low-flow measurements only), February to September 1969 (occasional measurements only), October 1969 to September 1982, October 1988 to current year.

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

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	8.8	15	23	14	12	23	47	21	10	62	11
2	11	71	285	22	14	12	17	52	22	11	21	60
3	13	45	145	21	14	12	13	47	27	10	21	87
4	13	17	100	21	16	11	12	38	33	10	16	48
5	12	42	58	29	14	11	40	33	167	10	14	22
6	13	72	37	45	14	11	47	30	91	11	12	15
7	10	55	29	30	13	11	34	36	43	12	12	12
8	10	1150	24	25	13	12	159	33	28	10	12	11
9	13	308	21	22	13	11	131	30	22	9.9	13	10
10	33	125	20	21	12	12	61	26	20	9.7	14	9.7
11	24	70	19	20	12	23	37	24	18	9.5	32	9.4
12	17	46	20	19	12	20	27	24	17	12	27	9.1
13	12	34	18	19	12	12	21	22	16	12	15	8.7
14	11	32	20	18	12	11	17	22	16	9.4	13	10
15	12	67	17	18	12	11	18	21	15	11	12	14
16	16	56	30	18	12	11	24	21	14	9.4	14	35
17	16	39	29	17	11	10	19	20	17	9.1	12	14
18	12	29	25	17	22	10	152	19	18	8.9	12	42
19	10	25	26	16	92	13	130	20	15	8.6	13	28
20	9.3	21	21	16	44	10	259	18	13	8.3	11	80
21	8.8	19	110	16	19	9.8	291	17	13	8.4	11	61
22	8.5	17	95	17	15	9.6	111	17	13	8.4	12	22
23	8.3	16	138	16	13	9.2	218	18	12	8.6	11	16
24	8.1	17	165	21	13	9.1	335	18	12	8.6	11	28
25	7.7	17	84	16	12	9.0	525	17	12	8.1	10	34
26	7.5	15	52	15	15	8.9	399	17	11	7.8	9.7	23
27	8.0	15	39	15	13	9.2	221	19	11	8.4	9.1	18
28	22	15	32	16	12	15	109	18	11	e8.9	9.2	16
29	15	28	28	15	---	130	74	19	11	8.5	12	23
30	9.5	20	26	15	---	68	58	43	11	7.9	14	16
31	8.4	---	25	15	---	27	---	28	---	8.5	13	---
TOTAL	390.1	2491.8	1753	614	490	550.8	3582	814	750	293.9	480.0	792.9
MEAN	12.6	83.1	56.5	19.8	17.5	17.8	119	26.3	25.0	9.48	15.5	26.4
MAX	33	1150	285	45	92	130	525	52	167	12	62	87
MIN	7.5	8.8	15	15	11	8.9	12	17	11	7.8	9.1	8.7
AC-FT	774	4940	3480	1220	972	1090	7100	1610	1490	583	952	1570
CFSM	0.75	4.97	3.39	1.19	1.05	1.06	7.15	1.57	1.50	0.57	0.93	1.58
IN.	0.87	5.55	3.90	1.37	1.09	1.23	7.98	1.81	1.67	0.65	1.07	1.77

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2002, BY WATER YEAR (WY)

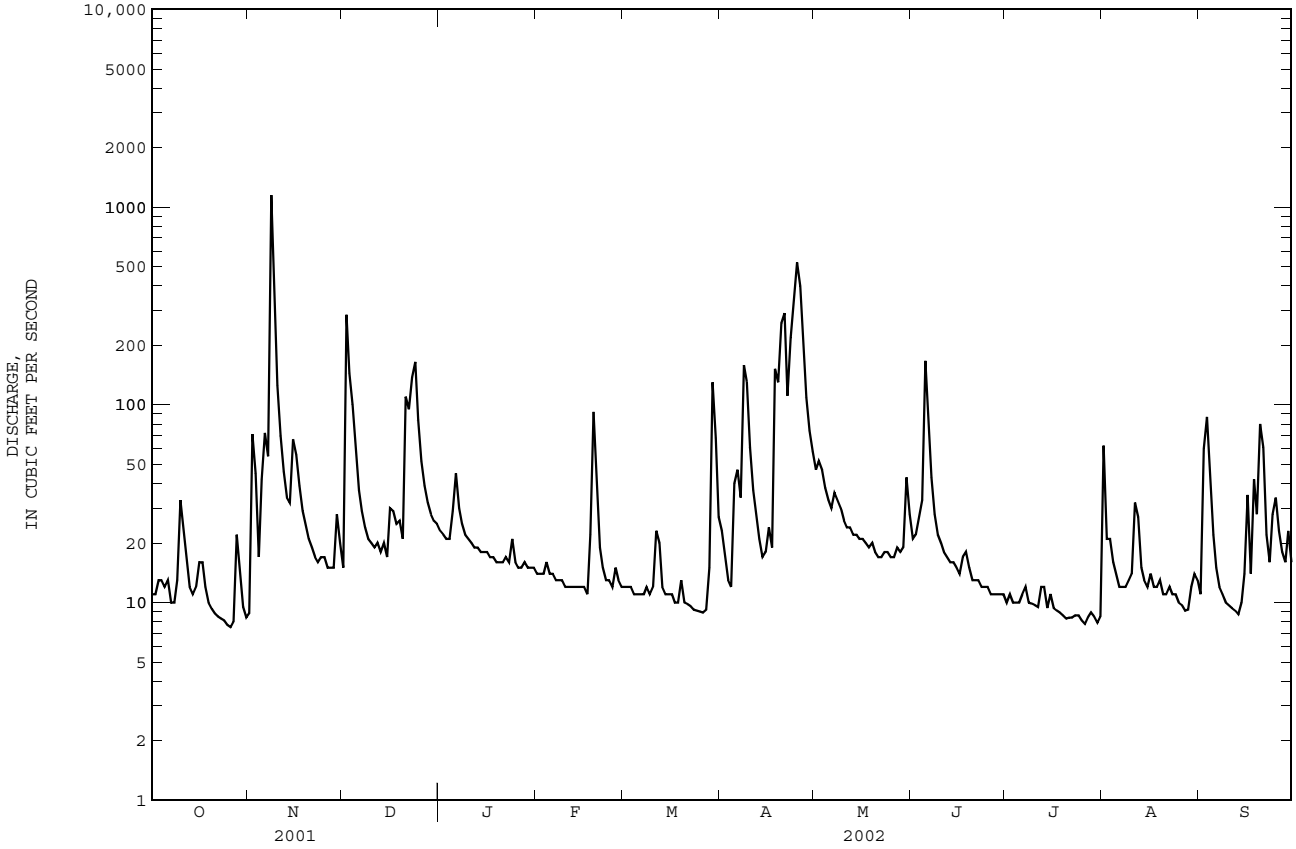
MEAN	80.7	58.0	30.4	21.6	17.0	15.2	29.7	48.7	20.4	15.2	21.3	109
MAX	392	205	108	83.4	43.5	59.9	119	179	78.6	104	152	1104
(WY)	1971	1971	1971	1992	1998	1972	2002	1981	1979	1979	1979	1996
MIN	12.6	7.12	4.29	3.66	5.70	4.18	4.92	4.24	3.59	3.22	3.97	3.55
(WY)	2002	1995	1995	1995	1994	1994	1995	1994	1994	1994	1994	1994

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1969 - 2002	
ANNUAL TOTAL	10687.1		13002.5			
ANNUAL MEAN	29.3		35.6		39.0	
HIGHEST ANNUAL MEAN					117	1996
LOWEST ANNUAL MEAN					6.56	1994
HIGHEST DAILY MEAN	1150	Nov 8	1150	Nov 8	19500	Sep 10 1996
LOWEST DAILY MEAN	6.7	Aug 13	7.5	Oct 26	2.8	Jul 23 1994
ANNUAL SEVEN-DAY MINIMUM	7.0	Aug 10	8.1	Oct 21	2.8	Jul 23 1994
MAXIMUM PEAK FLOW			2560	Apr 25	28200	Sep 22 1998
MAXIMUM PEAK STAGE			12.61	Apr 25	25.93	Sep 22 1998
INSTANTANEOUS LOW FLOW			7.1	Oct 25	2.6	Jul 26 1994
ANNUAL RUNOFF (AC-FT)	21200		25790		28250	
ANNUAL RUNOFF (CFSM)	1.75		2.13		2.33	
ANNUAL RUNOFF (INCHES)	23.81		28.96		31.72	
10 PERCENT EXCEEDS	59		64		68	
50 PERCENT EXCEEDS	12		16		14	
90 PERCENT EXCEEDS	8.1		9.4		5.7	

e Estimated

RIO GRANDE DE MANATI BASIN

50034000 RIO BAUTA NEAR OROCOVIS, PR--Continued



RIO GRANDE DE MANATI BASIN

50035000 RIO GRANDE DE MANATI AT CIALES, PR

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

DRAINAGE AREA.--128 mi^2 (332 km^2), excludes 6.0 mi^2 (15.5 km^2), the runoff from which is diverted through El Guineo and 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, February 1959 to September 1960 (monthly discharge measurements only), October 1960 to current year. Equivalent record from January 1971 to December 1972 published as 50035200 Río Grande de Manatí at Highway 145 at Ciales at site 1.6 mi (2.6 km) downstream, drainage area 132 mi^2 (342 km^2).

GAGE.--Water-stage recorder. Elevation of gage is 140 ft (43 m), from topographic map. Prior to April 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. Since October 1, 1997, 2.0 ft (0.6 m) were added to gage datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Approximate gage heights of major floods, pointed out by local residents are as follows: August 1899, 50 ft (15 m), September 1928, 36 ft (11 m), and September 1932, 34 ft (10 m) at site 1.6 mi (2.6 km) upstream.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e47	e50	118	164	113	83	164	442	141	93	154	102
2	e41	e52	362	158	105	86	122	472	140	93	186	319
3	e43	e172	431	148	104	82	104	403	188	92	115	1090
4	e45	e75	340	143	126	81	84	316	191	91	122	595
5	e51	e72	300	175	108	80	96	267	542	90	118	223
6	e72	e166	198	340	105	77	261	255	323	94	95	138
7	e53	e133	161	278	104	75	247	224	186	104	85	113
8	e47	e11600	149	209	97	80	697	284	144	92	89	103
9	e79	e3800	134	181	95	83	526	210	138	90	96	96
10	e130	e1100	129	161	96	86	303	194	129	90	120	94
11	e110	426	125	149	94	122	200	185	117	93	164	91
12	e100	302	157	142	90	167	157	183	113	136	234	88
13	e58	241	160	137	89	90	129	177	110	137	109	85
14	e47	206	172	136	88	83	117	168	107	94	100	102
15	e120	211	156	136	87	76	118	166	104	94	97	123
16	e140	203	224	132	84	76	186	164	107	89	85	193
17	e100	176	401	129	82	142	212	161	110	89	89	124
18	e80	167	288	124	82	81	455	155	128	87	82	256
19	e65	170	239	122	253	92	531	156	120	85	83	360
20	e60	150	187	117	268	81	829	151	109	82	82	263
21	e55	137	291	119	135	e83	1360	141	102	82	77	296
22	e52	129	418	117	104	e81	527	137	104	84	76	138
23	e52	128	646	126	94	e77	965	135	102	85	91	115
24	e50	143	806	150	89	e73	1360	132	101	84	88	116
25	e49	140	425	131	85	e75	2540	131	101	81	85	164
26	e47	129	291	115	91	e73	2280	133	99	79	78	182
27	e45	122	232	114	99	e73	1460	135	102	85	75	194
28	e47	123	200	115	85	e83	682	138	100	92	73	128
29	e70	145	180	129	---	319	716	129	96	98	76	154
30	e60	156	172	118	---	351	616	206	95	84	91	118
31	e52	---	171	112	---	189	---	222	---	84	119	---
TOTAL	2067	20824	8263	4627	3052	3300	18044	6372	4249	2853	3234	6163
MEAN	66.7	694	267	149	109	106	601	206	142	92.0	104	205
MAX	140	11600	806	340	268	351	2540	472	542	137	234	1090
MIN	41	50	118	112	82	73	84	129	95	79	73	85
AC-FT	4100	41300	16390	9180	6050	6550	35790	12640	8430	5660	6410	12220
CFSM	0.52	5.42	2.08	1.17	0.85	0.83	4.70	1.61	1.11	0.72	0.82	1.60
IN.	0.60	6.05	2.40	1.34	0.89	0.96	5.24	1.85	1.23	0.83	0.94	1.79

e Estimated

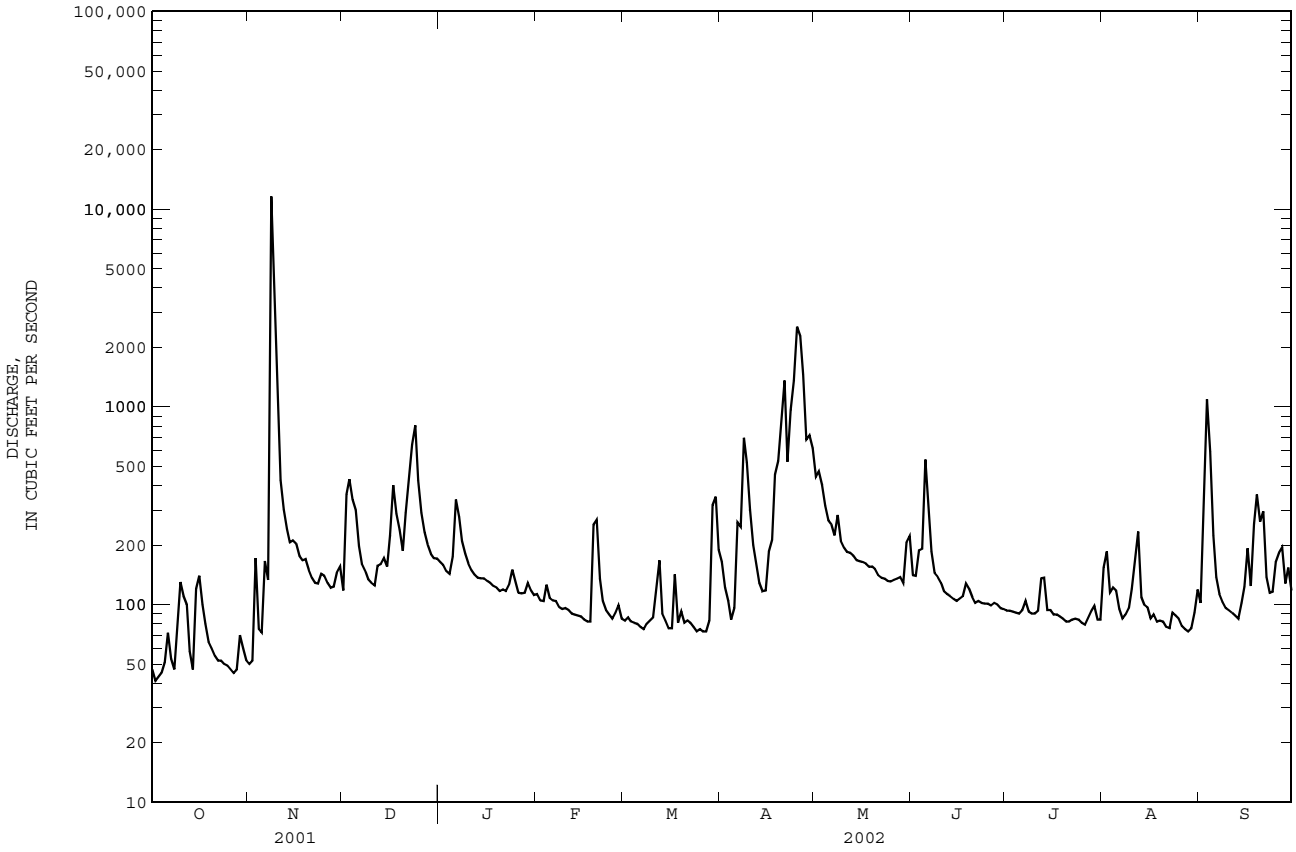
RIO GRANDE DE MANATI BASIN

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

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2002, BY WATER YEAR (WY)

MEAN	417	360	264	193	164	133	252	394	155	103	147	310
MAX	2422	1029	1296	679	1393	477	1174	2293	512	438	1212	1295
(WY)	1971	2000	1966	1952	1950	1969	1969	1985	1999	1979	1979	1996
MIN	66.7	34.7	29.7	26.2	41.6	29.7	28.5	29.6	17.8	14.1	27.0	23.9
(WY)	2002	1995	1995	1995	1957	1994	1984	1994	1994	1994	1994	1994

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1946 - 2002	
ANNUAL TOTAL	55384		83048			
ANNUAL MEAN	152		228		242	
HIGHEST ANNUAL MEAN					520	1971
LOWEST ANNUAL MEAN					47.3	1994
HIGHEST DAILY MEAN	11600	Nov 8	11600	Nov 8	42700	May 18 1985
LOWEST DAILY MEAN	36	Aug 14	41	Oct 2	8.5	Jul 28 1994
ANNUAL SEVEN-DAY MINIMUM	37	Aug 11	49	Oct 22	9.5	Jul 24 1994
MAXIMUM PEAK FLOW			Unknown	Nov 8	128000	Sep 10 1996
MAXIMUM PEAK STAGE			Unknown	Nov 8	25.20	Sep 10 1996
INSTANTANEOUS LOW FLOW					8.5	Jul 27 1994
ANNUAL RUNOFF (AC-FT)	109900		164700		175200	
ANNUAL RUNOFF (CFSM)	1.19		1.78		1.89	
ANNUAL RUNOFF (INCHES)	16.10		24.14		25.67	
10 PERCENT EXCEEDS	227		330		443	
50 PERCENT EXCEEDS	73		122		115	
90 PERCENT EXCEEDS	43		76		50	



RIO GRANDE DE MANATI BASIN

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

WATER-QUALITY RECORDS

PERIOD OF RECORD.--September 1946 to September 1953, May 1956 to December 1957 (unpublished, available in files of Caribbean District Office), February 1959 to September 1960 (monthly discharge measurements only), October 1960 to current year. Equivalent record from January 1971 to December 1972 published as 50035200 Río Grande de Manatí at Highway 145 at Ciales at site 1.6 mi (2.6 km) downstream, drainage area 132 mi^2 (342 km^2).

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: December 2001 to September 2002.

INSTRUMENTATION.--USDH-48 sediment sampler and automatic sediment sampler since 2001.

REMARKS.--Sediment samples were collected by a local observer on a weekly basis. During high flow events sediment samples were collected with automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 2,890 mg/L April 25, 2002; Minimum daily mean, 1 mg/L several days.

SEDIMENT LOADS: Maximum daily mean, 35,300 tons (32,024 tonnes) April 25, 2002; Minimum daily mean, .26 ton (.24 tonne) July 16, 2002.

EXTREMES FOR CURRENT YEAR 2002.--
SEDIMENT CONCENTRATION: Maximum daily mean, 2,890 mg/L April 25, 2002; Minimum daily mean, 1 mg/L several days.

SEDIMENT LOADS: Maximum daily mean, 35,300 tons (32,024 tonnes) April 25, 2002; Minimum daily mean, .26 ton (.24 tonne) July 16, 2002.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	e47	---	---	e50	---	---	118	35	11
2	e41	---	---	e52	---	---	362	359	748
3	e43	---	---	e172	---	---	431	431	562
4	e45	---	---	e75	---	---	340	301	300
5	e51	---	---	e72	---	---	300	224	193
6	e72	---	---	e166	---	---	198	111	60
7	e53	---	---	e133	---	---	161	65	28
8	e47	---	---	e11600	---	---	149	59	24
9	e79	---	---	e3800	---	---	134	53	19
10	e207	---	---	e1100	---	---	129	47	16
11	e128	---	---	426	---	---	125	41	14
12	e118	---	---	302	---	---	157	64	29
13	e58	---	---	241	---	---	160	76	33
14	e47	---	---	206	---	---	172	74	34
15	e166	---	---	211	---	---	156	69	29
16	e221	---	---	203	---	---	224	182	172
17	e116	---	---	176	---	---	401	401	444
18	e80	---	---	167	---	---	288	201	159
19	e65	---	---	170	---	---	239	130	84
20	e60	---	---	150	---	---	187	94	48
21	e55	---	---	137	---	---	291	243	305
22	e52	---	---	129	---	---	418	415	492
23	e52	---	---	128	---	---	646	645	1400
24	e50	---	---	143	---	---	806	827	1850
25	e49	---	---	140	---	---	425	452	532
26	e47	---	---	129	---	---	291	250	200
27	e45	---	---	122	---	---	232	135	85
28	e47	---	---	123	---	---	200	111	60
29	e70	---	---	145	---	---	180	88	43
30	e60	---	---	156	---	---	172	70	32
31	e52	---	---	---	---	---	171	66	30
TOTAL	2323	---	---	20824	---	---	8263	---	8036

RIO GRANDE DE MANATI BASIN

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

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	164	62	27	113	12	3.6	83	6	1.4
2	158	58	25	105	11	3.3	86	6	1.4
3	148	55	22	104	11	3.1	82	6	1.3
4	143	51	20	126	10	3.6	81	6	1.2
5	175	101	53	108	10	2.9	80	5	1.1
6	340	317	296	105	9	2.7	77	5	1.1
7	278	240	184	104	9	2.5	75	5	1.1
8	209	113	64	97	8	2.1	80	6	1.2
9	181	89	44	95	7	1.8	83	6	1.3
10	161	77	33	96	6	1.6	86	11	2.9
11	149	64	26	94	6	1.5	122	51	19
12	142	52	20	90	6	1.5	167	65	38
13	137	45	17	89	6	1.4	90	25	6.2
14	136	44	16	88	5	1.1	83	22	5.0
15	136	43	16	87	4	0.90	76	19	3.8
16	132	41	15	84	3	0.73	76	17	3.6
17	129	40	14	82	4	0.86	142	63	32
18	124	39	13	82	5	1.0	81	19	4.2
19	122	38	12	253	203	207	92	22	5.6
20	117	36	12	268	196	158	81	12	2.7
21	119	35	11	135	66	25	e83	e8	e1.6
22	117	34	11	104	26	7.3	e81	e5	e1.1
23	126	33	11	94	14	3.7	e77	e5	e1.1
24	150	55	23	89	5	1.2	e73	e5	e1.1
25	131	43	15	85	5	1.2	e75	e5	e1.1
26	115	16	5.0	91	6	1.5	e73	e5	e1.1
27	114	14	4.4	99	7	1.8	e73	e5	e1.1
28	115	14	4.3	85	7	1.6	e83	e6	e1.3
29	129	13	4.7	---	---	---	319	277	839
30	118	13	4.1	---	---	---	351	323	411
31	112	12	3.8	---	---	---	189	120	67
TOTAL	4627	---	1026.3	3052	---	444.49	3300	---	1460.6

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	164	46	23	442	337	483	141	7	2.7
2	122	21	7.0	472	395	636	140	7	2.5
3	104	18	5.2	403	200	253	188	72	66
4	84	16	3.6	316	27	23	191	83	44
5	96	29	11	267	20	15	542	494	1170
6	261	191	146	255	14	9.4	323	296	292
7	247	226	176	224	13	8.6	186	33	18
8	697	780	1640	284	188	155	144	9	3.5
9	526	566	816	210	8	4.4	138	6	2.3
10	303	115	106	194	7	3.5	129	3	1.2
11	200	43	23	185	7	3.4	117	2	0.54
12	157	28	12	183	11	5.2	113	2	0.69
13	129	16	5.6	177	15	7.0	110	3	0.75
14	117	15	4.7	168	17	7.8	107	3	0.80
15	118	15	4.9	166	15	6.5	104	3	0.82
16	186	78	40	164	12	5.1	107	3	0.75
17	212	109	64	161	9	3.8	110	2	0.68
18	455	457	1770	155	6	2.5	128	2	0.74
19	531	638	1100	156	5	2.2	120	3	0.83
20	829	923	3210	151	5	1.9	109	3	0.91
21	1360	1600	7070	141	4	1.5	102	4	0.99
22	527	627	918	137	3	1.3	104	4	1.1
23	965	1080	5330	135	3	1.1	102	3	0.89
24	1360	1460	7370	132	2	0.87	101	3	0.70
25	2540	2890	35300	131	2	0.81	101	2	0.55
26	2280	2390	21400	133	3	1.2	99	2	0.47
27	1460	1610	7760	135	5	1.8	102	2	0.43
28	682	776	1530	138	6	2.2	100	1	0.37
29	716	668	3120	129	6	2.1	96	1	0.30
30	616	714	1310	206	79	79	95	1	0.31
31	---	---	---	222	124	99	---	---	---
TOTAL	18044	---	100276.0	6372	---	1827.18	4249	---	1615.82

RIO GRANDE DE MANATI BASIN

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

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	93	2	0.54	154	66	61	102	23	6.4
2	93	3	0.79	186	75	48	319	303	963
3	92	4	0.98	115	30	10	1090	1080	4350
4	91	4	0.98	122	37	13	595	651	1250
5	90	4	0.97	118	26	9.0	223	137	90
6	94	5	1.2	95	10	2.6	138	57	21
7	104	7	2.1	85	8	1.7	113	41	12
8	92	7	1.7	89	7	1.7	103	27	7.4
9	90	6	1.4	96	12	3.9	96	22	5.7
10	90	5	1.1	120	26	9.4	94	18	4.6
11	93	8	2.5	164	93	84	91	15	3.6
12	136	72	36	234	179	175	88	11	2.6
13	137	43	18	109	32	9.7	85	7	1.7
14	94	2	0.63	100	10	2.7	102	17	6.4
15	94	2	0.42	97	5	1.4	123	6	2.0
16	89	1	0.26	85	5	1.1	193	89	54
17	89	1	0.29	89	4	1.0	124	9	3.4
18	87	1	0.32	82	4	0.78	256	207	339
19	85	2	0.35	83	3	0.69	360	336	494
20	82	2	0.37	82	3	0.70	263	217	207
21	82	2	0.41	77	3	0.69	296	250	271
22	84	2	0.46	76	3	0.71	138	30	12
23	85	2	0.51	91	4	0.88	115	13	4.0
24	84	2	0.55	88	4	0.89	116	20	6.2
25	81	3	0.57	85	4	0.89	164	67	30
26	79	3	0.60	78	4	0.81	182	98	68
27	85	3	0.69	75	3	0.65	194	100	58
28	92	3	0.80	73	3	0.51	128	36	13
29	98	3	0.90	76	2	0.45	154	61	27
30	84	4	0.82	91	5	1.3	118	27	8.8
31	84	4	0.86	119	36	12	---	---	---
TOTAL	2853	---	78.07	3234	---	457.15	6163	---	8321.8

e Estimated

RIO GRANDE DE MANATI BASIN

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

WATER-QUALITY RECORDS

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

DRAINAGE AREA.--136 mi^2 (352 km^2) this excludes the 6 mi^2 (15.5 km^2) upstream from Lago El Guineo and Lago de Matrullas, flow from which is diverted to Río Jacaguas.

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
NOV													
27...	1215	154	234	7.2	23.3	2.0	9.5	111	<10	590	730	92	24.3
MAR													
14...	0810	100	238	7.2	23.8	2.2	7.5	89	<10	310	250	--	--
MAY													
13...	1130	--	--	--	--	2.9	--	--	<10	--	--	91	22.9

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
NOV													
27...	7.59	10.7	.5	1.87	90	<1.0	7.7	12.1	E.1	22.1	140	58.4	<10
MAR													
14...	--	--	--	--	93	--	--	--	--	--	--	--	<10
MAY													
13...	8.18	10.4	.5	1.71	--	<.1	7.0	11.1	<.1	23.0	140	--	<10

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
NOV													
27...	.01	.350	.03	<.20	E.03	<2	42.7	20	<.1	<.8	M	50	<1
MAR													
14...	<.01	.460	.01	<.20	.06	--	--	--	--	--	--	--	--
MAY													
13...	<.01	.190	<.01	.30	.02	<2	41.1	E20	<.1	E.5	<10	150	<1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
NOV								
27...	14.9	<.01	<2	<.3	<20	<.01	E1	<.05
MAR								
14...	--	--	--	--	--	--	--	--
MAY								
13...	17.3	<.01	<2	<.3	<20	<.01	<16	<.05

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

RIO GRANDE DE MANATI BASIN

50035950 RIO CIALITOS AT HIGHWAY 649 AT CIALES, PR

WATER-QUALITY RECORDS

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

DRAINAGE AREA.--17.0 mi^2 (44.0 km^2).

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
NOV													
21...	0830	31	240	7.6	22.1	3.0	8.2	95	<10	330	350	94	28.0
MAR													
14...	0935	16	213	7.4	21.8	13	8.4	96	<10	E793	880	--	--
AUG													
29...	1315	13	208	7.5	28.5	5.8	8.7	113	<10	360	210	94	26.4

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
NOV													
21...	5.95	10.1	.5	1.86	90	<1.0	6.2	12.1	E.1	27.7	146	12.0	<10
MAR													
14...	--	--	--	--	74	--	--	--	--	--	--	--	<10
AUG													
29...	6.75	10.0	.5	1.54	84	<.1	5.4	10.1	E.09	29.1	140	4.98	<10

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
NOV													
21...	<.01	.900	.02	<.20	E.04	<2	44.3	20	<.1	<.8	<10	50	<1
MAR													
14...	<.01	1.10	<.01	<.20	.08	--	--	--	--	--	--	--	--
AUG													
29...	<.01	.350	.02	.40	.07	<2	45.1	E20	E.1	<.8	<10	130	<1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
NOV								
21...	6.9	<.01	<2	<.3	<20	<.01	<16	<.05
MAR								
14...	--	--	--	--	--	--	--	--
AUG								
29...	13.6	<.01	<2	<.3	E10	<.01	<16	<.05

< -- Less than
E -- Estimated value

RIO GRANDE DE MANATI BASIN

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

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

DRAINAGE AREA.--197 mi^2 (510 km^2), approximately, of which about 38 mi^2 (98 km^2) is partly or entirely noncontributing, excludes 6.0 mi^2 (15.5 km^2) 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.

REVISED RECORDS.--WRD PR-86-1: 1970-71 (M), 1975, 1979, 1982-85 (P).

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 (1.09 m) lower.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station. Possible water extraction about 500 ft (152.4 m) upstream of gage by unknown source affecting low flow.

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

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	117	112	195	244	146	105	162	1120	183	114	119	126
2	111	355	495	232	140	106	137	1070	173	111	257	114
3	108	356	862	225	137	105	120	978	170	112	178	1380
4	113	212	420	217	147	104	106	622	264	111	163	1470
5	125	178	427	234	147	101	105	505	530	110	189	581
6	116	226	298	409	135	101	362	447	554	108	126	290
7	114	287	238	390	140	101	315	399	251	123	112	185
8	e110	43500	222	285	131	104	1030	427	192	116	107	155
9	e130	17300	203	243	128	108	958	347	179	109	111	140
10	e200	2180	192	213	128	105	596	302	167	118	149	131
11	e140	1030	188	188	127	128	394	284	153	110	141	126
12	e130	680	197	179	124	192	269	269	145	132	391	124
13	e115	522	238	173	121	129	228	249	141	211	153	119
14	e110	408	253	170	120	111	210	233	137	127	114	117
15	e170	373	251	168	119	104	211	224	133	111	126	186
16	220	355	241	165	117	99	268	250	130	111	104	258
17	177	314	748	164	116	138	325	223	132	107	96	224
18	155	289	572	156	114	112	279	212	149	109	94	372
19	142	e277	368	153	168	102	1260	207	156	104	89	932
20	128	e255	301	149	341	112	835	204	139	101	88	846
21	120	e242	489	148	173	98	2730	188	130	99	85	577
22	115	e227	805	147	131	94	920	183	126	100	81	251
23	113	e212	1080	156	118	92	1120	177	126	105	90	191
24	111	e273	2020	171	112	89	2340	177	128	104	100	174
25	108	e300	846	177	108	87	4290	170	127	102	94	225
26	105	e212	500	155	108	86	6810	169	121	97	87	227
27	104	e200	377	152	119	85	4430	169	123	99	80	362
28	111	e190	324	151	111	90	1790	175	123	109	77	219
29	171	e202	285	163	---	126	982	163	120	119	76	214
30	137	232	268	157	---	613	2030	179	116	114	92	184
31	119	---	262	150	---	204	---	300	---	101	131	---
TOTAL	4045	71499	14165	6084	3826	3931	35612	10622	5318	3504	3900	10500
MEAN	130	2383	457	196	137	127	1187	343	177	113	126	350
MAX	220	43500	2020	409	341	613	6810	1120	554	211	391	1470
MIN	104	112	188	147	108	85	105	163	116	97	76	114
AC-FT	8020	141800	28100	12070	7590	7800	70640	21070	10550	6950	7740	20830
CFSM	0.66	12.1	2.32	1.00	0.69	0.64	6.03	1.74	0.90	0.57	0.64	1.78
IN.	0.76	13.50	2.67	1.15	0.72	0.74	6.72	2.01	1.00	0.66	0.74	1.98

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2002, BY WATER YEAR (WY)

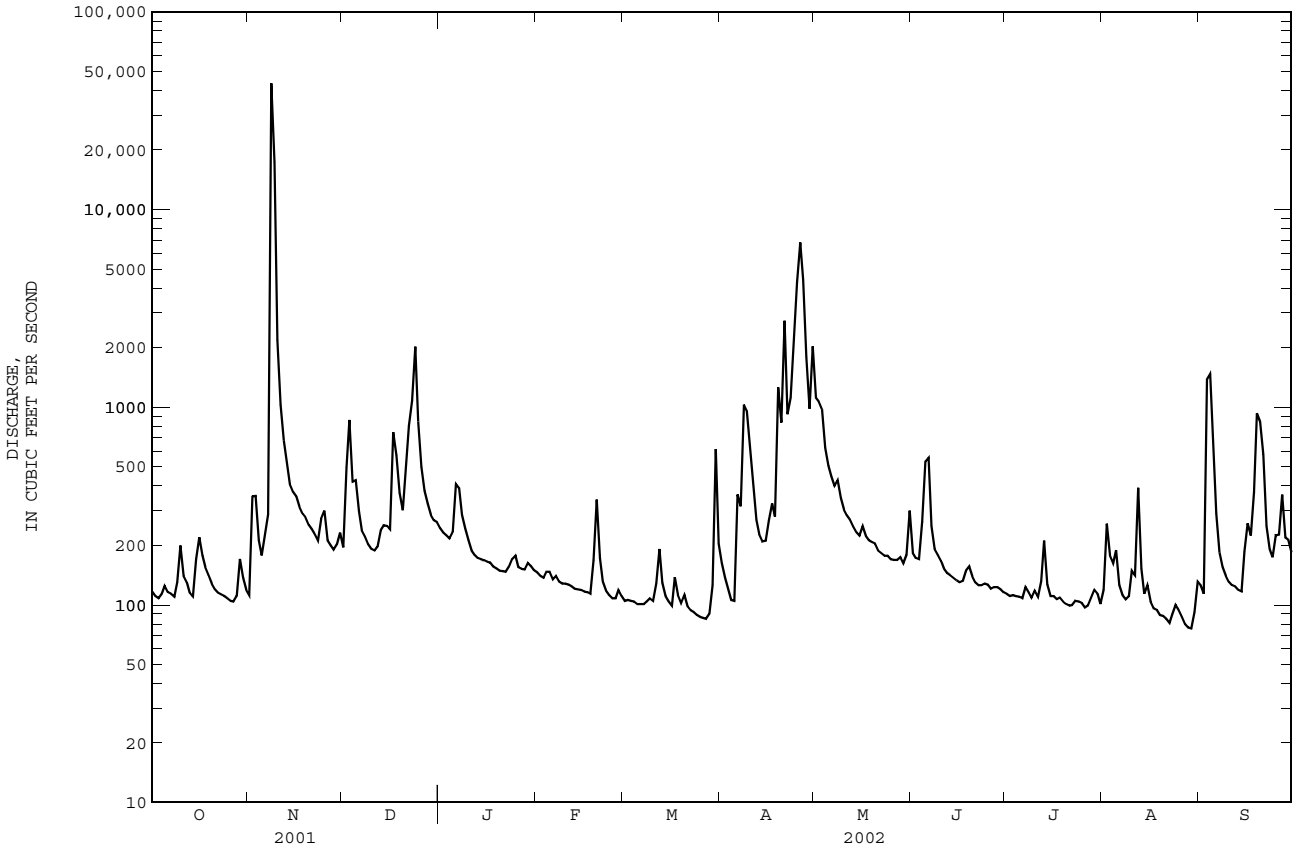
MEAN	701	648	420	267	206	178	359	620	238	152	208	605
MAX	2958	2383	1717	879	444	521	1187	3178	815	577	1644	3732
(WY)	1971	2002	2000	1997	1988	1972	2002	1985	1999	1979	1979	1998
MIN	130	71.0	55.1	59.1	72.0	56.2	49.9	93.7	63.8	53.0	67.9	67.4
(WY)	2002	1995	1998	1995	1994	1994	1995	1989	1994	1994	1984	1994

e Estimated

RIO GRANDE DE MANATI BASIN

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

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1970 - 2002	
ANNUAL TOTAL	128927		173006			
ANNUAL MEAN	353		474		382	
HIGHEST ANNUAL MEAN					756	1971
LOWEST ANNUAL MEAN					96.5	1994
HIGHEST DAILY MEAN	43500	Nov 8	43500	Nov 8	80400	Sep 22 1998
LOWEST DAILY MEAN	62	May 5	76	Aug 29	31	Jan 24 1995
ANNUAL SEVEN-DAY MINIMUM	67	Jun 10	86	Aug 23	33	Jul 23 1994
MAXIMUM PEAK FLOW			104000	Nov 8	198000	Sep 10 1996
MAXIMUM PEAK STAGE			34.01	Nov 8	36.39	Sep 10 1996
INSTANTANEOUS LOW FLOW			75	Aug 28	28	Jan 23 1995
ANNUAL RUNOFF (AC-FT)	255700		343200		276900	
ANNUAL RUNOFF (CFSM)	1.79		2.41		1.94	
ANNUAL RUNOFF (INCHES)	24.35		32.67		26.36	
10 PERCENT EXCEEDS	355		579		676	
50 PERCENT EXCEEDS	115		163		165	
90 PERCENT EXCEEDS	75		104		82	



RIO GRANDE DE MANATI BASIN

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

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
NOV													
27...	1510	201	282	7.5	26.6	5.2	8.5	106	<10	2200	630	120	35.7
MAR													
07...	1230	101	319	7.7	26.0	5.7	10.7	132	<10	E12000	980	--	--
MAY													
13...	1400	--	--	--	--	6.5	--	--	<10	--	--	110	33.5

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
NOV													
27...	7.42	10.2	.4	1.91	120	<1.0	8.2	12.8	E.1	18.8	167	90.5	<10
MAR													
07...	--	--	--	--	133	--	--	--	--	--	--	--	<10
MAY													
13...	7.49	10.2	.4	1.83	--	<.1	7.2	10.9	<.1	21.2	160	--	<10

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
NOV													
27...	.01	.510	.02	<.20	E.04	<2	44.3	30	<.1	<.8	<10	230	<1
MAR													
07...	<.01	.450	.05	.20	.08	--	--	--	--	--	--	--	--
MAY													
13...	<.01	.500	.02	.40	.06	<2	48.1	E10	<.1	1.0	M	640	<1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
NOV								
27...	49.3	<.01	<2	<.3	<20	<.01	E18	<.05
MAR								
07...	--	--	--	--	--	--	--	--
MAY								
13...	60.5	<.01	<2	<.3	<20	<.01	<16	<.05

RIO GRANDE DE MANATI BASIN

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

PESTICIDE ANALYSES

DATE	TIME	DI-CHLOR-PROP, WATER, UNFLTRD UG/L (82183)	2,4,5-T WATER UNFLTRD UG/L (39740)	2,4-D WATER UNFLTRD UG/L (39730)	ALDRIN, WATER, UNFLTRD UG/L (39330)	CARBO-PHENO-THION, WATER, UNFLTRD UG/L (39786)	CHLOR-DANE, TECH-NICAL, WATER, UNFLTRD UG/L (39350)	CHLOR-PYRIFOS WATER UNFLTRD UG/L (38932)	TRIBU-PHOS, WATER, UNFLTRD UG/L (39040)	DIAZI-NON, WATER, UNFLTRD UG/L (39570)	DIEL-DRIN, WATER, UNFLTRD UG/L (39380)	DISUL-FOTON, WATER, UNFLTRD UG/L (39011)	ALPHA-ENDO-SULFAN, WATER, UNFLTRD UG/L (39388)
MAY													
13...	1400	<.02	<.01	<.02	<.01	<.02	<.1	<.01	<.02	<.02	<.006	<.10	<.02

DATE	ENDRIN, WATER, UNFLTRD UG/L (39390)	ETHION, WATER, UNFLTRD UG/L (39398)	FONOFOS WATER UNFLTRD UG/L (82614)	HEPTA-CHLOR EPOXIDE WATER UNFLTRD UG/L (39420)	HEPTA-CHLOR, WATER, UNFLTRD UG/L (39410)	LINDANE WATER, UNFLTRD UG/L (39340)	MALA-THION, WATER, UNFLTRD UG/L (39530)	P,P'-METH-OXY-CHLOR, WATER, UNFLTRD UG/L (39480)	METHYL PARA-THION, WATER, UNFLTRD UG/L (39600)	MIREX, WATER, UNFLTRD UG/L (39755)	P,P'-DDD, WATER, UNFLTRD UG/L (39360)	P,P'-DDE, WATER, UNFLTRD UG/L (39365)	P,P'-DDT, WATER, UNFLTRD UG/L (39370)
MAY													
13...	<.01	<.01	<.01	<.009	<.01	<.006	<.10	<.020	<.02	<.006	<.007	<.006	<.009

DATE	PARA-THION, WATER, UNFLTRD UG/L (39540)	PCBS, WATER, UNFLTRD UG/L (39516)	PHORATE WATER UNFLTRD UG/L (39023)	SILVEX, WATER, UNFLTRD UG/L (39760)	TOXA-PHENE, WATER, UNFLTRD UG/L (39400)
MAY					
13...	<.01	<.1	<.02	<.02	<1

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

LAGUNA TORTUGUERO BASIN

50038200 LAGUNA TORTUGUERO OUTLET NEAR VEGA BAJA, PR

WATER-QUALITY RECORDS

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

DRAINAGE AREA.--Indeterminate.

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)	NITRITE WATER, UNFLTRD MG/L AS N (00615)
NOV														
19...	1015	40	996	7.3	27.8	5.2	66	30	E48	E34	113	<1.0	<10	.02
MAR														
06...	0930	7.9	933	7.7	25.6	7.0	86	30	100	92	132	--	<10	.01
MAY														
06...	1115	--	--	--	--	--	--	30	--	--	--	<1.0	<10	.01
SEP														
03...	0840	--	1100	7.1	28.7	5.8	75	30	E73	E64	110	<.1	<10	.01

DATE	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	TOTAL NITRO-GEN, WATER, UNFLTRD MG/L AS NO3 (71887)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
NOV													
19...	.460	.31	E1.1	--	E.02	50	<10	100	7.2	<20	<.01	<16	.06
MAR													
06...	.550	.12	.80	6.0	<.02	--	--	--	--	--	--	--	--
MAY													
06...	.280	.12	1.1	6.1	<.02	60	M	40	3.9	M	M	<16	.12
SEP													
03...	.560	.26	1.5	9.1	<.02	60	<10	M	E1.5	<20	<.01	<16	.13

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

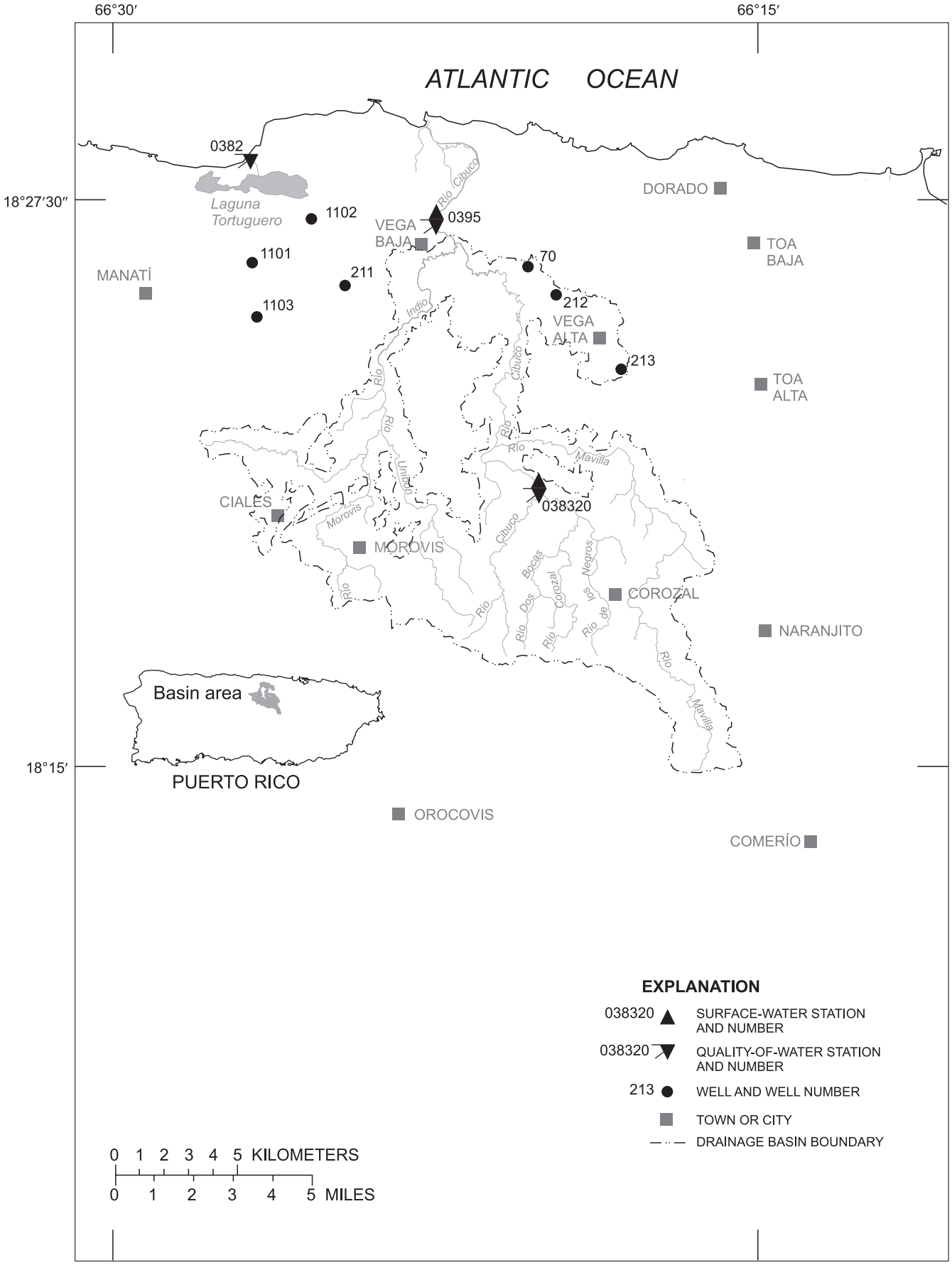


Figure 15. Río Cibuco basin.

RIO CIBUCO BASIN

50038320 RIO CIBUCO BELOW COROZAL, PR

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

DRAINAGE AREA.--15.1 mi^2 (39.1 km^2).

WATER-DISCHARGE RECORDS

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

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

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station. Daily discharge affected by sewage treatment plant about 0.6 mi (1.0 km) upstream from station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.6	5.7	14	12	18	12	18	440	14	9.1	6.4	16
2	5.4	5.9	27	12	15	12	18	138	15	9.3	14	55
3	6.0	5.7	58	13	28	12	15	53	14	9.0	15	223
4	13	5.8	159	12	30	10	11	46	15	8.8	12	91
5	10	6.1	100	19	18	11	18	57	15	8.5	7.4	23
6	7.2	7.0	39	82	21	8.8	100	50	14	11	7.1	15
7	6.1	67	32	48	23	9.0	160	36	14	11	6.5	13
8	18	3190	24	20	20	14	146	31	13	8.8	6.5	12
9	11	248	20	15	18	9.3	41	28	13	8.6	6.3	12
10	55	89	26	14	17	12	25	26	12	8.4	5.7	11
11	16	43	40	13	21	14	21	25	12	8.3	5.6	11
12	8.8	29	95	12	17	11	18	24	14	99	5.5	11
13	8.1	26	54	12	18	9.2	17	23	12	18	5.7	11
14	40	23	63	12	18	9.0	16	22	11	9.8	14	80
15	170	21	47	12	17	8.9	38	21	11	8.4	9.3	43
16	24	18	52	15	17	8.5	48	21	10	8.5	10	56
17	15	17	191	15	16	8.3	29	20	14	8.0	6.9	21
18	11	17	64	14	16	8.4	24	20	18	6.8	7.2	21
19	9.4	16	30	12	60	8.9	19	18	14	6.3	6.5	41
20	8.1	15	18	12	21	7.5	164	18	15	6.4	5.5	316
21	7.7	15	18	11	12	7.1	98	17	12	6.7	5.7	81
22	7.4	15	17	13	11	7.3	37	17	12	7.0	5.8	41
23	8.1	14	294	12	11	6.4	27	17	11	7.4	19	33
24	7.0	16	89	24	10	5.8	63	16	11	8.1	8.1	81
25	6.8	17	34	13	10	5.5	103	16	10	7.3	6.7	47
26	7.4	14	22	13	13	5.7	277	16	11	6.5	6.5	38
27	6.3	14	16	14	13	6.2	121	17	11	12	6.3	34
28	6.2	14	14	27	11	62	44	16	10	13	7.3	27
29	7.4	19	13	e16	---	30	35	16	9.6	9.1	7.5	25
30	6.2	15	13	e51	---	14	77	22	9.4	7.0	38	22
31	5.5	---	13	27	---	13	---	16	---	6.4	21	---
TOTAL	523.7	4008.2	1696	597	520	366.8	1828	1303	377.0	362.5	295.0	1511
MEAN	16.9	134	54.7	19.3	18.6	11.8	60.9	42.0	12.6	11.7	9.52	50.4
MAX	170	3190	294	82	60	62	277	440	18	99	38	316
MIN	5.4	5.7	13	11	10	5.5	11	16	9.4	6.3	5.5	11
AC-FT	1040	7950	3360	1180	1030	728	3630	2580	748	719	585	3000
CFSM	1.12	8.85	3.62	1.28	1.23	0.78	4.04	2.78	0.83	0.77	0.63	3.34
IN.	1.29	9.87	4.18	1.47	1.28	0.90	4.50	3.21	0.93	0.89	0.73	3.72

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2002, BY WATER YEAR (WY)

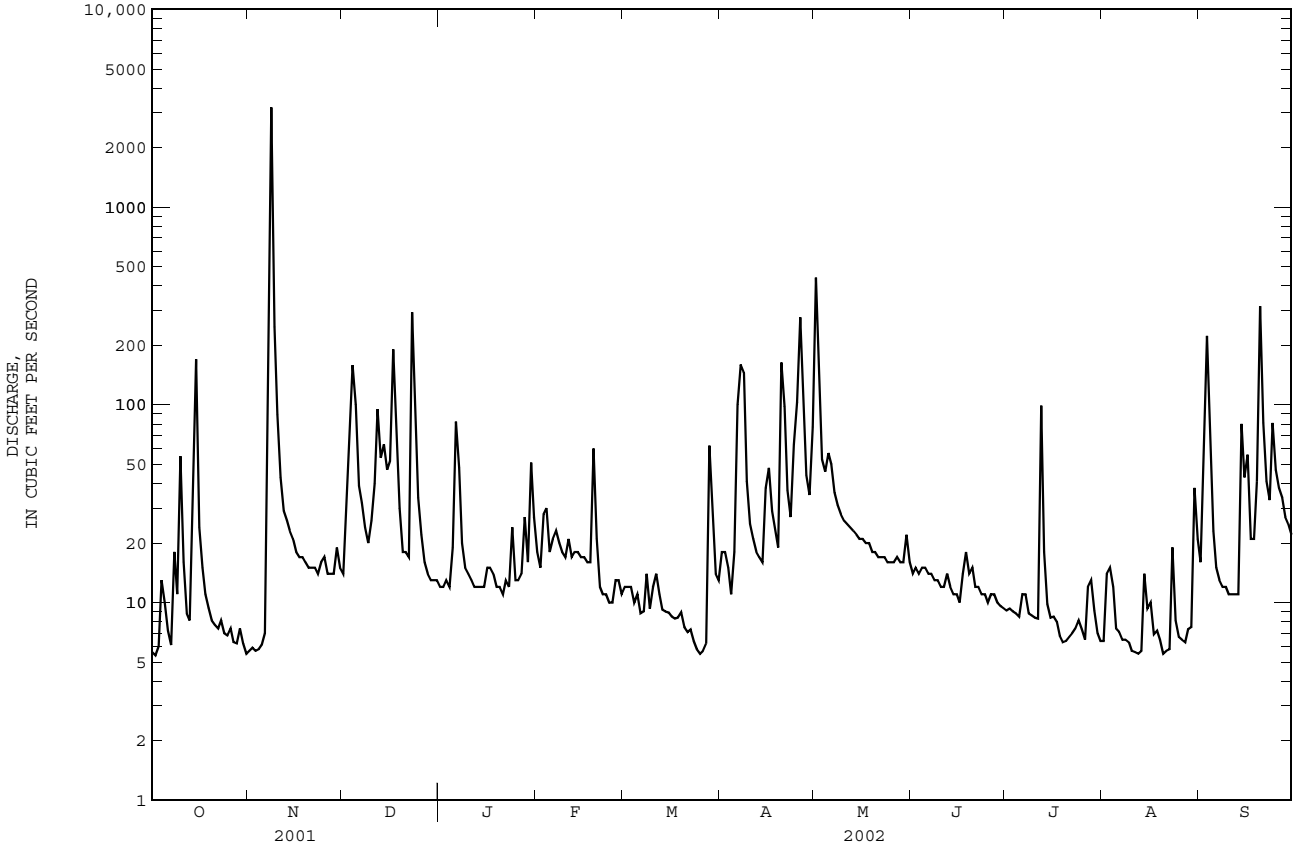
MEAN	41.2	51.8	40.1	24.9	21.2	20.1	31.1	41.8	14.9	12.2	15.9	33.6
MAX	135	155	169	69.6	51.3	65.1	111	157	44.4	35.6	50.8	191
(WY)	1991	1971	1971	1992	1988	1981	1973	1986	1987	1999	1979	1996
MIN	8.05	5.63	1.94	6.93	7.75	4.36	3.32	3.20	1.63	2.19	3.44	3.88
(WY)	1979	1998	1998	1995	1994	1984	1984	1977	1994	1994	1978	1994

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1969 - 2002	
ANNUAL TOTAL	8792.4		13388.2			
ANNUAL MEAN	24.1		36.7		29.2	
HIGHEST ANNUAL MEAN					56.5	1971
LOWEST ANNUAL MEAN					7.47	1994
HIGHEST DAILY MEAN	3190	Nov 8	3190	Nov 8	3190	Nov 8 2001
LOWEST DAILY MEAN	3.9	Jul 15	5.4	Oct 2	0.91	Jul 17 1994
ANNUAL SEVEN-DAY MINIMUM	4.2	Jul 11	5.8	Oct 30	1.2	Jun 21 1994
MAXIMUM PEAK FLOW			21400	Nov 8	21400	Nov 8 2001
MAXIMUM PEAK STAGE			22.68	Nov 8	22.68	Nov 8 2001
ANNUAL RUNOFF (AC-FT)	17440		26560		21120	
ANNUAL RUNOFF (CFSM)	1.60		2.43		1.93	
ANNUAL RUNOFF (INCHES)	21.66		32.98		26.24	
10 PERCENT EXCEEDS	26		57		52	
50 PERCENT EXCEEDS	7.6		14		13	
90 PERCENT EXCEEDS	5.3		6.6		5.2	

e Estimated

RIO CIBUCO BASIN

50038320 RIO CIBUCO BELOW COROZAL, PR--Continued



RIO CIBUCO BASIN

50038320 RIO CIBUCO BELOW COROZAL, PR

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
NOV													
20...	1020	15	391	7.4	23.9	2.1	8.2	98	<10	5200	460	150	39.9
MAR													
21...	0910	8.8	393	7.6	23.7	2.1	8.1	96	<10	2700	590	--	--
MAY													
08...	1200	--	--	--	--	6.8	--	--	<10	--	--	160	44.6

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
NOV													
20...	13.1	19.0	.7	3.76	138	<1.0	16.7	28.3	<.1	28.8	232	9.58	<10
MAR													
21...	--	--	--	--	138	--	--	--	--	--	--	--	<10
MAY													
08...	10.7	17.7	.6	2.79	--	.3	13.3	24.5	.1	18.2	209	--	<10

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
NOV													
20...	.03	2.10	.02	<.20	E.16	<2	57.5	30	<.1	<.8	<10	50	<1
MAR													
21...	.02	2.30	.04	.40	.26	--	--	--	--	--	--	--	--
MAY													
08...	<.01	1.80	.02	<.20	.13	<2	57.0	30	<.1	E.5	<10	210	<1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
NOV								
20...	35.1	<.01	<2	<.3	<20	<.01	E58	<.05
MAR								
21...	--	--	--	--	--	--	--	--
MAY								
08...	33.4	<.01	<2	<.3	<20	<.01	<16	E.04

< -- Less than
E -- Estimated value

RIO CIBUCO BASIN

50039500 RIO CIBUCO AT VEGA BAJA, PR

LOCATION.--Lat 18°26'53", long 66°22'29", Hydrologic Unit 21010002, on left bank, at bridge on Highway 2, 0.6 mi (1.0 km) downstream from Río Indio and 0.8 mi (1.3 km) east of Vega Baja.

DRAINAGE AREA.--99.1 mi^2 (256.7 km^2), of which 25.4 mi^2 (65.8 km^2), does not contribute directly to surface runoff.

WATER-DISCHARGE RECORDS

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

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

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of December 11, 1965, reached a stage of 26.2 ft (7.99 m), datum unknown, discharge about 28,000 ft^3/s (793 m^3/s).

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	18	56	145	113	51	61	778	54	29	e26	e45
2	17	19	62	134	85	52	52	854	73	29	e44	e39
3	16	e22	137	127	77	53	72	309	95	29	44	e91
4	16	e29	273	122	145	52	48	238	83	29	36	e319
5	60	e21	525	163	83	50	104	195	68	29	28	151
6	31	e28	313	298	75	48	260	239	57	30	26	137
7	23	e41	155	330	88	46	402	175	50	42	26	59
8	20	e4010	144	179	73	69	696	171	46	32	29	48
9	91	e911	e92	146	68	60	287	128	43	28	30	42
10	80	e355	e78	128	66	51	143	114	43	28	28	38
11	190	e224	e81	119	70	70	102	104	40	28	29	36
12	56	e162	e163	111	63	64	83	104	40	143	29	34
13	38	e139	328	102	64	e60	70	87	47	195	33	33
14	192	e124	320	97	64	e55	63	83	39	54	38	36
15	351	e109	320	95	60	49	77	79	37	61	57	265
16	297	e89	285	95	57	51	369	76	35	38	32	228
17	91	e87	978	95	55	51	241	73	36	51	37	89
18	68	e83	763	101	54	52	137	69	65	35	29	125
19	54	e94	353	93	108	58	109	67	58	32	29	141
20	39	79	250	80	121	58	321	64	47	30	25	271
21	32	72	216	80	65	52	763	63	49	29	24	446
22	41	66	295	80	56	53	260	60	40	49	24	119
23	33	61	825	79	54	51	308	58	36	40	24	87
24	24	80	869	129	51	52	265	56	34	31	48	167
25	26	87	408	93	51	46	273	52	33	e29	e28	e243
26	25	67	299	79	54	42	593	49	33	e26	e26	e111
27	23	60	246	79	61	42	905	50	34	e44	e25	125
28	24	62	211	95	52	53	304	52	35	e50	e25	87
29	23	78	184	110	---	169	192	48	32	e35	e27	86
30	23	73	166	104	---	77	402	99	30	e28	e27	58
31	20	---	157	146	---	58	---	111	---	e26	e67	---
TOTAL	2043	7350	9552	3834	2033	1795	7962	4705	1412	1359	1000	3756
MEAN	65.9	245	308	124	72.6	57.9	265	152	47.1	43.8	32.3	125
MAX	351	4010	978	330	145	169	905	854	95	195	67	446
MIN	16	18	56	79	51	42	48	48	30	26	24	33
AC-FT	4050	14580	18950	7600	4030	3560	15790	9330	2800	2700	1980	7450
CFSM	0.67	2.47	3.11	1.25	0.73	0.58	2.68	1.53	0.47	0.44	0.33	1.26
IN.	0.77	2.76	3.59	1.44	0.76	0.67	2.99	1.77	0.53	0.51	0.38	1.41

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 2002, BY WATER YEAR (WY)

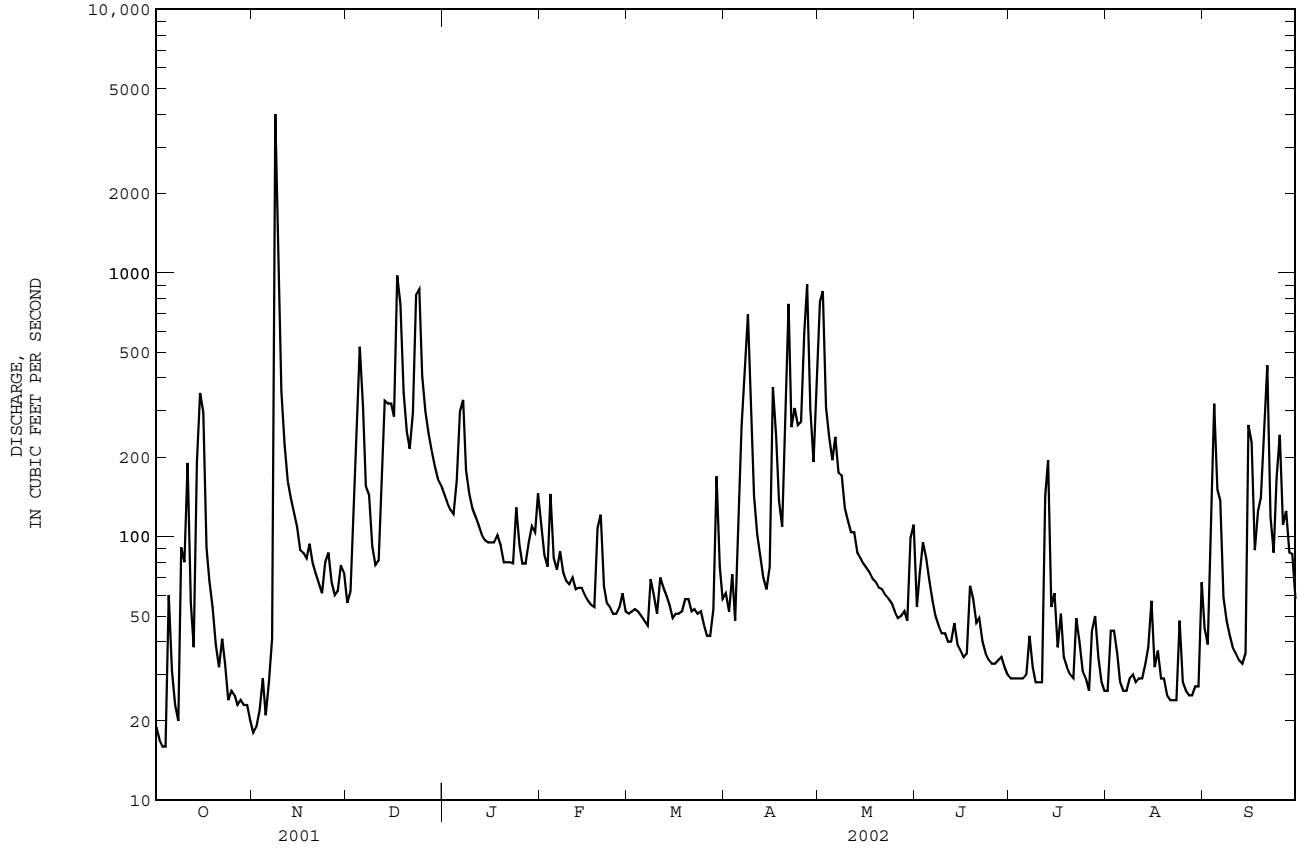
MEAN	157	205	206	106	88.0	78.2	141	175	70.4	56.2	75.5	142
MAX	559	523	1316	339	190	339	667	655	239	235	461	690
(WY)	1986	1980	1982	1997	1988	1990	1987	1985	1987	1999	1979	1996
MIN	45.9	28.3	12.9	30.2	27.2	20.5	16.2	24.7	12.5	14.0	21.2	26.7
(WY)	1974	1998	1998	1995	1994	1994	1984	1977	1994	1994	1978	1994

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1973 - 2002	
ANNUAL TOTAL	31807		46801			
ANNUAL MEAN	87.1		128		124	
HIGHEST ANNUAL MEAN					236	1982
LOWEST ANNUAL MEAN					38.5	1994
HIGHEST DAILY MEAN	4010	Nov 8	4010	Nov 8	14600	Dec 13 1981
LOWEST DAILY MEAN	15	Jun 12	16	Oct 3	7.2	May 3 1995
ANNUAL SEVEN-DAY MINIMUM	16	Jun 9	21	Oct 28	8.1	Apr 28 1995
MAXIMUM PEAK FLOW			2240	May 1	34000	Apr 12 1987
MAXIMUM PEAK STAGE			12.71	May 1	19.10	Apr 12 1987
INSTANTANEOUS LOW FLOW			14	Oct 3	7.2	May 2 1995
ANNUAL RUNOFF (AC-FT)	63090		92830		89760	
ANNUAL RUNOFF (CFSM)	0.88		1.29		1.25	
ANNUAL RUNOFF (INCHES)	11.94		17.57		16.99	
10 PERCENT EXCEEDS	170		286		239	
50 PERCENT EXCEEDS	34		64		57	
90 PERCENT EXCEEDS	19		28		22	

e Estimated

RIO CIBUCO BASIN

50039500 RIO CIBUCO AT VEGA BAJA, PR--Continued



RIO CIBUCO BASIN

50039500 RIO CIBUCO AT VEGA BAJA, PR--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
NOV													
19...	1400	102	475	7.5	26.2	8.1	7.0	88	<10	530	730	200	66.8
MAR													
06...	1100	37	445	7.7	24.5	5.0	6.9	83	<10	460	290	--	--
MAY													
06...	1330	--	--	--	--	80	--	--	<10	--	--	160	50.3
SEP													
03...	1110	185	265	6.7	26.1	300	6.0	75	10	E19000	E17000	120	37.0

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
NOV													
19...	8.69	14.4	.4	3.16	194	<1.0	17.6	25.9	.1	17.5	271	74.6	<10
MAR													
06...	--	--	--	--	174	--	--	--	--	--	--	--	<10
MAY													
06...	8.15	14.4	.5	3.17	--	<.1	14.8	19.8	E.1	18.2	220	--	50
SEP													
03...	7.74	12.5	.5	2.89	93	<.1	12.0	16.1	.14	17.4	162	80.7	238

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
NOV													
19...	.02	1.50	.04	E.20	E.08	E2	57.1	30	<.1	E.5	<10	360	M
MAR													
06...	.01	1.60	.02	<.20	.18	--	--	--	--	--	--	--	--
MAY													
06...	.04	1.20	.04	.60	.14	<2	56.7	20	<.1	2.4	E10	1770	1
SEP													
03...	.04	.960	.07	1.1	.32	<2	79.0	30	<.1	11.8	20	5810	3

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
NOV								
19...	47.1	<.01	<2	<.3	<20	<.01	<16	<.05
MAR								
06...	--	--	--	--	--	--	--	--
MAY								
06...	88.4	.01	<2	<.3	<20	<.01	<16	<.05
SEP								
03...	354	.03	<2	<.3	50	<.01	<16	<.05

< -- Less than
E -- Estimated value

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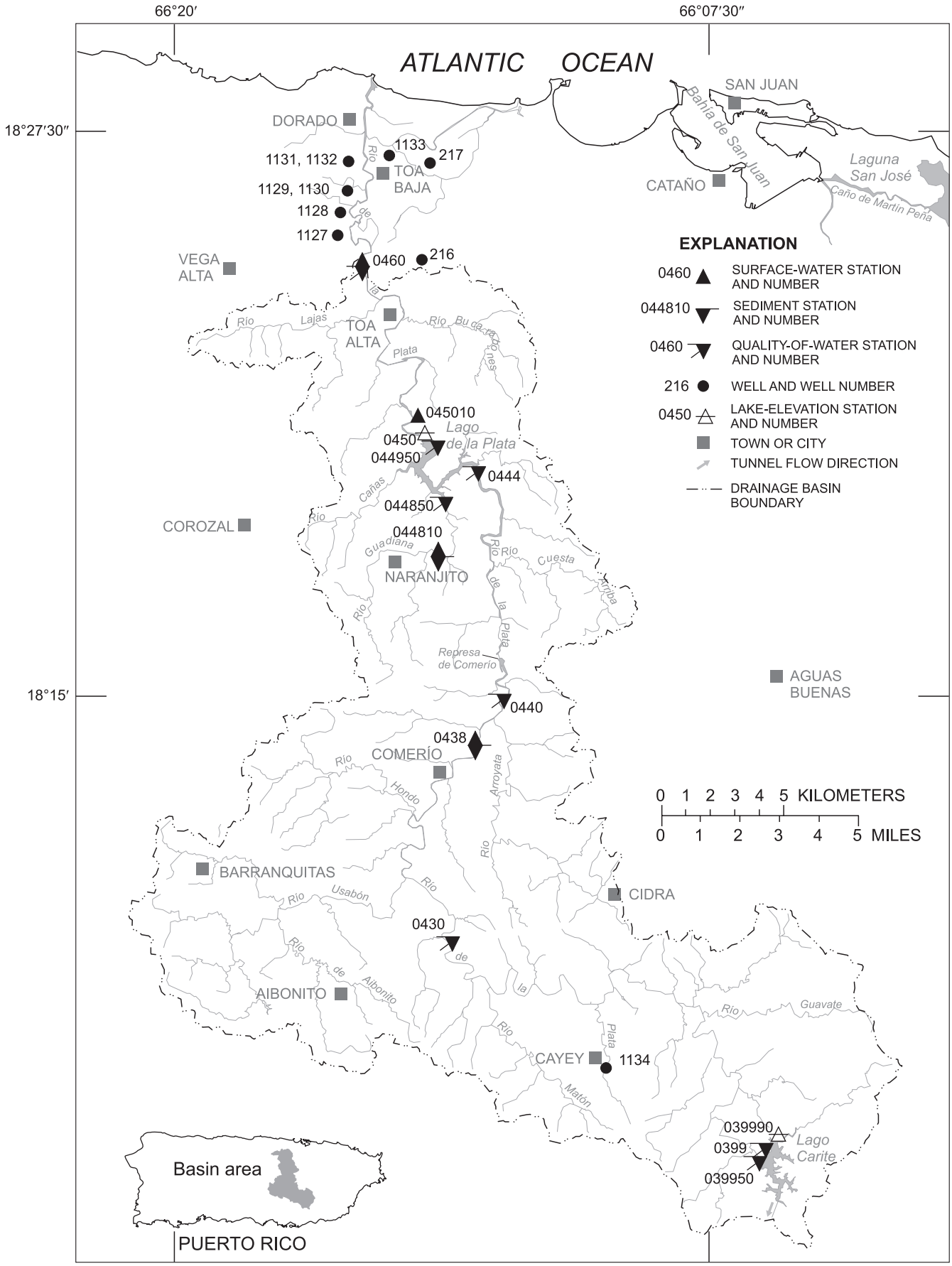


Figure 16. Río de la Plata basin.

RIO DE LA PLATA BASIN

50039990 LAGO CARITE AT GATE TOWER NEAR CAYEY, PR

LOCATION.--Lat 18°03'46", long 66°05'58", Hydrologic Unit 21010005, on top of a concrete tower at diversion tunnel on Carite Reservoir, 0.7 mi (1.1 km) northwest from Escuela Carite Chino, 1.2 mi (1.9 km) northeast from Central Hidroeléctrica de Carite Num. 1 and 1.8 mi (2.9 km) northeast from Escuela Segunda Unidad.

DRAINAGE AREA.--8.20 mi^2 (21.2 km^2).

ELEVATION RECORDS

PERIOD OF RECORD.--May 1989 to current year. Prior to October 1994, published as Lago Carite at Gate Tower.

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

REMARKS.--Lago Carite Dam was completed in 1913. The operation of the reservoir is controlled by the utilization of water to meet the demands for domestic, industrial, and agricultural purposes in the Guayama area. The dam is an earthfill with crest elevation of 1,806 ft (550 m) above mean sea level, with a structural height of 104 ft (32 m) and a length of 500 ft (152 m). The dam has a capacity of approximately 11,310 acre-feet (13.9 hm^3). The Dam is operated by the Puerto Rico Electric and Power Authority. Gage-height and precipitation satellite telemetry at station.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation 1,789.62 ft (545.48 m), September 21, 1998; minimum elevation, 1,761.22 ft (536.81 m), May 28, 1995.

EXTREMES FOR CURRENT YEAR.--Maximum elevation 1,778.20 ft (541.99 m), September 29; minimum elevation, 1,765.88 ft (538.14 m), May 29.

Capacity Table
(based on Data from Puerto Rico Electric Power Authority)

Elevation, in feet	Contents, in acre-feet	Elevation, in feet	Contents, in acre-feet
1,746	0	1,775	6,194
1,760	2,471	1,780	7,704
1,769	4,561	1,790	11,048

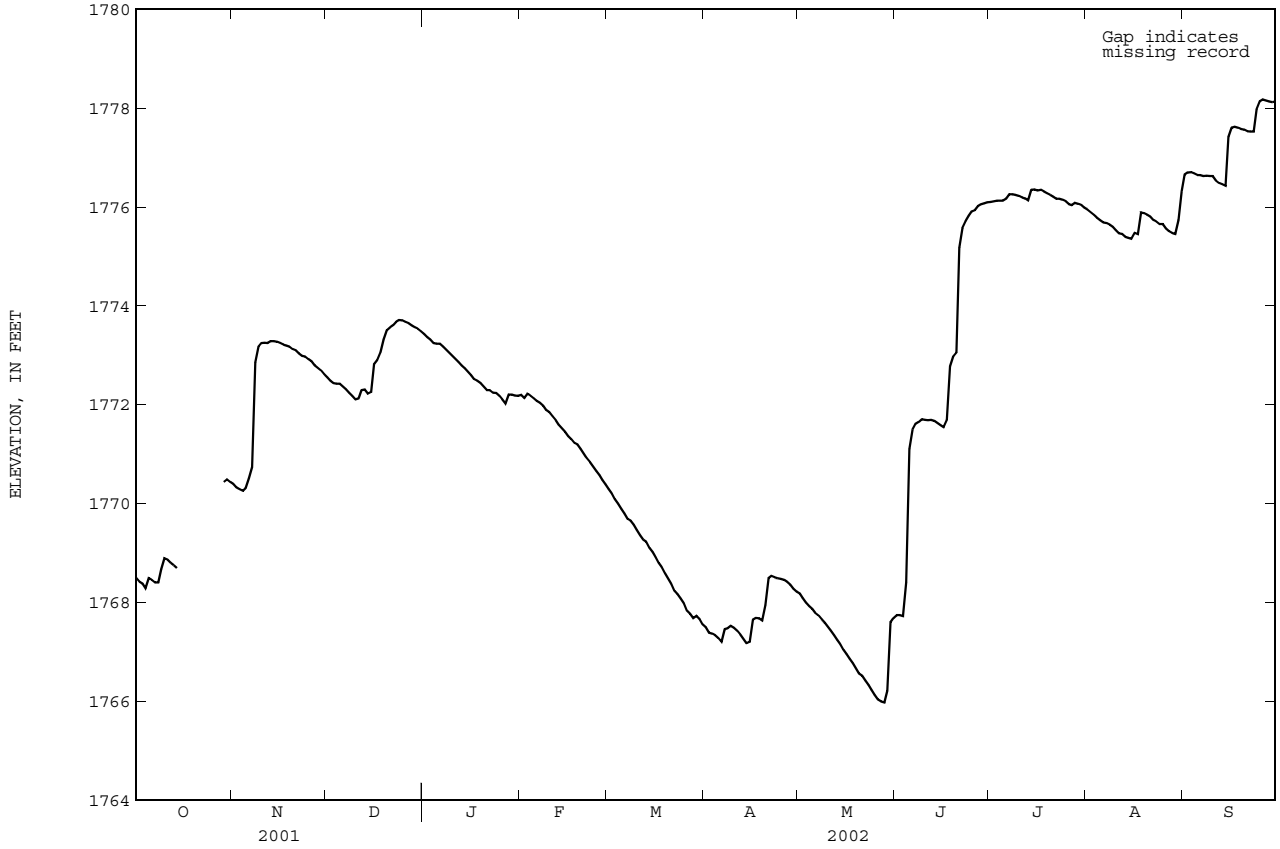
Elevation above NGVD 1929, feet
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1768.50	1770.40	1772.56	1773.43	1772.20	1770.29	1767.50	1768.18	1767.75	1776.11	1775.95	1776.66
2	1768.42	1770.33	1772.49	1773.37	1772.14	1770.20	1767.39	1768.09	1767.75	1776.12	1775.90	1776.70
3	1768.38	1770.29	1772.44	1773.32	1772.22	1770.09	1767.37	1768.00	1767.73	1776.13	1775.85	1776.71
4	1768.29	1770.26	1772.43	1773.25	1772.19	1770.00	1767.34	1767.93	1768.41	1776.13	1775.78	1776.68
5	1768.49	1770.32	1772.43	1773.24	1772.14	1769.90	1767.28	1767.87	1771.11	1776.13	1775.74	1776.65
6	1768.46	1770.51	1772.37	1773.24	1772.08	1769.80	1767.20	1767.79	1771.50	1776.17	1775.69	1776.65
7	1768.41	1770.74	1772.32	1773.18	1772.04	1769.69	1767.46	1767.74	1771.61	1776.26	1775.68	1776.63
8	1768.41	1772.86	1772.25	1773.12	1771.98	1769.66	1767.48	1767.66	1771.65	1776.26	1775.65	1776.64
9	1768.67	1773.18	1772.18	1773.06	1771.90	1769.57	1767.53	1767.59	1771.71	1776.25	1775.60	1776.63
10	1768.89	1773.25	1772.11	1772.99	1771.85	1769.46	1767.49	1767.51	1771.70	1776.23	1775.54	1776.63
11	1768.87	1773.26	1772.13	1772.93	1771.77	1769.36	1767.43	1767.43	1771.69	1776.20	1775.47	1776.54
12	1768.80	1773.25	1772.30	1772.87	1771.69	1769.27	1767.35	1767.34	1771.70	1776.18	1775.46	1776.49
13	1768.76	1773.29	1772.31	1772.80	1771.60	1769.23	1767.27	1767.24	1771.68	1776.14	1775.40	1776.46
14	1768.70	1773.29	1772.23	1772.74	1771.53	1769.11	1767.18	1767.15	1771.63	1776.35	1775.38	1776.43
15	A	1773.28	1772.26	1772.67	1771.46	1769.02	1767.20	1767.05	1771.59	1776.36	1775.36	1777.42
16	A	1773.25	1772.82	1772.60	1771.37	1768.91	1767.65	1766.96	1771.55	1776.34	1775.48	1777.61
17	A	1773.22	1772.90	1772.52	1771.30	1768.80	1767.69	1766.86	1771.69	1776.35	1775.45	1777.63
18	A	1773.20	1773.06	1772.49	1771.23	1768.71	1767.68	1766.77	1772.78	1776.32	1775.89	1777.61
19	A	1773.18	1773.32	1772.44	1771.20	1768.59	1767.64	1766.66	1772.98	1776.28	1775.88	1777.58
20	A	1773.13	1773.51	1772.37	1771.11	1768.48	1767.95	1766.56	1773.06	1776.25	1775.85	1777.57
21	A	1773.10	1773.56	1772.30	1771.01	1768.37	1768.49	1766.52	1775.18	1776.21	1775.81	1777.54
22	A	1773.04	1773.61	1772.30	1770.92	1768.24	1768.54	1766.42	1775.58	1776.17	1775.74	1777.53
23	A	1772.99	1773.68	1772.25	1770.84	1768.17	1768.51	1766.33	1775.72	1776.17	1775.71	1777.53
24	A	1772.98	1773.72	1772.24	1770.75	1768.08	1768.49	1766.23	1775.83	1776.15	1775.66	1777.98
25	A	1772.93	1773.71	1772.18	1770.66	1767.98	1768.48	1766.13	1775.91	1776.12	1775.66	1778.14
26	A	1772.88	1773.68	1772.11	1770.58	1767.84	1768.46	1766.04	1775.94	1776.06	1775.57	1778.18
27	A	1772.80	1773.65	1772.03	1770.48	1767.77	1768.42	1766.00	1776.02	1776.04	1775.51	1778.16
28	A	1772.75	1773.61	1772.21	1770.39	1767.68	1768.36	1765.98	1776.06	1776.09	1775.48	1778.14
29	1770.44	1772.70	1773.57	1772.21	---	1767.73	1768.28	1766.21	1776.08	1776.07	1775.46	1778.13
30	1770.49	1772.62	1773.54	1772.19	---	1767.66	1768.22	1767.60	1776.10	1776.04	1775.74	1778.14
31	1770.44	---	1773.49	1772.18	---	1767.56	---	1767.69	---	1775.99	1776.33	---
MAX	---	1773.29	1773.72	1773.43	1772.22	1770.29	1768.54	1768.18	1776.10	1776.36	1776.33	1778.18
MIN	---	1770.26	1772.11	1772.03	1770.39	1767.56	1767.18	1765.98	1767.73	1775.99	1775.36	1776.43

A No gage-height record

RIO DE LA PLATA BASIN

50039990 LAGO CARITE AT GATE TOWER NEAR CAYEY, PR--Continued



RIO DE LA PLATA BASIN

50043000 RIO DE LA PLATA AT PROYECTO LA PLATA, PR

WATER-QUALITY RECORDS

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

DRAINAGE AREA.--63.0 mi^2 (163.2 km^2), excludes 8.2 mi^2 (21.1 km^2) upstream from Lago Carite, the flow of which is diverted to Río Guamaní.

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTANTANEOUS DISCHARGE, CFS (00061)	SPECIF. CONDUCTANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPERATURE, WATER, DEG C (00010)	TURBIDITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DISSOLVED OXYGEN, MG/L (00300)	DISSOLVED OXYGEN, PERCENT OF SATURATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLIFORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREPTOCOCCI KF MF, COL/ 100 ML (31673)	HARDNESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
NOV													
28...	1415	20	436	7.7	24.7	2.6	9.6	119	10	E118	E140	--	--
MAR													
13...	0940	18	469	7.6	24.4	4.6	6.3	79	<10	360	390	--	--
SEP													
04...	0935	40	242	6.7	26.8	41	7.0	88	10	280	320	87	21.3

DATE	MAGNESIUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLORIDE, WATER, FLTRD, MG/L (00940)	FLUORIDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTITUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED, MG/L (00530)
NOV													
28...	--	--	--	--	146	<1.0	--	--	--	--	--	--	<10
MAR													
13...	--	--	--	--	152	--	--	--	--	--	--	--	<10
SEP													
04...	8.08	19.0	.9	1.98	80	<.1	9.7	18.9	E.10	19.8	147	15.7	17

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOSPHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOVERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOVERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROMIUM, WATER, UNFLTRD RECOVERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOVERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOVERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOVERABLE, UG/L (01051)
NOV													
28...	.02	2.90	.02	E.30	E.11	--	--	--	--	--	--	--	--
MAR													
13...	.06	3.30	.08	.40	.20	--	--	--	--	--	--	--	--
SEP													
04...	.05	1.40	.04	.50	.14	<2	16.4	50	<.1	E.5	<10	850	<1

DATE	MANGANESE, WATER, UNFLTRD RECOVERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOVERABLE, UG/L (71900)	SELENIUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOVERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOVERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHENOLIC COMPOUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
NOV								
28...	--	--	--	--	--	--	<16	--
MAR								
13...	--	--	--	--	--	--	--	--
SEP								
04...	43.5	E.01	<2	<.3	<20	<.01	<16	E.04

< -- Less than
E -- Estimated value

RIO DE LA PLATA BASIN

50043800 RIO DE LA PLATA AT COMERIO, PR

LOCATION.--Lat 18°13'23", long 66°13'30", Hydrologic Unit 21010005, on right bank 50 ft (15 m) upstream from bridge off Highway 167 in the Town of Comerío, 0.4 mi (0.6 km) southwest of Comerío High School, and 0.2 mi (0.3 km) northeast of Plaza de Comerío.

DRAINAGE AREA.--109 mi^2 (282 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1988 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 604.2 ft (184.160 m) above mean sea level.

REMARKS.--Records fair. Filtration plant more or less 500 feet upstream from station. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	34	57	59	185	41	120	411	74	35	105	641
2	21	270	1150	54	124	45	173	322	47	34	80	323
3	23	1170	414	53	101	48	62	225	37	33	49	309
4	31	496	134	53	195	41	49	151	38	32	31	258
5	43	144	398	58	117	44	44	122	1690	30	29	149
6	180	248	332	154	81	41	49	92	1080	28	28	66
7	74	235	119	129	72	38	48	84	296	31	30	49
8	37	11800	84	84	64	45	227	132	142	32	31	49
9	71	3570	71	68	60	52	565	77	100	27	38	45
10	112	974	61	61	58	44	259	60	149	24	32	37
11	187	421	70	58	53	45	119	50	78	21	25	37
12	212	248	155	56	47	39	72	49	60	74	23	34
13	57	177	328	54	47	38	54	40	56	50	23	30
14	59	147	160	54	46	43	43	40	52	31	24	28
15	244	124	118	58	45	39	42	39	44	123	32	1140
16	902	231	454	55	47	36	422	37	36	84	44	2140
17	540	323	939	54	42	36	402	34	54	47	138	274
18	178	155	703	56	45	29	154	36	666	36	60	233
19	106	107	647	61	250	33	148	36	429	34	239	123
20	73	97	360	57	234	30	742	33	175	30	69	81
21	55	76	230	56	90	28	2470	32	851	28	42	105
22	43	68	246	57	57	29	615	29	1950	31	33	61
23	39	63	1030	75	49	28	383	29	235	37	29	48
24	34	66	1150	114	43	27	905	29	98	34	29	91
25	31	61	389	91	39	25	679	29	67	33	27	350
26	29	56	180	68	43	27	504	27	56	29	23	231
27	27	54	119	58	48	28	292	30	52	27	26	146
28	25	55	93	66	45	31	162	45	52	41	25	85
29	24	63	75	208	---	734	108	55	44	75	27	76
30	28	69	69	151	---	483	100	239	39	42	68	57
31	29	---	63	130	---	101	---	188	---	30	533	---
TOTAL	3537	21602	10398	2410	2327	2348	10012	2802	8747	1243	1992	7296
MEAN	114	720	335	77.7	83.1	75.7	334	90.4	292	40.1	64.3	243
MAX	902	11800	1150	208	250	734	2470	411	1950	123	533	2140
MIN	21	34	57	53	39	25	42	27	36	21	23	28
MED	43	146	180	58	55	39	158	45	70	33	31	88
AC-FT	7020	42850	20620	4780	4620	4660	19860	5560	17350	2470	3950	14470
CFSM	1.05	6.64	3.09	0.72	0.77	0.70	3.08	0.83	2.69	0.37	0.59	2.24
IN.	1.21	7.41	3.57	0.83	0.80	0.81	3.43	0.96	3.00	0.43	0.68	2.50

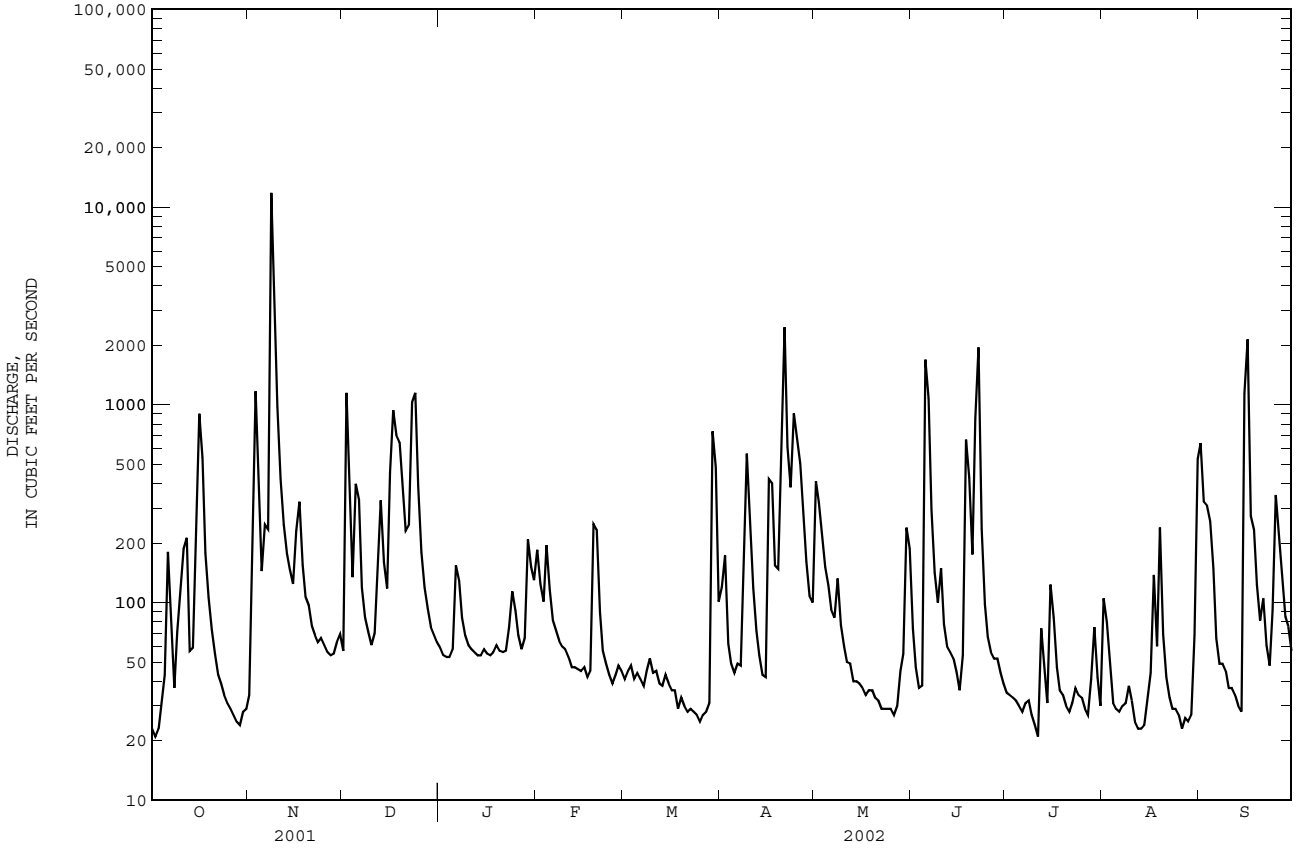
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2002, BY WATER YEAR (WY)

MEAN	220	265	132	133	91.8	47.5	71.0	84.0	84.6	79.9	130	403
MAX	866	1264	457	732	268	75.7	334	263	292	291	563	1433
(WY)	1991	2000	1999	1992	1998	2002	2002	1992	2002	1993	2000	1996
MIN	40.6	19.0	17.1	21.3	24.4	20.6	22.3	19.7	13.2	10.4	12.7	26.2
(WY)	1992	1995	1995	1995	1990	1993	1991	1994	1994	1994	1994	1997

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1989 - 2002	
ANNUAL TOTAL	51775		74714			
ANNUAL MEAN	142		205		144	
HIGHEST ANNUAL MEAN					267	2000
LOWEST ANNUAL MEAN					35.3	1994
HIGHEST DAILY MEAN	11800	Nov 8	11800	Nov 8	32400	Sep 10 1996
LOWEST DAILY MEAN	12	Jul 22	21	Oct 2	5.8	Jun 25 1994
ANNUAL SEVEN-DAY MINIMUM	15	Jul 18	27	Aug 23	7.3	Jul 31 1994
MAXIMUM PEAK FLOW			25600	Nov 8	127000	Jan 5 1992
MAXIMUM PEAK STAGE			15.53	Nov	29.22	Jan 5 1992
ANNUAL RUNOFF (AC-FT)	102700		148200		104200	
ANNUAL RUNOFF (CFSM)	1.31		1.89		1.33	
ANNUAL RUNOFF (INCHES)	17.75		25.62		18.01	
10 PERCENT EXCEEDS	230		412		214	
50 PERCENT EXCEEDS	34		59		42	
90 PERCENT EXCEEDS	21		29		17	

RIO DE LA PLATA BASIN

50043800 RIO DE LA PLATA AT COMERIO, PR--Continued



RIO DE LA PLATA BASIN

50043800 RIO DE LA PLATA AT COMERIO, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1989 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 1989 to current year.

INSTRUMENTATION.--USD-77 sediment sampler since 1989. Automatic sediment sampler since 1989.

REMARKS.--Sediment samples were collected by a local observer on a weekly basis. During high flow events sediment samples were collected with automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 8,800 mg/L January 05, 1992; Minimum daily mean, 1 mg/L several years.

SEDIMENT LOADS: Maximum daily mean, 950,000 tons (862,000 tonnes) January 05, 1992; Minimum daily mean, 0.04 tons (0.04 tonne) November 28, 1994.

EXTREMES FOR WATER YEARS 2001.--
SEDIMENT CONCENTRATION: Maximun daily mean, 883 mg/L November 2, 2000; Minimun daily mean, 3 mg/L June 23, 2001.

SEDIMENT LOADS: Maximun daily mean, 14,500 tons (13,154 tonnes) November 2, 2000; Minimun daily mean, 0.18 ton (0.16 tonne) June 23, 2001.

EXTREMES FOR WATER YEARS 2002.--
SEDIMENT CONCENTRATION: Maximun daily mean, 2,130 mg/L November 8, 2001; Minimun daily mean, 4 mg/L January 8, 2002.

SEDIMENT LOADS: Maximun daily mean, 85,300 tons (77,384 tonnes) November 8, 2001; Minimun daily mean, 0.33 ton (0.30 tonne) August 13, 2002.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	379	109	255	2300	581	11500	317	81	76
2	1120	237	1170	3420	883	14500	111	38	12
3	1010	222	713	1000	224	669	69	28	5.3
4	311	91	80	334	94	88	56	20	3.1
5	173	54	26	180	53	26	52	19	2.6
6	121	42	14	135	42	15	49	19	2.5
7	98	31	8.2	301	65	86	50	19	2.5
8	121	32	11	391	91	101	53	19	2.7
9	282	80	67	150	55	23	55	19	2.8
10	116	38	12	109	35	10	56	19	2.9
11	88	25	6.0	93	32	8.2	55	19	2.8
12	75	24	4.8	84	30	6.8	55	19	2.8
13	90	29	7.2	102	28	7.6	57	19	2.9
14	61	20	3.3	83	25	5.7	61	19	3.2
15	62	17	2.8	79	24	5.2	90	21	5.1
16	72	18	3.4	76	24	4.9	86	23	5.4
17	136	30	24	71	23	4.5	81	25	5.5
18	210	58	42	66	23	4.1	85	30	7.3
19	414	105	306	66	22	4.0	155	50	21
20	301	87	89	63	22	3.7	126	41	15
21	126	38	14	66	21	3.8	137	46	17
22	335	81	129	84	21	4.9	223	61	61
23	573	128	331	99	22	5.8	458	111	154
24	450	124	187	76	22	4.5	146	46	19
25	140	54	21	69	23	4.2	96	34	8.9
26	123	40	13	94	23	5.9	84	27	6.1
27	88	28	6.8	82	24	5.2	77	22	4.6
28	70	26	4.9	78	24	5.0	83	21	4.7
29	96	25	6.4	66	24	4.3	58	20	3.1
30	114	34	15	74	27	5.5	52	18	2.6
31	329	83	92	---	---	---	49	17	2.2
TOTAL	7684	---	3664.8	9891	---	27121.8	3182	---	466.6

RIO DE LA PLATA BASIN

50043800 RIO DE LA PLATA AT COMERIO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	44	16	1.9	39	18	1.9	67	17	6.9
2	42	16	1.8	33	16	1.5	129	32	13
3	44	16	1.9	36	14	1.4	56	12	1.8
4	40	16	1.7	32	12	1.1	46	9	1.1
5	40	15	1.7	27	10	0.74	42	8	0.92
6	40	15	1.7	25	9	0.62	42	7	0.84
7	36	15	1.5	24	9	0.58	39	9	0.94
8	35	15	1.4	24	9	0.58	36	11	1.1
9	37	15	1.5	25	9	0.59	29	13	1.0
10	36	15	1.5	31	9	0.72	26	14	0.94
11	36	15	1.4	32	9	0.75	24	13	0.85
12	34	15	1.3	43	9	1.0	27	13	0.93
13	34	14	1.3	54	9	1.2	30	12	1.0
14	33	14	1.3	36	8	0.81	25	12	0.81
15	31	14	1.2	32	8	0.72	24	12	0.76
16	33	14	1.3	31	8	0.71	29	11	0.90
17	39	14	1.5	32	8	0.72	31	11	0.92
18	42	14	1.6	27	8	0.60	24	12	0.75
19	34	13	1.2	23	8	0.51	21	13	0.72
20	32	13	1.2	24	8	0.52	23	14	0.85
21	32	13	1.1	24	8	0.53	41	15	1.6
22	30	13	1.0	73	41	10	81	15	3.3
23	31	12	1.0	53	49	7.1	162	41	20
24	31	12	1.0	90	32	7.8	328	411	434
25	28	12	0.91	118	21	7.0	101	46	14
26	27	12	0.85	59	11	1.8	54	13	2.0
27	26	11	0.80	44	9	1.0	e46	e9	e1.1
28	32	11	0.97	40	10	1.0	e39	e6	e0.53
29	97	33	22	---	---	---	e34	e6	e0.53
30	370	102	145	---	---	---	29	5	0.43
31	53	21	3.0	---	---	---	27	6	0.45
TOTAL	1499	---	207.53	1131	---	53.50	1712	---	514.97

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	23	14	0.85	e22	e14	e0.85	27	7	0.50
2	23	22	1.4	e21	e14	e0.85	29	6	0.47
3	25	24	1.6	e21	e14	e0.85	25	5	0.36
4	26	23	1.6	e21	e14	e0.85	22	6	0.37
5	26	23	1.6	e20	e14	e0.85	27	14	1.2
6	208	71	48	e162	e41	e20	40	72	7.8
7	63	49	8.4	e207	e71	e48	26	56	3.9
8	34	41	3.8	e98	e53	e22	24	39	2.5
9	45	35	4.3	e58	e49	e8.4	22	30	1.7
10	29	29	2.3	e38	e13	e1.4	19	24	1.3
11	e25	24	1.8	e33	e14	e1.2	17	19	0.86
12	e23	e14	e0.85	e31	e6	e0.47	18	13	0.62
13	e23	e14	e0.85	e28	e8	e0.62	18	7	0.36
14	e23	e14	e0.85	e28	e8	e0.62	18	5	0.25
15	e22	e14	e0.85	e27	e7	e0.50	18	4	0.21
16	e22	e14	e0.85	e27	e7	e0.50	19	5	0.24
17	e22	e14	e0.85	e26	e7	e0.50	25	8	0.68
18	e20	e14	e0.85	e28	e6	e0.47	70	24	5.0
19	e20	e14	e0.85	e28	e6	e0.47	33	14	1.2
20	e21	e14	e0.85	e25	e5	e0.36	23	10	0.66
21	e56	e35	e4.3	e25	e5	e0.36	20	7	0.39
22	e68	e49	e8.4	e25	e5	e0.36	18	4	0.19
23	e71	e49	e8.4	e22	e6	e0.38	19	3	0.18
24	e33	e41	e3.8	e23	e6	e0.38	21	4	0.23
25	e24	e24	e1.6	e22	e6	e0.38	23	5	0.28
26	e23	e22	e1.4	e22	e6	e0.38	28	5	0.39
27	e21	e14	e0.85	e22	e4	e0.22	31	6	0.47
28	e22	e14	e0.85	23	6	0.38	27	6	0.46
29	e21	e14	e0.85	48	17	2.2	26	6	0.43
30	e21	e14	e0.85	39	13	1.4	23	4	0.28
31	---	---	---	29	8	0.62	---	---	---
TOTAL	1083	---	114.60	1249	---	116.82	756	---	33.48

RIO DE LA PLATA BASIN

50043800 RIO DE LA PLATA AT COMERIO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	71	19	4.9	54	20	2.9	59	27	4.3
2	57	19	3.0	30	18	1.5	362	94	114
3	45	9	1.1	24	18	1.2	166	52	23
4	40	6	0.69	23	18	1.1	106	42	12
5	75	21	5.4	22	17	1.0	81	36	7.9
6	76	27	5.8	31	17	1.4	56	30	4.6
7	34	17	1.6	38	17	1.8	44	24	2.9
8	22	10	0.59	30	17	1.4	39	19	2.0
9	17	5	0.24	35	29	3.1	36	18	1.8
10	16	6	0.24	34	29	2.8	32	18	1.5
11	16	7	0.32	25	21	1.4	32	17	1.5
12	16	9	0.40	20	19	1.0	41	27	3.1
13	18	11	0.53	17	17	0.79	38	29	3.0
14	21	11	0.60	18	15	0.72	30	23	1.9
15	17	10	0.46	19	13	0.66	73	31	12
16	16	10	0.41	17	11	0.48	119	45	18
17	14	9	0.34	28	10	0.77	29	33	2.7
18	17	9	0.38	60	10	1.6	25	30	2.0
19	23	8	0.49	60	10	1.6	34	26	2.4
20	17	8	0.34	28	10	0.76	30	23	1.9
21	14	7	0.27	19	10	0.52	67	24	4.6
22	12	6	0.21	35	21	6.2	110	29	16
23	12	6	0.19	2790	557	5550	218	64	50
24	13	5	0.19	356	102	117	56	24	3.7
25	18	5	0.25	129	46	16	38	19	1.9
26	44	5	0.56	67	39	7.2	31	19	1.6
27	32	4	0.39	47	33	4.1	29	20	1.6
28	25	4	0.29	799	132	757	28	21	1.6
29	53	14	3.3	470	142	211	26	20	1.4
30	209	58	36	148	49	20	27	19	1.4
31	128	36	13	85	37	8.6	---	---	---
TOTAL	1188	---	82.48	5558	---	6725.60	2062	---	306.3
YEAR	36995		39408.48						

e Estimated

RIO DE LA PLATA BASIN

50043800 RIO DE LA PLATA AT COMERIO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	23	16	0.97	34	6	0.54	57	5	0.77
2	21	10	0.54	270	82	244	1150	275	2800
3	23	11	0.67	1170	341	1810	414	73	143
4	31	13	1.1	496	127	231	134	8	2.7
5	43	14	1.7	144	17	7.5	398	67	188
6	180	26	14	248	6	4.0	332	45	62
7	74	6	1.2	235	6	3.8	119	7	2.2
8	37	6	0.60	11800	2130	85300	84	7	1.7
9	71	21	4.5	3570	696	9600	71	8	1.6
10	112	27	8.4	974	217	615	61	9	1.5
11	187	46	34	421	97	115	70	11	2.1
12	212	56	41	248	30	21	155	29	18
13	57	17	2.8	177	21	10	328	83	76
14	59	18	3.3	147	23	9.1	160	72	31
15	244	58	91	124	24	8.2	118	74	23
16	902	211	546	231	51	88	454	120	210
17	540	130	209	323	80	88	939	215	635
18	178	63	32	155	42	18	703	164	371
19	106	28	8.3	107	36	10	647	145	262
20	73	12	2.5	97	34	8.9	360	83	82
21	55	8	1.2	76	33	6.7	230	66	41
22	43	7	0.86	68	28	5.2	246	60	45
23	39	7	0.74	63	24	4.0	1030	227	735
24	34	7	0.61	66	19	3.4	1150	187	678
25	31	6	0.54	61	14	2.4	389	58	64
26	29	6	0.49	56	10	1.5	180	38	19
27	27	10	0.73	54	7	1.1	119	34	11
28	25	15	1.0	55	5	0.81	93	29	7.4
29	24	18	1.2	63	5	0.85	75	25	5.1
30	28	13	0.98	69	5	0.93	69	21	3.9
31	29	7	0.54	---	---	---	63	16	2.8
TOTAL	3537	---	1012.47	21602	---	98218.93	10398	---	6525.77

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	59	12	1.9	185	44	22	41	13	1.5
2	54	8	1.2	124	35	12	45	13	1.6
3	53	7	1.0	101	26	7.4	48	13	1.7
4	53	7	1.0	195	51	27	41	13	1.4
5	58	8	1.3	117	32	11	44	13	1.5
6	154	30	13	81	20	4.3	41	12	1.4
7	129	12	4.8	72	19	3.6	38	12	1.2
8	84	4	0.85	64	18	3.1	45	12	1.4
9	68	5	0.88	60	17	2.8	52	12	1.6
10	61	5	0.85	58	16	2.6	44	11	1.4
11	58	5	0.84	53	16	2.2	45	11	1.4
12	56	6	0.86	47	15	1.9	39	11	1.2
13	54	6	0.85	47	14	1.8	38	11	1.1
14	54	6	0.90	46	13	1.6	43	11	1.2
15	58	6	0.99	45	12	1.5	39	10	1.1
16	55	7	0.97	47	12	1.5	36	10	0.99
17	54	7	1.0	42	11	1.2	36	10	0.95
18	56	7	1.1	45	11	1.4	29	10	0.77
19	61	7	1.2	250	54	50	33	9	0.83
20	57	7	1.2	234	61	45	30	9	0.74
21	56	8	1.2	90	23	5.7	28	9	0.70
22	57	8	1.3	57	15	2.3	29	9	0.70
23	75	15	3.1	49	15	1.9	28	9	0.65
24	114	23	7.1	43	14	1.7	27	8	0.61
25	91	20	5.1	39	14	1.5	25	8	0.55
26	68	15	2.8	43	14	1.6	27	8	0.58
27	58	10	1.6	48	14	1.8	28	8	0.60
28	66	14	2.7	45	14	1.7	31	8	0.67
29	208	53	32	---	---	---	734	405	2780
30	151	41	17	---	---	---	483	229	521
31	130	36	13	---	---	---	101	28	8.1
TOTAL	2410	---	123.59	2327	---	222.1	2348	---	3339.14

RIO DE LA PLATA BASIN

50043800 RIO DE LA PLATA AT COMERIO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	APRIL			MAY			JUNE		
1	120	33	25	411	95	343	74	24	4.8
2	173	55	32	322	82	86	47	20	2.6
3	62	19	3.3	225	55	34	37	17	1.7
4	49	13	1.7	151	37	16	38	14	1.4
5	44	13	1.5	122	19	6.4	1690	329	4840
6	49	12	1.6	92	12	3.0	1080	245	1030
7	48	13	1.7	84	12	2.7	296	72	61
8	227	65	46	132	26	9.8	142	42	16
9	565	130	217	77	11	2.3	100	29	8.0
10	259	70	54	60	10	1.7	149	40	17
11	119	37	12	50	10	1.3	78	22	4.6
12	72	20	4.0	49	9	1.2	60	17	2.8
13	54	17	2.5	40	9	0.99	56	14	2.1
14	43	15	1.7	40	9	0.96	52	13	1.8
15	42	15	1.7	39	9	0.94	44	12	1.4
16	422	107	190	37	9	0.90	36	11	1.1
17	402	107	132	34	9	0.83	54	17	2.9
18	154	47	20	36	9	0.86	666	146	504
19	148	51	21	36	9	0.87	429	101	126
20	742	201	847	33	9	0.80	175	52	25
21	2470	217	1510	32	9	0.78	851	171	4180
22	615	125	221	29	9	0.71	1950	421	4930
23	383	99	137	29	9	0.71	235	65	46
24	905	203	1240	29	9	0.69	98	39	10
25	679	168	375	29	9	0.70	67	35	6.3
26	504	124	190	27	9	0.66	56	31	4.7
27	292	75	63	30	9	0.73	52	27	3.8
28	162	48	21	45	9	1.1	52	23	3.2
29	108	35	10	55	9	1.3	44	19	2.3
30	100	26	7.3	239	50	52	39	15	1.6
31	---	---	---	188	50	30	---	---	---
TOTAL	10012	---	5390.0	2802	---	603.93	8747	---	15842.1

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	35	11	1.1	105	30	8.9	641	156	317
2	34	10	0.89	80	22	4.9	323	77	76
3	33	9	0.82	49	14	1.9	309	80	120
4	32	9	0.75	31	10	0.84	258	75	72
5	30	8	0.67	29	7	0.58	149	40	17
6	28	8	0.59	28	8	0.62	66	20	3.5
7	31	7	0.61	30	9	0.73	49	18	2.4
8	32	7	0.60	31	8	0.65	49	17	2.2
9	27	6	0.46	38	6	0.60	45	16	1.9
10	24	6	0.39	32	6	0.50	37	14	1.5
11	21	6	0.34	25	6	0.38	37	13	1.3
12	74	21	11	23	5	0.34	34	12	1.1
13	50	14	1.9	23	5	0.33	30	10	0.84
14	31	6	0.53	24	5	0.34	28	9	0.70
15	123	29	16	32	5	0.43	1140	234	2620
16	84	23	5.8	44	5	0.59	2140	480	4490
17	47	12	1.6	138	31	15	274	71	57
18	36	10	0.96	60	15	2.5	233	63	50
19	34	9	0.81	239	62	50	123	37	13
20	30	8	0.68	69	19	3.8	81	24	5.2
21	28	8	0.62	42	11	1.3	105	27	8.3
22	31	8	0.65	33	10	0.90	61	17	2.8
23	37	7	0.72	29	10	0.74	48	14	1.9
24	34	7	0.64	29	9	0.70	91	22	7.1
25	33	7	0.60	27	8	0.59	350	92	92
26	29	6	0.50	23	8	0.48	231	57	37
27	27	7	0.54	26	7	0.48	146	38	15
28	41	11	1.2	25	6	0.43	85	23	5.3
29	75	18	3.9	27	6	0.41	76	19	3.9
30	42	12	1.5	68	21	8.6	57	15	2.3
31	30	10	1.0	533	122	227	---	---	---
TOTAL	1243	---	58.37	1992	---	335.56	7296	---	8028.24
YEAR	74714		139700.20						

RIO DE LA PLATA BASIN

50043800 RIO DE LA PLATA AT COMERIO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

Date	Time	Instantaneous discharge, cfs (00061)	Suspended sediment concentration mg/L (80154)	Suspended sediment load, tons/d (80155)	Suspnd. sediment, sieve diametr percent <.063mm (70331)
MAR					
29...	1815	3280	6250	55400	96
29...	2115	2990	1140	9200	99
APR					
21...	0255	3220	234	2030	99

RIO DE LA PLATA BASIN

50044000 RIO DE LA PLATA NEAR COMERIO, PR

WATER-QUALITY RECORDS

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

DRAINAGE AREA.--139 mi^2 (360 km^2), excludes 8.2 mi^2 (21.1 km^2) upstream from Lago Carite, the flow of which is diverted to Río Guamaní.

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
NOV													
29...	1100	72	436	7.7	24.7	5.6	9.6	118	10	3000	940	150	36.1
MAR													
08...	1040	56	433	7.7	24.5	3.5	8.7	107	<10	550	430	--	--
AUG													
28...	0850	28	369	6.7	28.2	3.9	8.2	106	<10	290	280	130	30.5

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
NOV													
29...	15.5	23.4	.8	2.99	148	<1.0	14.8	29.9	.1	24.1	236	45.5	<10
MAR													
08...	--	--	--	--	156	--	--	--	--	--	--	--	<10
AUG													
28...	14.2	30.1	1	2.55	140	<.1	15.1	31.1	.15	26.9	235	17.8	<10

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
NOV													
29...	<.01	E1.30	.05	E.20	E.08	<2	35.1	60	<.1	<.8	<10	190	<1
MAR													
08...	.01	1.40	.02	<.20	.14	--	--	--	--	--	--	--	--
AUG													
28...	.01	.760	.02	.50	.14	<2	32.0	70	<.1	<.8	<10	110	<1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
NOV								
29...	17.4	E.01	<2	<.3	<20	<.01	<16	<.05
MAR								
08...	--	--	--	--	--	--	--	--
AUG								
28...	14.4	<.01	<2	<.3	<20	<.01	<16	<.05

< -- Less than
E -- Estimated value

RIO DE LA PLATA BASIN

50044810 RIO GUADIANA NEAR GUADIANA, PR

LOCATION.--Lat 18°13'42", long 66°18'05", Hydrologic Unit 21010005, at right bank 1.1 mi (2.1 km) east of Plaza de Naranjito, 0.9 mi (1.4 km) west from intersection of roads 167 and 164 at km 1.77 and 2.6 mi (4.2 km) northwest from Represa Comerío.

DRAINAGE AREA.--8.60 mi^2 (22.3 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 2001 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 229 ft (69.8 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	2.0	7.2	12	11	e9.9	6.5	136	8.1	5.5	4.0	5.1
2	1.8	2.9	14	12	11	e9.6	6.4	24	7.9	5.6	3.9	4.3
3	1.9	2.3	20	12	15	e9.5	6.3	25	7.6	5.4	3.8	4.4
4	2.2	3.5	12	11	15	e9.5	6.4	18	7.7	5.3	3.9	5.9
5	3.2	2.9	13	14	12	e9.4	6.3	16	8.0	5.1	3.7	5.0
6	3.6	2.8	11	25	11	9.0	20	15	7.8	5.6	3.9	3.5
7	1.9	38	13	19	e11	9.5	18	18	7.4	5.3	3.9	3.8
8	9.7	1570	11	14	e10	10	18	17	7.5	5.4	3.6	3.6
9	6.2	76	10	13	e10	9.3	15	14	7.7	5.2	3.5	4.1
10	4.0	28	10	12	e10	9.0	9.0	13	7.3	5.2	3.7	3.6
11	3.3	15	10	12	e10	9.2	8.0	12	7.1	5.0	3.7	3.6
12	2.7	11	13	12	e10	9.3	7.6	12	7.5	9.2	3.6	3.5
13	2.4	10	13	12	e10	9.1	7.1	11	7.3	5.9	3.7	3.4
14	62	9.5	14	11	e10	9.1	7.2	11	6.9	5.2	e4.8	4.6
15	54	8.6	14	11	e10	8.8	18	11	6.7	5.6	4.0	4.9
16	15	8.1	22	11	e9.8	8.9	33	11	6.3	5.4	4.3	6.9
17	7.4	7.8	36	11	e11	8.7	26	10	7.3	5.3	4.1	3.6
18	8.4	15	23	11	e11	9.6	23	10	8.9	4.9	3.5	6.0
19	5.3	9.4	16	11	e11	10	21	9.9	6.9	5.0	4.0	7.5
20	3.9	6.9	13	11	e9.9	8.7	45	9.6	6.6	5.0	3.7	19
21	4.2	6.6	12	11	e9.7	8.5	38	9.5	6.8	4.9	3.5	7.1
22	4.1	6.6	30	11	e9.5	8.5	25	9.4	6.1	5.2	3.7	5.5
23	3.5	7.5	163	11	e9.4	8.2	23	9.4	6.0	5.2	3.6	7.7
24	2.8	7.7	40	e11	e9.6	8.5	23	9.0	5.9	5.1	3.5	17
25	2.8	6.6	23	e11	e9.8	8.1	23	8.8	5.8	5.1	3.5	7.6
26	2.5	6.4	18	e11	e9.6	8.4	39	8.5	5.8	4.7	3.7	5.4
27	2.8	7.2	15	e11	e9.4	8.5	25	8.9	5.8	6.4	3.7	4.7
28	2.8	7.5	14	e13	e9.9	17	19	8.2	5.7	6.3	3.6	4.4
29	2.5	10	13	e12	---	11	17	8.0	5.5	4.6	3.6	4.4
30	2.4	7.9	13	12	---	9.1	18	8.4	5.5	3.9	11	4.1
31	2.5	---	12	12	---	6.8	---	8.1	---	3.7	6.7	---
TOTAL	233.6	1903.7	648.2	383	295.6	288.7	557.8	499.7	207.4	165.2	127.4	174.2
MEAN	7.54	63.5	20.9	12.4	10.6	9.31	18.6	16.1	6.91	5.33	4.11	5.81
MAX	62	1570	163	25	15	17	45	136	8.9	9.2	11	19
MIN	1.8	2.0	7.2	11	9.4	6.8	6.3	8.0	5.5	3.7	3.5	3.4
AC-FT	463	3780	1290	760	586	573	1110	991	411	328	253	346
CFSM	0.93	7.87	2.59	1.53	1.31	1.16	2.31	2.00	0.86	0.66	0.51	0.72
IN.	1.08	8.79	2.99	1.77	1.36	1.33	2.57	2.31	0.96	0.76	0.59	0.80

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2002, BY WATER YEAR (WY)

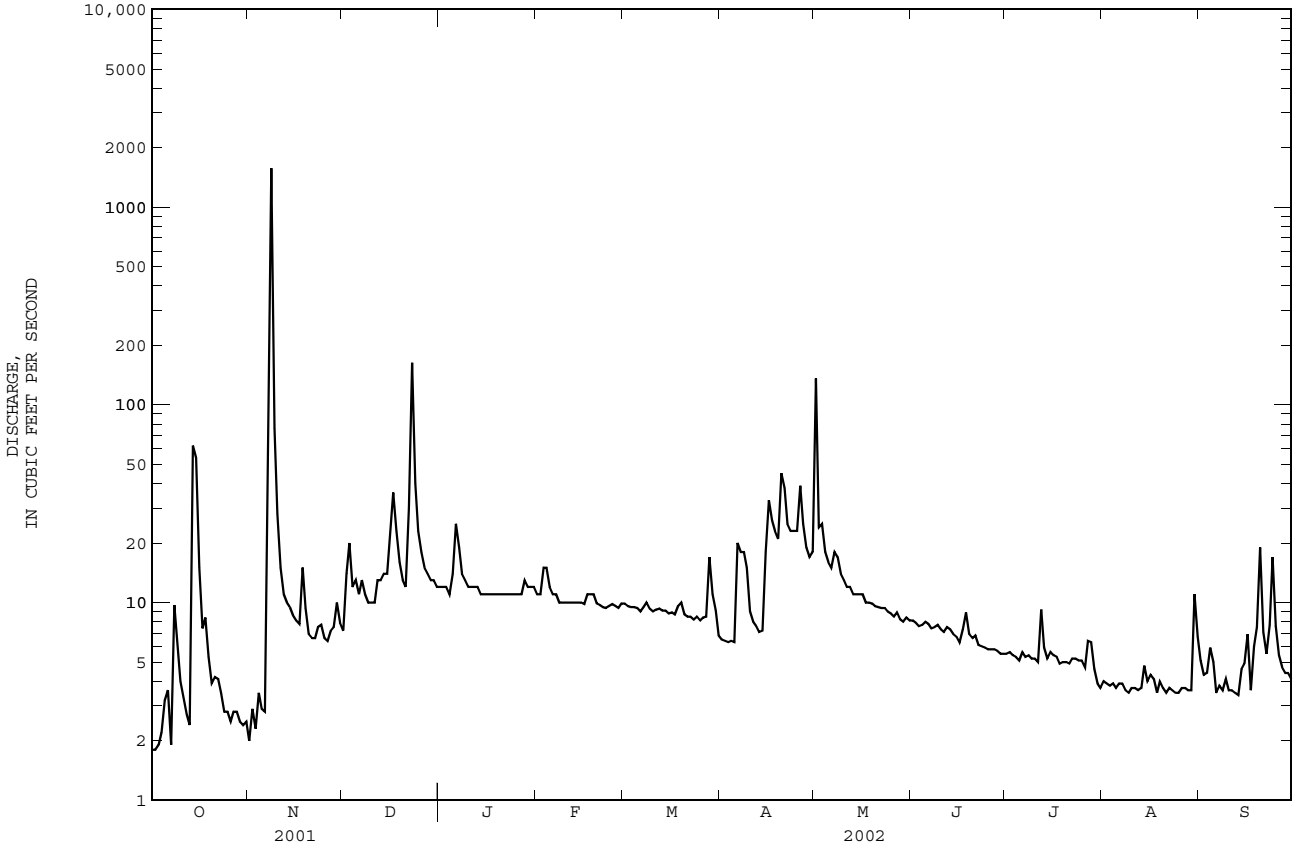
MEAN	7.54	63.5	20.9	12.4	10.6	9.31	12.6	13.5	5.58	4.68	5.13	4.23
MAX	7.54	63.5	20.9	12.4	10.6	9.31	18.6	16.1	6.91	5.33	6.15	5.81
(WY)	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2001	2002
MIN	7.54	63.5	20.9	12.4	10.6	9.31	6.68	11.0	4.24	4.02	4.11	2.65
(WY)	2002	2002	2002	2002	2002	2002	2001	2001	2001	2001	2002	2001

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 2001 - 2002	
ANNUAL TOTAL			5484.5			
ANNUAL MEAN			15.0		15.0	
HIGHEST ANNUAL MEAN					15.0	2002
LOWEST ANNUAL MEAN					15.0	2002
HIGHEST DAILY MEAN	1570	Nov 8	1570	Nov 8	1570	Nov 8 2001
LOWEST DAILY MEAN	1.7	Sep 25	1.8	Oct 1	1.7	Sep 25 2001
ANNUAL SEVEN-DAY MINIMUM	2.0	Sep 28	2.3	Oct 1	2.0	Sep 28 2001
MAXIMUM PEAK FLOW			8280	Nov 8	8280	Nov 8 2001
MAXIMUM PEAK STAGE			12.69	Nov 8	12.69	Nov 8 2001
INSTANTANEOUS LOW FLOW					1.5	Sep 25 2001
ANNUAL RUNOFF (AC-FT)			10880		10890	
ANNUAL RUNOFF (CFSM)			1.86		1.86	
ANNUAL RUNOFF (INCHES)			25.31		25.33	
10 PERCENT EXCEEDS			18		18	
50 PERCENT EXCEEDS			8.5		8.5	
90 PERCENT EXCEEDS			3.6		3.6	

e Estimated

RIO DE LA PLATA BASIN

50044810 RIO GUADIANA NEAR GUADIANA, PR--Continued



RIO DE LA PLATA BASIN

50044810 RIO GUADIANA NR GUADIANA, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 2001 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 2001 to September 2002.

INSTRUMENTATION.--USDH-48 sediment sampler and automatic sediment sampler since 2001.

REMARKS.--Sediment samples were collected by local observer on a weekly basis. During high flow events sediment samples were collected with automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 1,470 mg/L December 23, 2001; Minimum daily mean, 2 mg/L March 25-27, 2002.

SEDIMENT LOADS: Maximum daily mean, e25,000 tons (e63,504 tonnes) November 8, 2001; Minimum daily mean, 0.03 ton (0.03 tonne) October 7, 2001.

EXTREMES FOR CURRENT YEAR 2002.--
SEDIMENT CONCENTRATION: Maximum daily mean, 1,470 mg/L December 23, 2001; Minimum daily mean, 2 mg/L March 25-27, 2002.

SEDIMENT LOADS: Maximum daily mean, e25,000 tons (e63,504 tonnes) November 8, 2001; Minimum daily mean, 0.03 ton (0.03 tonne) October 7, 2001.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	1.8	e44	e0.22	2.0	20	0.11	7.2	27	0.53
2	1.8	44	0.22	2.9	20	0.16	14	66	4.0
3	1.9	37	0.19	2.3	20	0.13	20	100	8.2
4	2.2	27	0.16	3.5	23	0.26	12	56	1.9
5	3.2	20	0.18	2.9	20	0.16	13	58	2.0
6	3.6	18	0.19	2.8	20	0.15	11	50	1.5
7	1.9	7	0.03	38	253	83	13	58	2.2
8	9.7	51	4.0	1570	---	e25000	11	55	1.7
9	6.2	27	0.56	76	571	139	10	52	1.4
10	4.0	15	0.19	28	141	11	10	49	1.3
11	3.3	12	0.11	15	84	3.4	10	45	1.3
12	2.7	10	0.07	11	57	1.7	13	58	2.3
13	2.4	9	0.06	10	41	1.1	13	58	2.2
14	62	451	302	9.5	38	0.99	14	66	2.6
15	54	407	173	8.6	36	0.83	14	62	2.3
16	15	91	4.0	8.1	34	0.74	22	111	9.7
17	7.4	39	0.77	7.8	31	0.65	36	191	20
18	8.4	36	0.82	15	74	8.0	23	134	9.3
19	5.3	34	0.49	9.4	44	1.2	16	82	3.5
20	3.9	31	0.33	6.9	30	0.57	13	70	2.4
21	4.2	29	0.32	6.6	25	0.45	12	60	1.9
22	4.1	26	0.29	6.6	26	0.45	30	183	40
23	3.5	24	0.23	7.5	30	0.72	163	1470	2420
24	2.8	21	0.16	7.7	31	0.68	40	159	20
25	2.8	21	0.16	6.6	25	0.46	23	21	1.3
26	2.5	21	0.14	6.4	24	0.41	18	30	1.4
27	2.8	21	0.16	7.2	24	0.46	15	31	1.3
28	2.8	21	0.16	7.5	26	0.52	14	27	1.0
29	2.5	21	0.14	10	42	1.2	13	26	0.93
30	2.4	20	0.13	7.9	30	0.64	13	26	0.90
31	2.5	20	0.14	---	---	---	12	25	0.85
TOTAL	233.6	---	489.62	1903.7	---	25259.14	648.2	---	2569.91

RIO DE LA PLATA BASIN

50044810 RIO GUADIANA NR GUADIANA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	12	24	0.81	11	44	1.3	e9.9	e27	e0.69
2	12	23	0.76	11	42	1.2	e9.6	e27	e0.69
3	12	22	0.68	15	72	3.9	e9.5	e27	e0.69
4	11	21	0.65	15	68	2.8	e9.5	e27	e0.69
5	14	45	2.0	12	50	1.6	e9.4	e27	e0.67
6	25	130	9.0	11	48	1.4	9.0	27	0.66
7	19	97	5.1	e11	e46	e1.3	9.5	27	0.69
8	14	63	2.4	e10	e41	e1.1	10	41	1.1
9	13	57	2.0	e10	e41	e1.1	9.3	35	0.88
10	12	54	1.8	e10	e41	e1.1	9.0	35	0.84
11	12	52	1.7	e10	e41	e1.1	9.2	34	0.84
12	12	51	1.6	e10	e41	e1.1	9.3	33	0.83
13	12	50	1.6	e10	e41	e1.1	9.1	32	0.79
14	11	50	1.5	e10	e41	e1.1	9.1	31	0.77
15	11	50	1.5	e10	e41	e1.1	8.8	31	0.72
16	11	49	1.5	e9.8	e41	e1.1	8.9	30	0.72
17	11	49	1.5	e11	e48	e1.6	8.7	29	0.68
18	11	48	1.4	e11	e48	e1.6	9.6	36	0.99
19	11	48	1.4	e11	e48	e1.6	10	27	0.87
20	11	47	1.4	e9.9	e27	e0.69	8.7	4	0.09
21	11	47	1.4	e9.7	e27	e0.69	8.5	3	0.08
22	11	47	1.4	e9.5	e27	e0.69	8.5	3	0.07
23	11	46	1.4	e9.4	e27	e0.69	8.2	3	0.06
24	e11	e47	e1.9	e9.6	e27	e0.69	8.5	3	0.06
25	e11	e46	e1.4	e9.8	e27	e0.69	8.1	2	0.05
26	e11	e46	e1.4	e9.6	e27	e0.69	8.4	2	0.05
27	e11	e46	e1.4	e9.4	e27	e0.69	8.5	2	0.05
28	e13	e46	e1.5	e9.9	e27	e0.69	17	61	13
29	e12	e48	e1.5	---	---	---	11	51	2.1
30	12	46	1.5	---	---	---	9.1	42	1.2
31	12	45	1.4	---	---	---	6.8	27	0.50
TOTAL	383	---	56.50	295.6	---	34.41	288.7	---	32.12

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	6.5	25	0.44	136	1310	5130	8.1	4	0.09
2	6.4	25	0.43	24	134	9.1	7.9	4	0.08
3	6.3	25	0.43	25	142	12	7.6	4	0.08
4	6.4	26	0.44	18	92	4.6	7.7	4	0.08
5	6.3	26	0.44	16	66	2.8	8.0	4	0.09
6	20	115	26	15	64	2.6	7.8	4	0.08
7	18	98	10	18	86	5.1	7.4	4	0.08
8	18	90	6.2	17	111	5.1	7.5	4	0.08
9	15	73	3.0	14	85	3.2	7.7	4	0.08
10	9.0	46	1.1	13	64	2.2	7.3	4	0.08
11	8.0	32	0.70	12	44	1.4	7.1	4	0.08
12	7.6	29	0.60	12	24	0.75	7.5	4	0.08
13	7.1	26	0.50	11	6	0.19	7.3	4	0.08
14	7.2	28	0.54	11	4	0.12	6.9	4	0.07
15	18	91	6.3	11	4	0.12	6.7	4	0.07
16	33	173	15	11	4	0.11	6.3	3	0.06
17	26	129	9.0	10	4	0.11	7.3	3	0.06
18	23	111	6.8	10	4	0.11	8.9	31	0.82
19	21	97	5.5	9.9	4	0.11	6.9	25	0.46
20	45	252	47	9.6	4	0.10	6.6	24	0.43
21	38	210	23	9.5	4	0.10	6.8	24	0.44
22	25	126	8.5	9.4	4	0.10	6.1	24	0.39
23	23	109	6.6	9.4	4	0.10	6.0	23	0.38
24	23	114	7.2	9.0	4	0.10	5.9	23	0.37
25	23	117	7.5	8.8	4	0.10	5.8	22	0.35
26	39	235	57	8.5	4	0.09	5.8	22	0.34
27	25	126	8.6	8.9	4	0.10	5.8	21	0.33
28	19	100	5.2	8.2	4	0.09	5.7	20	0.31
29	17	85	4.0	8.0	4	0.09	5.5	19	0.29
30	18	87	4.5	8.4	4	0.09	5.5	18	0.27
31	---	---	---	8.1	4	0.09	---	---	---
TOTAL	557.8	---	272.52	499.7	---	5180.87	207.4	---	6.50

RIO DE LA PLATA BASIN

50044810 RIO GUADIANA NR GUADIANA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	5.5	18	0.27	4.0	17	0.18	5.1	20	0.29
2	5.6	18	0.27	3.9	15	0.16	4.3	10	0.12
3	5.4	18	0.26	3.8	14	0.14	4.4	13	0.16
4	5.3	18	0.26	3.9	13	0.13	5.9	23	0.55
5	5.1	18	0.25	3.7	12	0.12	5.0	19	0.28
6	5.6	18	0.27	3.9	12	0.13	3.5	13	0.12
7	5.3	18	0.26	3.9	13	0.13	3.8	13	0.13
8	5.4	18	0.26	3.6	13	0.13	3.6	12	0.12
9	5.2	14	0.19	3.5	13	0.12	4.1	12	0.13
10	5.2	6	0.09	3.7	13	0.13	3.6	12	0.11
11	5.0	4	0.05	3.7	13	0.13	3.6	12	0.11
12	9.2	35	2.5	3.6	13	0.13	3.5	11	0.11
13	5.9	25	0.40	3.7	14	0.14	3.4	11	0.10
14	5.2	23	0.32	e4.8	e14	e0.19	4.6	19	0.29
15	5.6	23	0.34	4.0	14	0.15	4.9	21	0.51
16	5.4	22	0.32	4.3	14	0.16	6.9	30	0.74
17	5.3	22	0.32	4.1	14	0.15	3.6	11	0.11
18	4.9	22	0.29	3.5	14	0.13	6.0	25	0.63
19	5.0	22	0.29	4.0	13	0.14	7.5	35	1.3
20	5.0	21	0.29	3.7	13	0.13	19	124	39
21	4.9	21	0.28	3.5	13	0.12	7.1	37	0.73
22	5.2	21	0.29	3.7	13	0.13	5.5	29	0.43
23	5.2	21	0.29	3.6	13	0.12	7.7	34	0.84
24	5.1	21	0.28	3.5	13	0.12	17	91	9.7
25	5.1	20	0.28	3.5	13	0.12	7.6	33	0.70
26	4.7	20	0.26	3.7	12	0.12	5.4	24	0.34
27	6.4	22	0.37	3.7	12	0.12	4.7	18	0.22
28	6.3	28	0.55	3.6	12	0.12	4.4	16	0.19
29	4.6	21	0.26	3.6	13	0.13	4.4	14	0.17
30	3.9	20	0.21	11	57	3.8	4.1	13	0.14
31	3.7	18	0.18	6.7	29	0.58	---	---	---
TOTAL	165.2	---	10.75	127.4	---	8.30	174.2	---	58.37
YEAR	5484.5		33979.01						

e Estimated

RIO DE LA PLATA BASIN

50044850 RIO GUADIANA NEAR NARANJITO, PR

WATER-QUALITY RECORDS

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

DRAINAGE AREA.--4.0 mi^2 (10.3 km^2).

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
NOV													
29...	0820	18	339	7.5	21.6	66	7.8	89	20	E12000	36000	130	29.7
MAR													
08...	1155	9.4	353	7.6	25.0	4.5	7.9	96	<10	E900	430	--	--
AUG													
28...	1100	--	350	7.1	30.0	33	7.7	102	<10	E780	520	150	34.8

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
NOV													
29...	13.9	15.3	.6	2.40	115	<1.0	17.8	21.7	.2	21.2	191	9.22	100
MAR													
08...	--	--	--	--	127	--	--	--	--	--	--	--	<10
AUG													
28...	15.1	20.8	.7	2.12	140	<.1	14.9	27.4	.15	25.7	225	--	45

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
NOV													
29...	<.01	E.980	E.04	E.30	E.21	3	82.9	40	<.1	5.4	M	3700	2
MAR													
08...	<.01	1.30	<.01	<.20	.17	--	--	--	--	--	--	--	--
AUG													
28...	.02	.730	.02	.40	.33	E1	59.7	40	.2	2.3	M	920	M

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
NOV								
29...	202	.02	<2	<.3	E20	<.01	<16	<.05
MAR								
08...	--	--	--	--	--	--	--	--
AUG								
28...	91.9	E.01	<2	<.3	<20	<.01	<16	<.05

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

RIO DE LA PLATA BASIN

50045000 LAGO LA PLATA AT DAMSITE NEAR TOA ALTA, PR

LOCATION.--Lat 18°20'40", long 66°14'10", Hydrologic Unit 21010005, 2.9 mi (4.7 km) at northeast of Plaza de Naranjito, 2.7 mi (4.3 km) west of Road 167, km 15.3, Buena Vista, Bayamón, 5.2 mi (8.4 km) east of Plaza de Corozal.

DRAINAGE AREA.--181 mi^2 (469 km^2).

ELEVATION RECORDS

PERIOD OF RECORD.--February 1989 to current year. Prior to October 1994, published as Lago La Plata at Damsite.

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

REMARKS.--Lago La Plata first construction phase was completed in 1974 and the second construction phase to provide the spillway with bascule gates was completed in October 1989. The maximum storage is 37,000 acre-ft (45.6 hm^3) and its purpose is the supply of water for domestic and industrial use. La Plata Dam is a concrete gravity structure located across the Río de la Plata, the dam has an overall length of 774 ft (236 m) and a maximum height of about 131 ft (40 m). The dam spillway is provided with six bascule gates. The spillway crest has a total clear length of 690 ft (210 m), an elevation of 155 ft (47 m). The Dam is owned and operated by Puerto Rico Aqueduct and Sewer Authority. Gage-height and precipitation satellite telemetry at station. New capacity table based on U.S. Geological Survey Water-Resources Investigations Report 00-4045, October 1998.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation, 170.90 ft (52.09 m), September 10, 1996; minimum elevation, 107.95 ft (32.90 m), February 21, 1995.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 167.99 ft (51.20 m), April 30; minimum elevation, 153.77 ft (46.86 m), August 30.

Capacity Table
(based on data from U.S. Geological Survey Water-Resources Investigations Report 00-4045, Puerto Rico, 1998)

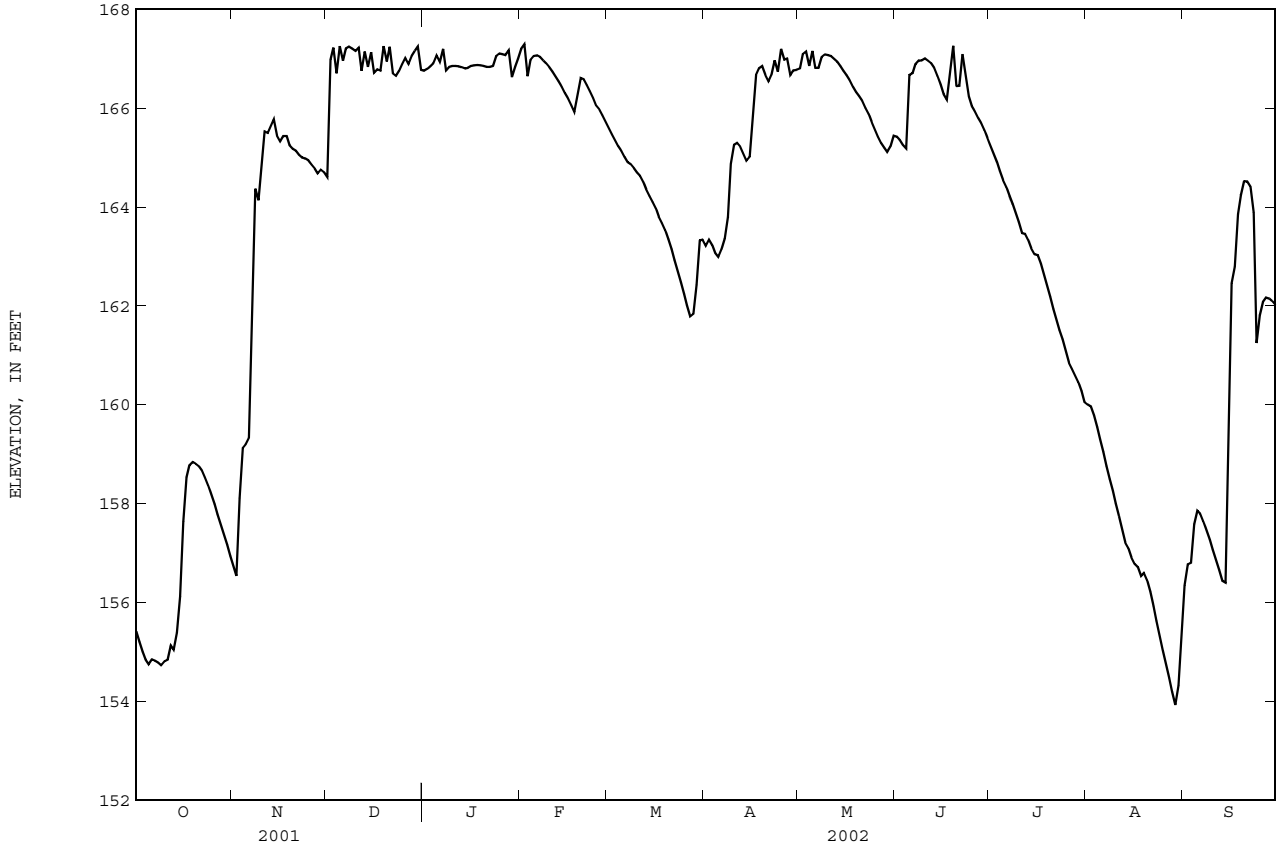
Elevation, in feet	Contents, in acre-feet	Elevation, in feet	Contents, in acre-feet
82	0	144	12,915
105	1,873	164	24,021
125	5,943	171	28,748

Elevation above NGVD 1929, feet
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	155.42	156.75	164.61	166.76	167.20	165.60	163.22	166.81	165.43	165.24	160.01	156.35
2	155.20	156.54	166.98	166.80	167.29	165.47	163.34	167.10	165.36	165.08	159.97	156.77
3	155.00	158.11	167.23	166.85	166.65	165.36	163.23	167.15	165.26	164.91	159.79	156.80
4	154.85	159.13	166.71	166.92	166.98	165.24	163.08	166.86	165.19	164.73	159.55	157.58
5	154.75	159.20	167.26	167.07	167.06	165.14	162.99	167.16	166.67	164.55	159.30	157.86
6	154.85	159.33	166.96	166.94	167.07	165.02	163.15	166.82	166.71	164.41	159.05	157.80
7	154.82	161.15	167.21	167.20	167.04	164.91	163.36	166.82	166.90	164.23	158.76	157.64
8	154.78	164.37	167.25	166.77	166.97	164.87	163.80	167.04	166.97	164.06	158.50	157.45
9	154.73	164.14	167.21	166.84	166.91	164.79	164.88	167.09	166.97	163.89	158.26	157.27
10	154.81	164.77	167.16	166.86	166.83	164.70	165.26	167.08	167.01	163.70	158.00	157.07
11	154.84	165.53	167.23	166.86	166.74	164.63	165.30	167.06	166.97	163.48	157.75	156.86
12	155.13	165.50	166.76	166.85	166.64	164.51	165.22	167.00	166.92	163.46	157.47	156.66
13	155.05	165.65	167.15	166.83	166.55	164.36	165.09	166.94	166.82	163.34	157.21	156.44
14	155.39	165.78	166.84	166.81	166.44	164.23	164.94	166.85	166.66	163.17	157.11	156.40
15	156.12	165.45	167.14	166.82	166.31	164.11	165.02	166.76	166.48	163.05	156.91	158.36
16	157.64	165.33	166.72	166.86	166.20	163.98	165.90	166.67	166.29	163.03	156.78	162.46
17	158.53	165.44	166.79	166.87	166.06	163.81	166.68	166.57	166.18	162.86	156.72	162.80
18	158.78	165.44	166.76	166.88	165.93	163.68	166.81	166.44	166.75	162.65	156.54	163.86
19	158.84	165.25	167.26	166.87	166.28	163.54	166.85	166.33	167.27	162.42	156.60	164.24
20	158.81	165.18	166.95	166.86	166.61	163.35	166.68	166.25	166.45	162.19	156.45	164.53
21	158.76	165.14	167.25	166.84	166.59	163.15	166.55	166.15	166.46	161.94	156.22	164.52
22	158.67	165.06	166.71	166.84	166.48	162.93	166.68	166.01	167.10	161.74	155.93	164.42
23	158.53	165.01	166.66	166.86	166.35	162.70	166.97	165.89	166.66	161.51	155.63	163.89
24	158.37	164.99	166.76	167.06	166.21	162.48	166.74	165.73	166.24	161.32	155.33	161.25
25	158.18	164.95	166.89	167.11	166.05	162.24	167.20	165.58	166.05	161.09	155.03	161.81
26	157.99	164.86	167.02	167.10	165.97	162.01	166.99	165.43	165.94	160.85	154.75	162.08
27	157.78	164.78	166.90	167.08	165.86	161.79	167.01	165.30	165.81	160.73	154.47	162.17
28	157.58	164.68	167.06	167.17	165.73	161.84	166.67	165.20	165.70	160.60	154.19	162.15
29	157.37	164.76	167.16	166.63	---	162.43	166.77	165.12	165.56	160.46	153.93	162.10
30	157.17	164.71	167.25	166.84	---	163.33	166.78	165.23	165.40	160.28	154.32	162.02
31	156.94	---	166.78	167.00	---	163.34	---	165.45	---	160.06	155.32	---
MAX	158.84	165.78	167.26	167.20	167.29	165.60	167.20	167.16	167.27	165.24	160.01	164.53
MIN	154.73	156.54	164.61	166.63	165.73	161.79	162.99	165.12	165.19	160.06	153.93	156.35

RIO DE LA PLATA BASIN

50045000 LAGO LA PLATA AT DAMSITE NEAR TOA ALTA, PR--Continued



RIO DE LA PLATA BASIN

50045010 RIO DE LA PLATA BELOW LA PLATA DAM

LOCATION.--Lat 18°20'45", long 66°14'17", Hydrologic Unit 21010005, 2.8 mi (4.5 km) west of Road 167, km 15.3, Buena Vista, Bayamón, 5.0 mi (8.0 km) east of Plaza de Corozal, 3.0 mi (4.8 km) northeast of Plaza de Naranjito.

DRAINAGE AREA.--173 mi^2 (448 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1989 to current year.

GAGE.--Water-stage recorder. Elevation of gage 66 ft (20 m), from topographic map.

REMARKS.--Records poor. Regulation at all stages by Puerto Rico Aqueduct and Sewer Authority reservoir upstream from gage. Gage-height satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.36	3.7	4.6	44	4.4	2.3	0.52	856	3.0	3.1	2.3	1.8
2	0.10	3.0	7.4	0.53	5.5	2.3	0.67	364	2.0	3.1	12	2.6
3	0.02	3.1	380	0.76	360	2.1	0.88	252	1.9	1.9	8.5	2.1
4	0.00	4.9	304	0.80	5.7	2.0	0.27	284	2.5	1.9	6.3	3.7
5	0.00	4.1	11	1.9	5.0	1.7	0.14	8.1	2.5	4.7	5.1	3.7
6	0.00	2.5	356	303	4.8	1.6	0.72	185	685	1.9	4.3	3.6
7	0.07	3.0	18	28	3.8	1.6	0.45	91	71	2.3	3.3	3.1
8	1.0	17700	15	224	8.5	1.8	0.85	6.2	5.6	2.0	2.7	2.3
9	0.93	3350	23	1.2	5.8	1.1	0.83	5.5	6.2	1.9	2.7	2.0
10	0.67	592	15	1.7	5.3	1.1	1.2	2.0	4.1	2.0	2.5	2.3
11	0.69	32	27	1.1	6.3	1.6	1.6	2.5	2.3	1.9	2.4	2.7
12	0.73	189	281	1.0	4.4	1.3	2.5	5.2	1.8	2.5	2.1	2.2
13	0.38	81	63	1.8	5.1	2.2	2.6	2.4	5.4	1.6	1.8	2.0
14	0.18	19	278	0.74	4.1	3.9	0.88	3.1	3.4	1.9	2.0	2.4
15	0.47	154	7.1	0.99	3.7	3.7	1.3	5.5	5.1	2.1	1.8	2.4
16	1.7	81	604	0.89	2.6	3.2	2.0	2.8	1.5	2.2	1.6	6.2
17	3.7	131	965	1.2	2.1	3.1	3.8	3.0	1.7	2.1	1.2	6.7
18	4.0	432	706	1.6	2.6	3.1	0.78	3.8	3.4	1.8	1.1	6.4
19	3.3	200	228	1.8	2.7	3.0	0.85	1.6	11	1.9	1.0	9.4
20	3.3	62	357	1.4	4.9	2.2	790	2.1	391	2.4	0.96	8.4
21	2.8	16	24	1.6	5.7	1.3	1810	2.3	24	2.9	13	6.5
22	3.2	15	528	1.8	3.8	1.4	403	2.9	1100	1.6	20	6.7
23	4.4	8.2	2150	1.9	3.3	0.79	44	1.4	288	1.6	14	186
24	4.4	8.0	1080	4.2	1.9	0.53	579	1.7	197	1.5	10	1160
25	3.4	5.8	392	5.1	2.1	0.50	377	1.8	62	1.2	6.1	9.7
26	2.9	6.1	142	7.9	3.0	0.35	608	2.1	4.2	1.0	2.8	8.3
27	2.4	6.0	199	4.6	2.8	0.35	274	2.0	5.9	1.4	0.83	7.4
28	2.5	4.6	40	6.5	2.7	0.27	286	2.5	3.8	1.4	0.06	6.6
29	2.0	5.2	35	289	---	0.23	4.4	2.0	6.5	1.1	0.01	5.7
30	4.9	5.6	7.9	19	---	0.73	805	2.1	5.4	3.0	0.24	4.5
31	5.3	---	208	4.9	---	1.5	---	2.5	---	2.5	0.74	---
TOTAL	59.80	23127.8	9456.0	964.91	472.6	52.85	6003.24	2109.1	2907.2	64.4	133.44	1477.4
MEAN	1.93	771	305	31.1	16.9	1.70	200	68.0	96.9	2.08	4.30	49.2
MAX	5.3	17700	2150	303	360	3.9	1810	856	1100	4.7	20	1160
MIN	0.00	2.5	4.6	0.53	1.9	0.23	0.14	1.4	1.5	1.0	0.01	1.8
AC-FT	119	45870	18760	1910	937	105	11910	4180	5770	128	265	2930
CFSM	0.01	4.46	1.77	0.18	0.10	0.01	1.16	0.39	0.56	0.01	0.02	0.28
IN.	0.01	4.98	2.04	0.21	0.10	0.01	1.29	0.45	0.63	0.01	0.03	0.32

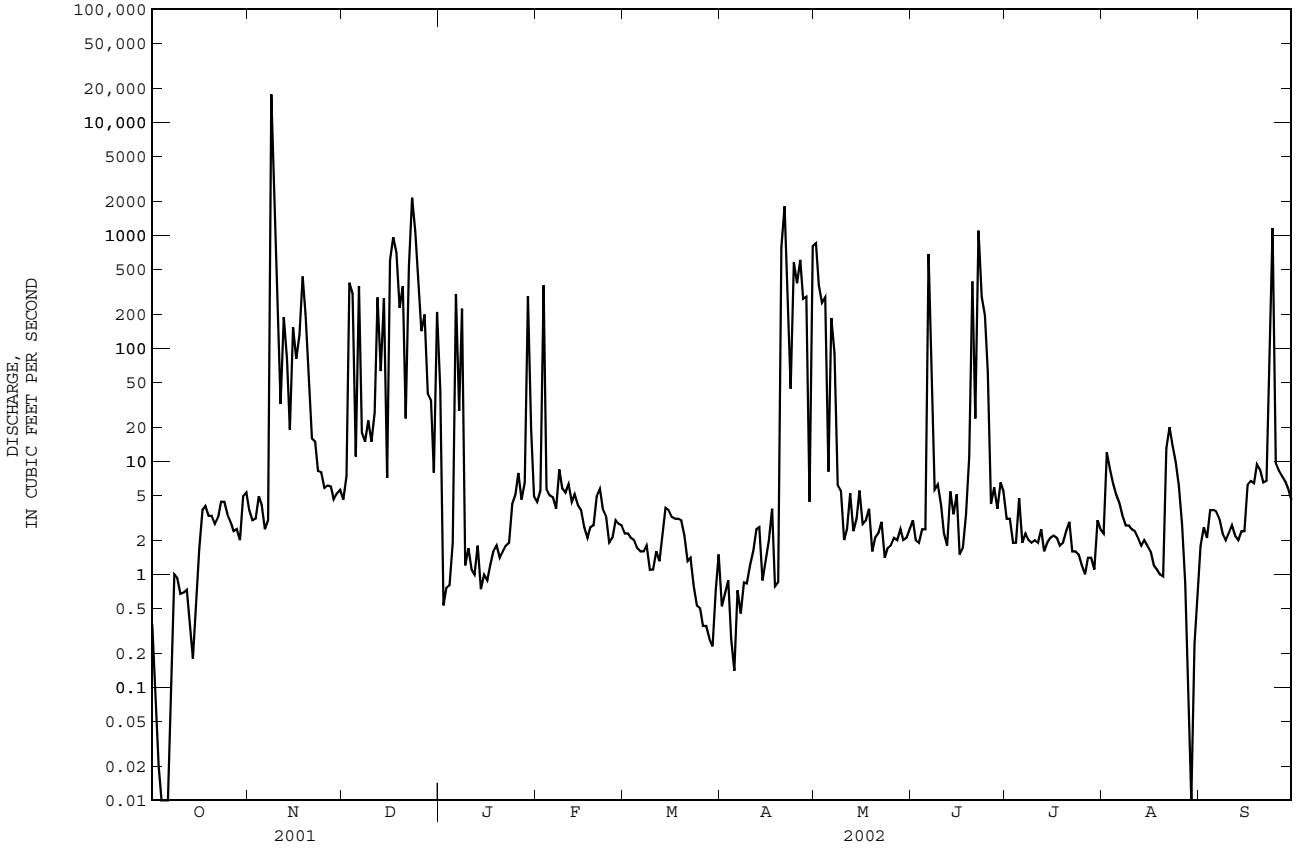
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2002, BY WATER YEAR (WY)

MEAN	177	261	174	185	49.2	11.5	37.4	85.0	35.9	56.3	55.1	818
MAX	1107	1368	926	1581	241	83.2	231	494	220	384	322	8046
(WY)	1991	2000	1999	1992	1998	1990	1993	1993	1993	1993	2000	1996
MIN	0.048	0.004	0.000	0.19	0.14	0.022	0.011	0.000	0.002	0.037	0.020	0.001
(WY)	1992	1995	1995	1990	1995	1995	1995	1994	1994	1994	1989	1991

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1989 - 2002	
ANNUAL TOTAL	35563.65		46828.74			
ANNUAL MEAN	97.4		128		165	
HIGHEST ANNUAL MEAN					714	1996
LOWEST ANNUAL MEAN					8.62	1997
HIGHEST DAILY MEAN	17700	Nov 8	17700	Nov 8	141000	Sep 10 1996
LOWEST DAILY MEAN	0.00	Oct 4	0.00	Oct 4	0.00	Jul 14 1989
ANNUAL SEVEN-DAY MINIMUM	0.05	Jul 15	0.08	Oct 1	0.00	Jul 14 1989
MAXIMUM PEAK FLOW			65300	Nov 8	197000	Sep 10 1996
MAXIMUM PEAK STAGE			25.72	Nov 8	42.26	Sep 10 1996
ANNUAL RUNOFF (AC-FT)	70540		92880		119300	
ANNUAL RUNOFF (CFSM)	0.56		0.74		0.95	
ANNUAL RUNOFF (INCHES)	7.66		10.08		12.95	
10 PERCENT EXCEEDS	41		276		207	
50 PERCENT EXCEEDS	2.0		3.1		1.7	
90 PERCENT EXCEEDS	0.16		0.82		0.00	

RIO DE LA PLATA BASIN

50045010 RIO DE LA PLATA BELOW LA PLATA DAM--Continued



RIO DE LA PLATA BASIN

50046000 RIO DE LA PLATA AT HIGHWAY 2 NEAR 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 Río 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.

DRAINAGE AREA.--208 mi^2 (539 km^2), excludes 8.2 mi^2 (21.2 km^2) upstream from Lago Carite, flow from which is diverted to Río Guamaní. Area at site used prior to September 25, 1984, 200 mi^2 (518 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1959 (measurement only), January 1960 to current year. Prior to October 1984, published as Río de la Plata at Toa Alta, PR; October 1984 to September 1988 published as 50046900.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 9.15 ft (2.789 m), above mean sea level. Prior to October 1984, at site about 1.0 mi (1.6 km) upstream at mean sea level datum.

REMARKS.--Records poor. Regulation at all stages by Puerto Rico Aqueduct and Sewer Authority reservoir upstream from gage. Gage-height and precipitation satellite telemetry at station. Flow affected by water extraction for La Virgencita water treatment plant by Puerto Rico Aqueduct and Sewer Authority of about 3.99 ft^3/s (0.11 m^3/s). Located about 1,000 ft upstream from station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Approximate discharges and elevations of major floods, as pointed out by local residents are as follows: Sept. 13, 1928, 120,000 ft^3/s (3,400 m^3/s), gage height, 37.4 ft (11.40 m); June 16, 1943, 82,000 ft^3/s (2,322 m^3/s), gage height, 34.4 ft (10.48 m), at site 1.0 mi upstream and different datum.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	34	47	334	51	24	21	1810	31	28	19	29
2	27	35	87	54	40	23	88	1500	31	30	18	19
3	48	36	582	44	220	e22	50	616	31	28	29	18
4	39	35	682	41	379	20	22	434	32	29	38	119
5	60	35	376	44	54	23	56	124	34	27	20	63
6	40	37	557	391	47	21	67	121	759	35	20	23
7	28	758	109	187	51	22	70	425	279	37	20	17
8	52	21400	e86	334	42	43	88	74	45	28	22	16
9	66	9080	70	57	40	25	42	57	34	27	19	18
10	151	1650	66	45	38	24	33	57	33	26	18	27
11	102	275	166	44	37	24	31	57	31	27	17	22
12	33	280	194	42	36	25	29	69	29	153	22	16
13	34	212	458	42	36	21	32	47	29	67	22	17
14	717	106	380	40	39	e21	34	42	29	42	29	46
15	284	239	409	37	35	e20	49	41	28	72	22	222
16	148	125	583	38	35	19	510	40	27	28	27	279
17	71	86	2130	36	32	20	164	40	28	28	23	39
18	79	266	e1230	61	33	21	52	39	e30	24	e34	32
19	78	517	529	52	38	19	38	39	29	24	23	29
20	41	185	552	37	36	17	762	36	458	24	19	79
21	36	73	212	35	31	19	3360	37	91	25	19	71
22	43	55	712	35	28	21	885	37	1330	51	21	27
23	92	50	2900	33	26	22	355	36	544	38	27	25
24	67	58	2030	57	23	22	352	34	234	23	27	2370
25	45	59	759	38	22	22	1320	36	104	22	21	163
26	37	48	203	34	31	21	958	36	55	21	22	56
27	53	51	458	34	26	22	1070	41	37	27	19	37
28	58	50	92	41	25	22	191	37	32	62	18	44
29	55	91	91	44	---	39	413	32	28	32	16	53
30	46	60	64	393	---	39	1350	55	30	19	97	32
31	33	---	55	69	---	23	---	55	---	19	103	---
TOTAL	2690	35986	16869	2773	1531	726	12492	6104	4512	1123	851	4008
MEAN	86.8	1200	544	89.5	54.7	23.4	416	197	150	36.2	27.5	134
MAX	717	21400	2900	393	379	43	3360	1810	1330	153	103	2370
MIN	27	34	47	33	22	17	21	32	27	19	16	16
AC-FT	5340	71380	33460	5500	3040	1440	24780	12110	8950	2230	1690	7950
CFSM	0.42	5.77	2.62	0.43	0.26	0.11	2.00	0.95	0.72	0.17	0.13	0.64
IN.	0.48	6.44	3.02	0.50	0.27	0.13	2.23	1.09	0.81	0.20	0.15	0.72

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2002, BY WATER YEAR (WY)

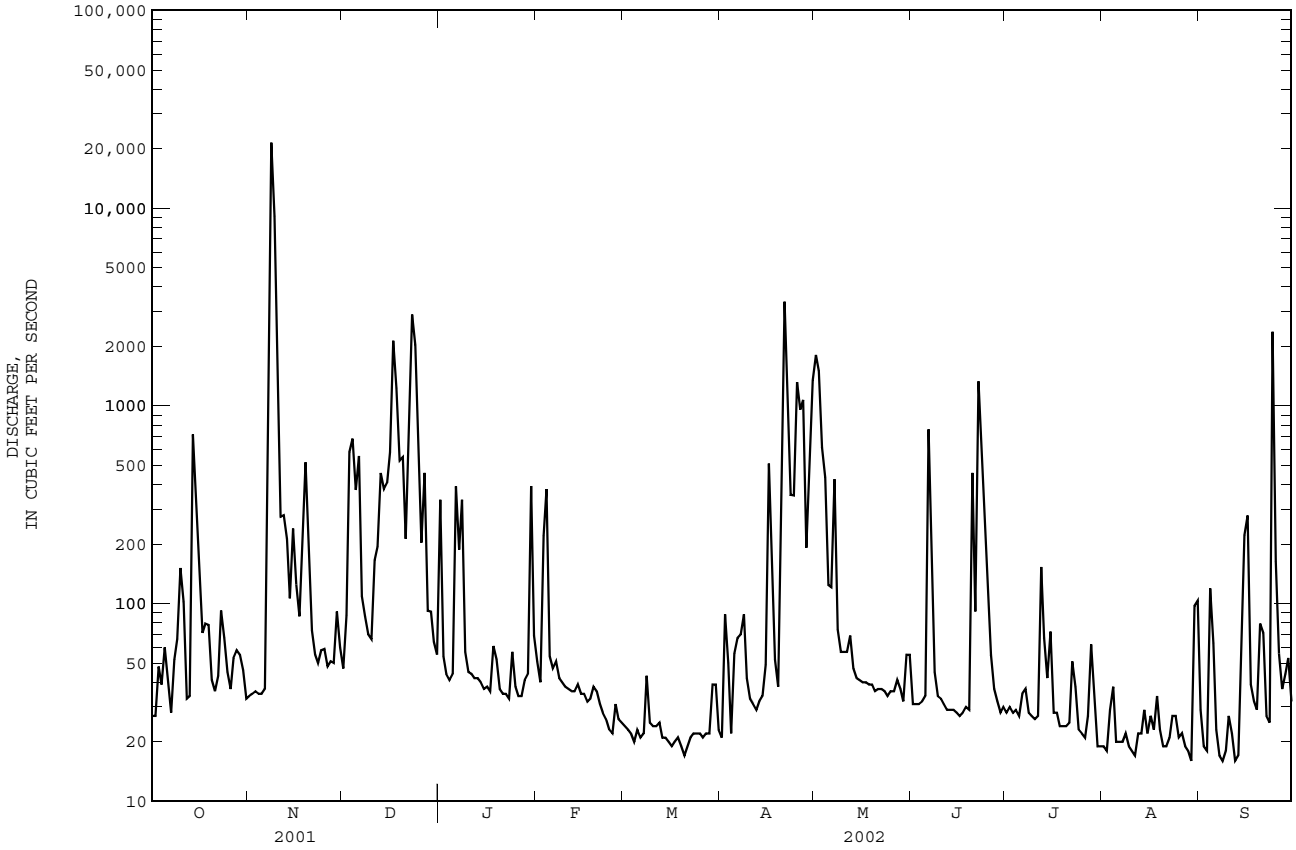
MEAN	451	475	346	182	127	90.2	173	310	150	138	236	422
MAX	4813	2015	1352	929	409	468	722	1939	847	690	1677	3173
(WY)	1971	1985	1971	1992	1989	1969	1987	1985	1970	1961	1979	1996
MIN	18.8	18.4	14.8	16.9	16.0	8.31	5.07	7.63	11.4	13.2	16.5	19.2
(WY)	1995	1995	1995	1984	1983	1986	1984	1984	1977	1994	1976	1991

e Estimated

RIO DE LA PLATA BASIN

50046000 RIO DE LA PLATA AT HIGHWAY 2 NEAR TOA ALTA, PR--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1960 - 2002	
ANNUAL TOTAL	69758		89665			
ANNUAL MEAN	191		246		256	
HIGHEST ANNUAL MEAN					824	1971
LOWEST ANNUAL MEAN					31.5	1994
HIGHEST DAILY MEAN	21400	Nov 8	21400	Nov 8	68100	Sep 10 1996
LOWEST DAILY MEAN	12	Apr 15	16	Aug 29	2.7	Apr 17 1984
ANNUAL SEVEN-DAY MINIMUM	13	Apr 12	19	Sep 7	2.9	Apr 15 1984
MAXIMUM PEAK FLOW			46700	Nov 8	160000	Sep 10 1996
MAXIMUM PEAK STAGE			22.47	Nov 8	27.33	Sep 10 1996
ANNUAL RUNOFF (AC-FT)	138400		177900		185700	
ANNUAL RUNOFF (CFSM)	0.92		1.18		1.23	
ANNUAL RUNOFF (INCHES)	12.48		16.04		16.75	
10 PERCENT EXCEEDS	242		444		473	
50 PERCENT EXCEEDS	33		39		74	
90 PERCENT EXCEEDS	18		21		18	



RIO DE LA PLATA BASIN

50046000 RIO DE LA PLATA AT HIGHWAY 2 NEARR TOA ALTA, PR--Continued

WATER-QUALITY RECORDS

LOCATION.--Lat 18°24'41", long 66°15'39", at Highway 2, 1.3 mi (2.1 km) downstream from Río Lajas, and 1.6 mi (2.6 km) northwest of Toa Alta, 11.3 mi (18.2 km) downstream from Lago La Plata.

DRAINAGE AREA.--208 mi^2 (539 km^2), exclude 8.2 mi^2 (21.2 km^2) upstream from Lago Carite, flow from which is diverted to Río Guamaní.

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTANTANEOUS DISCHARGE, CFS (00061)	SPECIF. CONDUCTANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPERATURE, WATER, DEG C (00010)	TURBIDITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DISSOLVED OXYGEN, MG/L (00300)	DISSOLVED OXYGEN, PERCENT OF SATURATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLIFORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREPTOCOCCI KF MF, COL/ 100 ML (31673)	HARDNESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
NOV													
20...	1340	151	273	7.1	26.1	78	5.9	74	10	E7270	E1400	100	27.7
MAR													
21...	1105	19	464	7.6	27.4	2.6	7.0	88	<10	E18	E10	--	--
MAY													
08...	1415	--	--	--	--	12	--	--	<10	--	--	140	35.9

DATE	MAGNESIUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLORIDE, WATER, FLTRD, MG/L (00940)	FLUORIDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTITUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED, MG/L (00530)
NOV													
20...	7.50	13.0	.6	3.02	92	<1.0	12.5	18.2	.1	17.8	155	63.2	108
MAR													
21...	--	--	--	--	168	--	--	--	--	--	--	--	<10
MAY													
08...	12.8	16.9	.6	3.39	--	<.1	15.2	24.5	.1	28.1	227	--	10

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOSPHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOVERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOVERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROMIUM, WATER, UNFLTRD RECOVERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOVERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOVERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOVERABLE, UG/L (01051)
NOV													
20...	.08	1.30	.08	E.60	E.13	E2	54.2	40	<.1	3.6	<10	2960	M
MAR													
21...	.03	.610	.02	.50	<.02	--	--	--	--	--	--	--	--
MAY													
08...	.05	.530	.20	<.20	.05	<2	56.9	40	<.1	<.8	<10	240	<1

DATE	MANGANESE, WATER, UNFLTRD RECOVERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOVERABLE, UG/L (71900)	SELENIUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOVERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOVERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHENOLIC COMPOUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
NOV								
20...	134	.01	<2	<.3	<20	<.01	<16	<.05
MAR								
21...	--	--	--	--	--	--	--	--
MAY								
08...	178	<.01	<2	<.3	<20	<.01	<16	E.04

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

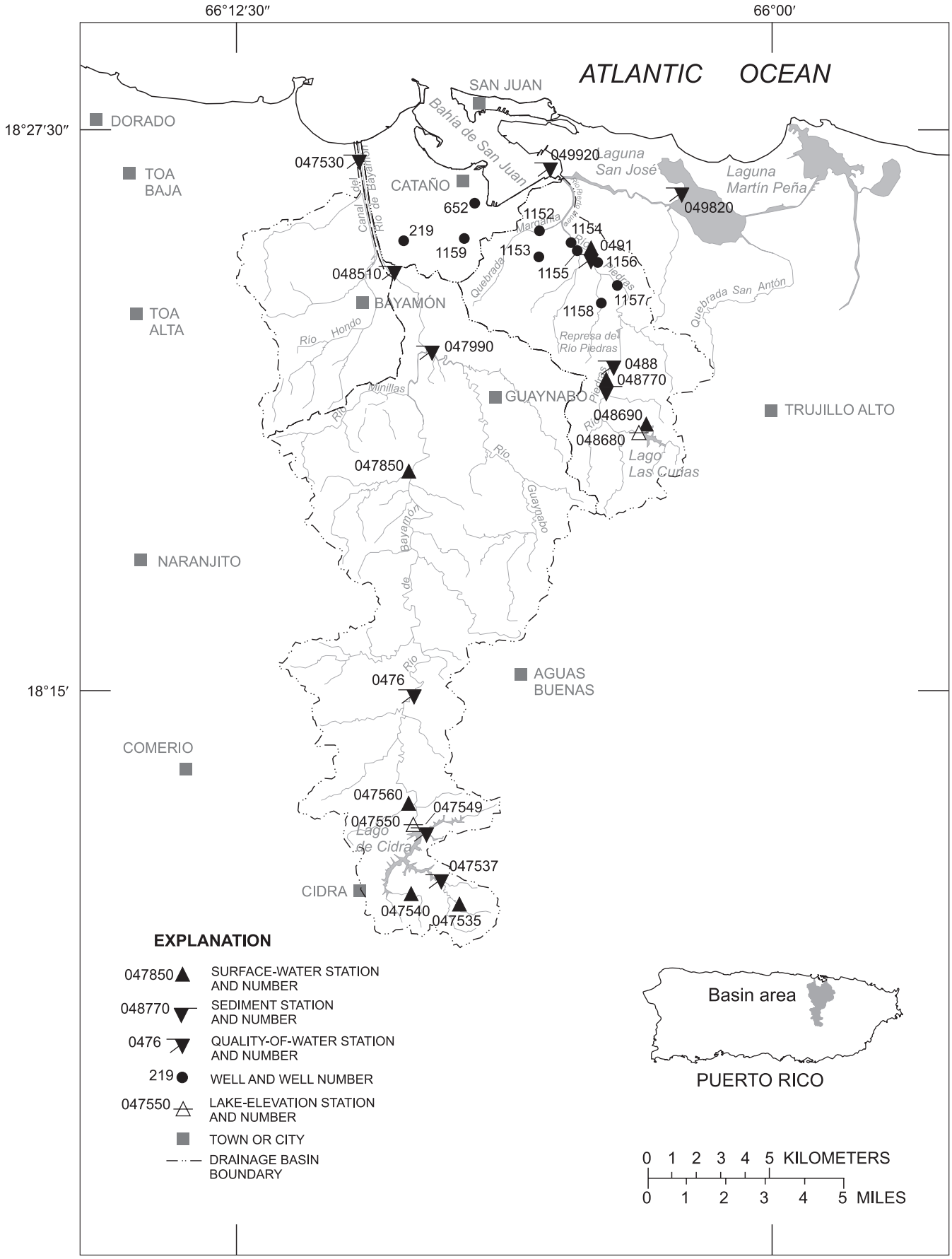


Figure 17. Río Hondo to Río Puerto Nuevo basins.

RIO DE BAYAMON BASIN

50047535 RIO DE BAYAMON AT ARENAS, PR

LOCATION.--Lat 18°10'11", long 66°07'18", Hydrologic Unit 21010005, at left bank, 2.6 mi (4.2 km) southeast of Plaza de Cidra, 0.6 mi (0.9 km) southwest from Escuela Segunda Unidad de Bayamón and 2.7 mi (4.34 km) northeast from Central Cayey.

DRAINAGE AREA.--0.45 mi^2 (1.16 km^2).

PERIOD OF RECORD.--July 1992 to September 1993, October 1995 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,378 ft (420 m), from topographic map.

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

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.09	0.05	0.13	0.24	0.91	0.20	0.21	0.24	e0.22	e0.25	0.42	7.1
2	0.16	0.05	0.12	0.23	0.66	0.20	0.15	3.1	e0.25	e0.25	0.47	1.5
3	0.05	0.16	0.12	0.20	0.98	0.18	0.12	0.92	e0.27	0.21	0.26	0.83
4	0.19	0.08	0.28	0.18	0.94	0.17	0.12	1.9	e0.22	0.20	0.22	0.61
5	1.0	0.07	3.6	0.36	0.47	0.17	0.10	0.72	e2.2	0.22	0.44	0.54
6	0.30	0.09	0.66	1.5	0.33	0.16	0.23	0.46	e0.72	0.24	0.44	0.34
7	0.11	0.61	0.33	0.55	0.28	0.17	1.1	0.71	e0.29	0.23	0.31	0.32
8	0.10	24	0.21	0.30	0.22	0.56	1.7	0.55	e0.21	0.20	0.38	0.32
9	0.68	3.4	0.17	0.20	0.21	0.33	3.4	0.35	e0.84	0.19	0.28	0.28
10	0.13	1.1	0.42	0.17	0.19	0.22	0.52	0.30	e0.21	0.16	0.23	0.31
11	0.10	0.61	0.61	0.15	0.21	0.19	0.27	0.28	e0.21	0.16	0.21	0.29
12	0.08	0.42	1.4	0.14	0.19	0.17	0.18	0.25	e0.23	0.16	0.18	0.29
13	0.09	0.32	0.67	0.14	0.17	0.17	0.15	e0.19	e0.23	0.17	0.17	0.28
14	0.08	0.24	0.96	0.14	0.18	0.15	0.15	e0.16	e0.22	0.77	0.20	1.0
15	2.7	0.18	1.1	0.13	0.17	0.45	1.2	e0.19	e0.23	0.77	0.19	28
16	3.0	0.65	3.8	0.13	0.19	0.43	5.7	e0.18	e0.23	0.29	0.95	4.6
17	0.42	0.58	5.0	0.13	0.22	0.21	0.91	e0.18	e0.72	0.19	0.51	0.65
18	0.25	0.26	3.2	0.21	0.24	0.18	0.47	e0.17	e5.3	0.16	1.3	0.37
19	0.15	0.22	1.8	0.18	0.65	0.18	0.29	e0.19	e0.54	0.14	0.59	0.30
20	0.11	0.19	0.83	0.18	0.46	0.15	13	e0.21	e0.34	0.14	0.26	0.27
21	0.09	0.15	0.53	0.17	0.31	0.15	9.1	e0.24	e13	0.18	0.20	0.28
22	0.08	0.13	2.3	0.19	0.25	0.13	1.4	e0.22	e3.8	0.19	0.19	0.27
23	0.08	0.12	9.7	0.16	0.22	0.12	0.74	e0.22	e0.87	0.23	0.17	0.27
24	0.07	0.19	3.2	0.35	0.21	0.11	0.93	e0.22	e0.58	0.21	0.17	0.53
25	0.06	0.14	1.0	0.21	0.20	0.10	0.70	e0.24	e0.49	0.17	0.17	1.9
26	0.06	0.12	0.58	0.17	0.24	0.10	0.56	e0.26	e0.45	0.15	0.15	0.49
27	0.06	0.12	0.39	0.16	0.23	0.17	0.51	e0.29	e0.37	0.21	0.14	0.36
28	0.06	0.12	0.32	0.96	0.20	0.13	0.44	e0.30	e0.31	0.33	0.17	0.31
29	0.07	0.19	0.29	1.0	---	0.23	0.35	e0.50	e0.28	0.26	0.19	0.25
30	0.06	0.13	0.28	0.70	---	0.15	0.29	e0.54	e0.23	0.20	8.9	0.23
31	0.05	---	0.27	1.1	---	0.30	---	e0.22	---	0.19	8.8	---
TOTAL	10.53	34.69	44.27	10.63	9.73	6.33	44.99	14.50	34.06	7.42	27.26	53.09
MEAN	0.34	1.16	1.43	0.34	0.35	0.20	1.50	0.47	1.14	0.24	0.88	1.77
MAX	3.0	24	9.7	1.5	0.98	0.56	13	3.1	13	0.77	8.9	28
MIN	0.05	0.05	0.12	0.13	0.17	0.10	0.10	0.16	0.21	0.14	0.14	0.23
AC-FT	21	69	88	21	19	13	89	29	68	15	54	105
CFSM	0.75	2.57	3.17	0.76	0.77	0.45	3.33	1.04	2.52	0.53	1.95	3.93
IN.	0.87	2.87	3.66	0.88	0.80	0.52	3.72	1.20	2.82	0.61	2.25	4.39

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2002, BY WATER YEAR (WY)

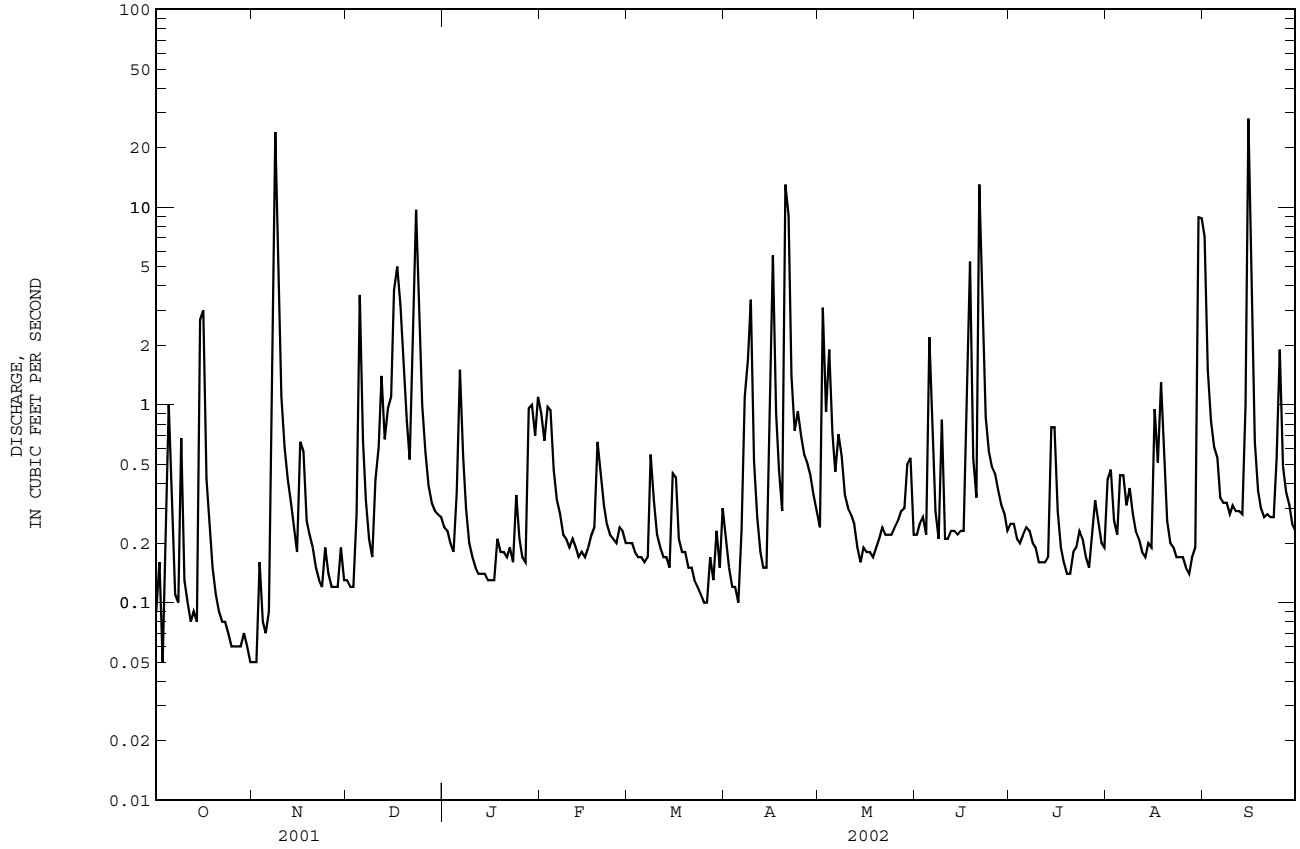
MEAN	0.64	1.19	1.20	0.62	0.58	0.26	0.38	0.48	0.62	0.69	0.95	2.20
MAX	1.73	3.82	4.63	1.17	2.38	0.65	1.50	2.02	1.79	2.12	1.87	6.52
(WY)	1998	2000	1999	2000	1998	1998	2002	1993	1996	1993	1996	1998
MIN	0.30	0.32	0.048	0.34	0.16	0.097	0.095	0.10	0.10	0.092	0.46	0.20
(WY)	1997	1998	1998	2002	1993	1993	1997	1999	1998	1998	1992	1997

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1992 - 2002	
ANNUAL TOTAL	182.54		297.50			
ANNUAL MEAN	0.50		0.82		0.83	
HIGHEST ANNUAL MEAN					1.16	1996
LOWEST ANNUAL MEAN					0.31	1997
HIGHEST DAILY MEAN	24	Nov 8	28	Sep 15	141	Sep 10 1996
LOWEST DAILY MEAN	0.05	Oct 3	0.05	Oct 3	0.02	Jul 3 1997
ANNUAL SEVEN-DAY MINIMUM	0.06	Oct 27	0.06	Oct 27	0.03	Jun 28 1997
MAXIMUM PEAK FLOW			221	Sep 15	1150	Sep 21 1998
MAXIMUM PEAK STAGE			5.16	Sep 15	7.89	Sep 21 1998
INSTANTANEOUS LOW FLOW					0.02	Jul 15 1997
ANNUAL RUNOFF (AC-FT)	362		590		602	
ANNUAL RUNOFF (CFSM)	1.11		1.81		1.85	
ANNUAL RUNOFF (INCHES)	15.09		24.59		25.07	
10 PERCENT EXCEEDS	0.65		1.1		1.1	
50 PERCENT EXCEEDS	0.19		0.24		0.21	
90 PERCENT EXCEEDS	0.11		0.12		0.07	

e Estimated

RIO DE BAYAMON BASIN

50047535 RIO DE BAYAMON AT ARENAS, PR--Continued



RIO DE BAYAMON BASIN

50047540 RIO SABANA AT VISTA MONTE, PR

LOCATION.--Lat 18°10'28", long 66°08'38", Hydrologic Unit 21010005, at left bank, 1.2 mi (1.9 km) southeast of Plaza de Cidra, 1.2 mi (1.9 km) southwest from Escuela Segunda Unidad de Bayamón, and 0.4 mi (0.6 km) upstream from Lago de Cidra.

DRAINAGE AREA.--0.80 mi^2 (2.07 km^2).

PERIOD OF RECORD.--August 1992 to September 1993, October 1995 to September 2002 (discontinued).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,345 ft (410 m), from topographic map.

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

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e0.19	0.30	0.33	0.58	0.88	0.26	0.23	0.36	0.27	0.32	e0.64	e13
2	e0.25	0.32	0.33	0.56	0.63	0.27	0.20	2.8	0.31	0.33	e0.72	e2.7
3	0.21	0.88	0.33	0.54	1.4	0.26	0.23	0.82	0.31	0.30	e0.36	e1.0
4	1.2	0.50	0.48	0.53	1.0	0.26	0.25	1.0	0.30	0.29	e0.30	e0.71
5	2.0	0.35	6.6	0.71	0.53	0.25	0.31	0.61	1.8	0.29	e0.71	e0.58
6	0.51	0.39	1.1	2.0	0.60	0.22	0.47	0.47	0.69	0.32	e0.70	e0.43
7	0.29	1.6	0.52	0.80	0.45	0.24	0.64	1.9	0.36	0.30	e0.48	e0.40
8	0.31	50	0.43	0.61	0.39	0.53	1.8	0.83	0.30	0.28	e0.60	e0.40
9	1.4	6.5	0.35	0.58	0.42	0.23	2.0	0.42	0.79	0.28	e0.42	e0.34
10	0.34	2.3	0.38	0.55	0.39	0.21	0.45	0.36	0.30	0.25	e0.33	e0.40
11	0.30	1.3	0.68	0.51	0.34	0.20	0.40	0.33	0.30	0.24	e0.30	e0.34
12	0.28	0.81	1.4	0.49	0.33	0.20	0.34	0.30	0.31	0.26	e0.24	e0.34
13	0.31	0.60	0.74	0.49	0.33	0.21	0.29	0.33	0.30	0.28	e0.22	e0.30
14	0.31	0.50	0.69	0.49	0.32	0.20	0.28	0.37	0.29	1.6	e0.27	e1.7
15	3.0	0.43	1.1	0.46	0.31	0.55	1.3	0.43	0.29	0.73	e0.27	e50
16	4.0	0.39	3.4	0.44	0.32	0.25	2.7	0.43	0.30	e0.48	e1.6	e8.0
17	0.93	0.38	3.6	0.43	0.33	0.20	0.51	0.43	0.65	e0.33	e0.83	e1.0
18	0.57	0.38	3.1	0.57	0.36	0.19	0.34	0.40	4.2	e0.27	e2.2	e0.51
19	0.53	0.38	2.0	0.61	0.83	0.19	0.30	0.38	0.56	e0.23	e0.97	e0.39
20	0.42	0.38	1.1	0.51	0.37	0.17	8.8	0.36	0.40	e0.23	e0.39	e0.32
21	0.37	0.37	0.84	0.49	0.27	0.17	6.7	0.33	10	e0.30	e0.28	e0.34
22	0.34	0.35	1.2	0.52	0.26	0.17	1.4	0.31	2.9	e0.32	e0.26	e0.31
23	0.33	0.36	5.2	0.55	0.26	0.17	0.78	0.30	0.78	e0.38	e0.22	e0.31
24	0.33	0.47	3.7	0.82	0.25	0.18	0.53	0.29	0.54	e0.33	e0.23	e0.74
25	0.34	0.33	1.5	0.44	0.26	0.19	0.44	0.29	0.49	e0.25	e0.23	e3.2
26	0.34	0.33	1.0	0.41	0.31	0.17	1.1	0.29	0.45	e0.22	e0.20	e0.76
27	0.34	0.36	0.89	0.41	0.26	0.22	0.52	0.31	0.40	e0.30	e0.19	e0.51
28	0.32	0.35	0.74	1.00	0.26	0.20	3.1	0.31	0.35	e0.51	e0.22	e0.42
29	0.33	0.41	0.66	0.83	---	0.41	0.59	0.46	0.34	e0.37	e0.26	e0.34
30	0.36	0.33	0.61	0.62	---	0.22	0.41	0.57	0.33	e0.28	e16	e0.30
31	0.30	---	0.57	0.99	---	0.18	---	0.28	---	e0.25	e16	---
TOTAL	21.05	72.35	45.57	19.54	12.66	7.37	37.41	17.07	29.61	11.12	46.64	90.09
MEAN	0.68	2.41	1.47	0.63	0.45	0.24	1.25	0.55	0.99	0.36	1.50	3.00
MAX	4.0	50	6.6	2.0	1.4	0.55	8.8	2.8	10	1.6	16	50
MIN	0.19	0.30	0.33	0.41	0.25	0.17	0.20	0.28	0.27	0.22	0.19	0.30
AC-FT	42	144	90	39	25	15	74	34	59	22	93	179
CFSM	0.85	3.01	1.84	0.79	0.57	0.30	1.56	0.69	1.23	0.45	1.88	3.75
IN.	0.98	3.36	2.12	0.91	0.59	0.34	1.74	0.79	1.38	0.52	2.17	4.19

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2002, BY WATER YEAR (WY)

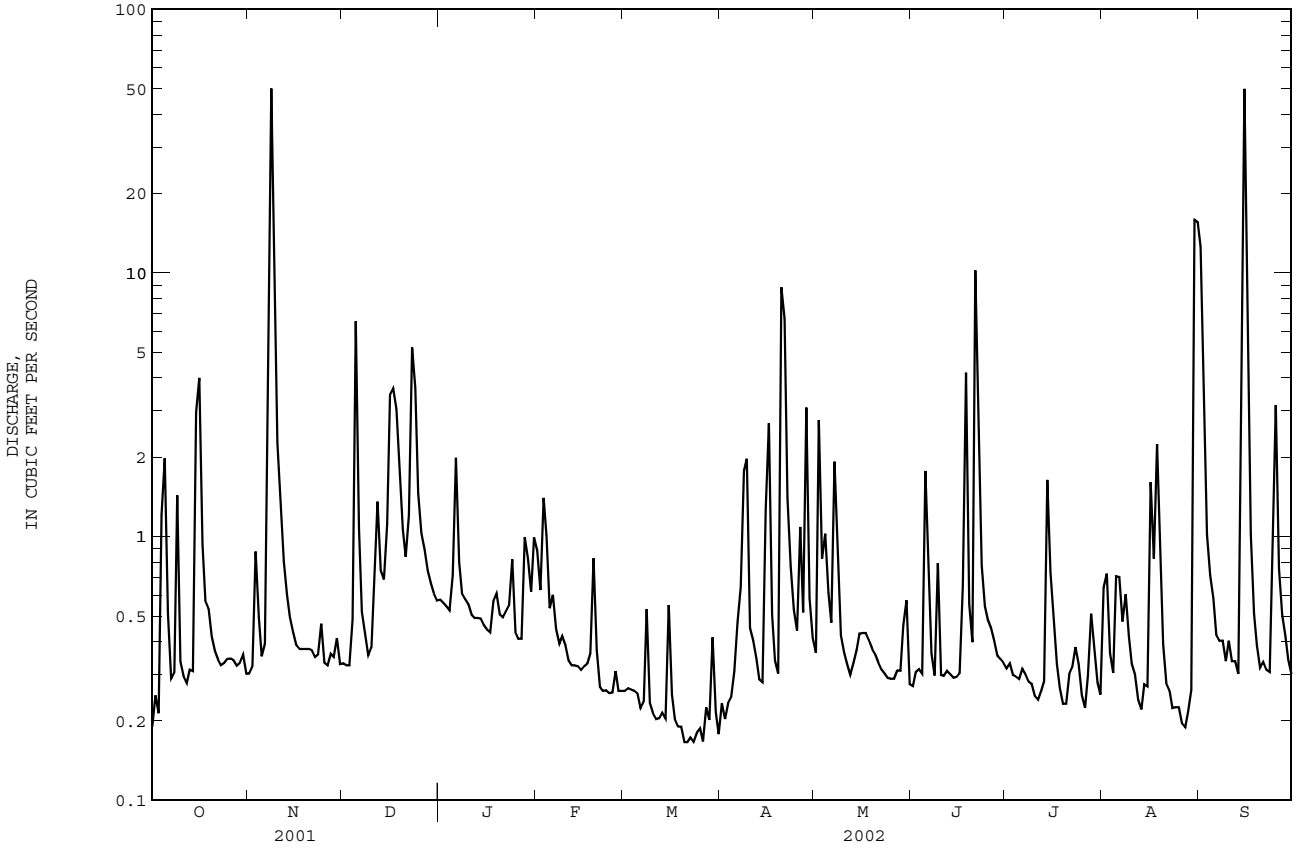
MEAN	1.73	2.13	1.92	0.95	0.99	0.47	0.64	0.67	0.75	1.07	1.51	4.38
MAX	4.51	5.02	7.83	1.91	3.50	1.01	1.25	2.26	1.57	3.02	3.44	16.7
(WY)	1998	2000	1999	1999	1998	1998	2002	1993	1999	1993	2000	1996
MIN	0.68	0.86	0.31	0.33	0.33	0.15	0.19	0.20	0.25	0.20	0.48	0.21
(WY)	2002	1998	1998	1998	1993	1993	2000	2000	1997	2001	1997	2001

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1992 - 2002	
ANNUAL TOTAL	254.28		410.48			
ANNUAL MEAN	0.70		1.12		1.46	
HIGHEST ANNUAL MEAN					2.37	1998
LOWEST ANNUAL MEAN					0.57	2001
HIGHEST DAILY MEAN	50	Nov 8	50	Nov 8	401	Sep 10 1996
LOWEST DAILY MEAN	0.12	Jul 23	0.17	Mar 20	0.08	Jun 8 2000
ANNUAL SEVEN-DAY MINIMUM	0.14	Sep 24	0.17	Mar 20	0.09	Jun 5 2000
MAXIMUM PEAK FLOW			268	Nov 8	2380	Sep 10 1996
MAXIMUM PEAK STAGE			4.46	Nov 8	12.02	Sep 10 1996
INSTANTANEOUS LOW FLOW			0.13	Mar 28	0.07	Jun 8 2000
ANNUAL RUNOFF (AC-FT)	504		814		1060	
ANNUAL RUNOFF (CFSM)	0.87		1.41		1.83	
ANNUAL RUNOFF (INCHES)	11.82		19.09		24.86	
10 PERCENT EXCEEDS	1.0		1.6		1.7	
50 PERCENT EXCEEDS	0.33		0.38		0.46	
90 PERCENT EXCEEDS	0.17		0.24		0.19	

e Estimated

RIO DE BAYAMON BASIN

50047540 RIO SABANA AT VISTA MONTE, PR--Continued



RIO DE BAYAMON BASIN

50047550 LAGO CIDRA AT DAMSITE NEAR CIDRA, PR

LOCATION.--Lat 18°11'57", long 66°08'29", Hydrologic Unit 21010005, at Lago de Cidra Dam on Río de Bayamón, 1.9 mi (3.0 km) northeast of Plaza de Cidra and 1.8 mi (2.9 km) northwest of Escuela Segunda Unidad de Bayamón.

DRAINAGE AREA.--8.26 mi^2 (21.39 km^2).

ELEVATION RECORDS

PERIOD OF RECORD.--January 1988 to current year.

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

REMARKS.--Lago de Cidra was completed in 1946. The maximum storage is 5,300 acre-ft (6.53 hm^3) and provides supplemental water to metropolitan San Juan. The dam is a concrete gravity and earthfill structure, approximately 541 ft (165 m) long between abutments with a maximum structural height of about 78.7 ft (24.0 m). The spillway portion of the dam, length 131 ft (40 m) and crest elevation 1,322 ft (403 m), is an ungated ogee crest located 131 ft (40 m) from the right abutment. This dam is owned by Puerto Rico Aqueduct and Sewer Authority. Gage-height and precipitation satellite telemetry at station. New capacity table based on U.S. Geological Survey Water-Resources Investigations Report 99-4144, November 1997.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation 1,328.09 ft (404.80 m), September 10, 1996; minimum elevation 1,295.86 ft (394.98 m), April 22,1995.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 1,320.76 ft (402.57 m), May 2; minimum elevation, 1,303.45 ft (397.29 m), October 4.

Capacity Table
(based on data from U.S. Geological Survey Water-Resources Investigations Report 99-4144, Puerto Rico, 1997)

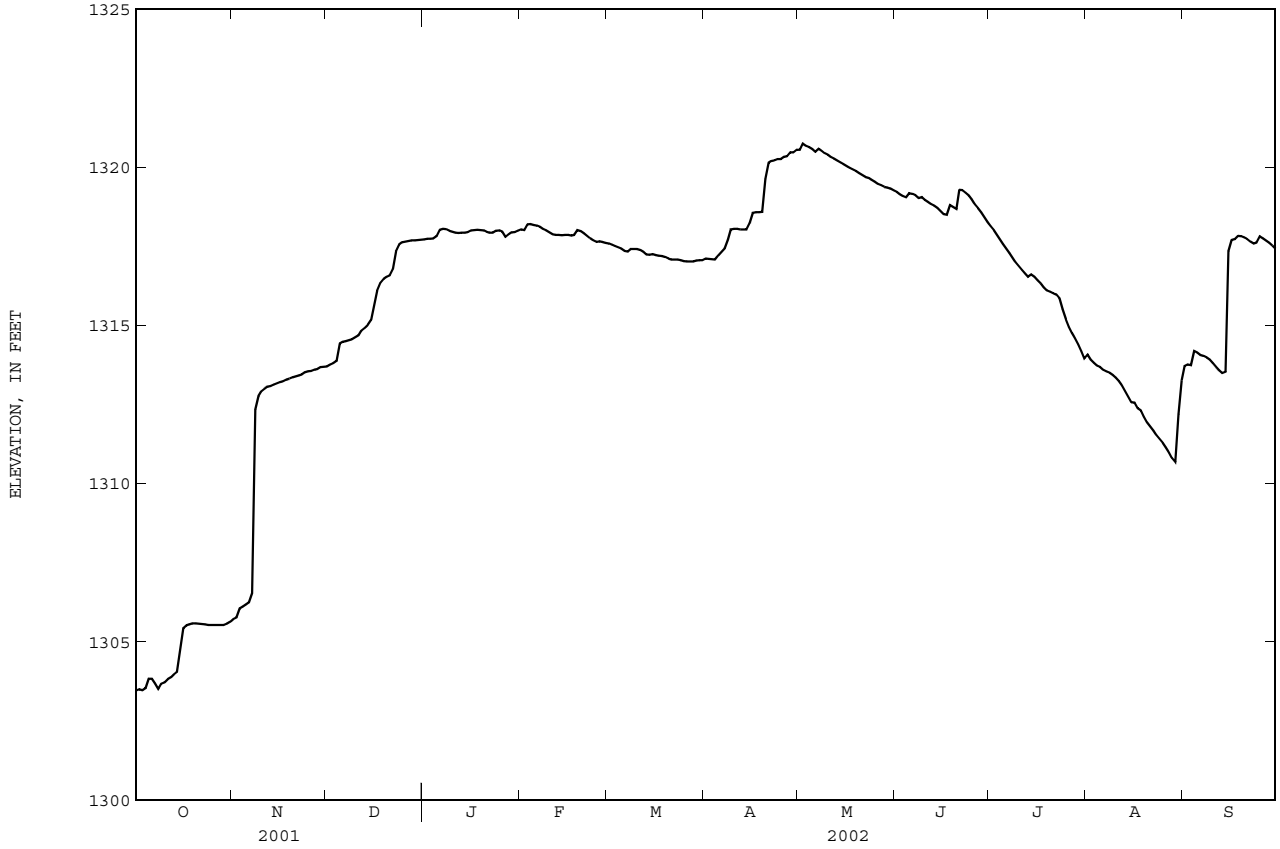
Elevation, in feet	Contents, in acre-feet	Elevation, in feet	Contents, in acre-feet
1,260	0	1,309	2,059
1,276	97	1,315	3,170
1,296	762	1,322	4,670

Elevation above NGVD 1929, feet
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1303.47	1305.72	1313.72	1317.73	1318.05	1317.60	1317.13	1320.57	1319.23	1318.15	1314.09	1313.73
2	1303.51	1305.77	1313.78	1317.75	1318.03	1317.56	1317.12	1320.76	1319.16	1318.03	1313.93	1313.78
3	1303.48	1306.06	1313.82	1317.75	1318.21	1317.52	1317.11	1320.69	1319.10	1317.87	1313.83	1313.76
4	1303.54	1306.12	1313.89	1317.76	1318.22	1317.48	1317.10	1320.65	1319.06	1317.73	1313.74	1314.20
5	1303.84	1306.18	1314.43	1317.83	1318.19	1317.44	1317.23	1320.59	1319.19	1317.58	1313.70	1314.15
6	1303.84	1306.25	1314.50	1318.04	1318.17	1317.37	1317.34	1320.51	1319.17	1317.44	1313.61	1314.08
7	1303.69	1306.54	1314.52	1318.07	1318.13	1317.35	1317.45	1320.60	1319.13	1317.30	1313.55	1314.05
8	1303.52	1312.35	1314.55	1318.06	1318.06	1317.43	1317.72	1320.54	1319.04	1317.15	1313.51	1314.00
9	1303.68	1312.78	1314.58	1318.01	1318.02	1317.43	1318.05	1320.45	1319.07	1317.00	1313.44	1313.93
10	1303.72	1312.93	1314.64	1317.98	1317.96	1317.43	1318.07	1320.40	1318.98	1316.88	1313.36	1313.83
11	1303.82	1313.01	1314.70	1317.95	1317.89	1317.40	1318.07	1320.33	1318.92	1316.76	1313.25	1313.71
12	1303.88	1313.08	1314.85	1317.94	1317.87	1317.34	1318.05	1320.28	1318.85	1316.65	1313.11	1313.59
13	1303.97	1313.10	1314.93	1317.95	1317.87	1317.26	1318.05	1320.22	1318.80	1316.55	1312.93	1313.50
14	1304.05	1313.14	1315.03	1317.95	1317.86	1317.25	1318.05	1320.16	1318.72	1316.62	1312.77	1313.54
15	1304.72	1313.18	1315.18	1317.97	1317.87	1317.27	1318.25	1320.11	1318.62	1316.55	1312.58	1317.36
16	1305.44	1313.22	1315.62	1318.02	1317.87	1317.24	1318.57	1320.05	1318.53	1316.44	1312.57	1317.71
17	1305.53	1313.25	1316.11	1318.03	1317.85	1317.22	1318.59	1319.99	1318.51	1316.34	1312.39	1317.74
18	1305.56	1313.30	1316.36	1318.04	1317.87	1317.21	1318.59	1319.94	1318.82	1316.22	1312.32	1317.84
19	1305.59	1313.33	1316.48	1318.03	1318.03	1317.18	1318.60	1319.89	1318.76	1316.11	1312.13	1317.83
20	1305.59	1313.37	1316.55	1318.02	1318.00	1317.13	1319.65	1319.83	1318.69	1316.07	1311.95	1317.79
21	1305.58	1313.40	1316.59	1317.97	1317.93	1317.10	1320.15	1319.77	1319.30	1316.02	1311.81	1317.74
22	1305.57	1313.43	1316.79	1317.95	1317.85	1317.10	1320.21	1319.71	1319.29	1315.99	1311.68	1317.66
23	1305.56	1313.46	1317.36	1317.95	1317.77	1317.10	1320.23	1319.68	1319.21	1315.87	1311.54	1317.60
24	1305.54	1313.53	1317.57	1318.01	1317.70	1317.08	1320.27	1319.62	1319.12	1315.52	1311.42	1317.63
25	1305.54	1313.56	1317.64	1318.02	1317.65	1317.05	1320.27	1319.55	1319.00	1315.21	1311.30	1317.82
26	1305.54	1313.57	1317.66	1317.98	1317.67	1317.04	1320.34	1319.48	1318.84	1314.96	1311.15	1317.76
27	1305.54	1313.62	1317.68	1317.81	1317.65	1317.03	1320.36	1319.44	1318.71	1314.78	1310.98	1317.69
28	1305.54	1313.64	1317.70	1317.90	1317.62	1317.04	1320.49	1319.39	1318.58	1314.61	1310.81	1317.62
29	1305.54	1313.70	1317.70	1317.96	---	1317.07	1320.49	1319.37	1318.43	1314.41	1310.69	1317.54
30	1305.58	1313.71	1317.71	1317.97	---	1317.08	1320.57	1319.34	1318.29	1314.19	1312.21	1317.44
31	1305.64	---	1317.72	1318.01	---	1317.08	---	1319.28	---	1313.97	1313.28	---
MAX	1305.64	1313.71	1317.72	1318.07	1318.22	1317.60	1320.57	1320.76	1319.30	1318.15	1314.09	1317.84
MIN	1303.47	1305.72	1313.72	1317.73	1317.62	1317.03	1317.10	1319.28	1318.29	1313.97	1310.69	1313.50

RIO DE BAYAMON BASIN

50047550 LAGO CIDRA AT DAMSITE NEAR CIDRA, PR--Continued



RIO DE BAYAMON BASIN

50047560 RIO DE BAYAMON BELOW LAGO CIDRA, PR

LOCATION.--Lat 18°12'04", long 66°08'26", Hydrologic Unit 21010005, 0.2 mi(0.3 km) downstream of Lago Cidra Dam on right bank, 2.1 mi (3.4 km) northwest of Plaza de Cidra.

DRAINAGE AREA.--8.32 mi^2 (21.5 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1990 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,279 ft (390 m), from topographic map.

REMARKS.--Records poor. Regulation at all stages by Puerto Rico Aqueduct and Sewer Authority reservoir upstream from gage. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	1.7	2.6	4.8	6.5	7.7	e5.7	11	13	16	43	e10
2	2.2	1.8	2.6	4.1	7.5	6.1	e5.4	24	13	15	27	e5.9
3	2.2	2.6	2.6	4.9	8.5	6.3	e6.0	50	13	18	16	e6.0
4	2.4	2.7	2.3	4.7	8.4	6.0	e7.5	40	13	15	14	e11
5	2.6	2.7	2.9	4.9	7.8	6.3	e7.2	38	13	16	19	e16
6	2.7	2.3	2.4	5.7	11	6.4	e18	43	12	16	15	e12
7	10	4.2	2.6	5.1	13	7.6	e9.9	40	12	17	10	e8.4
8	15	25	2.8	7.8	13	10	e17	37	12	16	9.2	e7.9
9	8.9	3.8	2.5	15	12	6.2	e13	32	13	21	9.1	e12
10	4.4	3.6	2.3	11	12	6.3	6.0	17	14	62	9.7	e14
11	2.3	2.9	2.9	12	12	19	5.6	8.7	16	21	13	e15
12	2.3	3.4	2.6	10	8.5	16	6.7	e8.5	16	18	18	e14
13	2.4	7.3	2.4	5.2	6.9	34	5.9	e7.1	16	18	26	e13
14	2.5	5.4	2.2	4.5	6.7	3.6	6.1	e6.4	16	19	29	e12
15	3.9	3.6	2.7	4.9	6.5	6.8	7.1	e5.4	16	19	28	e15
16	4.5	3.0	3.2	5.3	6.5	13	7.8	4.3	16	18	33	e12
17	5.7	2.7	3.4	6.2	6.6	13	6.2	4.5	16	e18	32	e6.9
18	5.9	2.5	2.8	12	6.4	13	6.6	4.3	18	20	34	e8.4
19	5.6	2.4	3.1	11	8.1	15	7.2	4.1	16	17	34	e8.8
20	5.4	2.2	3.3	12	7.8	16	13	4.0	15	12	26	13
21	5.4	2.4	3.6	12	13	12	9.5	4.0	18	11	19	16
22	5.1	2.4	3.9	12	14	6.6	12	3.9	16	10	19	17
23	5.5	2.7	4.5	12	13	6.1	8.0	4.0	17	32	17	16
24	5.0	3.0	5.2	10	14	7.1	8.5	4.1	16	e81	16	18
25	4.6	2.7	5.4	4.6	11	6.7	9.3	4.1	17	e60	17	17
26	4.6	3.1	8.5	11	12	e8.1	8.8	4.2	22	46	16	e16
27	4.6	2.3	5.4	57	12	e11	9.6	12	20	41	17	17
28	4.8	2.4	6.2	23	7.1	e10	10	8.7	16	e42	e17	16
29	4.3	2.5	4.4	7.8	---	e9.6	9.4	4.4	16	41	14	17
30	2.7	2.7	6.0	9.3	---	e6.8	14	10	15	e41	e16	17
31	1.7	---	5.3	8.1	---	e5.5	---	13	---	41	e16	---
TOTAL	141.4	112.0	112.6	317.9	271.8	307.8	267.0	461.7	462	838	629.0	388.3
MEAN	4.56	3.73	3.63	10.3	9.71	9.93	8.90	14.9	15.4	27.0	20.3	12.9
MAX	15	25	8.5	57	14	34	18	50	22	81	43	18
MIN	1.7	1.7	2.2	4.1	6.4	3.6	5.4	3.9	12	10	9.1	5.9
AC-FT	280	222	223	631	539	611	530	916	916	1660	1250	770
CFSM	0.55	0.45	0.44	1.23	1.17	1.19	1.07	1.79	1.85	3.25	2.44	1.56
IN.	0.63	0.50	0.50	1.42	1.22	1.38	1.19	2.06	2.07	3.75	2.81	1.74

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2002, BY WATER YEAR (WY)

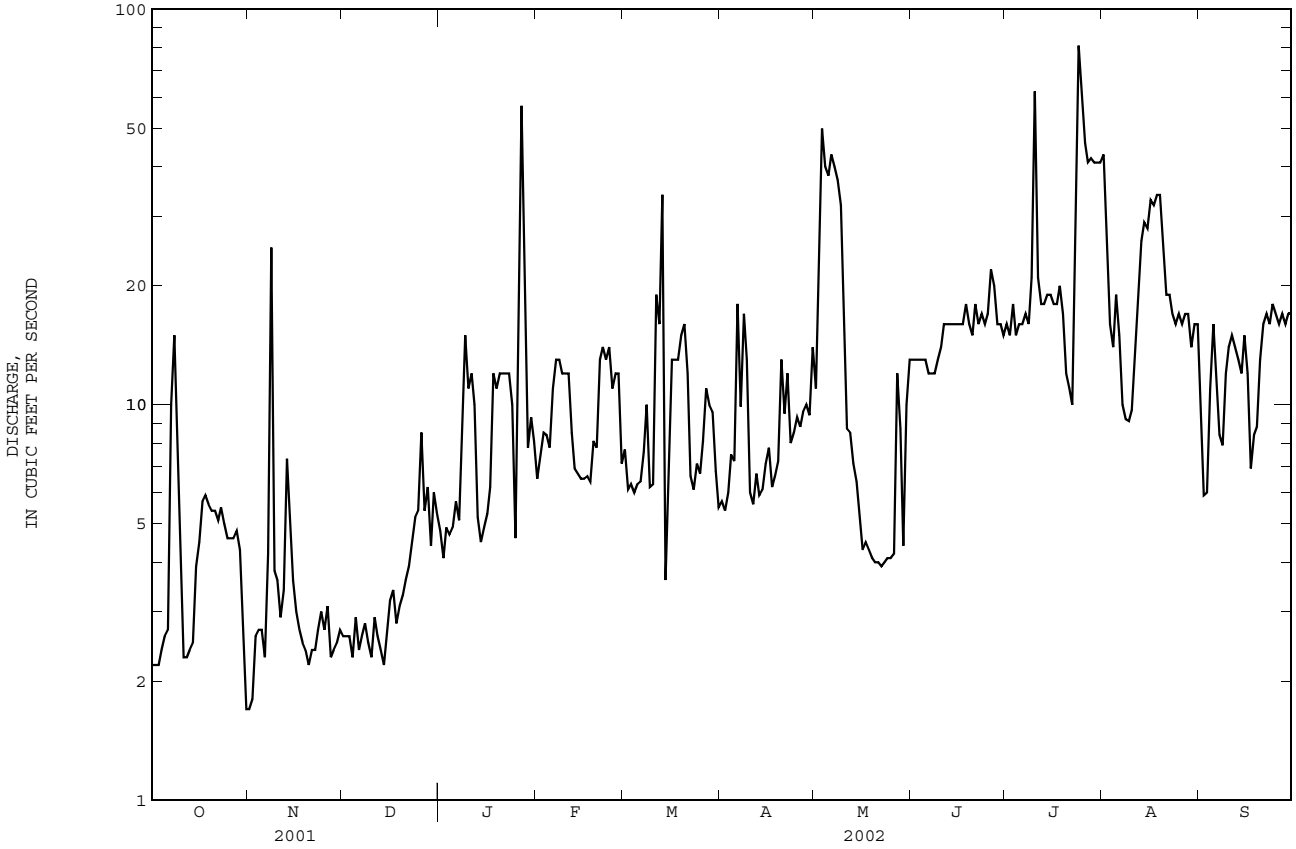
MEAN	14.8	20.2	27.1	18.6	17.1	16.6	14.1	13.3	12.9	15.1	14.0	36.6
MAX	31.2	41.2	117	59.6	36.5	26.3	24.5	23.2	21.8	39.6	29.2	233
(WY)	1999	1992	2000	1992	1991	1998	1996	1998	2001	1993	1996	1996
MIN	3.74	3.73	3.63	5.45	7.24	9.93	5.72	4.13	3.47	1.56	1.18	1.64
(WY)	1995	2002	2002	1995	1994	2002	1997	1993	1994	1994	1995	1994

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1991 - 2002	
ANNUAL TOTAL	3656.3		4309.5			
ANNUAL MEAN	10.0		11.8		18.3	
HIGHEST ANNUAL MEAN					36.1	1996
LOWEST ANNUAL MEAN					5.93	1994
HIGHEST DAILY MEAN	59	Jul 7	81	Jul 24	5420	Sep 10 1996
LOWEST DAILY MEAN	1.7	Oct 31	1.7	Oct 31	0.60	Aug 6 1992
ANNUAL SEVEN-DAY MINIMUM	2.2	Sep 27	2.2	Oct 31	0.80	May 1 1995
MAXIMUM PEAK FLOW			184	Nov 8	15000	Sep 10 1996
MAXIMUM PEAK STAGE			10.31	Nov 8	27.34	Sep 10 1996
ANNUAL RUNOFF (AC-FT)	7250		8550		13280	
ANNUAL RUNOFF (CFSM)	1.20		1.42		2.20	
ANNUAL RUNOFF (INCHES)	16.35		19.27		29.92	
10 PERCENT EXCEEDS	20		20		27	
50 PERCENT EXCEEDS	6.8		9.2		12	
90 PERCENT EXCEEDS	2.4		2.7		2.8	

e Estimated

RIO DE BAYAMON BASIN

50047560 RIO DE BAYAMON BELOW LAGO CIDRA, PR--Continued



RIO DE BAYAMON BASIN

50047600 RIO DE BAYAMON NEAR AGUAS BUENAS, PR

WATER-QUALITY RECORDS

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

DRAINAGE AREA.--18.5 mi^2 (47.9 km^2).

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTANTANEOUS DISCHARGE, CFS (00061)	SPECIF. CONDUCTANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPERATURE, WATER, DEG C (00010)	TURBIDITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DISSOLVED OXYGEN, MG/L (00300)	DISSOLVED OXYGEN, PERCENT OF SATURATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLIFORM, M-FC 0.7U MF COL/100 ML (31625)	FECAL STREPTOCOCCI KF MF, COL/100 ML (31673)	HARDNESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
NOV													
28...	1125	11	325	7.6	21.7	5.2	8.5	99	<10	E127	250	--	--
MAR													
13...	1215	28	293	7.5	23.3	8.3	8.5	104	<10	270	210	--	--
SEP													
04...	1215	17	260	7.0	26.2	18	7.6	96	<10	310	380	110	25.3

DATE	MAGNESIUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLORIDE, WATER, FLTRD, MG/L (00940)	FLUORIDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTITUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED, MG/L (00530)
NOV													
28...	--	--	--	--	123	<1.0	--	--	--	--	--	--	10
MAR													
13...	--	--	--	--	107	--	--	--	--	--	--	--	<10
SEP													
04...	11.2	14.6	.6	2.29	90	<.1	9.2	18.5	E.09	23.3	158	7.26	<10

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOSPHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOVERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOVERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROMIUM, WATER, UNFLTRD RECOVERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOVERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOVERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOVERABLE, UG/L (01051)
NOV													
28...	<.01	.730	<.01	<.20	E.02	--	--	--	--	--	--	--	--
MAR													
13...	<.01	.450	<.01	<.20	.02	--	--	--	--	--	--	--	--
SEP													
04...	<.01	.750	.01	.30	.03	2	19.4	30	<.1	E.5	<10	340	<1

DATE	MANGANESE, WATER, UNFLTRD RECOVERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOVERABLE, UG/L (71900)	SELENIUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOVERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOVERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHENOLIC COMPOUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
NOV								
28...	--	--	--	--	--	--	<16	--
MAR								
13...	--	--	--	--	--	--	--	--
SEP								
04...	45.4	<.01	E1	<.3	<20	<.01	<16	<.05

< -- Less than
E -- Estimated value

RIO DE BAYAMON BASIN

50047850 RIO DE BAYAMON NR BAYAMON, PR

LOCATION.--Lat 18°20'08", long 66°08'13", Hydrologic Unit 21010005, on left bank, at rock quarry near Highway 174, 1.3 mi (2.1 km) south of colonia Santa Rosa and 4.7 mi (7.6 km) south of Bayamón.

DRAINAGE AREA.--41.8 mi^2 (108.3 km^2).

PERIOD OF RECORD.--September 1964 to October 1970, June 1988 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 98 ft (30 m), from topographic map.

REMARKS.--Records fair. Diversion to the Guaynabo water treatment plant, for municipal supply, made upstream from station (at Represa de San Juan). Flow is regulated by storage and release of water at Lago de Cidra (capacity 5,220 acre-ft), 10.5 mi (16.9 km) upstream. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.5	10	18	29	22	11	8.5	64	15	12	8.9	98
2	7.4	10	134	29	19	11	11	114	14	12	16	29
3	9.1	10	127	28	56	11	9.0	91	14	11	9.4	14
4	9.7	10	51	27	76	11	9.1	70	15	11	8.6	12
5	7.5	9.9	40	30	27	11	32	52	15	11	9.0	18
6	15	9.5	33	66	22	10	71	53	20	12	9.5	14
7	9.3	482	41	46	16	10	36	56	16	12	8.5	11
8	11	3880	38	32	15	12	107	45	14	11	8.8	10
9	12	390	24	23	15	11	262	32	15	11	8.0	9.7
10	100	117	20	22	15	11	53	29	15	11	8.0	10
11	18	55	39	21	15	11	36	27	13	11	8.4	12
12	9.8	38	43	21	14	11	29	25	14	12	8.7	11
13	16	45	44	20	14	9.9	26	23	15	11	9.2	10
14	37	31	60	20	15	9.7	25	22	15	13	14	15
15	83	24	66	20	14	9.7	44	22	14	15	9.1	53
16	30	21	143	20	14	9.8	202	22	13	12	9.5	94
17	15	19	201	20	13	9.8	104	20	14	11	8.1	24
18	14	239	104	22	13	10	40	19	22	11	8.0	42
19	11	68	55	21	18	10	27	18	18	10	7.6	75
20	9.6	24	38	20	18	10	388	18	18	10	7.0	47
21	13	21	32	20	13	10	259	18	16	9.9	7.4	23
22	11	20	54	21	12	11	79	18	28	10	7.2	15
23	15	21	558	23	12	11	48	18	16	10	7.4	18
24	16	26	170	37	12	11	137	17	14	13	8.6	65
25	11	26	70	24	11	11	93	17	13	16	8.7	40
26	18	20	49	20	13	11	199	17	13	11	8.6	27
27	17	19	42	23	12	12	79	18	15	17	8.7	18
28	13	19	36	36	11	18	60	19	15	12	8.7	16
29	13	36	34	34	---	11	57	17	13	11	9.6	13
30	12	21	32	29	---	12	208	17	13	12	97	12
31	11	---	31	30	---	8.7	---	17	---	10	106	---
TOTAL	581.9	5721.4	2427	834	527	336.6	2738.6	1015	465	361.9	462.2	855.7
MEAN	18.8	191	78.3	26.9	18.8	10.9	91.3	32.7	15.5	11.7	14.9	28.5
MAX	100	3880	558	66	76	18	388	114	28	17	106	98
MIN	7.4	9.5	18	20	11	8.7	8.5	17	13	9.9	7.0	9.7
AC-FT	1150	11350	4810	1650	1050	668	5430	2010	922	718	917	1700
CFSM	0.45	4.56	1.87	0.64	0.45	0.26	2.18	0.78	0.37	0.28	0.36	0.68
IN.	0.52	5.09	2.16	0.74	0.47	0.30	2.44	0.90	0.41	0.32	0.41	0.76

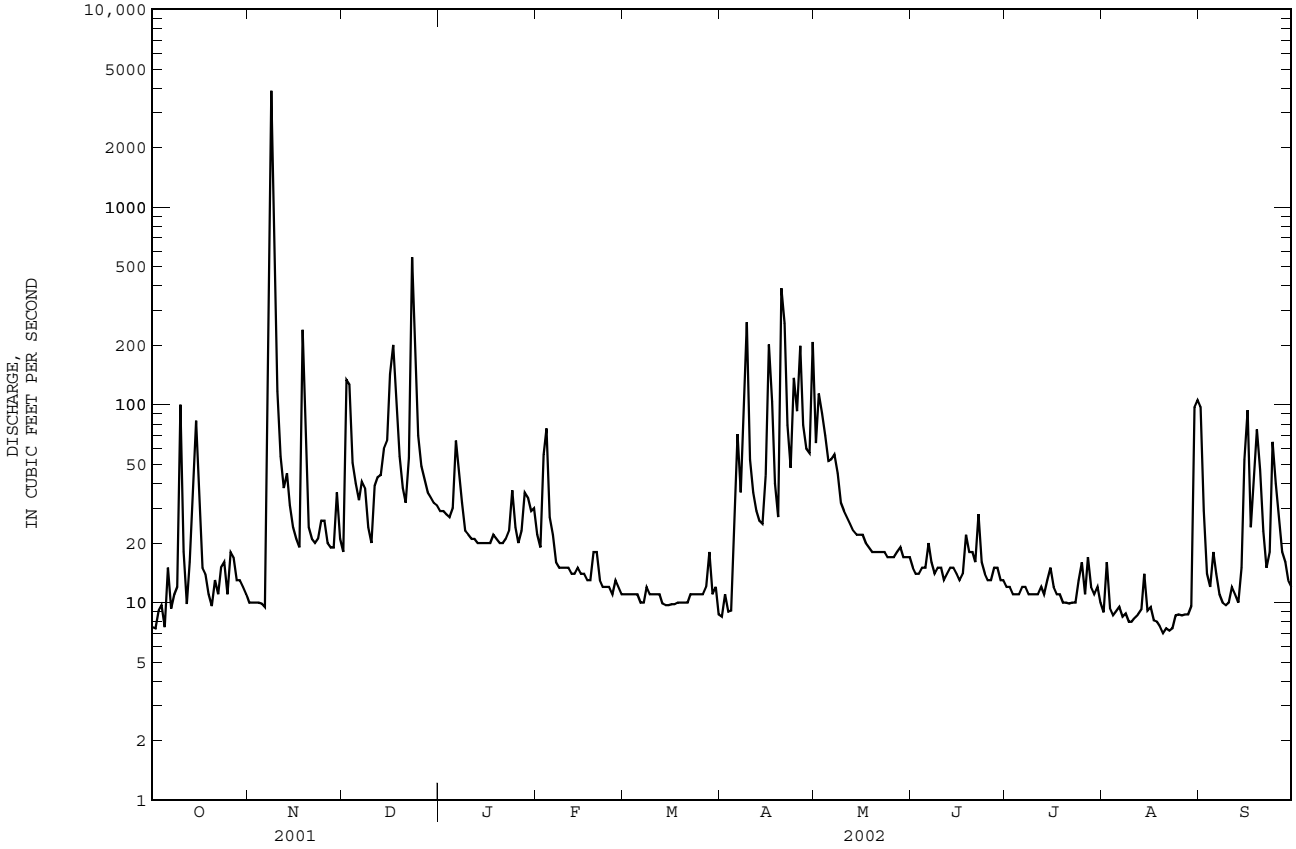
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2002, BY WATER YEAR (WY)

MEAN	39.4	62.3	55.9	37.1	23.3	17.2	22.8	34.4	19.6	22.5	42.5	61.5
MAX	129	232	263	159	75.3	52.9	91.3	131	60.8	79.2	137	360
(WY)	1991	2000	1966	1969	1989	1990	2002	1966	1970	1999	1970	1996
MIN	4.30	7.91	3.45	5.30	4.75	3.58	5.36	4.85	3.68	4.01	7.47	6.02
(WY)	1969	1965	1998	1968	1965	1965	1965	1994	1994	1994	1994	1967

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1964 - 2002	
ANNUAL TOTAL	12724.1		16326.3			
ANNUAL MEAN	34.9		44.7		36.6	
HIGHEST ANNUAL MEAN					69.5	1999
LOWEST ANNUAL MEAN					10.9	1994
HIGHEST DAILY MEAN	3880	Nov 8	3880	Nov 8	8640	Sep 10 1996
LOWEST DAILY MEAN	5.0	Jun 13	7.0	Aug 20	2.2	Apr 19 1965
ANNUAL SEVEN-DAY MINIMUM	5.4	Jun 9	7.5	Aug 17	2.4	Apr 14 1965
MAXIMUM PEAK FLOW			11900	Nov 8	65000	Sep 10 1996
MAXIMUM PEAK STAGE			16.68	Nov 8	29.07	Sep 10 1996
ANNUAL RUNOFF (AC-FT)	25240		32380		26510	
ANNUAL RUNOFF (CFSM)	0.83		1.07		0.88	
ANNUAL RUNOFF (INCHES)	11.32		14.53		11.90	
10 PERCENT EXCEEDS	44		70		62	
50 PERCENT EXCEEDS	10		16		13	
90 PERCENT EXCEEDS	7.2		9.6		5.4	

RIO DE BAYAMON BASIN

50047850 RIO DE BAYAMON NR BAYAMON, PR--Continued



RIO DE BAYAMON BASIN

50047990 RIO GUAYNABO NEAR BAYAMON, PR

WATER-QUALITY RECORDS

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

DRAINAGE AREA.--73.2 mi^2 (189.6 km^2).

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	SPECIF. CONDUC- TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER- ATURE, WATER, DEG C (00010)	TURBID- ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS- SOLVED OXYGEN, MG/L (00300)	DIS- SOLVED OXYGEN, PERCENT OF SAT- URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI- FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP- TOCOCCI KF MF, COL/ 100 ML (31673)	HARD- NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)	MAGNES- IUM, WATER, FLTRD, MG/L (00925)
DEC													
03...	1340	414	7.4	25.8	48	5.8	71	20	E14000	4400	160	43.5	11.7
FEB													
19...	1240	410	7.5	25.0	47	5.1	61	10	E60000	2800	--	--	--
APR													
23...	1330	412	7.7	28.5	26	5.1	66	10	24000	4200	140	40.1	10.8

DATE	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP- TION RATIO (00931)	POTAS- SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR- IDE, WATER, FLTRD, MG/L (00940)	FLUOR- IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI- TUENTS MG/L (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED, MG/L (00530)	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)
DEC													
03...	20.9	.7	2.98	149	<1.0	19.0	23.9	.2	22.7	234	62	.04	.980
FEB													
19...	--	--	--	156	--	--	--	--	--	--	44	.07	.630
APR													
23...	20.7	.7	2.95	153	<.1	17.9	26.2	.1	22.8	233	18	.04	.870

DATE	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS- PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV- ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV- ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM- IUM, WATER, UNFLTRD RECOV- ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV- ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV- ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV- ERABLE, UG/L (01051)	MANGAN- ESE, WATER, UNFLTRD RECOV- ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV- ERABLE, UG/L (71900)
DEC													
03...	.27	E.70	E.13	<2	109	40	<.1	<.8	<10	1230	2	125	<.01
FEB													
19...	.62	1.5	.21	--	--	--	--	--	--	--	--	--	--
APR													
23...	.73	1.0	.12	<2	105	40	<.1	E.7	<10	630	<1	101	E.01

DATE	SELEN- IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV- ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV- ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN- OLIC COM- POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
DEC						
03...	E1	<.3	<20	<.01	<16	E.04
FEB						
19...	--	--	--	--	--	--
APR						
23...	<2	<.3	<20	<.01	<18	.09

< -- Less than
E -- Estimated value

RIO DE BAYAMON BASIN

50048510 RIO DE BAYAMON AT FLOOD CHANNEL AT BAYAMON, PR

WATER-QUALITY RECORDS

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

DRAINAGE AREA.--71.9 mi^2 (186.2 km^2).

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 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
DEC													
03...	1150	189	287	7.3	24.0	140	7.6	90	20	E16400	E18200	110	27.7
FEB													
19...	1150	50	441	7.7	26.0	9.0	9.2	112	<10	60000	63	--	--
MAY													
14...	1050	82	435	7.8	26.3	15	8.0	97	<10	>60000	E50	170	45.8

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
DEC													
03...	9.00	13.6	.6	2.42	102	<1.0	12.3	16.9	E.1	19.3	162	82.7	26
FEB													
19...	--	--	--	--	171	--	--	--	--	--	--	--	12
MAY													
14...	14.2	23.3	.8	2.29	171	<.1	16.1	27.5	.1	26.7	258	57.5	15

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
DEC													
03...	.02	.930	.07	E1.0	E.25	E1	105	30	<.1	15.7	20	8120	4
FEB													
19...	.04	.440	.10	.50	.08	--	--	--	--	--	--	--	--
MAY													
14...	.01	.580	.05	.50	.05	<2	85.6	30	<.1	E.5	<10	580	<1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
DEC								
03...	342	.04	<2	<.3	40	<.01	<16	1.80
FEB								
19...	--	--	--	--	--	--	--	--
MAY								
14...	185	E.01	<2	<.3	<20	<.01	<17	<.05

RIO DE BAYAMON BASIN

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

PESTICIDE ANALYSES

DATE	TIME	DI-CHLOR-PROP, WATER, UNFLTRD UG/L (82183)	2,4,5-T WATER UNFLTRD UG/L (39740)	2,4-D WATER UNFLTRD UG/L (39730)	ALDRIN, WATER, UNFLTRD UG/L (39330)	CARBO-PHENO-THION, WATER, UNFLTRD UG/L (39786)	CHLOR-DANE, TECH-NICAL, WATER, UNFLTRD UG/L (39350)	CHLOR-PYRIFOS WATER UNFLTRD UG/L (38932)	TRIBU-PHOS, WATER, UNFLTRD UG/L (39040)	DIAZI-NON, WATER, UNFLTRD UG/L (39570)	DIEL-DRIN, WATER, UNFLTRD UG/L (39380)	DISUL-FOTON, WATER, UNFLTRD UG/L (39011)	ALPHA-ENDO-SULFAN, WATER, UNFLTRD UG/L (39388)
MAY													
14...	1050	<.02	<.01	<.02	<.01	<.02	<.1	<.01	<.02	E.02	<.006	<.10	<.02

DATE	ENDRIN, WATER, UNFLTRD UG/L (39390)	ETHION, WATER, UNFLTRD UG/L (39398)	FONOFOS WATER UNFLTRD UG/L (82614)	HEPTA-CHLOR EPOXIDE WATER UNFLTRD UG/L (39420)	HEPTA-CHLOR, WATER, UNFLTRD UG/L (39410)	LINDANE WATER, UNFLTRD UG/L (39340)	MALA-THION, WATER, UNFLTRD UG/L (39530)	P,P'-METH-OXY-CHLOR, WATER, UNFLTRD UG/L (39480)	METHYL PARA-THION, WATER, UNFLTRD UG/L (39600)	MIREX, WATER, UNFLTRD UG/L (39755)	P,P'-DDD, WATER, UNFLTRD UG/L (39360)	P,P'-DDE, WATER, UNFLTRD UG/L (39365)	P,P'-DDT, WATER, UNFLTRD UG/L (39370)
MAY													
14...	<.01	<.01	<.01	<.009	<.01	<.006	E.01	<.020	<.02	<.006	<.007	<.006	<.009

DATE	PARA-THION, WATER, UNFLTRD UG/L (39540)	PCBS, WATER, UNFLTRD UG/L (39516)	PHORATE WATER UNFLTRD UG/L (39023)	SILVEX, WATER, UNFLTRD UG/L (39760)	TOXA-PHENE, WATER, UNFLTRD UG/L (39400)
MAY					
14...	<.01	<.1	<.02	<.02	<1

< -- Less than
E -- Estimated value

RIO PUERTO NUEVO BASIN

50048680 LAGO LAS CURIAS AT DAMSITE NEAR RIO PIEDRAS, PR

LOCATION.--Lat 18°20'40", long 66°03'03", Hydrologic Unit 21010005, at Lago Las Curias Dam on Río Piedras, 4.15 mi (6.67 km) south of University of Puerto Rico Tower, 1.6 mi (2.57 km) northwest from Escuela José F. Díaz and 0.8 mi (1.28 km) north of Escuela Cupey Alto.

DRAINAGE AREA.--0.97 mi^2 (2.51 km^2).

ELEVATION RECORDS

PERIOD OF RECORD.--April 1997 to current year.

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

REMARKS.--Lago Las Curias was completed in 1946. The reservoir has a capacity of 1,135 acre-ft (1.40 hm^3) at spillway crest elevation 315.78 ft (96.25 m) for water supply. The dam is earthfill and has a crest elevation of 327.3 ft (99.75 m). Masonry parapet walls continous from abutment on each side of the 25 ft (7.62 m) wide crest. The dam is about 82.0 ft (25.0 m) high and 984.2 ft (300.0 m) long. The morning-glory inlet conduit spillway in located along the left abutment of the dam and has an uncontrolled capacity of about 5,000 ft^3/s (141.6 m^3/s) at reservoir elevation 321.5 ft (98.0 m). This dam is operated by Puerto Rico Aqueduct and Sewer Authority. Gage-height and precipitation satellite telemetry at station.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation, 317.01 ft (96.62 m), August 11, 1998; minimum elevation, 313.04 ft (95.41 m), October 5, 1998.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 317.00 ft (56.62 m), November 8; minimum elevation, 315.36 ft (96.12 m), February 22.

Capacity Table
(based on data from Puerto Rico Electric Power Authority)

Elevation, in feet	Contents, in acre-feet	Elevation, in feet	Contents, in acre-feet
284.7	154	313.0	677
298.2	462	314.3	1,078
307.1	770	317.5	1,232

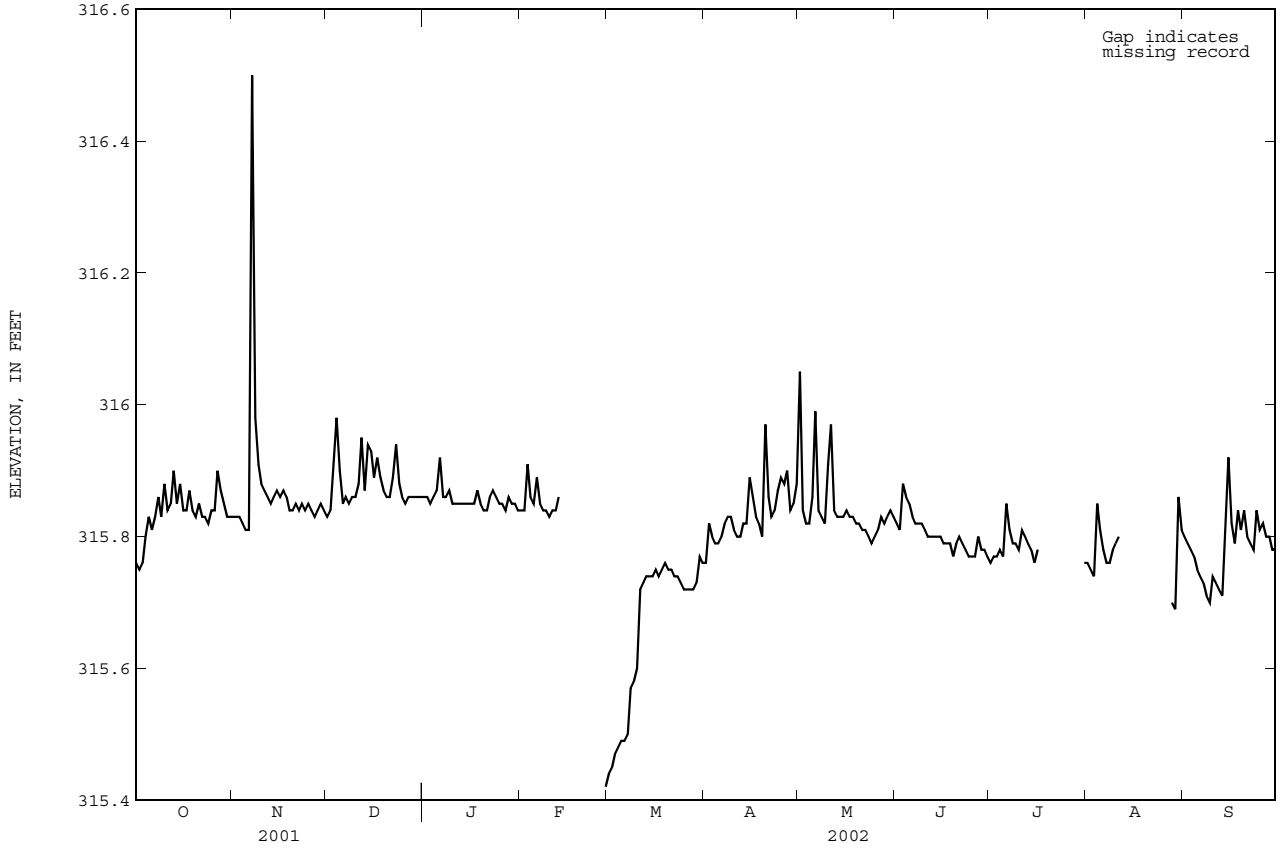
Elevation above NGVD 1929, feet
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	315.76	315.83	315.83	315.86	315.84	315.44	315.76	316.05	315.82	315.76	315.76	315.80
2	315.75	315.83	315.84	315.86	315.84	315.45	315.82	315.84	315.81	315.77	315.75	315.79
3	315.76	315.83	315.90	315.85	315.91	315.47	315.80	315.82	315.88	315.77	315.74	315.78
4	315.80	315.82	315.98	315.86	315.86	315.48	315.79	315.82	315.86	315.78	315.85	315.77
5	315.83	315.81	315.90	315.87	315.85	315.49	315.79	315.86	315.85	315.77	315.81	315.75
6	315.81	315.81	315.85	315.92	315.89	315.49	315.80	315.99	315.83	315.85	315.78	315.74
7	315.83	316.50	315.86	315.86	315.85	315.50	315.82	315.84	315.82	315.81	315.76	315.73
8	315.86	315.98	315.85	315.86	315.84	315.57	315.83	315.83	315.82	315.79	315.76	315.71
9	315.83	315.91	315.86	315.87	315.84	315.58	315.83	315.82	315.82	315.79	315.78	315.70
10	315.88	315.88	315.86	315.85	315.83	315.60	315.81	315.91	315.81	315.78	315.79	315.74
11	315.84	315.87	315.88	315.85	315.84	315.72	315.80	315.97	315.80	315.81	315.80	315.73
12	315.85	315.86	315.95	315.85	315.84	315.73	315.80	315.84	315.80	315.80	A	315.72
13	315.90	315.85	315.87	315.85	315.86	315.74	315.82	315.83	315.80	315.79	A	315.71
14	315.85	315.86	315.94	315.85	A	315.74	315.82	315.83	315.80	315.78	A	315.82
15	315.88	315.87	315.93	315.85	A	315.74	315.89	315.83	315.80	315.76	A	315.92
16	315.84	315.86	315.89	315.85	A	315.75	315.86	315.84	315.79	315.78	A	315.82
17	315.84	315.87	315.92	315.85	A	315.74	315.83	315.83	315.79	A	A	315.79
18	315.87	315.86	315.89	315.87	A	315.75	315.82	315.83	315.79	A	A	315.84
19	315.84	315.84	315.87	315.85	A	315.76	315.80	315.82	315.77	A	A	315.81
20	315.83	315.84	315.86	315.84	A	315.75	315.97	315.82	315.79	A	A	315.84
21	315.85	315.85	315.86	315.84	A	315.75	315.86	315.81	315.80	A	A	315.80
22	315.83	315.84	315.89	315.86	A	315.74	315.83	315.81	315.79	A	A	315.79
23	315.83	315.85	315.94	315.87	A	315.74	315.84	315.80	315.78	A	A	315.78
24	315.82	315.84	315.88	315.86	A	315.73	315.87	315.79	315.77	A	A	315.84
25	315.84	315.85	315.86	315.85	A	315.72	315.89	315.80	315.77	A	A	315.81
26	315.84	315.84	315.85	315.85	A	315.72	315.88	315.81	315.77	A	A	315.82
27	315.90	315.83	315.86	315.84	A	315.72	315.90	315.83	315.80	A	A	315.80
28	315.87	315.84	315.86	315.86	315.42	315.72	315.84	315.82	315.78	A	315.70	315.80
29	315.85	315.85	315.86	315.85	---	315.73	315.85	315.83	315.78	A	315.69	315.78
30	315.83	315.84	315.86	315.85	---	315.77	315.88	315.84	315.77	A	315.86	315.78
31	315.83	---	315.86	315.84	---	315.76	---	315.83	---	315.76	315.81	---
MAX	315.90	316.50	315.98	315.92	---	315.77	315.97	316.05	315.88	---	---	315.92
MIN	315.75	315.81	315.83	315.84	---	315.44	315.76	315.79	315.77	---	---	315.70

A No gage-height record

RIO PUERTO NUEVO BASIN

50048680 LAGO LAS CURIAS AT DAMSITE NEAR RIO PIEDRAS, PR--Continued



RIO PUERTO NUEVO BASIN

50048690 QUEBRADA LAS CURIAS BELOW LAS CURIAS DAM, PR

LOCATION.--Lat 18°20'44", long 66°03'15", Hydrologic Unit 21010005, at 0.2 miles (0.3 km) from Lago Las Curias Dam on Río Piedras, 4.1 mi (6.6 km) south of University of Puerto Rico Tower, 2.6 mi (4.1 km) northwest from Lago Loíza spillway crest and 0.85 mi (1.4 km) north of Escuela Cupey Alto.

DRAINAGE AREA.--1.08 mi^2 (2.79 km^2).

PERIOD OF RECORD.--August 1997 to current year.

GAGE.--Water stage recorder. Elevation of gage is 262.47 ft (80.0 km), from topographic map.

REMARKS.--Records poor. Flow completly regulated by Lago Las Curias Dam, 0.20 mi (0.32 km) from gage. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.32	0.21	0.73	1.0	1.5	0.33	0.35	26	0.52	0.31	0.31	0.89
2	0.31	0.17	0.88	1.1	0.96	0.34	0.57	9.8	0.33	0.30	0.29	0.38
3	0.26	0.20	9.3	1.3	3.8	0.37	1.5	2.3	2.5	0.26	0.28	0.24
4	0.27	0.37	18	1.1	3.4	0.37	0.87	1.7	1.3	0.32	4.2	0.20
5	0.99	0.28	17	1.8	1.3	0.37	0.44	3.7	1.2	0.35	1.4	0.21
6	0.90	0.20	2.9	9.2	4.2	0.36	0.31	6.0	0.91	3.0	0.73	0.19
7	0.38	46	0.99	4.5	2.5	0.36	0.50	7.8	0.50	1.6	0.49	0.31
8	3.1	139	0.66	1.5	1.0	0.36	2.0	1.8	0.36	0.62	0.28	0.18
9	2.6	32	0.50	1.9	1.1	0.32	4.2	1.1	0.33	0.36	0.26	0.21
10	5.3	5.0	0.61	1.7	1.1	0.33	0.70	29	0.37	0.40	0.39	0.21
11	1.7	1.8	1.3	1.1	0.74	0.38	0.39	15	0.33	0.35	0.32	0.26
12	0.56	1.1	10	1.1	0.58	0.27	0.29	6.8	0.30	0.55	0.54	0.25
13	6.5	0.92	4.2	1.1	1.0	0.32	0.55	1.8	0.23	0.79	0.34	0.24
14	12	0.64	3.6	1.4	12	0.27	1.1	1.2	0.39	0.44	0.40	0.71
15	5.4	2.0	17	1.2	12	0.28	3.9	0.80	0.19	0.36	0.26	6.2
16	1.9	0.85	6.3	1.5	0.25	0.28	18	0.62	0.25	0.39	0.26	11
17	0.67	0.54	10	1.1	0.26	0.29	2.1	1.1	0.32	0.37	0.28	0.65
18	2.7	1.0	6.4	2.1	0.27	0.29	0.67	0.80	0.26	0.38	1.6	1.8
19	1.2	1.1	2.7	2.2	0.35	0.28	0.80	0.69	0.42	0.34	1.2	1.2
20	0.56	0.49	1.5	1.3	0.32	0.26	23	0.68	0.32	0.34	0.40	1.6
21	0.53	0.34	1.2	1.2	0.33	0.32	12	0.72	0.28	0.32	0.43	1.2
22	0.67	0.79	6.0	1.6	0.34	0.31	2.4	0.62	0.44	0.45	0.25	0.28
23	0.33	0.99	21	1.8	0.35	0.38	0.89	0.88	0.28	0.59	0.24	0.27
24	0.33	1.1	9.1	3.8	0.35	0.45	3.6	0.45	0.30	0.47	0.26	2.3
25	0.42	1.1	2.5	2.1	0.35	0.28	9.7	0.41	0.23	0.58	0.26	1.3
26	0.49	1.4	1.7	1.8	0.35	0.31	6.1	0.26	0.23	0.41	0.25	1.2
27	10	1.3	0.92	1.5	0.34	0.31	16	0.36	0.41	0.70	0.28	0.67
28	4.1	0.62	1.2	1.8	0.33	0.33	4.6	0.60	0.54	0.75	0.28	0.39
29	1.7	3.1	1.1	1.6	---	0.35	2.2	0.72	0.42	0.64	0.28	0.35
30	0.61	0.80	1.1	1.5	---	0.38	3.5	0.56	0.39	0.32	3.2	0.31
31	0.31	---	1.3	1.6	---	0.36	---	0.70	---	0.29	2.6	---
TOTAL	67.11	245.41	161.69	59.5	51.37	10.21	123.23	124.97	14.85	17.35	22.56	35.20
MEAN	2.16	8.18	5.22	1.92	1.83	0.33	4.11	4.03	0.49	0.56	0.73	1.17
MAX	12	139	21	9.2	12	0.45	23	29	2.5	3.0	4.2	11
MIN	0.26	0.17	0.50	1.0	0.25	0.26	0.29	0.26	0.19	0.26	0.24	0.18
AC-FT	133	487	321	118	102	20	244	248	29	34	45	70
CFSM	2.00	7.57	4.83	1.78	1.70	0.30	3.80	3.73	0.46	0.52	0.67	1.09
IN.	2.31	8.45	5.57	2.05	1.77	0.35	4.24	4.30	0.51	0.60	0.78	1.21

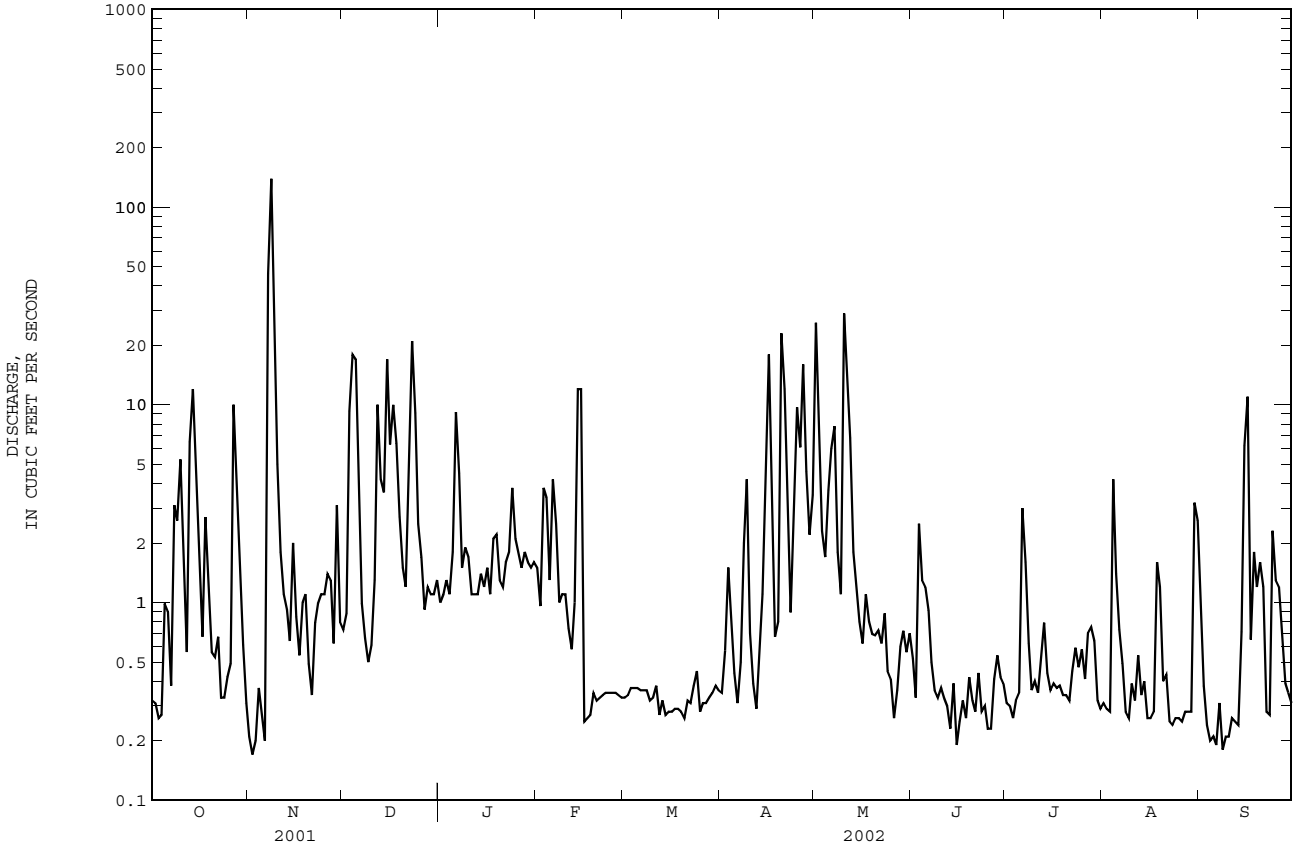
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2002, BY WATER YEAR (WY)

MEAN	4.33	6.33	4.84	2.36	1.70	0.94	1.71	1.67	1.43	1.46	2.98	3.44
MAX	5.90	11.4	10.2	4.63	2.51	2.52	4.11	4.03	3.64	3.51	7.06	12.2
(WY)	1999	2000	1999	1999	1999	1999	2002	2002	1999	1999	1998	1998
MIN	2.16	0.92	0.51	0.83	1.16	0.33	0.63	0.29	0.50	0.33	0.73	0.70
(WY)	2002	1998	1998	1998	2000	1998	2000	1998	2002	2000	2002	2001

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1997 - 2002		
ANNUAL TOTAL	878.00		933.45				
ANNUAL MEAN	2.41		2.56		2.81		
HIGHEST ANNUAL MEAN					3.95		1999
LOWEST ANNUAL MEAN					2.00		2001
HIGHEST DAILY MEAN	139	Nov 8	139	Nov 8	139	Nov 8	2001
LOWEST DAILY MEAN	0.17	Nov 2	0.17	Nov 2	0.17	Oct 7	1998
ANNUAL SEVEN-DAY MINIMUM	0.25	Oct 31	0.22	Sep 4	0.19	Jun 26	1998
MAXIMUM PEAK FLOW			336	Nov 7	431	Aug 11	1998
MAXIMUM PEAK STAGE			11.14	Nov 7	11.70	Aug 11	1998
ANNUAL RUNOFF (AC-FT)	1740		1850		2030		
ANNUAL RUNOFF (CFSM)	2.23		2.37		2.60		
ANNUAL RUNOFF (INCHES)	30.24		32.15		35.32		
10 PERCENT EXCEEDS	4.9		5.3		6.4		
50 PERCENT EXCEEDS	0.66		0.66		0.75		
90 PERCENT EXCEEDS	0.28		0.27		0.28		

RIO PUERTO NUEVO BASIN

50048690 QUEBRADA LAS CURIAS BELOW LAS CURIAS DAM, PR--Continued



RIO PUERTO NUEVO BASIN

50048770 RIO PIEDRAS AT EL SEÑORIAL, PR

LOCATION.--Lat 18°21'51", long 66°03'56", Hydrologic Unit 21010005, on right bank, in the Riveras of Señorial Housing area, 0.6 mi (1.0 km) west of Highway 176 and 2.7 mi (4.3 km) southwest of Río Piedras Plaza.

DRAINAGE AREA.--7.49 mi^2 (19.4 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORDS.--March 1988 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 98.4 ft (30.0 m), from topographic map.

REMARKS.--Records poor. Low flow is affected by discharges from water treatment plant of PRASA and others dispersed pollution points directly to the river. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.5	9.8	11	15	13	8.8	6.6	112	8.0	6.2	10	15
2	8.0	7.7	29	16	11	7.4	24	65	7.1	8.0	5.7	9.6
3	11	14	80	15	42	8.5	10	17	10	5.7	5.5	7.1
4	16	7.9	138	14	19	7.0	7.4	12	10	12	61	6.6
5	27	7.8	96	23	11	7.2	6.2	26	14	5.5	7.2	7.1
6	8.2	8.2	32	82	29	6.8	9.7	49	7.7	47	6.2	7.0
7	8.9	454	23	31	17	7.5	8.4	41	7.1	8.1	5.5	7.4
8	55	1060	19	17	14	24	19	13	7.5	6.1	5.2	6.2
9	18	241	18	20	11	11	33	11	7.3	5.8	8.8	6.5
10	62	60	19	14	9.7	9.9	7.0	212	6.9	5.6	9.1	39
11	18	30	49	13	11	22	6.2	108	7.0	6.2	9.6	6.0
12	8.8	22	78	13	8.9	8.4	6.0	39	7.8	6.7	4.8	6.0
13	37	21	e47	12	13	6.8	20	15	8.6	6.2	6.2	6.0
14	89	16	e61	13	13	6.3	7.7	12	6.5	6.0	7.0	27
15	69	24	e35	13	13	6.4	45	11	7.3	6.8	4.9	108
16	24	15	e78	14	10	6.5	151	11	6.3	8.4	7.0	103
17	13	13	e43	12	9.3	6.9	15	10	7.1	9.6	4.8	9.6
18	52	13	e53	30	9.5	7.4	9.0	9.5	6.6	6.1	31	93
19	12	13	31	15	20	6.7	7.1	9.9	6.9	5.6	6.3	27
20	10	13	23	12	11	6.2	192	9.4	12	7.0	4.9	15
21	18	11	22	12	9.8	6.2	74	9.3	14	6.1	7.8	9.9
22	13	12	65	16	11	6.2	16	8.8	6.4	21	5.3	7.1
23	11	26	189	15	11	6.1	11	9.7	6.6	6.4	6.1	7.8
24	8.7	21	70	30	11	5.8	53	8.4	7.0	6.5	9.4	52
25	37	18	29	16	11	5.6	72	8.1	5.9	7.2	4.9	12
26	11	15	21	14	11	6.2	43	8.7	6.0	5.0	5.2	21
27	84	16	19	12	8.1	6.4	109	9.9	16	24	5.2	8.7
28	68	11	16	17	8.8	7.1	26	8.3	7.1	9.0	5.0	8.6
29	21	e36	15	12	---	10	21	8.3	6.4	6.6	5.0	6.8
30	12	e12	15	18	---	21	18	12	6.7	5.1	98	6.5
31	9.0	---	15	13	---	5.4	---	7.7	---	5.6	35	---
TOTAL	846.1	2228.4	1439	569	377.1	267.7	1033.3	892.0	243.8	281.1	397.6	652.5
MEAN	27.3	74.3	46.4	18.4	13.5	8.64	34.4	28.8	8.13	9.07	12.8	21.8
MAX	89	1060	189	82	42	24	192	212	16	47	98	108
MIN	6.5	7.7	11	12	8.1	5.4	6.0	7.7	5.9	5.0	4.8	6.0
AC-FT	1680	4420	2850	1130	748	531	2050	1770	484	558	789	1290
CFSM	3.64	9.92	6.20	2.45	1.80	1.15	4.60	3.84	1.09	1.21	1.71	2.90
IN.	4.20	11.07	7.15	2.83	1.87	1.33	5.13	4.43	1.21	1.40	1.97	3.24

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 2002, BY WATER YEAR (WY)

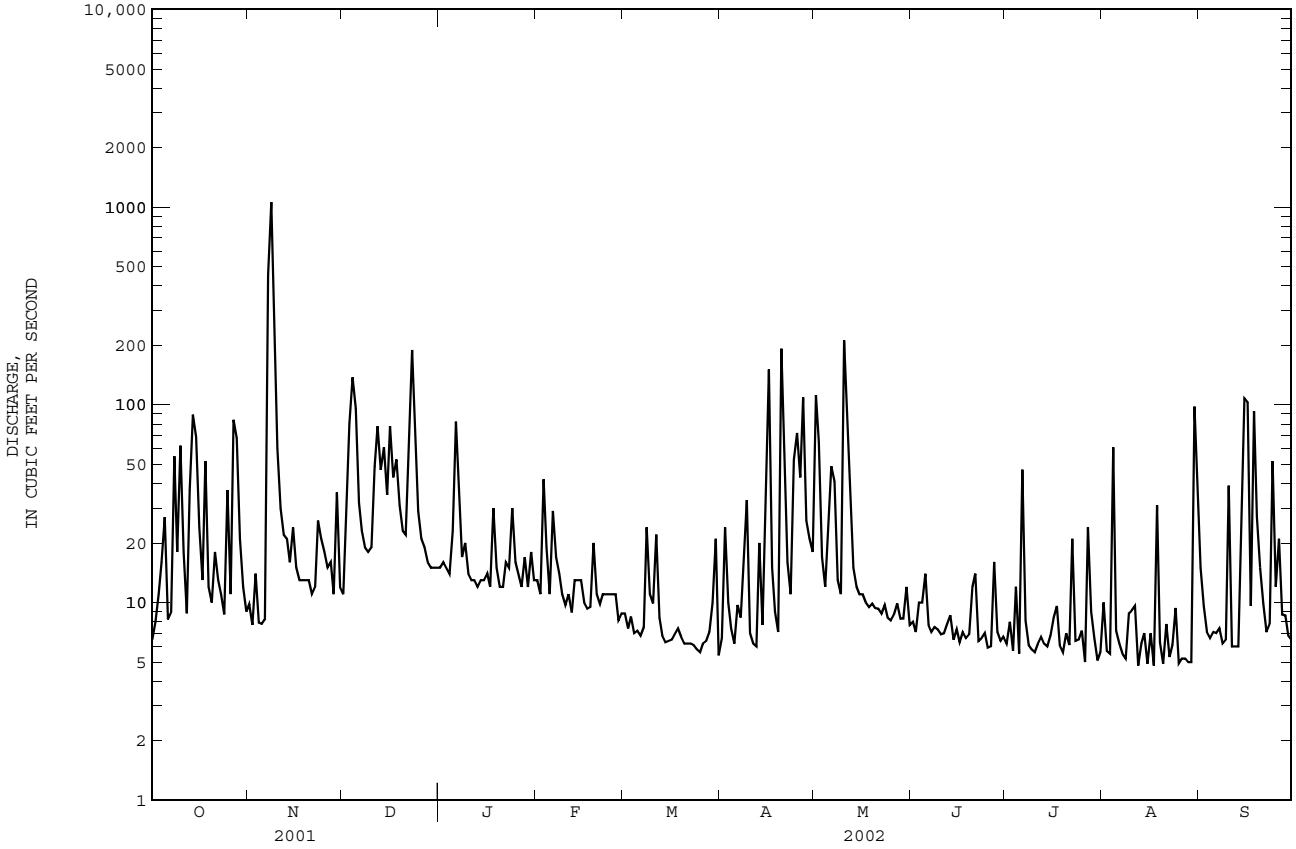
MEAN	27.9	30.6	22.3	16.5	13.2	11.2	13.4	15.6	12.9	15.1	22.3	29.7
MAX	57.3	79.5	66.3	29.1	23.6	20.1	34.4	47.2	25.5	38.0	66.9	80.8
(WY)	1991	2000	1999	2000	1991	1999	2002	1992	1999	1993	1992	1998
MIN	8.48	5.93	4.32	6.95	2.70	1.85	2.83	3.38	2.66	4.22	6.60	6.90
(WY)	1992	1996	1996	1995	1996	1996	1995	1994	1994	1994	1990	1991

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1988 - 2002	
ANNUAL TOTAL	9647.6		9227.6			
ANNUAL MEAN	26.4		25.3		19.1	
HIGHEST ANNUAL MEAN					28.6	1999
LOWEST ANNUAL MEAN					7.76	1994
HIGHEST DAILY MEAN	1060	Nov 8	1060	Nov 8	1650	Sep 10 1996
LOWEST DAILY MEAN	5.0	Jun 11	4.8	Aug 12	0.84	Aug 13 1995
ANNUAL SEVEN-DAY MINIMUM	5.1	Jun 8	5.8	Aug 23	0.97	Jun 30 1996
MAXIMUM PEAK FLOW			3630	Nov 8	5390	Sep 10 1996
MAXIMUM PEAK STAGE			13.56	Nov 8	15.46	Sep 10 1996
ANNUAL RUNOFF (AC-FT)	19140		18300		13850	
ANNUAL RUNOFF (CFSM)	3.53		3.38		2.55	
ANNUAL RUNOFF (INCHES)	47.92		45.83		34.68	
10 PERCENT EXCEEDS	60		52		39	
50 PERCENT EXCEEDS	11		11		8.4	
90 PERCENT EXCEEDS	6.6		6.1		3.1	

e Estimated

RIO PUERTO NUEVO BASIN

50048770 RIO PIEDRAS AT EL SEÑORIAL, PR--Continued



RIO PUERTO NUEVO BASIN

50048770 RIO PIEDRAS AT EL SENORIAL, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1988 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: April 1988 to September 1998 and from October 2001 to September 2002.

INSTRUMENTATION.--USDH-48 sediment sampler and automatic sediment sampler since 1988.

REMARKS.--Sediment samples were collected by local observer on a weekly basis. During high flow events sediment samples were collected with automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 24,600 mg/L September 18, 1989; Minimum daily mean, 2 mg/L November 18, 1988 and March 26-28, 2002.

SEDIMENT LOADS: Maximum daily mean, e165,000 tons (e150,000 tonnes) September 22, 1998; Minimum daily mean, 0.02 ton (0.02 tonne) June 9, 1994.

EXTREMES FOR CURRENT YEAR 2002.--
SEDIMENT CONCENTRATION: Maximum daily mean, 6,510 mg/L November 8, 2001; Minimum daily mean, 2 mg/L March 26-28, 2002.

SEDIMENT LOADS: Maximum daily mean, 24,900 tons (22,589 tonnes) November 8, 2001; Minimum daily mean, 0.03 ton (0.03 tonne) March 26, 27, 2002.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	OCTOBER			NOVEMBER			DECEMBER		
1	6.5	33	0.57	9.8	58	1.5	11	61	1.8
2	8.0	51	1.3	7.7	52	1.1	29	191	44
3	11	66	2.8	14	97	8.1	80	654	583
4	16	107	5.8	7.9	70	1.5	138	1070	795
5	27	184	32	7.8	42	0.88	96	690	268
6	8.2	48	1.1	8.2	41	0.91	32	248	22
7	8.9	54	1.5	454	2230	7490	23	202	12
8	55	397	199	1060	6510	24900	19	177	9.0
9	18	133	10	241	1450	1810	18	152	7.4
10	62	464	456	60	161	26	19	127	6.4
11	18	119	6.5	30	144	12	49	337	77
12	8.8	51	1.2	22	127	7.7	78	593	307
13	37	251	60	21	110	6.2	e47	e343	e49
14	89	639	489	16	49	2.2	e61	e413	e151
15	69	477	192	24	17	9.4	e35	e248	e22
16	24	174	17	15	113	4.5	e78	e511	e120
17	13	82	2.9	13	82	2.9	e43	e302	e45
18	52	366	199	13	75	2.6	e53	e328	e60
19	12	80	2.7	13	73	2.5	31	38	3.2
20	10	63	1.7	13	70	2.4	23	78	4.9
21	18	118	16	11	68	2.1	22	125	7.4
22	13	75	2.8	12	66	2.1	65	544	191
23	11	75	2.5	26	161	39	189	1370	2200
24	8.7	63	1.5	21	175	14	70	484	96
25	37	266	117	18	128	7.7	29	232	19
26	11	74	2.3	15	96	4.1	21	133	7.6
27	84	599	396	16	113	5.3	19	123	6.2
28	68	477	194	11	90	2.7	16	112	4.9
29	21	144	9.4	e36	e361	e42	15	101	4.2
30	12	77	2.5	e12	e136	e4.4	15	91	3.6
31	9.0	64	1.5	---	---	---	15	83	3.4
TOTAL	846.1	---	2427.57	2228.4	---	34415.79	1439	---	5131.0

RIO PUERTO NUEVO BASIN

50048770 RIO PIEDRAS AT EL SENORIAL, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	15	80	3.3	13	81	3.0	8.8	35	0.84
2	16	77	3.3	11	67	2.0	7.4	30	0.60
3	15	74	2.9	42	291	119	8.5	25	0.58
4	14	72	2.7	19	126	7.6	7.0	20	0.38
5	23	133	10	11	75	2.3	7.2	15	0.29
6	82	243	63	29	189	39	6.8	11	0.20
7	31	124	11	17	121	6.0	7.5	10	0.20
8	17	95	4.4	14	111	4.1	24	165	40
9	20	133	13	11	97	2.8	11	69	3.7
10	14	86	3.3	9.7	75	2.0	9.9	68	3.8
11	13	77	2.6	11	78	3.1	22	153	37
12	13	76	2.6	8.9	66	1.6	8.4	47	1.1
13	12	73	2.4	13	83	4.1	6.8	43	0.79
14	13	80	3.0	13	82	2.9	6.3	40	0.68
15	13	76	2.8	13	82	3.1	6.4	37	0.63
16	14	83	3.1	10	53	1.5	6.5	33	0.59
17	12	73	2.3	9.3	54	1.4	6.9	30	0.56
18	30	211	42	9.5	56	1.4	7.4	27	0.53
19	15	104	4.3	20	128	10	6.7	24	0.43
20	12	90	3.0	11	79	2.3	6.2	21	0.34
21	12	78	2.6	9.8	74	2.0	6.2	17	0.29
22	16	103	4.8	11	69	2.1	6.2	14	0.24
23	15	90	4.8	11	65	1.9	6.1	11	0.18
24	30	189	19	11	60	1.8	5.8	8	0.12
25	16	105	4.9	11	55	1.7	5.6	4	0.07
26	14	87	3.3	11	50	1.5	6.2	2	0.03
27	12	79	2.7	8.1	45	1.0	6.4	2	0.03
28	17	113	5.8	8.8	40	0.95	7.1	2	0.04
29	12	84	2.8	---	---	---	10	34	4.2
30	18	114	6.9	---	---	---	21	163	34
31	13	79	2.8	---	---	---	5.4	32	0.47
TOTAL	569	---	245.4	377.1	---	232.15	267.7	---	132.91

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	6.6	43	0.96	112	859	1120	8.0	5	0.11
2	24	162	27	65	485	165	7.1	5	0.10
3	10	75	2.9	17	106	4.9	10	49	2.5
4	7.4	59	1.3	12	81	2.7	10	62	1.7
5	6.2	41	0.74	26	268	25	14	102	5.7
6	9.7	65	4.6	49	335	189	7.7	99	2.1
7	8.4	56	1.5	41	365	61	7.1	81	1.5
8	19	138	23	13	192	6.9	7.5	62	1.3
9	33	231	44	11	124	3.8	7.3	44	0.86
10	7.0	46	0.87	212	1580	3070	6.9	25	0.48
11	6.2	36	0.60	108	883	910	7.0	9	0.16
12	6.0	36	0.58	39	302	41	7.8	6	0.13
13	20	130	32	15	28	1.2	8.6	6	0.14
14	7.7	48	1.0	12	8	0.24	6.5	6	0.11
15	45	331	123	11	7	0.21	7.3	6	0.12
16	151	1130	1260	11	7	0.21	6.3	6	0.10
17	15	160	6.6	10	7	0.18	7.1	6	0.11
18	9.0	112	2.8	9.5	7	0.17	6.6	6	0.11
19	7.1	65	1.3	9.9	6	0.17	6.9	6	0.11
20	192	1380	1780	9.4	6	0.15	12	50	4.6
21	74	551	142	9.3	6	0.15	14	109	8.0
22	16	123	5.7	8.8	6	0.14	6.4	41	0.70
23	11	84	2.5	9.7	6	0.15	6.6	39	0.70
24	53	389	160	8.4	6	0.13	7.0	37	0.71
25	72	522	236	8.1	6	0.12	5.9	35	0.57
26	43	330	49	8.7	6	0.13	6.0	34	0.55
27	109	828	620	9.9	5	0.15	16	106	16
28	26	279	21	8.3	5	0.12	7.1	41	0.78
29	21	181	19	8.3	5	0.12	6.4	41	0.70
30	18	116	9.3	12	5	0.17	6.7	40	0.73
31	---	---	---	7.7	5	0.11	---	---	---
TOTAL	1033.3	---	4579.25	892.0	---	5603.32	243.8	---	51.48

RIO PUERTO NUEVO BASIN

50048770 RIO PIEDRAS AT EL SENORIAL, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	6.2	40	0.67	10	74	4.9	15	116	5.2
2	8.0	57	2.2	5.7	37	0.57	9.6	102	2.7
3	5.7	34	0.53	5.5	32	0.47	7.1	88	1.7
4	12	83	5.2	61	452	277	6.6	74	1.3
5	5.5	37	0.55	7.2	51	1.0	7.1	60	1.1
6	47	374	207	6.2	32	0.53	7.0	45	0.86
7	8.1	57	1.3	5.5	31	0.46	7.4	41	0.82
8	6.1	41	0.67	5.2	29	0.41	6.2	43	0.73
9	5.8	28	0.45	8.8	63	4.1	6.5	45	0.79
10	5.6	18	0.28	9.1	99	3.3	39	328	179
11	6.2	10	0.17	9.6	81	4.2	6.0	43	0.70
12	6.7	9	0.16	4.8	28	0.36	6.0	41	0.66
13	6.2	9	0.14	6.2	28	0.47	6.0	42	0.68
14	6.0	8	0.14	7.0	28	0.53	27	225	58
15	6.8	8	0.15	4.9	28	0.37	108	793	565
16	8.4	15	0.52	7.0	28	0.53	103	793	736
17	9.6	95	3.4	4.8	28	0.37	9.6	70	1.9
18	6.1	71	1.2	31	215	84	93	700	1090
19	5.6	62	0.95	6.3	40	0.69	27	196	19
20	7.0	54	1.0	4.9	30	0.40	15	100	4.8
21	6.1	45	0.75	7.8	68	2.0	9.9	82	2.2
22	21	157	23	5.3	51	0.73	7.1	49	0.94
23	6.4	78	1.4	6.1	40	0.65	7.8	43	0.91
24	6.5	63	1.1	9.4	77	6.8	52	389	238
25	7.2	48	0.95	4.9	25	0.33	12	100	3.5
26	5.0	34	0.46	5.2	26	0.36	21	149	29
27	24	203	34	5.2	27	0.38	8.7	57	1.4
28	9.0	63	1.6	5.0	28	0.37	8.6	65	1.5
29	6.6	43	0.77	5.0	29	0.39	6.8	58	1.1
30	5.1	41	0.56	98	749	1100	6.5	42	0.73
31	5.6	39	0.59	35	271	34	---	---	---
TOTAL	281.1	---	291.86	397.6	---	1530.67	652.5	---	2950.22
YEAR	9227.6		57591.62						

e Estimated

RIO PUERTO NUEVO BASIN

50048800 RIO PIEDRAS NEAR RIO PIEDRAS, PR

WATER-QUALITY RECORDS

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

DRAINAGE AREA.--8.17 mi^2 (20.9 km^2).

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
NOV													
29...	1135	42	266	7.5	24.0	84	7.8	93	20	E60000	48000	90	23.8
FEB													
15...	1215	24	312	7.6	25.0	16	8.6	103	10	5400	320	--	--
APR													
22...	1400	16	403	7.6	27.4	11	7.1	90	10	25000	3300	140	35.2

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
NOV													
29...	7.37	14.7	.7	2.16	80	<1.0	10.7	17.3	.2	17.7	142	16.0	78
FEB													
15...	--	--	--	--	115	--	--	--	--	--	--	--	<10
APR													
22...	11.9	22.8	.8	2.90	134	<.1	19.0	29.9	.1	25.8	228	9.97	<10

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
NOV													
29...	.02	.670	.10	E.80	E.20	E2	122	20	<.1	1.8	M	4450	3
FEB													
15...	.07	.580	.27	.70	.08	--	--	--	--	--	--	--	--
APR													
22...	.05	.980	.36	.70	<.02	E1	94.1	50	<.1	<.8	<10	340	<1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
NOV								
29...	315	.04	<2	<.3	30	<.01	<16	E.04
FEB								
15...	--	--	--	--	--	--	--	--
APR								
22...	55.3	E.01	<2	<.3	E30	<.01	<18	.19

RIO PUERTO NUEVO BASIN

50048800 RIO PIEDRAS NEAR RIO PIEDRAS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

PESTICIDE ANALYSES

DATE	TIME	DI-CHLOR-PROP, WATER, UNFLTRD UG/L (82183)	2,4,5-T WATER UNFLTRD UG/L (39740)	2,4-D WATER UNFLTRD UG/L (39730)	ALDRIN, WATER, UNFLTRD UG/L (39330)	CARBO-PHENO-THION, WATER, UNFLTRD UG/L (39786)	CHLOR-DANE, TECH-NICAL, WATER, UNFLTRD UG/L (39350)	CHLOR-PYRIFOS WATER UNFLTRD UG/L (38932)	TRIBU-PHOS, WATER, UNFLTRD UG/L (39040)	DIAZI-NON, WATER, UNFLTRD UG/L (39570)	DIEL-DRIN, WATER, UNFLTRD UG/L (39380)	DISUL-FOTON, WATER, UNFLTRD UG/L (39011)	ALPHA-ENDO-SULFAN, WATER, UNFLTRD UG/L (39388)
APR													
22...	1400	<.02	<.01	<.02	<.01	<.02	<.1	<.01	<.02	.02	<.006	<.10	<.02

DATE	ENDRIN, WATER, UNFLTRD UG/L (39390)	ETHION, WATER, UNFLTRD UG/L (39398)	FONOFOS WATER UNFLTRD UG/L (82614)	HEPTA-CHLOR EPOXIDE WATER UNFLTRD UG/L (39420)	HEPTA-CHLOR, WATER, UNFLTRD UG/L (39410)	LINDANE WATER, UNFLTRD UG/L (39340)	MALA-THION, WATER, UNFLTRD UG/L (39530)	P,P'-METH-OXY-CHLOR, WATER, UNFLTRD UG/L (39480)	METHYL PARA-THION, WATER, UNFLTRD UG/L (39600)	MIREX, WATER, UNFLTRD UG/L (39755)	P,P'-DDD, WATER, UNFLTRD UG/L (39360)	P,P'-DDE, WATER, UNFLTRD UG/L (39365)	P,P'-DDT, WATER, UNFLTRD UG/L (39370)
APR													
22...	<.01	<.01	<.01	<.009	<.01	<.006	<.10	<.020	<.02	<.006	<.007	<.006	<.009

DATE	PARA-THION, WATER, UNFLTRD UG/L (39540)	PCBS, WATER, UNFLTRD UG/L (39516)	PHORATE WATER UNFLTRD UG/L (39023)	SILVEX, WATER, UNFLTRD UG/L (39760)	TOXA-PHENE, WATER, UNFLTRD UG/L (39400)
APR					
22...	<.01	<.1	<.02	<.02	<1

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

RIO PUERTO NUEVO BASIN

50049100 RIO PIEDRAS AT HATO REY, PR

LOCATION.--Lat 18°24'34", long 66°04'10", Hydrologic Unit 21010005, at bridge on Avenida Piñeiro near Expreso Las Américas (Luis A. Ferré) and 0.8 mi (1.3 km) southwest of Hato Rey.

DRAINAGE AREA.--15.2 mi^2 (39.4 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1970 to December 1987 (discharge measurements only), 1972 to December 1982 (maximum discharge only), January 1988 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 16 ft (5 m), from topographic map.

REMARKS.--Records poor. Mean daily discharge affected by sewage discharges (approximately 2.0 ft^3/s (0.06 m^3/s)), 20 ft (6 m) upstream from gaging station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	26	26	33	28	19	17	221	17	16	24	57
2	16	22	90	33	25	19	40	256	17	17	15	35
3	23	55	132	32	53	20	34	29	20	16	14	36
4	34	21	250	32	33	18	29	27	22	20	153	29
5	58	21	126	39	25	19	31	33	24	17	21	27
6	18	20	39	160	35	17	88	61	17	71	17	27
7	19	960	44	55	30	18	35	54	16	30	15	27
8	112	2040	e35	32	26	54	42	28	17	17	15	26
9	71	883	e30	33	25	20	47	21	24	16	21	31
10	54	98	e30	30	24	53	26	313	17	17	31	50
11	25	52	e40	28	25	30	23	105	18	16	68	29
12	18	45	e80	28	23	18	19	e38	23	28	18	25
13	84	53	e50	28	30	19	22	25	21	16	21	24
14	280	40	e60	28	30	15	19	e22	18	17	29	86
15	129	40	e40	27	34	15	69	22	17	17	31	161
16	46	35	e80	29	25	15	247	21	17	18	33	158
17	26	33	e50	26	23	15	34	21	42	22	23	24
18	57	32	e57	52	22	15	29	e22	e20	17	78	216
19	25	32	38	31	32	15	100	e20	17	16	33	42
20	24	31	35	28	22	14	444	e19	37	17	21	67
21	27	31	170	26	20	13	116	e18	51	16	18	26
22	25	29	474	29	20	14	38	e18	18	26	17	21
23	22	51	283	27	19	14	137	e18	17	19	26	52
24	21	54	86	56	20	14	84	18	18	19	62	356
25	39	43	46	29	21	14	68	17	17	17	21	63
26	24	31	39	27	22	12	111	91	16	15	17	116
27	64	38	37	25	19	13	94	21	31	35	21	45
28	207	27	35	39	20	16	33	18	19	28	17	40
29	36	68	34	27	---	15	66	17	16	18	34	38
30	26	29	34	33	---	80	141	31	16	17	388	37
31	23	---	34	35	---	12	---	17	---	16	92	---
TOTAL	1648	4940	2604	1137	731	645	2283	1642	640	647	1394	1971
MEAN	53.2	165	84.0	36.7	26.1	20.8	76.1	53.0	21.3	20.9	45.0	65.7
MAX	280	2040	474	160	53	80	444	313	51	71	388	356
MIN	15	20	26	25	19	12	17	17	16	15	14	21
AC-FT	3270	9800	5170	2260	1450	1280	4530	3260	1270	1280	2760	3910
CFSM	3.50	10.8	5.53	2.41	1.72	1.37	5.01	3.48	1.40	1.37	2.96	4.32
IN.	4.03	12.09	6.37	2.78	1.79	1.58	5.59	4.02	1.57	1.58	3.41	4.82

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 2002, BY WATER YEAR (WY)

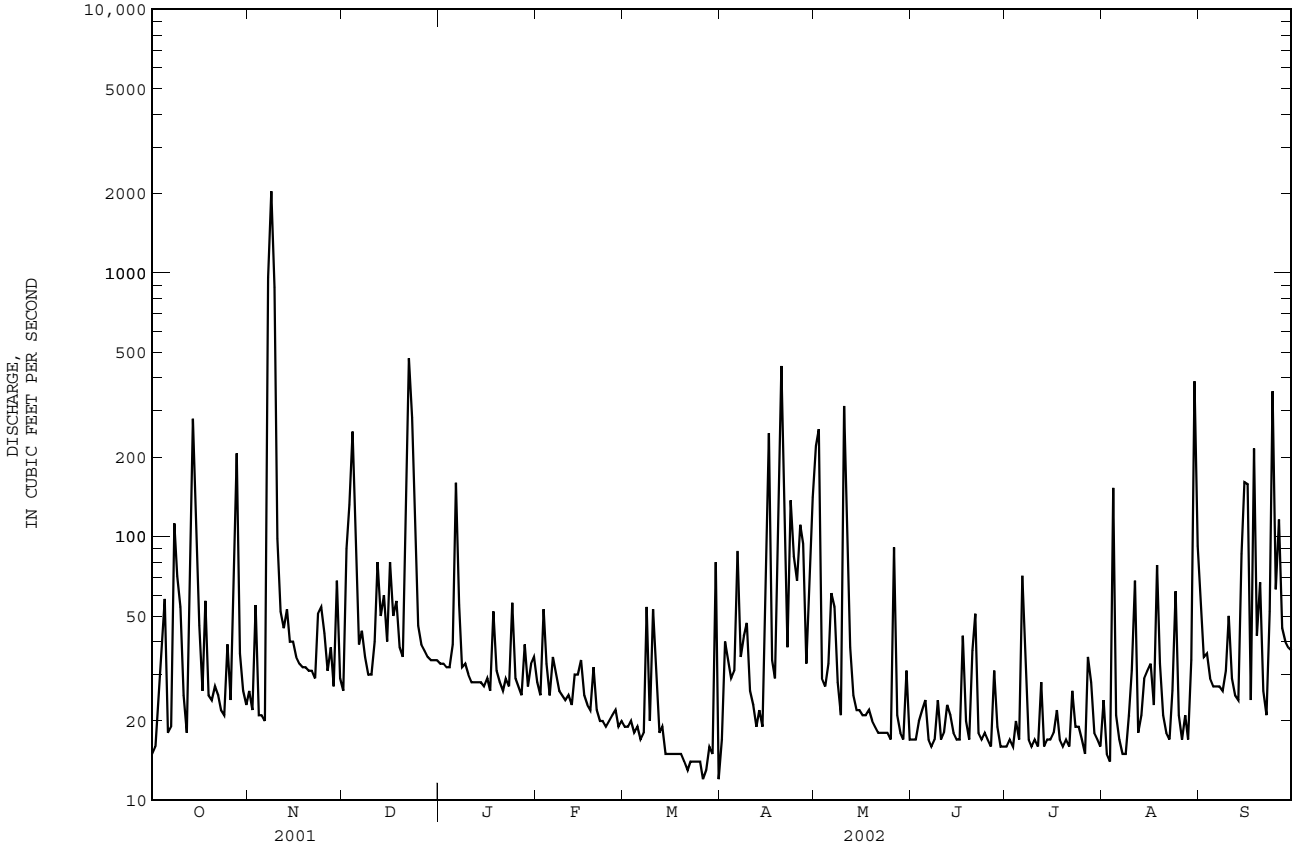
MEAN	69.3	80.5	54.6	44.3	39.6	34.6	50.5	43.9	38.5	45.8	56.9	89.0
MAX	138	235	168	97.4	86.9	78.5	150	97.5	81.9	97.4	91.0	261
(WY)	1999	1993	1993	1993	1995	1972	1972	1992	1995	1993	2000	1996
MIN	16.6	23.9	18.8	12.9	10.8	11.5	13.6	4.12	19.6	12.8	20.2	26.3
(WY)	1992	1991	1992	1973	1992	1994	1995	1972	2000	1994	1993	1972

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1972 - 2002	
ANNUAL TOTAL	19404		20282			
ANNUAL MEAN	53.2		55.6		53.2	
HIGHEST ANNUAL MEAN					84.0	1993
LOWEST ANNUAL MEAN					28.7	1994
HIGHEST DAILY MEAN	2040	Nov 8	2040	Nov 8	4550	Sep 10 1996
LOWEST DAILY MEAN	11	Jun 10	12	Mar 26	1.2	Jun 28 1972
ANNUAL SEVEN-DAY MINIMUM	12	Jun 8	13	Mar 21	1.2	Jul 5 1972
MAXIMUM PEAK FLOW			5740	Nov 7	10500	Sep 10 1996
MAXIMUM PEAK STAGE			17.37	Nov 7	22.11	Sep 10 1996
ANNUAL RUNOFF (AC-FT)	38490		40230		38550	
ANNUAL RUNOFF (CFSM)	3.50		3.66		3.50	
ANNUAL RUNOFF (INCHES)	47.49		49.64		47.57	
10 PERCENT EXCEEDS	89		90		110	
50 PERCENT EXCEEDS	23		28		23	
90 PERCENT EXCEEDS	15		17		11	

e Estimated

RIO PUERTO NUEVO BASIN

50049100 RIO PIEDRAS AT HATO REY, PR--Continued



RIO PUERTO NUEVO BASIN

50049100 RIO PIEDRAS AT HATO REY, PR--Continued

WATER-QUALITY RECORDS

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

DRAINAGE AREA.--15.4 mi^2 (39.9 km^2).

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
NOV													
29...	1415	54	280	7.5	25.0	61	6.2	75	20	60000	41000	94	26.8
FEB													
15...	1515	33	370	7.7	26.0	11	7.5	91	10	2900	780	--	--
APR													
22...	1045	31	399	7.4	25.8	23	6.1	74	20	35000	42000	140	38.9

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
NOV													
29...	6.61	15.7	.7	2.47	95	<1.0	9.8	18.5	.2	16.6	154	22.3	58
FEB													
15...	--	--	--	--	134	--	--	--	--	--	--	--	18
APR													
22...	9.58	22.0	.8	3.41	138	<.1	17.5	29.1	.1	21.5	225	19.1	14

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
NOV													
29...	.05	.680	.40	E1.1	E.21	E2	95.9	30	<.1	1.3	<10	2770	3
FEB													
15...	.08	.700	.40	1.1	.33	--	--	--	--	--	--	--	--
APR													
22...	.05	.850	.54	1.0	.09	E1	103	50	<.1	E.6	<10	740	1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
NOV								
29...	197	.03	<2	<.3	E30	<.01	<16	.11
FEB								
15...	--	--	--	--	--	--	--	--
APR								
22...	117	.01	<2	<.3	E30	<.01	<18	.16

< -- Less than
E -- Estimated value

RIO PUERTO NUEVO BASIN

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

WATER-QUALITY RECORDS

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

DRAINAGE AREA.--Indeterminate.

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	SPECIF. CONDUC- TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER- ATURE, WATER, DEG C (00010)	TRANS- PARENCY SECCHI DISC, INCHES (00077)	DIS- SOLVED OXYGEN, MG/L (00300)	DIS- SOLVED OXYGEN, PERCENT OF SAT- URATION (00301)	FECAL COLI- FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP- TOCOCCI KF MF, COL/ 100 ML (31673)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED, MG/L (00530)	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)
OCT													
04...	0910	17300	6.6	29.2	48.0	2.4	33	>60000	35000	87	14	<.01	<.020
APR													
02...	1000	--	--	--	--	--	--	--	--	--	<10	<.01	<.020

DATE	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS- PHORUS, WATER, UNFLTRD MG/L (00665)	ORGANIC CARBON, WATER, UNFLTRD MG/L (00680)
OCT				
04...	E1.70	2.3	.28	8.4
APR				
02...	.45	1.0	.26	6.3

> -- More than
< -- Less than
E -- Estimated value

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 2001 TO SEPTEMBER 2002

DATE	TIME	SPECIF. CONDUC- TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER- ATURE, WATER, DEG C (00010)	TRANS- PARENCY SECCHI DISC, INCHES (00077)	DIS- SOLVED OXYGEN, MG/L (00300)	DIS- SOLVED OXYGEN, PERCENT OF SAT- URATION (00301)	FECAL COLI- FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP- TOCOCCI KF MF, COL/ 100 ML (31673)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED, MG/L (00530)	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)
OCT													
04...	1020	50100	7.8	29.9	36.0	5.3	84	27000	260	121	10	<.01	.050
APR													
02...	1115	--	--	--	--	--	--	--	--	--	29	.03	.100

DATE	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	TOTAL NITRO- GEN, WATER, UNFLTRD MG/L AS NO3 (71887)	PHOS- PHORUS, WATER, UNFLTRD MG/L (00665)	ORGANIC CARBON, WATER, UNFLTRD MG/L (00680)
OCT					
04...	.24	E.80	--	.11	3.7
APR					
02...	.45	1.3	6.2	.04	6.6

< -- Less than
E -- Estimated value

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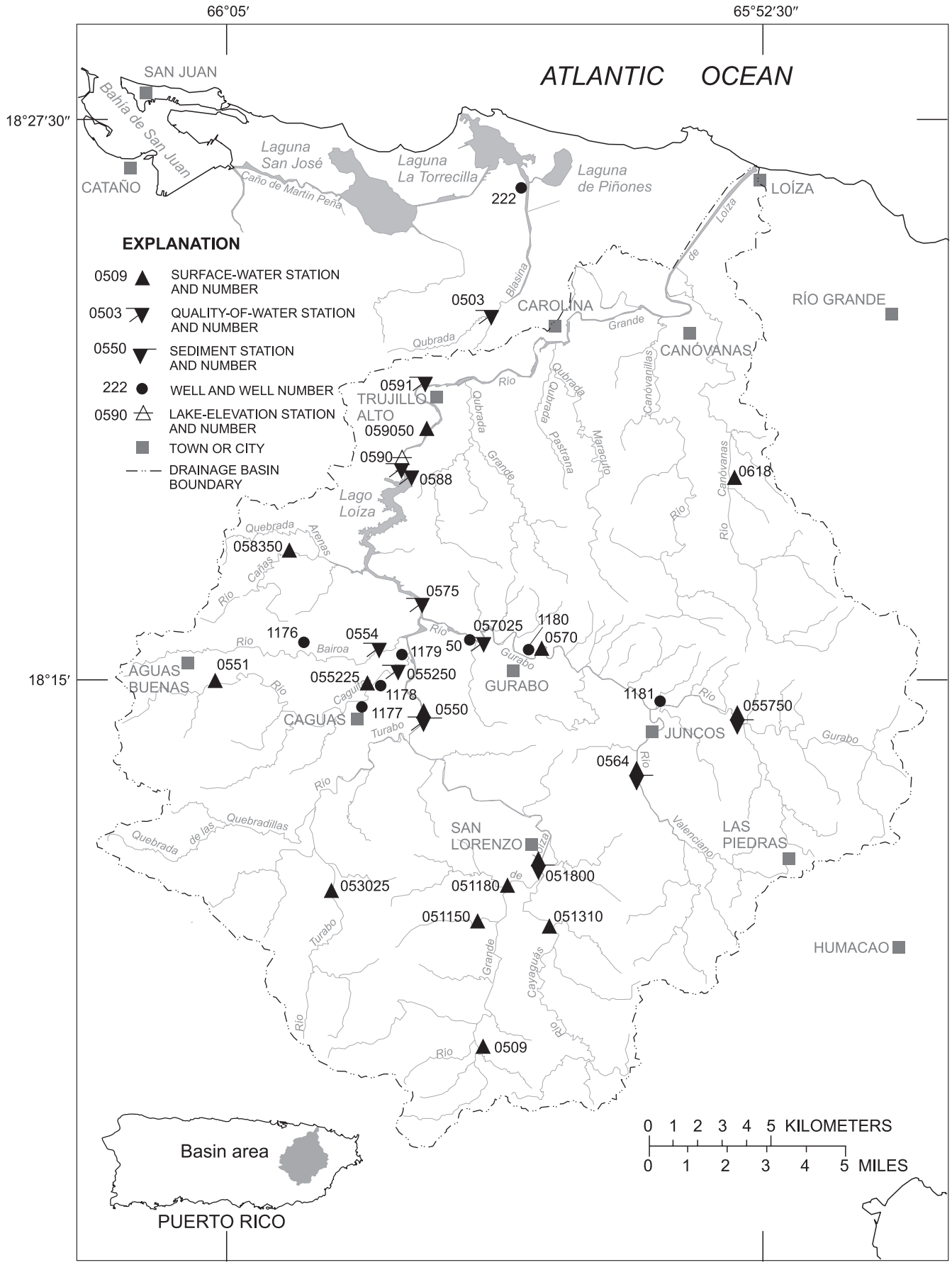


Figure 18. Río Grande de Loíza basin.

RIO GRANDE DE LOIZA BASIN

50050300 QUEBRADA BLASINA NEAR CAROLINA, PR

WATER-QUALITY RECORDS

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

DRAINAGE AREA.--2.96 mi^2 (7.67 km^2).

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
NOV													
23...	1545	3.5	518	7.5	28.5	22	5.3	68	30	60000	43000	180	56.4
FEB													
05...	1510	4.1	726	8.0	26.0	13	6.8	84	<10	E9000	E272	--	--
MAY													
09...	1400	5.6	525	7.9	29.1	2.8	8.8	114	20	22000	E60	190	59.5

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
NOV													
23...	8.69	26.0	.9	3.28	166	<1.0	13.7	36.0	.1	25.1	269	2.55	18
FEB													
05...	--	--	--	--	206	--	--	--	--	--	--	--	10
MAY													
09...	9.56	26.1	.8	2.61	187	<.1	12.0	37.0	.1	25.8	285	4.27	<10

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
NOV													
23...	.28	E1.20	E1.30	E1.9	E.17	<2	70.3	50	<.1	<.8	<10	660	1
FEB													
05...	.17	1.40	.44	.90	.15	--	--	--	--	--	--	--	--
MAY													
09...	.10	1.20	.21	.60	.08	3	75.9	60	E.1	<.8	<10	220	<1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
NOV								
23...	215	.04	<2	<.3	E20	<.01	E40	.12
FEB								
05...	--	--	--	--	--	--	--	--
MAY								
09...	68.0	.05	2	<.3	<20	<.01	<18	.09

< -- Less than
E -- Estimated value

RIO GRANDE DE LOIZA BASIN

50050900 RIO GRANDE DE LOIZA AT QUEBRADA ARENAS, PR

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

DRAINAGE AREA.--6.00 mi^2 (15.54 km^2).

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

GAGE.--Water-stage recorder. Elevation of gage is 640 ft (195 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	15	12	17	23	8.3	8.1	11	28	17	10	86
2	10	16	16	16	14	8.5	7.3	12	20	16	10	27
3	161	14	20	15	39	8.1	9.7	11	16	16	9.5	17
4	19	14	20	15	22	8.0	11	13	101	15	9.5	14
5	114	14	25	16	14	7.8	13	12	524	16	9.9	13
6	35	22	14	20	12	7.6	9.5	12	97	21	11	12
7	18	45	14	16	13	7.6	99	11	50	20	11	12
8	18	729	18	14	12	8.9	30	9.9	38	15	13	11
9	75	97	14	14	12	8.1	18	9.2	77	15	9.7	13
10	21	39	13	13	11	7.9	11	9.1	36	14	9.2	13
11	16	29	39	13	11	8.0	10	8.8	33	14	11	12
12	14	33	122	12	10	8.2	9.2	8.3	30	14	11	11
13	14	42	37	13	9.8	9.3	8.9	8.1	26	13	13	9.8
14	14	30	20	12	10	8.9	8.7	7.9	24	51	19	10
15	163	45	60	11	10	8.5	22	7.6	23	28	15	440
16	96	27	92	11	10	8.7	59	8.2	24	15	23	76
17	31	22	e48	11	11	8.7	27	8.0	37	17	14	23
18	29	21	71	15	9.7	8.7	18	7.8	122	15	265	17
19	23	21	88	14	10	8.6	15	7.4	71	13	23	14
20	30	20	42	12	9.2	8.3	531	7.2	44	13	20	13
21	21	19	35	11	8.7	8.4	286	6.9	376	12	14	13
22	26	18	306	18	8.4	8.4	43	6.7	68	12	12	12
23	19	17	70	13	8.6	8.3	24	11	35	13	11	14
24	16	17	42	14	8.6	7.9	19	7.6	28	16	11	132
25	15	17	29	13	8.4	7.7	16	6.9	24	12	19	21
26	14	16	24	11	8.6	7.6	15	6.8	22	12	11	16
27	14	15	22	11	8.4	9.9	15	14	21	12	11	14
28	15	14	20	38	8.2	9.0	13	20	20	17	11	13
29	21	e14	18	21	---	9.0	12	67	18	14	13	12
30	107	e12	18	16	---	18	12	779	17	11	41	12
31	19	---	17	20	---	10	---	67	---	11	263	---
TOTAL	1199	1454	1386	466	340.6	270.9	1380.4	1182.4	2050	500	933.8	1102.8
MEAN	38.7	48.5	44.7	15.0	12.2	8.74	46.0	38.1	68.3	16.1	30.1	36.8
MAX	163	729	306	38	39	18	531	779	524	51	265	440
MIN	10	12	12	11	8.2	7.6	7.3	6.7	16	11	9.2	9.8
AC-FT	2380	2880	2750	924	676	537	2740	2350	4070	992	1850	2190
CFSM	6.45	8.08	7.45	2.51	2.03	1.46	7.67	6.36	11.4	2.69	5.02	6.13
IN.	7.43	9.01	8.59	2.89	2.11	1.68	8.56	7.33	12.71	3.10	5.79	6.84

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2002, BY WATER YEAR (WY)

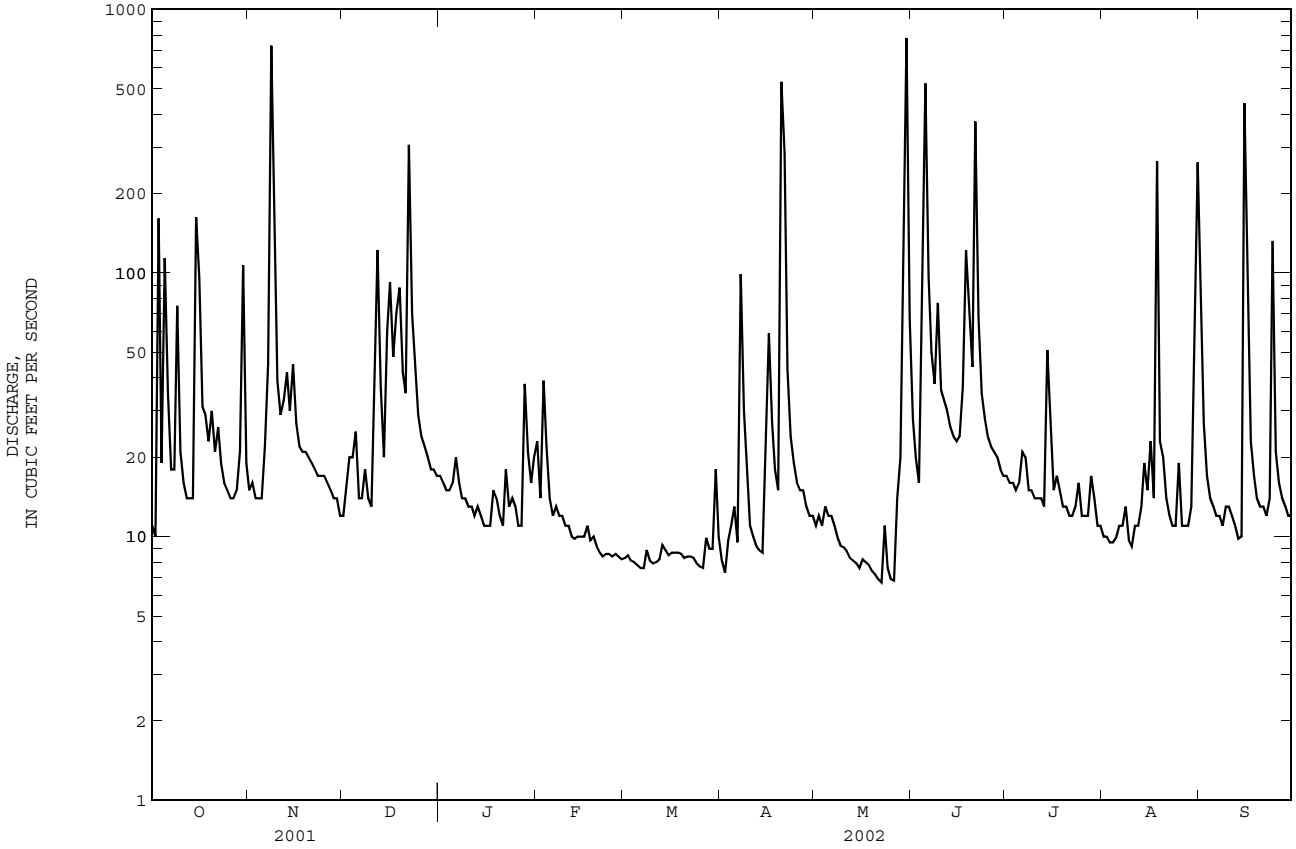
MEAN	41.4	46.0	26.8	20.7	18.4	15.0	15.1	30.3	35.9	33.7	36.5	58.6
MAX	123	122	59.5	56.1	38.0	53.6	46.0	77.5	122	92.3	90.0	351
(WY)	1986	1988	1999	1992	1982	1998	2002	1985	1979	1993	1979	1998
MIN	13.1	8.34	6.65	8.16	6.36	5.07	4.64	7.20	6.79	12.2	9.30	11.8
(WY)	1990	1990	1990	1990	1979	1979	1979	1999	2001	2000	1991	1981

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1978 - 2002	
ANNUAL TOTAL	10735.1		12265.9			
ANNUAL MEAN	29.4		33.6		31.5	
HIGHEST ANNUAL MEAN					62.7	1998
LOWEST ANNUAL MEAN					14.5	1990
HIGHEST DAILY MEAN	942	Aug 22	779	May 30	4690	Sep 22 1998
LOWEST DAILY MEAN	4.9	Jun 22	6.7	May 22	3.1	May 7 1979
ANNUAL SEVEN-DAY MINIMUM	5.3	Jun 18	7.5	May 16	3.6	May 1 1979
MAXIMUM PEAK FLOW			5230	Nov 8	45000	Sep 21 1998
MAXIMUM PEAK STAGE			11.06	Nov 8	26.37	Sep 21 1998
INSTANTANEOUS LOW FLOW			6.4	May 22	2.8	May 5 1979
ANNUAL RUNOFF (AC-FT)	21290		24330		22850	
ANNUAL RUNOFF (CFSM)	4.90		5.60		5.26	
ANNUAL RUNOFF (INCHES)	66.56		76.05		71.42	
10 PERCENT EXCEEDS	43		54		50	
50 PERCENT EXCEEDS	11		14		15	
90 PERCENT EXCEEDS	6.1		8.4		7.1	

e Estimated

RIO GRANDE DE LOIZA BASIN

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



RIO GRANDE DE LOIZA BASIN

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 mi^2 (8.42 km^2).

PERIOD OF RECORD.--October 1984 to September 2002 (discontinued).

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

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e0.85	1.2	2.1	3.2	5.4	1.6	1.4	1.9	2.3	1.8	4.1	18
2	0.98	1.2	2.4	3.0	4.0	1.6	1.4	7.1	1.8	2.0	1.7	7.1
3	2.0	1.4	3.6	2.9	5.9	1.5	1.5	2.5	1.7	2.0	1.2	3.7
4	1.9	1.3	5.0	2.9	5.3	1.5	1.4	2.0	2.4	2.4	1.1	2.9
5	4.1	1.5	7.7	2.8	3.5	1.5	1.3	1.9	27	1.7	0.99	3.0
6	3.9	3.2	3.6	3.5	3.0	1.5	1.3	1.9	15	1.8	0.99	2.5
7	2.1	39	3.0	3.0	2.7	1.4	1.6	1.8	9.8	1.9	0.98	2.3
8	2.1	97	2.7	2.7	2.5	2.9	2.7	1.7	6.7	1.8	3.6	2.0
9	3.1	28	2.5	2.6	2.5	1.9	3.2	1.6	8.2	1.6	1.5	1.8
10	3.3	15	3.1	2.4	2.4	1.6	1.8	1.5	5.8	1.4	1.2	1.6
11	2.2	11	6.7	2.4	2.2	1.7	1.6	1.5	5.8	1.4	1.2	1.6
12	1.9	9.0	15	2.3	2.1	1.6	1.4	1.5	4.0	1.4	1.1	1.5
13	1.9	7.8	10	2.3	2.1	1.6	1.4	1.4	3.3	1.4	1.7	1.5
14	1.7	6.5	6.4	2.4	2.4	1.6	1.3	1.4	3.5	2.0	2.0	1.6
15	12	12	9.7	2.2	2.2	1.5	1.8	1.4	2.5	3.7	2.2	19
16	12	9.4	15	2.2	2.2	1.4	9.5	1.4	2.2	1.8	13	22
17	6.9	6.5	14	2.1	2.1	1.4	3.0	1.6	9.1	1.6	6.3	5.9
18	5.0	10	19	2.2	2.0	1.4	2.1	1.5	14	1.4	28	3.8
19	4.7	6.7	13	2.0	2.2	1.4	3.2	1.4	7.9	1.3	4.9	5.1
20	3.6	4.0	8.8	2.1	2.0	1.3	31	1.4	4.6	1.3	2.5	3.1
21	2.9	3.5	6.6	2.2	1.8	1.3	26	1.3	22	1.3	2.3	2.3
22	2.5	3.2	7.0	2.3	1.7	1.3	9.3	1.4	15	1.5	2.2	2.1
23	2.1	3.0	14	2.2	1.7	1.3	7.2	1.5	7.3	1.7	2.1	2.0
24	1.8	3.3	10	2.8	1.7	1.4	4.6	1.4	4.6	1.9	2.2	9.6
25	1.6	2.8	7.5	2.2	1.7	1.4	3.6	1.3	3.4	1.5	2.4	15
26	1.5	2.5	5.7	2.1	1.7	1.2	3.6	1.4	2.8	1.3	2.5	5.0
27	1.4	2.3	4.9	2.0	1.7	1.3	3.3	2.6	3.5	2.4	2.6	3.4
28	1.4	2.1	4.3	4.6	1.6	1.3	2.5	1.8	3.2	1.7	3.0	2.9
29	1.7	2.3	3.8	4.6	---	1.8	2.2	1.8	2.3	1.5	3.2	2.7
30	1.5	2.2	3.6	3.8	---	1.6	2.0	9.3	2.0	1.2	20	2.6
31	1.3	---	3.4	5.5	---	1.5	---	4.2	---	1.1	26	---
TOTAL	95.93	298.9	224.1	85.5	72.3	47.3	138.2	66.4	203.7	52.8	148.76	157.6
MEAN	3.09	9.96	7.23	2.76	2.58	1.53	4.61	2.14	6.79	1.70	4.80	5.25
MAX	12	97	19	5.5	5.9	2.9	31	9.3	27	3.7	28	22
MIN	0.85	1.2	2.1	2.0	1.6	1.2	1.3	1.3	1.7	1.1	0.98	1.5
AC-FT	190	593	445	170	143	94	274	132	404	105	295	313
CFSM	0.95	3.07	2.22	0.85	0.79	0.47	1.42	0.66	2.09	0.52	1.48	1.62
IN.	1.10	3.42	2.57	0.98	0.83	0.54	1.58	0.76	2.33	0.60	1.70	1.80

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2002, BY WATER YEAR (WY)

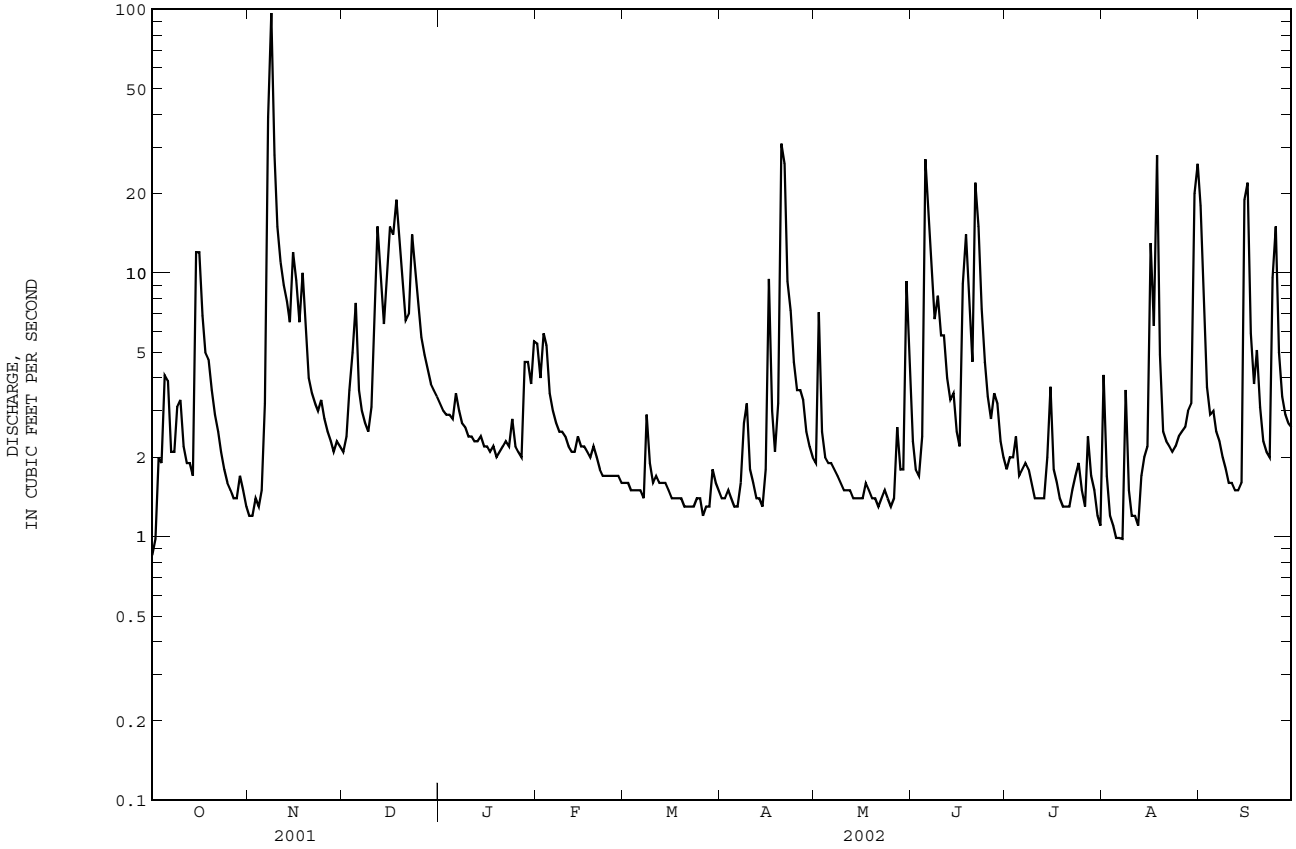
MEAN	9.39	13.4	7.08	5.04	4.07	3.94	2.52	5.85	5.72	5.50	7.11	9.40
MAX	47.8	36.9	30.1	12.0	8.21	20.7	5.47	31.5	21.3	15.0	20.2	27.7
(WY)	1986	1985	1988	1999	1989	1989	1998	1985	1987	1993	1988	1996
MIN	2.75	2.49	1.49	1.74	1.32	1.53	0.75	0.62	0.90	1.68	1.95	1.36
(WY)	1993	1990	1990	1995	1985	2002	1994	1994	2001	2001	1994	1990

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1984 - 2002	
ANNUAL TOTAL	1349.91		1591.49			
ANNUAL MEAN	3.70		4.36		6.59	
HIGHEST ANNUAL MEAN					12.3	1988
LOWEST ANNUAL MEAN					2.50	1990
HIGHEST DAILY MEAN	109	Aug 22	97	Nov 8	457	Dec 7 1987
LOWEST DAILY MEAN	0.60	Jun 24	0.85	Oct 1	0.33	May 20 1994
ANNUAL SEVEN-DAY MINIMUM	0.64	Jun 18	1.3	Mar 20	0.37	Apr 26 1994
MAXIMUM PEAK FLOW			682	Nov 7	7610	Sep 10 1996
MAXIMUM PEAK STAGE			7.37	Nov 7	14.64	Sep 10 1996
INSTANTANEOUS LOW FLOW					0.30	May 21 1994
ANNUAL RUNOFF (AC-FT)	2680		3160		4780	
ANNUAL RUNOFF (CFSM)	1.14		1.34		2.03	
ANNUAL RUNOFF (INCHES)	15.45		18.22		27.56	
10 PERCENT EXCEEDS	7.6		9.4		12	
50 PERCENT EXCEEDS	1.8		2.2		2.7	
90 PERCENT EXCEEDS	0.82		1.4		1.1	

e Estimated

RIO GRANDE DE LOIZA BASIN

50051150 QUEBRADA BLANCA AT EL JAGUAL, PR--Continued



RIO GRANDE DE LOIZA BASIN

50051180 QUEBRADA SALVATIERRA NEAR SAN LORENZO, PR

LOCATION.--Lat 18°10'24", long 65°58'38", Hydrologic Unit 21010005, on right bank 50 ft upstream from bridge on Highway 181, 0.2 mi (0.3 km) upstream from Río Grande de Loíza, and 1.5 mi (2.4 km) southwest of San Lorenzo.

DRAINAGE AREA.--3.74 mi^2 (9.69 km^2).

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

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

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.71	1.4	1.6	2.4	4.7	1.1	0.77	1.1	0.92	0.95	18	34
2	0.68	4.3	2.8	2.4	3.4	1.1	0.69	1.2	0.77	0.99	1.5	8.0
3	2.1	2.4	3.4	2.2	6.5	0.96	0.71	0.99	0.70	0.97	0.84	3.4
4	1.6	2.7	7.3	2.2	5.3	0.90	0.77	0.97	0.86	1.2	0.70	2.6
5	5.4	2.2	7.4	2.3	2.7	0.92	0.90	0.98	33	1.0	0.67	2.1
6	3.2	3.6	2.6	3.2	2.0	0.91	0.67	1.0	2.1	1.2	0.68	1.8
7	1.4	110	2.1	2.9	1.9	0.89	0.89	1.0	1.1	1.4	0.72	1.6
8	1.4	255	2.0	2.3	1.7	2.5	1.6	1.0	0.89	1.4	2.1	1.6
9	1.7	85	1.8	2.1	1.7	1.3	1.8	0.96	0.96	1.1	0.86	1.3
10	1.6	15	2.0	2.0	1.6	1.0	0.89	0.90	0.84	1.0	0.75	1.3
11	1.4	5.3	5.0	2.0	1.5	1.0	0.76	0.88	0.94	0.98	0.76	1.3
12	1.2	3.2	4.4	1.9	1.5	0.98	0.68	0.86	0.97	0.90	0.75	1.3
13	1.1	2.5	4.1	1.9	1.4	0.97	0.68	0.89	1.2	0.92	0.91	1.2
14	1.1	2.2	2.5	2.0	1.5	0.93	0.64	0.81	1.3	1.6	0.82	1.2
15	25	2.8	8.4	1.9	1.7	1.0	1.3	0.77	0.93	1.8	0.83	72
16	43	2.3	58	1.8	1.5	1.1	20	0.78	0.84	1.0	2.7	60
17	7.1	1.9	27	1.8	1.4	0.91	1.6	0.80	1.3	0.95	1.2	3.7
18	4.0	25	52	2.0	1.3	0.89	1.0	0.84	3.5	0.91	45	2.5
19	3.3	6.2	11	1.9	1.5	0.87	1.1	0.89	2.2	0.83	2.0	2.5
20	2.7	2.9	6.1	1.8	1.4	0.83	135	0.99	1.4	e0.82	1.3	2.3
21	2.1	2.4	4.2	1.8	1.3	0.79	78	1.0	57	e0.80	1.1	1.9
22	1.8	2.1	4.5	1.9	1.1	0.78	6.4	0.95	7.6	0.88	1.1	1.7
23	1.7	1.9	34	1.8	1.1	0.81	4.0	1.2	2.0	0.90	1.0	1.5
24	1.6	2.5	10	2.2	1.1	0.80	2.3	1.0	1.4	1.3	1.0	20
25	1.6	2.0	5.9	1.8	1.1	0.82	1.8	0.91	1.3	0.96	1.0	64
26	1.5	1.8	4.3	1.8	1.1	0.88	2.1	1.0	1.2	0.84	1.0	5.1
27	1.4	1.7	3.5	1.8	1.2	1.0	1.9	1.6	1.5	0.99	0.97	2.6
28	1.5	1.7	3.1	3.2	1.1	1.1	1.3	0.81	1.5	0.95	0.96	2.0
29	1.6	1.9	2.8	3.0	---	1.1	1.2	0.74	1.1	0.88	0.98	1.8
30	2.1	1.7	2.7	3.0	---	0.91	1.1	2.9	1.0	0.78	88	1.7
31	1.6	---	2.5	3.9	---	0.87	---	1.4	---	0.75	173	---
TOTAL	128.19	555.6	289.0	69.2	55.3	30.92	272.55	32.12	132.32	31.95	353.20	308.0
MEAN	4.14	18.5	9.32	2.23	1.98	1.00	9.09	1.04	4.41	1.03	11.4	10.3
MAX	43	255	58	3.9	6.5	2.5	135	2.9	57	1.8	173	72
MIN	0.68	1.4	1.6	1.8	1.1	0.78	0.64	0.74	0.70	0.75	0.67	1.2
AC-FT	254	1100	573	137	110	61	541	64	262	63	701	611
CFSM	1.11	4.95	2.49	0.60	0.53	0.27	2.43	0.28	1.18	0.28	3.05	2.75
IN.	1.28	5.53	2.87	0.69	0.55	0.31	2.71	0.32	1.32	0.32	3.51	3.06

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2002, BY WATER YEAR (WY)

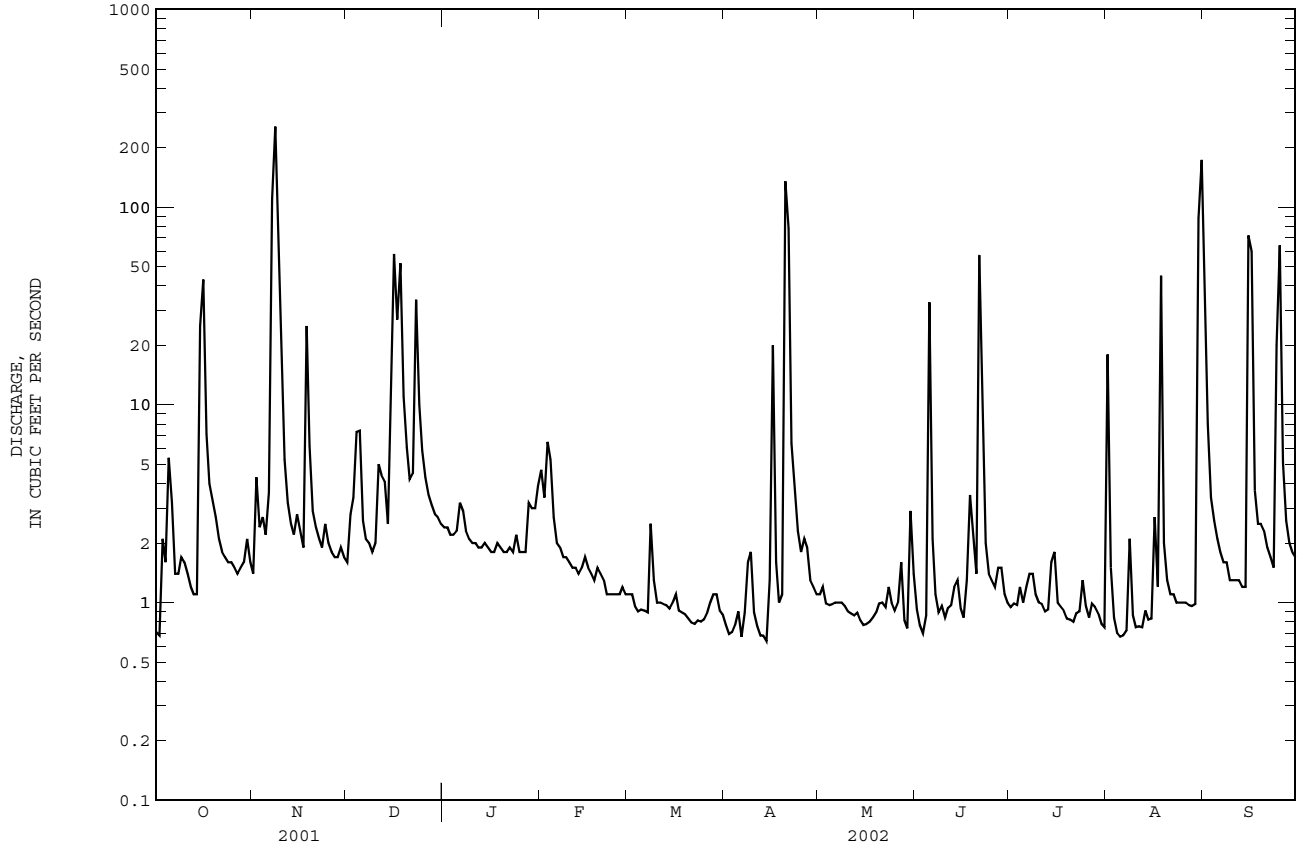
MEAN	9.32	12.3	5.88	4.78	3.34	3.21	2.61	5.34	5.52	5.04	7.28	15.6
MAX	36.2	33.4	22.8	23.4	10.3	17.4	9.08	35.8	17.5	20.5	14.5	76.5
(WY)	1986	1988	1988	1992	1984	1989	2002	1985	1996	1993	1996	1996
MIN	2.31	2.72	1.17	1.16	1.23	0.92	0.66	0.86	0.75	0.99	1.51	1.39
(WY)	1987	1990	1990	1990	1990	2001	1995	1995	2001	2001	1994	2001

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1984 - 2002	
ANNUAL TOTAL	1602.18		2258.35			
ANNUAL MEAN	4.39		6.19		6.68	
HIGHEST ANNUAL MEAN					12.4	1996
LOWEST ANNUAL MEAN					2.67	2001
HIGHEST DAILY MEAN	255	Nov 8	255	Nov 8	1750	Sep 10 1996
LOWEST DAILY MEAN	0.25	Jul 22	0.64	Apr 14	0.25	Jul 22 2001
ANNUAL SEVEN-DAY MINIMUM	0.28	Jul 17	0.77	Mar 31	0.28	Jul 17 2001
MAXIMUM PEAK FLOW			1150	Nov 7	15000	Sep 10 1996
MAXIMUM PEAK STAGE			10.39	Nov 7	20.87	Sep 10 1996
INSTANTANEOUS LOW FLOW			0.59	Apr 14	0.23	Jul 21 2001
ANNUAL RUNOFF (AC-FT)	3180		4480		4840	
ANNUAL RUNOFF (CFSM)	1.17		1.65		1.79	
ANNUAL RUNOFF (INCHES)	15.94		22.46		24.28	
10 PERCENT EXCEEDS	4.3		6.1		9.4	
50 PERCENT EXCEEDS	1.2		1.5		2.0	
90 PERCENT EXCEEDS	0.51		0.83		0.89	

e Estimated

RIO GRANDE DE LOIZA BASIN

50051180 QUEBRADA SALVATIERRA NEAR SAN LORENZO, PR--Continued



RIO GRANDE DE LOIZA BASIN

50051310 RIO CAYAGUAS AT CERRO GORDO, PR

LOCATION.--Lat 18°09'13", long 65°57'24", Hydrologic Unit 21010005, at downstream side of bridge on Highway 912, at Barrio Cerro Gordo, 2.8 mi (4.5 km) south of San Lorenzo.

DRAINAGE AREA.--10.2 mi^2 (26.4 km^2).

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

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 490 ft (150 m), from topographic map. Prior to October 1, 1983, at site 2,000 ft (610 m) downstream at different datum.

REMARKS.--Records poor. Sand removal at a commercial level is practiced at times during the year. This takes place about 100 ft (30.5 m) downstream from gage. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	24	23	28	32	18	23	19	e48	e20	e13	104
2	16	25	24	30	27	18	23	20	e37	e16	e13	27
3	38	26	30	29	30	18	22	21	19	e16	e13	20
4	28	25	29	30	30	18	23	22	84	e14	e13	17
5	45	25	35	30	22	17	20	23	343	e19	e13	16
6	45	30	29	33	20	17	19	21	e68	e24	14	15
7	18	80	27	29	21	17	70	20	e33	e27	13	14
8	19	611	34	29	20	19	54	20	e20	e20	19	14
9	29	209	29	28	20	18	27	19	e52	18	15	14
10	21	32	30	26	20	18	19	19	e20	e19	12	14
11	20	22	41	28	21	17	18	19	24	e17	15	13
12	20	30	116	26	20	17	e17	18	23	17	13	13
13	19	34	67	26	20	18	e18	18	23	e18	15	12
14	19	34	33	26	20	17	e18	18	21	e61	29	12
15	63	32	60	25	20	17	22	18	20	e42	21	105
16	61	29	63	25	21	17	52	20	20	e23	27	147
17	29	27	48	26	20	17	37	20	25	e25	17	27
18	30	27	67	28	20	17	22	e20	33	e24	121	22
19	29	26	50	28	20	16	19	19	51	e20	29	20
20	25	27	40	26	19	16	412	e19	32	e18	16	19
21	23	25	43	25	19	16	213	e18	65	e18	14	18
22	28	25	260	29	19	16	45	18	35	16	13	17
23	24	25	79	26	19	16	30	19	25	e18	13	17
24	23	25	40	28	20	15	25	19	22	e22	12	65
25	23	25	31	27	19	15	23	e15	e21	e19	15	34
26	23	25	30	25	18	15	21	e15	e20	e18	12	21
27	22	24	30	23	19	17	20	e28	22	e19	12	19
28	22	24	30	34	19	20	20	e36	22	e22	11	18
29	28	24	29	e27	---	17	19	e99	e20	e18	12	18
30	40	24	30	e25	---	22	19	e543	e20	14	63	19
31	28	---	30	31	---	28	---	e99	---	13	132	---
TOTAL	874	1621	1507	856	595	544	1370	1302	1268	655	750	891
MEAN	28.2	54.0	48.6	27.6	21.2	17.5	45.7	42.0	42.3	21.1	24.2	29.7
MAX	63	611	260	34	32	28	412	543	343	61	132	147
MIN	16	22	23	23	18	15	17	15	19	13	11	12
AC-FT	1730	3220	2990	1700	1180	1080	2720	2580	2520	1300	1490	1770
CFSM	2.76	5.30	4.77	2.71	2.08	1.72	4.48	4.12	4.14	2.07	2.37	2.91
IN.	3.19	5.91	5.50	3.12	2.17	1.98	5.00	4.75	4.62	2.39	2.74	3.25

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 2002, BY WATER YEAR (WY)

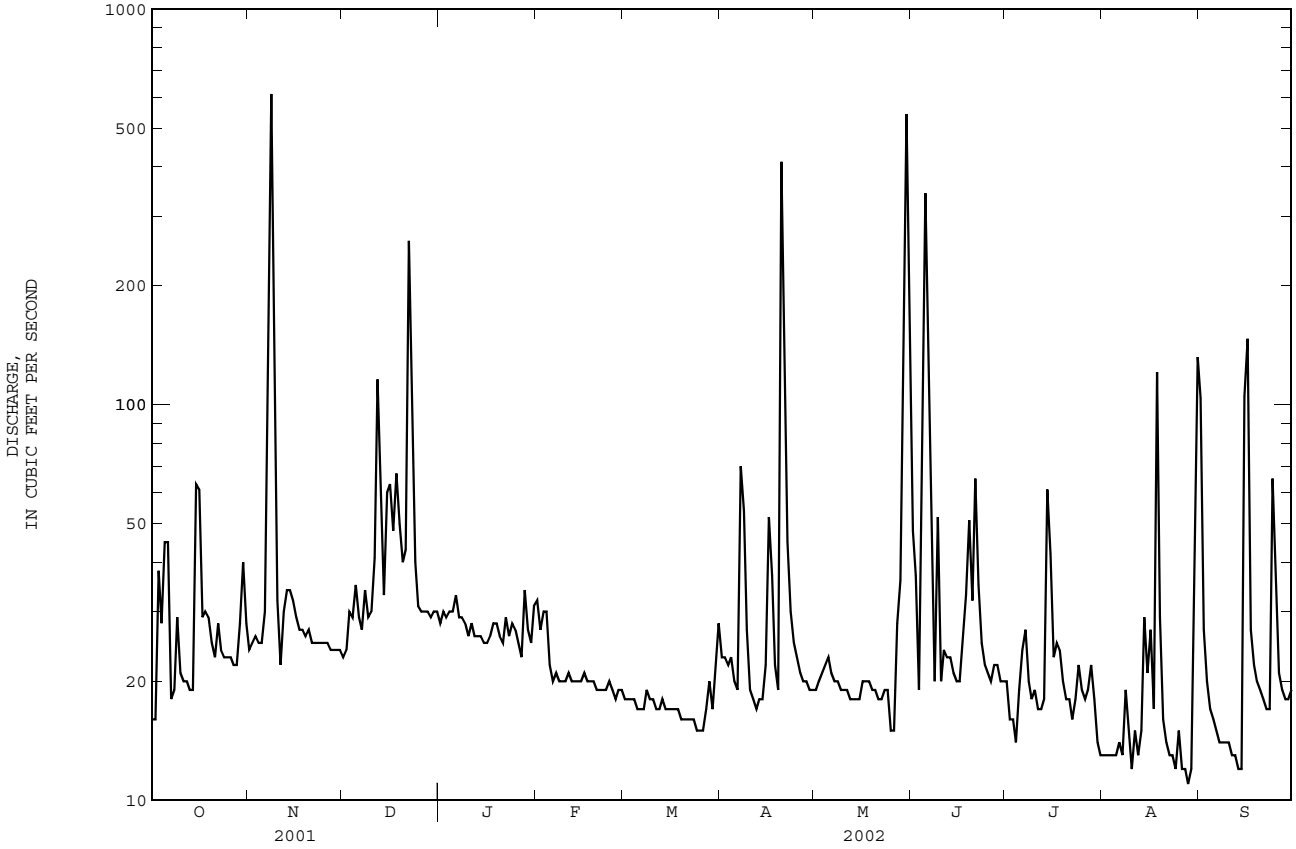
MEAN	62.6	71.2	47.0	34.2	29.6	23.5	21.6	43.9	42.9	41.7	52.4	76.4
MAX	176	196	163	99.5	74.1	64.1	46.0	155	140	118	202	330
(WY)	1986	1988	1988	1998	1997	1998	1985	1985	1979	1979	1979	1998
MIN	14.4	19.2	12.5	14.6	11.0	11.3	10.7	9.68	10.9	15.4	14.5	16.9
(WY)	1992	1982	1992	1990	1992	1992	1980	1990	1994	1994	1991	1980

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1977 - 2002	
ANNUAL TOTAL	11455.6		12233			
ANNUAL MEAN	31.4		33.5		45.6	
HIGHEST ANNUAL MEAN					89.7	1979
LOWEST ANNUAL MEAN					18.6	1990
HIGHEST DAILY MEAN	1450	Aug 22	611	Nov 8	5120	Sep 10 1996
LOWEST DAILY MEAN	8.2	Mar 19	11	Aug 28	7.1	Feb 4 1981
ANNUAL SEVEN-DAY MINIMUM	9.4	Mar 14	12	Aug 23	8.5	Jun 19 1994
MAXIMUM PEAK FLOW			2380	Nov 8	14200	Aug 22 2001
MAXIMUM PEAK STAGE			12.88	Nov 8	24.21	Aug 22 2001
ANNUAL RUNOFF (AC-FT)	22720		24260		33050	
ANNUAL RUNOFF (CFSM)	3.08		3.29		4.47	
ANNUAL RUNOFF (INCHES)	41.78		44.61		60.77	
10 PERCENT EXCEEDS	38		48		70	
50 PERCENT EXCEEDS	18		22		24	
90 PERCENT EXCEEDS	11		15		13	

e Estimated

RIO GRANDE DE LOIZA BASIN

50051310 RIO CAYAGUAS AT CERRO GORDO, PR--Continued



RIO GRANDE DE LOIZA BASIN

50051800 RIO GRANDE DE LOIZA AT HWY 183 NEAR SAN LORENZO, PR

LOCATION.--Lat 18°11'09", long 65°57'42", Hydrologic Unit 21010005, at downstream side of bridge on Highway 183 by-pass, 0.4 mi (0.6 km) south from Plaza de San Lorenzo, 1.4 mi (2.2 km), southwest from Escuela Rafael Colón García and 2.0 mi (3.2 km) northwest from Escuela Segunda Unidad de Carlos Zayas.

DRAINAGE AREA.--25.0 mi^2 (64.8 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1990 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 262 ft (80 m), from topographic map.

REMARKS.--Records fair except those for estimated discharges, which are poor. Water purification plant located about 0.2 mi (0.3 km) upstream from gage. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	54	51	74	112	34	37	49	81	57	70	312
2	30	52	50	71	81	36	38	59	94	59	42	133
3	111	59	77	68	102	34	e30	50	53	54	34	82
4	78	51	77	66	124	32	e44	48	154	55	33	67
5	124	51	126	67	70	33	41	55	739	49	33	57
6	144	88	67	86	64	30	e32	52	269	53	34	51
7	61	281	55	75	57	29	e32	46	133	72	35	50
8	57	1450	68	66	57	50	e131	45	94	53	65	51
9	111	495	54	60	56	39	114	38	140	47	41	48
10	73	204	61	59	54	32	55	37	90	44	34	47
11	60	133	101	58	50	30	44	37	82	41	37	45
12	48	132	296	56	47	30	35	34	77	39	33	39
13	44	117	192	57	44	31	31	34	74	38	41	36
14	43	116	96	56	48	31	29	32	67	68	60	35
15	186	130	161	53	48	27	54	29	58	145	75	491
16	e280	106	255	52	47	27	223	33	53	50	111	364
17	e126	86	190	52	49	27	108	37	77	49	76	103
18	e86	120	248	58	46	26	65	35	190	45	330	76
19	e88	85	205	64	47	25	52	30	159	39	111	68
20	e78	77	139	58	46	23	759	27	99	38	66	59
21	e68	73	110	55	41	22	568	28	481	41	53	52
22	e70	69	361	68	38	22	191	27	226	42	45	50
23	e63	65	260	64	37	22	119	35	115	41	39	47
24	e61	66	186	67	38	22	89	31	91	60	37	178
25	58	64	124	59	36	21	77	26	81	44	55	159
26	54	60	104	54	36	21	70	26	75	36	41	69
27	53	56	93	51	38	26	67	52	77	44	38	58
28	51	54	87	99	35	32	60	66	74	43	35	51
29	72	56	82	90	---	30	52	43	64	53	35	48
30	132	53	79	89	---	47	50	583	61	37	221	48
31	72	---	77	103	---	54	---	194	---	33	578	---
TOTAL	2610	4503	4132	2055	1548	945	3297	1918	4128	1569	2538	2974
MEAN	84.2	150	133	66.3	55.3	30.5	110	61.9	138	50.6	81.9	99.1
MAX	280	1450	361	103	124	54	759	583	739	145	578	491
MIN	28	51	50	51	35	21	29	26	53	33	33	35
AC-FT	5180	8930	8200	4080	3070	1870	6540	3800	8190	3110	5030	5900
CFSM	3.37	6.00	5.33	2.65	2.21	1.22	4.40	2.47	5.50	2.02	3.27	3.97
IN.	3.88	6.70	6.15	3.06	2.30	1.41	4.91	2.85	6.14	2.33	3.78	4.43

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2002, BY WATER YEAR (WY)

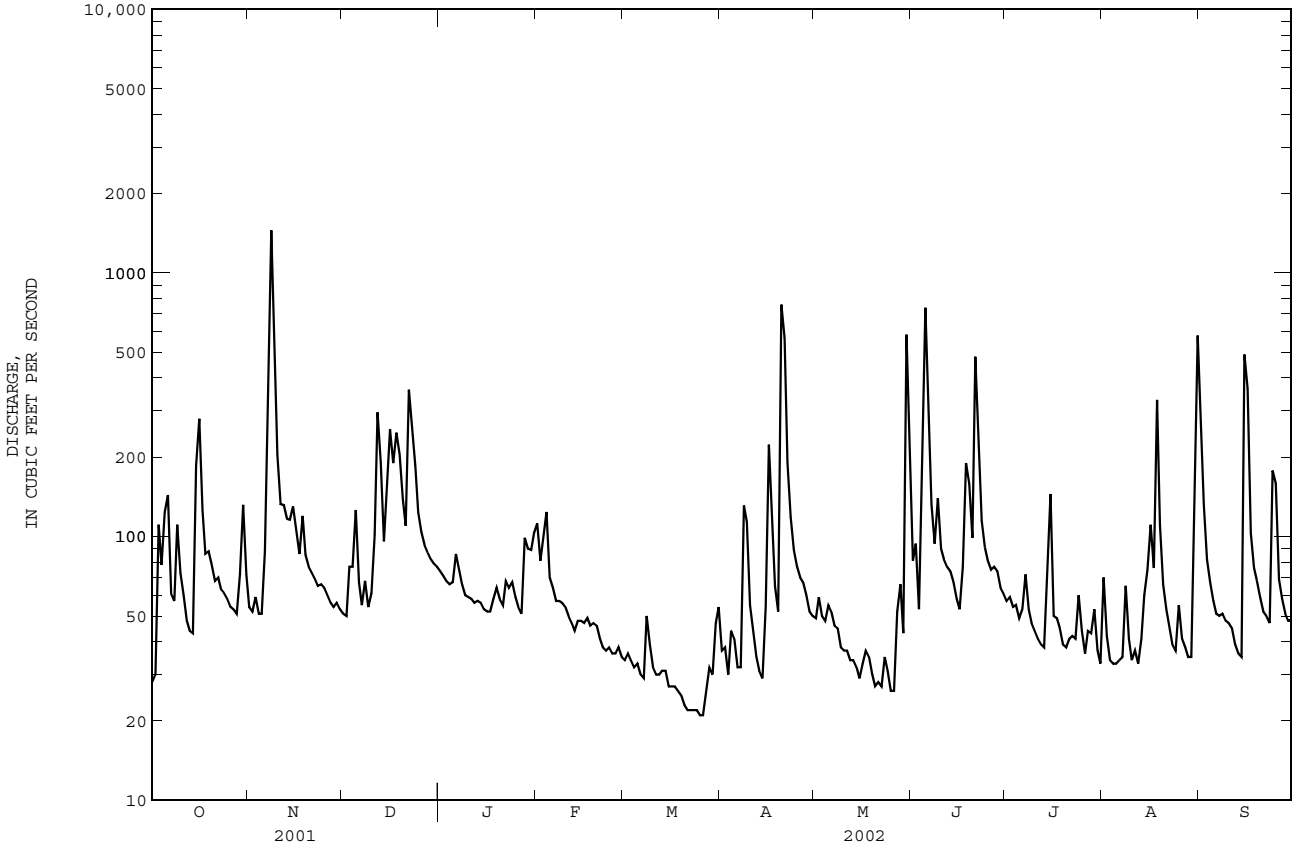
MEAN	144	150	108	102	75.1	54.8	46.6	67.6	98.1	83.9	112	191
MAX	340	298	253	192	160	158	110	186	290	208	196	631
(WY)	1999	2000	1999	1992	1998	1998	2002	1992	1992	1993	1996	1996
MIN	77.6	69.2	59.2	43.6	21.0	17.4	16.8	25.2	22.5	40.2	39.3	59.7
(WY)	1993	1996	1998	2001	1992	1992	1992	1995	2001	2001	1994	1990

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1990 - 2002	
ANNUAL TOTAL	26691		32217			
ANNUAL MEAN	73.1		88.3		105	
HIGHEST ANNUAL MEAN					154	1996
LOWEST ANNUAL MEAN					66.5	2001
HIGHEST DAILY MEAN	1960	Aug 22	1450	Nov 8	10000	Sep 10 1996
LOWEST DAILY MEAN	15	Jul 22	21	Mar 25	6.3	Apr 29 1992
ANNUAL SEVEN-DAY MINIMUM	17	Jul 17	22	Mar 20	7.4	Apr 25 1992
MAXIMUM PEAK FLOW			6070	Nov 8	56800	Sep 10 1996
MAXIMUM PEAK STAGE			15.41	Nov 8	35.62	Sep 10 1996
ANNUAL RUNOFF (AC-FT)	52940		63900		75740	
ANNUAL RUNOFF (CFSM)	2.93		3.53		4.18	
ANNUAL RUNOFF (INCHES)	39.72		47.94		56.82	
10 PERCENT EXCEEDS	125		156		180	
50 PERCENT EXCEEDS	44		56		63	
90 PERCENT EXCEEDS	20		32		27	

e Estimated

RIO GRANDE DE LOIZA BASIN

50051800 RIO GRANDE DE LOIZA AT HWY 183 NEAR SAN LORENZO, PR--Continued



RIO GRANDE DE LOIZA BASIN

50051800 RIO GRANDE DE LOIZA AT HWY 183 NEAR SAN LORENZO, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORDS.--Water years 1990 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: February 1990 to current year.

INSTRUMENTATION.--USDH-48 and automatic sediment samplers since 1990.

REMARKS.-- Sediment samples were collected by a local observer on a weekly basis. During high flow events sediment samples were collected with automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 3,080 mg/L November 10, 1997; Minimum daily mean, 3 mg/L several days during Water Year 2001.

SEDIMENT LOADS: Maximum daily mean, 80,600 tons (73,100 tonnes) September 10, 1996; Minimum daily mean, 0.15 ton (0.14 tonne) July 18, 2001.

EXTREMES FOR CURRENT YEAR 2002.--
SEDIMENT CONCENTRATION: Maximum daily mean, 1,250 mg/L November 8, 2001; Minimum daily mean, 6 mg/L November 27, 2001.

SEDIMENT LOADS: Maximum daily mean, 7,000 tons (6,350 tonnes) November 8, 2001; Minimum daily mean, 0.80 ton (0.72 tonne) March 26, 2002.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	OCTOBER			NOVEMBER			DECEMBER		
1	28	17	1.3	54	54	8.0	51	20	2.8
2	30	15	1.2	52	45	6.3	50	19	2.6
3	111	99	69	59	47	7.9	77	31	7.5
4	78	59	15	51	38	5.2	77	46	11
5	124	96	54	51	38	5.1	126	114	46
6	144	127	65	88	60	17	67	60	11
7	61	24	4.0	281	344	1150	55	48	7.1
8	57	14	2.1	1450	1250	7000	68	52	9.7
9	111	89	30	495	516	735	54	38	5.6
10	73	40	8.2	204	190	109	61	48	8.0
11	60	38	6.1	133	100	37	101	85	33
12	48	43	5.6	132	98	37	296	313	291
13	44	48	5.8	117	78	28	192	157	98
14	43	52	6.1	116	59	20	96	77	20
15	186	213	233	130	99	51	161	143	87
16	e280	e311	e406	106	60	19	255	243	210
17	e126	e96	e54	86	39	9.1	190	140	78
18	e86	e59	e15	120	98	47	248	247	236
19	e88	e59	e15	85	33	7.7	205	99	61
20	e78	e59	e15	77	20	4.2	139	77	30
21	e68	e40	e8.2	73	11	2.1	110	53	16
22	e70	e40	e8.2	69	9	1.7	361	421	1000
23	e63	e38	e6.1	65	9	1.5	260	213	168
24	e61	e26	e4.6	66	8	1.5	186	127	69
25	58	20	3.2	64	8	1.3	124	52	18
26	54	20	2.9	60	7	1.1	104	17	4.8
27	53	19	2.7	56	6	0.98	93	19	4.9
28	51	18	2.5	54	8	1.2	87	23	5.4
29	72	13	2.4	56	15	2.4	82	20	4.5
30	132	97	52	53	21	3.0	79	17	3.7
31	72	65	13	---	---	---	77	15	3.1
TOTAL	2610	---	1117.2	4503	---	9320.28	4132	---	2552.7

RIO GRANDE DE LOIZA BASIN

50051800 RIO GRANDE DE LOIZA AT HWY 183 NEAR SAN LORENZO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	74	14	2.8	112	86	27	34	23	2.1
2	71	13	2.5	81	63	14	36	23	2.2
3	68	12	2.2	102	91	32	34	22	2.0
4	66	11	1.9	124	104	40	32	22	1.9
5	67	19	3.6	70	53	10	33	21	1.9
6	86	61	14	64	49	8.4	30	21	1.7
7	75	59	12	57	46	7.1	29	20	1.6
8	66	51	9.1	57	44	6.7	50	37	5.5
9	60	46	7.4	56	41	6.2	39	29	3.1
10	59	44	7.1	54	39	5.6	32	25	2.1
11	58	43	6.7	50	36	4.9	30	21	1.7
12	56	42	6.3	47	35	4.5	30	19	1.5
13	57	41	6.3	44	34	4.1	31	16	1.4
14	56	39	6.0	48	33	4.3	31	16	1.3
15	53	38	5.5	48	33	4.2	27	16	1.2
16	52	37	5.2	47	32	4.1	27	16	1.1
17	52	39	5.4	49	31	4.1	27	15	1.1
18	58	41	6.4	46	30	3.7	26	15	1.1
19	64	48	8.3	47	29	3.7	25	15	1.0
20	58	41	6.5	46	28	3.5	23	15	0.94
21	55	39	5.7	41	27	3.0	22	15	0.88
22	68	50	9.6	38	26	2.7	22	15	0.87
23	64	50	8.7	37	26	2.6	22	14	0.87
24	67	42	7.7	38	25	2.6	22	14	0.83
25	59	40	6.4	36	25	2.4	21	14	0.81
26	54	38	5.6	36	24	2.4	21	14	0.80
27	51	36	4.9	38	24	2.5	26	17	1.3
28	99	80	27	35	23	2.2	32	21	1.9
29	90	74	19	---	---	---	30	21	1.8
30	89	70	18	---	---	---	47	32	4.5
31	103	84	25	---	---	---	54	41	6.4
TOTAL	2055	---	262.8	1548	---	218.5	945	---	57.40

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	37	28	2.9	49	37	4.9	81	93	21
2	38	28	3.1	59	47	7.5	94	80	22
3	e30	e25	e2.5	50	34	4.6	53	60	8.6
4	e44	e32	e3.9	48	35	4.6	154	157	101
5	41	30	3.4	55	36	5.5	739	788	2750
6	e32	e25	e2.3	52	22	3.1	269	264	201
7	e32	e67	e36	46	22	2.7	133	115	43
8	e131	e133	e65	45	21	2.6	94	78	20
9	114	92	29	38	21	2.2	140	121	58
10	55	44	6.7	37	21	2.1	90	71	18
11	44	33	3.9	37	21	2.1	82	63	14
12	35	29	2.7	34	20	1.9	77	57	12
13	31	26	2.2	34	20	1.9	74	53	11
14	29	23	1.8	32	20	1.7	67	50	9.0
15	54	39	8.5	29	20	1.6	58	47	7.3
16	223	215	151	33	20	1.7	53	44	6.3
17	108	88	27	37	19	1.9	77	61	14
18	65	50	8.9	35	19	1.8	190	173	121
19	52	35	5.0	30	19	1.5	159	136	59
20	759	1040	3430	27	19	1.4	99	74	20
21	568	713	1370	28	18	1.4	481	539	1240
22	191	178	96	27	18	1.3	226	243	172
23	119	106	34	35	26	2.7	115	100	32
24	89	83	20	31	22	1.9	91	81	20
25	77	61	13	26	18	1.3	81	75	16
26	70	52	9.9	26	19	1.4	75	69	14
27	67	47	8.7	52	38	5.9	77	63	13
28	60	43	7.0	66	49	8.7	74	57	11
29	52	41	5.8	43	32	3.7	64	52	9.0
30	50	39	5.2	583	709	1340	61	46	7.5
31	---	---	---	194	209	140	---	---	---
TOTAL	3297	---	5365.4	1918	---	1565.6	4128	---	5050.7

RIO GRANDE DE LOIZA BASIN

50051800 RIO GRANDE DE LOIZA AT HWY 183 NEAR SAN LORENZO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	57	42	6.3	70	57	18	312	321	308
2	59	40	6.3	42	31	3.7	133	114	43
3	54	38	5.6	34	24	2.2	82	64	14
4	55	37	5.5	33	23	2.0	67	54	9.7
5	49	35	4.7	33	22	1.9	57	46	7.2
6	53	39	5.7	34	22	2.1	51	39	5.4
7	72	49	9.5	35	26	2.4	50	38	5.2
8	53	31	4.4	65	46	8.5	51	39	5.4
9	47	29	3.6	41	32	3.6	48	30	3.9
10	44	27	3.3	34	26	2.4	47	29	3.6
11	41	26	2.9	37	27	2.7	45	28	3.4
12	39	26	2.7	33	25	2.3	39	27	2.9
13	38	26	2.7	41	27	3.1	36	26	2.6
14	68	55	34	60	45	9.9	35	26	2.4
15	145	134	84	75	58	14	491	478	1620
16	50	38	5.1	111	94	37	364	436	643
17	49	37	5.0	76	58	13	103	88	25
18	45	33	4.0	330	388	832	76	63	13
19	39	32	3.4	111	110	36	68	48	8.9
20	38	32	3.3	66	53	9.5	59	44	7.0
21	41	33	3.6	53	44	6.4	52	39	5.5
22	42	33	3.7	45	35	4.2	50	37	4.9
23	41	33	3.6	39	30	3.2	47	35	4.4
24	60	45	7.6	37	30	3.0	178	179	184
25	44	32	3.9	55	40	6.3	159	159	89
26	36	27	2.6	41	30	3.3	69	52	9.7
27	44	31	3.7	38	28	2.8	58	43	6.7
28	43	31	3.5	35	26	2.5	51	38	5.3
29	53	41	6.0	35	26	2.4	48	35	4.5
30	37	28	2.8	221	258	491	48	32	4.1
31	33	26	2.3	578	638	1710	---	---	---
TOTAL	1569	---	245.3	2538	---	3241.4	2974	---	3051.7
YEAR	32217		32048.98						

e Estimated

RIO GRANDE DE LOIZA BASIN

50053025 RIO TURABO ABOVE BORINQUEN, PR

LOCATION.--Lat 18°09'35", long 66°02'26", Hydrologic Unit 21010005, on left bank at Highway 765, 1.12 mi (1.8 km) south of Villa Borinquén, 1.35 mi (2.17 km), north from Mercedes Palma school and 0.83 mi (1.34 km) east from Atravezada school on Road 763.

DRAINAGE AREA.--7.49 mi^2 (18.5 km^2).

PERIOD OF RECORD.--January 1990 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 492 ft (150 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.9	7.9	8.0	16	30	8.5	7.6	12	13	13	11	89
2	6.8	7.6	12	15	19	8.5	7.9	13	11	13	11	32
3	9.2	7.5	11	14	32	8.3	8.4	11	9.7	12	10	25
4	7.7	7.8	23	14	25	8.0	e7.3	12	18	13	10	19
5	22	10	30	16	16	8.1	e6.9	11	115	14	10	16
6	15	45	15	23	14	7.9	6.6	13	39	14	11	14
7	7.8	95	13	17	13	8.0	e41	12	21	16	11	16
8	8.7	291	12	14	12	13	29	11	16	14	11	17
9	20	117	11	14	11	9.7	29	9.9	71	14	10	12
10	21	50	12	13	11	8.8	12	9.5	18	13	9.9	11
11	12	29	36	13	10	8.4	9.4	9.2	14	13	9.9	11
12	8.5	19	111	12	9.6	8.1	8.3	8.9	13	13	9.9	10
13	7.6	17	41	12	9.4	8.4	7.4	e8.7	12	12	10	10
14	7.5	17	23	12	9.7	7.9	7.1	e8.6	10	54	13	12
15	84	52	35	11	9.7	7.9	28	8.3	8.9	30	12	237
16	70	25	53	11	9.7	7.8	76	8.7	8.5	18	38	100
17	22	e15	89	11	9.5	7.4	21	9.3	23	17	11	29
18	20	e13	71	13	9.1	7.3	14	9.1	123	15	99	21
19	17	e12	54	12	12	6.9	11	8.3	33	14	24	17
20	13	11	32	12	10	6.6	197	8.0	17	13	18	16
21	12	11	27	12	9.0	6.6	166	7.8	204	13	16	14
22	12	9.8	27	17	8.8	6.5	45	7.6	78	13	15	14
23	10	9.4	73	14	8.5	6.2	27	12	32	12	15	13
24	9.5	11	51	18	8.5	6.3	23	8.3	22	14	14	33
25	8.9	9.5	30	13	8.3	6.3	19	7.6	17	e12	14	19
26	8.5	9.1	25	12	8.8	6.2	20	8.4	15	11	11	15
27	8.3	9.2	21	11	8.7	9.2	17	14	15	13	11	13
28	8.7	8.8	19	38	8.4	6.9	14	15	14	13	11	13
29	8.7	10	18	32	---	9.5	13	11	13	13	11	12
30	12	8.3	17	21	---	7.8	12	82	13	11	112	12
31	8.8	---	16	45	---	6.6	---	19	---	11	155	---
TOTAL	493.1	944.9	1016.0	508	350.7	243.6	890.9	394.2	1017.1	471	734.7	872
MEAN	15.9	31.5	32.8	16.4	12.5	7.86	29.7	12.7	33.9	15.2	23.7	29.1
MAX	84	291	111	45	32	13	197	82	204	54	155	237
MIN	5.9	7.5	8.0	11	8.3	6.2	6.6	7.6	8.5	11	9.9	10
MED	9.5	11	25	14	9.7	7.9	14	9.5	16	13	11	16
AC-FT	978	1870	2020	1010	696	483	1770	782	2020	934	1460	1730
CFSM	2.23	4.41	4.59	2.30	1.75	1.10	4.16	1.78	4.75	2.13	3.32	4.07
IN.	2.57	4.92	5.29	2.65	1.83	1.27	4.64	2.05	5.30	2.45	3.83	4.54

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2002, BY WATER YEAR (WY)

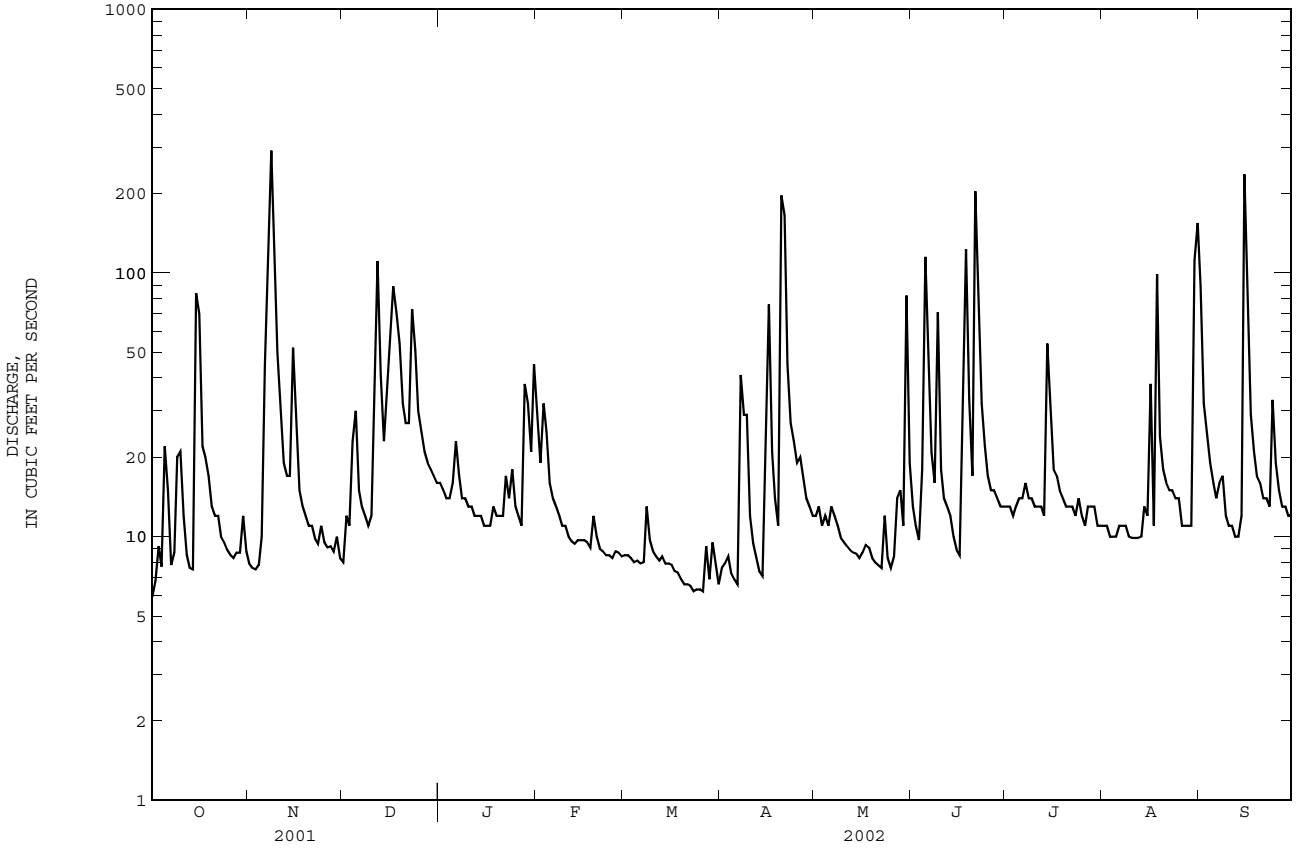
MEAN	26.0	28.1	22.5	22.0	16.5	12.4	11.3	14.9	23.7	19.9	22.4	43.1
MAX	51.3	70.5	42.7	47.5	25.0	26.9	29.7	31.9	67.9	54.6	41.4	123
(WY)	1998	2000	1999	1992	1997	1998	2002	1993	1996	1993	1996	1996
MIN	10.3	18.6	10.6	7.85	8.93	7.35	6.18	6.11	6.07	8.25	6.98	12.1
(WY)	1994	1996	1994	1990	1990	1993	1990	1994	2001	2001	1994	2001

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1990 - 2002	
ANNUAL TOTAL	5459.6		7936.2			
ANNUAL MEAN	15.0		21.7		22.4	
HIGHEST ANNUAL MEAN					38.1	1996
LOWEST ANNUAL MEAN					12.1	1994
HIGHEST DAILY MEAN	291	Nov 8	291	Nov 8	1940	Sep 10 1996
LOWEST DAILY MEAN	4.1	Jul 21	5.9	Oct 1	3.3	Aug 17 1994
ANNUAL SEVEN-DAY MINIMUM	4.4	Jul 15	6.4	Mar 20	3.8	Aug 11 1994
MAXIMUM PEAK FLOW			1060	Jun 21	15200	Sep 10 1996
MAXIMUM PEAK STAGE			8.39	Jun 21	22.60	Sep 10 1996
INSTANTANEOUS LOW FLOW					2.6	Jul 17 1997
ANNUAL RUNOFF (AC-FT)	10830		15740		16200	
ANNUAL RUNOFF (CFSM)	2.09		3.05		3.13	
ANNUAL RUNOFF (INCHES)	28.44		41.35		42.56	
10 PERCENT EXCEEDS	25		38		36	
50 PERCENT EXCEEDS	8.7		12		12	
90 PERCENT EXCEEDS	5.4		7.9		6.4	

e Estimated

RIO GRANDE DE LOIZA BASIN

50053025 RIO TURABO ABOVE BORINQUEN, PR--Continued



RIO GRANDE DE LOIZA BASIN

50055000 RIO GRANDE DE LOIZA AT CAGUAS, PR

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

DRAINAGE AREA.--89.8 mi^2 (233 km^2).

WATER-DISCHARGE RECORDS

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

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

REMARKS.--Records good except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	85	132	125	174	176	58	46	78	127	97	134	879
2	84	137	125	170	144	60	42	153	137	105	103	326
3	181	147	173	163	150	58	43	113	88	95	62	167
4	203	129	159	159	242	55	53	81	180	95	56	129
5	249	129	358	159	118	56	48	87	1190	87	77	109
6	343	212	208	230	105	53	94	85	529	100	61	99
7	153	667	152	e198	98	51	79	104	226	122	59	89
8	136	4420	155	e158	97	73	266	109	145	105	97	101
9	210	1330	141	e146	93	61	198	70	219	87	77	85
10	182	495	151	e137	93	42	88	62	162	82	57	90
11	155	308	205	e130	88	39	59	58	122	76	55	79
12	129	271	487	e117	83	38	49	51	119	73	56	70
13	118	219	445	e120	79	38	43	46	123	71	63	66
14	116	250	236	e116	83	39	39	44	117	109	65	63
15	263	250	309	e112	85	37	50	43	95	336	114	1220
16	803	281	669	e103	84	41	432	44	87	100	147	1110
17	343	209	666	e105	83	36	171	50	97	84	172	242
18	230	517	e675	e137	81	34	87	53	376	84	e590	154
19	233	267	478	e124	89	34	69	47	262	72	230	167
20	205	188	316	e125	98	32	1950	42	169	67	99	132
21	172	170	259	e117	78	29	1660	41	1530	71	82	100
22	180	159	566	e202	73	29	391	43	629	72	68	92
23	160	149	687	e147	70	30	199	43	232	78	61	86
24	150	161	486	e211	70	29	142	56	167	84	63	251
25	140	151	304	e141	68	29	121	41	142	83	67	418
26	133	143	252	e113	65	27	140	40	128	64	66	182
27	129	142	224	e101	65	27	118	68	128	73	56	119
28	127	137	209	e301	62	52	94	103	126	77	52	98
29	152	141	195	e300	---	48	88	71	110	85	50	90
30	215	135	184	207	---	57	81	794	103	65	819	91
31	177	---	182	154	---	58	---	391	---	60	1720	---
TOTAL	6156	12046	9781	4877	2720	1350	6940	3111	7865	2859	5478	6904
MEAN	199	402	316	157	97.1	43.5	231	100	262	92.2	177	230
MAX	803	4420	687	301	242	73	1950	794	1530	336	1720	1220
MIN	84	129	125	101	62	27	39	40	87	60	50	63
AC-FT	12210	23890	19400	9670	5400	2680	13770	6170	15600	5670	10870	13690
CFSM	2.21	4.47	3.51	1.75	1.08	0.48	2.58	1.12	2.92	1.03	1.97	2.56
IN.	2.55	4.99	4.05	2.02	1.13	0.56	2.87	1.29	3.26	1.18	2.27	2.86

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2002, BY WATER YEAR (WY)

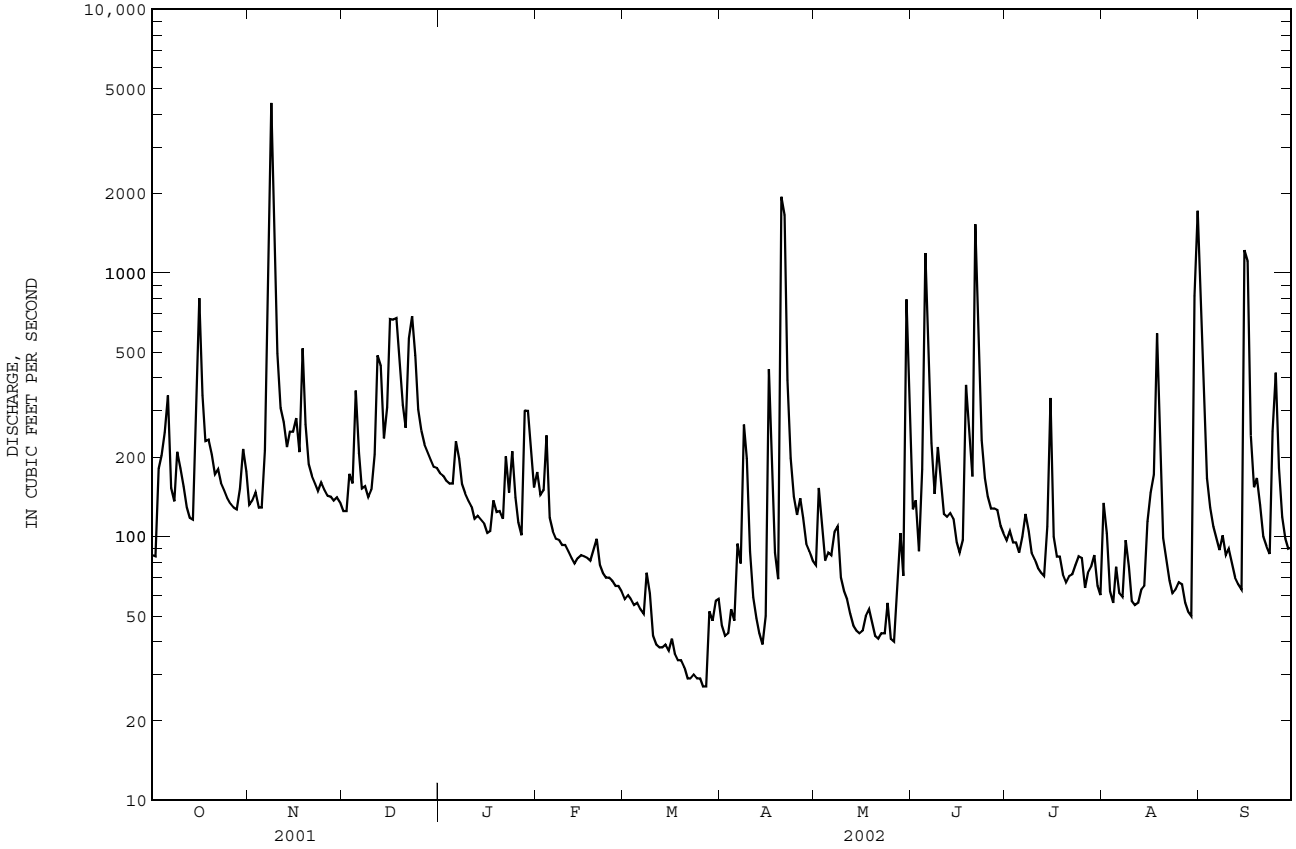
MEAN	348	321	226	151	112	92.9	92.5	215	234	214	265	318
MAX	1910	1131	714	559	291	306	355	863	1283	660	949	1438
(WY)	1971	1988	1988	1992	1984	1989	1978	1985	1979	1961	1979	1960
MIN	44.2	64.9	33.6	45.3	35.6	23.2	30.6	33.7	34.1	21.8	51.4	37.4
(WY)	1968	1968	1968	1968	1968	1968	1995	1974	1975	1974	1994	1967

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1960 - 2002		
ANNUAL TOTAL	58906		70087				
ANNUAL MEAN	161		192		214		
HIGHEST ANNUAL MEAN					526		1979
LOWEST ANNUAL MEAN					82.3		1967
HIGHEST DAILY MEAN	4420	Nov 8	4420	Nov 8	25300	Sep 6	1960
LOWEST DAILY MEAN	25	Jul 16	27	Mar 26	11	Apr 8	1968
ANNUAL SEVEN-DAY MINIMUM	25	Jul 16	29	Mar 21	11	Apr 8	1968
MAXIMUM PEAK FLOW			11700	Nov 8	83000	Sep 10	1996
MAXIMUM PEAK STAGE			14.75	Nov 8	32.32	Sep 10	1996
INSTANTANEOUS LOW FLOW			25	Mar 26	17	Aug 18	1994
ANNUAL RUNOFF (AC-FT)	116800		139000		154800		
ANNUAL RUNOFF (CFSM)	1.80		2.14		2.38		
ANNUAL RUNOFF (INCHES)	24.40		29.03		32.33		
10 PERCENT EXCEEDS	268		339		352		
50 PERCENT EXCEEDS	84		116		106		
90 PERCENT EXCEEDS	39		49		40		

e Estimated

RIO GRANDE DE LOIZA BASIN

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



RIO GRANDE DE LOIZA BASIN

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

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 1983 to current year.

INSTRUMENTATION.--USDH-48 sediment sampler since October 1983. Automatic sediment sampler since 1984.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 14,500 mg/L November 27, 1987; Minimum daily mean, 5 mg/L September 30, 2001.

SEDIMENT LOADS: Maximum daily mean, 396,000 tons (359,000 tonnes) September 10, 1996; Minimum daily mean, 0.65 ton (0.59 tonne) May 25, 1995.

EXTREMES FOR CURRENT YEAR 2002.--
SEDIMENT CONCENTRATION: Maximum daily mean, 1,380 mg/L November 8, 2001; Minimum daily mean, 13 mg/L July 31 and August 29, 2002.

SEDIMENT LOADS: Maximum daily mean, 21,800 tons (19,777 tonnes) November 8, 2001; Minimum daily mean, 1.4 ton (1.3 tonne) March 26, 2002.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
NOV													
20...	1345	191	275	7.2	26.5	29	7.3	91	20	3300	49000	--	--
FEB													
11...	1200	86	305	7.5	27.0	25	8.4	105	<10	4900	E180	--	--
MAY													
07...	1250	83	274	7.5	29.9	27	7.3	95	<10	42000	20	84	21.4

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
NOV													
20...	--	--	--	--	85	<1.0	--	--	--	--	--	--	24
FEB													
11...	--	--	--	--	87	--	--	--	--	--	--	--	22
MAY													
07...	7.45	22.0	1	1.84	92	.2	12.9	21.6	.1	31.9	174	39.2	23

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
NOV													
20...	.06	.620	.35	E.70	E.10	--	--	--	--	--	--	--	--
FEB													
11...	.04	.520	.10	.50	.06	--	--	--	--	--	--	--	--
MAY													
07...	.02	.090	.09	.30	.06	<2	35.1	40	<.1	E.5	<10	670	<1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
NOV								
20...	--	--	--	--	--	--	E3	E.03
FEB								
11...	--	--	--	--	--	--	--	--
MAY								
07...	160	<.01	<2	<.3	<20	<.01	<16	.07

< -- Less than
E -- Estimated value

RIO GRANDE DE LOIZA BASIN

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

WATER-QUALITY RECORDS

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	85	18	4.1	132	30	11	125	19	6.3
2	84	36	8.2	137	33	13	125	18	6.0
3	181	60	43	147	36	14	173	35	17
4	203	112	63	129	32	11	159	22	9.5
5	249	95	71	129	28	9.8	358	96	95
6	343	97	101	212	51	32	208	60	35
7	153	34	14	667	420	3520	152	42	17
8	136	29	11	4420	1380	21800	155	36	15
9	210	53	32	1330	370	1430	141	31	12
10	182	44	22	495	120	175	151	26	11
11	155	24	10	308	21	18	205	29	18
12	129	22	7.6	271	39	30	487	155	220
13	118	24	7.7	219	18	11	445	142	198
14	116	27	8.4	250	38	28	236	71	46
15	263	134	168	250	41	44	309	79	81
16	803	599	2030	281	53	47	669	363	993
17	343	109	104	209	17	9.7	666	402	971
18	230	81	50	517	382	1460	e675	e352	e832
19	233	69	44	267	282	251	478	163	214
20	205	58	32	188	44	23	316	125	108
21	172	47	22	170	39	18	259	89	63
22	180	35	17	159	33	14	566	369	1250
23	160	27	12	149	30	12	687	500	1120
24	150	25	10	161	26	11	486	216	329
25	140	24	9.1	151	22	9.1	304	96	80
26	133	23	8.2	143	19	7.3	252	58	40
27	129	22	7.7	142	16	6.1	224	30	18
28	127	21	7.3	137	15	5.6	209	27	15
29	152	21	8.4	141	15	5.5	195	25	13
30	215	43	32	135	18	6.6	184	23	11
31	177	45	23	---	---	---	182	21	10
TOTAL	6156	---	2987.7	12046	---	29032.7	9781	---	6853.8

RIO GRANDE DE LOIZA BASIN

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

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	174	21	9.8	176	43	21	58	21	3.3
2	170	21	9.5	144	35	14	60	21	3.4
3	163	20	9.0	150	39	19	58	21	3.2
4	159	20	8.7	242	68	51	55	21	3.1
5	159	20	8.8	118	31	9.9	56	21	3.1
6	230	57	36	105	29	8.4	53	20	2.9
7	e198	e25	e18.0	98	29	7.7	51	20	2.8
8	e158	e33	e14.0	97	29	7.5	73	20	4.0
9	e146	e16	e12.0	93	28	7.1	61	20	3.3
10	e137	e15	e5.6	93	28	7.0	42	20	2.3
11	e130	e18	e6.6	88	27	6.5	39	20	2.1
12	e117	e19	e6.3	83	27	6.0	38	20	2.1
13	e120	e19	e6.3	79	27	5.7	38	20	2.1
14	e116	e19	e6.3	83	26	5.8	39	20	2.1
15	e112	e18	e6.0	85	26	5.9	37	20	2.0
16	e103	e18	e6.0	84	25	5.8	41	20	2.2
17	e105	e18	e6.0	83	25	5.5	36	20	2.0
18	e137	e18	e6.0	81	24	5.3	34	20	1.8
19	e124	e18	e6.0	89	24	5.8	34	20	1.8
20	e125	e18	e6.0	98	24	6.3	32	20	1.7
21	e117	e18	e6.0	78	23	4.9	29	20	1.6
22	e202	e27	e15.0	73	23	4.5	29	20	1.6
23	e147	e16	e12.0	70	22	4.2	30	20	1.6
24	e211	e28	e15.0	70	22	4.2	29	20	1.5
25	e141	e16	e6.1	68	21	3.9	29	20	1.5
26	e113	e18	e6.0	65	21	3.7	27	20	1.4
27	e101	e18	e6.0	65	21	3.7	27	20	1.5
28	e301	e21	e18.0	62	21	3.5	52	20	2.8
29	e300	e39	e30.0	---	---	---	48	20	2.6
30	207	55	33	---	---	---	57	20	3.1
31	154	41	18	---	---	---	58	20	3.1
TOTAL	4877	---	358.0	2720	---	243.8	1350	---	73.6

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	46	20	2.5	78	21	4.4	127	33	11
2	42	20	2.3	153	46	34	137	35	14
3	43	20	2.3	113	24	7.5	88	26	6.3
4	53	20	2.8	81	21	4.5	180	51	40
5	48	20	2.6	87	19	4.6	1190	397	2840
6	94	30	11	85	18	4.2	529	169	264
7	79	28	7.9	104	24	7.4	226	68	43
8	266	79	67	109	27	8.3	145	49	19
9	198	48	26	70	21	3.9	219	62	48
10	88	22	5.5	62	20	3.4	162	42	19
11	59	20	3.2	58	20	3.1	122	28	9.3
12	49	20	2.7	51	20	2.8	119	26	8.2
13	43	20	2.3	46	20	2.4	123	25	8.2
14	39	20	2.1	44	19	2.3	117	24	7.7
15	50	20	2.7	43	19	2.2	95	24	6.1
16	432	132	200	44	19	2.2	87	24	5.5
17	171	42	21	50	19	2.5	97	24	6.5
18	87	25	5.9	53	18	2.6	376	108	141
19	69	26	4.8	47	18	2.3	262	68	48
20	1950	639	6210	42	18	2.0	169	42	20
21	1660	483	2680	41	17	1.9	1530	494	5930
22	391	128	148	43	17	2.0	629	219	503
23	199	63	34	43	17	1.9	232	80	50
24	142	35	13	56	17	2.5	167	55	25
25	121	27	8.9	41	16	1.8	142	34	13
26	140	35	15	40	16	1.7	128	30	10
27	118	30	9.6	68	16	2.9	128	29	10
28	94	22	5.5	103	15	4.3	126	29	9.8
29	88	21	5.0	71	15	2.9	110	28	8.4
30	81	21	4.6	794	520	1530	103	28	7.8
31	---	---	---	391	129	206	---	---	---
TOTAL	6940	---	9508.2	3111	---	1864.5	7865	---	10131.8

RIO GRANDE DE LOIZA BASIN

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

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	97	28	7.2	134	35	24	879	318	1040
2	105	27	7.7	103	29	9.3	326	101	94
3	95	27	6.8	62	16	2.6	167	45	21
4	95	26	6.8	56	15	2.3	129	40	14
5	87	26	6.0	77	15	3.1	109	38	11
6	100	25	6.9	61	15	2.4	99	37	9.9
7	122	25	8.2	59	14	2.3	89	36	8.6
8	105	25	7.0	97	22	6.2	101	35	9.5
9	87	24	5.7	77	18	3.9	85	33	7.6
10	82	24	5.3	57	14	2.2	90	32	7.9
11	76	23	4.8	55	14	2.1	79	31	6.6
12	73	23	4.5	56	15	2.2	70	30	5.6
13	71	23	4.4	63	15	2.5	66	28	5.0
14	109	34	18	65	15	2.6	63	27	4.6
15	336	102	117	114	28	9.1	1220	535	4620
16	100	34	9.2	147	43	25	1110	396	1720
17	84	29	6.6	172	46	26	242	88	61
18	84	28	6.3	e590	e331	e1120	154	42	18
19	72	27	5.2	230	73	55	167	47	24
20	67	26	4.7	99	32	8.7	132	36	13
21	71	25	4.7	82	30	6.7	100	24	6.5
22	72	23	4.5	68	28	5.2	92	23	5.7
23	78	22	4.7	61	26	4.3	86	23	5.3
24	84	21	4.8	63	24	4.0	251	90	116
25	83	20	4.5	67	22	3.9	418	127	164
26	64	19	3.3	66	20	3.5	182	57	30
27	73	18	3.5	56	18	2.7	119	33	11
28	77	17	3.5	52	15	2.2	98	29	7.6
29	85	16	3.6	50	13	1.8	90	25	6.2
30	65	14	2.5	819	365	2830	91	22	5.3
31	60	13	2.1	1720	820	5310	---	---	---
TOTAL	2859	---	290.0	5478	---	9485.8	6904	---	8058.9
YEAR	70087		78888.8						

e Estimated

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

Date	Time	Instan-taneous dis-charge, cfs (00061)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment load, tons/d (80155)	Suspnd. sedi-ment, sieve diametr percent <.062mm (70331)
APR					
21...	0330	3850	785	8160	98
JUN					
21...	2310	2390	828	5340	99

RIO GRANDE DE LOIZA BASIN

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

PARTICLE SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

Date	Time	Instantaneous discharge, cfs (00061)	Suspended sediment concentration mg/L (80154)	Suspended sediment load, tons/d (80155)	Suspnd. sediment, falldia nat wat percent <.002mm (70326)	Suspnd. sediment, falldia nat wat percent <.004mm (70327)	Suspnd. sediment, falldia nat wat percent <.008mm (70328)	Suspnd. sediment, falldia nat wat percent <.016mm (70329)	Suspnd. sediment, falldia nat wat percent <.031mm (70330)	Suspnd. sediment, sieve diametr percent <.062mm (70331)	Suspnd. sediment, sieve diametr percent <.125mm (70332)	Suspnd. sediment, sieve diametr percent <.25mm (70333)	Suspnd. sediment, sieve diametr percent <.5 mm (70334)
APR													
20...	1415	5740	1680	26000	48	61	69	82	86	95	99	100	100
JUN													
21...	1855	6410	1870	32300	52	63	71	84	86	93	99	100	100

RIO GRANDE DE LOIZA BASIN

50055100 RIO CAGÜITAS NEAR AGUAS BUENAS, PR

LOCATION.--Lat 18°14'48", long 66°05'37", Hydrologic Unit 21010005, on right bank 450 ft (137 m) upstream from bridge on Highway 777, 1.0 mi (1.6 km) southeast from Aguas Buenas, 3.9 mi (6.3 km) northwest from Caguas, and 2.1 mi (3.4 km) southwest from Las Carolinas.

DRAINAGE AREA.--5.30 mi^2 (13.7 km^2).

PERIOD OF RECORD.--February 1990 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 394 ft (120 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e2.3	e2.6	4.5	6.7	8.7	4.1	e4.4	e6.0	4.3	3.9	2.7	15
2	2.3	2.6	4.6	6.4	7.4	4.2	e3.2	e34	4.2	4.4	2.8	5.2
3	3.7	e2.6	7.2	6.1	34	4.0	3.1	e20	4.1	3.7	2.6	3.7
4	3.4	e2.7	5.9	6.0	17	4.0	3.4	e13	4.3	3.6	2.8	3.0
5	e8.5	2.6	7.9	6.8	9.1	4.8	e4.5	e9.1	5.5	3.5	5.3	2.9
6	e4.6	2.4	6.2	18	7.1	4.1	e32	e7.8	5.0	4.4	3.9	2.7
7	3.6	4.9	5.3	10	6.2	4.0	14	e6.7	4.4	3.8	2.7	2.8
8	5.0	320	5.9	7.4	5.7	e6.2	26	e7.3	4.3	3.9	2.9	2.8
9	e4.1	50	5.6	6.6	5.7	e3.9	41	e6.0	5.3	3.5	2.6	2.8
10	5.3	17	7.6	6.1	5.6	e3.7	9.1	e6.0	4.1	3.4	2.5	2.8
11	4.1	10	11	6.0	5.5	e6.2	e6.1	e5.7	4.4	3.2	2.5	3.0
12	3.1	7.1	15	5.8	5.0	e3.9	e4.9	e5.7	4.0	3.2	2.5	3.0
13	6.1	5.8	13	5.6	4.8	3.6	e4.3	e5.7	4.0	3.2	2.3	3.1
14	4.2	5.0	13	5.7	4.9	e3.5	e4.0	e5.6	4.3	4.7	2.2	2.8
15	10	4.5	15	5.6	4.7	e4.9	e6.1	e5.2	3.8	6.9	2.3	10
16	17	4.2	50	5.3	4.6	e4.3	e30	e5.2	3.7	3.6	4.8	13
17	10	4.0	29	5.2	4.6	3.5	e13	e5.4	7.2	3.4	3.0	4.9
18	e7.0	32	28	5.2	4.7	e3.5	7.6	e5.0	e6.0	3.2	2.8	4.2
19	5.0	12	17	5.0	7.6	e4.1	e5.9	e4.8	4.5	3.1	2.5	16
20	e4.1	6.8	11	5.8	5.3	e3.6	e149	e4.7	4.1	3.1	2.3	9.3
21	e3.6	5.6	11	5.7	4.4	e3.3	e46	4.7	15	3.0	2.3	5.7
22	e3.3	4.9	15	6.1	4.2	e3.2	18	4.6	8.4	3.4	2.2	4.7
23	e3.1	4.7	60	5.7	4.2	3.1	11	5.1	4.7	3.5	2.1	4.5
24	e3.0	6.1	28	15	4.3	3.0	11	4.7	4.4	3.2	2.4	8.1
25	e2.8	5.1	16	6.4	4.1	e3.0	9.2	e4.7	4.2	2.9	2.1	12
26	4.6	4.6	12	5.5	4.8	3.0	e7.8	e4.5	4.0	3.0	2.0	6.8
27	3.2	4.5	9.9	5.3	4.2	3.7	e7.4	e5.7	4.4	3.5	1.9	5.7
28	3.0	4.8	8.7	10	4.0	e4.2	e7.4	e4.8	4.2	3.9	3.1	4.9
29	e3.0	8.3	7.8	8.9	---	e4.4	e7.0	4.6	4.0	3.4	2.3	4.4
30	e2.9	5.3	7.3	10	---	e4.1	e6.3	4.9	3.8	2.9	33	4.2
31	e2.6	---	6.9	9.2	---	e3.1	---	4.7	---	2.8	47	---
TOTAL	148.5	552.7	445.3	223.1	192.4	122.2	502.7	221.9	148.6	111.2	158.4	174.0
MEAN	4.79	18.4	14.4	7.20	6.87	3.94	16.8	7.16	4.95	3.59	5.11	5.80
MAX	17	320	60	18	34	6.2	149	34	15	6.9	47	16
MIN	2.3	2.4	4.5	5.0	4.0	3.0	3.1	4.5	3.7	2.8	1.9	2.7
AC-FT	295	1100	883	443	382	242	997	440	295	221	314	345
CFSM	0.90	3.48	2.71	1.36	1.30	0.74	3.16	1.35	0.93	0.68	0.96	1.09
IN.	1.04	3.88	3.13	1.57	1.35	0.86	3.53	1.56	1.04	0.78	1.11	1.22

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2002, BY WATER YEAR (WY)

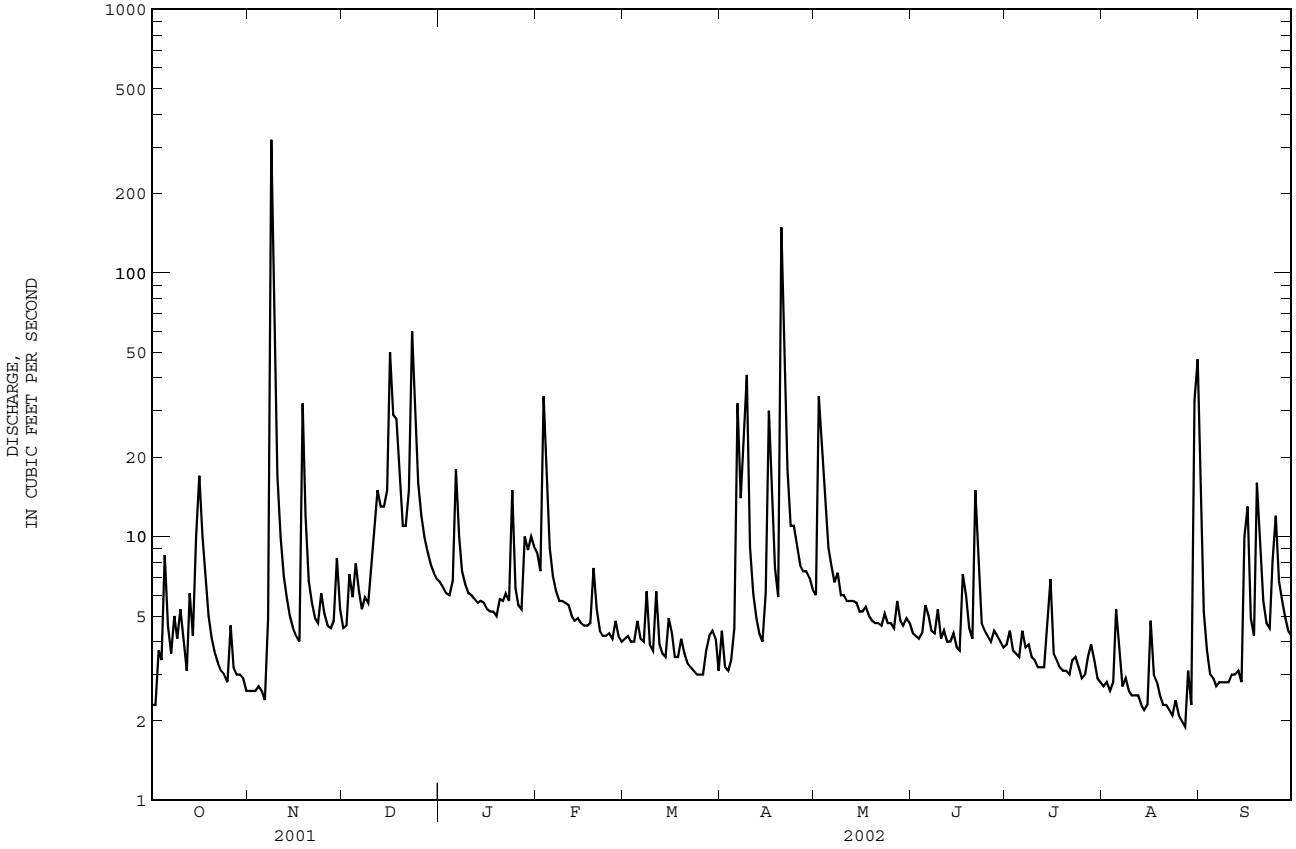
MEAN	9.47	11.9	10.9	8.85	6.10	5.01	5.61	5.31	4.97	6.17	7.64	13.8
MAX	20.9	32.7	39.2	16.7	10.1	8.87	16.8	18.0	12.1	18.6	18.9	52.9
(WY)	1991	2000	1999	1992	1999	1990	2002	1993	1999	1993	2000	1996
MIN	3.17	2.66	2.34	2.48	2.96	2.09	1.84	2.00	1.84	1.86	1.85	2.43
(WY)	1996	1995	1995	1995	1995	1996	1995	1997	1997	1994	1994	1997

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1990 - 2002	
ANNUAL TOTAL	2376.5		3001.0			
ANNUAL MEAN	6.51		8.22		8.10	
HIGHEST ANNUAL MEAN					14.5	1999
LOWEST ANNUAL MEAN					4.31	1997
HIGHEST DAILY MEAN	320	Nov 8	320	Nov 8	1260	Sep 10 1996
LOWEST DAILY MEAN	2.3	May 27	1.9	Aug 27	1.0	Aug 1 1997
ANNUAL SEVEN-DAY MINIMUM	2.5	May 24	2.1	Aug 21	1.2	Apr 30 1996
MAXIMUM PEAK FLOW			1280	Nov 8	4490	Sep 10 1996
MAXIMUM PEAK STAGE			14.79	Nov 8	21.22	Sep 10 1996
INSTANTANEOUS LOW FLOW					0.82	Jul 29 1997
ANNUAL RUNOFF (AC-FT)	4710		5950		5870	
ANNUAL RUNOFF (CFSM)	1.23		1.55		1.53	
ANNUAL RUNOFF (INCHES)	16.68		21.06		20.77	
10 PERCENT EXCEEDS	8.6		13		13	
50 PERCENT EXCEEDS	4.1		4.7		4.8	
90 PERCENT EXCEEDS	2.8		2.8		2.1	

e Estimated

RIO GRANDE DE LOIZA BASIN

50055100 RIO CAGÜITAS NEAR AGUAS BUENAS, PR--Continued



RIO GRANDE DE LOIZA BASIN

50055225 RIO CAGÜITAS AT VILLA BLANCA AT CAGUAS, PR

LOCATION.--Lat 18°14'55", long 66°01'40", Hydrologic Unit 21010005, on left bank, at Calle 4 Villa Blanca housing area at Caguas, 1.8 mi (2.9 km) upstream from Río Grande de Loíza, and 0.95 mi (1.53 km) northeast from Caguas Plaza.

DRAINAGE AREA.--11.7 mi^2 (30.3 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1990 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 164 ft (50 m), from topographic map.

REMARKS.--Records poor. Gage-height and precipitation satellite telemetry at station. Low flow affected by pluvial discharges above 50 ft (15.24 m), upstream from station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e5.5	e9.1	e14	17	23	10	11	16	8.6	9.6	7.6	76
2	e5.2	e9.2	e14	16	18	11	10	187	8.2	16	6.8	31
3	e9.6	e9.5	e23	16	113	10	9.3	62	7.4	9.0	6.5	19
4	e8.7	e10	e16	16	51	10	11	35	e8.3	10	6.9	16
5	e27	e9.5	e35	21	e23	16	8.6	24	e20	8.0	57	15
6	e12	e9.0	16	62	e17	9.8	128	21	e11	20	15	13
7	e9.5	e20	14	26	17	10	63	41	8.2	11	10	13
8	e13	e1100	13	19	16	17	71	23	8.3	10	15	13
9	e11	e175	16	17	16	11	86	16	11	8.7	9.1	11
10	e14	e50	13	17	15	10	24	15	10	8.0	8.2	11
11	e11	e30	33	16	16	10	17	13	13	7.6	11	11
12	e10	e22	40	15	e15	12	14	13	10	7.9	8.2	11
13	e17	e17	32	15	e14	10	13	12	10	7.6	7.3	10
14	e11	e18	34	15	e14	9.3	11	12	11	60	7.7	13
15	e30	e17	52	15	e13	10	22	11	10	26	8.3	127
16	e55	e20	224	14	13	18	61	11	9.4	10	23	68
17	e30	e16	91	14	14	13	30	11	25	8.8	11	19
18	e23	e110	103	15	13	12	18	13	23	8.2	13	42
19	e18	e45	41	15	23	15	15	12	14	7.4	9.9	50
20	e15	e22	28	27	17	11	413	11	11	7.5	8.6	36
21	e13	e18	26	15	12	11	222	11	188	7.8	8.8	20
22	e11	e17	35	16	12	10	46	11	39	10	8.3	15
23	e10	e16	299	19	11	9.5	29	12	15	13	8.0	14
24	e9.5	e20	74	43	11	8.9	29	11	12	9.5	8.1	29
25	e9.0	e17	38	18	11	8.7	29	11	11	8.1	8.0	51
26	e16	e15	29	16	11	8.2	34	13	9.9	7.6	8.3	20
27	e11	e15	24	15	11	10	25	18	11	13	7.5	15
28	e10	e17	21	28	11	23	25	18	11	12	12	13
29	e9.6	e20	19	27	---	40	21	12	9.7	11	11	12
30	e9.2	e17	18	22	---	15	17	26	9.4	8.1	320	12
31	e9.0	---	17	23	---	9.9	---	13	---	9.4	188	---
TOTAL	452.8	1890.3	1452	630	551	389.3	1512.9	715	553.4	370.8	838.1	806
MEAN	14.6	63.0	46.8	20.3	19.7	12.6	50.4	23.1	18.4	12.0	27.0	26.9
MAX	55	1100	299	62	113	40	413	187	188	60	320	127
MIN	5.2	9.0	13	14	11	8.2	8.6	11	7.4	7.4	6.5	10
MED	11	17	28	16	14	10	24	13	11	9.4	8.6	15
AC-FT	898	3750	2880	1250	1090	772	3000	1420	1100	735	1660	1600
CFSM	1.25	5.38	4.00	1.74	1.68	1.07	4.31	1.97	1.58	1.02	2.31	2.29
IN.	1.44	6.01	4.61	2.00	1.75	1.24	4.81	2.27	1.76	1.18	2.66	2.56

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2002, BY WATER YEAR (WY)

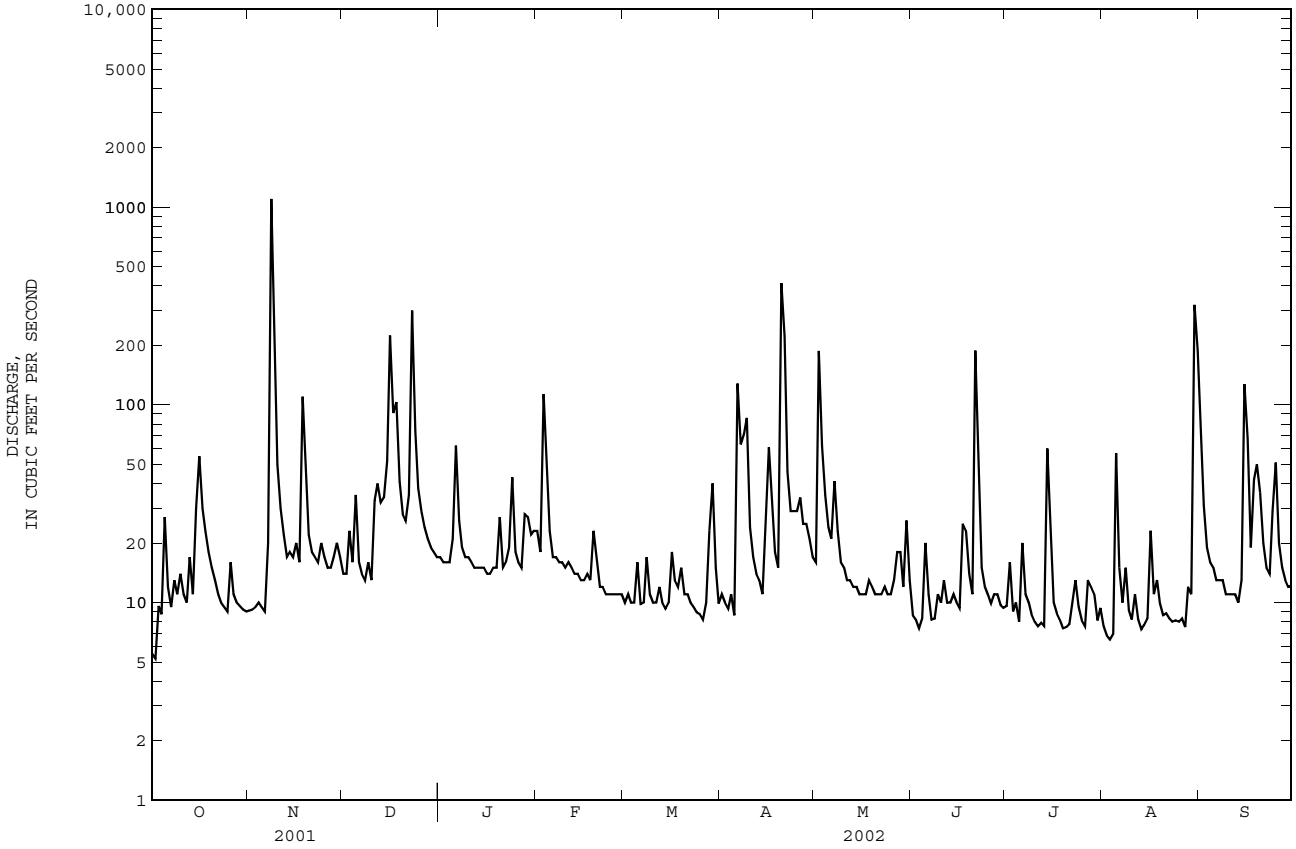
MEAN	39.3	49.8	36.1	34.9	24.5	17.4	19.4	22.0	24.4	29.3	41.8	86.4
MAX	130	114	123	120	67.9	42.6	50.4	59.8	55.9	74.6	109	364
(WY)	1999	1999	1999	1992	1998	1998	2002	1993	1999	1993	1998	1996
MIN	14.6	12.2	8.87	14.2	10.8	7.54	5.49	3.35	2.86	4.13	3.82	8.82
(WY)	2002	1995	1995	1995	1992	1994	1994	1994	1994	1994	1994	1994

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1991 - 2002	
ANNUAL TOTAL	7348.2		10161.6			
ANNUAL MEAN	20.1		27.8		36.5	
HIGHEST ANNUAL MEAN					64.0	1998
LOWEST ANNUAL MEAN					11.9	1994
HIGHEST DAILY MEAN	1100	Nov 8	1100	Nov 8	8600	Sep 10 1996
LOWEST DAILY MEAN	5.2	May 30	5.2	Oct 2	1.3	Jun 8 1994
ANNUAL SEVEN-DAY MINIMUM	6.0	May 24	8.0	Jul 29	1.4	Jun 8 1994
MAXIMUM PEAK FLOW			7920	Nov 8	25000	Sep 10 1996
MAXIMUM PEAK STAGE			17.26	Nov 8	23.89	Sep 10 1996
ANNUAL RUNOFF (AC-FT)	14580		20160		26450	
ANNUAL RUNOFF (CFSM)	1.72		2.38		3.12	
ANNUAL RUNOFF (INCHES)	23.34		32.28		42.37	
10 PERCENT EXCEEDS	27		42		53	
50 PERCENT EXCEEDS	11		14		16	
90 PERCENT EXCEEDS	7.2		8.6		6.8	

e Estimated

RIO GRANDE DE LOIZA BASIN

50055225 RIO CAGÜITAS AT VILLA BLANCA AT CAGUAS, PR--Continued



RIO GRANDE DE LOIZA BASIN

50055225 RIO CAGÜITAS AT VILLA BLANCA AT CAGUAS, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORDS.--Water years 1991 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: December 1990 to current year.

INSTRUMENTATION.--USDH-48 sediment sampler and automatic sediment sampler since 1991.

REMARKS.--Sediment samples were collected by a local observer on a weekly basis. During high flow events sediment samples were collected with automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 5,990 mg/L August 23, 2000; Minimum daily mean, 3 mg/L August 2, 1997.

SEDIMENT LOADS: Maximum daily mean, e110,000 tons (e99,800 tonnes) September 22,1998; Minimum daily mean, e0.01 ton (e0.01 tonne) several days during 2001.

EXTREMES FOR CURRENT YEAR 2001.--
SEDIMENT CONCENTRATION: Maximum daily mean, 1,240 mg/L November 1, 2000; Minimum daily mean, 9 mg/L November 12-14, 2000, but may have been less during period of no mean concentration record March 24 to September 30, 2001.

SEDIMENT LOADS: Maximum daily mean, 2,070 tons (1,878 tonnes) November 2, 2000; Minimum daily mean, e0.01 ton (e0.01 tonne) several days.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	114	911	860	162	1240	1770	22	17	0.97
2	143	1020	859	257	1100	2070	15	17	0.71
3	76	262	59	143	454	222	14	18	0.67
4	39	49	5.3	43	44	5.6	13	18	0.66
5	30	37	3.0	31	18	1.5	13	19	0.67
6	24	36	2.3	27	20	1.4	13	17	0.61
7	31	61	8.6	24	21	1.4	13	16	0.57
8	34	60	11	22	19	1.1	13	15	0.52
9	22	21	1.3	21	16	0.90	13	15	0.51
10	19	19	0.97	20	13	0.68	13	15	0.54
11	17	17	0.80	19	10	0.49	13	15	0.52
12	16	16	0.69	18	9	0.43	14	15	0.57
13	15	15	0.58	17	9	0.42	15	15	0.62
14	14	13	0.50	18	9	0.44	23	32	2.8
15	14	12	0.44	20	27	1.7	39	188	36
16	66	303	175	18	21	1.2	21	55	3.1
17	21	219	12	17	10	0.46	22	62	4.1
18	17	191	8.9	17	10	0.46	35	124	15
19	17	172	8.1	17	10	0.45	e52	e184	e54
20	35	195	26	19	20	1.3	62	199	50
21	28	103	8.4	35	97	20	22	73	4.4
22	60	354	130	18	26	1.3	30	92	12
23	46	271	127	17	19	0.87	19	24	1.2
24	30	160	36	19	17	0.96	18	24	1.3
25	19	34	1.8	23	39	3.3	16	11	0.47
26	15	29	1.2	16	15	0.64	15	10	0.41
27	14	23	0.89	17	33	1.6	15	11	0.44
28	18	18	0.88	15	29	1.2	e14	e12	e0.45
29	18	18	0.87	15	22	0.85	13	13	0.47
30	14	19	0.75	40	66	25	13	15	0.52
31	16	21	0.89	---	---	---	13	18	0.62
TOTAL	1042	---	2352.16	1145	---	4137.65	626	---	195.42

RIO GRANDE DE LOIZA BASIN

50055225 RIO CAGÜITAS AT VILLA BLANCA AT CAGUAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	12	20	0.66	18	19	0.93	11	17	0.51
2	12	22	0.71	14	20	0.77	12	16	0.51
3	13	24	0.89	13	21	0.71	10	15	0.42
4	12	24	0.76	11	22	0.68	10	20	0.55
5	12	23	0.72	12	23	0.71	10	27	0.74
6	11	22	0.67	11	24	0.71	10	34	0.93
7	11	18	0.55	11	25	0.71	10	40	1.1
8	11	14	0.43	11	23	0.67	10	39	1.1
9	11	11	0.34	11	21	0.65	9.3	37	0.92
10	11	12	0.35	17	59	6.7	9.0	34	0.83
11	10	13	0.35	37	153	22	8.8	32	0.76
12	10	13	0.36	21	41	2.4	8.6	29	0.68
13	9.9	14	0.38	14	29	1.1	8.5	27	0.63
14	9.8	16	0.42	19	46	2.9	8.7	27	0.63
15	9.6	18	0.46	18	38	1.9	8.8	27	0.64
16	21	56	6.6	24	69	6.9	8.9	27	0.65
17	12	22	0.72	18	55	2.7	8.7	27	0.63
18	10	21	0.58	12	43	1.4	8.4	26	0.59
19	11	21	0.61	11	30	0.92	8.2	25	0.56
20	10	22	0.61	16	29	1.5	9.4	25	0.67
21	10	23	0.62	12	18	0.59	18	39	2.3
22	15	45	3.8	28	81	7.9	27	102	20
23	11	21	0.60	27	95	12	e20	15	e2.5
24	10	17	0.45	33	115	18	e18	---	e1.9
25	9.2	17	0.42	20	56	3.0	e14	---	e0.97
26	9.1	18	0.43	15	44	1.8	e12	---	e0.65
27	10	18	0.49	12	34	1.2	e11	---	e0.51
28	22	64	9.4	11	22	0.69	e10	---	e0.40
29	108	574	378	---	---	---	e10	---	e0.40
30	53	115	45	---	---	---	e10	---	e0.40
31	17	20	0.89	---	---	---	e10	---	e0.40
TOTAL	503.6	---	457.27	477	---	102.14	348.3	---	44.48

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	e8.9	---	e0.17	e22	---	e3.2	e11	---	e0.51
2	e7.7	---	e0.06	e12	---	e0.65	e6.4	---	e0.02
3	e8.1	---	e0.09	e10	---	e0.40	e5.7	---	e0.01
4	e8.9	---	e0.17	e10	---	e0.40	e7.2	---	e0.04
5	e8.1	---	e0.09	e9.2	---	e0.20	e16	---	e1.4
6	e14	---	e0.97	e22	---	e3.2	e12	---	e0.65
7	e9.3	---	e0.24	e96	---	e152	e8.9	---	e0.17
8	e14	---	e0.97	e18	---	e1.9	e9.2	---	e0.22
9	e15	---	e1.2	e16	---	e1.4	e8.4	---	e0.11
10	e9.7	---	e0.32	e16	---	e1.4	e8.4	---	e0.11
11	e14	---	e0.97	e13	---	e0.80	e7.6	---	e0.06
12	e9.3	---	e0.24	e10	---	e0.40	e6.8	---	e0.02
13	e16	---	e1.4	e9.2	---	e0.22	e6.4	---	e0.02
14	e10	---	e0.40	e8.8	---	e0.16	e6.4	---	e0.02
15	e8.5	---	e0.12	e8.0	---	e0.08	e6.8	---	e0.02
16	e8.9	---	e0.17	e7.6	---	e0.06	e6.8	---	e0.02
17	e8.5	---	e0.12	e7.6	---	e0.06	e10	---	e0.40
18	e7.7	---	e0.06	e10	---	e0.40	e8.4	---	e0.11
19	e7.7	---	e0.06	e11	---	e0.51	e6.8	---	e0.02
20	e9.7	---	e0.32	e7.2	---	e0.04	e6.4	---	e0.02
21	e24	---	e4.0	e6.8	---	e0.02	e6.4	---	e0.02
22	e24	---	e4.0	e7.2	---	e0.04	e6.4	---	e0.02
23	e23	---	e3.6	e6.4	---	e0.02	e6.4	---	e0.02
24	e24	---	e4.0	e6.1	---	e0.01	e6.0	---	e0.01
25	e15	---	e1.2	e6.1	---	e0.01	e12	---	e0.65
26	e12	---	e0.65	e5.7	---	e0.01	e7.2	---	e0.04
27	e11	---	e0.51	e5.3	---	e0.01	e6.4	---	e0.02
28	e12	---	e0.65	e7.7	---	e0.06	e11	---	e0.51
29	e11	---	e0.51	e5.7	---	e0.01	e7.6	---	e0.06
30	e13	---	e0.80	e5.2	---	e0.01	e8.0	---	e0.08
31	---	---	---	e6.1	---	e0.01	---	---	---
TOTAL	373.0	---	28.06	391.9	---	167.69	243.0	---	5.38

RIO GRANDE DE LOIZA BASIN

50055225 RIO CAGÜITAS AT VILLA BLANCA AT CAGUAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	e16	---	e1.4	e8.8	---	e0.16	e14	---	e0.97
2	e16	---	e1.4	e12	---	e0.65	e13	---	e0.80
3	e11	---	e0.51	e10	---	e0.40	e15	---	e1.2
4	e9.6	---	e0.30	e8.8	---	e0.16	e12	---	e0.65
5	e16	---	e1.4	e8.4	---	e0.11	e11	---	e0.51
6	e10	---	e0.40	e19	---	e2.2	e11	---	e0.51
7	e8.8	---	e0.16	e11	---	e0.51	e10	---	e0.40
8	e8.4	---	e0.11	e8.0	---	e0.08	e9.6	---	e0.30
9	e8.0	---	e0.08	e18	---	e1.9	e9.2	---	e0.22
10	e8.0	---	e0.08	e12	---	e0.65	e8.8	---	e0.16
11	e7.6	---	e0.06	e8.4	---	e0.11	e8.8	---	e0.16
12	e7.6	---	e0.06	e7.2	---	e0.04	e10	---	e0.40
13	e11	---	e0.51	e11	---	e0.51	e11	---	e0.51
14	e7.6	---	e0.06	e9.2	---	e0.22	e10	---	e0.40
15	e6.8	---	e0.02	e7.2	---	e0.04	e9.6	---	e0.30
16	e7.7	---	e0.06	e8.5	---	e0.12	e8.8	---	e0.16
17	e9.2	---	e0.22	e27	---	e5.4	e9.2	---	e0.22
18	e25	---	e4.4	e14	---	e0.97	e9.6	---	e0.30
19	e12	---	e0.65	e8.9	---	e0.17	e8.0	---	e0.08
20	e9.6	---	e0.30	e8.0	---	e0.08	e7.6	---	e0.06
21	e7.2	---	e0.04	e8.0	---	e0.08	e8.0	---	e0.08
22	e7.6	---	e0.06	e33	---	e9.2	e7.6	---	e0.06
23	e9.2	---	e0.22	e132	---	e347	e7.6	---	e0.06
24	e16	---	e1.4	e22	---	e3.2	e7.2	---	e0.01
25	e12	---	e0.65	e14	---	e0.97	e6.8	---	e0.01
26	e13	---	e0.80	e12	---	e0.65	e26	---	e4.9
27	e11	---	e0.51	e11	---	e0.51	e8.4	---	e0.11
28	e10	---	e0.40	e44	---	e20	e7.2	---	e0.04
29	e40	---	e15	e20	---	e2.5	e6.4	---	e0.02
30	e17	---	e1.6	e15	---	e1.2	e5.6	---	e0.01
31	e11	---	e0.51	e13	---	e0.80	---	---	---
TOTAL	369.9	---	33.37	549.4	---	400.59	297.0	---	13.61
YEAR	6366.1		7937.82						

e Estimated

RIO GRANDE DE LOIZA BASIN

50055250 RIO CAGÜITAS 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 mi^2 (36.5 km^2).

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
NOV													
19...	1330	41	390	7.3	27.1	90	7.2	90	20	36000	2200	140	35.2
FEB													
07...	1105	17	626	7.8	24.5	24	5.6	67	<10	3300	290	--	--
APR													
30...	1330	16	515	7.4	29.2	13	5.5	72	10	13000	370	170	45.5

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
NOV													
19...	11.5	18.9	.7	2.83	120	<1.0	28.9	26.5	.2	26.1	222	24.5	208
FEB													
07...	--	--	--	--	153	--	--	--	--	--	--	--	30
APR													
30...	14.8	29.6	1	2.45	154	<.1	40.8	35.5	E.1	32.6	294	13.0	19

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
NOV													
19...	.06	1.10	.30	E1.1	E.26	E1	62.1	30	<.1	7.3	E20	5950	5
FEB													
07...	.15	1.10	.78	1.1	.22	--	--	--	--	--	--	--	--
APR													
30...	.16	.990	.81	1.3	.22	2	40.7	40	<.1	<.8	<10	680	1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
NOV								
19...	376	.02	<2	<.3	30	<.01	<16	.06
FEB								
07...	--	--	--	--	--	--	--	--
APR								
30...	276	E.01	<2	1.3	<20	<.01	<17	.09

< -- Less than
E -- Estimated value

RIO GRANDE DE LOIZA BASIN

50055400 RIO BAIROA NEAR CAGUAS, PR

WATER-QUALITY RECORDS

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

DRAINAGE AREA.--5.4 mi^2 (14.0 km^2).

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
NOV													
20...	1030	8.8	357	7.9	24.2	35	8.1	97	<10	5500	2300	130	31.1
FEB													
07...	1225	8.0	450	7.6	25.0	7.1	7.4	89	<10	E5000	390	--	--
MAY													
06...	1215	14	384	7.9	27.2	13	7.0	88	<10	28000	2200	140	33.7

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
NOV													
20...	12.7	16.4	.6	3.87	116	<1.0	14.7	24.4	.2	24.1	197	4.70	104
FEB													
07...	--	--	--	--	141	--	--	--	--	--	--	--	<10
MAY													
06...	13.7	19.0	.7	3.25	136	.2	14.2	26.0	.1	27.8	219	8.42	10

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
NOV													
20...	.02	E1.30	.06	E.30	E.12	E1	85.7	30	<.1	E.6	<10	770	M
FEB													
07...	.02	1.70	.25	.50	.51	--	--	--	--	--	--	--	--
MAY													
06...	.02	1.20	.07	.40	.14	E2	79.9	30	<.1	E.6	M	430	M

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
NOV								
20...	69.9	E.01	<2	<.3	<20	<.01	<16	<.05
FEB								
07...	--	--	--	--	--	--	--	--
MAY								
06...	71.2	<.01	<2	<.3	<20	<.01	<16	E.04

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

RIO GRANDE DE LOIZA BASIN

50055750 RIO GURABO BELOW EL MANGO, PR

LOCATION.--Lat 18°14'02", long 65°53'07", Hydrologic Unit 21010005, on left bank, 2.43 mi (3.91 km) northeast of Plaza de Juncos, 1.3 mi (2.1 km) southeast of Escuela La Placita and 0.35 mi (0.56 km) southwest of El Mango.

DRAINAGE AREA.--22.3 mi^2 (57.8 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1990 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 230 ft (70 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station. Low-flow is affected by sewage discharges from a water treatment plant, 0.60 mi (0.96 m) upstream from gaging station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.0	49	16	14	20	6.0	6.2	10	88	8.1	6.8	46
2	7.6	44	65	13	17	5.7	5.7	9.4	249	10	7.0	21
3	28	36	55	12	23	5.5	5.9	9.2	42	9.7	6.9	117
4	20	22	68	12	32	5.6	8.6	15	42	8.3	6.8	36
5	135	22	106	12	14	5.4	7.6	14	339	8.0	6.9	16
6	45	41	29	34	13	5.1	6.2	14	92	16	7.1	13
7	15	565	22	19	12	4.7	22	10	44	31	7.4	9.1
8	16	1030	26	13	12	5.9	104	11	29	12	17	9.6
9	496	865	20	12	11	6.4	84	8.2	25	9.2	28	9.4
10	38	121	18	11	11	5.3	14	7.3	21	8.1	11	22
11	21	58	44	11	10	4.9	8.3	7.3	18	7.6	31	23
12	17	37	124	11	9.7	4.7	7.0	6.9	17	7.4	23	11
13	18	27	67	11	9.4	4.9	6.2	6.5	17	7.5	11	9.6
14	18	26	60	11	9.5	4.8	5.6	6.3	18	8.3	9.9	8.7
15	53	40	200	11	9.2	4.8	5.8	6.3	14	13	10	154
16	124	30	406	11	9.1	4.7	162	7.0	13	8.3	16	256
17	61	22	117	11	9.4	4.8	20	8.7	12	8.0	16	28
18	38	31	78	13	8.8	4.8	8.5	11	13	7.9	12	16
19	48	25	55	12	10	4.7	6.7	9.0	13	7.5	16	14
20	29	20	40	11	17	4.8	254	7.8	11	6.9	9.9	12
21	24	18	83	11	8.9	4.7	432	7.7	53	7.2	8.4	11
22	39	17	167	11	7.7	4.6	83	7.7	20	7.9	8.2	11
23	27	18	280	13	7.2	4.5	399	8.2	12	8.4	8.1	10
24	26	17	101	24	7.0	4.7	37	8.8	11	8.1	26	33
25	21	18	44	14	6.7	4.7	22	8.7	9.8	7.7	23	26
26	19	18	33	12	6.6	4.7	17	9.1	9.4	7.2	15	15
27	17	17	28	11	6.8	5.2	16	22	12	8.4	10	11
28	18	17	24	19	6.4	6.1	14	27	12	13	8.6	10
29	56	17	21	16	---	7.6	12	26	9.3	10	39	9.3
30	62	16	17	15	---	7.7	11	1790	8.6	8.1	70	13
31	29	---	15	27	---	7.6	---	297	---	7.3	148	---
TOTAL	1573.6	3284	2429	438	324.4	165.6	1791.3	2397.1	1274.1	296.1	624.0	980.7
MEAN	50.8	109	78.4	14.1	11.6	5.34	59.7	77.3	42.5	9.55	20.1	32.7
MAX	496	1030	406	34	32	7.7	432	1790	339	31	148	256
MIN	7.6	16	15	11	6.4	4.5	5.6	6.3	8.6	6.9	6.8	8.7
AC-FT	3120	6510	4820	869	643	328	3550	4750	2530	587	1240	1950
CFSM	2.28	4.91	3.51	0.63	0.52	0.24	2.68	3.47	1.90	0.43	0.90	1.47
IN.	2.63	5.48	4.05	0.73	0.54	0.28	2.99	4.00	2.13	0.49	1.04	1.64

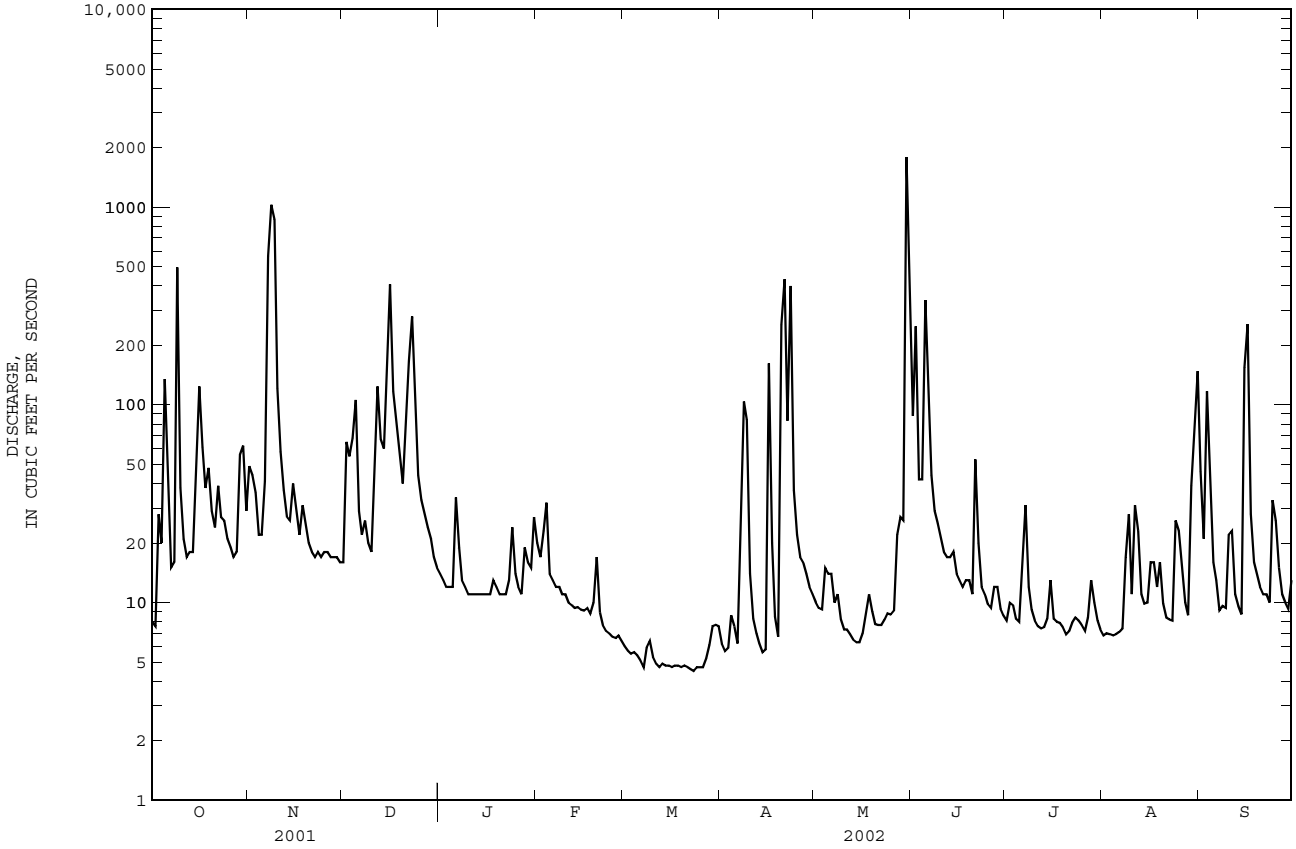
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2002, BY WATER YEAR (WY)

MEAN	54.8	84.3	47.5	35.7	25.7	11.3	12.3	28.8	38.7	37.5	42.8	81.7
MAX	161	252	166	103	66.7	18.1	59.7	123	117	147	110	196
(WY)	1991	2000	1999	1996	1995	1991	2002	1992	1992	1993	1998	1998
MIN	4.01	13.6	10.7	6.34	8.90	5.34	5.29	4.83	9.65	6.64	10.2	21.4
(WY)	1993	1996	1998	1995	2001	2002	1995	1990	2000	2000	1993	1997

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1990 - 2002	
ANNUAL TOTAL	14788.2		15577.9			
ANNUAL MEAN	40.5		42.7		42.4	
HIGHEST ANNUAL MEAN					54.4	2000
LOWEST ANNUAL MEAN					22.0	1994
HIGHEST DAILY MEAN	1220	Aug 22	1790	May 30	4040	Sep 10 1996
LOWEST DAILY MEAN	2.8	Mar 19	4.5	Mar 23	1.1	Oct 27 1992
ANNUAL SEVEN-DAY MINIMUM	3.1	Mar 13	4.7	Mar 19	1.4	Oct 22 1992
MAXIMUM PEAK FLOW			5070	Nov 9	19100	Sep 10 1996
MAXIMUM PEAK STAGE			16.85	Nov 9	24.12	Sep 10 1996
ANNUAL RUNOFF (AC-FT)	29330		30900		30750	
ANNUAL RUNOFF (CFSM)	1.82		1.91		1.90	
ANNUAL RUNOFF (INCHES)	24.67		25.99		25.86	
10 PERCENT EXCEEDS	66		67		75	
50 PERCENT EXCEEDS	11		13		12	
90 PERCENT EXCEEDS	4.4		6.4		4.9	

RIO GRANDE DE LOIZA BASIN

50055750 RIO GURABO BELOW EL MANGO, PR--Continued



RIO GRANDE DE LOIZA BASIN

50055750 RIO GURABO BELOW EL MANGO, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORDS.--Water year 1990 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: March 1990 to current year.

INSTRUMENTATION.--USDH-48 sediment sampler and automatic sediment sampler since 1990.

REMARKS:-- Sediment samples were collected by a local observer on a weekly basis. During high flow events sediment samples were collected with an automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 2,400 mg/L September 22, 1998; Minimum daily mean, 2 mg/L May 5, 1997 and October 27 and November 19, 20, 2001.

SEDIMENT LOADS: Maximum daily mean, 51,000 tons (46,300 tonnes) september 10, 1996: Minimum daily mean, 0.05 ton (0.04 tonne) several days.

EXTREMES FOR CURRENT YEAR 2001.--
SEDIMENT CONCENTRATION: Maximum daily mean, 800 mg/L August 22, 2001; Minimum daily mean, 2 mg/L October 27 and November 19, 20, 2001.

SEDIMENT LOADS: Maximum daily mean, 8,350 tons (7,575 tonnes) August 22, 2001; Minimum daily mean, 0.06 ton (0.05 tonne) October 27 and November 19, 20, 2001 .

EXTREMES FOR CURRENT YEAR 2002.--
SEDIMENT CONCENTRATION: Maximum daily mean, 781 mg/L May 30, 2002; Minimum daily mean, 4 mg/L July 11-13, 2002.

SEDIMENT LOADS: Maximum daily mean, 4,880 tons (4,427 tonnes) May 30, 2002; Minimum daily mean, 0.08 ton (0.07 tonne) July 12, 13, 2002.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	OCTOBER			NOVEMBER			DECEMBER		
1	37	73	7.3	463	475	1720	14	17	0.66
2	188	604	922	557	607	2350	12	16	0.51
3	147	138	64	159	192	98	15	14	0.59
4	52	60	8.7	42	30	3.6	12	13	0.41
5	28	45	3.4	26	28	2.0	10	11	0.31
6	20	37	2.0	21	37	2.1	9.3	10	0.24
7	17	29	1.3	19	46	2.3	9.0	8	0.19
8	31	42	5.1	17	45	2.1	8.9	6	0.15
9	23	35	2.2	15	30	1.2	9.0	5	0.12
10	18	32	1.6	15	27	1.1	8.9	5	0.12
11	14	29	1.1	13	25	0.89	8.4	5	0.11
12	12	27	0.91	12	22	0.72	8.9	5	0.12
13	11	26	0.81	12	20	0.62	17	19	1.1
14	11	25	0.74	11	17	0.51	16	18	0.74
15	11	23	0.66	16	14	0.61	49	55	8.9
16	9.8	19	0.51	15	11	0.44	17	34	1.6
17	9.7	16	0.41	11	7	0.20	28	43	3.7
18	9.3	12	0.30	11	3	0.08	92	141	50
19	9.1	12	0.30	11	2	0.06	140	270	119
20	9.4	14	0.35	9.9	2	0.06	93	146	54
21	9.0	15	0.37	12	3	0.08	55	174	32
22	40	535	164	18	3	0.14	31	89	7.7
23	29	28	2.6	23	7	0.61	20	90	4.9
24	17	12	0.65	17	7	0.37	15	79	3.3
25	12	4	0.12	94	133	50	13	69	2.4
26	11	3	0.08	22	58	3.5	12	51	1.6
27	9.7	2	0.06	16	35	1.5	11	32	0.94
28	18	11	0.73	18	44	2.5	10	21	0.57
29	16	19	0.84	22	57	3.5	12	18	0.59
30	11	14	0.39	14	22	0.87	14	15	0.55
31	9.8	8	0.22	---	---	---	10	14	0.38
TOTAL	849.8	---	1193.75	1711.9	---	4249.66	780.4	---	297.50

RIO GRANDE DE LOIZA BASIN

50055750 RIO GURABO BELOW EL MANGO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	9.4	12	0.31	9.8	14	0.37	5.2	13	0.18
2	8.9	11	0.27	9.2	14	0.35	5.6	12	0.19
3	8.9	10	0.24	8.1	20	0.44	4.5	12	0.14
4	8.8	9	0.21	7.5	26	0.53	4.1	11	0.13
5	8.2	7	0.17	7.3	30	0.60	4.0	11	0.12
6	7.8	6	0.13	7.0	25	0.48	4.0	10	0.11
7	7.8	8	0.17	6.8	19	0.34	3.8	10	0.10
8	7.7	11	0.22	6.7	12	0.22	3.4	10	0.10
9	7.6	13	0.27	6.4	6	0.11	3.4	10	0.10
10	7.4	15	0.31	6.3	5	0.09	3.4	11	0.10
11	7.2	14	0.28	17	22	1.3	3.3	11	0.10
12	6.7	12	0.22	14	15	0.57	3.2	11	0.10
13	6.6	11	0.19	13	10	0.36	3.0	11	0.09
14	6.3	10	0.17	8.3	9	0.19	3.0	11	0.09
15	6.1	10	0.17	8.6	7	0.17	3.4	11	0.10
16	10	12	0.38	10	7	0.19	3.3	11	0.10
17	16	25	1.2	19	32	1.7	3.1	11	0.09
18	7.8	14	0.30	8.8	27	0.65	3.0	11	0.09
19	7.3	13	0.26	6.7	21	0.37	2.8	11	0.08
20	7.4	12	0.24	5.8	15	0.24	3.1	11	0.09
21	7.0	11	0.21	5.7	14	0.22	8.5	11	0.25
22	6.8	10	0.19	7.1	13	0.25	277	416	574
23	7.1	10	0.19	7.5	12	0.24	66	81	21
24	6.8	10	0.18	9.8	12	0.37	41	44	5.6
25	6.8	10	0.18	16	23	1.1	22	23	1.4
26	7.4	10	0.20	6.7	14	0.26	12	20	0.64
27	7.3	10	0.20	5.4	14	0.20	13	16	0.57
28	9.3	10	0.25	4.7	13	0.17	8.9	13	0.32
29	41	34	5.4	---	---	---	7.8	13	0.27
30	37	45	6.1	---	---	---	7.4	13	0.26
31	11	17	0.51	---	---	---	7.3	13	0.25
TOTAL	311.4	---	19.32	249.2	---	12.08	543.5	---	606.76

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	6.7	13	0.24	69	82	30	67	63	25
2	6.1	13	0.21	37	48	6.3	41	48	6.2
3	5.7	13	0.20	11	15	0.46	15	23	1.0
4	5.9	13	0.21	7.6	14	0.28	8.3	8	0.19
5	6.5	13	0.23	6.4	12	0.21	26	25	3.1
6	9.6	19	0.52	6.2	11	0.18	15	18	0.80
7	6.9	21	0.40	316	400	863	7.4	10	0.20
8	5.6	19	0.28	62	73	15	6.0	8	0.13
9	5.2	17	0.23	44	54	7.2	5.3	8	0.11
10	5.6	15	0.22	27	31	3.0	4.6	7	0.09
11	5.2	12	0.18	32	41	4.3	4.2	7	0.08
12	6.8	10	0.19	14	18	0.68	4.0	7	0.07
13	6.9	10	0.19	13	14	0.49	4.6	6	0.08
14	7.3	10	0.20	11	12	0.34	4.4	6	0.07
15	5.4	10	0.15	8.4	14	0.31	3.8	7	0.07
16	4.7	11	0.13	7.2	17	0.32	3.6	8	0.08
17	4.3	11	0.12	6.9	19	0.36	4.4	9	0.11
18	4.1	11	0.12	7.0	18	0.35	5.7	10	0.16
19	3.7	11	0.11	9.6	15	0.39	4.5	11	0.13
20	3.6	12	0.12	7.1	13	0.25	3.6	12	0.12
21	4.7	13	0.16	6.3	11	0.19	3.1	13	0.11
22	11	14	0.41	8.0	9	0.20	3.0	14	0.12
23	10	14	0.40	7.0	8	0.14	2.8	15	0.11
24	28	35	3.3	6.6	6	0.11	3.0	15	0.12
25	22	27	1.7	8.3	6	0.13	4.1	15	0.16
26	17	19	0.91	7.9	6	0.13	4.1	15	0.16
27	e16	e23	e1.0	6.2	6	0.10	3.0	14	0.12
28	8.5	17	0.41	94	109	47	6.0	14	0.23
29	5.8	12	0.18	16	17	0.72	6.8	14	0.26
30	5.2	9	0.12	8.4	12	0.27	60	45	14
31	---	---	---	16	17	1.0	---	---	---
TOTAL	244.0	---	12.84	887.1	---	983.41	334.3	---	53.18

RIO GRANDE DE LOIZA BASIN

50055750 RIO GURABO BELOW EL MANGO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	28	25	2.1	12	19	0.62	441	471	1600
2	13	18	0.65	e8.7	e14	e0.33	288	295	518
3	30	31	3.5	7.9	10	0.22	130	143	59
4	8.9	15	0.36	e8.6	e9	e0.29	48	56	7.5
5	19	22	1.4	31	39	3.7	23	30	1.9
6	12	14	0.46	e9.7	e33	e0.86	17	25	1.2
7	7.0	14	0.26	8.4	30	0.68	14	25	0.98
8	5.7	14	0.21	6.2	26	0.44	13	25	0.85
9	4.9	13	0.17	5.6	21	0.32	11	25	0.76
10	4.6	13	0.16	38	40	6.2	12	24	0.77
11	5.1	12	0.17	17	20	1.2	12	22	0.70
12	82	74	43	8.4	9	0.21	10	19	0.54
13	146	39	17	6.6	10	0.19	15	21	0.88
14	21	17	1.0	5.2	12	0.16	12	20	0.65
15	11	14	0.41	4.9	13	0.17	80	81	26
16	7.9	12	0.25	8.2	11	0.25	28	35	3.5
17	6.4	9	0.16	6.1	10	0.16	379	370	1520
18	5.4	10	0.14	14	13	0.59	122	163	81
19	5.1	11	0.15	8.3	8	0.18	22	11	0.79
20	4.8	11	0.15	20	29	1.7	13	5	0.19
21	4.1	12	0.13	11	11	0.31	20	26	2.3
22	3.8	12	0.12	1220	800	8350	13	14	0.48
23	3.9	11	0.12	651	245	812	16	18	0.82
24	7.3	17	0.37	100	43	13	18	20	1.3
25	8.4	33	0.82	33	28	2.6	16	15	0.71
26	8.9	38	0.95	23	27	1.7	9.7	11	0.30
27	9.8	48	1.3	19	27	1.4	8.3	14	0.32
28	6.0	31	0.51	159	160	111	7.6	13	0.26
29	26	54	8.6	39	35	3.7	15	19	1.1
30	59	64	12	21	31	1.8	9.7	18	0.48
31	17	28	1.3	16	27	1.2	---	---	---
TOTAL	582.0	---	97.92	2526.8	---	9317.18	1823.3	---	3833.28
YEAR	10843.7		20676.88						

e Estimated

RIO GRANDE DE LOIZA BASIN

50055750 RIO GURABO BELOW EL MANGO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	8.0	11	0.24	49	91	16	16	64	2.7
2	7.6	10	0.21	44	81	15	65	115	54
3	28	42	9.6	36	72	8.0	55	97	18
4	20	46	2.8	22	53	3.2	68	84	78
5	135	174	93	22	53	3.2	106	159	69
6	45	84	13	41	81	9.4	29	63	5.1
7	15	40	1.7	565	277	1830	22	42	2.5
8	16	35	1.7	1030	553	2240	26	38	2.7
9	496	383	1050	865	583	2310	20	37	2.0
10	38	61	6.6	121	135	50	18	35	1.7
11	21	48	2.7	58	18	3.0	44	69	21
12	17	43	2.0	37	15	1.5	124	181	76
13	18	45	2.3	27	17	1.2	67	121	24
14	18	42	2.1	26	18	1.2	60	88	17
15	53	84	14	40	55	9.4	200	219	241
16	124	187	70	30	63	5.4	406	352	734
17	61	98	17	22	51	2.9	117	178	58
18	38	81	8.4	31	63	6.7	78	121	25
19	48	93	12	25	54	3.8	55	78	12
20	29	83	6.6	20	35	1.9	40	41	4.5
21	24	80	5.2	18	33	1.6	83	99	54
22	39	75	8.3	17	31	1.5	167	197	174
23	27	50	4.0	18	37	1.8	280	321	315
24	26	47	3.3	17	45	2.1	101	157	46
25	21	34	1.9	18	51	2.5	44	49	6.1
26	19	22	1.1	18	58	2.7	33	32	2.8
27	17	20	0.90	17	64	2.9	28	30	2.3
28	18	20	0.97	17	65	3.0	24	29	1.9
29	56	90	20	17	64	2.9	21	27	1.5
30	62	110	21	16	64	2.8	17	26	1.2
31	29	63	5.0	---	---	---	15	25	1.0
TOTAL	1573.6	---	1387.62	3284	---	6545.6	2429	---	2054.0

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	14	24	0.91	20	45	2.4	6.0	11	0.18
2	13	23	0.81	17	37	1.7	5.7	11	0.17
3	12	22	0.73	23	46	4.7	5.5	11	0.16
4	12	21	0.67	32	64	6.9	5.6	10	0.16
5	12	21	0.64	14	36	1.3	5.4	10	0.15
6	34	72	7.3	13	34	1.1	5.1	10	0.14
7	19	48	2.6	12	32	1.0	4.7	10	0.12
8	13	35	1.2	12	31	1.0	5.9	9	0.15
9	12	30	0.94	11	30	0.93	6.4	9	0.16
10	11	29	0.88	11	30	0.89	5.3	9	0.13
11	11	29	0.85	10	29	0.81	4.9	9	0.11
12	11	29	0.86	9.7	29	0.75	4.7	8	0.11
13	11	29	0.84	9.4	28	0.72	4.9	8	0.11
14	11	29	0.88	9.5	28	0.71	4.8	8	0.11
15	11	29	0.86	9.2	27	0.67	4.8	8	0.10
16	11	29	0.82	9.1	27	0.66	4.7	8	0.10
17	11	29	0.83	9.4	26	0.66	4.8	8	0.11
18	13	33	1.1	8.8	26	0.61	4.8	8	0.11
19	12	30	0.98	10	28	0.95	4.7	8	0.11
20	11	31	0.89	17	41	2.2	4.8	8	0.11
21	11	31	0.91	8.9	26	0.62	4.7	8	0.10
22	11	31	0.92	7.7	22	0.47	4.6	8	0.10
23	13	32	1.1	7.2	20	0.39	4.5	8	0.10
24	24	51	3.7	7.0	17	0.33	4.7	8	0.11
25	14	35	1.4	6.7	15	0.27	4.7	8	0.11
26	12	32	1.0	6.6	13	0.22	4.7	9	0.11
27	11	30	0.91	6.8	12	0.22	5.2	9	0.12
28	19	42	2.6	6.4	12	0.20	6.1	9	0.14
29	16	39	1.7	---	---	---	7.6	9	0.18
30	15	36	1.4	---	---	---	7.7	9	0.18
31	27	59	4.5	---	---	---	7.6	9	0.18
TOTAL	438	---	45.73	324.4	---	33.38	165.6	---	4.03

RIO GRANDE DE LOIZA BASIN

50055750 RIO GURABO BELOW EL MANGO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	APRIL			MAY			JUNE		
1	6.2	9	0.15	10	28	0.76	88	137	46
2	5.7	9	0.14	9.4	26	0.66	249	278	350
3	5.9	9	0.14	9.2	29	0.73	42	97	11
4	8.6	9	0.21	15	43	1.7	42	84	11
5	7.6	9	0.18	14	39	1.5	339	357	427
6	6.2	9	0.15	14	35	1.3	92	145	37
7	22	37	6.5	10	31	0.86	44	97	12
8	104	233	146	11	27	0.80	29	67	5.3
9	84	136	36	8.2	23	0.52	25	48	3.3
10	14	43	1.7	7.3	20	0.39	21	36	2.0
11	8.3	24	0.54	7.3	16	0.31	18	24	1.2
12	7.0	22	0.41	6.9	12	0.23	17	12	0.55
13	6.2	20	0.33	6.5	9	0.15	17	5	0.23
14	5.6	18	0.27	6.3	6	0.10	18	5	0.25
15	5.8	20	0.32	6.3	7	0.11	14	5	0.19
16	162	188	177	7.0	8	0.16	13	5	0.17
17	20	54	3.2	8.7	10	0.24	12	5	0.16
18	8.5	36	0.84	11	12	0.35	13	5	0.18
19	6.7	26	0.46	9.0	13	0.33	13	5	0.17
20	254	252	317	7.8	15	0.32	11	5	0.15
21	432	424	652	7.7	17	0.35	53	86	20
22	83	135	39	7.7	19	0.39	20	51	3.0
23	399	341	792	8.2	20	0.45	12	35	1.2
24	37	79	8.4	8.8	21	0.51	11	32	0.90
25	22	49	3.0	8.7	18	0.43	9.8	28	0.75
26	17	42	1.9	9.1	14	0.35	9.4	25	0.64
27	16	39	1.7	22	36	4.3	12	24	0.77
28	14	36	1.4	27	64	5.0	12	24	0.76
29	12	33	1.1	26	57	5.8	9.3	23	0.58
30	11	30	0.90	1790	781	4880	8.6	23	0.52
31	---	---	---	297	357	335	---	---	---
TOTAL	1791.3	---	2192.94	2397.1	---	5244.10	1274.1	---	936.97

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	8.1	22	0.48	6.8	22	0.40	46	87	13
2	10	22	0.60	7.0	22	0.41	21	50	2.9
3	9.7	23	0.60	6.9	22	0.40	117	151	130
4	8.3	23	0.52	6.8	21	0.39	36	81	8.9
5	8.0	24	0.51	6.9	21	0.40	16	40	1.7
6	16	40	2.7	7.1	21	0.40	13	32	1.1
7	31	64	6.0	7.4	21	0.42	9.1	27	0.67
8	12	27	0.93	17	36	3.4	9.6	25	0.65
9	9.2	13	0.33	28	62	5.3	9.4	25	0.64
10	8.1	7	0.16	11	32	0.95	22	44	5.0
11	7.6	4	0.09	31	59	11	23	55	4.0
12	7.4	4	0.08	23	51	3.9	11	31	0.95
13	7.5	4	0.08	11	31	0.93	9.6	27	0.70
14	8.3	9	0.28	9.9	29	0.77	8.7	25	0.59
15	13	33	1.3	10	29	0.83	154	158	234
16	8.3	24	0.54	16	37	2.2	256	290	330
17	8.0	24	0.51	16	41	1.9	28	71	5.4
18	7.9	24	0.50	12	31	1.0	16	44	1.9
19	7.5	23	0.47	16	38	1.7	14	35	1.3
20	6.9	23	0.43	9.9	29	0.77	12	33	1.1
21	7.2	23	0.45	8.4	23	0.53	11	31	0.91
22	7.9	23	0.48	8.2	23	0.50	11	29	0.85
23	8.4	23	0.52	8.1	23	0.51	10	29	0.81
24	8.1	23	0.49	26	49	7.1	33	65	9.7
25	7.7	22	0.47	23	50	3.3	26	56	4.2
26	7.2	22	0.43	15	39	1.7	15	36	1.5
27	8.4	22	0.51	10	29	0.78	11	31	0.93
28	13	31	1.0	8.6	23	0.54	10	28	0.75
29	10	29	0.83	39	66	18	9.3	25	0.64
30	8.1	24	0.52	70	109	40	13	31	1.1
31	7.3	22	0.43	148	203	109	---	---	---
TOTAL	296.1	---	23.24	624.0	---	219.43	980.7	---	765.89
YEAR	15577.9		19452.93						

RIO GRANDE DE LOIZA BASIN

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 Víctor, 1.7 mi (2.7 km) upstream from Río Gurabo and 1.0 mi (1.6 km) south of Juncos Plaza.

DRAINAGE AREA.--16.4 mi^2 (42.5 km^2).

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.--Records poor. Minor diversion from public water-supply tank, 0.5 mi upstream, during low flow. Gage-height and precipitation satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Approximate discharges (no stages were recorded) of major floods are as follows: September 6, 1960, 37,100 ft^3/s (1,050 m^3/s), October 9, 1970, 18,200 ft^3/s (515 m^3/s).

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.5	12	9.2	20	35	6.6	7.3	11	38	11	7.5	277
2	4.1	9.4	8.9	20	18	6.0	5.9	33	292	15	5.6	61
3	35	8.3	19	19	48	5.6	9.8	13	38	13	5.0	31
4	13	8.0	26	18	44	6.1	12	11	52	13	4.9	18
5	51	8.5	60	20	18	5.7	11	9.8	282	11	4.8	13
6	47	12	14	32	16	5.3	5.8	9.3	80	16	5.4	9.8
7	11	975	13	23	14	5.4	17	8.6	38	35	6.3	7.9
8	16	1260	11	18	13	28	61	8.2	34	27	7.8	7.2
9	80	871	8.9	17	12	9.6	34	7.6	24	13	5.7	7.3
10	13	110	16	16	11	6.1	9.0	7.3	18	12	4.9	12
11	8.5	56	32	16	9.8	5.6	6.9	7.8	17	10	5.1	7.3
12	6.6	57	98	15	9.6	5.1	5.1	7.2	17	11	4.8	4.7
13	6.8	31	53	18	8.7	6.4	4.9	6.9	37	9.0	32	4.5
14	7.8	29	22	16	11	5.2	4.6	6.2	39	16	8.3	4.0
15	80	39	113	14	10	4.9	11	6.1	16	35	5.8	263
16	227	26	254	13	11	4.4	212	7.0	12	12	20	238
17	42	17	80	12	9.3	4.4	30	13	20	11	8.8	24
18	33	84	115	16	8.2	4.3	15	13	22	9.8	18	13
19	30	40	63	13	8.4	4.1	34	7.4	36	7.6	8.2	11
20	20	22	49	12	8.5	4.2	619	6.6	17	7.9	5.2	10
21	17	18	42	14	8.5	4.2	521	8.0	134	7.6	4.6	8.8
22	22	16	372	14	6.4	4.0	91	6.0	45	8.8	4.8	7.8
23	19	15	231	13	5.9	4.0	156	10	22	9.7	4.1	7.2
24	14	14	87	24	6.4	3.9	32	5.7	18	12	5.1	50
25	11	15	51	12	5.9	3.8	20	5.4	16	7.9	6.0	40
26	9.8	12	38	11	6.1	3.6	16	5.8	14	6.9	6.0	13
27	9.9	12	32	11	6.1	5.0	18	21	21	12	5.0	11
28	14	11	27	29	5.9	15	13	20	16	8.7	4.2	8.4
29	23	12	25	25	---	7.9	12	14	13	8.1	4.6	7.5
30	18	9.9	21	25	---	6.1	10	586	12	6.6	232	12
31	14	---	20	43	---	8.9	---	124	---	5.7	337	---
TOTAL	910.0	3810.1	2011.0	569	374.7	199.4	2004.3	1005.9	1440	389.3	787.5	1189.4
MEAN	29.4	127	64.9	18.4	13.4	6.43	66.8	32.4	48.0	12.6	25.4	39.6
MAX	227	1260	372	43	48	28	619	586	292	35	337	277
MIN	4.1	8.0	8.9	11	5.9	3.6	4.6	5.4	12	5.7	4.1	4.0
AC-FT	1800	7560	3990	1130	743	396	3980	2000	2860	772	1560	2360
CFSM	1.79	7.74	3.96	1.12	0.82	0.39	4.07	1.98	2.93	0.77	1.55	2.42
IN.	2.06	8.64	4.56	1.29	0.85	0.45	4.55	2.28	3.27	0.88	1.79	2.70

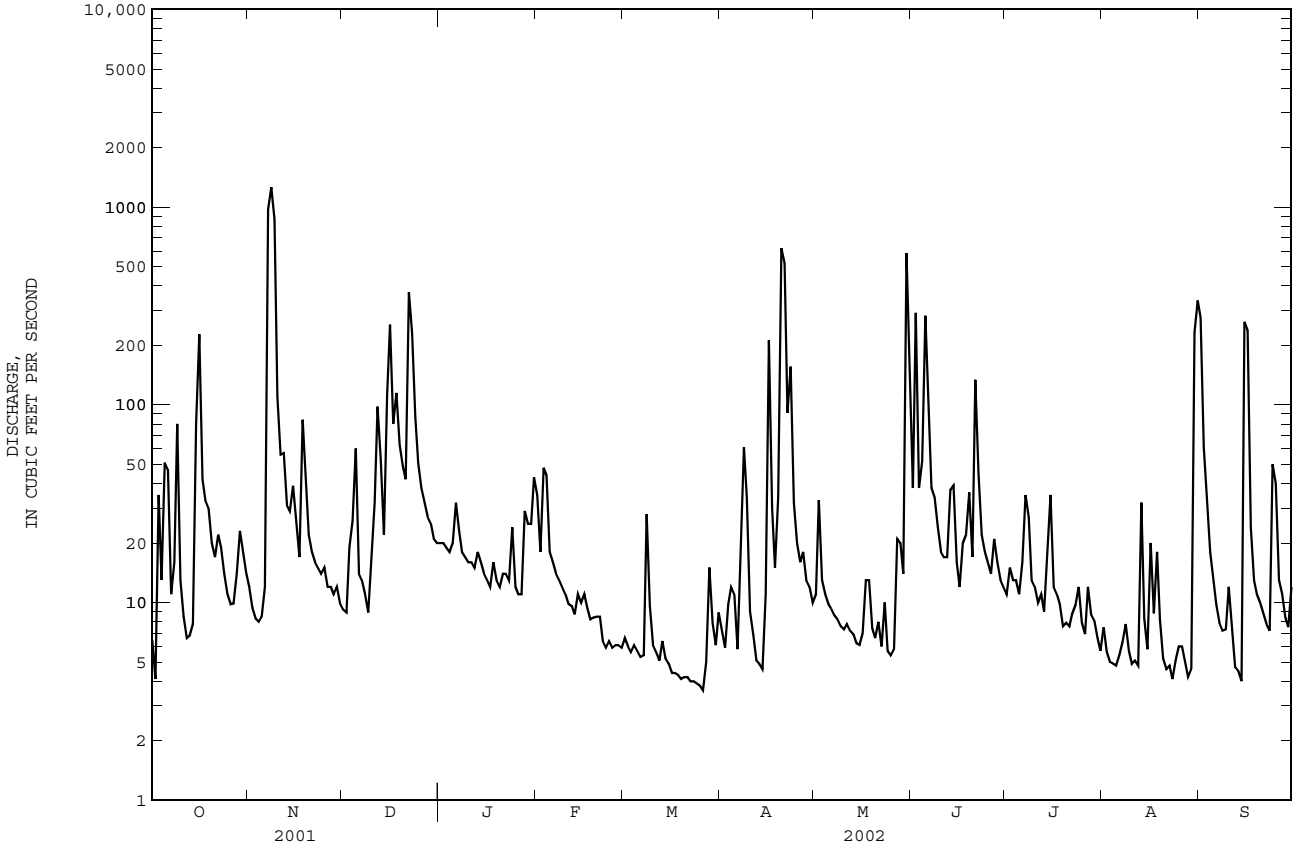
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 2002, BY WATER YEAR (WY)

MEAN	74.5	90.5	53.6	27.0	19.6	17.9	16.1	44.2	47.3	43.8	60.9	84.9
MAX	293	461	550	79.6	47.9	39.7	66.8	268	188	163	231	285
(WY)	1986	1988	1988	1998	1984	1973	2002	1985	1979	1981	1979	1998
MIN	19.9	16.8	11.0	11.4	7.21	6.04	5.17	5.02	3.86	4.61	4.71	10.8
(WY)	1993	1996	1990	1976	1974	2000	1995	1990	2001	1994	1994	1987

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1971 - 2002	
ANNUAL TOTAL	13616.6		14690.6			
ANNUAL MEAN	37.3		40.2		48.5	
HIGHEST ANNUAL MEAN					121	1988
LOWEST ANNUAL MEAN					17.1	1990
HIGHEST DAILY MEAN	1800	Aug 22	1260	Nov 8	9100	Dec 8 1987
LOWEST DAILY MEAN	1.2	Jun 22	3.6	Mar 26	1.2	Jun 22 2001
ANNUAL SEVEN-DAY MINIMUM	1.6	Jun 17	4.0	Mar 20	1.6	Jun 17 2001
MAXIMUM PEAK FLOW			9380	Nov 7	40000	Dec 8 1987
MAXIMUM PEAK STAGE			14.74	Nov 7	25.63	Dec 8 1987
ANNUAL RUNOFF (AC-FT)	27010		29140		35130	
ANNUAL RUNOFF (CFSM)	2.27		2.45		2.96	
ANNUAL RUNOFF (INCHES)	30.89		33.32		40.18	
10 PERCENT EXCEEDS	52		58		72	
50 PERCENT EXCEEDS	10		12		18	
90 PERCENT EXCEEDS	3.5		5.3		6.4	

RIO GRANDE DE LOIZA BASIN

50056400 RIO VALENCIANO NEAR JUNCOS, PR--Continued



RIO GRANDE DE LOIZA BASIN

50056400 RIO VALENCIANO NEAR JUNCOS, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORDS.--Water years 1983 to 1986 and water year 1989 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 1994 to current year.

INSTRUMENTATION.--USDH-48 and automatic sediment samplers since 1984.

REMARKS:--Sediment samples were collected by a local observer on a weekly basis. During high flow event sediment samples were collected with automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 8,340 mg/L September 10, 1996; Minimum daily mean, 1 mg/L several days during several years.

SEDIMENT LOADS: Maximum daily mean, 263,000 tons (238,000 tonnes) September 10,1996; Minimum daily mean, 0.01 ton (0.01 tonne) several days.

EXTREMES FOR CURRENT YEAR 2002.--
SEDIMENT CONCENTRATION: Maximum daily mean, 3,100 mg/L April 16, 2002; Minimum daily mean, 6 mg/L July 13, 2002.

SEDIMENT LOADS: Maximum daily mean, 26,000 tons (23,587 tonnes) November 7, 2001; Minimum daily mean, 0.08 ton (.07 tonne) several days.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	OCTOBER			NOVEMBER			DECEMBER		
1	6.5	13	0.22	12	23	0.75	9.2	7	0.17
2	4.1	22	0.25	9.4	21	0.53	8.9	8	0.19
3	35	113	23	8.3	21	0.46	19	37	2.2
4	13	42	1.9	8.0	20	0.44	26	88	27
5	51	141	35	8.5	20	0.46	60	177	71
6	47	124	25	12	24	0.75	14	41	1.6
7	11	33	1.0	975	2000	26000	13	32	1.3
8	16	43	2.9	1260	2800	18600	11	26	0.79
9	80	672	290	871	2510	18200	8.9	23	0.55
10	13	17	0.66	110	271	87	16	42	2.1
11	8.5	11	0.25	56	140	22	32	83	13
12	6.6	11	0.20	57	143	27	98	252	94
13	6.8	11	0.20	31	43	3.6	53	142	25
14	7.8	11	0.23	29	23	1.8	22	56	3.4
15	80	280	380	39	66	13	113	262	174
16	227	633	1370	26	48	4.1	254	680	1440
17	42	104	12	17	18	0.85	80	214	50
18	33	89	8.1	84	237	176	115	306	186
19	30	84	7.3	40	105	12	63	154	29
20	20	50	2.7	22	56	3.4	49	75	14
21	17	43	2.0	18	43	2.0	42	61	8.3
22	22	59	3.8	16	39	1.7	372	1150	5380
23	19	46	3.0	15	36	1.5	231	585	547
24	14	37	1.4	14	32	1.2	87	142	36
25	11	31	0.94	15	29	1.2	51	81	11
26	9.8	25	0.66	12	25	0.83	38	54	5.7
27	9.9	24	0.65	12	21	0.66	32	32	2.8
28	14	29	1.1	11	16	0.49	27	27	2.0
29	23	57	4.1	12	12	0.37	25	24	1.6
30	18	48	2.4	9.9	7	0.19	21	21	1.2
31	14	30	1.2	---	---	---	20	18	1.0
TOTAL	910.0	---	2182.16	3810.1	---	63164.28	2011.0	---	8131.90

RIO GRANDE DE LOIZA BASIN

50056400 RIO VALENCIANO NEAR JUNCOS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	20	17	0.93	35	84	9.0	6.6	11	0.20
2	20	17	0.88	18	45	2.4	6.0	11	0.18
3	19	16	0.85	48	118	51	5.6	11	0.17
4	18	16	0.75	44	125	21	6.1	11	0.18
5	20	32	2.0	18	45	2.2	5.7	11	0.16
6	32	79	6.9	16	40	1.7	5.3	10	0.15
7	23	28	1.8	14	36	1.4	5.4	10	0.15
8	18	18	0.89	13	33	1.2	28	72	10
9	17	18	0.79	12	29	0.90	9.6	24	0.69
10	16	17	0.74	11	25	0.76	6.1	10	0.16
11	16	16	0.71	9.8	22	0.58	5.6	10	0.15
12	15	16	0.65	9.6	18	0.48	5.1	10	0.14
13	18	29	1.7	8.7	15	0.35	6.4	10	0.17
14	16	20	0.93	11	13	0.39	5.2	10	0.14
15	14	15	0.55	10	13	0.35	4.9	10	0.13
16	13	14	0.48	11	13	0.39	4.4	10	0.12
17	12	13	0.44	9.3	13	0.32	4.4	10	0.11
18	16	12	0.51	8.2	13	0.28	4.3	10	0.11
19	13	11	0.40	8.4	13	0.28	4.1	10	0.11
20	12	17	0.69	8.5	12	0.29	4.2	10	0.11
21	14	24	1.1	8.5	12	0.28	4.2	9	0.11
22	14	13	0.46	6.4	12	0.21	4.0	9	0.10
23	13	13	0.45	5.9	12	0.20	4.0	9	0.10
24	24	50	3.5	6.4	12	0.21	3.9	9	0.10
25	12	13	0.43	5.9	12	0.19	3.8	9	0.09
26	11	13	0.37	6.1	12	0.20	3.6	9	0.09
27	11	12	0.36	6.1	12	0.19	5.0	11	0.17
28	29	67	7.8	5.9	12	0.18	15	27	1.3
29	25	65	6.2	---	---	---	7.9	15	0.51
30	25	62	5.2	---	---	---	6.1	8	0.13
31	43	110	18	---	---	---	8.9	8	0.20
TOTAL	569	---	67.46	374.7	---	96.93	199.4	---	16.23

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	7.3	8	0.16	11	14	0.82	38	91	9.7
2	5.9	8	0.13	33	85	13	292	974	2760
3	9.8	9	0.23	13	12	0.44	38	110	12
4	12	9	0.28	11	12	0.34	52	128	23
5	11	9	0.27	9.8	11	0.30	282	805	922
6	5.8	9	0.14	9.3	11	0.27	80	200	46
7	17	42	6.2	8.6	10	0.24	38	95	9.8
8	61	163	33	8.2	10	0.22	34	83	8.0
9	34	84	8.4	7.6	10	0.20	24	61	4.0
10	9.0	16	0.43	7.3	9	0.18	18	54	2.7
11	6.9	10	0.19	7.8	9	0.19	17	46	2.1
12	5.1	10	0.14	7.2	9	0.17	17	38	1.8
13	4.9	10	0.13	6.9	8	0.15	37	104	13
14	4.6	10	0.12	6.2	8	0.14	39	99	13
15	11	25	1.2	6.1	8	0.14	16	36	1.6
16	212	3100	1620	7.0	9	0.16	12	30	0.99
17	30	81	7.4	13	17	0.73	20	55	3.9
18	15	35	1.4	13	22	1.1	22	59	3.8
19	34	89	10	7.4	10	0.20	36	91	9.3
20	619	2300	10800	6.6	10	0.18	17	44	2.1
21	521	1440	4220	8.0	10	0.22	134	339	243
22	91	215	57	6.0	10	0.16	45	130	18
23	156	309	280	10	10	0.28	22	38	2.5
24	32	60	5.6	5.7	10	0.15	18	10	0.48
25	20	19	1.1	5.4	10	0.15	16	10	0.42
26	16	18	0.78	5.8	10	0.16	14	10	0.39
27	18	16	0.80	21	51	3.6	21	42	2.9
28	13	15	0.54	20	46	3.3	16	10	0.43
29	12	14	0.43	14	19	0.91	13	10	0.34
30	10	12	0.34	586	2770	3380	12	10	0.30
31	---	---	---	124	244	93	---	---	---
TOTAL	2004.3	---	17056.41	1005.9	---	3501.10	1440	---	4117.55

RIO GRANDE DE LOIZA BASIN

50056400 RIO VALENCIANO NEAR JUNCOS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	11	10	0.29	7.5	17	0.58	277	566	640
2	15	9	0.38	5.6	7	0.11	61	193	35
3	13	9	0.32	5.0	7	0.10	31	89	7.6
4	13	9	0.31	4.9	7	0.09	18	50	2.4
5	11	9	0.27	4.8	7	0.09	13	40	1.4
6	16	19	1.1	5.4	7	0.10	9.8	30	0.80
7	35	89	10	6.3	7	0.12	7.9	20	0.43
8	27	59	5.3	7.8	7	0.15	7.2	10	0.21
9	13	8	0.27	5.7	7	0.11	7.3	7	0.14
10	12	7	0.23	4.9	7	0.09	12	7	0.23
11	10	7	0.19	5.1	7	0.10	7.3	7	0.14
12	11	7	0.19	4.8	7	0.09	4.7	7	0.09
13	9.0	6	0.16	32	85	12	4.5	7	0.08
14	16	28	3.6	8.3	8	0.17	4.0	7	0.08
15	35	87	10	5.8	7	0.12	263	294	658
16	12	15	0.56	20	48	4.0	238	388	393
17	11	8	0.24	8.8	16	0.48	24	65	4.6
18	9.8	8	0.21	18	40	2.9	13	19	0.71
19	7.6	8	0.16	8.2	13	0.37	11	10	0.29
20	7.9	8	0.17	5.2	8	0.11	10	9	0.26
21	7.6	8	0.16	4.6	8	0.10	8.8	9	0.21
22	8.8	8	0.18	4.8	8	0.10	7.8	9	0.18
23	9.7	8	0.20	4.1	8	0.08	7.2	8	0.16
24	12	8	0.25	5.1	8	0.10	50	128	50
25	7.9	7	0.16	6.0	7	0.12	40	108	16
26	6.9	7	0.14	6.0	7	0.12	13	25	0.95
27	12	7	0.24	5.0	7	0.10	11	10	0.28
28	8.7	7	0.17	4.2	7	0.08	8.4	9	0.21
29	8.1	7	0.16	4.6	7	0.09	7.5	8	0.17
30	6.6	7	0.13	232	311	772	12	24	0.91
31	5.7	7	0.11	337	757	1060	---	---	---
TOTAL	389.3	---	35.85	787.5	---	1854.77	1189.4	---	1814.53
YEAR	14690.6		102039.17						

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

Date	Time	Instan-taneous dis-charge, cfs (00061)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment load, tons/d (80155)	Suspnd. sedi-ment, sieve diametr percent <.062mm (70331)
OCT					
09...	0710	189	638	326	99
NOV					
08...	0431	552	4010	5970	97

RIO GRANDE DE LOIZA BASIN

50056400 RIO VALENCIANO NEAR JUNCOS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

PARTICLE SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

Date	Time	Instantaneous discharge, cfs (00061)	Suspended sediment concentration mg/L (80154)	Suspended sediment load, tons/d (80155)	Suspnd. sediment, falldia nat wat percent <.002mm (70326)	Suspnd. sediment, falldia nat wat percent <.004mm (70327)	Suspnd. sediment, falldia nat wat percent <.008mm (70328)	Suspnd. sediment, falldia nat wat percent <.016mm (70329)	Suspnd. sediment, falldia nat wat percent <.031mm (70330)	Suspnd. sediment, sieve diametr percent <.062mm (70331)	Suspnd. sediment, sieve diametr percent <.125mm (70332)	Suspnd. sediment, sieve diametr percent <.25mm (70333)	Suspnd. sediment, sieve diametr percent <.5 mm (70334)
NOV													
07...	2301	7720	18000	376000	13	15	19	22	28	34	58	82	97
APR													
20...	0933	474	4780	6110	52	65	80	90	96	98	99	100	100

Date	Suspnd. sediment, sieve diametr percent <1 mm (70335)
NOV	
07...	100
APR	
20...	100

RIO GRANDE DE LOIZA BASIN

50057000 RIO GURABO AT GURABO, PR

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

DRAINAGE AREA.--60.2 mi^2 (156 km^2).

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 and crest-stage gage. Datum of gage is 131.58 ft (40.106 m) above mean sea level. Prior to October 1, 1989 datum 5.0 ft (1.5 m) higher.

REMARKS.--Records poor. Gage-height and precipitation satellite telemetry at station. Low flow affected by diversions for water supply about 400 ft (121 m) upstream from station by PRASA.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	59	60	44	79	57	15	22	35	110	24	37	168
2	54	60	45	78	61	15	15	88	370	24	22	77
3	69	63	92	76	76	15	14	63	76	25	17	80
4	90	47	59	74	122	14	19	54	67	23	16	52
5	144	45	167	75	67	14	18	49	430	22	25	26
6	137	61	60	111	57	13	24	45	146	28	18	21
7	70	758	49	99	51	12	17	40	78	50	17	18
8	59	4920	50	80	49	18	89	36	59	40	24	16
9	586	2040	42	73	45	19	93	31	52	26	34	15
10	90	243	50	72	43	13	33	27	44	24	23	18
11	66	122	53	70	39	12	21	25	38	22	21	27
12	59	100	140	71	35	11	18	24	36	22	35	17
13	54	79	123	69	32	11	16	22	38	21	28	15
14	60	74	72	72	30	11	15	20	49	23	21	14
15	87	72	236	69	28	11	16	18	35	56	19	282
16	266	86	631	66	26	10	245	18	30	26	22	682
17	102	63	312	65	25	9.5	47	20	31	23	30	70
18	86	91	217	68	22	9.2	24	23	36	21	24	44
19	81	89	168	67	22	9.1	23	21	36	20	28	36
20	69	60	122	63	31	8.1	716	17	33	19	20	34
21	59	55	150	63	26	7.9	916	18	105	19	16	30
22	68	52	377	62	23	8.4	147	16	74	21	15	27
23	57	50	550	64	23	9.3	542	18	35	24	14	26
24	59	52	246	78	23	10	60	17	28	23	16	45
25	51	50	143	68	24	11	37	16	27	22	30	70
26	50	49	114	60	21	11	58	16	25	20	24	53
27	48	47	100	57	19	15	48	24	28	24	18	40
28	53	47	93	62	17	25	49	45	30	27	16	32
29	67	48	88	74	---	56	41	30	25	26	16	29
30	74	45	83	71	---	25	38	2390	23	22	112	33
31	63	---	82	68	---	20	---	478	---	19	406	---
TOTAL	2937	9628	4758	2224	1094	448.5	3421	3744	2194	786	1164	2097
MEAN	94.7	321	153	71.7	39.1	14.5	114	121	73.1	25.4	37.5	69.9
MAX	586	4920	631	111	122	56	916	2390	430	56	406	682
MIN	48	45	42	57	17	7.9	14	16	23	19	14	14
AC-FT	5830	19100	9440	4410	2170	890	6790	7430	4350	1560	2310	4160
CFSM	1.57	5.33	2.55	1.19	0.65	0.24	1.89	2.01	1.21	0.42	0.62	1.16
IN.	1.81	5.95	2.94	1.37	0.68	0.28	2.11	2.31	1.36	0.49	0.72	1.30

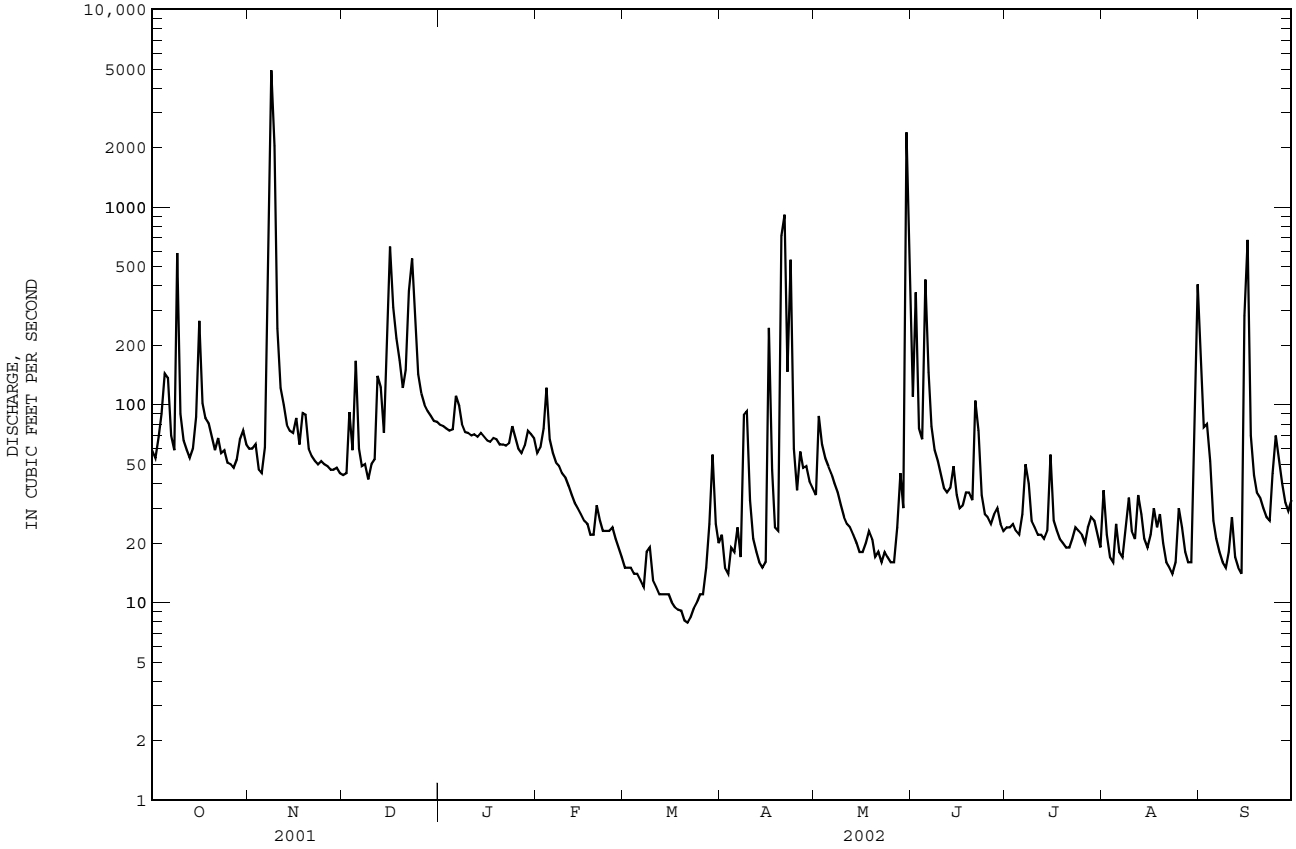
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2002, BY WATER YEAR (WY)

MEAN	216	218	147	64.1	47.0	37.9	41.5	132	121	106	158	227
MAX	1414	1045	863	204	131	97.5	114	746	468	376	610	1225
(WY)	1971	1988	1988	1992	1989	1985	2002	1985	1970	1993	1979	1960
MIN	16.0	23.7	10.7	16.4	12.6	11.2	13.1	12.7	16.8	14.9	24.8	8.76
(WY)	1968	1996	1968	1968	1968	1965	1995	1990	1972	2000	1967	1967

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1960 - 2002	
ANNUAL TOTAL	35913.2		34495.5			
ANNUAL MEAN	98.4		94.5		127	
HIGHEST ANNUAL MEAN					286	1979
LOWEST ANNUAL MEAN					42.2	1967
HIGHEST DAILY MEAN	4920	Nov 8	4920	Nov 8	26200	Sep 10 1996
LOWEST DAILY MEAN	5.4	Apr 20	7.9	Mar 21	3.7	May 27 1996
ANNUAL SEVEN-DAY MINIMUM	9.9	Jun 21	8.8	Mar 17	5.2	May 25 1996
MAXIMUM PEAK FLOW			15100	Nov 8	62100	Sep 10 1996
MAXIMUM PEAK STAGE			23.14	Nov 8	31.44	Sep 10 1996
ANNUAL RUNOFF (AC-FT)	71230		68420		91790	
ANNUAL RUNOFF (CFSM)	1.63		1.57		2.10	
ANNUAL RUNOFF (INCHES)	22.19		21.32		28.60	
10 PERCENT EXCEEDS	127		122		200	
50 PERCENT EXCEEDS	35		41		47	
90 PERCENT EXCEEDS	12		16		16	

RIO GRANDE DE LOIZA BASIN

50057000 RIO GURABO AT GURABO, PR--Continued



RIO GRANDE DE LOIZA BASIN

50057025 RIO GURABO NEAR GURABO, PR

WATER-QUALITY RECORDS

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

DRAINAGE AREA.--62.8 mi^2 (162.7 km^2).

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	SPECIF. CONDUC- TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER- ATURE, WATER, DEG C (00010)	TURBID- ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS- SOLVED OXYGEN, MG/L (00300)	DIS- SOLVED OXYGEN, PERCENT OF SAT- URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI- FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP- TOCOCCI KF MF, COL/ 100 ML (31673)	HARD- NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)	MAGNES- IUM, WATER, FLTRD, MG/L (00925)
NOV													
19...	1045	327	7.0	27.0	57	3.1	39	20	11000	8000	98	23.8	9.36
FEB													
11...	1330	398	7.4	27.0	8.3	5.5	68	<10	2100	E10	--	--	--
APR													
30...	1115	379	7.5	28.7	22	4.7	60	10	800	450	120	29.1	12.7

DATE	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP- TION RATIO (00931)	POTAS- SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR- IDE, WATER, FLTRD, MG/L (00940)	FLUOR- IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI- TUENTS MG/L (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED, MG/L (00530)	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)
NOV													
19...	22.0	1	4.01	102	<1.0	14.1	25.2	.2	24.6	184	96	.07	.920
FEB													
11...	--	--	--	136	--	--	--	--	--	--	10	.08	.980
APR													
30...	26.9	1	3.61	130	<.1	16.6	29.9	E.1	28.9	225	19	.06	.750

DATE	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS- PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV- ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV- ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM- IUM, WATER, UNFLTRD RECOV- ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV- ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV- ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV- ERABLE, UG/L (01051)	MANGAN- ESE, WATER, UNFLTRD RECOV- ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV- ERABLE, UG/L (71900)
NOV													
19...	.14	E.90	E.24	E1	66.0	30	<.1	<.8	<10	M	M	53.3	.01
FEB													
11...	.20	.70	.15	--	--	--	--	--	--	--	--	--	--
APR													
30...	.17	.60	.15	<2	87.0	40	<.1	1.2	<10	1100	<1	385	E.01

DATE	SELEN- IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV- ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV- ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN- OLIC COM- POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
NOV						
19...	<2	<.3	<20	<.01	<16	--
FEB						
11...	--	--	--	--	--	--
APR						
30...	E1	<.3	E30	<.01	<17	<.05

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

RIO GRANDE DE LOIZA BASIN

50058350 RIO CAÑAS AT RIO CAÑAS, PR

LOCATION.--Lat 18°17'41", long 66°02'44", Hydrologic Unit 21010005, at right bank, off Road 798, upstream side of bridge on Highway 52, 0.5 mi (0.8 km) northeast from Escuela Segunda Unidad de Francisco Valdés, and 0.8 mi (1.3 km) north of La Barra.

DRAINAGE AREA.--7.53 mi^2 (19.5 km^2).

PERIOD OF RECORD.--March 1990 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 164 ft (50 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.6	11	11	e20	17	8.5	5.9	12	8.0	5.1	6.8	16
2	6.5	11	11	e19	16	9.0	6.9	101	7.7	4.9	5.2	6.7
3	24	15	30	e18	39	9.0	6.1	23	7.7	4.7	5.0	5.1
4	14	11	65	e18	17	8.7	5.9	23	7.7	4.7	4.8	4.4
5	e22	9.8	22	e22	13	8.7	6.6	17	8.4	4.5	5.7	4.3
6	e25	10	14	e32	12	7.8	8.0	21	6.6	4.8	5.2	4.3
7	e12	e13	e35	e23	12	7.9	9.1	26	6.4	4.7	4.6	4.3
8	e13	e80	e22	e17	11	9.8	17	17	6.3	4.7	5.3	4.2
9	e26	71	e16	e16	11	7.7	39	14	6.3	4.6	5.3	4.2
10	e50	40	e15	e16	11	7.4	8.8	14	6.1	4.6	6.2	4.3
11	e13	29	e72	e17	11	15	8.3	15	6.0	4.4	4.2	4.2
12	11	23	e51	18	10	8.3	8.1	11	6.8	4.5	4.1	4.1
13	33	48	e30	e17	11	8.0	8.0	11	6.2	4.4	4.4	4.2
14	27	23	e46	e17	10	8.2	7.5	10	5.9	7.9	7.4	7.2
15	49	17	e47	e17	9.8	8.2	15	9.6	5.7	6.1	5.7	47
16	19	15	67	e21	9.3	10	59	9.4	5.6	5.4	8.3	23
17	13	14	109	e18	9.3	7.6	14	9.3	7.1	4.6	4.5	6.6
18	25	30	e34	e23	9.2	8.1	8.4	9.3	5.7	4.3	15	24
19	12	18	e31	e17	11	8.1	8.2	9.2	5.8	4.3	5.2	14
20	10	15	e22	e16	8.8	7.5	70	9.1	6.5	4.6	4.3	115
21	10	14	e23	e17	8.4	7.6	40	8.5	7.2	4.7	4.2	15
22	14	13	38	e17	8.4	8.6	15	8.3	6.2	5.4	4.2	8.6
23	11	14	e542	e17	8.3	8.8	11	8.3	5.4	4.9	4.0	27
24	9.2	15	e41	24	8.4	8.7	31	8.1	5.5	4.5	3.9	30
25	9.2	15	e31	17	8.3	8.5	35	7.8	5.2	4.5	3.9	12
26	97	14	e29	15	8.6	6.4	173	7.6	5.1	4.3	3.9	9.0
27	31	15	e28	16	8.4	6.9	43	8.7	5.3	7.1	3.8	8.0
28	16	13	e24	20	8.3	21	17	8.0	5.0	6.3	4.5	7.3
29	15	18	e23	18	---	7.6	14	7.4	4.9	4.5	4.5	6.7
30	14	12	e22	24	---	7.1	13	7.6	4.8	4.1	34	6.3
31	13	---	e22	19	---	6.1	---	8.1	---	14	16	---
TOTAL	650.5	646.8	1573	586	325.5	270.8	711.8	459.3	187.1	162.1	204.1	437.0
MEAN	21.0	21.6	50.7	18.9	11.6	8.74	23.7	14.8	6.24	5.23	6.58	14.6
MAX	97	80	542	32	39	21	173	101	8.4	14	34	115
MIN	6.5	9.8	11	15	8.3	6.1	5.9	7.4	4.8	4.1	3.8	4.1
AC-FT	1290	1280	3120	1160	646	537	1410	911	371	322	405	867
CFSM	2.79	2.86	6.74	2.51	1.54	1.16	3.15	1.97	0.83	0.69	0.87	1.93
IN.	3.21	3.20	7.77	2.89	1.61	1.34	3.52	2.27	0.92	0.80	1.01	2.16

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2002, BY WATER YEAR (WY)

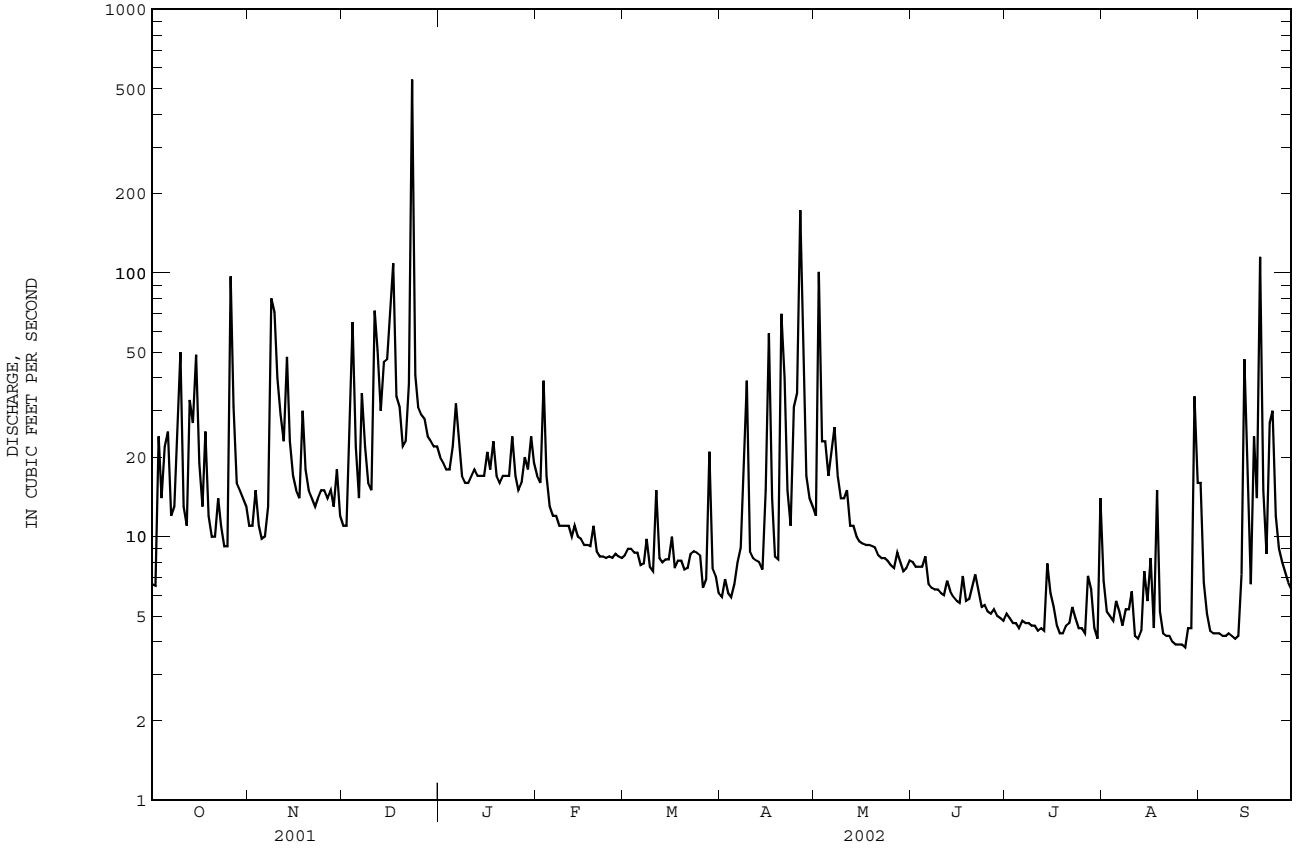
MEAN	20.8	20.6	19.2	13.3	10.6	6.42	7.08	8.57	9.50	9.09	15.6	24.9
MAX	51.0	53.8	50.7	24.5	18.8	12.0	23.7	19.5	35.2	25.9	36.8	81.6
(WY)	1999	1999	2002	1992	1995	1999	2002	1992	1999	1999	1996	1996
MIN	4.60	7.18	5.55	4.48	4.29	2.48	3.24	2.50	1.78	3.40	4.36	4.25
(WY)	1992	1991	1994	1994	1994	1994	1995	1994	1994	1990	1990	1997

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1990 - 2002	
ANNUAL TOTAL	5232.6		6214.0			
ANNUAL MEAN	14.3		17.0		14.1	
HIGHEST ANNUAL MEAN					24.8	1999
LOWEST ANNUAL MEAN					5.77	1994
HIGHEST DAILY MEAN	542	Dec 23	542	Dec 23	1670	Sep 10 1996
LOWEST DAILY MEAN	4.2	Jul 17	3.8	Aug 27	1.1	Jun 8 1994
ANNUAL SEVEN-DAY MINIMUM	4.6	Jul 11	4.0	Aug 21	1.2	Jun 8 1994
MAXIMUM PEAK FLOW			2670	Dec 23	7500	Sep 10 1996
MAXIMUM PEAK STAGE			18.55	Dec 23	24.60	Sep 10 1996
INSTANTANEOUS LOW FLOW			3.7	Aug 12	1.0	Jun 21 1994
ANNUAL RUNOFF (AC-FT)	10380		12330		10250	
ANNUAL RUNOFF (CFSM)	1.90		2.26		1.88	
ANNUAL RUNOFF (INCHES)	25.85		30.70		25.53	
10 PERCENT EXCEEDS	28		31		27	
50 PERCENT EXCEEDS	7.9		9.8		6.7	
90 PERCENT EXCEEDS	5.2		4.6		3.1	

e Estimated

RIO GRANDE DE LOIZA BASIN

50058350 RIO CAÑAS AT RIO CAÑAS, PR--Continued



RIO GRANDE DE LOIZA BASIN

50059000 LAGO LOIZA AT DAMSITE NEAR TRUJILLO ALTO, PR

LOCATION.--Lat 18°19'49", long 66°01'00", Hydrologic Unit 21010005, at pumpsite at damsite, and 1.9 mi (3.1 km) south of Trujillo Alto Plaza.

DRANAIGE AREA.--208 mi^2 (539 km^2).

ELEVATION RECORDS

PERIOD OF RECORD.--December 1987 to current year. Prior to October 1994, published as Lago Loíza at Damsite.

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

REMARKS.--Lake is formed by Loíza Dam, a concrete structure completed in 1954. Useable capacity of impoundment is 30,000 acre-ft (37.0 hm^3). Out flow from lake is controlled by five slide gates in power plant and pump intake structure, four sluicegates, and concrete spillway with eight radial gates. Lake is used for municipal water supply and intermittent power generation. Gage-height satellite telemetry at station. New capacity table based on U.S. Geological Survey Water-Resources Investigations Report 97-4108, November 1994 .

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation 147.42 ft (44.93 m), September 18, 1989; minimum elevation, 108.52 ft (33.08 m), July 18, 1994.

EXTREMES FOR CURRENT YEAR.--Maximum elevation 136.10 ft (41.48 m), January 25; minimum elevation, 130.72 ft (39.84 m), March 28.

Capacity Table
(based on data from U.S. Geological Survey Water-Resources Investigations Report 97-4108, Puerto Rico, 1994)

Elevation, in feet	Contents in acre-feet	Elevation, in feet	Contents in acre-feet
75	0	125	5,861
95	73	131	9,218
115	2,205	135	11,504

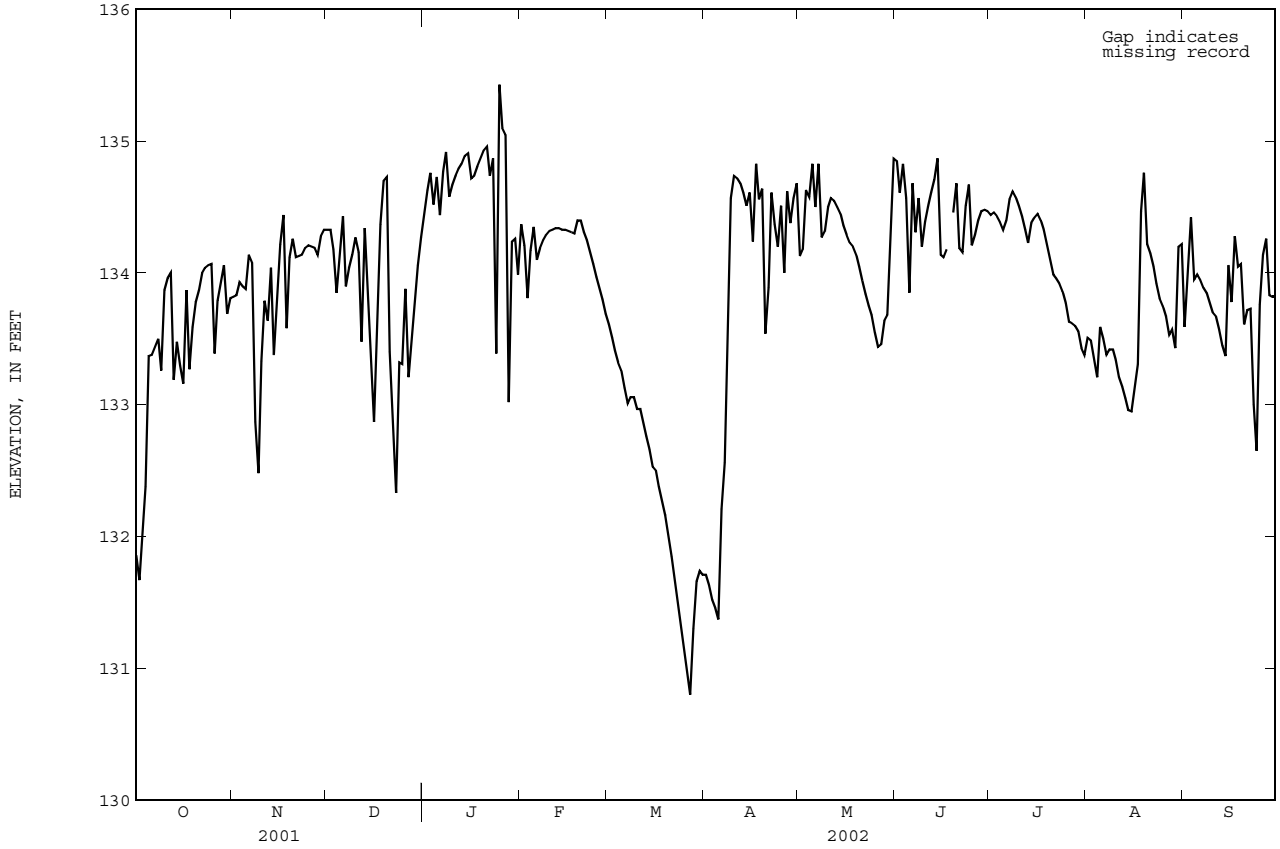
Elevation above NGVD 1929, feet
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	131.86	133.82	134.33	134.45	134.37	133.61	131.71	134.13	134.85	134.44	133.51	133.59
2	131.67	133.83	134.33	134.63	134.21	133.51	131.63	134.18	134.61	134.46	133.49	133.96
3	132.05	133.93	134.18	134.76	133.81	133.41	131.52	134.63	134.83	134.43	133.35	134.42
4	132.38	133.90	133.85	134.52	134.17	133.32	131.46	134.58	134.57	134.39	133.21	133.95
5	133.37	133.88	134.12	134.73	134.35	133.26	131.37	134.83	133.85	134.33	133.59	133.99
6	133.38	134.14	134.43	134.44	134.10	133.13	132.21	134.50	134.68	134.40	133.50	133.95
7	133.44	134.08	133.90	134.77	134.19	133.01	132.56	134.83	134.31	134.56	133.38	133.89
8	133.50	132.87	134.04	134.92	134.25	133.06	133.82	134.27	134.57	134.62	133.42	133.85
9	133.26	132.48	134.14	134.58	134.29	133.06	134.57	134.32	134.20	134.58	133.42	133.77
10	133.87	133.33	134.27	134.67	134.32	132.97	134.74	134.50	134.39	134.51	133.34	133.70
11	133.96	133.79	134.16	134.74	134.33	132.97	134.72	134.57	134.50	134.43	133.21	133.67
12	134.00	133.64	133.48	134.79	134.34	132.86	134.68	134.55	134.61	134.33	133.14	133.57
13	133.19	134.04	134.34	134.83	134.34	132.76	134.61	134.50	134.71	134.23	133.05	133.45
14	133.48	133.38	133.79	134.89	134.33	132.66	134.51	134.45	134.87	134.38	132.96	133.37
15	133.30	133.74	133.27	134.91	134.33	132.53	134.61	134.36	134.14	134.42	132.95	134.06
16	133.16	134.22	132.87	134.72	134.32	132.50	134.24	134.29	134.12	134.45	133.12	133.78
17	133.87	134.44	133.76	134.74	134.31	132.38	134.83	134.23	134.18	134.40	133.31	134.28
18	133.27	133.58	134.37	134.81	134.30	132.27	134.56	134.20	A	134.33	134.47	134.05
19	133.59	134.12	134.70	134.87	134.40	132.16	134.64	134.14	134.46	134.21	134.76	134.07
20	133.78	134.26	134.73	134.93	134.40	132.00	133.54	134.05	134.68	134.10	134.22	133.61
21	133.87	134.12	133.40	134.96	134.31	131.85	133.89	133.94	134.19	133.99	134.15	133.72
22	134.00	134.13	132.81	134.74	134.25	131.69	134.61	133.84	134.16	133.96	134.05	133.73
23	134.04	134.14	132.33	134.87	134.16	131.52	134.37	133.75	134.51	133.92	133.92	133.00
24	134.06	134.19	133.32	133.39	134.07	131.35	134.20	133.68	134.67	133.86	133.81	132.65
25	134.07	134.21	133.31	135.43	133.97	131.16	134.51	133.55	134.21	133.77	133.75	133.76
26	133.39	134.20	133.88	135.10	133.88	130.98	134.00	133.44	134.29	133.63	133.67	134.14
27	133.79	134.19	133.21	135.05	133.80	130.80	134.62	133.46	134.40	133.62	133.53	134.26
28	133.93	134.14	133.55	133.02	133.69	131.30	134.38	133.64	134.47	133.60	133.57	133.83
29	134.06	134.28	133.83	134.24	---	131.66	134.57	133.68	134.48	133.56	133.43	133.82
30	133.69	134.33	134.06	134.26	---	131.74	134.68	134.38	134.47	133.43	134.20	133.82
31	133.81	---	134.27	133.99	---	131.71	---	134.87	---	133.38	134.22	---
MAX	134.07	134.44	134.73	135.43	134.40	133.61	134.83	134.87	___	134.62	134.76	134.42
MIN	131.67	132.48	132.33	133.02	133.69	130.80	131.37	133.44	___	133.38	132.95	132.65

A No gage-height record

RIO GRANDE DE LOIZA BASIN

50059000 LAGO LOIZA AT DAMSITE NEAR TRUJILLO ALTO, PR--Continued



RIO GRANDE DE LOIZA BASIN

50059000 LAGO LOIZA AT DAMSITE NEAR TRUJILLO ALTO, PR--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	SPECIF. CONDUC- TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER- ATURE, WATER, DEG C (00010)	DIS- SOLVED OXYGEN, MG/L (00300)	DIS- SOLVED OXYGEN, PERCENT OF SAT- URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI- FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP- TOCOCCI KF MF, COL/ 100 ML (31673)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED, MG/L (00530)	NITRITE WATER, UNFLTRD MG/L AS N (00615)
NOV													
21...	1130	204	6.8	28.0	3.5	45	20	52	277	57	<1.0	16	.01
FEB													
08...	1200	363	7.1	26.5	2.7	33	<10	26	22	108	--	<10	.02
MAY													
06...	1425	219	7.0	26.4	.7	9	10	58	12	64	.2	<10	.01

DATE	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	TOTAL NITRO- GEN, WATER, UNFLTRD MG/L AS NO3 (71887)	PHOS- PHORUS, WATER, UNFLTRD MG/L (00665)	BORON, WATER, UNFLTRD RECOV- ERABLE, UG/L (01022)	COPPER, WATER, UNFLTRD RECOV- ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV- ERABLE, UG/L (01045)	MANGAN- ESE, WATER, UNFLTRD RECOV- ERABLE, UG/L (01055)	ZINC, WATER, UNFLTRD RECOV- ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN- OLIC COM- POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
NOV													
21...	.720	.02	E.70	--	E.12	20	E20	2290	119	E20	<.01	<16	<.05
FEB													
08...	.190	.11	.50	3.1	.04	--	--	--	--	--	--	--	--
MAY													
06...	.490	.06	.50	4.4	.08	30	E10	970	96.0	<20	<.01	<17	E.05

< -- Less than
E -- Estimated value

RIO GRANDE DE LOIZA BASIN

50059050 RIO GRANDE DE LOIZA BELOW DAMSITE, PR

LOCATION.--Lat 18°20'33", long 66°00'20", Hydrologic Unit 21010005, on left bank of Highway 175, 1.1 mi (1.8 km) downstream of Lago Loíza Dam.

DRAINAGE AREA.--209 mi^2 (541 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1986 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 32 ft (10 m), from topographic map.

REMARKS.--Records poor. Flow regulated by Lago Loíza Dam. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	8.3	28	14	11	4.3	3.1	342	223	4.3	4.9	1750
2	13	8.0	29	14	189	4.3	3.2	969	782	4.6	5.0	324
3	13	7.5	306	13	634	4.3	3.5	88	3.2	4.7	5.5	3.2
4	14	7.5	495	169	199	4.2	2.6	234	296	4.9	13	344
5	13	7.6	484	15	8.6	4.3	2.4	5.6	2350	4.9	6.7	2.5
6	388	8.0	30	467	172	e4.2	2.4	243	420	5.6	5.7	2.2
7	10	2030	392	16	8.6	e4.1	2.5	5.7	426	4.9	5.6	2.0
8	11	21800	29	14	7.7	4.7	3.4	353	3.2	4.6	5.7	2.1
9	1020	6060	27	211	7.5	4.1	301	3.8	343	4.6	5.9	2.1
10	18	628	27	15	7.2	4.1	2.9	19	27	4.5	6.8	2.2
11	11	195	379	13	7.0	5.5	2.3	12	3.1	4.5	6.1	1.9
12	10	490	970	13	6.6	4.3	2.2	5.7	3.1	4.6	5.9	1.8
13	489	86	327	13	6.4	4.0	2.1	4.2	3.1	4.5	5.8	2.0
14	17	406	544	13	6.3	3.9	2.2	3.9	3.2	4.5	5.9	2.6
15	567	64	936	13	5.9	3.9	3.0	3.8	363	306	5.7	2180
16	1300	57	2370	106	5.8	3.7	1500	3.7	2.9	4.7	5.4	3060
17	9.6	55	1330	13	5.7	3.7	3.5	3.8	2.8	4.7	4.7	5.1
18	509	1190	882	12	5.7	3.7	186	3.6	2.9	4.4	6.6	385
19	9.8	91	452	12	5.7	3.7	2.7	3.5	374	4.6	5.3	196
20	8.8	77	296	13	9.6	3.5	5030	3.4	3.1	4.5	254	901
21	8.9	156	881	13	8.3	3.5	3900	3.4	2150	4.6	3.1	7.0
22	8.7	69	1370	134	5.8	3.6	404	3.3	870	4.7	3.1	4.9
23	8.6	67	3390	12	4.9	3.6	1190	3.3	5.1	4.7	1.9	312
24	8.3	66	518	173	4.7	3.4	468	3.2	4.9	4.7	1.7	597
25	8.2	66	462	129	4.6	3.4	309	3.3	265	4.6	1.6	5.4
26	711	64	17	12	4.5	3.4	916	3.6	5.7	4.7	1.6	4.8
27	11	63	491	11	4.3	3.3	204	3.7	4.8	5.7	1.5	4.8
28	9.5	63	18	11	4.2	3.5	245	3.7	4.9	5.1	1.4	208
29	8.3	49	14	168	---	3.5	5.3	3.5	4.6	4.8	1.8	11
30	282	30	14	127	---	3.1	4.0	4080	4.3	4.9	1180	4.3
31	7.7	---	14	266	---	2.9	---	1170	---	4.9	3110	---
TOTAL	5516.4	33968.9	17522	2225	1350.6	119.7	14706.3	7591.7	8953.9	448.0	4677.9	10328.9
MEAN	178	1132	565	71.8	48.2	3.86	490	245	298	14.5	151	344
MAX	1300	21800	3390	467	634	5.5	5030	4080	2350	306	3110	3060
MIN	7.7	7.5	14	11	4.2	2.9	2.1	3.2	2.8	4.3	1.4	1.8
AC-FT	10940	67380	34750	4410	2680	237	29170	15060	17760	889	9280	20490
CFSM	0.85	5.42	2.70	0.34	0.23	0.02	2.35	1.17	1.43	0.07	0.72	1.65
IN.	0.98	6.05	3.12	0.40	0.24	0.02	2.62	1.35	1.59	0.08	0.83	1.84

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 2002, BY WATER YEAR (WY)

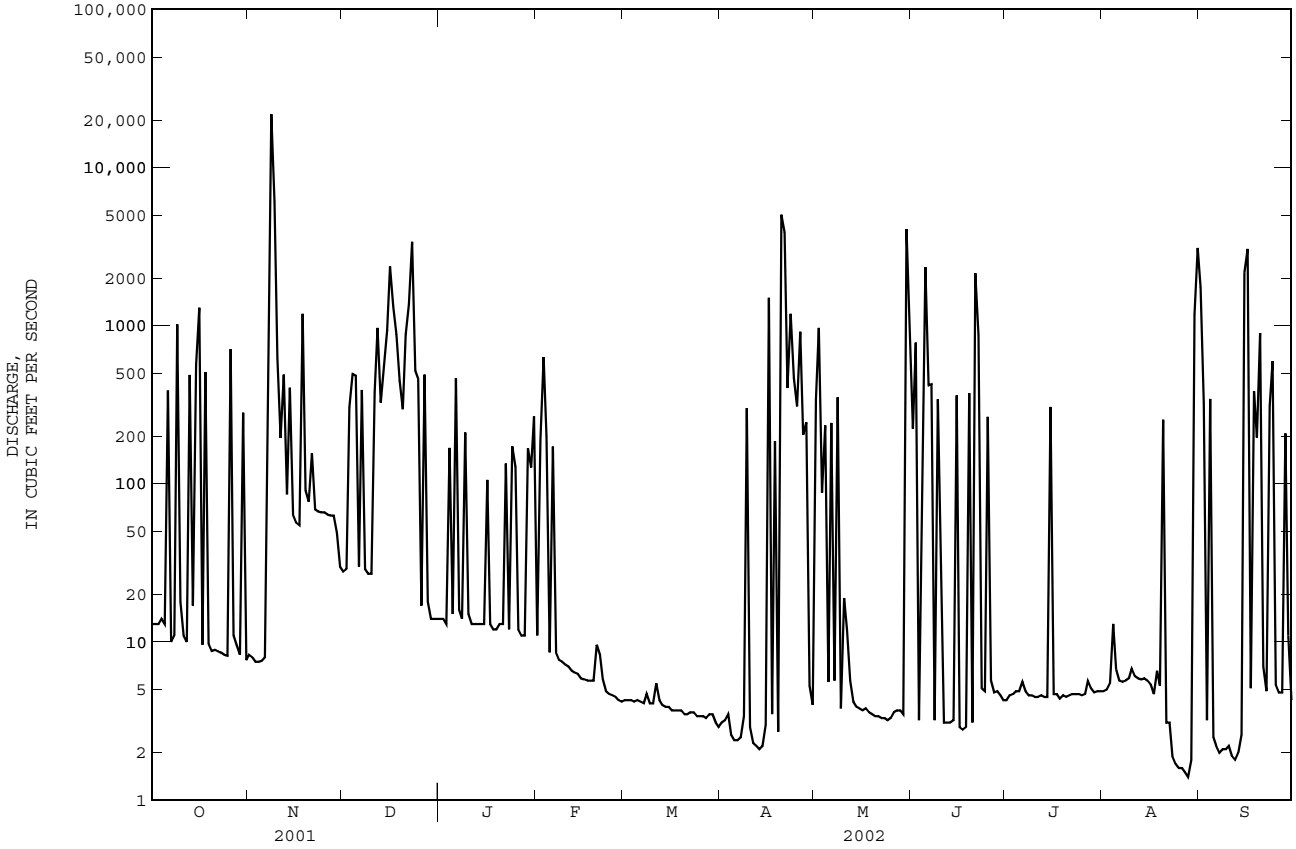
MEAN	371	598	379	157	71.3	43.7	53.4	91.9	161	133	263	774
MAX	1281	2732	2603	733	242	299	490	367	784	672	718	4255
(WY)	1999	1988	1988	1992	1989	1989	2002	1992	1987	1993	1988	1996
MIN	44.7	37.6	17.2	2.49	4.52	3.71	1.20	1.03	1.96	1.62	2.21	29.7
(WY)	1992	1996	1994	1995	1990	2001	1995	1995	1994	1994	1994	1990

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1987 - 2002	
ANNUAL TOTAL	78641.7		107409.3			
ANNUAL MEAN	215		294		258	
HIGHEST ANNUAL MEAN					652	1988
LOWEST ANNUAL MEAN					37.8	1994
HIGHEST DAILY MEAN	21800	Nov 8	21800	Nov 8	110000	Sep 10 1996
LOWEST DAILY MEAN	1.9	Jul 19	1.4	Aug 28	0.42	May 13 1995
ANNUAL SEVEN-DAY MINIMUM	2.0	Jul 22	1.6	Aug 23	0.49	Aug 11 1994
MAXIMUM PEAK FLOW			49300	Nov 8	223000	Sep 10 1996
MAXIMUM PEAK STAGE			26.96	Nov 8	49.31	Sep 10 1996
ANNUAL RUNOFF (AC-FT)	156000		213000		187200	
ANNUAL RUNOFF (CFSM)	1.03		1.41		1.24	
ANNUAL RUNOFF (INCHES)	14.00		19.12		16.80	
10 PERCENT EXCEEDS	398		579		447	
50 PERCENT EXCEEDS	8.5		7.6		8.4	
90 PERCENT EXCEEDS	2.6		3.1		2.5	

e Estimated

RIO GRANDE DE LOIZA BASIN

50059050 RIO GRANDE DE LOIZA BELOW DAMSITE, PR--Continued



RIO GRANDE DE LOIZA BASIN

50059100 RIO GRANDE DE LOIZA BELOW TRUJILLO ALTO, PR

WATER-QUALITY RECORDS

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

DRAINAGE AREA.--213 mi^2 (552 km^2).

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

REMARKS.--Flow controlled by Lago Loíza.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
NOV													
21...	1350	45	192	7.1	26.6	82	7.5	93	30	909	840	58	14.3
FEB													
08...	1115	11	453	7.5	26.5	7.8	8.5	104	<10	E1180	E63	--	--
MAY													
10...	1045	12	428	7.6	29.3	7.7	4.2	54	20	60000	6600	150	38.6

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
NOV													
21...	5.34	11.6	.7	2.96	51	<1.0	9.4	13.0	<.1	17.1	104	12.8	76
FEB													
08...	--	--	--	--	148	--	--	--	--	--	--	--	<10
MAY													
10...	13.8	26.3	.9	2.85	164	<.1	15.8	28.3	.1	26.6	251	7.94	<10

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
NOV													
21...	.02	.810	.06	E.70	E.16	M	59.7	20	<.1	2.2	<10	3550	1
FEB													
08...	.02	.730	.07	.40	.08	--	--	--	--	--	--	--	--
MAY													
10...	.05	.790	.60	1.4	.11	<2	42.0	60	<.1	<.8	<10	160	<1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
NOV								
21...	159	.02	<2	<.3	<20	<.01	<16	--
FEB								
08...	--	--	--	--	--	--	--	--
MAY								
10...	58.5	<.01	<2	<.3	<20	<.01	<16	.24

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

RIO GRANDE DE LOIZA BASIN

50061800 RIO CANOVANAS NEAR CAMPO RICO, PR

LOCATION.--Lat 18°19'08", long 65°53'21", Hydrologic Unit 21010005, at about 100 feet upstream from bridge, on paved secondary road, 0.4 mi (0.6 km) northeast of junction of Highways 185 and 186, 1.5 mi (2.4 km) south of Campo Rico, and 4.4 mi (7.1 km) south of Loíza.

DRAINAGE AREA.--9.84 mi^2 (25.5 km^2).

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

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

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.2	7.3	12	26	29	9.2	32	18	40	9.1	11	20
2	5.1	10	12	25	15	9.0	10	22	28	9.3	7.5	28
3	8.6	14	22	24	15	9.1	8.9	18	24	9.1	6.0	123
4	15	7.7	48	23	17	8.9	8.8	19	24	8.8	5.9	28
5	46	7.1	69	31	12	11	7.9	19	121	8.2	5.7	11
6	22	12	26	98	10	8.7	16	24	49	8.4	5.5	7.7
7	9.6	447	18	45	9.7	8.5	23	20	30	9.5	6.0	6.6
8	8.9	957	18	31	9.0	10	111	18	25	9.0	10	6.2
9	127	314	14	27	9.0	9.7	171	15	23	8.1	9.2	6.1
10	31	78	13	24	8.6	8.2	34	14	19	7.7	7.6	6.5
11	17	49	28	23	8.7	7.7	19	23	18	7.2	14	7.4
12	11	36	39	22	7.9	7.3	15	18	17	6.8	21	6.0
13	9.5	30	32	21	7.7	7.4	12	14	16	7.0	7.7	5.4
14	32	27	48	20	8.0	7.0	9.9	13	15	6.7	6.3	11
15	31	26	84	19	7.2	6.7	13	12	14	6.8	6.0	32
16	35	26	83	19	7.2	6.8	154	12	13	6.8	10	150
17	23	21	93	20	7.3	6.5	34	14	14	6.8	13	25
18	16	19	57	20	7.4	7.9	20	12	18	6.3	8.0	18
19	14	18	35	19	7.5	11	15	11	15	6.2	8.3	14
20	11	16	27	17	20	7.3	94	11	13	6.1	6.2	12
21	8.8	15	91	17	12	6.8	199	11	44	6.1	5.7	11
22	8.7	15	49	18	10	6.6	54	10	20	6.8	5.3	11
23	7.9	14	241	19	9.9	6.4	94	10	14	6.4	4.8	11
24	7.5	15	107	39	9.7	6.0	53	10	12	6.8	8.3	21
25	8.2	19	55	23	9.3	6.0	33	9.9	11	6.1	9.8	36
26	7.6	16	42	18	10	6.0	89	9.7	11	5.5	7.1	22
27	7.3	14	37	16	12	6.5	34	13	11	8.5	5.3	15
28	7.1	14	34	22	9.7	6.3	26	16	11	10	4.6	13
29	8.5	18	32	23	---	26	22	14	10	8.3	12	12
30	11	14	30	21	---	19	19	752	9.6	6.3	30	13
31	9.5	---	28	30	---	9.5	---	86	---	5.8	50	---
TOTAL	570.0	2276.1	1524	800	305.8	273.0	1431.5	1268.6	689.6	230.5	317.8	688.9
MEAN	18.4	75.9	49.2	25.8	10.9	8.81	47.7	40.9	23.0	7.44	10.3	23.0
MAX	127	957	241	98	29	26	199	752	121	10	50	150
MIN	5.1	7.1	12	16	7.2	6.0	7.9	9.7	9.6	5.5	4.6	5.4
AC-FT	1130	4510	3020	1590	607	541	2840	2520	1370	457	630	1370
CFSM	1.87	7.71	5.00	2.62	1.11	0.89	4.85	4.16	2.34	0.76	1.04	2.33
IN.	2.15	8.60	5.76	3.02	1.16	1.03	5.41	4.80	2.61	0.87	1.20	2.60

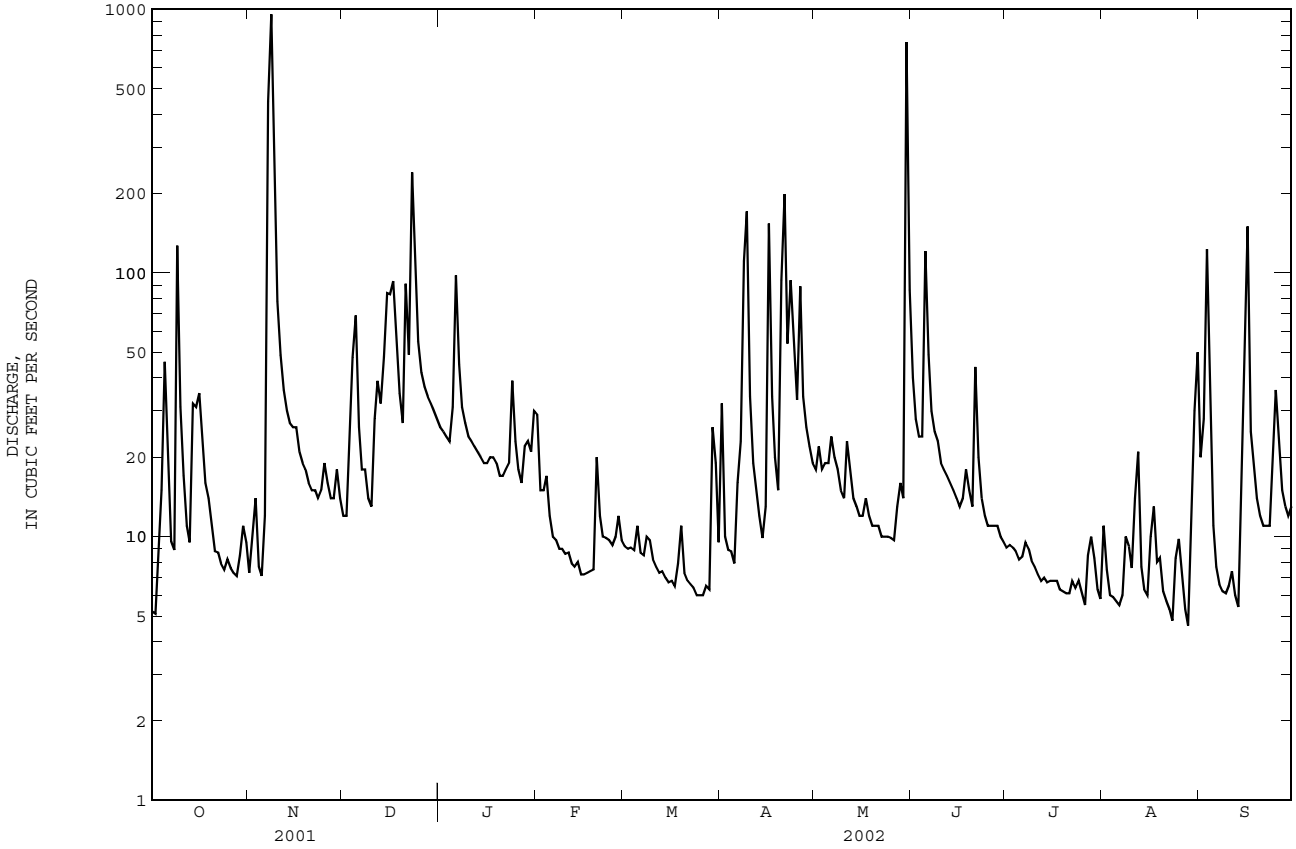
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2002, BY WATER YEAR (WY)

MEAN	40.9	46.8	35.1	25.7	19.1	13.6	15.3	26.1	17.1	17.6	25.8	39.9
MAX	273	125	116	62.4	48.4	36.2	53.2	93.2	63.7	63.7	137	196
(WY)	1971	1985	1971	1969	1988	1969	1971	1969	1970	1979	1979	1996
MIN	6.74	6.66	5.82	6.66	4.04	3.54	4.36	4.28	2.80	3.72	5.69	5.20
(WY)	1968	1981	1968	1977	1977	1977	1994	1974	1974	1974	1991	1967

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1967 - 2002	
ANNUAL TOTAL	7403.1		10375.8			
ANNUAL MEAN	20.3		28.4		27.2	
HIGHEST ANNUAL MEAN					58.0	1971
LOWEST ANNUAL MEAN					10.5	1994
HIGHEST DAILY MEAN	957	Nov 8	957	Nov 8	4230	Sep 10 1996
LOWEST DAILY MEAN	3.0	Jul 21	4.6	Aug 28	0.80	Jul 24 1977
ANNUAL SEVEN-DAY MINIMUM	3.3	Jul 18	6.3	Mar 22	1.5	Jul 18 1977
MAXIMUM PEAK FLOW			3770	Nov 8	17300	Sep 21 1998
MAXIMUM PEAK STAGE			9.51	Nov 8	15.90	Sep 21 1998
INSTANTANEOUS LOW FLOW			4.2	Aug 24	0.80	Jul 24 1977
ANNUAL RUNOFF (AC-FT)	14680		20580		19680	
ANNUAL RUNOFF (CFSM)	2.06		2.89		2.76	
ANNUAL RUNOFF (INCHES)	27.99		39.23		37.51	
10 PERCENT EXCEEDS	32		45		45	
50 PERCENT EXCEEDS	7.1		13		12	
90 PERCENT EXCEEDS	4.1		6.6		5.2	

RIO GRANDE DE LOIZA BASIN

50061800 RIO CANOVANAS NEAR CAMPO RICO, PR--Continued



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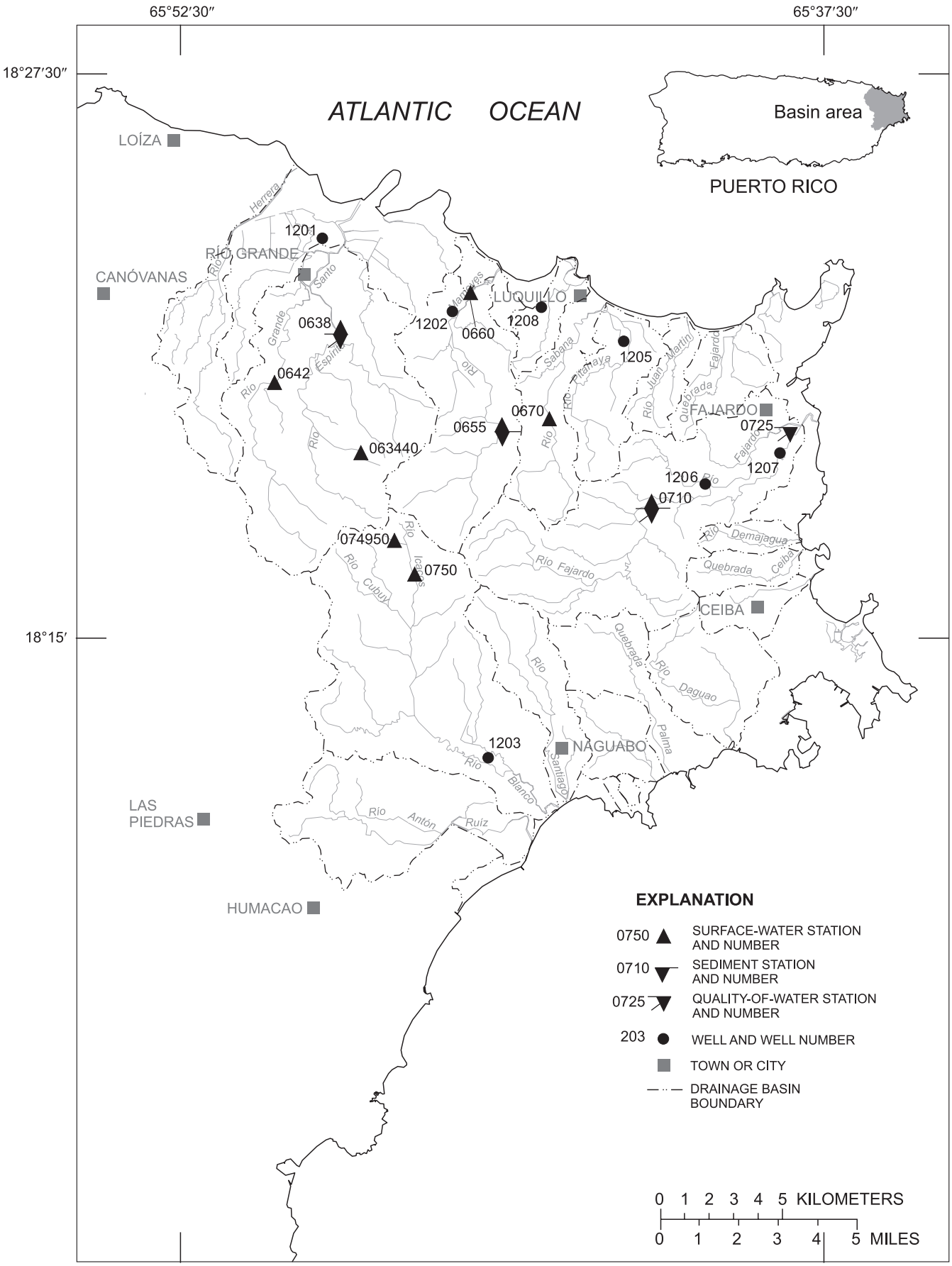


Figure 19. Northeastern river basins -- Río Herrera to Río Antón Ruíz basins.

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 Río Espíritu 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 mi^2 (2.62 km^2).

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

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

REMARKS.--Records poor.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.72	2.4	1.8	3.7	27	0.87	1.8	3.0	4.1	1.7	2.3	12
2	0.63	1.8	e2.5	3.1	17	1.2	5.1	21	3.0	2.0	1.8	4.5
3	12	1.5	4.3	2.8	23	1.3	16	7.9	2.5	3.3	1.1	32
4	7.4	1.4	e58	2.5	13	0.94	20	9.0	4.2	2.8	1.0	6.5
5	12	2.8	19	18	7.3	3.5	2.8	11	23	1.6	0.93	3.7
6	5.0	4.3	e8.3	50	6.3	0.86	1.9	18	5.8	1.8	0.98	2.9
7	2.4	99	9.4	9.9	5.8	0.69	9.2	18	3.4	9.2	1.5	2.6
8	2.8	135	e8.9	4.4	4.2	16	40	5.5	3.4	2.1	20	2.4
9	9.7	75	e11	3.7	4.7	2.6	28	4.7	5.6	2.0	7.8	6.6
10	6.5	22	e11	3.2	3.4	5.2	5.6	6.7	2.7	1.8	8.3	4.3
11	2.7	8.8	e58	2.9	4.3	4.2	6.3	20	2.1	1.3	9.0	5.5
12	1.4	6.5	e16	2.7	2.1	1.6	3.2	6.5	8.8	1.3	4.6	2.2
13	2.7	7.3	e24	2.5	2.7	4.2	2.3	3.5	9.4	1.1	2.5	1.7
14	8.2	10	e17	2.8	2.7	1.5	2.0	3.1	3.1	0.94	3.3	20
15	37	8.4	e44	2.7	1.9	1.1	58	2.6	2.1	1.5	2.7	52
16	24	5.2	e23	2.6	2.2	0.92	71	2.3	1.8	1.6	12	27
17	13	3.6	e60	6.5	2.9	0.83	12	2.9	5.0	7.6	4.5	5.8
18	5.1	3.0	e30	16	1.6	3.7	5.3	8.5	e10	1.4	7.3	4.4
19	8.8	2.6	15	8.3	1.4	9.9	4.1	2.7	17	0.96	2.9	3.6
20	4.4	2.2	8.0	5.6	1.5	1.4	33	1.9	7.8	0.87	2.0	3.2
21	6.3	2.0	29	7.2	1.2	1.0	45	1.7	30	0.91	5.4	2.9
22	8.4	1.8	73	23	1.1	0.92	7.7	1.5	5.7	2.1	2.2	2.6
23	5.9	12	73	18	0.99	0.85	9.9	2.3	3.5	4.1	2.0	6.7
24	3.3	7.7	38	49	0.95	0.79	7.6	1.5	2.9	14	1.7	23
25	4.7	21	12	15	0.84	0.71	6.8	1.2	2.6	2.3	3.7	7.8
26	3.1	4.0	8.0	12	2.6	0.65	31	1.1	2.3	1.5	1.8	19
27	2.6	4.6	6.4	16	1.4	3.7	8.2	7.7	2.4	4.7	1.7	6.6
28	3.0	3.2	5.4	61	0.80	1.7	5.5	13	2.8	13	1.3	9.6
29	4.7	3.5	4.6	33	---	13	4.4	3.9	2.5	3.5	3.7	6.2
30	4.2	e2.3	4.1	25	---	22	3.3	82	1.9	1.7	27	3.4
31	4.6	---	4.6	24	---	3.3	---	7.8	---	1.4	37	---
TOTAL	217.25	464.9	687.3	437.1	144.88	111.13	457.0	282.5	181.4	96.08	184.01	290.7
MEAN	7.01	15.5	22.2	14.1	5.17	3.58	15.2	9.11	6.05	3.10	5.94	9.69
MAX	37	135	73	61	27	22	71	82	30	14	37	52
MIN	0.63	1.4	1.8	2.5	0.80	0.65	1.8	1.1	1.8	0.87	0.93	1.7
AC-FT	431	922	1360	867	287	220	906	560	360	191	365	577
CFSM	6.94	15.3	22.0	14.0	5.12	3.55	15.1	9.02	5.99	3.07	5.88	9.59
IN.	8.00	17.12	25.31	16.10	5.34	4.09	16.83	10.40	6.68	3.54	6.78	10.71

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2002, BY WATER YEAR (WY)

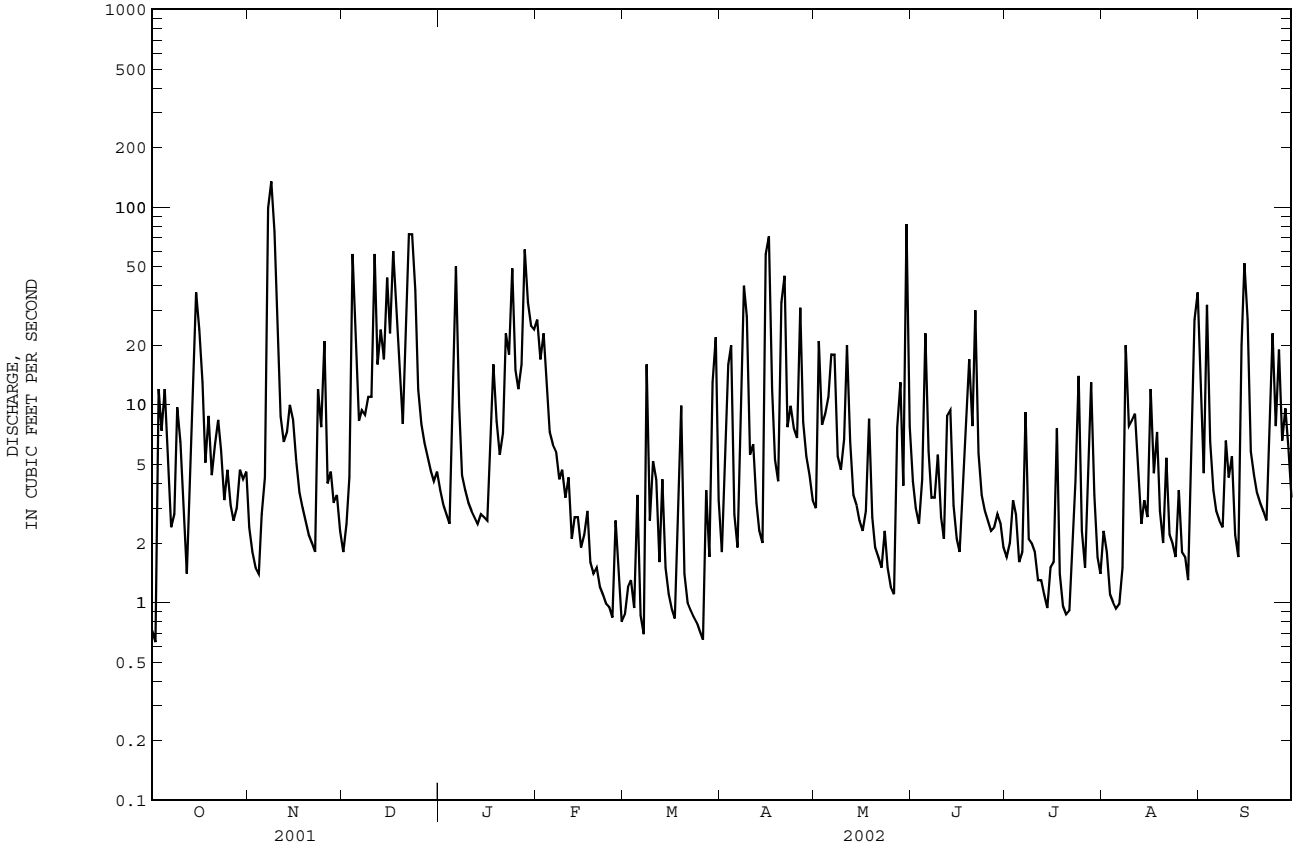
MEAN	5.60	9.52	9.55	7.36	5.77	4.66	5.06	7.04	5.46	5.83	7.19	7.54
MAX	16.8	19.8	22.3	14.1	11.9	14.3	15.2	14.3	13.7	12.7	14.2	23.2
(WY)	1986	1985	2000	2002	1988	1990	2002	1992	1987	1983	1988	1998
MIN	0.22	2.47	0.92	3.42	1.56	1.53	0.90	2.00	0.98	1.90	0.50	2.45
(WY)	1993	1991	1990	1985	1992	1993	1997	1999	1985	2000	1993	1986

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1983 - 2002	
ANNUAL TOTAL	2749.83		3554.25			
ANNUAL MEAN	7.53		9.74		6.67	
HIGHEST ANNUAL MEAN					9.74	2002
LOWEST ANNUAL MEAN					3.91	1994
HIGHEST DAILY MEAN	135	Nov 8	135	Nov 8	346	Sep 10 1996
LOWEST DAILY MEAN	0.44	Jun 24	0.63	Oct 2	0.00	Aug 14 1993
ANNUAL SEVEN-DAY MINIMUM	0.66	Jun 9	0.90	Mar 20	0.01	Mar 31 1994
MAXIMUM PEAK FLOW			611	Nov 7	2230	Dec 7 1987
MAXIMUM PEAK STAGE			7.39	Nov 7	9.42	Dec 7 1987
INSTANTANEOUS LOW FLOW			0.60	Oct 2	0.00	Aug 13 1993
ANNUAL RUNOFF (AC-FT)	5450		7050		4830	
ANNUAL RUNOFF (CFSM)	7.46		9.64		6.61	
ANNUAL RUNOFF (INCHES)	101.28		130.91		89.76	
10 PERCENT EXCEEDS	16		23		16	
50 PERCENT EXCEEDS	3.0		4.2		2.7	
90 PERCENT EXCEEDS	0.89		1.3		0.56	

e Estimated

RIO ESPIRITU SANTO BASIN

50063440 QUEBRADA SONADORA NEAR EL VERDE, PR--Continued



RIO ESPIRITU SANTO BASIN

50063800 RIO ESPIRITU SANTO NEAR RIO GRANDE, PR

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

DRAINAGE AREA.--8.62 mi^2 (22.33 km^2).

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 and crest-stage gage. Elevation of gage is 40 ft (12 m), from topographic map.

REMARKS.--Records poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e25	21	20	39	73	19	19	36	43	20	e17	70
2	e23	18	19	36	54	20	21	81	38	22	e24	30
3	39	17	33	34	64	20	68	50	31	25	e15	263
4	39	16	504	32	55	20	72	52	36	25	e15	39
5	72	18	134	54	36	28	26	49	94	24	e14	23
6	35	34	54	193	34	19	20	74	53	29	e14	19
7	24	951	62	78	37	18	42	84	35	47	e18	20
8	31	1350	52	42	33	59	191	45	34	25	101	18
9	57	525	48	37	33	29	120	43	42	25	57	27
10	50	91	57	34	32	37	38	53	31	25	34	25
11	30	56	168	32	36	29	43	121	27	19	38	31
12	19	44	85	31	29	21	28	53	36	19	33	18
13	21	50	e66	30	32	25	23	33	64	18	19	16
14	47	52	e103	31	32	20	21	29	36	21	20	55
15	115	39	208	31	27	17	215	26	27	21	19	377
16	102	37	97	30	28	19	416	25	24	21	52	139
17	63	29	245	39	30	21	85	28	47	34	31	33
18	37	27	128	65	25	21	46	39	67	21	39	30
19	48	26	80	53	23	49	36	27	65	18	25	24
20	34	24	56	33	30	20	262	22	70	16	16	22
21	41	23	261	41	22	17	340	20	173	15	27	20
22	81	22	358	69	21	16	62	19	51	20	18	19
23	47	36	472	55	20	15	63	22	31	26	14	26
24	32	39	193	170	20	14	41	19	27	54	15	144
25	37	64	80	55	20	13	56	18	25	24	17	47
26	24	29	64	40	25	13	170	18	23	17	17	98
27	21	29	56	43	25	22	61	37	24	33	15	42
28	25	26	50	178	19	22	44	58	24	61	12	33
29	36	25	46	68	---	40	35	26	25	32	29	35
30	28	22	43	77	---	88	30	731	21	19	149	23
31	29	---	42	69	---	29	---	e72	---	e16	108	---
TOTAL	1312	3740	3884	1819	915	800	2694	2010	1324	792	1022	1766
MEAN	42.3	125	125	58.7	32.7	25.8	89.8	64.8	44.1	25.5	33.0	58.9
MAX	115	1350	504	193	73	88	416	731	173	61	149	377
MIN	19	16	19	30	19	13	19	18	21	15	12	16
AC-FT	2600	7420	7700	3610	1810	1590	5340	3990	2630	1570	2030	3500
CFSM	4.91	14.5	14.5	6.81	3.79	2.99	10.4	7.52	5.12	2.96	3.82	6.83
IN.	5.66	16.14	16.76	7.85	3.95	3.45	11.63	8.67	5.71	3.42	4.41	7.62

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2002, BY WATER YEAR (WY)

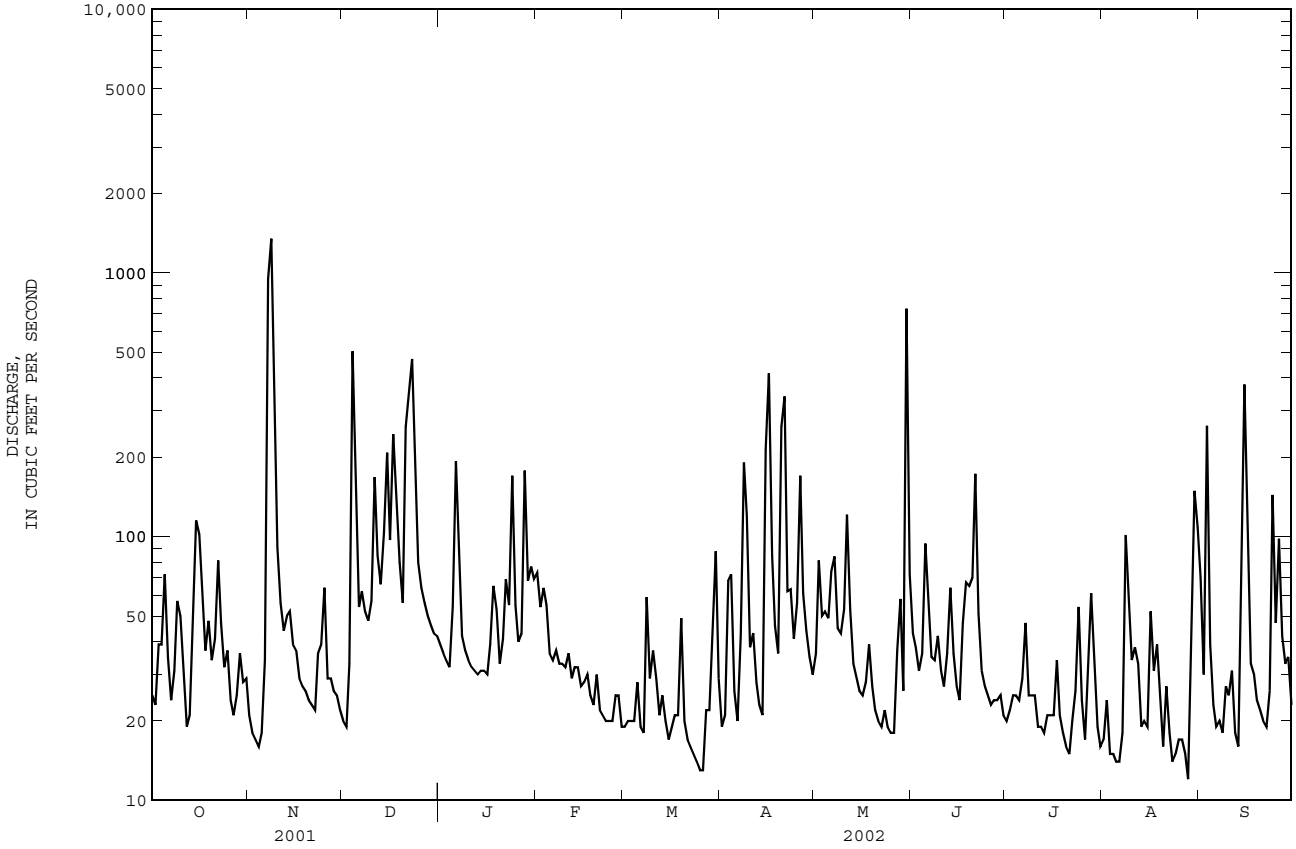
MEAN	61.5	89.2	80.3	56.5	49.8	38.1	44.4	63.6	44.6	50.9	63.1	63.1
MAX	202	196	248	119	117	153	119	185	120	114	126	235
(WY)	1971	1985	1999	1969	1982	1990	1981	1979	1970	1983	1998	1998
MIN	12.3	29.1	16.8	18.5	10.8	9.53	6.27	14.9	10.0	11.1	18.5	17.7
(WY)	1969	1982	1994	1977	1983	1996	1984	1973	1975	1975	1994	1971

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1966 - 2002	
ANNUAL TOTAL	19380.7		22078			
ANNUAL MEAN	53.1		60.5		58.9	
HIGHEST ANNUAL MEAN					98.6	1979
LOWEST ANNUAL MEAN					21.6	1994
HIGHEST DAILY MEAN	1350	Nov 8	1350	Nov 8	2600	Dec 7 1987
LOWEST DAILY MEAN	6.3	Jun 15	12	Aug 28	3.6	Apr 2 1996
ANNUAL SEVEN-DAY MINIMUM	7.8	Jun 10	15	Mar 20	4.0	May 28 1999
MAXIMUM PEAK FLOW			4940	May 30	21200	Aug 13 1990
MAXIMUM PEAK STAGE			8.48	May 30	16.62	Aug 13 1990
ANNUAL RUNOFF (AC-FT)	38440		43790		42650	
ANNUAL RUNOFF (CFSM)	6.16		7.02		6.83	
ANNUAL RUNOFF (INCHES)	83.64		95.28		92.79	
10 PERCENT EXCEEDS	90		99		123	
50 PERCENT EXCEEDS	24		33		26	
90 PERCENT EXCEEDS	9.0		18		10	

e Estimated

RIO ESPIRITU SANTO BASIN

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



RIO ESPIRITU SANTO BASIN

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

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
NOV													
23...	1230	23	122	7.1	25.0	2.5	8.4	102	<10	430	E153	35	7.47
FEB													
05...	1200	33	107	6.9	22.0	9.7	9.1	103	<10	E240	E120	--	--
MAY													
09...	1115	32	101	7.1	25.2	11	8.3	100	10	E191	73	27	5.65

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
NOV													
23...	3.96	7.92	.6	.52	34	<1.0	1.8	9.62	<.1	20.9	73	4.62	<10
FEB													
05...	--	--	--	--	30	--	--	--	--	--	--	--	<10
MAY													
09...	3.23	6.83	.6	.36	28	<.1	1.7	8.96	<.1	15.9	59	5.15	<10

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
NOV													
23...	<.01	.080	<.01	<.20	<.02	<2	4.0	E10	<.1	<.8	<10	70	<1
FEB													
05...	<.01	.070	<.01	<.20	<.02	--	--	--	--	--	--	--	--
MAY													
09...	<.01	.040	<.01	<.20	<.02	<2	4.2	E20	<.1	<.8	M	140	<1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
NOV								
23...	7.9	<.01	<2	<.3	<20	<.01	<16	<.05
FEB								
05...	--	--	--	--	--	--	--	--
MAY								
09...	10.1	<.01	<2	<.3	<20	<.01	<16	<.05

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

RIO ESPIRITU SANTO BASIN

50064200 RIO GRANDE NEAR EL VERDE, PR

LOCATION.--Lat 18°20'42", long 65°50'30", Hydrologic Unit 21010005, on left bank 250 ft (7.6 m) about 350 feet upstream side of bridge at Highway 960, 0.05 mi (0.08 km) southwest of junction of Highways 956 and 960, 1.1 mi (1.8 km) west of El Verde, and 2.7 mi (4.3 km) south of Río Grande.

DRAINAGE AREA.--7.31 mi^2 (18.9 km^2).

PERIOD OF RECORD.--May 1967 to December 1970, January 1972 to September 1982, August 1990 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 131 ft (40 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	e14	21	30	99	13	12	18	38	12	10	37
2	11	e13	27	26	42	13	15	19	35	13	14	14
3	46	e15	47	25	44	13	27	26	21	13	9.0	321
4	32	e13	301	24	44	15	32	30	26	13	8.3	47
5	151	e11	191	66	24	17	15	35	171	12	8.4	21
6	35	e27	61	314	22	13	14	71	47	12	8.4	17
7	21	e550	57	73	21	12	66	59	26	20	12	15
8	19	e1150	51	31	20	30	325	30	23	14	132	14
9	151	e650	36	25	20	19	284	25	24	13	55	17
10	84	133	36	23	19	13	38	29	18	11	16	17
11	33	74	172	22	19	12	29	79	16	10	79	21
12	17	55	121	21	16	12	20	43	19	10	26	14
13	14	47	104	19	18	12	16	19	26	9.7	10	12
14	45	42	137	19	18	12	14	17	22	9.6	9.6	54
15	137	40	228	21	15	11	91	16	16	9.9	9.0	191
16	116	41	148	19	15	10	390	15	14	10	51	190
17	50	33	277	22	16	11	69	21	20	12	18	27
18	29	31	141	38	15	14	29	16	43	9.9	18	30
19	43	30	64	30	24	32	21	15	33	8.8	13	22
20	26	28	45	20	31	13	183	14	41	8.7	8.2	17
21	23	26	173	24	15	11	334	13	148	8.6	9.4	16
22	33	25	151	48	13	10	58	12	33	11	7.8	15
23	18	25	532	45	13	10	86	12	18	11	6.6	17
24	15	26	244	164	13	10	30	12	16	25	6.5	90
25	20	57	77	35	13	10	33	11	15	13	7.4	56
26	14	29	54	23	20	10	60	11	14	9.1	7.9	53
27	12	32	45	26	18	12	29	17	14	29	6.6	23
28	e13	28	39	138	13	11	29	35	15	48	6.1	11
29	e36	27	35	49	---	26	22	16	14	21	19	9.9
30	e25	24	33	67	---	55	19	949	13	11	82	8.7
31	e20	---	31	83	---	17	---	87	---	9.2	112	---
TOTAL	1303	3296	3679	1570	660	479	2390	1772	979	427.5	786.2	1397.6
MEAN	42.0	110	119	50.6	23.6	15.5	79.7	57.2	32.6	13.8	25.4	46.6
MAX	151	1150	532	314	99	55	390	949	171	48	132	321
MIN	11	11	21	19	13	10	12	11	13	8.6	6.1	8.7
AC-FT	2580	6540	7300	3110	1310	950	4740	3510	1940	848	1560	2770
CFSM	5.75	15.0	16.2	6.93	3.22	2.11	10.9	7.82	4.46	1.89	3.47	6.37
IN.	6.63	16.77	18.72	7.99	3.36	2.44	12.16	9.02	4.98	2.18	4.00	7.11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2002, BY WATER YEAR (WY)

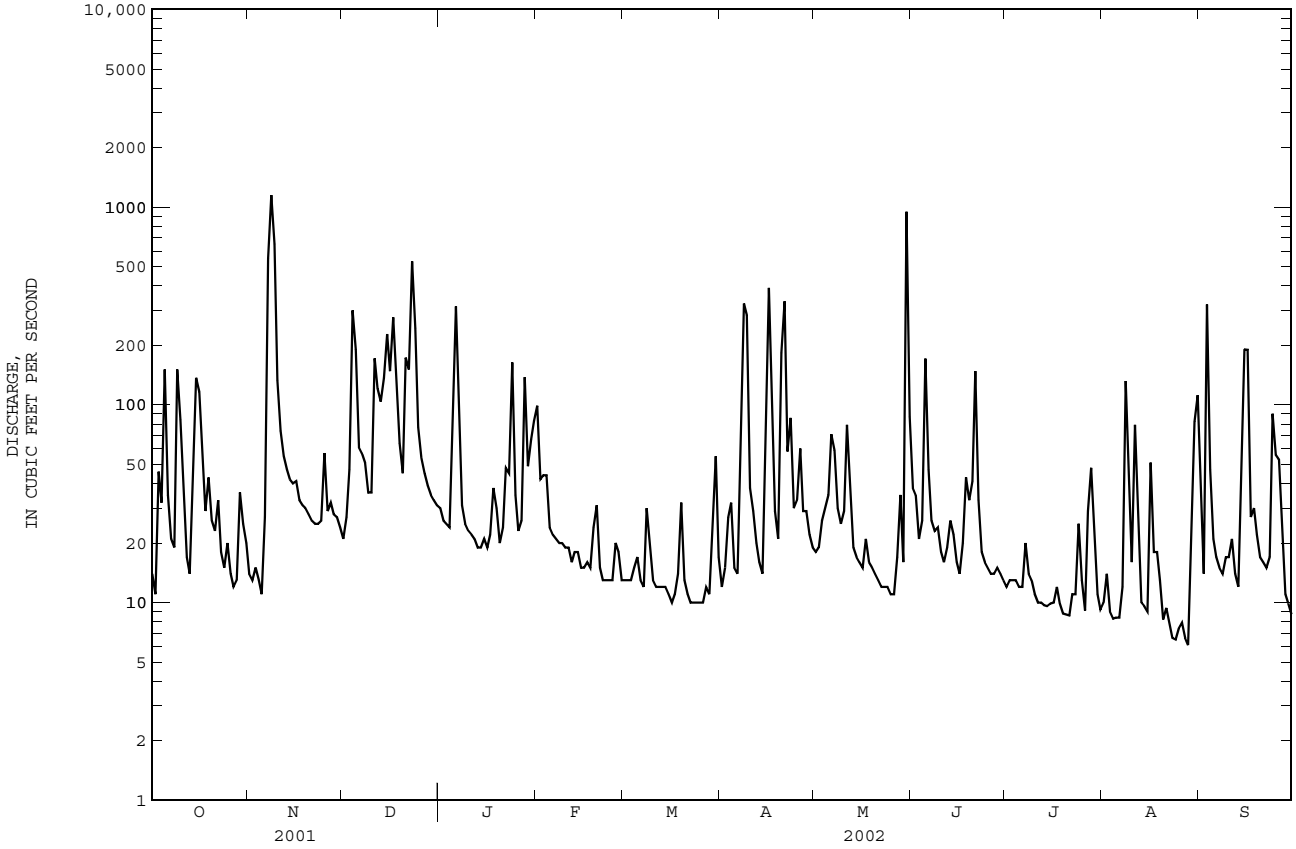
MEAN	55.6	69.2	54.4	44.7	30.4	20.3	28.0	46.7	29.3	34.0	44.5	50.6
MAX	392	172	140	151	76.4	54.4	119	203	86.5	109	90.0	153
(WY)	1971	1970	1971	1969	1969	1969	1978	1969	1968	1969	1968	1975
MIN	8.45	14.3	12.0	10.1	5.80	4.50	6.29	10.2	6.22	8.66	7.39	12.4
(WY)	1969	1981	1998	1977	1977	1977	1995	1974	1975	1994	1991	1967

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1967 - 2002	
ANNUAL TOTAL	15385.0		18739.3			
ANNUAL MEAN	42.2		51.3		41.0	
HIGHEST ANNUAL MEAN					87.1	1969
LOWEST ANNUAL MEAN					17.3	1994
HIGHEST DAILY MEAN	1150	Nov 8	1150	Nov 8	3470	May 21 1969
LOWEST DAILY MEAN	5.0	Jul 21	6.1	Aug 28	2.2	Aug 15 1991
ANNUAL SEVEN-DAY MINIMUM	5.3	Jul 17	7.0	Aug 22	2.5	Aug 10 1991
MAXIMUM PEAK FLOW			4540	May 30	22000	Sep 21 1998
MAXIMUM PEAK STAGE			12.31	May 30	19.30	Sep 21 1998
INSTANTANEOUS LOW FLOW			5.6	Aug 28	1.6	Mar 13 1977
ANNUAL RUNOFF (AC-FT)	30520		37170		29700	
ANNUAL RUNOFF (CFSM)	5.77		7.02		5.61	
ANNUAL RUNOFF (INCHES)	78.29		95.36		76.20	
10 PERCENT EXCEEDS	92		114		81	
50 PERCENT EXCEEDS	15		21		17	
90 PERCENT EXCEEDS	6.5		10		6.8	

e Estimated

RIO ESPIRITU SANTO BASIN

50064200 RIO GRANDE NEAR EL VERDE, PR--Continued



RIO MAMEYES BASIN

50065500 RIO MAMEYES NEAR SABANA, PR

LOCATION.--Lat 18°19'46", long 65°45'04", Hydrologic Unit 21010005, on left bank, at bridge on Highway 988, 1.4 mi (2.3 km) west of Sabana, 2.0 mi (3.2 km) downstream from Río de la Mina, and 3.2 mi (5.1 km) southeast of Mameyes.

DRAINAGE AREA.--6.88 mi^2 (17.8 km^2).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 275 ft (84 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	34	21	37	91	15	15	52	68	20	16	48
2	17	24	23	33	64	15	17	98	61	21	e15	28
3	85	22	45	31	e107	14	58	61	45	25	e13	91
4	54	51	282	29	59	13	80	64	74	24	13	30
5	86	42	156	64	37	21	21	58	133	19	20	22
6	48	44	71	227	34	13	16	90	64	21	26	20
7	41	e628	76	84	36	12	54	90	42	65	25	e22
8	32	601	55	42	30	48	e215	43	42	21	125	e21
9	56	516	58	36	31	18	134	33	54	18	72	47
10	123	169	74	33	28	29	48	47	34	18	50	28
11	45	113	198	31	31	38	41	107	29	16	48	32
12	29	83	106	29	23	16	25	66	59	19	31	21
13	37	68	96	30	22	23	20	41	84	15	21	18
14	48	75	91	32	24	15	19	38	39	18	26	33
15	112	60	222	30	21	13	261	33	27	e26	21	223
16	89	46	140	27	22	12	385	35	23	e21	38	164
17	85	38	266	38	25	12	100	48	30	31	26	36
18	42	34	203	64	19	19	45	66	46	19	55	29
19	71	31	130	47	18	24	48	33	43	17	33	25
20	45	28	83	33	18	13	181	28	36	16	22	23
21	40	26	251	39	16	12	241	28	159	19	32	22
22	68	25	564	80	15	11	166	25	35	31	21	21
23	58	56	419	60	15	11	97	29	25	36	27	32
24	42	47	230	238	14	12	93	23	23	62	21	76
25	70	73	124	66	14	11	81	21	21	22	38	31
26	34	32	92	45	22	11	93	21	19	24	21	66
27	29	35	72	46	16	28	62	70	e25	39	22	33
28	43	28	59	311	14	15	46	96	e24	48	17	89
29	57	28	51	143	---	e138	34	36	e21	24	25	41
30	43	23	45	89	---	68	28	597	19	17	92	26
31	39	---	43	89	---	20	---	120	---	15	110	---
TOTAL	1686	3080	4346	2183	866	720	2724	2197	1404	787	1122	1398
MEAN	54.4	103	140	70.4	30.9	23.2	90.8	70.9	46.8	25.4	36.2	46.6
MAX	123	628	564	311	107	138	385	597	159	65	125	223
MIN	17	22	21	27	14	11	15	21	19	15	13	18
AC-FT	3340	6110	8620	4330	1720	1430	5400	4360	2780	1560	2230	2770
CFSM	7.91	14.9	20.4	10.2	4.50	3.38	13.2	10.3	6.80	3.69	5.26	6.77
IN.	9.12	16.65	23.50	11.80	4.68	3.89	14.73	11.88	7.59	4.26	6.07	7.56

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2002, BY WATER YEAR (WY)

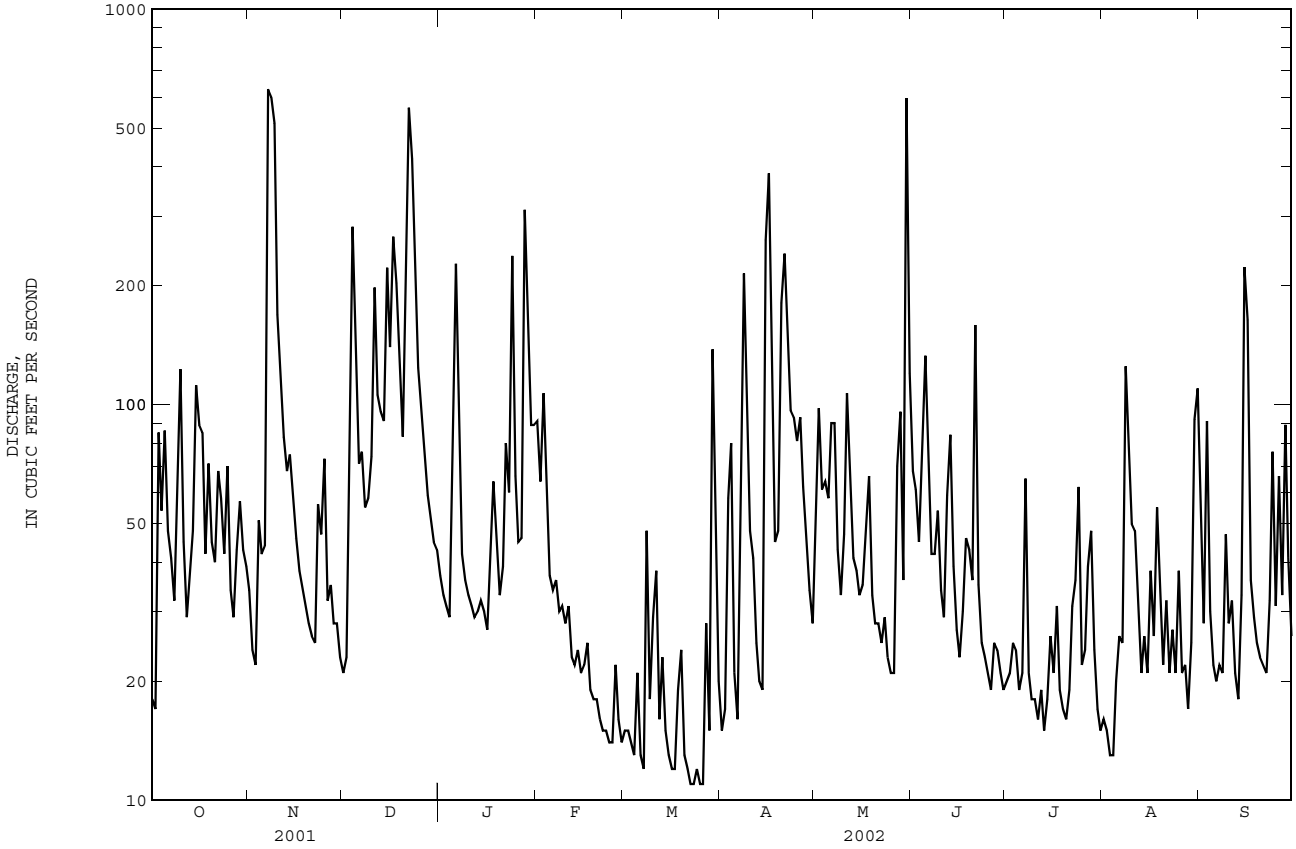
MEAN	63.5	82.0	64.7	54.7	40.7	35.6	41.4	61.7	52.2	48.2	55.7	62.1
MAX	240	191	164	105	68.0	79.7	90.8	147	112	93.4	85.2	166
(WY)	1971	1985	1971	1969	1988	1990	2002	1970	1970	1969	2000	1989
MIN	20.3	36.3	16.6	25.0	21.7	16.8	14.5	18.7	12.4	20.3	20.4	26.6
(WY)	1969	1974	1990	1985	1968	2000	1984	1973	1985	1994	1994	1986

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1967 - 2002	
ANNUAL TOTAL	19161		22513			
ANNUAL MEAN	52.5		61.7		55.8	
HIGHEST ANNUAL MEAN					78.0	1971
LOWEST ANNUAL MEAN					33.1	1994
HIGHEST DAILY MEAN	736	Aug 22	628	Nov 7	2780	Sep 18 1989
LOWEST DAILY MEAN	13	Jan 24	11	Mar 22	6.9	Apr 20 1970
ANNUAL SEVEN-DAY MINIMUM	14	Jan 21	12	Mar 20	9.4	Jun 12 1985
MAXIMUM PEAK FLOW			9830	May 30	20500	Sep 18 1989
MAXIMUM PEAK STAGE			10.16	May 30	13.19	Sep 18 1989
INSTANTANEOUS LOW FLOW			10	Mar 26	5.1	Apr 8 1970
ANNUAL RUNOFF (AC-FT)	38010		44650		40390	
ANNUAL RUNOFF (CFSM)	7.63		8.97		8.10	
ANNUAL RUNOFF (INCHES)	103.60		121.73		110.10	
10 PERCENT EXCEEDS	91		121		102	
50 PERCENT EXCEEDS	28		35		34	
90 PERCENT EXCEEDS	16		17		16	

e Estimated

RIO MAMEYES BASIN

50065500 RIO MAMEYES NEAR SABANA, PR--Continued



RIO MAMEYES BASIN

50065500 RIO MAMEYES NEAR SABANA, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1992 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 1992 to September 2002.

INSTRUMENTATION.--USDH-48 and automatic sediment samplers since 1993.

REMARKS.--During high flow events sediment samples were collected with automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 484 mg/L September 10, 1996; Minimum daily mean, 1 mg/L several days during several years.

SEDIMENT LOADS: Maximum daily mean, 5,390 tons (4,890 tonnes) September 21, 1998; Minimum daily mean, 0.03 ton (0.03 tonne) October 05, 1994 and June 19, 2001.

EXTREMES FOR CURRENT YEAR 2002.--
SEDIMENT CONCENTRATION: Maximum daily mean, 193 mg/L May 30, 2002; Minimum daily mean, 1 mg/L several days.

SEDIMENT LOADS: Maximum daily mean, e791 tons (e718 tonnes) November 7, 2001; Minimum daily mean, 0.05 ton (.04 tonne) October 1, 2, 2001.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	18	1	0.05	34	5	0.47	21	4	0.25
2	17	1	0.05	24	3	0.19	23	4	0.26
3	85	17	8.0	22	3	0.18	45	8	2.1
4	54	7	1.4	51	10	2.8	282	86	223
5	86	16	4.1	42	7	1.0	156	34	16
6	48	7	1.0	44	7	1.0	71	13	2.6
7	41	3	0.44	e628	e120	e791	76	15	3.8
8	32	1	0.09	601	66	123	55	9	1.5
9	56	8	1.6	516	53	105	58	10	1.9
10	123	68	97	169	24	11	74	13	3.0
11	45	7	0.97	113	21	6.4	198	41	37
12	29	3	0.26	83	18	4.1	106	21	6.4
13	37	3	0.38	68	9	1.9	96	18	5.4
14	48	5	0.83	75	7	1.9	91	16	4.4
15	112	20	11	60	5	1.3	222	48	50
16	89	6	1.4	46	1	0.13	140	30	12
17	85	8	2.1	38	1	0.10	266	44	36
18	42	6	0.68	34	1	0.09	203	38	22
19	71	11	2.6	31	1	0.08	130	19	6.8
20	45	9	1.1	28	1	0.08	83	15	3.5
21	40	7	0.77	26	1	0.07	251	59	91
22	68	13	4.2	25	1	0.07	564	132	275
23	58	8	1.8	56	10	2.4	419	107	144
24	42	3	0.39	47	8	1.0	230	43	30
25	70	12	3.0	73	18	4.9	124	5	1.8
26	34	4	0.35	32	5	0.44	92	4	0.96
27	29	3	0.27	35	5	0.47	72	2	0.47
28	43	6	0.83	28	5	0.37	59	2	0.32
29	57	10	1.7	28	5	0.36	51	2	0.27
30	43	6	0.75	23	5	0.29	45	2	0.24
31	39	6	0.73	---	---	---	43	2	0.23
TOTAL	1686	---	149.84	3080	---	1062.09	4346	---	982.20

RIO MAMEYES BASIN

50065500 RIO MAMEYES NEAR SABANA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	37	2	0.20	91	11	3.4	15	4	0.15
2	33	2	0.18	64	3	0.71	15	3	0.14
3	31	2	0.17	e107	e20	e20	14	3	0.12
4	29	2	0.15	59	6	1.3	13	3	0.11
5	64	11	3.5	37	1	0.12	21	4	0.22
6	227	52	36	34	1	0.12	13	3	0.09
7	84	20	5.8	36	1	0.14	12	2	0.07
8	42	7	0.85	30	2	0.12	48	9	1.8
9	36	6	0.58	31	2	0.14	18	3	0.13
10	33	6	0.54	28	2	0.14	29	4	0.36
11	31	6	0.50	31	2	0.16	38	7	1.2
12	29	6	0.48	23	2	0.13	16	2	0.09
13	30	6	0.49	22	2	0.13	23	2	0.16
14	32	6	0.52	24	2	0.15	15	2	0.09
15	30	6	0.48	21	3	0.14	13	2	0.07
16	27	6	0.44	22	3	0.16	12	2	0.06
17	38	6	0.61	25	3	0.19	12	2	0.06
18	64	11	2.6	19	3	0.15	19	2	0.10
19	47	7	0.86	18	3	0.15	24	2	0.13
20	33	5	0.45	18	3	0.15	13	2	0.07
21	39	5	0.53	16	3	0.14	12	2	0.06
22	80	16	6.2	15	3	0.14	11	2	0.06
23	60	12	4.6	15	4	0.15	11	2	0.06
24	238	59	48	14	4	0.15	12	2	0.06
25	66	13	2.4	14	4	0.14	11	2	0.06
26	45	10	1.3	22	5	0.28	11	2	0.06
27	46	9	1.1	16	4	0.17	28	5	0.42
28	311	83	112	14	4	0.14	15	2	0.08
29	143	29	12	---	---	---	e138	e36	e80
30	89	8	2.1	---	---	---	68	13	3.0
31	89	10	2.6	---	---	---	20	2	0.14
TOTAL	2183	---	248.23	866	---	29.01	720	---	89.22

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	15	2	0.08	52	13	11	68	5	1.0
2	17	2	0.11	98	23	15	61	8	1.8
3	58	10	1.7	61	11	2.8	45	6	0.80
4	80	14	4.4	64	11	2.4	74	10	2.1
5	21	3	0.17	58	9	1.6	133	28	13
6	16	2	0.10	90	18	5.6	64	11	2.0
7	54	11	3.4	90	16	4.4	42	7	0.79
8	e215	e58	e71	43	8	0.93	42	6	0.68
9	134	28	14	33	6	0.66	54	9	1.5
10	48	8	1.1	47	8	1.6	34	5	0.47
11	41	4	0.51	107	25	27	29	5	0.39
12	25	4	0.27	66	10	2.1	59	10	2.7
13	20	4	0.22	41	3	0.35	84	16	4.4
14	19	4	0.20	38	3	0.31	39	6	0.63
15	261	68	85	33	3	0.27	27	6	0.42
16	385	99	129	35	4	0.40	23	5	0.33
17	100	19	6.1	48	7	1.1	30	5	0.42
18	45	9	1.1	66	12	2.9	46	8	1.2
19	48	8	1.1	33	4	0.35	43	7	0.89
20	181	45	27	28	4	0.29	36	5	0.54
21	241	65	63	28	4	0.28	159	41	38
22	166	42	40	25	4	0.24	35	5	0.50
23	97	19	6.3	29	3	0.27	25	3	0.18
24	93	22	19	23	3	0.21	23	2	0.13
25	81	18	5.7	21	3	0.18	21	2	0.11
26	93	22	15	21	3	0.17	19	2	0.10
27	62	11	2.0	70	14	4.2	e25	e2	e0.14
28	46	9	1.1	96	25	11	e24	e2	e0.17
29	34	7	0.64	36	5	0.56	e21	e2	e0.13
30	28	6	0.48	597	193	620	19	2	0.10
31	---	---	---	120	23	8.2	---	---	---
TOTAL	2724	---	499.78	2197	---	726.37	1404	---	75.62

RIO MAMEYES BASIN

50065500 RIO MAMEYES NEAR SABANA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	20	2	0.11	16	2	0.09	48	10	1.4
2	21	2	0.11	e15	e2	e0.09	28	7	0.51
3	25	2	0.13	e13	e2	e0.09	91	23	23
4	24	2	0.13	13	2	0.07	30	5	0.41
5	19	2	0.10	20	2	0.11	22	4	0.27
6	21	2	0.11	26	2	0.14	20	4	0.22
7	65	11	3.1	25	2	0.14	e22	e4	e0.24
8	21	2	0.11	125	31	46	e21	e3	e0.22
9	18	2	0.10	72	17	5.9	47	8	1.3
10	18	2	0.10	50	8	1.1	28	4	0.27
11	16	2	0.09	48	10	1.9	32	3	0.25
12	19	2	0.10	31	6	0.50	21	3	0.14
13	15	2	0.08	21	5	0.31	18	2	0.11
14	18	2	0.09	26	5	0.35	33	5	0.94
15	e26	e3	e0.27	21	4	0.26	223	65	108
16	e21	e2	e0.15	38	6	0.64	164	37	34
17	31	4	0.36	26	4	0.27	36	5	0.50
18	19	2	0.10	55	9	2.6	29	2	0.20
19	17	2	0.09	33	7	0.60	25	2	0.14
20	16	2	0.08	22	6	0.39	23	2	0.13
21	19	2	0.10	32	6	0.53	22	2	0.12
22	31	3	0.30	21	6	0.33	21	2	0.11
23	36	4	0.44	27	6	0.40	32	4	0.55
24	62	11	2.9	21	5	0.30	76	14	4.1
25	22	2	0.12	38	7	0.86	31	4	0.36
26	24	2	0.13	21	3	0.18	66	12	5.5
27	39	5	0.65	22	3	0.20	33	4	0.43
28	48	6	0.80	17	4	0.17	89	19	17
29	24	2	0.13	25	4	0.25	41	7	0.82
30	17	2	0.09	92	21	17	26	4	0.26
31	15	2	0.08	110	22	7.7	---	---	---
TOTAL	787	---	11.25	1122	---	89.47	1398	---	201.50
YEAR	22513		4164.58						

e Estimated

RIO MAMEYES BASIN

50066000 RIO MAMEYES AT MAMEYES, PR

LOCATION.--Lat 18°22'27", long 65°45'50", Hydrologic Unit 21010005, on right bank, at bridge on Highway 3, 3.1 mi (5.0 km), southwest from Luquillo, 0.4 mi (0.6 km) downstream from Quebrada Anón, and 2.9 mi (4.7 km) east from Escuela Juan González.

DRAINAGE AREA.--13.5 mi^2 (34.7 km^2).

PERIOD OF RECORD.--July 1997 to current year

GAGE.--Water-stage recorder. Elevation of gage is 16.4 ft (5.0 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Discharges above 5,000 ft^3/s (141.6 m^3/s), are based on a rating curve extension and are rated poor. Low flow affected by water supply intake about 1,000 ft (305 m), upstream from station. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	e41	e23	45	e92	15	17	98	77	28	17	76
2	14	e26	e25	40	e73	16	19	235	66	29	17	27
3	113	e23	e47	38	e102	14	57	90	42	34	13	108
4	63	e57	e278	36	e73	13	82	98	60	32	13	48
5	116	46	e184	57	e48	20	26	81	158	29	16	26
6	56	57	e126	250	e42	13	18	128	114	35	16	21
7	45	1100	126	107	43	12	43	137	50	91	21	21
8	45	1200	86	45	37	46	260	75	45	39	185	21
9	73	1160	66	39	36	20	145	82	43	32	90	53
10	188	259	94	35	33	28	35	99	28	27	57	26
11	55	126	300	33	35	33	34	180	27	23	43	44
12	28	90	172	32	27	18	21	102	48	26	34	20
13	32	99	117	31	26	22	18	51	102	23	15	16
14	43	e90	116	32	27	16	18	45	35	22	21	21
15	163	e60	498	e34	24	13	362	39	27	27	14	384
16	96	e56	229	e31	25	12	719	43	24	23	35	291
17	92	e47	446	e43	28	12	185	57	37	30	27	49
18	53	e39	347	e67	22	18	79	71	47	22	59	28
19	78	e35	199	e53	20	26	68	40	44	20	36	23
20	46	e32	102	e38	20	14	499	32	58	19	17	20
21	40	e29	545	e45	17	11	498	30	300	21	27	18
22	121	e28	1070	e74	16	13	305	27	50	25	15	16
23	92	e58	636	e65	17	10	155	33	32	28	19	33
24	46	e52	365	e201	16	9.8	149	27	28	68	17	235
25	78	e75	162	e75	14	9.1	168	24	27	23	39	68
26	34	e35	108	e53	21	9.1	127	23	25	18	21	107
27	28	e39	84	e54	19	25	95	79	24	31	22	67
28	34	e31	70	e298	14	19	71	129	23	51	15	138
29	57	e31	60	e142	---	143	53	41	21	31	19	91
30	38	e27	53	e112	---	94	48	e1230	23	19	125	38
31	37	---	50	e109	---	24	---	e215	---	17	142	---
TOTAL	2020	5048	6784	2314	967	748.0	4374	3641	1685	943	1207	2134
MEAN	65.2	168	219	74.6	34.5	24.1	146	117	56.2	30.4	38.9	71.1
MAX	188	1200	1070	298	102	143	719	1230	300	91	185	384
MIN	14	23	23	31	14	9.1	17	23	21	17	13	16
AC-FT	4010	10010	13460	4590	1920	1480	8680	7220	3340	1870	2390	4230
CFSM	4.86	12.6	16.3	5.57	2.58	1.80	10.9	8.77	4.19	2.27	2.91	5.31
IN.	5.61	14.01	18.83	6.42	2.68	2.08	12.14	10.11	4.68	2.62	3.35	5.92

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2002, BY WATER YEAR (WY)

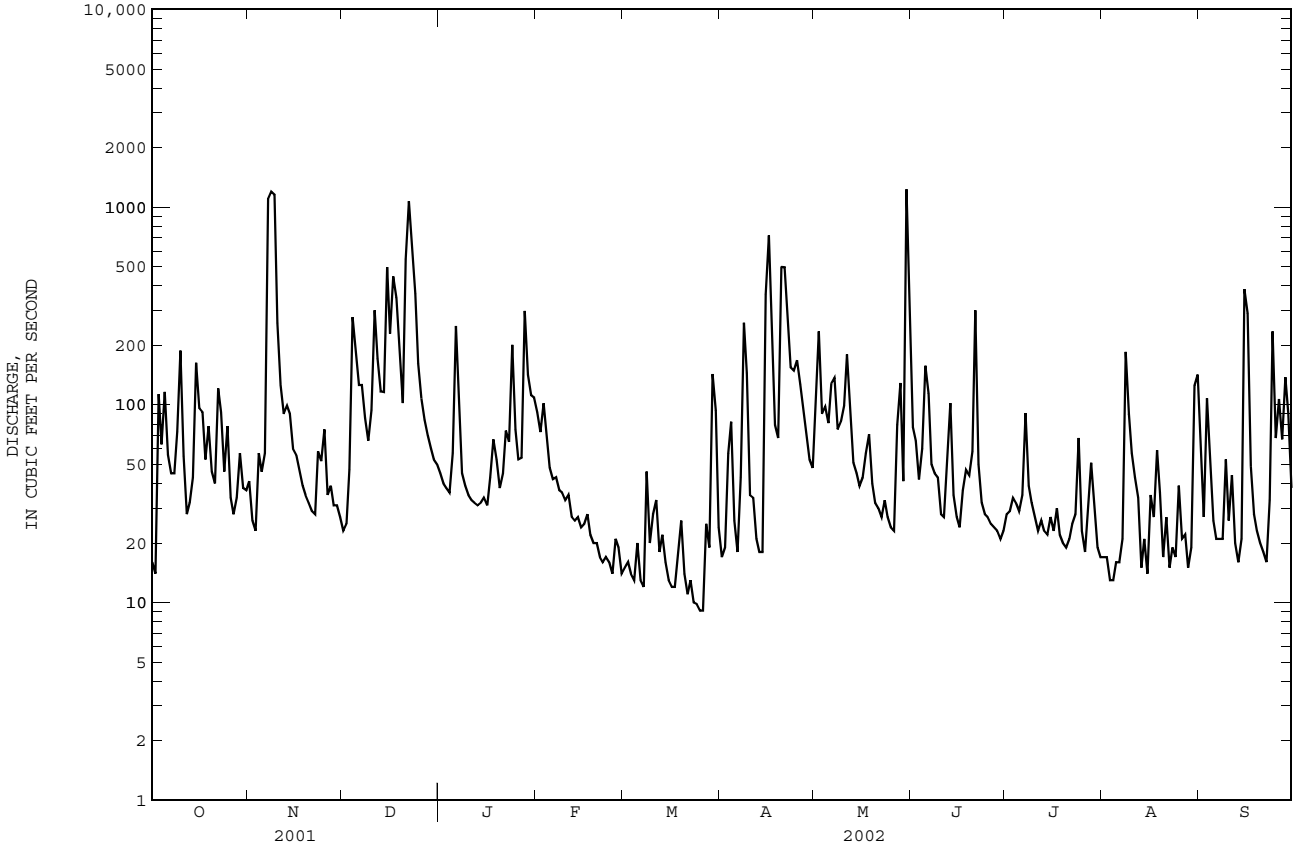
MEAN	95.1	154	152	77.9	47.6	38.1	67.2	83.4	52.6	49.3	86.0	106
MAX	135	271	264	122	72.5	80.6	146	129	86.2	93.0	126	274
(WY)	1999	2000	1999	1999	2000	1998	2002	1998	1998	1999	2000	1998
MIN	58.8	75.9	18.4	43.4	34.5	17.5	17.5	32.7	36.2	25.8	38.9	51.4
(WY)	2001	2001	1998	2001	2002	2000	2000	1999	2001	2000	2002	2001

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1997 - 2002	
ANNUAL TOTAL	27131.1		31865.0			
ANNUAL MEAN	74.3		87.3		85.1	
HIGHEST ANNUAL MEAN					101	1998
LOWEST ANNUAL MEAN					52.3	2001
HIGHEST DAILY MEAN	1200	Nov 8	1230	May 30	2660	Sep 21 1998
LOWEST DAILY MEAN	9.0	Mar 19	9.1	Mar 25	6.0	Apr 29 2000
ANNUAL SEVEN-DAY MINIMUM	13	Mar 6	11	Mar 20	7.3	Apr 23 2000
MAXIMUM PEAK FLOW			8370	Nov 7	Not determined	Aug 22 2001
MAXIMUM PEAK STAGE			11.49	Nov 7	15.64	Aug 22 2001
ANNUAL RUNOFF (AC-FT)	53810		63200		61630	
ANNUAL RUNOFF (CFSM)	5.55		6.52		6.35	
ANNUAL RUNOFF (INCHES)	75.32		88.46		86.25	
10 PERCENT EXCEEDS	126		175		173	
50 PERCENT EXCEEDS	34		40		40	
90 PERCENT EXCEEDS	16		17		16	

e Estimated

RIO MAMEYES BASIN

50066000 RIO MAMEYES AT MAMEYES, PR--Continued



RIO SABANA BASIN

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 mi^2 (10.3 km^2).

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

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

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Low flow affected by Puerto Rico Aqueduct and Sewer Authority Water Intake 1.0 mi (1.6 km) upstream, and purification plant 0.2 mi (0.32 km). Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	9.2	e4.5	18	14	e3.6	2.0	8.0	9.6	5.2	2.9	e6.0
2	1.7	4.7	e5.5	17	14	e3.6	1.8	11	10	4.8	2.7	e4.0
3	70	4.0	e9.0	15	15	e3.4	2.3	11	5.8	5.3	2.3	e10
4	19	71	e40	14	13	e3.0	3.7	16	10	4.8	e2.7	e4.2
5	9.4	11	e22	18	10	e4.0	1.9	11	132	4.6	e3.9	e3.0
6	5.0	11	e9.6	52	9.7	e3.0	1.8	13	36	5.0	e5.0	e2.7
7	4.1	281	10	23	9.3	e2.8	9.0	14	12	17	e4.8	e3.0
8	4.0	253	8.4	13	8.4	e3.2	63	8.8	12	4.5	e17	e2.8
9	5.4	437	13	13	7.9	2.7	19	7.1	11	4.1	e8.0	e6.0
10	74	79	9.7	11	7.6	3.4	5.2	11	13	4.0	e6.0	e3.6
11	11	41	96	11	7.3	2.9	5.8	e20	7.7	3.6	e5.6	e4.0
12	4.5	28	31	10	6.8	2.8	2.7	e11	15	6.1	e3.0	e2.5
13	4.0	23	13	9.5	6.7	2.8	2.0	e6.5	21	4.1	e3.5	e2.1
14	4.2	20	12	9.5	6.1	2.7	2.0	e6.0	8.1	3.7	e3.0	e6.0
15	19	16	147	9.2	5.8	2.0	74	e5.5	6.7	4.0	e5.0	e40
16	9.4	14	48	8.6	6.2	2.7	204	e5.6	6.5	3.9	e4.0	e30
17	20	12	68	8.7	5.7	2.3	28	e8.0	6.8	3.6	e6.5	e12
18	6.8	11	81	11	5.0	2.8	8.5	e12	6.8	2.9	e4.7	e7.0
19	6.3	10	37	10	4.9	2.3	7.4	e4.8	7.7	2.9	e3.7	e4.2
20	6.1	9.3	22	7.6	4.3	2.2	95	e4.2	9.5	3.2	e3.0	2.3
21	5.6	8.5	109	7.3	4.2	2.1	144	e3.7	90	4.4	e4.0	1.9
22	20	e8.0	243	12	4.2	2.0	38	e3.5	9.7	3.6	e2.9	1.7
23	11	e18	176	12	e4.0	1.9	16	e3.8	7.1	4.4	e3.5	9.2
24	5.7	e17	72	112	e3.7	2.2	45	e3.1	6.4	6.7	e3.0	25
25	12	e22	45	16	e3.4	1.9	34	2.9	6.2	3.9	e5.0	4.7
26	5.6	e10	36	9.9	e4.5	1.8	11	2.9	5.3	3.2	e3.4	123
27	4.5	e11	31	9.0	e3.5	4.1	9.7	8.8	6.1	3.3	e3.5	17
28	6.5	e8.0	27	95	e3.3	2.9	8.8	17	6.2	4.9	e2.8	16
29	5.7	e8.0	24	21	---	20	7.3	5.7	6.1	3.6	e3.2	8.2
30	5.9	e5.5	21	14	---	11	7.0	168	5.2	2.9	6.1	3.7
31	5.2	---	20	14	---	2.4	---	25	---	2.7	e13	---
TOTAL	373.1	1461.2	1490.7	611.3	198.5	110.5	859.9	438.9	495.5	140.9	147.7	365.8
MEAN	12.0	48.7	48.1	19.7	7.09	3.56	28.7	14.2	16.5	4.55	4.76	12.2
MAX	74	437	243	112	15	20	204	168	132	17	17	123
MIN	1.5	4.0	4.5	7.3	3.3	1.8	1.8	2.9	5.2	2.7	2.3	1.7
AC-FT	740	2900	2960	1210	394	219	1710	871	983	279	293	726
CFSM	3.04	12.3	12.1	4.98	1.79	0.90	7.24	3.58	4.17	1.15	1.20	3.08
IN.	3.50	13.73	14.00	5.74	1.86	1.04	8.08	4.12	4.65	1.32	1.39	3.44

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2002, BY WATER YEAR (WY)

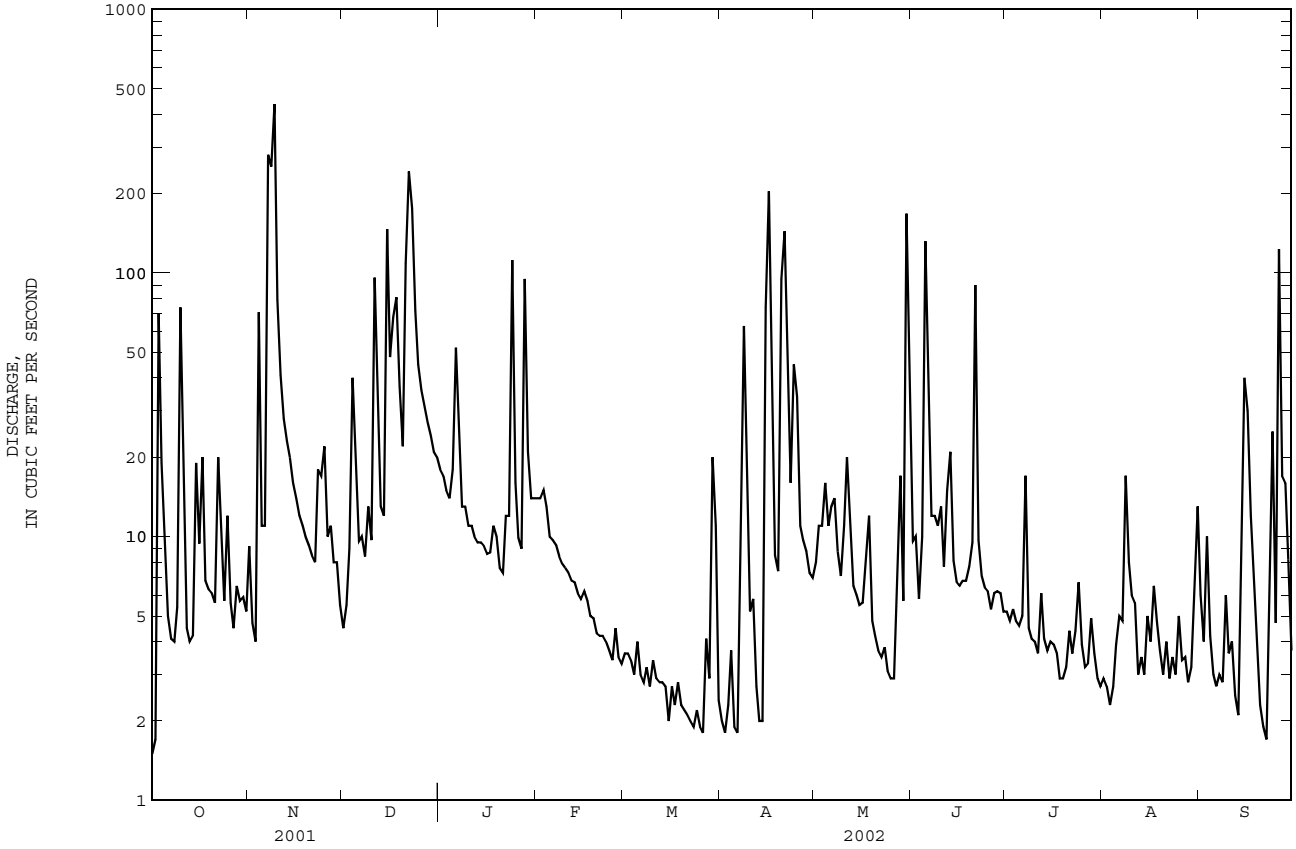
MEAN	22.8	35.1	27.2	16.1	12.2	10.3	11.5	28.7	18.7	14.9	17.9	23.6
MAX	66.4	82.2	64.1	48.5	23.2	36.0	33.5	63.9	50.6	36.0	39.9	74.2
(WY)	1986	2000	1982	1996	1997	1987	1990	1982	1987	1996	1995	1996
MIN	6.48	8.15	3.92	6.02	2.94	2.71	2.20	4.65	3.64	2.82	3.09	7.23
(WY)	1983	1981	1990	2001	1983	1994	1984	1994	1997	2000	1994	1987

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1980 - 2002	
ANNUAL TOTAL	5875.6		6694.0			
ANNUAL MEAN	16.1		18.3		20.0	
HIGHEST ANNUAL MEAN					31.9	1996
LOWEST ANNUAL MEAN					7.85	1994
HIGHEST DAILY MEAN	437	Nov 9	437	Nov 9	1100	Sep 10 1996
LOWEST DAILY MEAN	1.3	Mar 15	1.5	Oct 1	0.96	Apr 10 1983
ANNUAL SEVEN-DAY MINIMUM	1.4	Mar 5	2.0	Mar 20	1.0	Apr 6 1983
MAXIMUM PEAK FLOW			2760	Nov 9	9600	Jan 5 1992
MAXIMUM PEAK STAGE			13.91	Nov 9	19.74	Jan 5 1992
INSTANTANEOUS LOW FLOW			1.4	Oct 1	0.86	Apr 17 1983
ANNUAL RUNOFF (AC-FT)	11650		13280		14460	
ANNUAL RUNOFF (CFSM)	4.07		4.63		5.04	
ANNUAL RUNOFF (INCHES)	55.20		62.88		68.48	
10 PERCENT EXCEEDS	31		36		38	
50 PERCENT EXCEEDS	3.2		6.8		8.5	
90 PERCENT EXCEEDS	1.7		2.8		2.6	

e Estimated

RIO SABANA BASIN

50067000 RIO SABANA AT SABANA, PR--Continued



RIO FAJARDO BASIN

50070500 RIO FAJARDO ABOVE FAJARDO, PR

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1996 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 1995 to current year .

INSTRUMENTATION.--USDH-48 sediment sampler and automatic sediment sampler since 1995.

REMARKS.--Sediment samples were collected by a local observer on a weekly basis. During high flow events sediment samples were collected with automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 1,020 mg/L September 21, 1998; Minimum daily mean, 1 mg/L several days during several years.

SEDIMENT LOADS: Maximum daily mean, e5,320 tons (e4,830 tonnes) September 21, 1998; Minimum daily mean, 0.01 tons (0.01 tonnes) several days during several years.

EXTREMES FOR CURRENT YEAR 2001.--
SEDIMENT CONCENTRATION: Maximum daily mean, e294 mg/L August 22, 2001; Minimum daily mean, 1 mg/L several days.

SEDIMENT LOADS : Maximum daily mean, e1330 tons (e1206 tonnes) August 22, 2001; Minimum daily mean 0.02 ton (0.02 tonne) several days.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	OCTOBER			NOVEMBER			DECEMBER		
1	59	38	24	53	24	7.3	20	4	0.20
2	97	52	56	61	18	6.4	20	1	0.07
3	44	15	2.0	36	12	1.2	17	2	0.08
4	25	1	0.10	22	6	0.33	15	2	0.08
5	24	2	0.12	20	3	0.16	15	2	0.08
6	21	2	0.11	19	2	0.10	14	2	0.07
7	20	2	0.11	20	2	0.08	13	1	0.05
8	37	12	1.7	19	1	0.06	13	1	0.04
9	25	12	0.85	20	1	0.05	13	2	0.05
10	27	5	0.41	18	1	0.05	13	2	0.06
11	20	2	0.13	17	1	0.05	e12	e2	e0.07
12	19	2	0.10	16	1	0.04	24	4	0.33
13	18	2	0.08	16	1	0.04	41	9	1.3
14	17	1	0.07	17	1	0.05	37	9	1.1
15	17	1	0.05	25	3	0.27	54	20	4.0
16	17	1	0.05	19	2	0.14	22	8	0.48
17	16	1	0.04	22	4	0.37	61	42	8.0
18	16	1	0.04	22	4	0.27	41	5	0.72
19	16	1	0.04	17	3	0.13	36	15	2.0
20	15	1	0.04	30	5	0.64	26	4	0.32
21	27	6	0.63	32	6	0.53	24	3	0.21
22	74	19	8.8	24	4	0.23	35	13	1.7
23	41	9	1.1	52	10	2.8	28	7	0.57
24	23	6	0.37	21	3	0.19	20	4	0.23
25	18	4	0.21	70	17	4.0	18	3	0.15
26	19	3	0.16	32	7	0.67	17	3	0.12
27	20	3	0.18	24	3	0.21	16	2	0.10
28	26	4	0.25	26	5	0.36	16	2	0.08
29	20	4	0.21	23	6	0.41	e16	e2	e0.09
30	29	6	0.42	31	8	0.82	16	2	0.08
31	20	11	0.61	---	---	---	15	2	0.08
TOTAL	867	---	98.98	824	---	27.95	728	---	22.51

RIO FAJARDO BASIN

50070500 RIO FAJARDO ABOVE FAJARDO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	14	5	0.17	12	2	0.06	9.9	15	0.39
2	14	5	0.18	12	2	0.06	9.6	11	0.29
3	20	3	0.15	14	1	0.06	9.3	7	0.19
4	14	1	0.04	12	1	0.04	9.1	4	0.09
5	13	1	0.04	11	1	0.03	8.9	2	0.05
6	12	2	0.05	15	3	0.19	8.8	5	0.13
7	12	2	0.06	13	2	0.07	8.6	9	0.21
8	12	2	0.06	11	1	0.03	8.5	11	0.26
9	12	2	0.06	12	1	0.03	8.4	9	0.20
10	11	2	0.06	13	1	0.03	8.7	6	0.14
11	11	2	0.06	35	8	1.3	8.9	3	0.08
12	11	2	0.06	20	1	0.06	8.5	1	0.03
13	11	2	0.06	13	1	0.03	11	1	0.03
14	11	2	0.06	12	1	0.03	16	1	0.04
15	11	2	0.07	20	1	0.05	9.9	1	0.03
16	11	4	0.12	22	3	0.27	9.3	2	0.04
17	13	6	0.20	17	3	0.14	9.1	2	0.05
18	12	7	0.21	12	2	0.07	8.9	3	0.06
19	11	5	0.16	11	2	0.06	8.7	3	0.07
20	11	4	0.13	13	2	0.07	9.7	3	0.08
21	10	3	0.08	11	2	0.06	18	3	0.14
22	10	2	0.06	17	2	0.09	166	37	51
23	9.8	3	0.09	17	2	0.08	14	4	0.15
24	9.8	4	0.11	17	1	0.07	11	3	0.08
25	9.8	5	0.13	14	1	0.05	11	2	0.05
26	9.6	5	0.12	13	2	0.08	9.6	1	0.03
27	10	4	0.12	11	7	0.20	9.4	1	0.03
28	16	4	0.18	10	12	0.33	8.9	1	0.02
29	146	45	27	---	---	---	10	1	0.03
30	26	13	1.0	---	---	---	9.1	1	0.02
31	14	6	0.24	---	---	---	8.5	1	0.02
TOTAL	518.0	---	31.13	410	---	3.64	465.3	---	54.03

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	8.4	2	0.04	131	41	42	81	21	13
2	8.0	2	0.04	28	10	0.89	18	2	0.12
3	7.9	2	0.03	18	5	0.24	14	2	0.06
4	11	1	0.04	16	4	0.18	15	2	0.09
5	27	7	1.9	14	4	0.15	23	e5	e0.25
6	36	11	1.8	14	3	0.13	17	e4	e0.18
7	16	3	0.13	130	57	119	13	e4	e0.14
8	22	1	0.08	30	8	0.94	e11	e1	e0.03
9	34	3	0.43	21	4	0.24	e10	e1	e0.03
10	16	1	0.04	16	3	0.14	e12	e1	e0.03
11	32	10	1.2	15	4	0.15	e11	e1	e0.03
12	29	8	0.70	16	4	0.18	e12	e1	e0.03
13	29	8	0.65	20	5	0.25	e11	e1	e0.03
14	19	10	0.52	15	5	0.19	e12	e1	e0.03
15	16	10	0.41	13	4	0.14	e11	e1	e0.03
16	14	10	0.36	12	3	0.12	e13	e1	e0.03
17	14	9	0.35	12	3	0.09	e54	e17	e4.2
18	13	9	0.33	12	2	0.07	e30	e8	e0.94
19	13	8	0.30	12	2	0.06	e17	e4	e0.18
20	15	6	0.25	11	2	0.05	e11	e1	e0.03
21	57	17	4.2	11	1	0.04	e11	e1	e0.03
22	25	5	0.36	12	1	0.04	e11	e1	e0.03
23	22	2	0.13	11	1	0.03	e10	e1	e0.03
24	33	5	0.69	13	1	0.03	e11	e1	e0.03
25	18	2	0.10	11	1	0.03	e11	e1	e0.03
26	37	7	1.2	12	1	0.03	e11	e1	e0.03
27	e34	e12	e1.5	10	1	0.03	e12	e1	e0.03
28	e16	e7	e0.31	26	17	1.4	e15	e4	e0.15
29	14	4	0.17	12	17	0.53	e12	e1	e0.03
30	28	8	1.3	10	13	0.36	e10	e1	e0.03
31	---	---	---	14	9	0.36	---	---	---
TOTAL	664.3	---	19.56	698	---	168.09	510	---	19.88

RIO FAJARDO BASIN

50070500 RIO FAJARDO ABOVE FAJARDO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	e10	e1	e0.03	e19	e4	e0.19	214	117	394
2	e12	e1	e0.03	e26	e5	e0.39	36	4	0.43
3	e12	e1	e0.03	e21	e3	e0.16	29	2	0.16
4	e15	e4	e0.15	e44	e8	e2.9	23	2	0.13
5	e26	e17	e1.4	e24	e4	e0.25	21	3	0.15
6	e13	e1	e0.03	e20	e3	e0.16	20	3	0.18
7	e12	e1	e0.03	e17	e2	e0.12	20	3	0.18
8	e11	e1	e0.03	e16	e2	e0.12	19	4	0.19
9	e10	e1	e0.03	e20	e3	e0.16	19	4	0.20
10	e9.6	e1	e0.03	e31	e5	e0.42	22	4	0.24
11	e9.2	e1	e0.03	e22	e5	e0.27	23	4	0.25
12	e15	e4	e0.15	e22	e5	e0.27	25	5	0.33
13	e45	e8	e2.9	e16	e2	e0.12	51	17	4.2
14	e17	e4	e0.15	e16	e2	e0.12	22	6	0.33
15	e24	e17	e1.4	e17	e2	e0.12	39	11	3.2
16	e20	e5	e0.25	e17	e2	e0.12	21	3	0.20
17	e12	e1	e0.03	e20	e3	e0.16	19	1	0.06
18	e18	e4	e0.15	e17	e2	e0.12	19	1	0.07
19	e28	e17	e0.14	e16	e2	e0.12	17	1	0.07
20	e16	e4	e0.15	e16	e2	e0.12	16	2	0.07
21	e11	e1	e0.03	e16	e2	e0.12	20	4	0.66
22	e10	e1	e0.03	e488	e294	e1330	42	8	2.9
23	e10	e1	e0.03	114	28	20	24	2	0.13
24	e12	e1	e0.03	27	5	0.39	24	3	0.25
25	17	e4	e0.15	22	5	0.27	21	2	0.12
26	11	e1	e0.83	19	4	0.19	19	2	0.10
27	15	e4	e0.15	27	9	1.5	19	2	0.10
28	10	e1	e0.05	30	5	0.42	19	2	0.10
29	e85	e21	e13	19	3	0.18	19	2	0.10
30	e45	e8	e2.9	20	3	0.16	17	2	0.09
31	e28	e17	e1.4	17	2	0.12	---	---	---
TOTAL	588.8	---	25.74	1216	---	1359.76	899	---	409.19
YEAR	8388.4		2240.46						

e Estimated

RIO FAJARDO BASIN

50071000 RIO FAJARDO NEAR FAJARDO, PR

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

DRAINAGE AREA.--14.9 mi^2 (38.6 km^2).

WATER-DISCHARGE RECORDS

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

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

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Low flow affected by diversions for water supply about 0.25 mi (0.40 km) upstream from gaging station (estimated mean daily discharges is 9.0 ft^3/s (0.255 m^3/s)). Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e6.5	74	16	36	55	12	8.2	65	375	20	12	25
2	e6.2	24	106	33	38	12	12	134	407	22	14	17
3	e184	16	39	31	66	11	25	273	64	22	11	13
4	30	187	441	29	48	10	25	138	350	24	10	14
5	48	37	134	62	30	12	11	63	508	18	15	12
6	25	28	44	240	26	8.9	7.4	56	104	20	17	10
7	24	1070	37	76	25	8.2	67	79	68	82	16	10
8	17	918	35	38	23	17	220	41	57	21	23	11
9	36	1440	39	32	27	12	105	29	54	18	101	29
10	232	259	29	30	22	9.9	33	28	58	18	24	20
11	38	117	195	28	20	12	31	52	40	15	66	28
12	20	80	81	30	19	8.5	18	32	48	17	26	12
13	26	58	51	27	19	14	13	23	110	16	14	9.7
14	22	46	75	30	21	9.0	11	26	49	14	24	8.6
15	76	43	460	30	17	6.9	198	21	35	17	17	264
16	38	37	177	26	20	6.5	610	19	32	18	24	350
17	34	31	323	26	24	8.6	91	33	33	21	21	22
18	25	30	312	33	18	9.2	48	22	44	16	37	15
19	108	27	117	29	17	12	37	19	29	14	20	12
20	29	24	72	22	20	6.8	180	17	28	14	13	11
21	22	22	113	25	14	5.8	401	16	222	18	15	9.9
22	20	20	754	31	17	5.5	111	16	37	18	14	9.0
23	20	50	708	34	16	7.4	198	19	28	18	280	9.6
24	34	37	251	297	12	5.4	159	15	26	31	34	23
25	28	39	112	49	11	5.0	120	14	24	17	51	17
26	16	24	82	31	15	4.9	44	13	21	14	22	220
27	17	23	67	32	14	11	36	42	29	31	17	35
28	27	20	57	367	12	12	37	70	23	35	13	19
29	32	23	49	69	---	144	28	20	20	22	17	19
30	25	18	44	47	---	47	24	604	19	15	45	14
31	20	---	39	39	---	14	---	114	---	13	106	---
TOTAL	1285.7	4822	5059	1909	666	468.5	2908.6	2113	2942	659	1119	1268.8
MEAN	41.5	161	163	61.6	23.8	15.1	97.0	68.2	98.1	21.3	36.1	42.3
MAX	232	1440	754	367	66	144	610	604	508	82	280	350
MIN	6.2	16	16	22	11	4.9	7.4	13	19	13	10	8.6
AC-FT	2550	9560	10030	3790	1320	929	5770	4190	5840	1310	2220	2520
CFSM	2.78	10.8	11.0	4.13	1.60	1.01	6.51	4.57	6.58	1.43	2.42	2.84
IN.	3.21	12.04	12.63	4.77	1.66	1.17	7.26	5.28	7.35	1.65	2.79	3.17

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2002, BY WATER YEAR (WY)

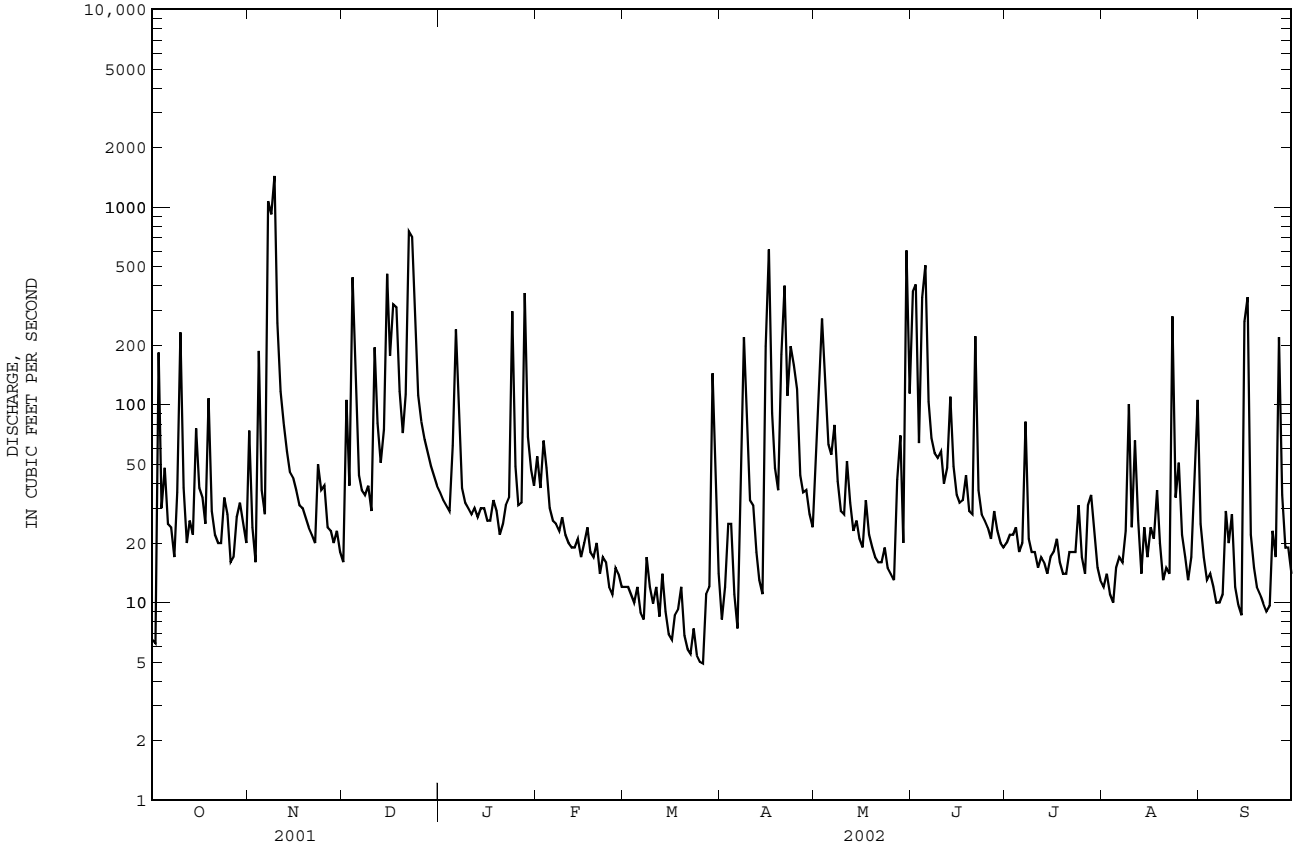
MEAN	93.5	112	86.3	50.2	38.3	34.0	43.5	86.6	58.6	48.4	57.9	87.5
MAX	260	328	237	150	80.4	109	129	399	166	132	159	421
(WY)	1971	2000	1976	1996	1982	1987	1963	1979	1962	1969	1979	1989
MIN	19.1	26.0	14.9	15.4	10.8	9.70	4.02	17.7	10.0	10.6	9.70	18.9
(WY)	1969	1994	1990	1977	1983	1977	1984	1973	1985	2000	1994	1994

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1961 - 2002	
ANNUAL TOTAL	18988.3		25220.6			
ANNUAL MEAN	52.0		69.1		66.8	
HIGHEST ANNUAL MEAN					140	1979
LOWEST ANNUAL MEAN					19.0	1994
HIGHEST DAILY MEAN	1440	Nov 9	1440	Nov 9	8800	Sep 18 1989
LOWEST DAILY MEAN	3.4	Jul 10	4.9	Mar 26	1.0	May 6 1984
ANNUAL SEVEN-DAY MINIMUM	5.1	Jul 6	5.8	Mar 20	1.5	Apr 18 1984
MAXIMUM PEAK FLOW			6030	Nov 9	21700	Sep 18 1989
MAXIMUM PEAK STAGE			9.39	Nov 9	20.00	Sep 18 1989
INSTANTANEOUS LOW FLOW					0.86	May 3 1984
ANNUAL RUNOFF (AC-FT)	37660		50030		48380	
ANNUAL RUNOFF (CFSM)	3.49		4.64		4.48	
ANNUAL RUNOFF (INCHES)	47.41		62.97		60.90	
10 PERCENT EXCEEDS	81		166		131	
50 PERCENT EXCEEDS	15		26		32	
90 PERCENT EXCEEDS	7.0		11		10	

e Estimated

RIO FAJARDO BASIN

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued



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 September 1986 and October 1995 to current year.

INSTRUMENTATION.--USDH-48 sediment sampler and automatic sediment sampler since October 1983.

EXTREMES FOR PERIOD OF RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 2,210 mg/L October 6, 1985; Minimum daily mean, 1 mg/L several years.

SEDIMENT LOADS: Maximum daily mean, 22,100 tons (20,000 tonnes) October 6, 1985; Minimum daily mean,<0.01 tons (<0.01 tonnes) July 9, 2001.

EXTREMES FOR CURRENT YEAR 2001.--
SEDIMENT CONCENTRATION: Maximum daily mean, e266 mg/L August 22, 2001; Minimum daily mean, 1 mg/L several days.

SEDIMENT LOADS: Maximum daily mean, 1,140 tons (1,034 tonnes) May 7, 2001; Minimum daily mean, <0.01 tons (<0.01 tonnes) July 9, 2001.

EXTREMES FOR CURRENT YEAR 2002.--
SEDIMENT CONCENTRATION: Maximum daily mean, 543 mg/L November 9, 2001; Minimum daily mean, 3 mg/L several days.

SEDIMENT LOADS: Maximum daily mean, 3,770 tons (3,420 tonnes) November 9, 2001; Minimum daily mean, 0.07 tons (0.06 tonnes) several days.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
NOV													
30...	1200	19	131	7.2	25.0	2.1	8.7	105	<10	E64	E100	32	7.04
FEB													
22...	1145	19	142	7.2	28.0	3.7	9.1	116	<10	E30	E118	--	--
MAY													
13...	1215	27	191	7.4	26.6	9.2	8.5	105	<10	E54	210	29	6.20

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
NOV													
30...	3.51	10.7	.8	1.07	34	<1.0	3.5	12.7	E.1	24.6	84	4.32	<10
FEB													
22...	--	--	--	--	39	--	--	--	--	--	--	--	<10
MAY													
13...	3.30	10.1	.8	.83	31	<.1	3.5	11.5	<.1	23.2	77	5.55	<10

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
NOV													
30...	<.01	.090	<.01	<.20	E.03	<2	21.7	20	<.1	2.1	<10	200	<1
FEB													
22...	<.01	.130	.01	.20	<.02	--	--	--	--	--	--	--	--
MAY													
13...	<.01	.080	<.01	.30	<.02	<2	19.8	E10	<.1	<.8	<10	250	<1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
NOV								
30...	12.7	<.01	<2	<.3	<20	<.01	<16	<.05
FEB								
22...	--	--	--	--	--	--	--	--
MAY								
13...	15.8	<.01	<2	<.3	<20	<.01	<16	<.05

RIO FAJARDO BASIN

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

PESTICIDE ANALYSES

DATE	TIME	DI-CHLOR-PROP, WATER, UNFLTRD UG/L (82183)	2,4,5-T WATER UNFLTRD UG/L (39740)	2,4-D WATER UNFLTRD UG/L (39730)	ALDRIN, WATER, UNFLTRD UG/L (39330)	CARBO-PHENO-THION, WATER, UNFLTRD UG/L (39786)	CHLOR-DANE, TECH-NICAL, WATER, UNFLTRD UG/L (39350)	CHLOR-PYRIFOS WATER UNFLTRD UG/L (38932)	TRIBU-PHOS, WATER, UNFLTRD UG/L (39040)	DIAZI-NON, WATER, UNFLTRD UG/L (39570)	DIEL-DRIN, WATER, UNFLTRD UG/L (39380)	DISUL-FOTON, WATER, UNFLTRD UG/L (39011)	ALPHA-ENDO-SULFAN, WATER, UNFLTRD UG/L (39388)
MAY													
13...	1215	<.02	<.01	<.02	<.01	<.02	<.1	<.01	<.02	<.02	<.006	<.10	<.02

DATE	ENDRIN, WATER, UNFLTRD UG/L (39390)	ETHION, WATER, UNFLTRD UG/L (39398)	FONOFOS WATER UNFLTRD UG/L (82614)	HEPTA-CHLOR EPOXIDE WATER UNFLTRD UG/L (39420)	HEPTA-CHLOR, WATER, UNFLTRD UG/L (39410)	LINDANE WATER, UNFLTRD UG/L (39340)	MALA-THION, WATER, UNFLTRD UG/L (39530)	P,P'-METH-OXY-CHLOR, WATER, UNFLTRD UG/L (39480)	METHYL PARA-THION, WATER, UNFLTRD UG/L (39600)	MIREX, WATER, UNFLTRD UG/L (39755)	P,P'-DDD, WATER, UNFLTRD UG/L (39360)	P,P'-DDE, WATER, UNFLTRD UG/L (39365)	P,P'-DDT, WATER, UNFLTRD UG/L (39370)
MAY													
13...	<.01	<.01	<.01	<.009	<.01	<.006	<.10	<.020	<.02	<.006	<.007	<.006	<.009

DATE	PARA-THION, WATER, UNFLTRD UG/L (39540)	PCBS, WATER, UNFLTRD UG/L (39516)	PHORATE WATER UNFLTRD UG/L (39023)	SILVEX, WATER, UNFLTRD UG/L (39760)	TOXA-PHENE, WATER, UNFLTRD UG/L (39400)
MAY					
13...	<.01	<.1	<.02	<.02	<1

< -- Less than
E -- Estimated value

RIO FAJARDO BASIN

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

WATER-QUALITY RECORDS

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	160	70	93	105	10	6.3	26	6	0.44
2	293	124	217	150	49	70	23	12	0.74
3	204	51	30	84	17	5.3	19	8	0.45
4	69	13	2.6	31	6	0.48	16	2	0.07
5	52	4	0.53	23	6	0.37	15	1	0.04
6	42	5	0.54	20	5	0.25	14	1	0.04
7	36	6	0.56	19	4	0.18	13	2	0.08
8	106	19	8.5	19	2	0.12	12	4	0.12
9	49	7	1.1	18	2	0.09	11	5	0.14
10	69	20	4.7	15	1	0.06	11	5	0.16
11	40	3	0.37	14	1	0.04	11	4	0.12
12	41	3	0.50	15	2	0.09	24	4	0.40
13	33	<1	0.03	13	4	0.14	69	18	5.2
14	29	1	0.07	15	6	0.24	56	17	4.0
15	27	1	0.07	21	8	0.43	100	25	9.3
16	27	1	0.07	21	7	0.42	29	13	0.99
17	25	1	0.07	15	7	0.33	103	28	11
18	23	1	0.06	27	10	0.86	85	20	5.3
19	26	1	0.05	16	5	0.21	76	23	6.9
20	22	<1	0.02	31	6	0.85	44	7	0.92
21	50	6	1.4	40	4	0.55	32	6	0.51
22	174	32	25	31	1	0.11	54	16	3.2
23	86	23	5.9	123	41	25	44	6	0.69
24	45	6	0.92	27	11	0.78	25	5	0.37
25	29	2	0.12	135	32	17	21	5	0.29
26	32	1	0.09	59	14	3.7	18	5	0.26
27	29	1	0.08	35	4	0.49	17	6	0.26
28	42	5	0.77	31	1	0.10	15	6	0.24
29	36	12	1.2	30	1	0.05	15	5	0.18
30	54	5	0.87	41	9	1.6	14	3	0.13
31	36	2	0.16	---	---	---	13	2	0.08
TOTAL	1986	---	396.35	1224	---	136.14	1025	---	52.62

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

RIO FAJARDO BASIN

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

WATER-QUALITY RECORDS

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	12	1	0.04	9.5	3	0.07	e9.5	e8	e0.20
2	10	2	0.06	9.4	2	0.05	e9.3	e8	e0.20
3	19	2	0.12	12	2	0.06	e9.0	e8	e0.20
4	10	2	0.06	9.2	2	0.05	e8.8	e8	e0.20
5	8.7	2	0.04	7.7	2	0.05	e8.6	e8	e0.20
6	7.8	1	0.03	11	5	0.15	e8.5	e6	e0.13
7	7.4	1	0.02	12	7	0.23	e8.3	e6	e0.13
8	6.8	1	0.02	8.2	8	0.18	e8.2	e6	e0.13
9	6.9	1	0.03	e7.7	e6	e0.12	e8.1	e6	e0.13
10	6.6	2	0.03	e7.5	e5	e0.10	e8.4	e6	e0.13
11	6.4	2	0.03	e68	e18	e5.8	e8.6	e6	e0.13
12	6.2	2	0.03	e29	e13	e0.99	e8.2	e6	e0.13
13	6.1	1	0.02	e17	e6	e0.26	e11	e8	e0.25
14	6.2	1	0.02	e11	e5	e0.15	e17	e12	e1.0
15	5.9	1	0.02	e33	e6	e0.51	e9.5	e8	e0.20
16	7.2	1	0.02	e27	e6	e0.44	e9.0	e8	e0.20
17	9.3	1	0.03	e38	e12	e1.8	e8.7	e8	e0.20
18	10	17	0.48	e13	e7	e0.23	e8.6	e8	e0.20
19	6.9	7	0.14	e11	e5	e0.15	e8.3	e8	e0.20
20	6.6	4	0.08	e15	e5	e0.21	e9.6	e8	e0.20
21	6.8	4	0.07	e12	e7	e0.23	e52	e11	e1.6
22	5.6	3	0.05	e27	e11	e0.85	e530	e117	e800
23	5.8	3	0.04	e24	e7	e0.45	e50	e11	e1.6
24	5.0	2	0.03	e29	e5	e0.38	e12	e8	e0.25
25	4.7	2	0.03	e27	e3	e0.21	e11	e8	e0.25
26	4.4	2	0.02	e18	e1	e0.06	e15	e12	e1.0
27	4.5	2	0.02	e14	e1	e0.05	e36	e7	e1.3
28	13	5	0.20	e12	e2	e0.06	12	8	0.25
29	244	70	64	---	---	---	10	9	0.24
30	58	18	5.8	---	---	---	9.7	8	0.20
31	14	5	0.21	---	---	---	7.7	6	0.13
TOTAL	531.8	---	71.79	519.2	---	13.89	930.6	---	811.18

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	7.0	5	0.10	419	134	339	296	129	239
2	7.6	7	0.14	94	33	11	37	89	9.3
3	6.6	7	0.12	32	13	1.1	17	58	2.7
4	11	6	0.19	23	11	0.67	14	31	1.2
5	17	12	1.0	19	8	0.43	23	17	0.95
6	67	28	9.3	18	6	0.31	16	5	0.23
7	13	11	0.38	416	234	1140	e9.8	e3	e0.11
8	14	7	0.29	120	31	28	e9.3	e4	e0.09
9	45	15	2.2	52	11	1.6	9.6	4	0.09
10	15	7	0.30	29	8	0.62	8.3	4	0.08
11	35	12	1.8	22	6	0.38	8.3	4	0.09
12	24	6	0.50	22	5	0.27	6.7	5	0.09
13	37	16	1.7	29	7	0.64	8.2	6	0.14
14	21	9	0.54	21	9	0.49	7.1	7	0.13
15	12	7	0.25	18	5	0.25	6.2	6	0.11
16	10	7	0.20	16	2	0.11	6.5	6	0.10
17	9.0	9	0.21	11	5	0.15	201	102	183
18	9.3	10	0.25	12	5	0.17	30	13	1.3
19	6.9	10	0.18	14	6	0.21	15	6	0.25
20	9.7	9	0.24	10	6	0.16	12	4	0.15
21	103	35	18	9.3	6	0.15	11	3	0.09
22	38	18	2.2	11	6	0.17	9.6	3	0.07
23	28	11	0.85	11	5	0.16	8.0	2	0.05
24	65	24	5.3	11	5	0.15	7.2	2	0.04
25	24	10	0.62	10	5	0.13	7.1	2	0.04
26	48	22	3.9	9.8	4	0.12	9.0	2	0.04
27	e74	e28	e9.3	9.4	4	0.11	7.0	1	0.02
28	18	11	0.57	35	12	1.6	17	1	0.05
29	14	11	0.42	14	3	0.11	9.4	1	0.03
30	29	14	2.1	9.9	2	0.05	15	4	0.25
31	---	---	---	12	2	0.06	---	---	---
TOTAL	818.1	---	63.15	1539.4	---	1528.37	841.3	---	439.79

RIO FAJARDO BASIN

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	13	10	0.37	10	2	0.06	e506	e117	e800
2	12	8	0.27	15	6	0.23	e17	e2	e0.09
3	11	5	0.16	12	6	0.18	e15	e2	e0.09
4	9.5	4	0.10	34	13	3.3	e13	e1	e0.05
5	15	2	0.10	14	5	0.20	e13	e1	e0.05
6	7.6	1	0.03	11	4	0.10	e13	e1	e0.05
7	5.0	1	0.01	8.8	5	0.12	e12	e1	e0.05
8	4.0	1	0.01	7.7	7	0.15	e12	e1	e0.05
9	3.7	1	<0.01	11	8	0.24	e12	e1	e0.05
10	3.4	2	0.02	18	7	0.33	17	3	0.12
11	3.6	3	0.02	11	5	0.15	18	2	0.09
12	8.3	2	0.05	11	3	0.09	22	5	0.40
13	62	16	6.9	e9.3	e2	e0.06	74	17	9.3
14	9.8	3	0.07	e9.4	e1	e0.03	18	1	0.07
15	16	4	0.35	e9.7	e1	e0.03	33	8	2.5
16	12	2	0.07	e9.8	e1	e0.03	21	8	0.54
17	5.7	4	0.05	e14	e5	e0.20	13	3	0.10
18	8.4	5	0.11	e9.7	e1	e0.03	17	2	0.09
19	17	6	0.26	e9.4	e1	e0.03	11	1	0.03
20	9.0	5	0.11	e9.3	e1	e0.03	9.3	1	0.03
21	5.6	3	0.05	e9.4	e1	e0.03	8.8	1	0.02
22	4.2	2	0.02	e790	e266	e750	47	17	4.3
23	4.1	1	0.02	e32	e8	e2.5	21	2	0.12
24	5.1	3	0.04	e14	e5	e0.20	20	3	0.29
25	10	5	0.13	e12	e6	e0.18	e18	e3	e0.20
26	6.5	6	0.10	e12	e6	e0.18	12	1	0.05
27	8.2	5	0.12	e13	e6	e0.18	e11	e1	e0.03
28	5.0	5	0.07	e16	e6	e0.18	e11	e1	e0.03
29	100	28	33	e12	e6	e0.18	e8.2	e1	e0.02
30	30	6	0.80	e13	e6	e0.18	e7.7	e1	e0.02
31	17	2	0.07	e11	e6	e0.18	---	---	---
TOTAL	431.7	---	43.49	1178.5	---	759.58	1031.0	---	818.83
YEAR	12056.6		5135.18						

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

e Estimated

RIO FAJARDO BASIN

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	e6.5	e5	e0.09	74	26	8.1	16	4	0.19
2	e6.2	e9	e0.16	24	12	0.75	106	41	57
3	e184	e132	e212	16	11	0.46	39	14	1.8
4	30	5	0.47	187	123	259	441	171	647
5	48	20	4.0	37	15	1.5	134	50	34
6	25	21	1.4	28	11	0.82	44	13	1.5
7	24	16	1.0	1070	414	3520	37	14	1.4
8	17	12	0.56	918	263	995	35	15	1.4
9	36	16	2.1	1440	543	3770	39	18	2.1
10	232	155	422	259	67	54	29	10	0.79
11	38	10	1.1	117	8	2.7	195	72	97
12	20	9	0.47	80	8	1.8	81	17	5.4
13	26	9	0.63	58	10	1.5	51	11	1.5
14	22	10	0.58	46	11	1.3	75	15	4.1
15	76	32	12	43	11	1.3	460	196	552
16	38	13	1.4	37	9	0.87	177	60	36
17	34	10	0.94	31	7	0.56	323	65	63
18	25	8	0.54	30	6	0.52	312	65	102
19	108	42	27	27	6	0.42	117	41	14
20	29	10	0.76	24	5	0.33	72	24	4.6
21	22	9	0.57	22	5	0.27	113	22	6.5
22	20	9	0.48	20	4	0.22	754	299	993
23	20	8	0.45	50	17	5.6	708	256	681
24	34	11	1.3	37	4	0.42	251	41	30
25	28	6	0.47	39	12	1.6	112	32	9.8
26	16	6	0.28	24	8	0.51	82	33	7.2
27	17	6	0.30	23	6	0.35	67	33	5.9
28	27	7	0.48	20	5	0.27	57	27	4.2
29	32	7	0.60	23	5	0.30	49	20	2.7
30	25	7	0.46	18	5	0.22	44	13	1.5
31	20	6	0.31	---	---	---	39	6	0.66
TOTAL	1285.7	---	694.90	4822	---	8630.69	5059	---	3369.24

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	36	5	0.47	55	21	3.4	12	7	0.21
2	33	5	0.41	38	17	1.7	12	7	0.22
3	31	4	0.37	66	28	9.5	11	7	0.21
4	29	4	0.33	48	20	3.0	10	7	0.19
5	62	20	7.2	30	8	0.64	12	7	0.21
6	240	107	92	26	8	0.56	8.9	7	0.16
7	76	32	7.7	25	8	0.52	8.2	6	0.14
8	38	25	2.5	23	8	0.48	17	6	0.30
9	32	23	2.0	27	8	0.58	12	6	0.21
10	30	22	1.7	22	8	0.46	9.9	6	0.17
11	28	21	1.6	20	8	0.42	12	6	0.20
12	30	19	1.6	19	8	0.39	8.5	6	0.14
13	27	18	1.3	19	8	0.39	14	6	0.23
14	30	17	1.4	21	8	0.42	9.0	6	0.15
15	30	15	1.3	17	8	0.35	6.9	6	0.11
16	26	14	0.97	20	7	0.41	6.5	6	0.10
17	26	13	0.90	24	7	0.47	8.6	6	0.13
18	33	13	1.2	18	7	0.35	9.2	6	0.14
19	29	11	0.88	17	7	0.34	12	6	0.18
20	22	8	0.48	20	7	0.39	6.8	6	0.10
21	25	8	0.54	14	7	0.28	5.8	6	0.09
22	31	9	0.81	17	7	0.33	5.5	5	0.08
23	34	26	3.9	16	7	0.30	7.4	5	0.11
24	297	112	157	12	7	0.23	5.4	5	0.08
25	49	27	3.6	11	7	0.21	5.0	5	0.07
26	31	23	1.9	15	7	0.29	4.9	5	0.07
27	32	18	1.6	14	7	0.27	11	5	0.15
28	367	147	313	12	7	0.22	12	5	0.16
29	69	30	6.4	---	---	---	144	188	350
30	47	22	2.9	---	---	---	47	42	9.7
31	39	17	1.8	---	---	---	14	7	0.29
TOTAL	1909	---	619.76	666	---	26.90	468.5	---	364.30

RIO FAJARDO BASIN

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	8.2	5	0.12	65	15	16	375	181	1250
2	12	5	0.15	134	43	36	407	74	209
3	25	4	0.30	273	56	121	64	11	1.9
4	25	9	0.75	138	56	29	350	96	143
5	11	5	0.15	63	32	5.6	508	144	273
6	7.4	4	0.09	56	20	3.2	104	107	30
7	67	30	22	79	21	6.1	68	120	22
8	220	83	67	41	14	1.6	57	84	13
9	105	44	17	29	6	0.44	54	63	9.2
10	33	26	2.3	28	5	0.37	58	48	7.7
11	31	22	1.9	52	19	7.3	40	34	3.8
12	18	18	0.88	32	7	0.72	48	21	2.7
13	13	14	0.49	23	4	0.25	110	41	17
14	11	10	0.30	26	4	0.28	49	15	2.0
15	198	70	79	21	4	0.22	35	15	1.4
16	610	221	894	19	4	0.21	32	14	1.2
17	91	33	8.9	33	9	1.0	33	14	1.2
18	48	20	2.6	22	5	0.29	44	13	1.7
19	37	11	1.1	19	5	0.24	29	9	0.72
20	180	80	50	17	5	0.22	28	8	0.61
21	401	170	226	16	5	0.20	222	78	112
22	111	59	22	16	4	0.19	37	26	2.6
23	198	65	66	19	4	0.22	28	23	1.7
24	159	50	83	15	4	0.18	26	19	1.4
25	120	50	31	14	4	0.16	24	16	1.0
26	44	17	2.1	13	4	0.14	21	12	0.71
27	36	14	1.3	42	18	4.0	29	12	1.1
28	37	13	1.3	70	30	9.4	23	8	0.50
29	28	11	0.87	20	8	0.44	20	8	0.46
30	24	10	0.69	604	278	731	19	9	0.43
31	---	---	---	114	57	24	---	---	---
TOTAL	2908.6	---	1583.29	2113	---	999.97	2942	---	2113.03

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	20	9	0.48	12	5	0.16	25	10	0.67
2	22	9	0.53	14	5	0.17	17	7	0.31
3	22	9	0.54	11	5	0.14	13	7	0.24
4	24	9	0.61	10	5	0.12	14	6	0.25
5	18	10	0.47	15	4	0.18	12	6	0.19
6	20	10	0.52	17	4	0.20	10	6	0.16
7	82	34	14	16	4	0.18	10	6	0.15
8	21	17	1.0	23	8	1.1	11	5	0.15
9	18	15	0.73	101	44	38	29	12	1.4
10	18	12	0.58	24	10	0.65	20	8	0.72
11	15	9	0.39	66	25	13	28	10	1.0
12	17	9	0.40	26	14	1.2	12	4	0.14
13	16	9	0.37	14	8	0.28	9.7	3	0.09
14	14	9	0.33	24	7	0.47	8.6	3	0.07
15	17	9	0.40	17	7	0.30	264	99	275
16	18	9	0.42	24	9	0.73	350	147	350
17	21	9	0.49	21	7	0.40	22	27	1.6
18	16	8	0.37	37	16	2.3	15	22	0.87
19	14	8	0.31	20	8	0.43	12	17	0.56
20	14	8	0.31	13	5	0.18	11	12	0.37
21	18	8	0.40	15	4	0.17	9.9	7	0.19
22	18	8	0.40	14	4	0.14	9.0	3	0.08
23	18	8	0.39	280	134	371	9.6	3	0.08
24	31	12	1.1	34	36	3.3	23	8	0.59
25	17	10	0.46	51	27	5.8	17	6	0.27
26	14	8	0.29	22	11	0.68	220	117	332
27	31	13	1.6	17	6	0.29	35	24	2.4
28	35	12	1.1	13	7	0.23	19	11	0.56
29	22	7	0.45	17	8	0.39	19	8	0.45
30	15	6	0.24	45	22	6.6	14	5	0.20
31	13	5	0.17	106	45	29	---	---	---
TOTAL	659	---	29.85	1119	---	477.79	1268.8	---	970.76
YEAR	25220.6		19880.48						

e Estimated

RIO FAJARDO BASIN

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

Date	Time	Instantaneous discharge, cfs (00061)	Suspended sediment concentration mg/L (80154)	Suspended sediment load, tons/d (80155)	Suspnd. sediment, sieve diametr percent <.063mm (70331)
JUN					
01...	2220	3790	2170	22200	86

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

PARTICLE SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

Date	Time	Instantaneous discharge, cfs (00061)	Suspended sediment concentration mg/L (80154)	Suspended sediment load, tons/d (80155)	Suspnd. sediment, falldia nat wat percent <.002mm (70326)	Suspnd. sediment, falldia nat wat percent <.004mm (70327)	Suspnd. sediment, falldia nat wat percent <.008mm (70328)	Suspnd. sediment, falldia nat wat percent <.016mm (70329)	Suspnd. sediment, falldia nat wat percent <.031mm (70330)	Suspnd. sediment, sieve diametr percent <.063mm (70331)	Suspnd. sediment, sieve diametr percent <.125mm (70332)	Suspnd. sediment, sieve diametr percent <.25mm (70333)	Suspnd. sediment, sieve diametr percent <.5 mm (70334)
JUN													
01...	2135	2590	1740	12200	62	67	86	86	90	94	98	99	100

Date	Suspnd. sediment, sieve diametr percent <1 mm (70335)
JUN	
01...	100

RIO FAJARDO BASIN

50072500 RIO FAJARDO BELOW FAJARDO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°19'35", long 65°38'47", 1.2 mi (1.9 km) southwest of Playa de Fajardo and 0.5 mi (0.8 km) east of Fajardo Plaza.

DRAINAGE AREA.--23.4 mi^2 (60.6 km^2).

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
NOV													
30...	1415	21	157	7.2	25.5	54	8.6	104	<10	E1540	864	38	8.49
FEB													
22...	1330	15	154	7.6	25.5	6.2	9.4	113	<10	E91	E27	--	--
MAY													
13...	1430	21	129	8.0	27.6	3.9	9.4	119	<10	280	200	32	6.95

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
NOV													
30...	4.04	12.3	.9	1.15	38	<1.0	4.3	15.3	E.1	19.9	88	5.04	60
FEB													
22...	--	--	--	--	43	--	--	--	--	--	--	--	<10
MAY													
13...	3.64	11.6	.9	.88	34	<.1	3.2	12.8	E.1	20.2	80	4.54	<10

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
NOV													
30...	<.01	<.020	<.01	<.20	E.06	<2	49.8	20	<.1	<.8	M	2620	<1
FEB													
22...	<.01	.060	.02	<.20	<.02	--	--	--	--	--	--	--	--
MAY													
13...	<.01	.030	<.01	.30	<.02	<2	24.3	E20	<.1	<.8	<10	230	<1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
NOV								
30...	145	E.01	<2	<.3	E20	<.01	<16	E.03
FEB								
22...	--	--	--	--	--	--	--	--
MAY								
13...	17.6	<.01	<2	<.3	<20	<.01	<16	E.04

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

RIO BLANCO BASIN

50074950 QUEBRADA GUABA NEAR NAGUABO, PR

LOCATION.--Lat 18°17'02", long 65°47'20", Hydrologic Unit 21010005, on right bank, off Highway 191 at El Yunque Caribbean National Forest, 4.8 mi (7.7 km) southeast of Campamento Eliza Colberg, 1.3 mi (2.1 km) southeast of Mt. Britton, 2.0 mi (3.2 km) northwest of Pico del Este and 7.3 mi (11.7 km) southeast of Río Grande Plaza.

DRAINAGE AREA.--0.12 mi^2 (0.31 km^2).

PERIOD OF RECORD.--June 1992 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,100 ft (640 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.23	0.29	0.16	0.46	0.48	0.17	e0.13	0.70	0.47	0.29	0.16	0.34
2	0.20	0.25	0.18	0.45	0.37	0.17	e0.15	0.44	0.39	0.31	0.14	0.28
3	0.54	0.25	0.18	0.43	0.53	0.15	0.19	0.64	0.35	0.28	0.13	2.6
4	0.30	0.24	1.2	0.42	0.42	0.16	0.26	0.58	0.43	0.27	0.14	e0.65
5	1.1	0.34	e0.83	0.79	0.37	0.15	0.12	0.59	0.78	0.25	0.13	e0.34
6	0.39	0.31	e0.52	1.4	0.41	0.15	0.11	0.58	0.51	0.26	0.15	e0.27
7	0.45	4.7	e0.69	0.55	0.38	0.15	0.47	0.62	0.44	0.40	0.23	e0.22
8	0.35	7.4	e0.46	0.46	0.34	0.21	2.4	0.46	0.42	0.29	0.69	e0.20
9	0.57	4.4	e0.49	0.45	0.34	0.15	1.3	0.42	0.41	0.25	0.78	e0.22
10	1.3	e0.61	e0.44	0.46	0.29	0.15	0.63	0.42	0.39	0.24	0.28	e0.23
11	e0.40	e0.55	e1.0	0.44	0.29	0.14	0.57	0.79	0.38	0.23	0.79	e0.20
12	e0.30	e0.50	0.51	0.42	0.27	0.14	0.47	0.47	0.48	0.22	0.31	e0.17
13	e0.32	e0.42	0.59	0.41	0.26	0.14	0.42	0.42	0.72	0.21	0.25	e0.17
14	e0.34	0.39	0.64	0.42	0.24	0.13	0.38	0.40	0.45	0.21	0.25	e0.22
15	0.49	0.39	0.82	0.39	0.24	0.13	1.9	0.39	0.39	0.20	0.24	e1.3
16	0.34	0.36	0.66	0.38	0.23	0.12	2.8	0.43	0.37	0.20	0.40	e0.73
17	0.30	0.30	1.1	0.42	0.24	0.12	0.59	0.44	0.42	0.20	0.25	e0.22
18	0.28	0.29	0.89	0.45	0.23	0.16	0.48	0.39	0.48	0.19	0.27	e0.21
19	0.51	0.28	0.56	0.38	0.29	0.16	0.41	0.36	0.41	0.19	0.22	e0.20
20	0.30	0.27	0.48	0.41	0.23	0.12	0.79	0.35	0.38	0.18	0.19	e0.21
21	0.28	0.26	1.5	0.38	0.20	0.11	1.5	0.31	0.72	0.18	0.23	0.22
22	0.29	0.25	2.4	0.44	0.19	0.10	0.70	0.30	0.40	0.19	0.18	0.21
23	0.27	0.29	4.0	0.54	0.19	0.10	0.84	0.30	0.37	0.20	0.22	0.22
24	0.28	0.26	e1.5	0.91	0.18	0.10	0.54	0.30	0.34	0.38	0.21	0.45
25	0.37	0.29	e0.79	0.45	0.19	0.10	0.48	0.29	0.32	0.18	0.25	0.26
26	0.26	0.22	e0.65	0.40	0.19	0.10	0.43	0.29	0.30	0.15	0.22	0.24
27	0.25	0.22	0.60	0.41	0.18	0.09	0.49	0.57	0.35	0.28	0.19	0.22
28	0.36	0.20	0.57	1.5	0.18	0.10	0.43	0.37	0.34	0.32	0.16	0.28
29	0.44	0.20	0.53	0.54	---	0.35	0.39	0.45	0.32	0.20	0.44	0.22
30	0.32	0.18	0.50	0.40	---	e0.28	0.37	8.5	0.31	0.17	0.66	0.19
31	0.25	---	0.48	0.49	---	e0.15	---	0.64	---	0.15	0.66	---
TOTAL	12.38	24.91	25.92	16.45	7.95	4.55	20.74	22.21	12.84	7.27	9.42	11.49
MEAN	0.40	0.83	0.84	0.53	0.28	0.15	0.69	0.72	0.43	0.23	0.30	0.38
MAX	1.3	7.4	4.0	1.5	0.53	0.35	2.8	8.5	0.78	0.40	0.79	2.6
MIN	0.20	0.18	0.16	0.38	0.18	0.09	0.11	0.29	0.30	0.15	0.13	0.17
AC-FT	25	49	51	33	16	9.0	41	44	25	14	19	23
CFSM	3.33	6.92	6.97	4.42	2.37	1.22	5.76	5.97	3.57	1.95	2.53	3.19
IN.	3.84	7.72	8.04	5.10	2.46	1.41	6.43	6.89	3.98	2.25	2.92	3.56

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2002, BY WATER YEAR (WY)

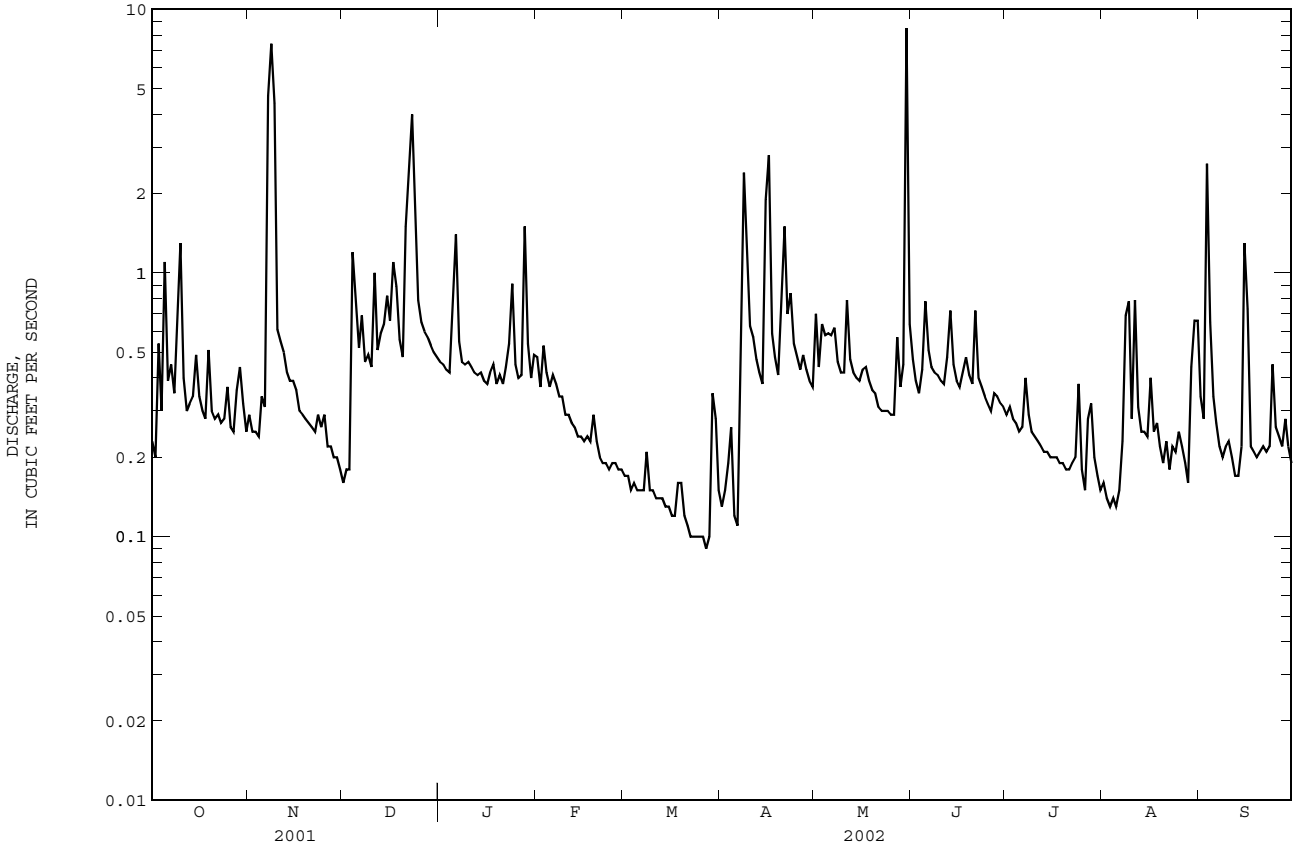
MEAN	0.48	0.61	0.60	0.50	0.41	0.25	0.30	0.39	0.34	0.42	0.45	0.59
MAX	0.89	1.19	1.24	0.67	0.71	0.32	0.69	0.72	0.50	1.18	0.74	1.42
(WY)	1998	2000	2000	1997	2000	2001	2002	2002	1996	1992	2001	1996
MIN	0.25	0.32	0.22	0.28	0.28	0.15	0.20	0.13	0.18	0.22	0.19	0.34
(WY)	1993	1995	1994	1994	2002	2002	2000	1999	2000	1994	1993	1993

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1992 - 2002	
ANNUAL TOTAL	158.86		176.13			
ANNUAL MEAN	0.44		0.48		0.44	
HIGHEST ANNUAL MEAN					0.57	2000
LOWEST ANNUAL MEAN					0.32	1994
HIGHEST DAILY MEAN	7.6	Aug 22	8.5	May 30	23	Sep 10 1996
LOWEST DAILY MEAN	0.13	Mar 18	0.09	Mar 27	0.06	May 31 1999
ANNUAL SEVEN-DAY MINIMUM	0.16	Jul 17	0.10	Mar 22	0.07	May 27 1999
MAXIMUM PEAK FLOW			118	May 30	118	May 30 2002
MAXIMUM PEAK STAGE			10.98	May 30	10.98	May 30 2002
INSTANTANEOUS LOW FLOW			0.08	Mar 26	0.05	May 1 1997
ANNUAL RUNOFF (AC-FT)	315		349		318	
ANNUAL RUNOFF (CFSM)	3.63		4.02		3.66	
ANNUAL RUNOFF (INCHES)	49.25		54.60		49.76	
10 PERCENT EXCEEDS	0.64		0.72		0.72	
50 PERCENT EXCEEDS	0.26		0.34		0.29	
90 PERCENT EXCEEDS	0.17		0.16		0.15	

e Estimated

RIO BLANCO BASIN

50074950 QUEBRADA GUABA NEAR NAGUABO, PR--Continued



RIO BLANCO BASIN

50075000 RIO ICACOS NEAR NAGUABO, PR

LOCATION.--Lat 18°16'38", long 65°47'09", Hydrologic Unit 21010005, in Caribbean National Forest, at Highway 191, at El Yunque, 1.6 mi (2.6 km) upstream from confluence with Río Cubuy, 2.8 mi (4.5 km) north of Florida, and 5.3 mi (8.5 km) northwest of Naguabo Plaza.

DRAINAGE AREA.--1.26 mi^2 (3.26 km^2).

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, crest-stage gage and sharp-crested weir. Elevation of gage is 2,020 ft (616 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

REVISIONS.--The maximum discharges for some water years have been revised, as shown in the following table. They supersede figures published in the reports for 1995-2001.

Water year	Date	Discharge (ft^3/s)	Gage-height (ft)	Water year	Date	Discharge (ft^3/s)	Gage-height (ft)
1995	Feb 25	787	5.68	1999	Jun 8	741	5.56
1996	Sep 10	1,780	7.58	2000	Aug 23	726	5.52
1997	Jun 2	1,050	6.28	2001	Aug 22	1,210	6.62
1998	Sep 21	2,050	7.97				

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.3	10	7.1	10	18	7.4	5.4	16	14	6.6	e5.1	7.7
2	6.0	7.8	8.3	10	15	7.0	7.6	17	14	7.7	e4.8	6.0
3	19	8.4	11	9.6	24	6.6	11	20	12	7.5	e4.9	50
4	12	9.0	50	9.2	15	6.6	15	16	17	6.9	e4.8	8.5
5	28	13	28	23	12	6.9	5.9	15	26	6.5	e4.8	6.3
6	13	12	11	50	14	6.1	5.2	16	14	6.6	e5.0	5.9
7	16	147	16	17	14	6.1	18	20	10	13	e6.6	7.2
8	11	157	11	13	12	11	55	9.3	10	6.8	19	7.4
9	21	94	11	12	13	6.7	31	8.0	10	6.3	24	12
10	41	22	9.8	11	e12	6.8	9.8	8.3	9.0	6.1	8.6	9.7
11	8.8	16	32	11	e11	7.3	8.4	25	8.7	5.7	21	8.7
12	7.1	14	15	11	e11	6.0	6.3	9.6	13	5.6	7.2	7.2
13	8.9	12	19	11	e11	6.8	5.7	7.6	24	5.4	6.3	6.8
14	11	12	17	11	10	6.3	5.5	7.4	13	5.3	7.6	9.2
15	22	15	29	10	9.1	6.0	61	6.9	8.7	5.3	6.9	45
16	13	11	21	9.6	9.1	6.0	83	10	8.1	5.4	14	25
17	9.9	10	43	12	9.5	5.9	14	8.5	10	6.1	6.6	6.5
18	7.5	9.9	33	14	8.5	9.0	9.2	8.5	12	5.2	11	5.7
19	18	9.5	16	10	11	8.9	8.7	6.7	9.2	5.0	6.1	5.6
20	9.2	8.8	13	12	9.0	5.9	30	6.3	8.3	5.0	5.4	5.3
21	7.6	8.3	59	12	8.0	5.3	47	6.1	22	5.1	7.8	e5.1
22	7.4	8.0	89	16	7.8	5.2	18	5.9	8.7	5.5	5.2	e5.1
23	7.1	13	110	15	7.6	5.0	26	6.3	7.7	7.0	7.4	e5.3
24	7.8	11	35	36	7.5	4.9	14	5.7	7.8	14	6.6	e9.7
25	13	15	18	13	7.3	4.8	11	5.5	7.2	5.5	9.7	e6.0
26	7.3	8.7	15	11	7.8	4.9	10	5.4	7.0	5.0	5.7	e5.6
27	6.9	8.7	14	12	7.3	5.5	12	13	8.7	12	6.2	e5.3
28	12	7.9	13	50	7.1	5.0	9.5	14	7.6	14	5.1	e6.4
29	17	e7.8	12	22	---	15	7.6	9.9	6.9	6.4	16	e5.3
30	11	7.4	12	15	---	11	7.1	203	6.8	e5.4	22	e4.7
31	8.6	---	11	21	---	5.6	---	22	---	e5.1	24	---
TOTAL	394.4	694.2	789.2	499.4	308.6	211.5	557.9	538.9	341.4	213.0	295.4	304.2
MEAN	12.7	23.1	25.5	16.1	11.0	6.82	18.6	17.4	11.4	6.87	9.53	10.1
MAX	41	157	110	50	24	15	83	203	26	14	24	50
MIN	6.0	7.4	7.1	9.2	7.1	4.8	5.2	5.4	6.8	5.0	4.8	4.7
AC-FT	782	1380	1570	991	612	420	1110	1070	677	422	586	603
CFSM	10.1	18.4	20.2	12.8	8.75	5.41	14.8	13.8	9.03	5.45	7.56	8.05
IN.	11.64	20.50	23.30	14.74	9.11	6.24	16.47	15.91	10.08	6.29	8.72	8.98

e Estimated

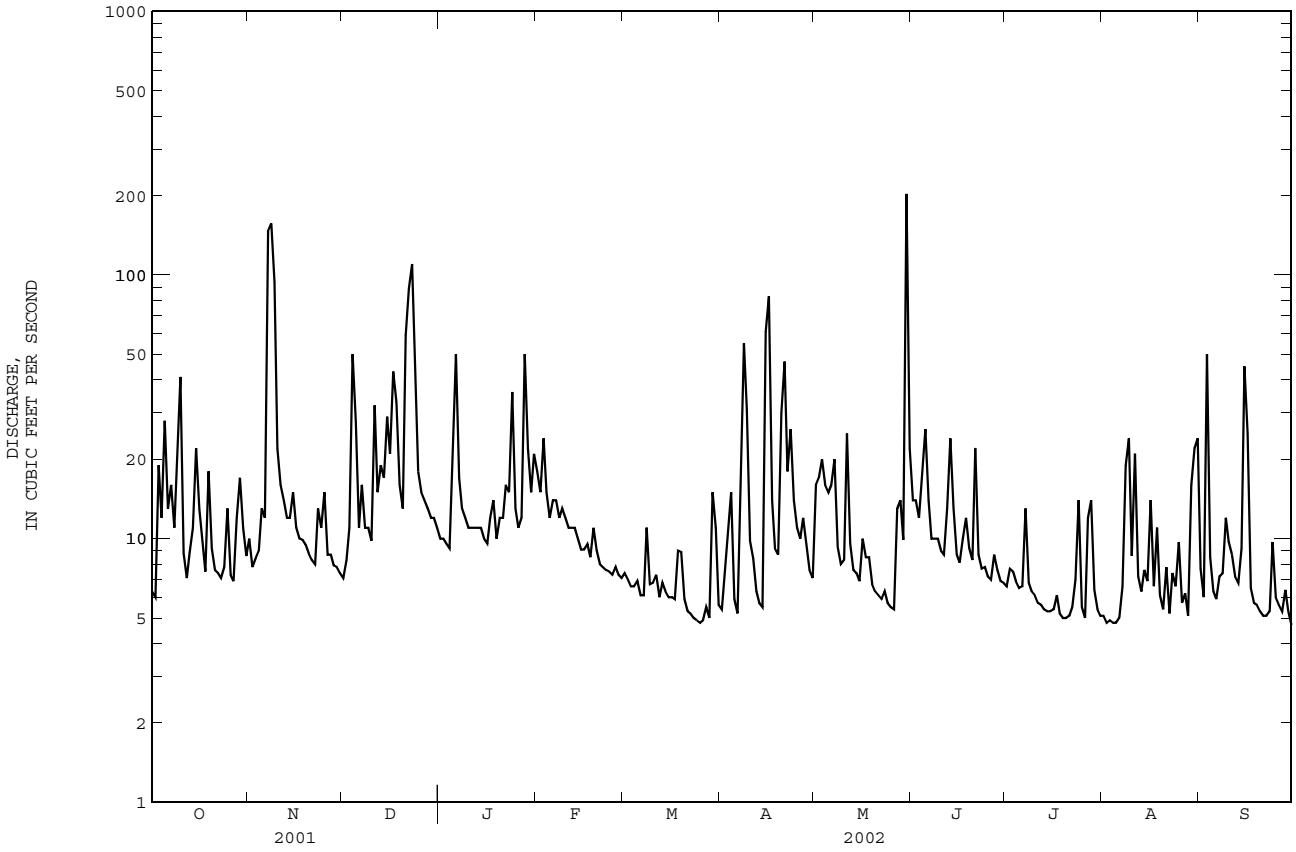
RIO BLANCO BASIN

50075000 RIO ICACOS NEAR NAGUABO, PR--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2002, BY WATER YEAR (WY)

MEAN	15.6	19.0	16.3	13.6	13.2	9.96	11.8	15.4	11.9	12.9	14.6	17.5
MAX	32.1	46.8	34.6	27.0	44.0	26.2	34.4	26.4	20.5	38.9	24.5	40.5
(WY)	1986	1951	1999	1952	1950	1949	1950	1948	1996	1952	1945	1996
MIN	4.78	8.00	4.99	6.65	4.86	3.96	4.77	5.25	5.19	6.44	5.91	7.03
(WY)	1993	1948	1990	1994	1983	1951	1984	1999	1985	1994	1993	1986

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1945 - 2002	
ANNUAL TOTAL	4526.8		5148.1			
ANNUAL MEAN	12.4		14.1		14.3	
HIGHEST ANNUAL MEAN					21.0	1952
LOWEST ANNUAL MEAN					7.92	1994
HIGHEST DAILY MEAN	188	Aug 22	203	May 30	571	Sep 10 1996
LOWEST DAILY MEAN	3.9	Jul 22	4.7	Sep 30	1.5	Mar 22 1946
ANNUAL SEVEN-DAY MINIMUM	4.3	Jul 17	4.9	Jul 31	2.0	Apr 7 1946
MAXIMUM PEAK FLOW			1120	May 30	2860	Apr 21 1983
MAXIMUM PEAK STAGE			6.44	May 30	8.96	Apr 21 1983
INSTANTANEOUS LOW FLOW			4.2	Aug 4		
ANNUAL RUNOFF (AC-FT)	8980		10210		10360	
ANNUAL RUNOFF (CFSM)	9.84		11.2		11.4	
ANNUAL RUNOFF (INCHES)	133.65		151.99		154.22	
10 PERCENT EXCEEDS	21		22		28	
50 PERCENT EXCEEDS	7.4		9.2		8.3	
90 PERCENT EXCEEDS	4.9		5.4		4.8	



RIO BLANCO BASIN

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 mi^2 (31.9 km^2).

PERIOD OF RECORD.--October 1982 to January 1985. July 2002 to September 2002.

GAGE.--Water-stage recorder. Elevation of gage is 50 ft (15 m), from topographic map.

REMARKS.-Records fair. Low flow affected by diversion for water supply and hydroelectric power generation.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum discharge, 11,000 ft^3/s (312 m^3/s), April 21, 1983, gage height, 22.76 ft (6.937 m) from rating curve extended above 200 ft^3/s (5.664 m^3/s) on basis of step-backwater analysis and slope-area measurement; minimum discharge, 8.8 ft^3/s (0.249 m^3/s), April 10, 1983.

EXTREMES OBSERVED FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft^3/s (85.0 m^3/s) and maximum observed.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	31	47	73
2	---	---	---	---	---	---	---	---	---	35	47	44
3	---	---	---	---	---	---	---	---	---	51	45	311
4	---	---	---	---	---	---	---	---	---	63	43	69
5	---	---	---	---	---	---	---	---	---	62	49	46
6	---	---	---	---	---	---	---	---	---	87	51	36
7	---	---	---	---	---	---	---	---	---	142	61	30
8	---	---	---	---	---	---	---	---	---	71	280	31
9	---	---	---	---	---	---	---	---	---	63	172	57
10	---	---	---	---	---	---	---	---	---	60	55	188
11	---	---	---	---	---	---	---	---	---	55	257	66
12	---	---	---	---	---	---	---	---	---	53	67	36
13	---	---	---	---	---	---	---	---	---	50	34	31
14	---	---	---	---	---	---	---	---	---	53	57	30
15	---	---	---	---	---	---	---	---	---	52	35	263
16	---	---	---	---	---	---	---	---	---	55	111	315
17	---	---	---	---	---	---	---	---	---	56	43	50
18	---	---	---	---	---	---	---	---	---	50	136	39
19	---	---	---	---	---	---	---	---	---	45	54	35
20	---	---	---	---	---	---	---	---	---	48	29	33
21	---	---	---	---	---	---	---	---	---	49	33	27
22	---	---	---	---	---	---	---	---	---	64	27	28
23	---	---	---	---	---	---	---	---	---	55	96	31
24	---	---	---	---	---	---	---	---	---	89	72	98
25	---	---	---	---	---	---	---	---	---	52	97	72
26	---	---	---	---	---	---	---	---	---	47	42	72
27	---	---	---	---	---	---	---	---	e38	100	35	42
28	---	---	---	---	---	---	---	---	36	111	30	35
29	---	---	---	---	---	---	---	---	27	65	133	33
30	---	---	---	---	---	---	---	---	27	50	187	32
31	---	---	---	---	---	---	---	---	---	42	254	---
TOTAL	---	---	---	---	---	---	---	---	128	1906	2679	2253
MEAN	---	---	---	---	---	---	---	---	32.0	61.5	86.4	75.1
MAX	---	---	---	---	---	---	---	---	38	142	280	315
MIN	---	---	---	---	---	---	---	---	27	31	27	27
AC-FT	---	---	---	---	---	---	---	---	254	3780	5310	4470
CFSM	---	---	---	---	---	---	---	---	2.60	5.00	7.03	6.11
IN.	---	---	---	---	---	---	---	---	0.39	5.76	8.10	6.81

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2002, BY WATER YEAR (WY)

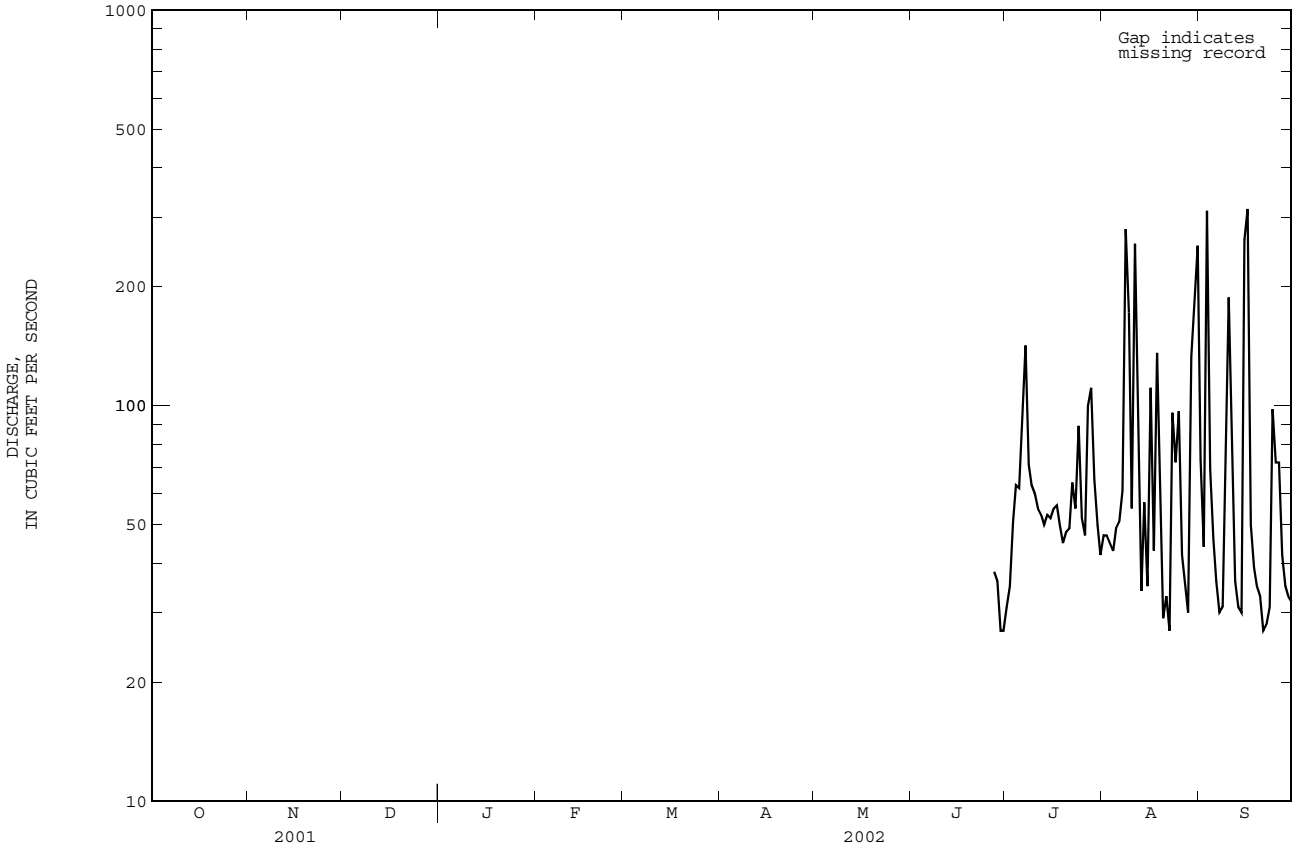
MEAN	68.0	114	74.3	45.0	42.8	32.5	48.8	71.6	---	71.6	85.0	64.1
MAX	89.3	190	96.0	48.4	68.0	38.7	77.3	78.7	---	103	119	75.1
(WY)	1985	1985	1983	1984	1984	1983	1983	1983	---	1983	1983	2002
MIN	50.5	75.0	59.3	41.7	16.8	26.4	20.2	64.5	---	50.0	49.4	49.0
(WY)	1983	1984	1984	1983	1983	1984	1984	1984	---	1984	1984	1983

e Estimated

RIO BLANCO BASIN

50076000 RIO BLANCO NEAR FLORIDA, PR--Continued

SUMMARY STATISTICS	FOR 2002 WATER YEAR		WATER YEARS 1983 - 2002	
ANNUAL MEAN			61.8	
HIGHEST ANNUAL MEAN			67.9	1983
LOWEST ANNUAL MEAN			55.7	1984
HIGHEST DAILY MEAN	315	Sep 16	1220	Apr 21 1983
LOWEST DAILY MEAN	27	Jun 29	9.6	Apr 10 1983
ANNUAL SEVEN-DAY MINIMUM	35	Sep 17	10	Apr 7 1983
MAXIMUM PEAK FLOW	3570	Aug 8	11000	Apr 21 1983
MAXIMUM PEAK STAGE	16.00	Aug 8	22.76	Apr 21 1983
INSTANTANEOUS LOW FLOW			8.8	Apr 10 1983
ANNUAL RUNOFF (AC-FT)			44770	
ANNUAL RUNOFF (CFSM)			5.02	
ANNUAL RUNOFF (INCHES)			68.26	
10 PERCENT EXCEEDS			131	
50 PERCENT EXCEEDS			37	
90 PERCENT EXCEEDS			16	



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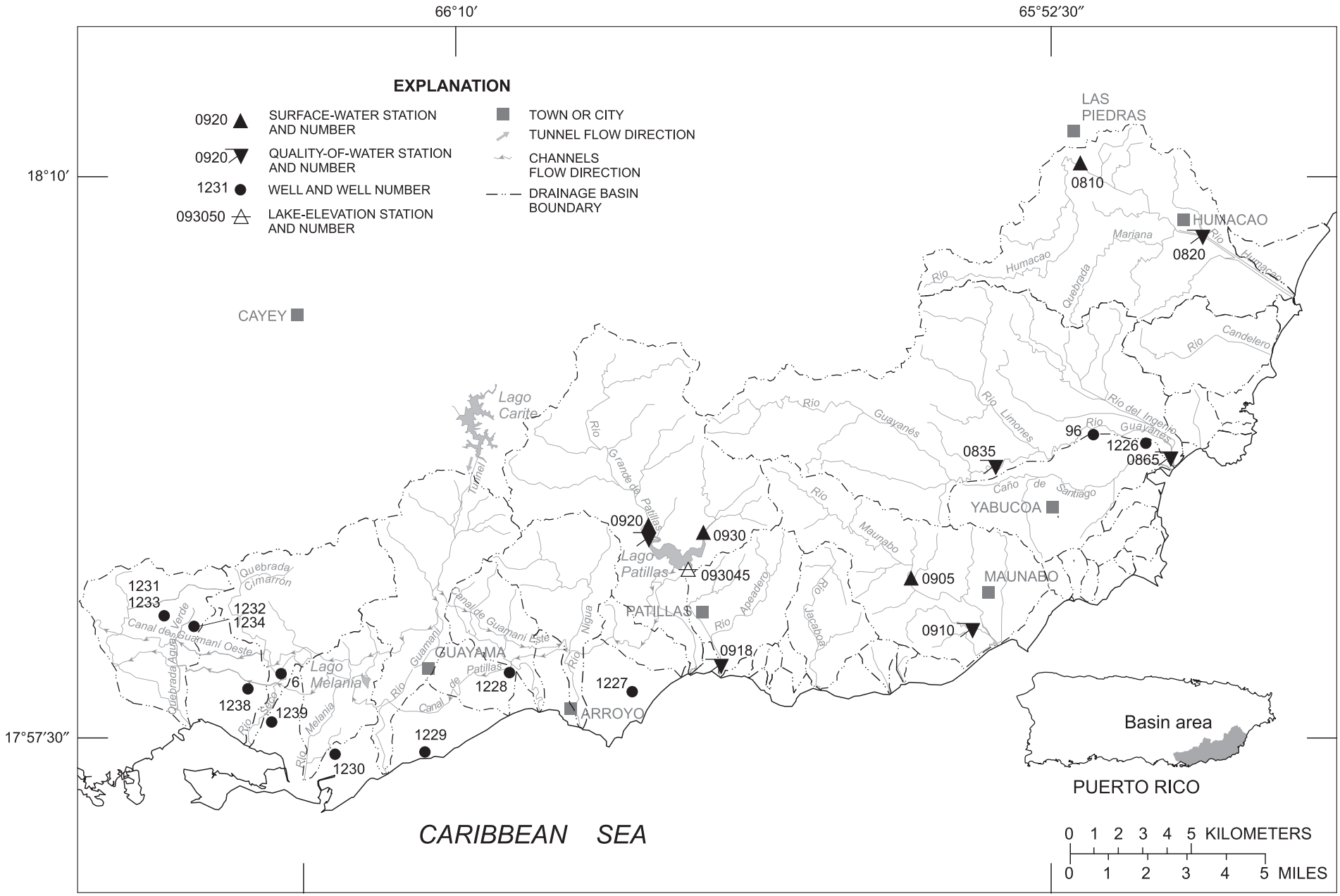


Figure 20. Southeastern river basins -- Río Humacao to Quebrada Aguas Verdes basins.

RIO HUMACAO BASIN

50081000 RIO HUMACAO AT LAS PIEDRAS, PR

LOCATION.--Lat 18°10'27", long 65°52'11", Hydrologic Unit 21010005, on left bank at downstream side of bridge on Highway 921, 0.6 mi (1.0 km) southeast of junction with Highway 30, 0.8 mi (1.3 km) downstream from Quebrada Blanca and 0.8 mi (1.3 km) south of Las Piedras.

DRAINAGE AREA.--6.65 mi^2 (17.2 km^2).

PERIOD OF RECORD.--September 1958 to December 1967 (monthly discharge measurements), July 1974 to September 1977, October 1987 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 260 ft (79 m), from topographic map. Prior to July 1974, crest-stage gage at different datum. July 1974 to September 1977 at site 90 ft (27 m) upstream at present datum.

REMARKS.--Records fair except those for estimated daily discharges and those for above 1,000 ft^3/s (28.3 m^3/s), which are poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	12	15	18	18	11	8.8	12	47	11	8.9	129
2	11	12	16	18	16	11	11	18	167	12	8.6	20
3	24	11	25	18	30	10	12	17	33	12	8.2	12
4	15	11	37	18	28	9.8	10	14	87	11	8.3	11
5	23	12	49	18	21	9.6	11	12	102	11	8.1	9.5
6	25	13	18	23	19	9.1	9.0	12	39	14	9.2	8.9
7	14	198	16	20	19	9.0	12	12	27	17	9.0	8.5
8	14	270	19	18	19	17	16	10	23	12	8.5	8.3
9	30	252	16	17	18	12	12	9.9	22	11	9.0	9.0
10	14	40	21	17	18	12	10	9.7	20	11	8.3	9.3
11	13	27	33	16	17	11	9.5	9.5	20	11	9.6	8.2
12	11	87	80	16	16	11	8.9	9.3	20	10	8.6	7.7
13	11	38	38	17	16	11	8.7	9.8	19	10	12	7.4
14	11	31	21	16	17	10	8.3	9.0	19	10	12	7.6
15	45	22	58	15	16	10	11	8.8	17	12	12	68
16	64	21	88	16	17	10	80	10	17	9.9	18	70
17	22	19	33	15	16	10	17	10	19	10	11	15
18	26	27	89	19	15	9.9	14	11	22	10	21	12
19	20	20	32	17	14	9.4	16	8.8	26	9.6	12	12
20	16	19	27	16	14	9.1	158	8.6	22	9.6	9.4	e11
21	14	18	23	15	13	9.0	110	8.5	42	10	8.7	e10
22	15	17	36	16	13	8.9	26	8.3	16	11	8.5	e9.0
23	14	18	53	15	13	8.9	22	8.5	14	9.8	8.2	e9.0
24	13	17	29	17	12	8.9	16	8.1	14	11	8.7	e75
25	13	17	23	15	12	8.8	15	8.5	13	9.0	9.9	e21
26	13	16	21	14	12	8.5	14	8.8	13	9.0	10	e15
27	13	16	20	14	12	11	15	15	14	10	9.5	e12
28	13	16	20	28	11	12	13	16	13	9.4	8.0	e11
29	15	16	19	25	---	9.0	12	18	12	9.5	7.9	e10
30	21	15	19	19	---	10	12	444	12	9.1	72	e9.5
31	13	---	18	20	---	11	---	71	---	8.7	48	---
TOTAL	577	1308	1012	546	462	317.9	698.2	836.1	931	330.6	411.1	625.9
MEAN	18.6	43.6	32.6	17.6	16.5	10.3	23.3	27.0	31.0	10.7	13.3	20.9
MAX	64	270	89	28	30	17	158	444	167	17	72	129
MIN	11	11	15	14	11	8.5	8.3	8.1	12	8.7	7.9	7.4
AC-FT	1140	2590	2010	1080	916	631	1380	1660	1850	656	815	1240
CFSM	2.80	6.56	4.91	2.65	2.48	1.54	3.50	4.06	4.67	1.60	1.99	3.14
IN.	3.23	7.32	5.66	3.05	2.58	1.78	3.91	4.68	5.21	1.85	2.30	3.50

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2002, BY WATER YEAR (WY)

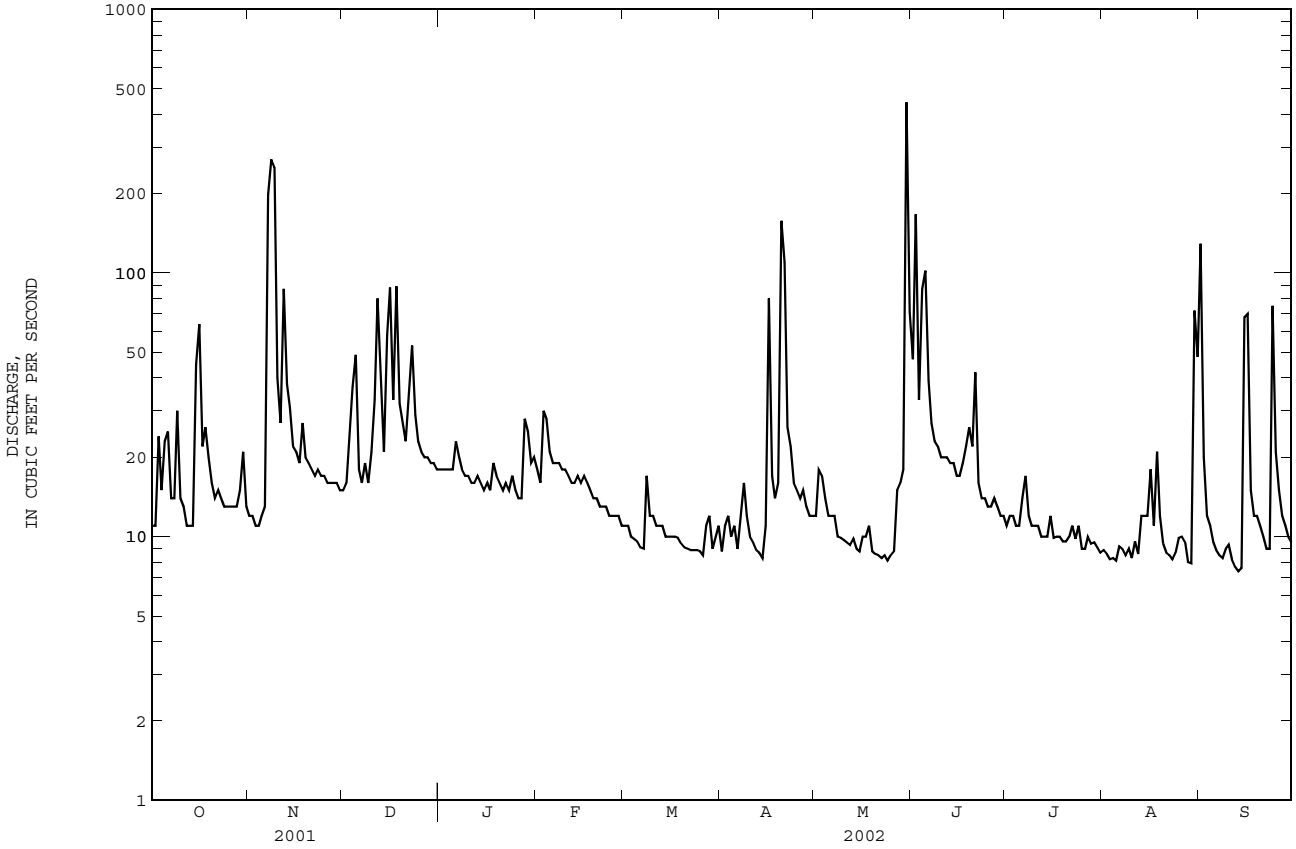
MEAN	31.7	39.3	30.5	20.5	16.1	11.7	10.3	15.0	17.2	18.3	20.6	35.6
MAX	77.5	126	112	37.5	22.2	16.4	23.3	42.2	41.1	38.1	34.7	121
(WY)	1999	1988	1988	1999	1997	1989	2002	1992	1996	1993	1996	1996
MIN	12.8	13.4	11.5	9.87	10.2	8.87	5.88	7.26	5.91	7.02	9.45	10.0
(WY)	1995	1996	1992	2001	2001	1996	1977	1990	1977	2001	1974	1990

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1974 - 2002	
ANNUAL TOTAL	6609.3		8055.8			
ANNUAL MEAN	18.1		22.1		22.3	
HIGHEST ANNUAL MEAN					37.6	1988
LOWEST ANNUAL MEAN					12.1	1990
HIGHEST DAILY MEAN	401	Aug 22	444	May 30	2010	Sep 10 1996
LOWEST DAILY MEAN	3.6	Jul 22	7.4	Sep 13	2.2	Jul 15 1974
ANNUAL SEVEN-DAY MINIMUM	4.2	Jul 16	8.2	Sep 8	2.8	Jul 19 1974
MAXIMUM PEAK FLOW			2160	May 30	20800	Sep 6 1960
MAXIMUM PEAK STAGE			6.47	May 30	34.40	Sep 6 1960
ANNUAL RUNOFF (AC-FT)	13110		15980		16180	
ANNUAL RUNOFF (CFSM)	2.72		3.32		3.36	
ANNUAL RUNOFF (INCHES)	36.97		45.06		45.64	
10 PERCENT EXCEEDS	28		33		34	
50 PERCENT EXCEEDS	9.9		14		14	
90 PERCENT EXCEEDS	5.8		8.9		7.3	

e Estimated

RIO HUMACAO BASIN

50081000 RIO HUMACAO AT LAS PIEDRAS, PR--Continued



RIO HUMACAO BASIN

50082000 RIO HUMACAO AT HIGHWAY 3 AT HUMACAO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°08'49", long 65°49'37", at bridge on Highway 3, 300 ft (91 m) downstream from Quebrada Mariana, and 0.4 mi (0.6 km) south of Humacao Plaza.

DRAINAGE AREA.--17.3 mi^2 (44.8 km^2).

PERIOD OF RECORD.--Water years 1958-66, 1969 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
NOV													
26...	1030	22	310	7.5	25.0	8.6	5.7	69	<10	2000	710	--	--
FEB													
13...	1200	15	318	7.6	25.5	10	8.2	99	<10	E21	360	--	--
APR													
29...	1415	16	317	7.5	29.5	3.9	7.2	94	<10	29000	32000	93	24.9

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
NOV													
26...	--	--	--	--	--	<1.0	--	--	--	--	--	--	<10
FEB													
13...	--	--	--	--	103	--	--	--	--	--	--	--	<10
APR													
29...	7.40	23.7	1	2.36	97	<.1	9.6	29.8	E.1	35.9	192	8.40	<10

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
NOV													
26...	.02	.610	.04	<.20	E.04	--	--	--	--	--	--	--	--
FEB													
13...	<.01	.630	.08	.20	.04	--	--	--	--	--	--	--	--
APR													
29...	.02	.540	.26	.40	.07	4	71.0	30	<.1	<.8	M	320	<1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
NOV								
26...	--	--	--	--	--	--	E6	.06
FEB								
13...	--	--	--	--	--	--	--	--
APR								
29...	155	<.01	<2	<.3	<20	<.01	<17	E.04

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

RIO GUAYANES BASIN

50083500 RIO GUAYANES AT YABUCOA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°03'33", long 65°54'03", at bridge on Highway 182, 1.4 mi (2.2 km) west-northwest of Yabucoa Plaza.

DRAINAGE AREA.--17.2 mi^2 (44.6 km^2).

PERIOD OF RECORD.--Water years 1958-62, 1968-70, 1980 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
NOV													
26...	1345	30	192	7.1	24.5	9.8	7.2	86	<10	470	330	54	13.7
FEB													
12...	1255	32	189	7.5	24.0	15	7.6	90	<10	E136	40	--	--
APR													
25...	1145	47	189	7.2	25.3	25	7.5	91	<10	350	530	48	12.1

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
NOV													
26...	4.75	14.8	.9	1.49	64	<1.0	4.0	14.2	E.1	37.6	129	10.6	<10
FEB													
12...	--	--	--	--	67	--	--	--	--	--	--	--	10
APR													
25...	4.38	14.1	.9	1.86	59	<.1	<.1	14.1	E.1	34.3	--	--	34

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
NOV													
26...	<.01	.340	<.01	<.20	E.03	<2	48.4	E10	--	--	--	--	--
FEB													
12...	<.01	.380	<.01	.20	.03	--	--	--	--	--	--	--	--
APR													
25...	<.01	.360	<.01	.30	.06	<2	59.5	30	<.1	<.8	M	1810	M

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
NOV								
26...	--	--	--	--	--	<.01	E7	E.03
FEB								
12...	--	--	--	--	--	--	--	--
APR								
25...	103	<.01	<2	<.3	<20	<.01	<16	<.05

RIO GUAYANES BASIN

50083500 RIO GUAYANES AT YABUCOA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

PESTICIDE ANALYSES

DATE	TIME	DI-CHLOR-PROP, WATER, UNFLTRD UG/L (82183)	2,4,5-T WATER UNFLTRD UG/L (39740)	2,4-D WATER UNFLTRD UG/L (39730)	ALDRIN, WATER, UNFLTRD UG/L (39330)	CARBO-PHENO-THION, WATER, UNFLTRD UG/L (39786)	CHLOR-DANE, TECH-NICAL, WATER, UNFLTRD UG/L (39350)	CHLOR-PYRIFOS WATER UNFLTRD UG/L (38932)	TRIBU-PHOS, WATER, UNFLTRD UG/L (39040)	DIAZI-NON, WATER, UNFLTRD UG/L (39570)	DIEL-DRIN, WATER, UNFLTRD UG/L (39380)	DISUL-FOTON, WATER, UNFLTRD UG/L (39011)	ALPHA-ENDO-SULFAN, WATER, UNFLTRD UG/L (39388)
APR													
25...	1145	<.02	<.01	<.02	<.01	<.04	<.1	<.03	<.04	<.04	<.006	<.20	<.02

DATE	ENDRIN, WATER, UNFLTRD UG/L (39390)	ETHION, WATER, UNFLTRD UG/L (39398)	FONOFOS WATER UNFLTRD UG/L (82614)	HEPTA-CHLOR EPOXIDE WATER UNFLTRD UG/L (39420)	HEPTA-CHLOR, WATER, UNFLTRD UG/L (39410)	LINDANE WATER, UNFLTRD UG/L (39340)	MALA-THION, WATER, UNFLTRD UG/L (39530)	P,P'-METH-OXY-CHLOR, WATER, UNFLTRD UG/L (39480)	METHYL PARA-THION, WATER, UNFLTRD UG/L (39600)	MIREX, WATER, UNFLTRD UG/L (39755)	P,P'-DDD, WATER, UNFLTRD UG/L (39360)	P,P'-DDE, WATER, UNFLTRD UG/L (39365)	P,P'-DDT, WATER, UNFLTRD UG/L (39370)
APR													
25...	<.01	<.03	<.02	<.009	<.01	<.006	<.20	<.020	<.03	<.006	<.007	<.006	<.009

DATE	PARA-THION, WATER, UNFLTRD UG/L (39540)	PCBS, WATER, UNFLTRD UG/L (39516)	PHORATE WATER UNFLTRD UG/L (39023)	SILVEX, WATER, UNFLTRD UG/L (39760)	TOXA-PHENE, WATER, UNFLTRD UG/L (39400)
APR					
25...	<.02	<.1	<.04	<.02	<1

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

RIO GUAYANES BASIN

50086500 RIO GUAYANES ABOVE MOUTH AT PLAYA DE GUAYANES, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°03'45", long 65°49'42", at old railroad crossing, 0.2 mi (0.3 km) from mouth, 0.4 mi (0.6 km) west of Playa de Guayanés, and 3.5 mi (5.6 km) northeast of Yabucoa Plaza.

DRAINAGE AREA.--34.0 mi^2 (88.1 km^2).

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	SPECIF. CONDUC- TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER- ATURE, WATER, DEG C (00010)	TURBID- ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS- SOLVED OXYGEN, MG/L (00300)	DIS- SOLVED OXYGEN, PERCENT OF SAT- URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI- FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP- TOCOCCI KF MF, COL/ 100 ML (31673)	HARD- NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)	MAGNES- IUM, WATER, FLTRD, MG/L (00925)
NOV													
26...	1530	318	7.0	26.0	22	3.7	45	10	330	480	86	21.7	7.65
FEB													
12...	1125	297	7.8	23.0	30	4.9	56	20	290	370	--	--	--
APR													
25...	1300	274	6.9	27.1	41	2.7	33	30	590	740	67	16.8	6.03

DATE	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP- TION RATIO (00931)	POTAS- SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR- IDE, WATER, FLTRD, MG/L (00940)	FLUOR- IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI- TUENTS MG/L (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED, MG/L (00530)	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)
NOV													
26...	28.8	1	3.50	103	<1.0	5.2	31.2	.2	35.6	196	30	.05	.320
FEB													
12...	--	--	--	108	--	--	--	--	--	--	20	<.01	.230
APR													
25...	23.0	1	5.84	141	<.1	8.5	28.2	.1	29.4	202	73	<.01	.080

DATE	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS- PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV- ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV- ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM- IUM, WATER, UNFLTRD RECOV- ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV- ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV- ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV- ERABLE, UG/L (01051)	MANGAN- ESE, WATER, UNFLTRD RECOV- ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV- ERABLE, UG/L (71900)
NOV													
26...	.26	E.70	E.14	<2	85.5	30	<.1	<.8	<10	1910	M	467	E.01
FEB													
12...	.12	.60	.14	--	--	--	--	--	--	--	--	--	--
APR													
25...	.07	.80	.48	<2	111	40	<.1	<.8	M	3220	1	724	E.01

DATE	SELEN- IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV- ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV- ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN- OLIC COM- POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
NOV						
26...	<2	<.3	<20	--	<16	<.05
FEB						
12...	--	--	--	--	--	--
APR						
25...	<2	<.3	<20	<.01	<17	E.04

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

RIO MAUNABO BASIN

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) downstream from Quebrada Coroco, and about 3.0 mi (4.8 km) northwest of Maunabo.

DRAINAGE AREA.--5.38 mi^2 (13.9 km^2).

PERIOD OF RECORD.--February 1971 to January 1985, February 1991 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 230 ft (70 m), from topographic map.

REMARKS.--Records poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.5	23	18	19	21	7.9	5.8	8.4	29	e18	e9.0	72
2	7.1	22	21	18	17	7.8	5.6	18	218	e23	e10	28
3	47	19	30	18	25	7.6	7.4	15	32	28	e9.0	18
4	11	17	76	17	21	7.3	16	11	87	e23	e8.4	15
5	25	17	44	18	16	7.2	15	10	118	e18	e8.7	13
6	16	19	17	24	13	7.0	7.2	13	46	e26	e10	11
7	7.8	18	15	18	13	6.9	55	11	29	e66	e11	12
8	7.7	141	18	16	12	9.3	25	9.2	23	e16	e11	e12
9	88	64	15	16	12	7.7	14	8.2	e36	e12	e9.1	e15
10	20	36	17	15	11	7.4	12	8.4	e21	e11	e14	13
11	10	26	39	15	11	7.3	11	8.1	e17	e12	52	35
12	8.0	23	64	16	11	7.4	11	7.5	e16	9.2	12	15
13	8.6	21	39	15	11	10	10	7.1	e15	e8.6	8.8	13
14	9.2	21	25	17	10	7.3	9.9	7.0	e13	e49	9.2	12
15	91	20	44	15	10	6.8	17	6.8	e16	e33	8.6	50
16	93	18	107	14	10	6.6	71	6.9	e14	e9.0	12	33
17	48	17	63	15	10	6.6	36	7.2	36	e12	7.2	13
18	30	24	68	17	9.7	6.4	18	7.9	76	e9.5	193	11
19	34	20	123	16	9.4	6.3	17	6.9	33	e9.0	23	10
20	31	17	82	14	8.9	6.1	50	6.5	32	e8.2	e16	9.6
21	31	16	52	15	8.6	6.1	123	6.4	44	e7.9	e13	e9.4
22	26	15	51	26	8.7	6.0	23	6.1	e33	e19	e12	e9.8
23	24	15	36	19	8.5	6.0	17	7.2	e32	e8.2	e11	11
24	23	e14	30	21	8.6	5.8	13	6.2	e22	e9.3	e10	17
25	20	e14	26	17	8.1	5.7	11	5.9	e18	e6.3	e12	11
26	18	e14	24	15	8.2	5.8	11	5.9	e16	e8.1	e9.9	15
27	19	e14	23	14	8.0	6.7	10	8.1	e15	e9.4	e9.2	8.9
28	32	e14	22	111	7.9	6.0	9.3	8.9	e18	98	e8.8	8.4
29	22	e14	21	27	---	6.8	8.9	21	e19	e40	e10	7.7
30	46	e13	20	18	---	10	9.8	371	e18	e11	e92	8.7
31	26	---	20	24	---	7.2	---	52	---	e9.5	e110	---
TOTAL	888.9	726	1250	640	328.6	219.0	649.9	682.8	1142	627.2	739.9	517.5
MEAN	28.7	24.2	40.3	20.6	11.7	7.06	21.7	22.0	38.1	20.2	23.9	17.2
MAX	93	141	123	111	25	10	123	371	218	98	193	72
MIN	7.1	13	15	14	7.9	5.7	5.6	5.9	13	6.3	7.2	7.7
AC-FT	1760	1440	2480	1270	652	434	1290	1350	2270	1240	1470	1030
CFSM	5.33	4.50	7.49	3.84	2.18	1.31	4.03	4.09	7.08	3.76	4.44	3.21
IN.	6.15	5.02	8.64	4.43	2.27	1.51	4.49	4.72	7.90	4.34	5.12	3.58

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 2002, BY WATER YEAR (WY)

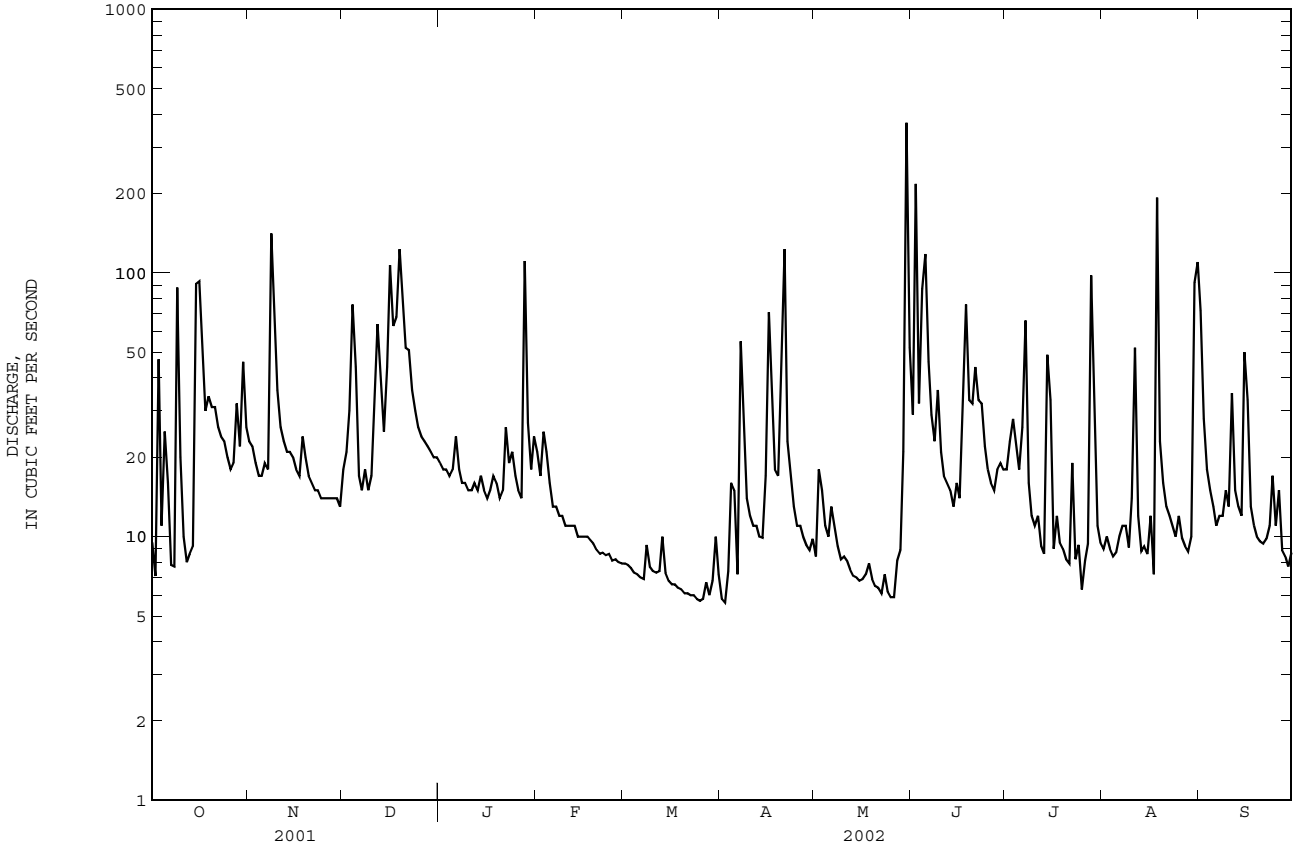
MEAN	28.0	32.4	20.1	15.2	12.4	9.70	8.00	13.3	17.3	16.7	23.3	28.4
MAX	52.6	88.9	48.1	40.2	24.5	18.9	21.7	25.1	47.1	40.2	131	94.6
(WY)	1979	1978	1999	1998	1982	1976	2002	1979	1979	1993	1979	1996
MIN	10.4	7.46	8.74	7.79	6.10	4.32	3.92	4.46	4.40	3.70	6.18	7.99
(WY)	1994	1982	1994	1981	1979	1979	1979	1999	1974	1974	1974	1980

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1971 - 2002	
ANNUAL TOTAL	6607.1		8411.8			
ANNUAL MEAN	18.1		23.0		18.8	
HIGHEST ANNUAL MEAN					36.7	1979
LOWEST ANNUAL MEAN					10.8	1994
HIGHEST DAILY MEAN	372	Aug 22	371	May 30	2480	Aug 31 1979
LOWEST DAILY MEAN	4.0	Jun 17	5.6	Apr 2	2.2	Jul 16 1974
ANNUAL SEVEN-DAY MINIMUM	4.2	Jun 13	5.9	Mar 20	2.8	Jul 11 1974
MAXIMUM PEAK FLOW			2170	Aug 18	9950	Sep 20 1994
MAXIMUM PEAK STAGE			9.88	Aug 18	17.46	Sep 20 1994
ANNUAL RUNOFF (AC-FT)	13110		16680		13640	
ANNUAL RUNOFF (CFSM)	3.36		4.28		3.50	
ANNUAL RUNOFF (INCHES)	45.68		58.16		47.55	
10 PERCENT EXCEEDS	33		46		34	
50 PERCENT EXCEEDS	9.3		15		11	
90 PERCENT EXCEEDS	5.0		7.2		5.3	

e Estimated

RIO MAUNABO BASIN

50090500 RIO MAUNABO AT LIZAS, PR--Continued



RIO MAUNABO BASIN

50091000 RIO MAUNABO AT MAUNABO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°00'24", long 65°54'19", at bridge on Highway 3, 0.4 mi (0.6 km) southwest of Maunabo Plaza, and 1.3 mi (2.1 km) upstream from mouth.

DRAINAGE AREA.--12.4 mi^2 (32.1 km^2).

PERIOD OF RECORD.--Water years 1958-66, 1975 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
NOV													
27...	1230	15	266	7.4	25.5	2.3	7.6	93	<10	580	E160	--	--
FEB													
13...	1355	15	243	7.4	28.5	7.3	7.5	96	<10	490	E73	--	--
APR													
29...	1200	11	267	7.6	29.0	2.5	7.5	96	<10	210	E150	74	17.8

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
NOV													
27...	--	--	--	--	84	<1.0	--	--	--	--	--	--	<10
FEB													
13...	--	--	--	--	80	--	--	--	--	--	--	--	<10
APR													
29...	7.19	19.5	1	1.15	80	<.1	8.8	20.1	.1	36.2	159	4.59	<10

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
NOV													
27...	<.01	.440	<.01	<.20	E.03	--	--	--	--	--	--	--	--
FEB													
13...	<.01	.250	<.01	.20	.02	--	--	--	--	--	--	--	--
APR													
29...	<.01	.130	<.01	<.20	.03	<2	36.7	20	<.1	<.8	M	260	<1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
NOV								
27...	--	--	--	--	--	--	E3	<.05
FEB								
13...	--	--	--	--	--	--	--	--
APR								
29...	33.4	<.01	E1	<.3	<20	<.01	<17	<.05

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

RIO CHICO BASIN

50091800 RIO CHICO AT PROVIDENCIA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 17°59'16", long 66°00'18", at flat low bridge 200 ft (61 m) south of Highway 3, 0.5 mi (0.8 km) above mouth, and 1.5 mi (2.4 km) southeast of Patillas Plaza.

DRAINAGE AREA.--4.9 mi^2 (12.8 km^2).

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
NOV													
27...	1445	1.5	413	7.1	28.0	8.4	5.3	68	40	240	E181	--	--
FEB													
14...	1400	1.1	478	7.2	31.0	10	5.2	69	40	E200	E400	--	--
APR													
24...	1430	1.0	515	7.3	32.0	7.5	3.9	53	40	500	480	77	18.4

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
NOV													
27...	--	--	--	--	110	<1.0	--	--	--	--	--	--	<10
FEB													
14...	--	--	--	--	102	--	--	--	--	--	--	--	<10
APR													
24...	7.55	42.5	2	6.54	126	<.1	22.5	46.5	E.1	27.7	248	.67	<10

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
NOV													
27...	1.20	E4.50	3.70	E5.0	E2.30	--	--	--	--	--	--	--	--
FEB													
14...	1.30	3.80	8.70	12	3.40	--	--	--	--	--	--	--	--
APR													
24...	.52	.770	12.0	12	2.10	<2	13.1	130	<.1	<.8	<10	90	<1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
NOV								
27...	--	--	--	--	--	--	<16	.12
FEB								
14...	--	--	--	--	--	--	--	--
APR								
24...	46.9	.01	<2	.7	E30	<.01	<18	.29

< -- Less than
E -- Estimated value

RIO GRANDE DE PATILLAS BASIN

50092000 RIO GRANDE DE PATILLAS NEAR PATILLAS, PR

LOCATION.--Lat 18°02'04", long 66°01'58", Hydrologic Unit 21010004, on left bank, at old foot bridge abutment, 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 mi^2 (47.4 km^2).

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 and crest-stage gage. Elevation of gage is 235 ft (72 m), from topographic map.

REMARKS.--Records fair. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	39	26	34	49	17	13	20	59	28	29	242
2	32	38	25	32	36	17	12	19	43	26	26	83
3	50	38	29	31	47	16	18	19	30	25	23	48
4	40	35	41	30	60	16	31	21	513	30	21	38
5	78	38	42	31	34	15	17	24	919	28	22	32
6	74	108	27	39	29	15	21	22	303	32	26	29
7	37	54	24	32	28	15	116	20	123	50	29	32
8	36	571	28	29	26	18	60	20	78	32	29	28
9	129	319	23	27	26	17	50	18	142	27	23	31
10	50	107	22	26	25	15	25	18	64	30	22	27
11	38	69	40	26	24	15	19	19	47	29	26	29
12	28	58	113	26	23	15	16	17	44	25	24	25
13	25	76	74	25	22	19	15	17	37	26	27	23
14	25	60	36	25	22	15	14	16	32	62	27	24
15	238	51	51	24	22	14	32	16	41	92	30	216
16	351	50	264	23	21	14	197	16	44	23	58	201
17	164	40	138	23	21	13	69	17	53	33	33	57
18	93	43	129	27	20	13	33	18	521	25	272	42
19	78	38	259	30	22	13	23	17	217	21	54	36
20	73	35	292	25	21	13	149	16	115	20	46	32
21	63	33	168	24	18	12	302	15	496	19	37	33
22	59	32	109	35	18	12	80	17	326	18	31	34
23	54	32	98	30	18	12	40	41	108	24	29	34
24	47	32	89	30	18	12	29	24	67	32	27	127
25	42	31	61	29	18	12	25	21	53	28	32	74
26	39	30	52	24	18	11	24	22	45	25	26	46
27	38	29	47	24	18	13	23	35	43	27	24	38
28	38	29	43	102	17	13	21	56	37	42	22	35
29	42	28	40	53	---	20	20	54	33	40	27	33
30	82	27	38	47	---	25	21	988	29	26	88	31
31	48	---	36	37	---	19	---	167	---	25	240	---
TOTAL	2223	2170	2464	1000	721	466	1515	1810	4662	970	1430	1760
MEAN	71.7	72.3	79.5	32.3	25.8	15.0	50.5	58.4	155	31.3	46.1	58.7
MAX	351	571	292	102	60	25	302	988	919	92	272	242
MIN	25	27	22	23	17	11	12	15	29	18	21	23
AC-FT	4410	4300	4890	1980	1430	924	3010	3590	9250	1920	2840	3490
CFSM	3.92	3.95	4.34	1.76	1.41	0.82	2.76	3.19	8.49	1.71	2.52	3.21
IN.	4.52	4.41	5.01	2.03	1.47	0.95	3.08	3.68	9.48	1.97	2.91	3.58

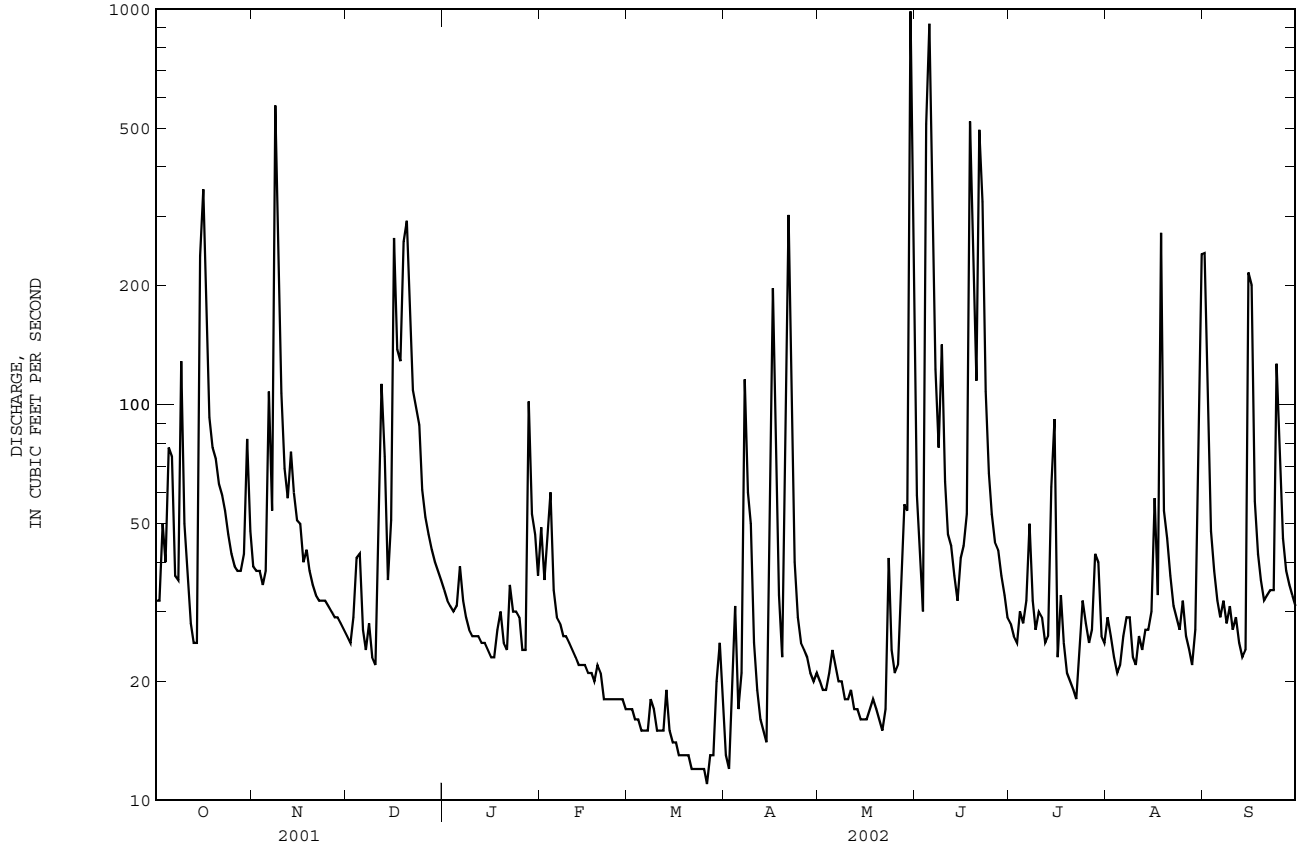
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2002, BY WATER YEAR (WY)

MEAN	97.3	91.6	54.5	36.3	28.7	24.7	22.6	48.9	62.7	60.3	68.3	97.0
MAX	593	393	195	125	94.6	51.2	50.5	172	200	164	231	432
(WY)	1971	1978	1999	1992	1982	1998	2002	1969	1979	1979	1979	1998
MIN	14.4	16.1	8.63	14.0	7.09	6.74	9.98	10.3	13.1	14.1	17.2	12.1
(WY)	1968	1968	1968	1973	1973	1968	1968	1974	1974	1974	1994	1967

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1966 - 2002	
ANNUAL TOTAL	16635		21191			
ANNUAL MEAN	45.6		58.1		57.3	
HIGHEST ANNUAL MEAN					117	1979
LOWEST ANNUAL MEAN					19.8	1994
HIGHEST DAILY MEAN	653	Aug 23	988	May 30	4780	Sep 16 1975
LOWEST DAILY MEAN	12	Mar 10	11	Mar 26	4.8	May 9 1968
ANNUAL SEVEN-DAY MINIMUM	12	Apr 14	12	Mar 20	5.0	Apr 10 1968
MAXIMUM PEAK FLOW			2050	Jun 21	30900	Jan 5 1992
MAXIMUM PEAK STAGE			8.70	Jun 21	unknown	Jan 5 1992
INSTANTANEOUS LOW FLOW			11	Mar 25	4.6	May 13 1968
ANNUAL RUNOFF (AC-FT)	33000		42030		41520	
ANNUAL RUNOFF (CFSM)	2.49		3.17		3.13	
ANNUAL RUNOFF (INCHES)	33.82		43.08		42.55	
10 PERCENT EXCEEDS	80		108		96	
50 PERCENT EXCEEDS	24		30		28	
90 PERCENT EXCEEDS	14		17		13	

RIO GRANDE DE PATILLAS BASIN

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



RIO GRANDE DE PATILLAS BASIN

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

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
NOV													
28...	1200	29	165	7.2	24.0	1.0	8.4	100	<10	2900	E10	--	--
FEB													
14...	1230	23	163	7.5	25.0	4.5	8.4	102	<10	E30	E20	--	--
APR													
24...	1200	30	161	7.6	27.0	1.8	8.0	100	<10	93	50	44	10.2

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
NOV													
28...	--	--	--	--	52	<1.0	--	--	--	--	--	--	<10
FEB													
14...	--	--	--	--	51	--	--	--	--	--	--	--	<10
APR													
24...	4.57	11.9	.8	.42	46	.2	10.0	11.3	<.1	21.2	97	7.74	<10

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
NOV													
28...	<.01	.040	<.01	<.20	<.02	--	--	--	--	--	--	--	--
FEB													
14...	<.01	.040	<.01	<.20	<.02	--	--	--	--	--	--	--	--
APR													
24...	<.01	.090	<.01	<.20	<.02	<2	10.8	30	<.1	<.8	<10	50	<1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
NOV								
28...	--	--	--	--	--	--	<16	<.05
FEB								
14...	--	--	--	--	--	--	--	--
APR								
24...	6.2	<.01	<2	<.3	E20	<.01	<18	<.05

< -- Less than
E -- Estimated value

RIO GRANDE DE PATILLAS BASIN

50093000 RIO MARIN NEAR PATILLAS, PR

LOCATION.--Lat 18°02'16", long 66°00'31", Hydrologic Unit 21010004, on left bank, 3.52 mi (5.66 km) southeast from Escuela Francisco Zenón Gedy, 1.45 mi (2.33 km) northeast from Lago Patillas Dam and 2.10 mi (3.38 km) north from Patillas town.

DRAINAGE AREA.--4.45 mi^2 (11.5 km^2).

PERIOD OF RECORD.--February 2000 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 295.3 ft (90 m), from topographic map.

REMARKS.--Records fair. Gage-height satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.5	12	7.9	11	17	6.4	5.5	7.6	15	13	8.4	47
2	6.3	11	8.2	10	12	6.3	5.2	7.9	45	13	8.2	17
3	29	11	9.9	10	18	6.3	9.0	8.9	14	13	8.0	11
4	8.8	10	44	10	14	6.1	16	8.3	75	14	7.9	9.4
5	23	10	20	10	10	6.1	7.0	8.4	134	11	7.8	8.5
6	12	12	13	14	9.6	5.9	5.9	8.8	31	13	8.2	7.9
7	8.2	9.9	11	10	9.3	5.7	72	7.7	21	17	8.4	8.3
8	9.1	97	13	9.5	8.9	7.3	15	7.5	24	12	7.9	7.7
9	49	34	10	9.2	8.8	6.0	9.2	7.0	36	11	7.7	11
10	14	18	11	8.9	8.4	6.0	7.3	7.0	17	11	7.8	9.1
11	9.4	14	28	8.8	8.3	6.6	6.8	6.9	15	10	16	19
12	8.1	13	42	9.3	8.2	5.8	6.5	6.7	17	10	9.7	8.3
13	7.8	13	24	8.8	8.2	7.9	6.3	6.4	15	9.7	8.6	7.4
14	8.0	12	15	9.9	8.0	5.7	6.1	6.3	14	25	8.2	7.5
15	88	12	27	8.8	7.9	5.5	9.9	6.2	12	15	7.6	62
16	80	11	105	8.7	7.5	5.4	66	6.1	11	10	9.9	30
17	36	10	39	8.7	7.5	5.3	24	6.1	14	19	8.0	13
18	20	14	49	9.9	7.3	5.4	10	6.7	124	11	161	11
19	23	11	81	8.9	7.3	5.4	8.6	6.1	40	9.9	17	11
20	18	9.9	80	8.4	7.0	5.3	31	5.7	32	9.5	12	10
21	19	9.7	35	8.5	6.9	5.2	71	5.6	53	9.4	9.7	10
22	16	9.3	22	13	6.9	5.2	19	5.5	27	9.5	8.5	9.9
23	17	9.1	19	9.6	7.0	5.2	13	6.4	18	9.8	7.9	13
24	15	8.8	16	11	7.0	5.1	10	5.4	17	11	7.9	21
25	13	8.8	15	9.1	6.7	5.0	9.4	5.2	16	8.9	7.8	18
26	12	8.6	14	8.2	6.6	5.0	8.9	5.2	15	8.9	7.9	12
27	12	8.4	13	8.2	6.6	5.3	8.8	6.0	19	9.7	7.2	10
28	15	8.3	12	54	6.4	5.1	8.3	5.7	15	17	7.1	11
29	12	8.4	12	15	---	6.8	8.0	28	14	10	11	9.8
30	27	8.0	12	11	---	9.2	7.8	200	13	9.0	30	9.7
31	14	---	11	13	---	6.0	---	31	---	8.5	89	---
TOTAL	636.2	432.2	819.0	353.4	247.3	183.5	491.5	446.3	913	368.8	532.3	440.5
MEAN	20.5	14.4	26.4	11.4	8.83	5.92	16.4	14.4	30.4	11.9	17.2	14.7
MAX	88	97	105	54	18	9.2	72	200	134	25	161	62
MIN	6.3	8.0	7.9	8.2	6.4	5.0	5.2	5.2	11	8.5	7.1	7.4
AC-FT	1260	857	1620	701	491	364	975	885	1810	732	1060	874

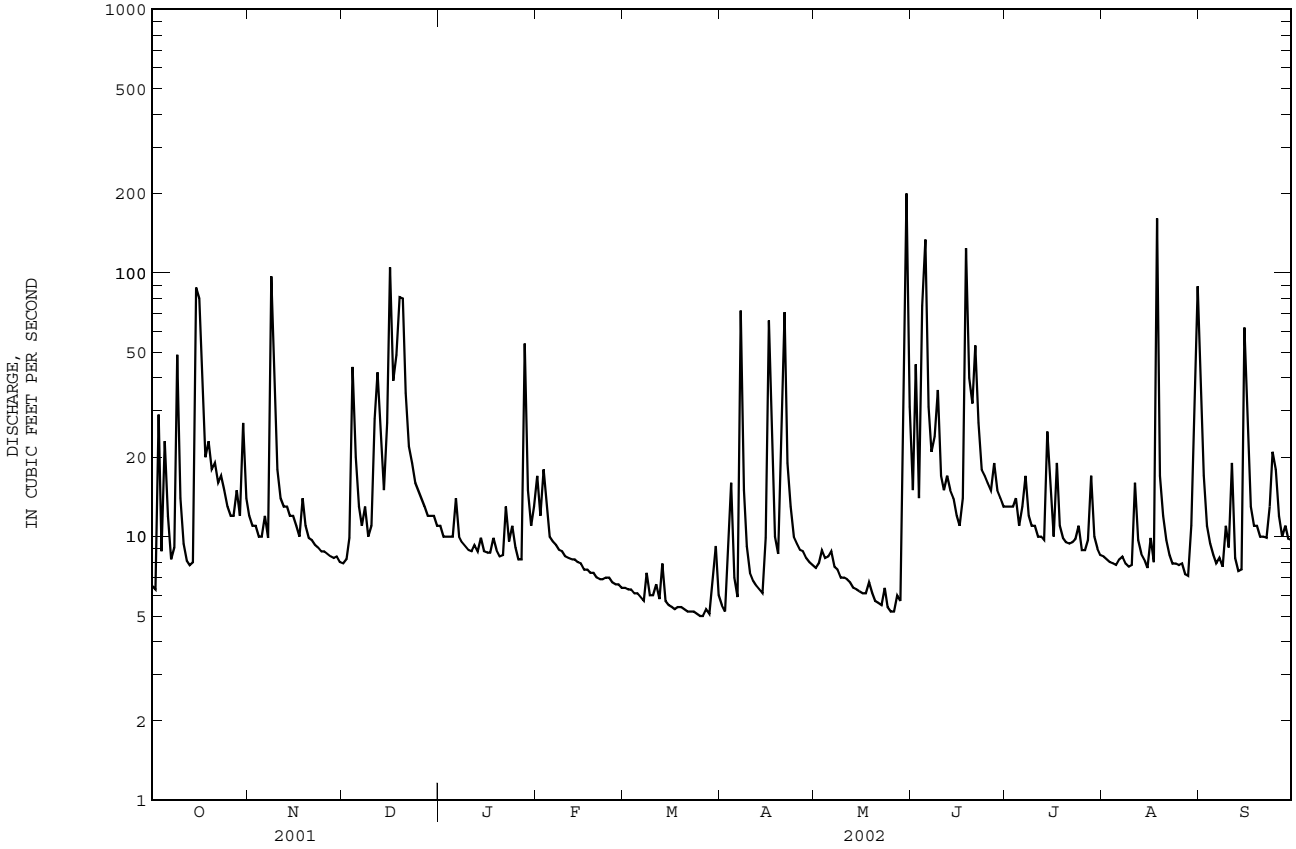
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2002, BY WATER YEAR (WY)

MEAN	19.1	13.9	20.3	8.80	7.97	5.73	9.77	13.8	14.8	8.91	19.3	19.8
MAX	20.5	14.4	26.4	11.4	8.83	6.48	16.4	16.6	30.4	11.9	25.5	27.4
(WY)	2002	2002	2002	2002	2002	2001	2002	2000	2002	2002	2001	2000
MIN	17.6	13.4	14.1	6.19	7.10	4.80	5.87	10.6	4.77	7.16	15.3	14.7
(WY)	2001	2001	2001	2001	2001	2000	2000	2001	2001	2000	2000	2002

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 2000 - 2002	
ANNUAL TOTAL	4711.6		5864.0			
ANNUAL MEAN	12.9		16.1		13.8	
HIGHEST ANNUAL MEAN					16.1	2002
LOWEST ANNUAL MEAN					11.5	2001
HIGHEST DAILY MEAN	269	Aug 22	200	May 30	269	Aug 22 2001
LOWEST DAILY MEAN	4.0	Jun 21	5.0	Mar 25	4.0	Jun 21 2001
ANNUAL SEVEN-DAY MINIMUM	4.2	Jun 17	5.1	Mar 22	4.2	Jun 17 2001
MAXIMUM PEAK FLOW			2160	Aug 18	4970	Sep 1 2001
MAXIMUM PEAK STAGE			10.05	Aug 18	13.28	Sep 1 2001
INSTANTANEOUS LOW FLOW			4.9	May 25	3.7	Jun 22 2001
ANNUAL RUNOFF (AC-FT)	9350		11630		10000	
10 PERCENT EXCEEDS	22		29		23	
50 PERCENT EXCEEDS	6.6		9.9		8.5	
90 PERCENT EXCEEDS	4.6		6.1		5.2	

RIO GRANDE DE PATILLAS BASIN

50093000 RIO MARIN NEAR PATILLAS, PR--Continued



RIO PATILLAS BASIN

50093045 LAGO PATILLAS AT DAMSITE NEAR PATILLAS, PR

LOCATION.--Lat 18°01'15", long 66°01'19", Hydrologic Unit 21010004, on right edge, in a concrete tower at damsite, 1.05 mi (1.69 km) northeast from Patillas Plaza, 0.45 mi (0.72 km) northeast from Escuela Segunda Unidad de Real and 2.30 mi (3.70 km) from Escuela Segunda Unidad de Jesús María Rodríguez.

DRAINAGE AREA.--25.6 mi^2 (66.3 km^2).

ELEVATION RECORDS

PERIOD OF RECORD.--March 1995 to current year.

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

REMARKS.--Lago Patillas was completed in 1914. The dam is a semihydraulic earthfill structure about 147 ft (45 m) height, a top width of 15 ft (4.6 m), maximum pool elevation of 230 ft (70.1 m), a base width of 625 ft (190 m), a crest length of 1,067 ft (325 m) and has maximum pool storage of 17,073 acre-ft (21.05 hm^3). The Patillas Dam is owned by the Puerto Rico Electric Power Authority (PREPA) and its primary purpose is for irrigation of lands served by the Patillas irrigation canal. Gage-height and precipitation satellite telemetry at station. New capacity table based on U.S. Geological Survey Water-Resources Investigations Report 99-4030, April 1997.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation, 225.92 ft (68.86 m) September 10, 1996; minimum elevation, 211.19 ft (64.37 m), May 29, 1995, July 19, 1997.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximun elevation, 222.08 ft (67.69 m), December 19; minimum elevation, 215.22 ft (65.60 m), June 22.

Capacity Table
(based on data from U.S. Geological Survey Water-Resources Investigations Report 99-4030, Puerto Rico, 1997)

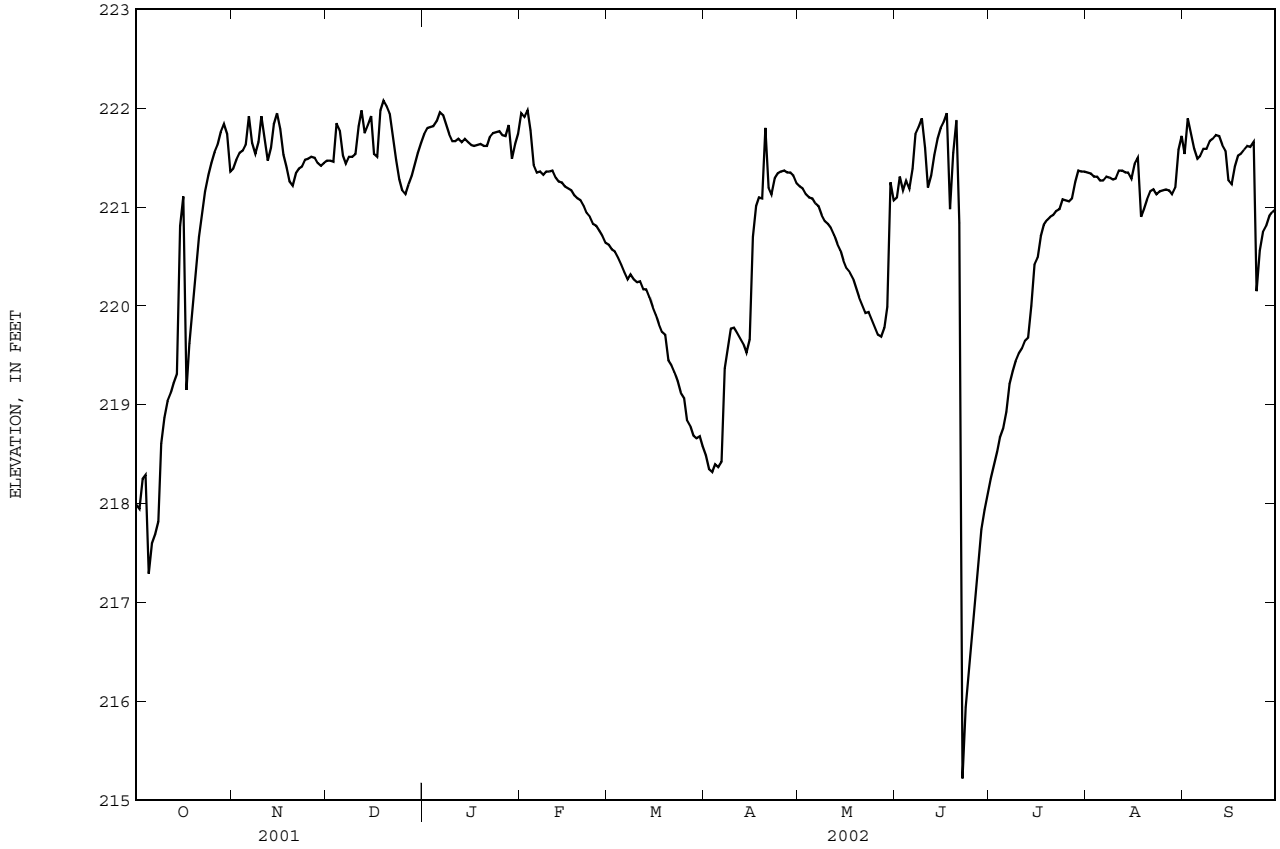
Elevation, in feet	Contents, in acre-feet	Elevation, in feet	Contents, in acre-feet
147	0	192	4,281
163	819	209	7,629
179	2,294	222	11,220

Elevation above NGVD 1929, feet
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	217.99	221.39	221.47	221.74	221.95	220.62	218.49	221.21	221.10	218.25	221.35	221.54
2	217.95	221.48	221.47	221.80	221.91	220.57	218.35	221.19	221.31	218.39	221.34	221.90
3	218.25	221.55	221.46	221.81	221.98	220.55	218.32	221.13	221.17	218.52	221.31	221.75
4	218.29	221.57	221.85	221.82	221.78	220.49	218.40	221.10	221.27	218.67	221.31	221.59
5	217.29	221.63	221.78	221.87	221.43	220.42	218.37	221.09	221.19	218.76	221.27	221.49
6	217.60	221.92	221.52	221.96	221.35	220.34	218.42	221.04	221.39	218.93	221.27	221.52
7	217.69	221.65	221.44	221.93	221.36	220.27	219.37	221.01	221.74	219.21	221.31	221.59
8	217.82	221.54	221.51	221.84	221.33	220.32	219.57	220.92	221.81	219.34	221.30	221.59
9	218.61	221.66	221.51	221.74	221.36	220.27	219.77	220.86	221.90	219.44	221.28	221.67
10	218.87	221.92	221.54	221.67	221.36	220.24	219.78	220.83	221.60	219.52	221.29	221.69
11	219.04	221.70	221.82	221.67	221.37	220.25	219.73	220.79	221.20	219.57	221.37	221.73
12	219.12	221.47	221.98	221.69	221.30	220.17	219.67	220.72	221.32	219.65	221.37	221.72
13	219.22	221.60	221.75	221.66	221.26	220.17	219.62	220.63	221.53	219.68	221.35	221.63
14	219.31	221.84	221.83	221.69	221.25	220.09	219.53	220.56	221.69	220.00	221.35	221.57
15	220.81	221.95	221.92	221.66	221.21	219.99	219.66	220.46	221.80	220.42	221.29	221.27
16	221.11	221.79	221.54	221.63	221.19	219.91	220.70	220.38	221.86	220.49	221.44	221.23
17	219.15	221.53	221.51	221.62	221.17	219.82	221.01	220.34	221.95	220.71	221.50	221.41
18	219.62	221.40	221.98	221.63	221.12	219.74	221.10	220.28	220.98	220.82	220.90	221.52
19	220.02	221.26	222.08	221.64	221.09	219.71	221.09	220.18	221.55	220.87	220.98	221.54
20	220.39	221.22	222.02	221.62	221.07	219.45	221.80	220.09	221.88	220.90	221.08	221.58
21	220.70	221.34	221.95	221.62	221.01	219.40	221.20	220.01	220.84	220.92	221.16	221.62
22	220.94	221.39	221.71	221.71	220.94	219.33	221.13	219.93	215.22	220.96	221.18	221.61
23	221.16	221.41	221.48	221.75	220.90	219.24	221.29	219.94	215.94	220.98	221.13	221.66
24	221.32	221.48	221.28	221.76	220.83	219.12	221.34	219.87	216.45	221.08	221.16	220.15
25	221.45	221.49	221.17	221.77	220.81	219.07	221.36	219.79	216.81	221.07	221.17	220.56
26	221.56	221.51	221.13	221.73	220.76	218.85	221.37	219.71	217.14	221.06	221.18	220.75
27	221.63	221.50	221.23	221.72	220.71	218.79	221.35	219.69	217.45	221.09	221.17	220.81
28	221.76	221.45	221.32	221.83	220.64	218.69	221.35	219.78	217.74	221.25	221.13	220.91
29	221.84	221.42	221.44	221.49	---	218.66	221.32	219.99	217.94	221.37	221.20	220.95
30	221.74	221.45	221.55	221.64	---	218.68	221.24	221.25	218.09	221.36	221.58	220.98
31	221.36	---	221.65	221.74	---	218.58	---	221.07	---	221.36	221.72	---
MAX	221.84	221.95	222.08	221.96	221.98	220.62	221.80	221.25	221.95	221.37	221.72	221.90
MIN	217.29	221.22	221.13	221.49	220.64	218.58	218.32	219.69	215.22	218.25	220.90	220.15

RIO PATILLAS BASIN

50093045 LAGO PATILLAS AT DAMSITE NEAR PATILLAS, PR--Continued



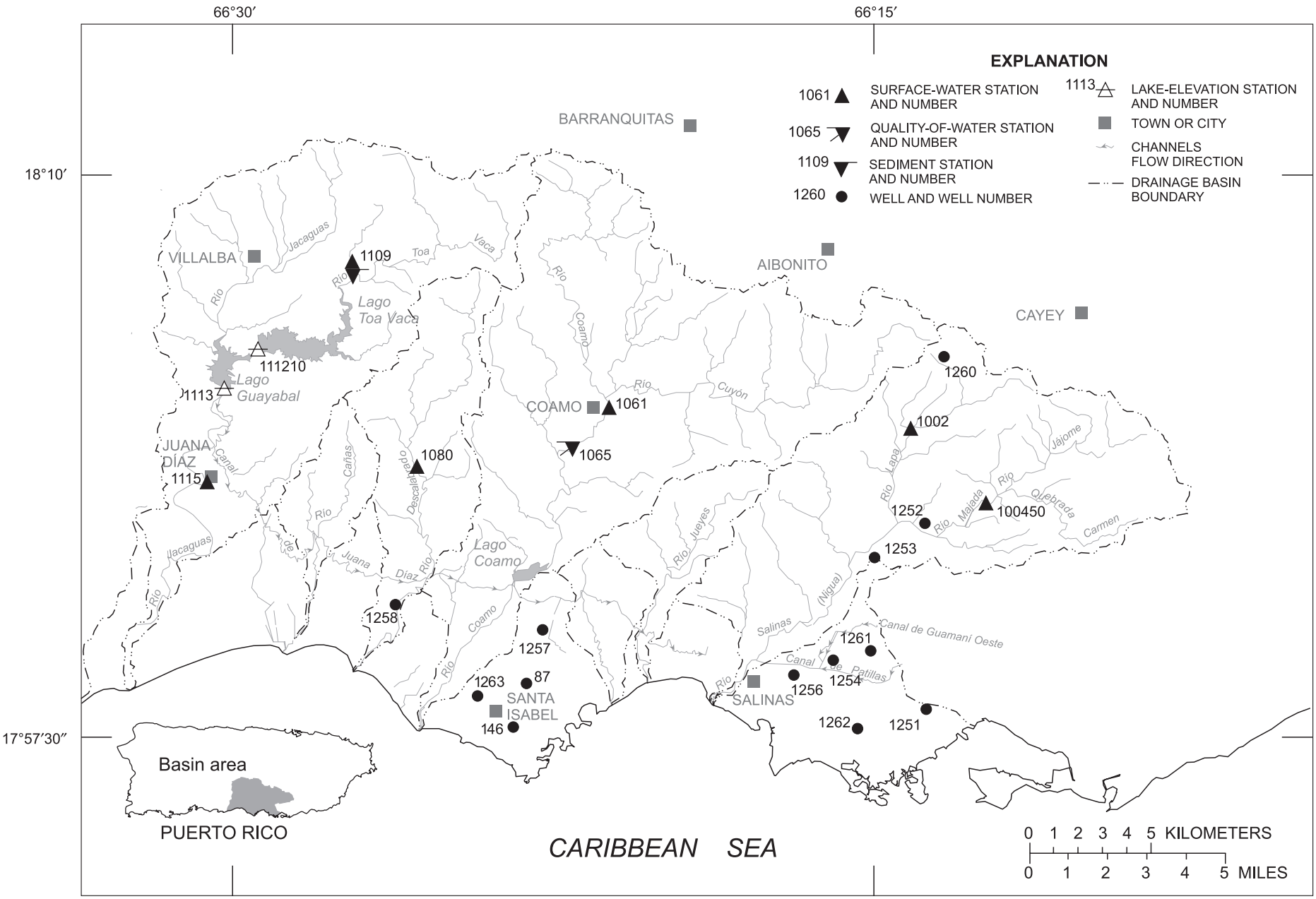


Figure 21. South coast river basins -- Río Salinas to Río Jacaguas basins.

RIO SALINAS BASIN

50100200 RIO LAPA NEAR RABO DEL BUEY, PR

LOCATION.--Lat 18°03'36", long 66°14'28", Hydrologic Unit 21010004, on left bank, at bridge on Highway 1, km 9.7, 1.5 mi (2.4 km) north of Rabo del Buey, and 4.4 mi (7.1 km) northeast of Salinas Plaza.

DRAINAGE AREA.--9.92 mi^2 (25.7 km^2).

PERIOD OF RECORD.--1953-63 (annual low-flow measurements only), September 1988 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 394 ft (120 m), from topographic map.

REMARKS.--Records poor.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	0.76	1.2	1.2	0.80	0.64	2.8	3.4	1.8	0.86	0.97	1.2
2	0.94	1.8	1.2	1.1	0.76	0.62	1.1	3.2	1.8	0.83	0.82	0.87
3	0.88	9.7	1.2	1.1	0.84	0.59	0.88	2.8	1.9	0.66	0.81	0.72
4	0.85	4.8	1.3	1.0	1.7	0.54	0.87	2.4	7.4	0.65	0.81	0.61
5	1.1	2.8	1.6	1.0	1.0	0.51	0.74	2.3	130	0.64	0.78	0.48
6	1.1	2.4	1.6	1.3	0.83	0.49	0.78	2.4	39	0.61	0.78	0.42
7	0.86	2.0	1.4	1.2	0.85	0.46	11	2.4	12	0.68	0.74	0.47
8	0.76	46	1.3	0.99	0.76	0.48	5.6	2.3	7.5	0.74	0.90	0.53
9	0.89	42	1.2	0.90	0.72	0.48	3.8	2.1	5.2	0.55	0.79	0.53
10	0.95	10	1.2	0.85	0.68	0.48	2.4	1.9	4.1	0.51	0.70	0.58
11	0.89	4.9	1.2	0.81	0.59	0.56	1.6	1.8	3.6	0.48	0.64	0.64
12	0.81	3.0	1.3	0.78	0.58	0.49	1.1	1.7	3.5	0.52	0.62	0.93
13	0.77	2.3	1.6	0.75	0.57	0.44	0.97	1.6	2.9	0.45	0.65	0.57
14	0.76	2.0	1.3	0.75	0.59	0.41	0.85	1.5	2.6	0.48	0.57	0.63
15	4.5	4.0	1.4	0.71	0.59	0.40	0.85	1.5	2.4	0.97	0.58	50
16	6.4	1.9	14	0.69	0.58	0.36	1.1	1.4	2.2	0.62	0.65	43
17	2.3	1.9	8.9	0.69	0.58	0.35	1.1	1.4	2.2	0.62	0.74	2.7
18	1.5	1.7	3.7	0.73	0.76	0.32	0.97	1.3	2.7	0.54	0.76	1.4
19	1.2	1.7	2.3	0.71	2.6	0.31	0.86	1.2	2.3	0.49	0.84	0.98
20	1.1	1.5	1.5	0.69	2.2	0.31	9.8	1.1	1.9	0.66	0.74	0.84
21	0.99	1.5	0.96	0.69	1.1	0.30	32	1.1	2.0	0.82	0.63	0.74
22	0.95	1.4	3.4	0.72	0.93	0.31	11	1.0	3.3	0.79	0.54	0.57
23	0.87	1.3	31	0.74	0.80	0.32	6.2	0.94	1.8	0.78	0.52	0.49
24	0.84	1.3	25	0.78	0.74	0.33	50	0.87	1.5	0.78	0.55	1.3
25	0.80	1.3	9.9	0.79	0.69	0.32	99	0.83	1.4	0.71	0.47	5.0
26	0.80	1.2	4.8	0.71	0.69	0.33	64	0.88	1.1	0.70	0.42	1.9
27	0.86	1.2	3.1	0.68	0.71	0.34	15	1.2	1.2	0.72	0.39	1.4
28	0.82	1.2	2.2	0.79	0.65	0.36	7.9	1.0	1.1	0.79	0.39	1.1
29	0.78	1.3	1.6	0.94	---	41	5.3	1.8	0.98	0.89	0.39	0.89
30	0.77	1.3	1.4	0.99	---	28	4.1	8.9	0.89	0.85	0.48	0.71
31	0.76	---	1.3	0.94	---	2.0	---	e2.2	---	0.77	1.4	---
TOTAL	39.00	160.16	135.06	26.72	24.89	82.85	343.67	60.42	252.27	21.16	21.07	122.20
MEAN	1.26	5.34	4.36	0.86	0.89	2.67	11.5	1.95	8.41	0.68	0.68	4.07
MAX	6.4	46	31	1.3	2.6	41	99	8.9	130	0.97	1.4	50
MIN	0.76	0.76	0.96	0.68	0.57	0.30	0.74	0.83	0.89	0.45	0.39	0.42
AC-FT	77	318	268	53	49	164	682	120	500	42	42	242
CFSM	0.13	0.54	0.44	0.09	0.09	0.27	1.15	0.20	0.85	0.07	0.07	0.41
IN.	0.15	0.60	0.51	0.10	0.09	0.31	1.29	0.23	0.95	0.08	0.08	0.46

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 2002, BY WATER YEAR (WY)

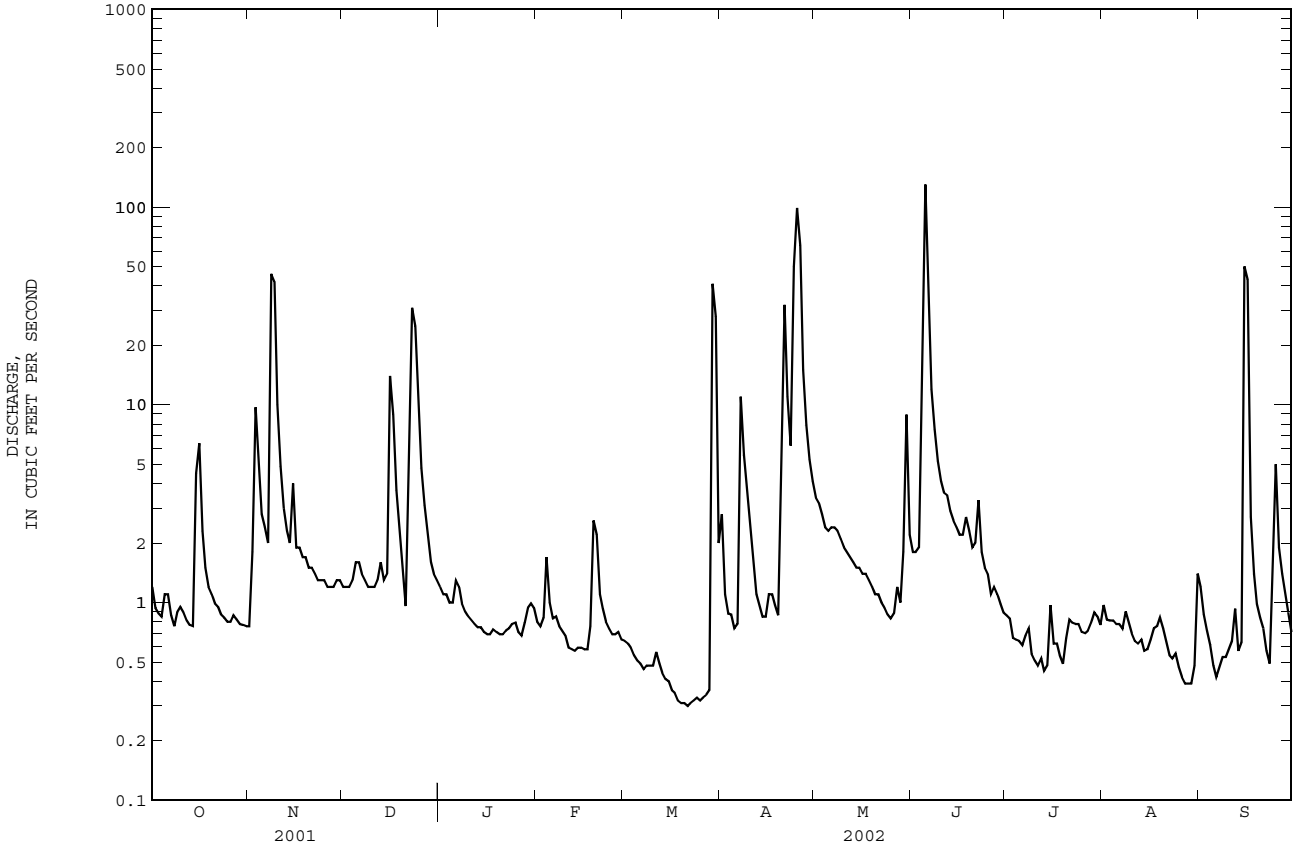
MEAN	16.1	9.49	3.86	7.08	3.24	1.36	2.15	4.33	2.50	1.50	4.49	17.9
MAX	76.1	36.4	14.4	68.8	12.4	2.67	11.5	36.6	10.4	7.80	17.9	81.2
(WY)	1991	2000	1999	1992	1991	2002	2002	1992	1993	1993	2000	1996
MIN	1.26	1.07	0.75	0.47	0.49	0.44	0.28	0.086	0.036	0.009	0.001	0.052
(WY)	2002	1994	1995	1994	1990	1990	1990	1994	1994	1994	1994	1997

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1988 - 2002	
ANNUAL TOTAL	931.76		1289.47			
ANNUAL MEAN	2.55		3.53		6.17	
HIGHEST ANNUAL MEAN					14.1	1998
LOWEST ANNUAL MEAN					0.57	1994
HIGHEST DAILY MEAN	123	Aug 22	130	Jun 5	1900	Sep 10 1996
LOWEST DAILY MEAN	0.08	Jul 16	0.30	Mar 21	0.00	Jun 24 1994
ANNUAL SEVEN-DAY MINIMUM	0.08	Jul 15	0.31	Mar 18	0.00	Jul 21 1994
MAXIMUM PEAK FLOW			600	Apr 26	18100	Sep 10 1996
MAXIMUM PEAK STAGE			8.29	Apr 26	18.65	Sep 10 1996
INSTANTANEOUS LOW FLOW			0.10	Sep 22	0.00	Jun 24 1994
ANNUAL RUNOFF (AC-FT)	1850		2560		4470	
ANNUAL RUNOFF (CFSM)	0.26		0.36		0.62	
ANNUAL RUNOFF (INCHES)	3.49		4.84		8.44	
10 PERCENT EXCEEDS	2.7		4.8		8.6	
50 PERCENT EXCEEDS	0.95		0.94		1.2	
90 PERCENT EXCEEDS	0.21		0.50		0.18	

e Estimated

RIO SALINAS BASIN

50100200 RIO LAPA NEAR RABO DEL BUEY, PR--Continued



RIO SALINAS BASIN

50100450 RIO MAJADA AT LA PLENA, PR

LOCATION.--Lat 18°02'40", long 66°12'27", Hydrologic Unit 21010004, on right bank, upstream side of bridge on Highway 712, about 0.3 mi (0.5 km) southwest of La Plena.

DRAINAGE AREA.--16.7 mi^2 (43.3 km^2).

PERIOD OF RECORD.--January 1973 to April 1979 (montly measurements only), September 1988 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 410 ft (125 m), from topographic map.

REMARKS.-Records poor. Some regulation at low flow upstream from station by local residents for agricultural purposes.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.6	1.1	1.2	0.97	1.5	0.89	1.2	2.3	2.4	1.7	0.73	3.3
2	4.1	52	1.4	0.96	e1.4	0.93	0.86	2.0	2.5	1.9	0.73	1.1
3	2.9	32	1.1	0.88	e1.4	0.83	0.74	1.8	1.5	1.8	0.62	0.63
4	3.6	9.5	1.3	0.96	e1.6	0.68	0.91	1.6	19	2.1	0.48	0.87
5	7.8	4.4	1.5	1.0	e2.5	0.65	0.83	1.7	129	2.1	0.41	0.46
6	7.9	6.3	1.4	1.6	e1.5	0.67	0.84	1.7	46	1.3	0.44	0.37
7	5.0	7.5	1.2	2.5	e1.4	0.68	39	1.5	19	2.8	0.68	0.54
8	2.0	82	0.96	1.6	e1.3	0.72	15	1.4	11	2.1	1.1	0.65
9	2.5	81	0.90	1.3	e1.3	0.98	6.1	1.2	6.9	2.2	1.2	0.52
10	1.9	22	0.88	2.5	e1.2	0.84	4.7	1.1	4.7	1.2	0.87	0.50
11	2.6	13	0.90	1.8	e1.1	0.63	3.4	1.1	3.7	1.1	0.76	0.43
12	1.9	9.4	1.7	1.2	e1.0	0.55	2.5	1.0	3.3	0.97	0.68	0.31
13	1.3	6.9	2.3	1.0	e0.86	0.53	2.0	0.97	2.5	0.82	0.82	0.30
14	1.2	5.9	1.2	1.1	e0.90	0.66	1.5	0.93	2.5	0.92	0.70	0.30
15	8.4	3.9	1.3	1.2	e0.84	0.53	1.5	0.92	2.1	5.3	0.60	6.4
16	18	4.7	9.1	1.2	0.80	0.48	2.5	0.88	1.8	1.8	0.62	27
17	10	8.6	9.6	1.1	0.76	0.45	2.9	0.87	1.6	1.1	0.94	1.8
18	4.8	4.7	2.9	1.5	0.85	0.41	2.0	0.85	3.5	1.2	0.84	0.91
19	5.3	7.7	2.5	1.5	1.6	0.40	1.6	0.77	3.4	0.73	0.90	0.73
20	4.4	3.8	1.7	1.4	2.2	e0.52	8.4	0.70	2.6	0.69	0.75	0.61
21	1.7	3.0	1.7	1.2	1.2	e0.40	24	0.69	2.3	0.75	0.52	0.55
22	1.8	1.8	2.1	1.5	0.88	0.40	11	0.61	7.0	0.49	0.38	0.53
23	2.0	1.7	4.6	2.1	0.78	0.45	6.2	0.56	3.1	0.49	0.48	0.46
24	1.7	1.5	6.9	1.7	0.71	0.43	4.0	0.52	2.4	0.55	0.51	1.6
25	1.4	1.3	3.3	1.7	0.72	0.32	4.1	0.47	2.8	0.43	0.53	9.2
26	1.4	1.2	2.1	1.5	0.81	0.28	18	0.45	4.0	0.47	0.53	3.3
27	0.97	1.0	1.4	1.3	0.99	0.30	7.3	0.93	3.0	0.56	e0.51	2.5
28	1.4	1.1	1.2	1.4	0.99	0.49	3.8	1.4	4.2	0.71	e0.38	1.3
29	1.6	1.2	1.1	2.3	---	6.7	2.9	2.9	3.7	0.85	0.37	1.0
30	1.7	1.4	1.0	1.6	---	16	2.6	16	1.8	0.74	0.49	0.94
31	1.2	---	1.0	1.3	---	5.1	---	e4.3	---	0.40	2.9	---
TOTAL	117.07	381.6	71.44	44.87	33.09	43.90	182.38	54.12	303.3	40.27	22.47	69.11
MEAN	3.78	12.7	2.30	1.45	1.18	1.42	6.08	1.75	10.1	1.30	0.72	2.30
MAX	18	82	9.6	2.5	2.5	16	39	16	129	5.3	2.9	27
MIN	0.97	1.0	0.88	0.88	0.71	0.28	0.74	0.45	1.5	0.40	0.37	0.30
AC-FT	232	757	142	89	66	87	362	107	602	80	45	137
CFSM	0.23	0.76	0.14	0.09	0.07	0.08	0.36	0.10	0.61	0.08	0.04	0.14
IN.	0.26	0.85	0.16	0.10	0.07	0.10	0.41	0.12	0.68	0.09	0.05	0.15

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 2002, BY WATER YEAR (WY)

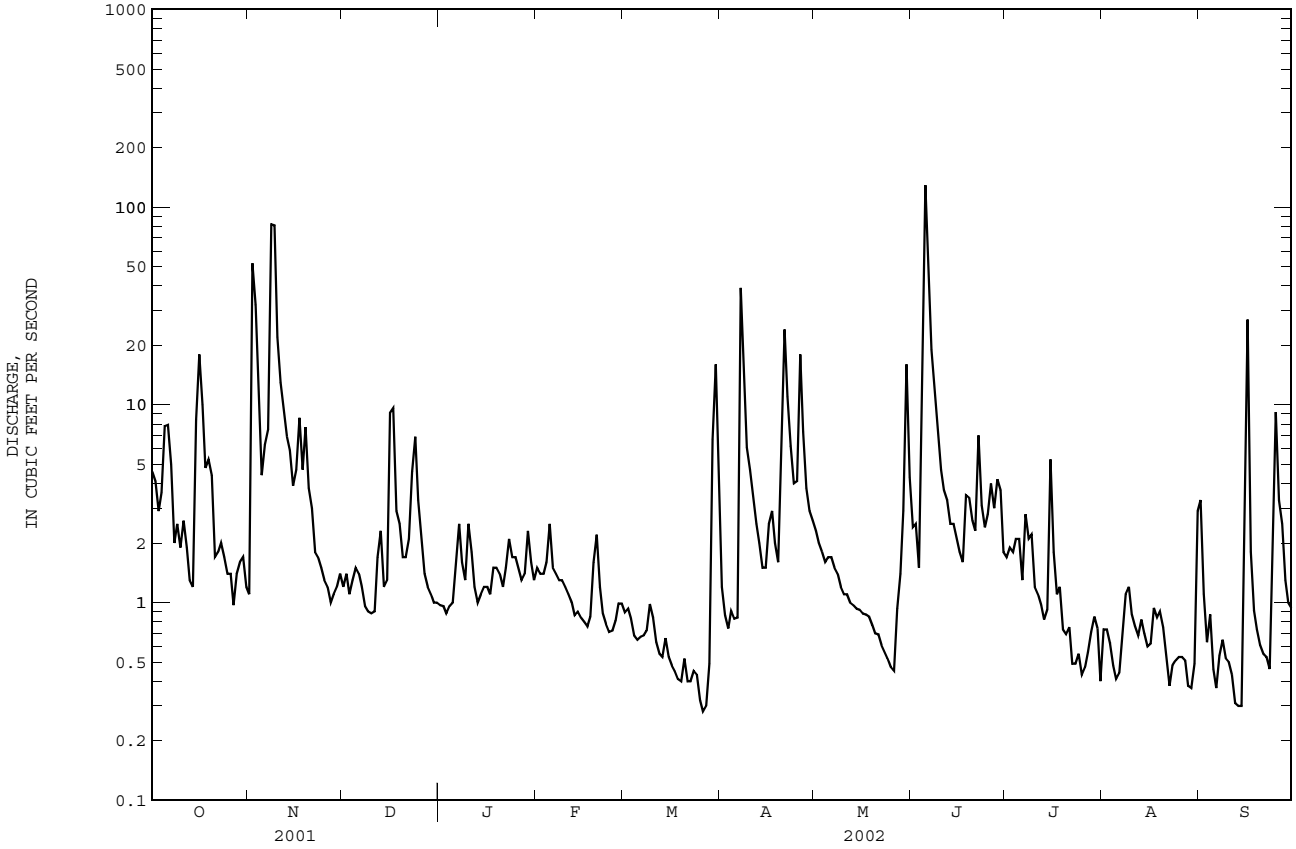
MEAN	15.9	16.0	6.22	8.75	3.62	2.29	2.45	4.73	3.56	2.79	4.64	22.9
MAX	76.4	82.8	21.4	68.8	12.1	4.42	6.19	25.5	12.1	12.9	23.4	109
(WY)	1991	2000	1999	1992	1991	1999	1998	1992	1992	1993	1998	1996
MIN	1.43	1.53	0.62	0.37	0.63	0.59	0.30	0.21	0.042	0.012	0.010	0.008
(WY)	1992	1994	1995	1995	1990	1990	1995	1994	1994	1997	1994	1997

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1973 - 2002	
ANNUAL TOTAL	1454.44		1363.62			
ANNUAL MEAN	3.98		3.74		7.82	
HIGHEST ANNUAL MEAN					18.7	1998
LOWEST ANNUAL MEAN					0.81	1994
HIGHEST DAILY MEAN	97	Aug 23	129	Jun 5	2270	Sep 10 1996
LOWEST DAILY MEAN	0.26	Aug 15	0.28	Mar 26	0.00	Oct 3 1994
ANNUAL SEVEN-DAY MINIMUM	0.31	Aug 10	0.37	Mar 21	0.00	Oct 8 1994
MAXIMUM PEAK FLOW			871	Nov 8	17700	Sep 10 1996
MAXIMUM PEAK STAGE			7.08	Nov 8	19.69	Sep 10 1996
ANNUAL RUNOFF (AC-FT)	2880		2700		5660	
ANNUAL RUNOFF (CFSM)	0.24		0.22		0.47	
ANNUAL RUNOFF (INCHES)	3.24		3.04		6.36	
10 PERCENT EXCEEDS	6.3		6.9		12	
50 PERCENT EXCEEDS	1.7		1.3		2.1	
90 PERCENT EXCEEDS	0.78		0.51		0.30	

e Estimated

RIO SALINAS BASIN

50100450 RIO MAJADA AT LA PLENA, PR--Continued



RIO COAMO BASIN

50106100 RIO COAMO AT HWY 14 AT COAMO, PR

LOCATION.--Lat 18°05'00", long 66°21'16", Hydrologic Unit 21010004, on Highway 14 bridge, 0.8 mi (1.3 km) northeast from Parque Atlético, 1.2 mi (1.9 km) southeast from (W.C.P.R.) Antena de Radio.

DRAINAGE AREA.--43.5 mi^2 (113 km^2).

PERIOD OF RECORD.--January 1987 to current year. Prior to September 2000, published as Río Coamo at Coamo, PR.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 335 ft (110 m), from topographic map.

REMARKS.--Records poor. Low flow is affected by domestic discharges about 200 ft (65.6 m), upstream from gaging station. Gage-height and precipitation satellite telemetry at station. The gage-height recovered for the instantaneous peak stage produced by Hurricane Georges was affected by backwater caused by the Highway 14 old bridge which is about 100 ft (30.40 m) downstream from gage.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.2	10	8.2	7.8	3.5	2.1	9.5	18	6.0	3.8	3.3	2.9
2	8.4	8.9	19	7.7	3.4	2.4	12	18	6.9	3.5	4.8	141
3	8.1	23	19	7.2	3.6	2.3	7.3	15	6.7	3.3	4.0	90
4	8.0	26	13	6.9	4.0	2.4	7.0	12	5.9	4.0	5.0	15
5	8.5	21	11	6.9	3.6	2.3	7.2	11	203	5.5	3.3	5.8
6	9.3	34	10	7.6	3.5	2.6	13	11	62	6.6	2.1	4.6
7	7.7	23	8.5	7.9	3.0	2.6	29	9.8	21	6.9	2.1	4.1
8	6.9	364	7.9	7.5	3.0	2.6	7.4	10	14	5.3	2.7	3.8
9	7.8	105	8.0	7.0	2.9	2.2	8.5	8.2	12	5.0	1.9	3.6
10	17	49	7.8	6.8	3.0	3.8	9.3	7.1	11	4.9	1.8	5.6
11	34	30	8.1	6.3	2.8	9.1	7.2	6.7	9.6	4.8	1.9	3.4
12	21	21	8.7	6.5	2.6	6.9	6.2	6.3	8.7	5.1	2.0	3.1
13	12	17	9.0	6.6	2.6	4.5	5.2	6.2	8.0	6.2	1.9	2.9
14	9.4	25	7.5	6.6	2.7	4.0	4.5	5.5	7.4	6.2	1.8	3.0
15	14	34	7.9	6.1	2.6	3.6	4.3	5.2	6.7	5.8	1.6	108
16	16	24	9.7	6.5	2.6	3.7	4.7	4.7	6.5	3.0	1.7	64
17	15	26	13	6.2	2.7	3.3	5.1	4.6	6.5	3.1	1.8	9.4
18	12	19	10	5.9	3.1	3.3	6.9	4.4	7.6	2.7	2.2	6.8
19	10	17	13	5.9	4.5	3.4	11	4.5	6.9	2.7	3.6	6.3
20	9.2	15	11	6.1	4.5	3.2	24	4.0	6.0	2.8	1.7	5.9
21	9.1	13	16	6.4	3.5	3.3	60	3.7	5.2	2.9	1.4	8.0
22	9.1	11	20	5.1	3.0	3.5	25	3.6	5.3	2.8	1.5	5.6
23	8.8	10	17	4.5	2.6	3.4	22	3.3	5.1	3.0	1.5	4.9
24	8.8	9.7	19	4.7	2.7	3.8	113	3.3	5.1	3.1	1.7	5.6
25	8.4	9.4	16	4.3	3.9	3.7	166	3.3	4.6	3.6	1.7	8.0
26	8.2	9.2	13	4.1	3.3	3.3	228	3.3	5.3	3.4	1.9	6.6
27	14	8.8	11	3.9	3.0	3.3	195	4.5	5.5	3.4	1.7	5.5
28	11	8.3	9.8	4.0	2.4	4.2	72	4.7	5.1	3.4	1.5	5.2
29	9.4	8.6	8.9	4.4	---	92	38	15	4.9	3.9	1.4	5.2
30	7.8	8.6	8.7	4.0	---	36	24	17	4.2	3.5	1.9	4.9
31	7.5	---	8.2	3.7	---	9.4	---	6.9	---	3.2	3.0	---
TOTAL	345.6	988.5	357.9	185.1	88.6	236.2	1132.3	240.8	472.7	127.4	70.4	548.7
MEAN	11.1	33.0	11.5	5.97	3.16	7.62	37.7	7.77	15.8	4.11	2.27	18.3
MAX	34	364	20	7.9	4.5	92	228	18	203	6.9	5.0	141
MIN	6.9	8.3	7.5	3.7	2.4	2.1	4.3	3.3	4.2	2.7	1.4	2.9
AC-FT	685	1960	710	367	176	469	2250	478	938	253	140	1090
CFSM	0.26	0.76	0.27	0.14	0.07	0.18	0.87	0.18	0.36	0.09	0.05	0.42
IN.	0.30	0.85	0.31	0.16	0.08	0.20	0.97	0.21	0.40	0.11	0.06	0.47

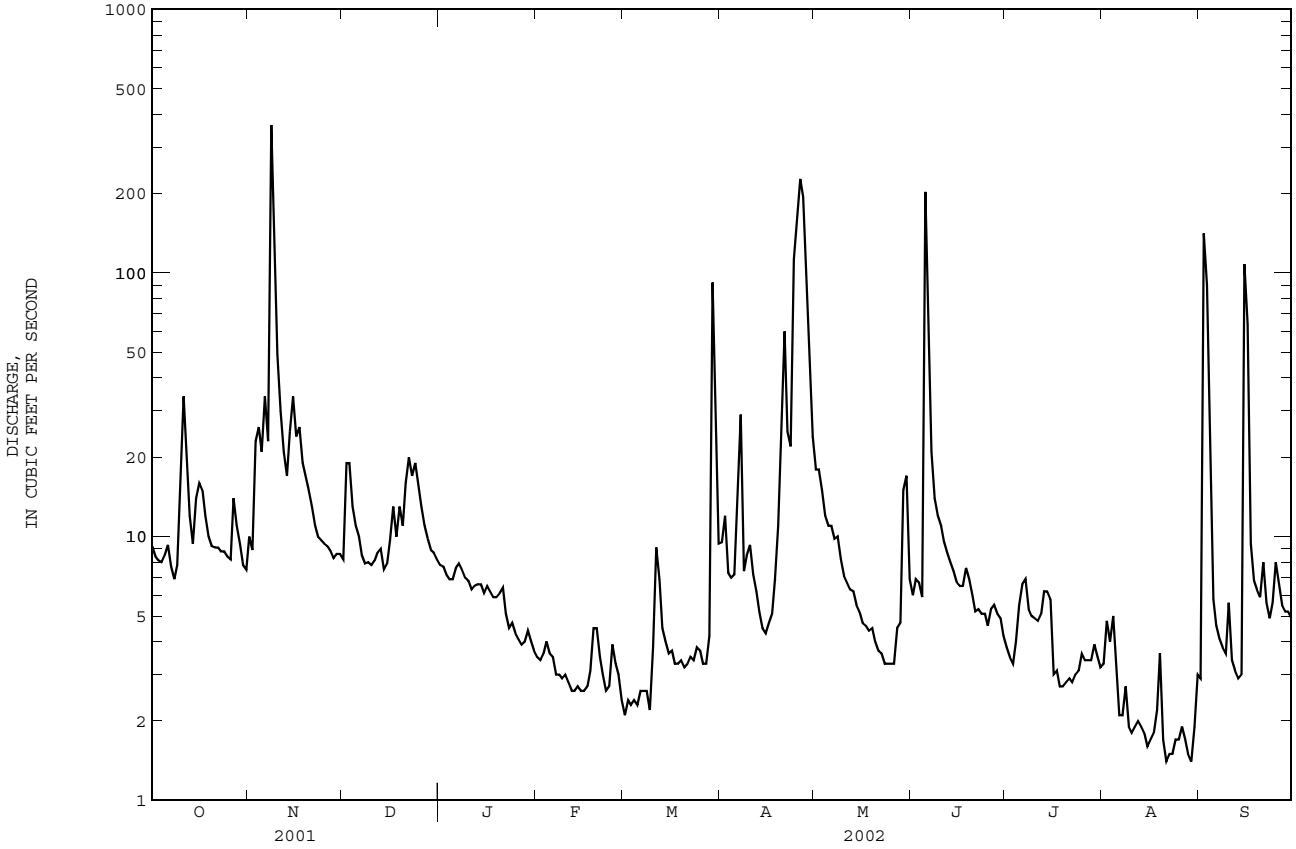
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 2002, BY WATER YEAR (WY)

MEAN	54.1	38.2	20.9	17.3	10.4	6.98	12.9	18.3	15.1	6.78	10.6	48.0
MAX	274	142	83.8	79.0	25.5	16.1	37.7	69.6	76.1	15.5	29.7	291
(WY)	1991	2000	1988	1992	1998	2000	2002	1992	1987	1988	1998	1998
MIN	10.3	4.91	3.72	2.71	3.16	3.09	2.49	1.66	1.99	0.78	1.28	1.61
(WY)	1989	1995	1989	1995	2002	1987	1995	1989	1989	1989	1994	1994

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1987 - 2002	
ANNUAL TOTAL	4799.3		4794.2			
ANNUAL MEAN	13.1		13.1		21.4	
HIGHEST ANNUAL MEAN					40.9	1998
LOWEST ANNUAL MEAN					4.52	1994
HIGHEST DAILY MEAN	364	Nov 8	364	Nov 8	4530	Sep 22 1998
LOWEST DAILY MEAN	2.8	Aug 15	1.4	Aug 21	0.67	Aug 2 1989
ANNUAL SEVEN-DAY MINIMUM	3.2	Aug 11	1.6	Aug 20	0.70	Jul 27 1989
MAXIMUM PEAK FLOW			1920	Mar 29	52700	Sep 21 1998
MAXIMUM PEAK STAGE			8.87	Mar 29	25.94	Sep 21 1998
ANNUAL RUNOFF (AC-FT)	9520		9510		15530	
ANNUAL RUNOFF (CFSM)	0.30		0.30		0.49	
ANNUAL RUNOFF (INCHES)	4.10		4.10		6.70	
10 PERCENT EXCEEDS	20		21		43	
50 PERCENT EXCEEDS	8.0		6.2		7.6	
90 PERCENT EXCEEDS	4.6		2.6		2.4	

RIO COAMO BASIN

50106100 RIO COAMO AT HWY 14 AT COAMO, PR--Continued



RIO COAMO BASIN

50106500 RIO COAMO NEAR COAMO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°03'52", long 66°22'10", Hydrologic Unit 21010004, on Highway 153 bridge, 0.4 mi (0.6 km) above Río de la Mina, and 1.8 mi (2.9 km) south of Coamo Plaza.

DRAINAGE AREA.--46.0 mi^2 (119.1 km^2).

PERIOD OF RECORD.--Water years 1978 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
DEC													
05...	1245	16	536	8.1	29.0	2.9	8.5	110	<10	E54	E54	190	51.2
FEB													
27...	1135	4.7	616	8.2	25.5	1.4	10.8	133	<10	E173	E80	--	--
MAY													
24...	1100	5.7	601	8.0	31.2	2.2	8.8	119	<10	E73	E164	230	60.0

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
DEC													
05...	16.1	27.9	.9	1.94	179	<1.0	25.9	30.1	.1	29.1	290	12.2	<10
FEB													
27...	--	--	--	--	220	--	--	--	--	--	--	--	<10
MAY													
24...	18.4	31.6	.9	1.81	206	<.1	31.1	36.7	.2	30.6	334	5.17	<10

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
DEC													
05...	<.01	1.90	.03	<.20	E.12	E1	27.1	60	<.1	<.8	<10	100	<1
FEB													
27...	<.01	1.70	<.01	<.20	.11	--	--	--	--	--	--	--	--
MAY													
24...	<.01	1.50	.02	<.20	.11	<2	32.2	70	<.1	<.8	M	30	<1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
DEC								
05...	5.9	<.01	<2	<.3	<20	<.01	<16	<.05
FEB								
27...	--	--	--	--	--	--	--	--
MAY								
24...	4.1	<.01	<2	<.3	<20	<.01	<17	<.05

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

RIO DESCALABRADO BASIN

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 Díaz.

DRAINAGE AREA.--12.9 mi^2 (33.4 km^2).

PERIOD OF RECORD.--1959-65 (annual low-flow measurements only), 1965 (annual maximum discharge), January 1966 to June 1969, July to December 1969 (maximum discharge only), February 1984 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 220 ft (67 m), from topographic map.

REMARKS.--Records poor. Some regulation at low flow by local resident upstream from station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e2.7	e1.3	3.0	e17	0.43	0.85	2.0	1.6	4.6	1.3	e0.85	4.5
2	e2.5	e1.2	3.6	17	0.41	0.88	2.8	8.6	13	1.6	e0.66	12
3	e5.0	e1.1	16	6.4	0.53	0.79	2.7	5.1	7.2	2.5	e0.61	3.8
4	e3.0	e1.0	5.1	6.7	e0.43	0.81	2.8	1.9	11	1.6	e6.6	1.0
5	e2.0	e0.95	2.9	3.8	0.37	0.82	1.6	2.0	211	2.0	3.7	0.62
6	e1.7	e4.0	2.5	4.1	0.40	0.69	30	1.5	24	5.1	e1.0	0.57
7	e1.5	e10	2.1	3.0	0.40	0.68	55	1.4	10	3.9	e0.95	0.69
8	e1.3	e100	2.7	1.6	e0.43	0.75	5.6	1.6	9.3	2.7	e0.90	e0.43
9	e5.00	e20	1.5	1.1	e0.46	1.0	2.0	1.5	6.4	2.5	e2.0	e0.38
10	e20	e10	1.9	0.90	0.51	1.5	1.3	2.2	5.6	4.5	e4.6	e0.35
11	e7.0	e6.0	3.1	0.76	0.57	33	0.70	1.9	5.8	2.7	e1.8	e1.1
12	e2.5	e5.0	2.5	0.66	0.55	4.2	0.72	1.8	4.3	1.3	e0.95	e0.50
13	e2.2	e8.0	0.78	e0.66	0.28	1.1	0.72	2.1	3.8	2.2	e0.70	e0.31
14	e2.0	e30	0.69	0.55	0.39	2.6	0.66	1.5	3.2	2.5	e0.52	e0.30
15	e2.1	e10	0.77	0.52	0.32	2.5	0.69	2.0	3.4	2.9	0.39	49
16	e2.5	e3.8	2.3	0.53	0.34	0.85	2.0	1.5	3.0	2.0	0.52	35
17	e2.2	3.2	2.8	e0.64	0.37	1.5	1.1	1.4	2.9	1.9	0.47	0.91
18	e2.1	2.9	e1.8	0.72	0.42	0.84	0.80	1.1	3.1	1.8	e0.41	0.54
19	e2.0	2.4	e2.0	0.68	0.75	0.42	0.58	1.3	2.5	1.7	1.3	0.44
20	e1.9	2.2	e1.7	0.71	0.59	0.70	31	1.4	2.1	2.4	0.66	0.44
21	e2.0	2.0	e25	0.56	0.48	0.57	16	1.3	3.0	1.7	0.50	0.46
22	e1.8	2.0	e43	0.86	0.51	0.73	3.2	0.76	3.5	1.1	0.46	0.88
23	e1.6	2.2	e6.7	1.0	0.55	0.67	9.7	0.73	3.4	1.4	0.39	0.66
24	e1.4	2.0	e9.0	0.83	0.61	0.82	51	0.82	2.8	e1.6	0.63	1.6
25	e1.5	2.1	5.6	1.2	0.72	0.75	21	0.52	2.3	e1.7	0.42	0.73
26	e1.2	2.0	7.2	0.91	0.77	0.72	10	0.94	1.7	e1.1	0.39	0.53
27	e2.5	1.8	e6.5	1.0	0.83	0.84	15	0.89	2.7	e2.0	0.57	0.68
28	e2.4	2.7	e4.6	1.0	0.80	2.9	3.7	1.2	3.0	e1.6	0.39	0.53
29	e2.0	2.5	15	3.1	---	21	2.6	10	2.2	e1.3	0.63	0.51
30	e1.7	2.1	e17	1.2	---	48	1.8	18	1.6	e1.1	0.48	0.41
31	e1.5	---	e28	0.63	---	4.7	---	3.3	---	e1.0	0.97	---
TOTAL	90.80	244.45	227.34	80.32	14.22	138.18	278.77	81.86	362.4	64.7	35.42	119.87
MEAN	2.93	8.15	7.33	2.59	0.51	4.46	9.29	2.64	12.1	2.09	1.14	4.00
MAX	20	100	43	17	0.83	48	55	18	211	5.1	6.6	49
MIN	1.2	0.95	0.69	0.52	0.28	0.42	0.58	0.52	1.6	1.0	0.39	0.30
AC-FT	180	485	451	159	28	274	553	162	719	128	70	238
CFSM	0.23	0.63	0.57	0.20	0.04	0.35	0.72	0.20	0.94	0.16	0.09	0.31
IN.	0.26	0.70	0.66	0.23	0.04	0.40	0.80	0.24	1.05	0.19	0.10	0.35

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2002, BY WATER YEAR (WY)

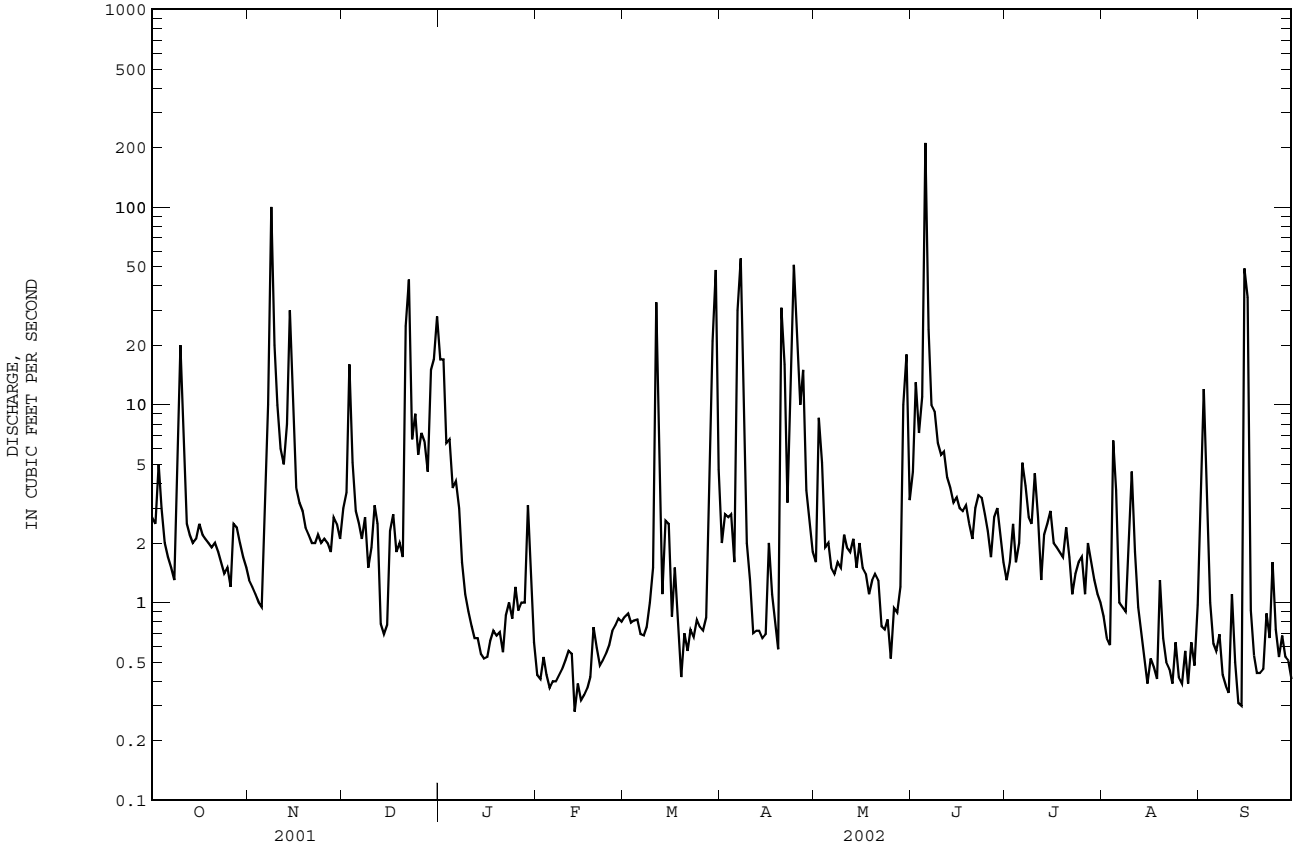
MEAN	26.2	15.6	5.79	4.63	3.38	2.03	5.01	12.9	4.85	2.38	3.87	34.2
MAX	117	41.0	24.5	36.4	23.9	8.93	20.5	62.2	25.2	10.5	13.1	395
(WY)	1986	1985	1988	1992	1995	1996	1999	1985	1987	1991	1996	1996
MIN	2.02	1.04	0.19	0.057	0.020	0.012	0.000	0.032	0.000	0.000	0.19	0.063
(WY)	1968	1995	1968	1968	1968	1968	1968	1968	1967	1967	1990	1967

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1966 - 2002		
ANNUAL TOTAL	1079.13		1738.33				
ANNUAL MEAN	2.96		4.76		10.5		
HIGHEST ANNUAL MEAN					41.7		1996
LOWEST ANNUAL MEAN					1.69		1994
HIGHEST DAILY MEAN	100	Nov 8	211	Jun 5	10000	Sep 10	1996
LOWEST DAILY MEAN	0.61	Aug 14	0.28	Feb 13	0.00	Jun 22	1966
ANNUAL SEVEN-DAY MINIMUM	0.69	Jun 8	0.38	Feb 12	0.00	Jun 22	1966
MAXIMUM PEAK FLOW			1090	Jun 5	30000	Oct 7	1985
MAXIMUM PEAK STAGE			6.98	Jun 5	24.37	Oct 7	1985
INSTANTANEOUS LOW FLOW					0.00	Jun 22	1966
ANNUAL RUNOFF (AC-FT)	2140		3450		7600		
ANNUAL RUNOFF (CFSM)	0.23		0.37		0.81		
ANNUAL RUNOFF (INCHES)	3.11		5.01		11.05		
10 PERCENT EXCEEDS	5.3		9.8		17		
50 PERCENT EXCEEDS	1.4		1.6		1.8		
90 PERCENT EXCEEDS	0.76		0.51		0.14		

e Estimated

RIO DESCALABRADO BASIN

50108000 RIO DESCALABRADO NEAR LOS LLANOS, PR--Continued



RIO JACAGUAS BASIN

50110900 RIO TOA VACA ABOVE LAGO TOA VACA, PR

LOCATION.--Lat 18°07'37", long 66°27'24", Hydrologic Unit 21010004, on right bank, off a dirt road about 0.3 mi (0.5 km) from Road 553, 2.4 mi (3.9 km) southeast from Villalba Plaza, and 0.2 mi (0.3 km) downstream from confluence with Quebrada Limón.

DRAINAGE AREA.--14.2 mi^2 (36.8 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1989 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 525 ft (160 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	6.0	8.3	6.5	5.1	3.7	13	e22	32	e6.4	e4.0	e9.0
2	11	9.8	126	6.1	5.1	3.5	8.9	e30	45	e6.1	e4.7	e37
3	18	14	47	6.2	5.6	3.5	6.0	e20	48	e5.9	e3.8	e23
4	14	16	29	6.0	6.1	3.4	5.2	e16	53	e5.6	e5.7	e14
5	13	25	e21	6.0	5.8	3.2	23	e13	156	e5.5	e5.4	e8.5
6	12	26	e15	6.6	5.3	3.2	31	e11	70	e7.4	e4.3	e7.1
7	10	17	e13	6.1	5.0	3.1	16	e11	37	e7.1	e4.5	e5.8
8	9.2	194	e13	5.8	4.7	3.2	e14	e10	27	e5.7	e4.9	e6.4
9	9.6	82	e12	5.6	4.3	3.2	e14	e11	e22	e5.5	e4.2	e6.1
10	102	32	e8.9	5.3	4.5	4.4	e12	e9.9	e20	e5.7	e5.3	e6.6
11	e32	20	e10	5.1	4.2	27	e8.8	e9.4	e18	e5.6	e6.9	e5.4
12	e22	16	e11	5.0	4.0	11	e7.6	e9.1	e17	e7.2	e6.5	e6.0
13	e15	13	e10	5.0	3.9	4.9	e6.3	e8.6	e14	e6.7	e4.9	e5.2
14	e13	39	e10	4.9	3.8	4.0	e4.9	e8.0	e13	e5.7	e4.4	e5.5
15	e13	22	e9.9	4.7	3.9	3.6	e4.9	7.9	e12	e6.9	e4.5	e14
16	e15	28	e12	4.6	3.8	4.3	e6.0	7.7	e12	e5.1	e4.6	e21
17	e14	27	e12	4.5	3.8	3.4	e4.4	7.5	e11	e5.1	e4.6	e9.4
18	e13	25	e11	4.4	3.9	3.0	e6.5	7.3	e11	e4.6	e5.1	e7.1
19	e12	22	e13	4.4	12	3.0	e10	7.1	e10	e4.7	e5.7	e7.4
20	e8.9	16	e13	4.5	9.1	2.9	e40	6.8	e9.7	e4.2	e5.3	e7.6
21	e9.4	14	e86	4.3	5.2	2.8	e57	6.7	e9.6	e4.0	e5.1	e11
22	e9.2	12	37	4.3	4.4	2.7	e22	6.6	e9.0	e4.0	e4.6	e7.6
23	e7.6	11	21	4.4	4.1	2.7	e41	6.7	e8.8	e4.1	e7.5	e6.8
24	e7.2	10	18	4.8	4.0	2.7	50	6.4	e8.4	e3.9	e7.6	e9.9
25	e7.5	9.5	15	4.8	3.9	2.6	191	5.9	e7.9	e3.7	e6.1	e14
26	e5.5	9.2	11	4.8	3.8	2.6	319	5.7	e7.6	e3.6	e5.7	e11
27	e10	8.6	9.8	4.6	3.8	2.5	84	6.4	e7.7	e3.6	e5.5	e8.9
28	e10	8.5	8.8	4.6	3.8	2.8	e46	6.6	e7.6	e3.9	e4.9	e11
29	e8.4	9.2	7.8	5.0	---	111	e30	12	e7.2	e4.1	e4.9	e11
30	6.8	8.8	7.3	4.8	---	29	e26	23	e6.6	e3.8	e5.7	e8.0
31	5.6	---	6.8	5.1	---	14	---	15	---	e3.7	e8.2	---
TOTAL	455.9	750.6	633.6	158.8	136.9	276.9	1108.5	334.3	718.1	159.1	165.1	311.3
MEAN	14.7	25.0	20.4	5.12	4.89	8.93	37.0	10.8	23.9	5.13	5.33	10.4
MAX	102	194	126	6.6	12	111	319	30	156	7.4	8.2	37
MIN	5.5	6.0	6.8	4.3	3.8	2.5	4.4	5.7	6.6	3.6	3.8	5.2
AC-FT	904	1490	1260	315	272	549	2200	663	1420	316	327	617
CFSM	1.04	1.76	1.44	0.36	0.34	0.63	2.60	0.76	1.69	0.36	0.38	0.73
IN.	1.19	1.97	1.66	0.42	0.36	0.73	2.90	0.88	1.88	0.42	0.43	0.82

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2002, BY WATER YEAR (WY)

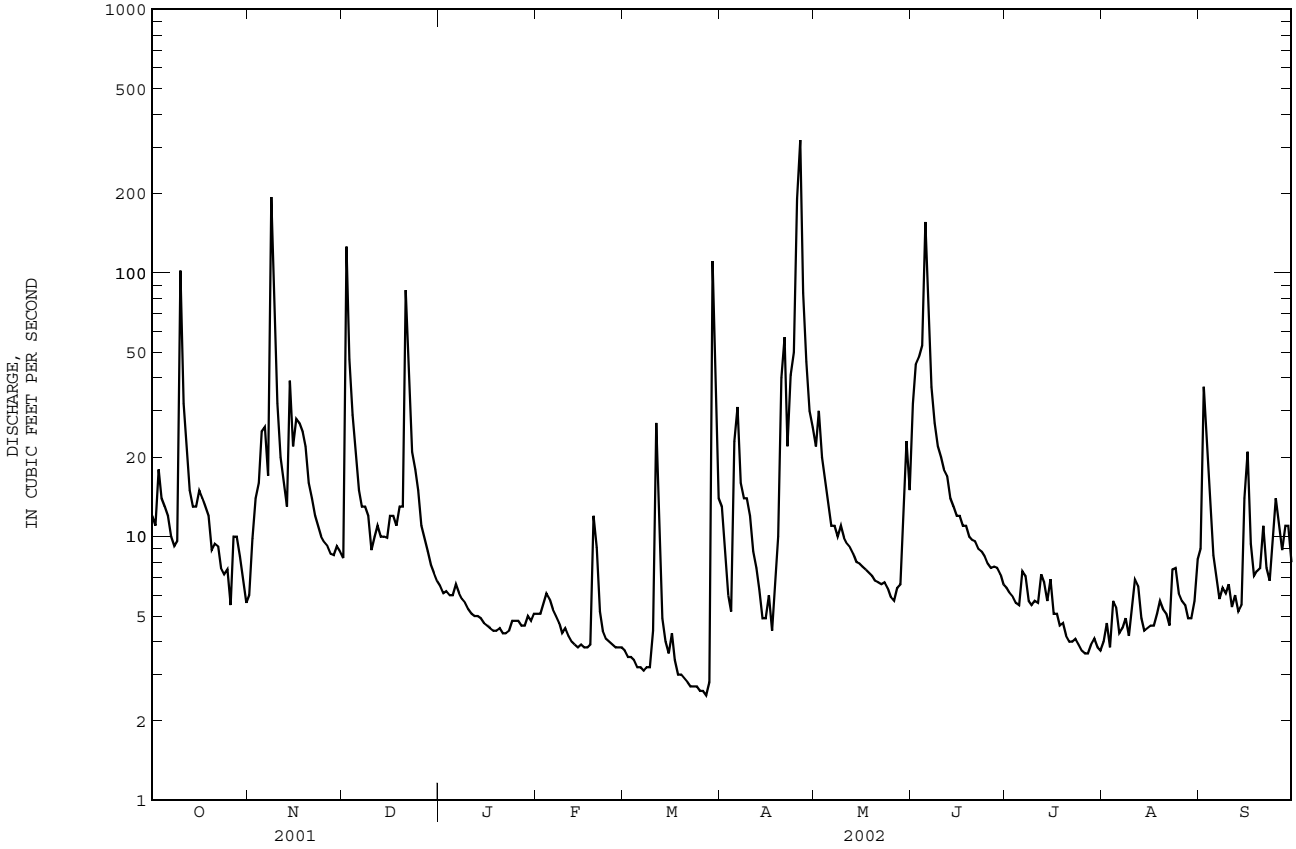
MEAN	39.5	21.5	9.07	8.37	5.36	4.19	11.1	19.7	12.8	6.13	9.17	40.3
MAX	109	55.7	20.4	43.1	12.6	8.93	37.0	76.1	35.4	14.4	36.4	152
(WY)	1991	2000	2002	1992	1996	2002	2002	1995	1992	1992	1998	1998
MIN	4.61	2.19	1.42	1.79	2.37	1.67	1.46	1.42	1.23	0.71	2.74	3.21
(WY)	1992	1992	1992	1995	1990	1990	1990	1997	1990	1990	1990	1994

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1989 - 2002	
ANNUAL TOTAL	3999.6		5209.1			
ANNUAL MEAN	11.0		14.3		15.7	
HIGHEST ANNUAL MEAN					29.3	1998
LOWEST ANNUAL MEAN					4.02	1994
HIGHEST DAILY MEAN	194	Nov 8	319	Apr 26	2050	Sep 10 1996
LOWEST DAILY MEAN	1.4	Aug 14	2.5	Mar 27	0.45	Aug 7 1990
ANNUAL SEVEN-DAY MINIMUM	1.7	Aug 10	2.7	Mar 21	0.61	Jul 9 1990
MAXIMUM PEAK FLOW			5770	Apr 26	3000	Sep 21 1998
MAXIMUM PEAK STAGE			11.25	Apr 26	20.60	Sep 21 1998
INSTANTANEOUS LOW FLOW					0.42	Jul 14 1997
ANNUAL RUNOFF (AC-FT)	7930		10330		11400	
ANNUAL RUNOFF (CFSM)	0.77		1.01		1.11	
ANNUAL RUNOFF (INCHES)	10.48		13.65		15.06	
10 PERCENT EXCEEDS	24		26		34	
50 PERCENT EXCEEDS	4.9		7.5		5.4	
90 PERCENT EXCEEDS	2.2		3.9		1.7	

e Estimated

RIO JACAGUAS BASIN

50110900 RIO TOA VACA ABOVE LAGO TOA VACA, PR--Continued



RIO JACAGUAS BASIN

50110900 RIO TOA VACA ABOVE LAGO TOA VACA, PR--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: April 1988 to current year.

INSTRUMENTATION.--USDH-48 and automatic sediment samplers since 1988.

REMARKS.--Sediment samples were collected by a local observer on a weekly basis. During high flow events sediment samples were collected with automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 11,800 mg/L September 22, 1998; Minimum daily mean, 1 mg/L several days during several years.

SEDIMENT LOADS: Maximum daily mean, e93,300 tons (e84,600 tonnes) September 22, 1998; Minimum daily mean, <0.01 ton (<0.01 tonne) several years.

EXTREMES FOR CURRENT YEAR 2002.--
SEDIMENT CONCENTRATION: Maximum daily mean, 1,500 mg/L April 26, 2002; Minimum daily mean, 1 mg/L several days.

SEDIMENT LOADS: Maximum daily mean, 6,190 tons (5,616 tonnes) April 26, 2002; Minimum daily mean, 0.02 ton (0.02 tonne) several days.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	OCTOBER			NOVEMBER			DECEMBER		
1	12	20	0.67	6.0	29	0.46	8.3	10	0.22
2	11	10	0.28	9.8	40	1.6	126	508	1050
3	18	35	3.3	14	19	0.90	47	145	21
4	14	19	0.73	16	37	3.1	29	83	6.7
5	13	16	0.56	25	66	8.1	e21	e45	e2.6
6	12	12	0.40	26	61	4.4	e15	e13	e0.53
7	10	8	0.21	17	43	2.0	e13	e6	e0.22
8	9.2	8	0.19	194	638	421	e13	e9	e0.33
9	9.6	7	0.19	82	52	15	e12	e12	e0.37
10	102	469	629	32	14	1.3	e8.9	e15	e0.35
11	e32	e96	e8.9	20	8	0.42	e10	e17	e0.46
12	e22	e55	e3.2	16	5	0.20	e11	e11	e0.32
13	e15	e53	e2.2	13	2	0.06	e10	e3	e0.09
14	e13	e53	e1.8	39	125	41	e10	e3	e0.08
15	e13	e52	e1.8	22	78	4.7	e9.9	e4	e0.11
16	e15	e52	e2.1	28	70	12	e12	e7	e0.23
17	e14	e52	e2.0	27	63	4.9	e12	e16	e0.51
18	e13	e52	e1.8	25	61	5.9	e11	e24	e0.69
19	e12	e51	e1.7	22	57	3.5	e13	e32	e1.1
20	e8.9	e51	e1.2	16	20	0.89	e13	e38	e1.4
21	e9.4	e43	e1.1	14	14	0.50	e86	e492	e473
22	e9.2	e33	e0.82	12	14	0.45	37	49	6.5
23	e7.6	e23	e0.47	11	15	0.43	21	2	0.10
24	e7.2	e13	e0.25	10	13	0.35	18	2	0.08
25	e7.5	e4	e0.08	9.5	11	0.28	15	1	0.05
26	e5.5	e3	e0.04	9.2	9	0.22	11	1	0.03
27	e10	e15	e0.60	8.6	8	0.18	9.8	1	0.03
28	e10	e30	e0.81	8.5	23	0.52	8.8	2	0.04
29	e8.4	e40	e0.90	9.2	43	1.1	7.8	5	0.11
30	6.8	46	0.84	8.8	40	0.97	7.3	8	0.16
31	5.6	37	0.56	---	---	---	6.8	7	0.13
TOTAL	455.9	---	668.70	750.6	---	536.43	633.6	---	1567.54

RIO JACAGUAS BASIN

50110900 RIO TOA VACA ABOVE LAGO TOA VACA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	6.5	6	0.11	5.1	24	0.33	3.7	15	0.15
2	6.1	6	0.09	5.1	25	0.34	3.5	15	0.15
3	6.2	5	0.08	5.6	26	0.39	3.5	15	0.14
4	6.0	4	0.06	6.1	27	0.44	3.4	15	0.13
5	6.0	3	0.05	5.8	28	0.44	3.2	14	0.12
6	6.6	5	0.08	5.3	26	0.38	3.2	12	0.11
7	6.1	7	0.11	5.0	24	0.32	3.1	10	0.09
8	5.8	8	0.13	4.7	22	0.28	3.2	8	0.07
9	5.6	8	0.12	4.3	20	0.23	3.2	7	0.06
10	5.3	7	0.10	4.5	17	0.21	4.4	7	0.14
11	5.1	6	0.08	4.2	15	0.17	27	90	20
12	5.0	5	0.06	4.0	13	0.14	11	21	0.80
13	5.0	3	0.05	3.9	6	0.06	4.9	7	0.10
14	4.9	2	0.03	3.8	8	0.08	4.0	3	0.03
15	4.7	1	0.02	3.9	12	0.12	3.6	2	0.02
16	4.6	4	0.05	3.8	12	0.12	4.3	4	0.07
17	4.5	7	0.09	3.8	10	0.10	3.4	3	0.03
18	4.4	9	0.11	3.9	8	0.09	3.0	3	0.02
19	4.4	11	0.14	12	6	0.20	3.0	3	0.02
20	4.5	13	0.16	9.1	5	0.14	2.9	3	0.02
21	4.3	15	0.18	5.2	5	0.07	2.8	3	0.02
22	4.3	17	0.20	4.4	4	0.05	2.7	3	0.02
23	4.4	11	0.14	4.1	6	0.07	2.7	3	0.02
24	4.8	3	0.03	4.0	9	0.10	2.7	3	0.02
25	4.8	5	0.06	3.9	12	0.13	2.6	3	0.02
26	4.8	8	0.11	3.8	15	0.16	2.6	2	0.02
27	4.6	12	0.15	3.8	16	0.16	2.5	2	0.02
28	4.6	16	0.20	3.8	16	0.16	2.8	2	0.02
29	5.0	20	0.27	---	---	---	111	677	1060
30	4.8	16	0.21	---	---	---	29	100	13
31	5.1	15	0.21	---	---	---	14	28	1.4
TOTAL	158.8	---	3.48	136.9	---	5.48	276.9	---	1096.83

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	13	26	0.93	e22	e49	e2.9	32	250	106
2	8.9	14	0.36	e30	e86	e12	45	221	66
3	6.0	11	0.18	e20	e39	e2.1	48	162	39
4	5.2	8	0.12	e16	e34	e1.5	53	135	30
5	23	84	25	e13	e32	e1.1	156	580	336
6	31	82	8.1	e11	e30	e0.90	70	231	47
7	16	29	1.3	e11	e27	e0.78	37	76	8.2
8	e14	e26	e1.0	e10	e25	e0.72	27	9	0.64
9	e14	e30	e1.1	e11	e23	e0.69	e22	e6	e0.38
10	e12	e22	e0.71	e9.9	e21	e0.56	e20	e4	e0.24
11	e8.8	e14	e0.33	e9.4	e19	e0.47	e18	e3	e0.16
12	e7.6	e8	e0.16	e9.1	e16	e0.40	e17	e3	e0.14
13	e6.3	e7	e0.13	e8.6	e14	e0.33	e14	e3	e0.11
14	e4.9	e7	e0.09	e8.0	e12	e0.26	e13	e3	e0.11
15	e4.9	e6	e0.09	7.9	11	0.23	e12	e3	e0.10
16	e6.0	e6	e0.10	7.7	9	0.20	e12	e3	e0.10
17	e4.4	e6	e0.07	7.5	9	0.18	e11	e4	e0.11
18	e6.5	e10	e0.30	7.3	14	0.27	e11	e4	e0.13
19	e10	e19	e0.57	7.1	20	0.38	e10	e5	e0.13
20	e40	e156	e43	6.8	26	0.48	e9.7	e5	e0.13
21	e57	e187	e37	6.7	33	0.59	e9.6	e4	e0.09
22	e22	e49	e3.2	6.6	36	0.64	e9.0	e2	e0.06
23	e41	e143	e38	6.7	37	0.68	e8.8	e3	e0.07
24	50	163	31	6.4	36	0.61	e8.4	e4	e0.10
25	191	935	2630	5.9	33	0.53	e7.9	e6	e0.12
26	319	1500	6190	5.7	31	0.47	e7.6	e7	e0.14
27	84	557	132	6.4	28	0.49	e7.7	e6	e0.12
28	e46	e211	e27	6.6	25	0.45	e7.6	e5	e0.10
29	e30	e76	e6.3	12	40	3.2	e7.2	e5	e0.09
30	e26	e63	e4.4	23	51	4.8	e6.6	e5	e0.08
31	---	---	---	15	28	1.3	---	---	---
TOTAL	1108.5	---	9182.54	334.3	---	40.21	718.1	---	635.65

RIO JACAGUAS BASIN

50110900 RIO TOA VACA ABOVE LAGO TOA VACA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	e6.4	e4	e0.07	e4.0	e4	e0.05	e9.0	e5	e0.11
2	e6.1	e4	e0.07	e4.7	e6	e0.07	e37	e160	e50
3	e5.9	e4	e0.06	e3.8	e5	e0.05	e23	e57	e4.7
4	e5.6	e3	e0.05	e5.7	e5	e0.07	e14	e17	e0.74
5	e5.5	e3	e0.05	e5.4	e4	e0.06	e8.5	e9	e0.21
6	e7.4	e5	e0.10	e4.3	e3	e0.04	e7.1	e7	e0.13
7	e7.1	e7	e0.13	e4.5	e3	e0.04	e5.8	e4	e0.07
8	e5.7	e9	e0.13	e4.9	e3	e0.04	e6.4	e4	e0.07
9	e5.5	e9	e0.13	e4.2	e3	e0.03	e6.1	e5	e0.08
10	e5.7	e8	e0.12	e5.3	e3	e0.04	e6.6	e5	e0.09
11	e5.6	e8	e0.11	e6.9	e6	e0.15	e5.4	e3	e0.05
12	e7.2	e7	e0.14	e6.5	e1	e0.03	e6.0	e1	e0.02
13	e6.7	e7	e0.13	e4.9	e2	e0.02	e5.2	e1	e0.02
14	e5.7	e8	e0.12	e4.4	e2	e0.03	e5.5	e2	e0.02
15	e6.9	e8	e0.16	e4.5	e3	e0.03	e14	e33	e5.5
16	e5.1	e9	e0.13	e4.6	e3	e0.04	e21	e43	e3.4
17	e5.1	e11	e0.15	e4.6	e3	e0.03	e9.4	e3	e0.07
18	e4.6	e12	e0.16	e5.1	e3	e0.04	e7.1	e2	e0.04
19	e4.7	e11	e0.14	e5.7	e3	e0.04	e7.4	e2	e0.04
20	e4.2	e9	e0.11	e5.3	e2	e0.03	e7.6	e4	e0.13
21	e4.0	e7	e0.08	e5.1	e2	e0.03	e11	e12	e0.42
22	e4.0	e5	e0.06	e4.6	e2	e0.03	e7.6	e2	e0.04
23	e4.1	e3	e0.04	e7.5	e13	e0.44	e6.8	e2	e0.04
24	e3.9	e4	e0.05	e7.6	e23	e0.47	e9.9	e13	e0.50
25	e3.7	e6	e0.06	e6.1	e11	e0.19	e14	e4	e0.17
26	e3.6	e7	e0.07	e5.7	e5	e0.08	e11	e1	e0.04
27	e3.6	e9	e0.08	e5.5	e3	e0.04	e8.9	e1	e0.03
28	e3.9	e8	e0.08	e4.9	e2	e0.02	e11	e12	e0.54
29	e4.1	e6	e0.07	e4.9	e1	e0.02	e11	e11	e0.34
30	e3.8	e5	e0.05	e5.7	e3	e0.05	e8.0	e6	e0.14
31	e3.7	e3	e0.03	e8.2	e5	e0.12	---	---	---
TOTAL	159.1	---	2.93	165.1	---	2.42	311.3	---	67.75
YEAR	5209.1		13809.95						

e Estimated

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

Date	Time	Instan-taneous dis-charge, cfs (00061)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment load, tons/d (80155)	Suspnd. sedi-ment, sieve diametr percent <.063mm (70331)
APR					
25...	1614	1300	10800	37800	78
26...	1402	1470	8080	32100	88
JUN					
05...	0724	248	1450	968	98

RIO TOA VACA BASIN

50111210 LAGO TOA VACA AT DAMSITE NEAR VILLALBA, PR

LOCATION.--Lat 18°06'07", long 66°29'23", Hydrologic Unit 21010004, in a concrete gate tower at Damsite on Río Toa Vaca, 0.45 mi (0.7 km) northwest from Escuela Higüero, 2.0 mi (3.2 km) south from Villalba Plaza.

DRAINAGE AREA.--22.0 mi^2 (57.9 km^2).

PERIOD OF RECORD.--August 1997 to current year.

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

REMARKS.--Lago Toa Vaca was completed in 1972. The dam is located in the Toa Vaca river just upstream from Guayabal reservoir. The Toa Vaca dam is a zoned earth and rockfill embankment structure. At crest elevation 555.00 ft (169.2 m) (top of dam), the dam is approximately 1,740 ft (530.3 m) long, about 215 ft (65.53 m) height, and has a maximum storage capacity of about 67,759 acre-ft (83.55 hm^3) at top of dam elevation. The Toa Vaca dam is owned by the Puerto Rico Aqueduct and Sewer Authority and its primary purpose is to provide water for municipal and industrial use, and for irrigation of some of the lands served by the South Coast irrigation district through the Juana Díaz canal. Gage-height and precipitation satellite telemetry at station.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation, 535.24 ft (163.14 m) November 13, 1998; minimum elevation, 463.63 ft (141.31 m), August 19, 2001.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 502.18 ft (153.06 m), June 30; minimum elevation, 474.51 ft (144.63 m), October 1.

Capacity Table
(based on data from Puerto Rico Electric Power Authority)

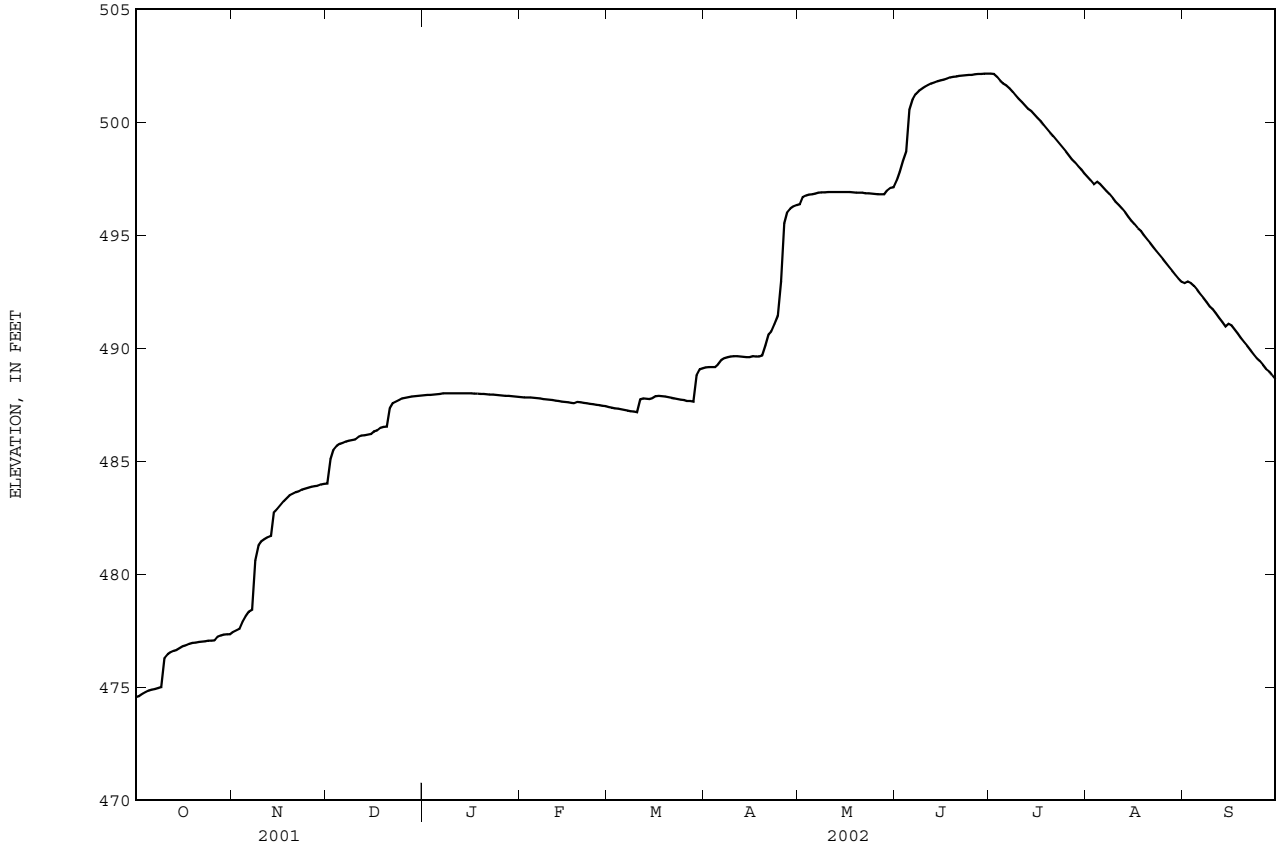
Elevation, in feet	Contents, in acre-feet	Elevation, in feet	Contents, in acre-feet
345.00	0	489.80	23,756
488.70	23,259	531.20	48,362
		570.00	81,991

Elevation above NGVD 1929, feet
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	474.57	477.45	484.02	487.93	487.84	487.40	489.16	496.39	497.44	502.16	497.59	492.89
2	474.61	477.52	485.10	487.94	487.83	487.37	489.17	496.69	497.82	502.15	497.43	492.95
3	474.71	477.59	485.51	487.94	487.83	487.35	489.18	496.77	498.29	502.02	497.26	492.88
4	474.78	477.92	485.68	487.96	487.83	487.33	489.18	496.81	498.71	501.87	497.38	492.76
5	474.86	478.14	485.77	487.97	487.82	487.30	489.30	496.83	500.57	501.72	497.27	492.59
6	474.90	478.34	485.82	487.99	487.80	487.27	489.49	496.85	501.02	501.64	497.12	492.41
7	474.93	478.42	485.88	488.01	487.78	487.25	489.57	496.89	501.24	501.51	496.97	492.23
8	474.97	480.62	485.91	488.02	487.76	487.22	489.61	496.91	501.38	501.35	496.82	492.05
9	475.01	481.27	485.94	488.02	487.75	487.20	489.64	496.91	501.49	501.20	496.65	491.85
10	476.28	481.45	485.97	488.02	487.73	487.18	489.65	496.92	501.59	501.05	496.49	491.74
11	476.45	481.56	486.09	488.02	487.71	487.75	489.65	496.92	501.66	500.90	496.34	491.55
12	476.55	481.64	486.14	488.02	487.69	487.78	489.64	496.92	501.72	500.75	496.18	491.35
13	476.61	481.70	486.16	488.02	487.67	487.77	489.63	496.92	501.77	500.60	496.01	491.17
14	476.65	482.74	486.18	488.02	487.65	487.76	489.62	496.92	501.83	500.50	495.83	490.97
15	476.74	482.88	486.21	488.01	487.63	487.80	489.62	496.92	501.87	500.35	495.65	491.08
16	476.82	483.06	486.33	488.01	487.61	487.89	489.65	496.92	501.90	500.20	495.49	491.01
17	476.87	483.23	486.37	488.00	487.59	487.90	489.64	496.92	501.94	500.05	495.32	490.83
18	476.92	483.37	486.49	488.00	487.58	487.88	489.64	496.91	501.99	499.88	495.19	490.65
19	476.96	483.49	486.53	487.99	487.63	487.87	489.68	496.90	502.02	499.71	495.01	490.46
20	476.98	483.57	486.54	487.98	487.61	487.84	490.13	496.90	502.04	499.55	494.83	490.28
21	477.00	483.63	487.34	487.97	487.59	487.81	490.62	496.89	502.06	499.39	494.65	490.11
22	477.02	483.68	487.57	487.96	487.57	487.78	490.76	496.87	502.08	499.23	494.47	489.93
23	477.04	483.75	487.65	487.95	487.55	487.76	491.08	496.86	502.09	499.06	494.30	489.73
24	477.06	483.79	487.72	487.94	487.53	487.73	491.45	496.85	502.10	498.89	494.13	489.57
25	477.07	483.83	487.78	487.93	487.51	487.71	492.95	496.84	502.11	498.72	493.96	489.44
26	477.08	483.87	487.82	487.92	487.49	487.68	495.54	496.82	502.13	498.54	493.78	489.27
27	477.24	483.90	487.85	487.90	487.46	487.67	496.02	496.82	502.15	498.37	493.60	489.09
28	477.29	483.92	487.87	487.90	487.44	487.65	496.18	496.82	502.15	498.22	493.44	488.98
29	477.33	483.97	487.88	487.88	---	488.80	496.28	497.00	502.17	498.06	493.26	488.81
30	477.34	484.00	487.90	487.87	---	489.08	496.34	497.10	502.16	497.91	493.09	488.63
31	477.35	---	487.91	487.86	---	489.12	---	497.13	---	497.74	492.94	---
TOTAL	14765.99	14454.30	15083.93	15126.95	13654.48	15119.90	14728.07	15403.12	15039.49	15503.29	15358.45	14727.26
MAX	477.35	484.00	487.91	488.02	487.84	489.12	496.34	497.13	502.17	502.16	497.59	492.95
MIN	474.57	477.45	484.02	487.86	487.44	487.18	489.16	496.39	497.44	497.74	492.94	488.63

RIO TOA VACA BASIN

50111210 LAGO TOA VACA AT DAMSITE NEAR VILLALBA, PR--Continued



RIO JACAGUAS BASIN

50111300 LAGO GUAYABAL AT DAMSITE NEAR JUANA DIAZ, PR

LOCATION.--Lat 18°05'17", long 66°30'09", Hydrologic Unit 21010004, at Damsite, 2.30 mi (3.70 km) northeast from Juana Díaz Plaza, 0.70 mi (1.13 km) northeast from Escuela Salvador Bousquets and 2.45 mi (3.94 km) southeast from Escuela Zoilo Gracia.

DRAINAGE AREA.--43.3 mi^2 (42.1 km^2).

ELEVATION RECORDS

PERIOD OF RECORD.--April 1995 to current year.

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

REMARKS.--Lago Guayabal was completed in 1913. The dam is a reinforced concrete, flatslab and buttress-type structure about 130 ft (40 m) height, a net crest length at the right side of the dam of 693 ft (211 m) and a crest elevation of 331 ft (101 m). It has a maximum storage capacity of 7,600 acre-feet (9.37 hm^3). The Guayabal dam is owned by the Puerto Rico Electric Power Authority (PREPA) and its primary purpose is for irrigation of lands served by the Juana Díaz Canal. Gage-height and precipitation satellite telemetry at station.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation, 342.89 ft (104.51 m), April 26, 2002; minimum elevation, 325.99 ft (99.36 m), September 29, 1997.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 342.89 ft (104.51 m), April 26; minimum elevation, 334.21 ft (101.87 m), March 11.

Capacity Table
(based on data from Puerto Rico Electric Power Authority)

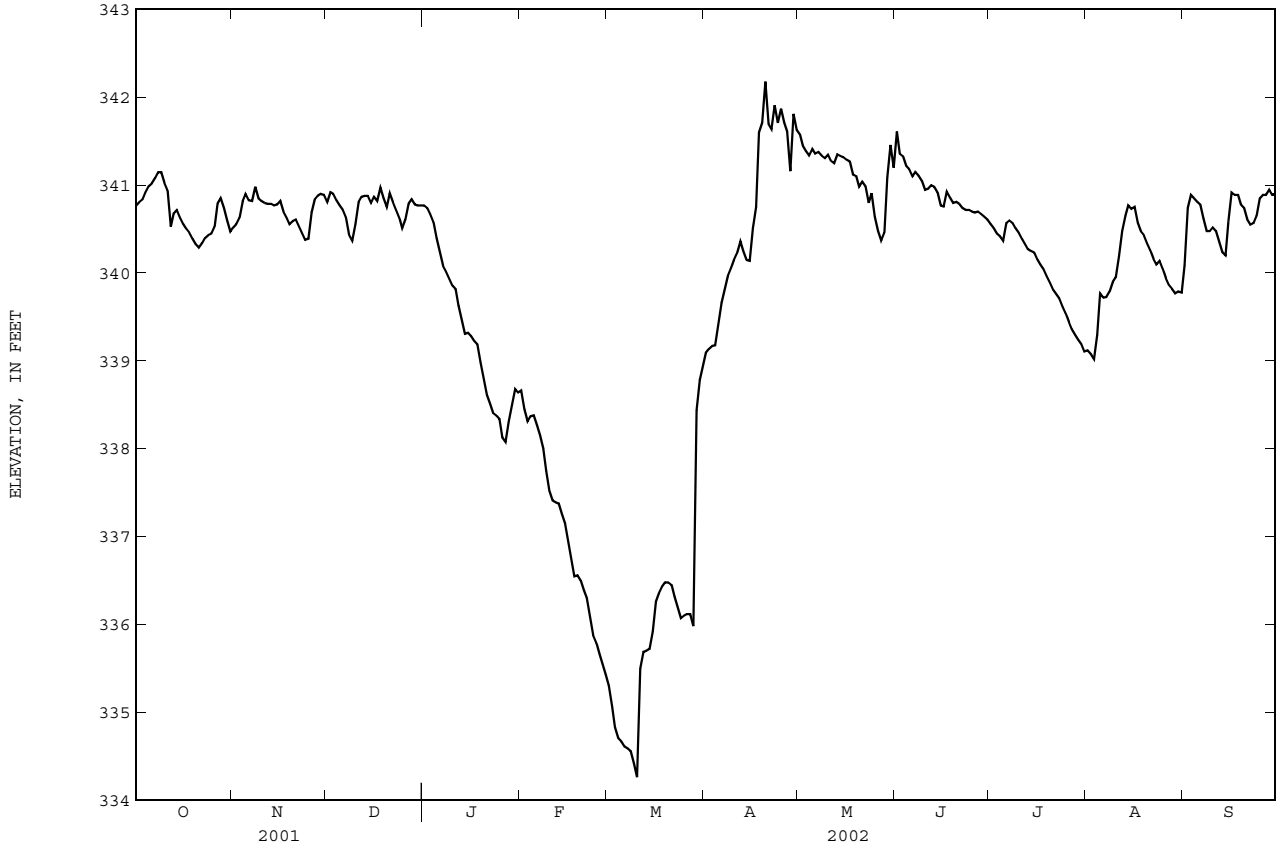
Elevation, in feet	Contents, in acre-feet	Elevation, in feet	Contents, in acre-feet
305	366	330	3,885
321	2,010	341	7,360

Elevation above NGVD 1929, feet
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	340.77	340.52	340.81	340.77	338.66	335.30	339.09	341.58	341.61	340.56	339.12	340.09
2	340.81	340.56	340.92	340.74	338.45	335.07	339.14	341.45	341.36	340.51	339.08	340.74
3	340.84	340.63	340.90	340.67	338.31	334.83	339.17	341.39	341.33	340.45	339.02	340.89
4	340.92	340.82	340.83	340.58	338.37	334.71	339.18	341.34	341.22	340.42	339.30	340.85
5	340.99	340.90	340.77	340.39	338.38	334.67	339.42	341.41	341.18	340.37	339.77	340.81
6	341.02	340.83	340.72	340.24	338.27	334.61	339.66	341.36	341.10	340.57	339.72	340.78
7	341.08	340.82	340.64	340.08	338.15	334.59	339.82	341.38	341.15	340.60	339.73	340.62
8	341.15	340.98	340.44	340.02	338.00	334.56	339.97	341.34	341.11	340.57	339.79	340.48
9	341.15	340.85	340.37	339.94	337.75	334.42	340.05	341.31	341.05	340.51	339.90	340.48
10	341.03	340.82	340.56	339.86	337.52	334.26	340.15	341.35	340.95	340.46	339.95	340.52
11	340.94	340.80	340.81	339.82	337.41	335.50	340.23	341.28	340.96	340.39	340.19	340.48
12	340.53	340.79	340.87	339.63	337.39	335.69	340.36	341.25	341.00	340.33	340.48	340.36
13	340.68	340.79	340.88	339.47	337.38	335.70	340.25	341.35	340.98	340.27	340.65	340.24
14	340.72	340.77	340.88	339.31	337.26	335.72	340.15	341.33	340.92	340.25	340.77	340.20
15	340.63	340.78	340.80	339.32	337.15	335.92	340.14	341.32	340.77	340.23	340.73	340.59
16	340.56	340.82	340.87	339.28	336.93	336.26	340.51	341.29	340.76	340.15	340.75	340.92
17	340.50	340.70	340.82	339.23	336.73	336.35	340.75	341.27	340.93	340.09	340.57	340.89
18	340.46	340.63	340.97	339.19	336.55	336.43	341.60	341.12	340.86	340.04	340.47	340.89
19	340.39	340.56	340.85	338.98	336.56	336.48	341.71	341.10	340.80	339.96	340.43	340.78
20	340.33	340.59	340.75	338.80	336.50	336.48	342.18	340.98	340.81	339.89	340.34	340.74
21	340.29	340.61	340.91	338.61	336.39	336.45	341.70	341.04	340.79	339.81	340.26	340.61
22	340.34	340.53	340.81	338.52	336.30	336.32	341.64	340.99	340.74	339.76	340.16	340.55
23	340.40	340.46	340.72	338.41	336.08	336.20	341.91	340.80	340.72	339.71	340.10	340.57
24	340.43	340.38	340.63	338.38	335.88	336.07	341.71	340.91	340.72	339.62	340.14	340.65
25	340.45	340.39	340.51	338.34	335.79	336.10	341.87	340.64	340.70	339.54	340.05	340.85
26	340.53	340.69	340.61	338.13	335.66	336.12	341.71	340.48	340.69	339.44	339.94	340.89
27	340.79	340.84	340.79	338.08	335.55	336.12	341.61	340.37	340.70	339.36	339.86	340.89
28	340.85	340.88	340.84	338.31	335.43	335.98	341.16	340.46	340.67	339.30	339.82	340.95
29	340.74	340.90	340.78	338.49	---	338.44	341.81	341.09	340.64	339.24	339.77	340.89
30	340.60	340.89	340.77	338.68	---	338.78	341.63	341.46	340.61	339.19	339.79	340.89
31	340.47	---	340.77	338.64	---	338.93	---	341.20	---	339.11	339.78	---
MAX	341.15	340.98	340.97	340.77	338.66	338.93	342.18	341.58	341.61	340.60	340.77	340.95
MIN	340.29	340.38	340.37	338.08	335.43	334.26	339.09	340.37	340.61	339.11	339.02	340.09

RIO JACAGUAS BASIN

50111300 LAGO GUAYABAL AT DAMSITE NEAR JUANA DIAZ, PR--Continued



RIO JACAGUAS BASIN

50111500 RIO JACAGUAS AT JUANA DIAZ, PR

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 Díaz Plaza, and 4.0 mi (6.4 km) downstream from Lago Guayabal.

DRAINAGE AREA.--49.8 mi^2 (129 km^2).

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

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 131 ft (40 m), from topographic map.

REMARKS.--Records poor. Flow regulation from Lago Guayabal. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	42	53	26	10	3.4	9.7	85	92	17	8.3	14
2	30	33	46	24	9.9	3.3	8.8	358	225	17	8.8	12
3	30	32	149	21	9.8	3.0	7.7	158	280	16	8.8	29
4	31	272	95	20	9.4	2.8	7.1	87	333	15	9.1	40
5	33	121	45	20	9.2	2.7	7.0	75	1140	15	10	26
6	38	117	34	19	9.0	2.5	8.3	72	408	16	11	19
7	40	88	30	18	8.8	2.4	8.4	67	223	15	11	16
8	41	370	29	18	8.4	2.4	7.0	69	145	15	11	14
9	44	247	28	17	8.2	2.4	6.6	60	122	14	11	13
10	255	108	29	16	7.9	2.3	6.9	53	104	14	12	13
11	88	79	29	16	7.3	25	6.9	55	75	13	13	13
12	53	71	43	16	6.9	6.1	6.6	49	78	13	14	13
13	43	58	48	15	6.9	3.9	6.5	52	74	13	16	13
14	41	235	47	15	6.8	3.6	6.2	55	63	13	17	12
15	41	76	41	14	6.5	3.3	6.3	54	51	13	18	19
16	41	67	34	14	6.4	4.4	7.6	52	41	12	17	36
17	38	68	38	14	6.2	4.4	7.0	50	48	11	16	45
18	36	50	35	14	5.9	3.2	7.1	43	53	11	15	35
19	36	46	65	13	6.0	3.1	40	34	43	11	14	26
20	35	45	34	13	5.5	3.1	77	28	38	11	13	15
21	34	43	27	12	5.1	3.1	213	21	34	11	13	14
22	34	41	50	12	4.8	3.3	80	22	26	11	12	13
23	35	40	29	11	4.8	3.2	158	18	22	10	12	13
24	35	38	25	11	4.7	2.7	184	14	21	10	11	14
25	35	36	23	11	4.4	2.7	135	14	20	9.5	11	16
26	34	37	23	10	4.1	2.8	686	13	20	9.2	11	28
27	38	41	24	10	3.7	2.6	279	12	20	9.2	11	34
28	52	54	31	11	3.5	2.7	178	12	19	9.3	11	36
29	51	60	35	11	---	13	80	13	18	8.9	11	65
30	36	61	28	11	---	16	121	80	18	8.4	12	39
31	33	---	27	10	---	12	---	93	---	8.4	12	---
TOTAL	1442	2676	1274	463	190.1	151.4	2362.7	1868	3854	379.9	381.0	695
MEAN	46.5	89.2	41.1	14.9	6.79	4.88	78.8	60.3	128	12.3	12.3	23.2
MAX	255	370	149	26	10	25	686	358	1140	17	18	65
MIN	30	32	23	10	3.5	2.3	6.2	12	18	8.4	8.3	12
AC-FT	2860	5310	2530	918	377	300	4690	3710	7640	754	756	1380
CFSM	0.93	1.79	0.83	0.30	0.14	0.10	1.58	1.21	2.58	0.25	0.25	0.47
IN.	1.08	2.00	0.95	0.35	0.14	0.11	1.76	1.40	2.88	0.28	0.28	0.52

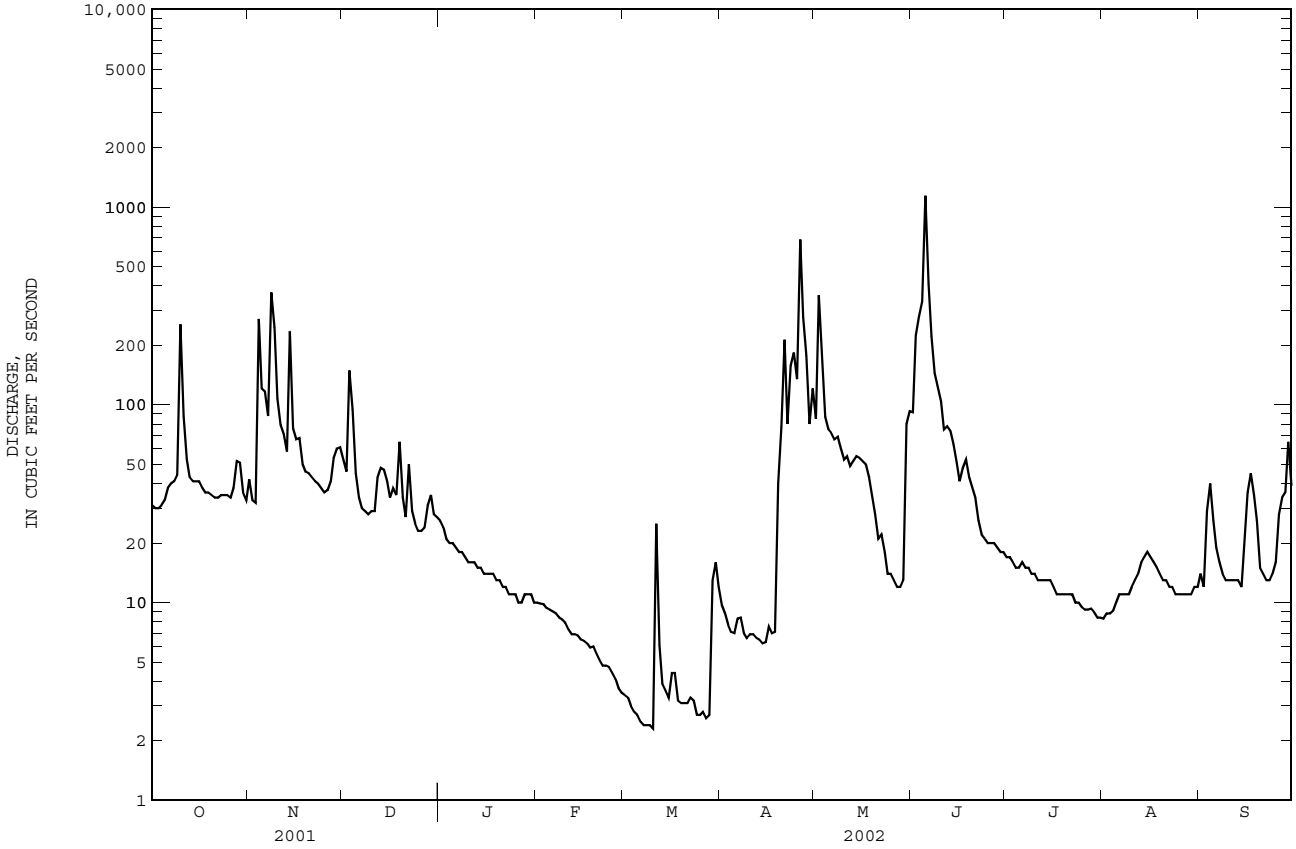
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2002, BY WATER YEAR (WY)

MEAN	124	97.2	35.6	22.6	9.28	5.66	17.0	64.3	42.7	20.9	27.8	85.3
MAX	445	287	151	144	21.2	12.0	78.8	215	198	82.4	136	667
(WY)	1986	1988	1988	1992	2000	2000	2002	1985	1987	1987	1998	1998
MIN	4.31	7.57	6.20	1.71	1.97	1.95	1.84	1.46	0.93	1.04	1.59	0.76
(WY)	1995	1995	1998	1998	1994	1994	1994	1994	1994	1994	1994	1997

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1984 - 2002	
ANNUAL TOTAL	13453.3		15737.1			
ANNUAL MEAN	36.9		43.1		47.1	
HIGHEST ANNUAL MEAN					93.1	1998
LOWEST ANNUAL MEAN					6.23	1994
HIGHEST DAILY MEAN	596	Sep 8	1140	Jun 5	8530	Sep 22 1998
LOWEST DAILY MEAN	2.8	Apr 19	2.3	Mar 10	0.24	Jan 3 1992
ANNUAL SEVEN-DAY MINIMUM	3.3	Apr 14	2.5	Mar 4	0.51	Aug 31 1997
MAXIMUM PEAK FLOW			11100	Apr 26	40000	Oct 7 1985
MAXIMUM PEAK STAGE			17.82	Apr 26	29.42	Oct 7 1985
ANNUAL RUNOFF (AC-FT)	26680		31210		34100	
ANNUAL RUNOFF (CFSM)	0.74		0.87		0.95	
ANNUAL RUNOFF (INCHES)	10.05		11.76		12.84	
10 PERCENT EXCEEDS	60		80		105	
50 PERCENT EXCEEDS	22		18		11	
90 PERCENT EXCEEDS	5.3		6.0		2.8	

RIO JACAGUAS BASIN

50111500 RIO JACAGUAS AT JUANA DIAZ, PR--Continued



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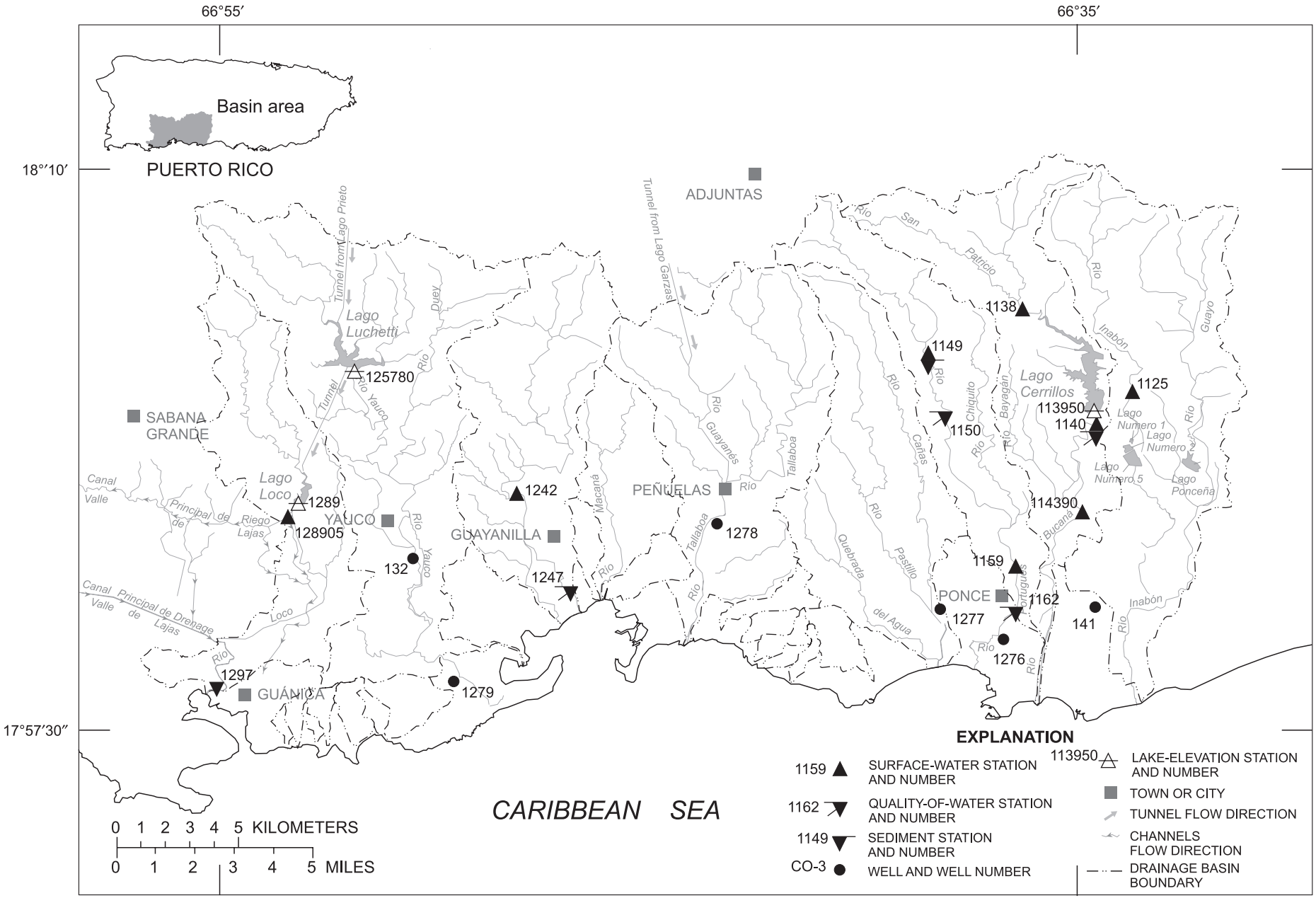


Figure 22. South coast river basins -- Río Inabón to Río Loco basins.

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 mi^2 (25.1 km^2).

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. Elevation of gage is 410 ft (125 m), from topographic map. Prior to April 1971 non-recording gage and crest-stage gage at different datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	42	11	8.8	e5.8	3.3	15	39	9.0	e4.2	e5.0	e34
2	37	58	11	8.6	5.4	2.8	12	55	10	e4.5	e5.4	e30
3	37	60	30	8.4	5.8	2.5	11	39	42	e4.3	e9.3	e23
4	36	43	19	8.1	6.6	2.6	6.0	21	42	e4.3	e8.2	e15
5	36	39	14	8.3	5.6	2.3	7.3	11	143	e4.1	e5.1	e9.5
6	35	43	13	8.6	4.6	2.1	13	9.8	54	e14	e5.5	e7.9
7	35	38	13	8.1	4.0	2.2	9.0	11	35	e15	e4.3	e8.3
8	34	63	12	7.9	3.9	2.4	7.3	11	28	e6.7	e8.2	e6.8
9	35	53	11	7.7	3.9	2.2	6.0	11	24	e5.9	e6.1	e7.4
10	70	41	12	7.3	4.0	2.4	4.9	9.3	21	e5.7	e9.6	e7.7
11	48	37	16	7.0	3.8	9.8	4.4	8.1	19	e5.0	e9.9	e9.4
12	37	33	15	6.9	3.9	14	4.3	7.1	17	e4.7	e11	e6.6
13	34	34	13	6.9	3.8	8.1	3.8	8.2	16	e4.7	e9.7	e5.6
14	32	37	12	7.1	3.6	6.8	3.9	8.0	14	e4.7	e10	e12
15	33	34	12	7.0	3.4	7.9	3.8	7.2	13	e7.1	e6.4	e26
16	31	32	15	6.8	3.3	10	4.1	7.6	13	e4.2	e5.9	e10
17	31	29	22	6.8	3.6	12	6.5	8.2	15	e4.2	e5.6	e20
18	32	26	21	6.7	3.6	6.7	9.1	9.1	17	e4.1	e11	e13
19	30	23	26	7.4	6.6	4.7	19	11	15	e4.0	e8.2	e8.5
20	29	21	17	6.7	6.5	3.9	32	12	14	e3.0	e4.9	e6.7
21	27	20	43	5.9	3.6	3.5	32	11	14	e3.2	e4.2	e6.4
22	27	18	29	6.1	3.5	3.4	22	9.1	13	e4.2	e6.7	e5.5
23	30	17	19	6.1	3.6	3.2	36	8.0	9.6	e7.3	e9.6	e6.1
24	28	16	16	6.2	3.9	3.0	35	6.3	7.1	e4.1	e14	e9.3
25	26	15	14	6.0	3.7	3.0	40	5.0	e5.5	e3.5	e5.9	e7.0
26	34	14	12	5.7	3.6	3.0	67	4.5	e6.6	e3.4	e4.5	e6.2
27	45	13	11	5.5	3.7	2.8	57	5.4	e6.6	e3.1	e37	e5.6
28	54	12	11	5.8	3.2	4.1	51	e4.0	e6.1	e11	e15	e5.7
29	49	12	10	e5.8	---	34	61	11	e4.8	e9.1	e20	e4.8
30	40	11	9.7	e6.0	---	22	53	10	e4.5	e3.9	e23	e46
31	35	---	9.3	e6.0	---	19	---	8.7	---	e3.4	e13	---
TOTAL	1125	934	499.0	216.2	120.5	209.7	636.4	386.6	638.8	170.6	302.2	370.0
MEAN	36.3	31.1	16.1	6.97	4.30	6.76	21.2	12.5	21.3	5.50	9.75	12.3
MAX	70	63	43	8.8	6.6	34	67	55	143	15	37	46
MIN	26	11	9.3	5.5	3.2	2.1	3.8	4.0	4.5	3.0	4.2	4.8
AC-FT	2230	1850	990	429	239	416	1260	767	1270	338	599	734
CFSM	3.74	3.21	1.66	0.72	0.44	0.70	2.19	1.29	2.20	0.57	1.00	1.27
IN.	4.31	3.58	1.91	0.83	0.46	0.80	2.44	1.48	2.45	0.65	1.16	1.42

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2002, BY WATER YEAR (WY)

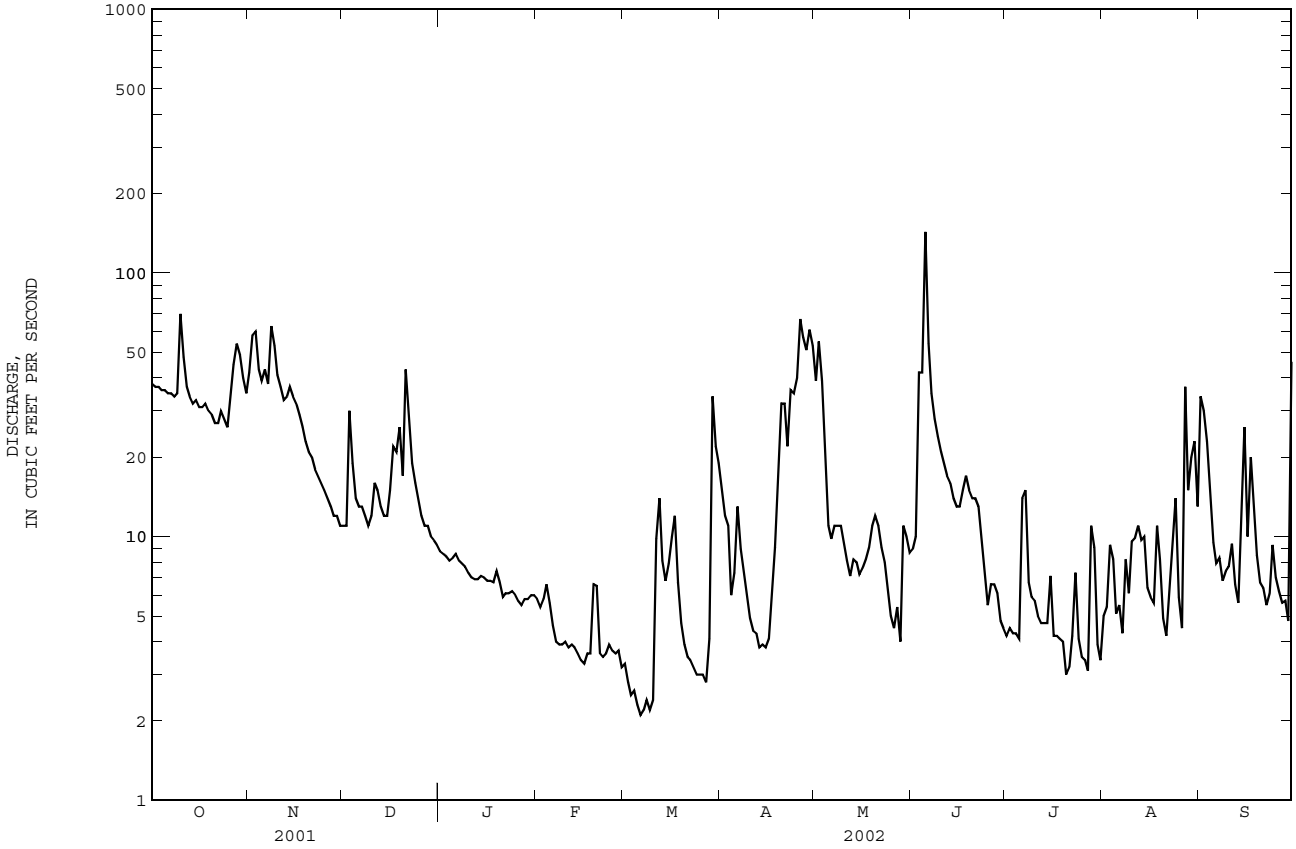
MEAN	45.3	32.7	12.5	8.44	5.82	6.02	9.49	19.1	16.3	11.9	17.9	35.7
MAX	148	77.9	26.5	45.5	13.1	16.4	35.9	76.7	49.8	32.7	46.1	119
(WY)	1986	1978	1966	1992	1996	1972	1998	1969	1969	1979	1979	1975
MIN	14.5	8.32	4.43	4.11	3.05	1.85	2.76	1.94	2.75	1.77	4.47	6.16
(WY)	1994	1977	1977	1989	1977	1977	1975	1967	1967	1990	1974	1997

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1964 - 2002	
ANNUAL TOTAL	8027.1		5609.0			
ANNUAL MEAN	22.0		15.4		18.3	
HIGHEST ANNUAL MEAN					30.9	1969
LOWEST ANNUAL MEAN					7.44	1994
HIGHEST DAILY MEAN	234	Aug 23	143	Jun 5	2500	Sep 16 1975
LOWEST DAILY MEAN	2.7	Mar 21	2.1	Mar 6	0.80	Jul 23 1977
ANNUAL SEVEN-DAY MINIMUM	3.1	Mar 15	2.3	Mar 4	1.1	Mar 31 1977
MAXIMUM PEAK FLOW			544	Oct 10	19000	Oct 7 1985
MAXIMUM PEAK STAGE			6.95	Oct 10	25.30	Oct 7 1985
ANNUAL RUNOFF (AC-FT)	15920		11130		13280	
ANNUAL RUNOFF (CFSM)	2.27		1.58		1.89	
ANNUAL RUNOFF (INCHES)	30.78		21.51		25.67	
10 PERCENT EXCEEDS	49		37		41	
50 PERCENT EXCEEDS	13		9.1		9.2	
90 PERCENT EXCEEDS	4.8		3.8		3.3	

e Estimated

RIO INABON BASIN

50112500 RIO INABON AT REAL ABAJO, PR--Continued



RIO BUCANA BASIN

50113800 RIO CERRILLOS ABOVE LAGO CERRILLOS NEAR PONCE, PR

LOCATION.--Lat 18°07'01", long 66°36'17", Hydrologic Unit 21010004, on right bank, 0.3 mi (0.5 km) downstream from confluence with Río San Patricio, 0.1 mi (0.2 km) southwest of Highway 139 and 2.4 mi (3.7 km) northwest of Maragüez.

DRAINAGE AREA.-- 11.9 mi^2 (30.8 km^2).

PERIOD OF RECORD.--December 1988 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 720 ft (210 m), from topographic map.

REMARKS.--Records fair, except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	e33	21	e20	9.8	9.0	14	e39	15	9.4	9.0	47
2	47	e51	20	e20	9.6	8.9	14	e32	18	9.4	8.7	66
3	47	e48	41	e19	10	8.8	13	e24	23	9.3	8.2	49
4	40	e36	26	e18	11	8.7	10	e20	27	9.2	8.5	29
5	42	e38	22	e21	9.9	8.2	16	e18	70	8.8	11	19
6	36	e42	22	e25	9.8	8.0	23	e16	35	18	8.7	16
7	35	35	21	e20	9.7	8.1	16	e18	24	13	9.1	16
8	35	e74	21	e18	9.7	8.2	14	e17	19	9.6	9.9	14
9	38	e56	19	e18	10	8.3	13	e15	18	9.2	8.4	13
10	56	42	24	e17	10	7.9	12	e16	16	9.3	9.0	13
11	40	e37	40	e17	9.9	15	13	e15	16	8.8	15	20
12	35	e34	27	e17	9.8	12	12	e16	16	8.7	13	15
13	e35	38	21	e15	10	8.8	11	e18	15	8.6	20	13
14	e33	33	21	e15	9.7	8.4	11	e18	14	10	13	12
15	e34	41	21	e15	9.7	8.0	11	e14	14	12	9.6	26
16	33	36	31	e15	9.9	8.8	12	e13	e13	8.5	9.2	e40
17	33	31	51	e15	9.9	11	16	e13	e13	8.2	8.8	19
18	34	30	38	e13	11	9.4	15	e13	e14	8.2	12	16
19	31	28	33	e13	14	7.9	24	e12	12	8.0	10	15
20	30	27	28	e13	12	7.3	50	12	11	7.7	8.8	e14
21	29	26	83	e11	10	7.0	48	12	11	7.8	8.6	e13
22	29	26	57	e11	9.8	6.7	30	12	11	8.4	9.2	13
23	31	25	38	e10	9.6	6.4	43	12	11	8.7	11	12
24	29	25	30	e10	9.6	6.2	40	12	11	7.6	44	13
25	28	24	27	e10	9.5	6.0	67	12	10	7.5	29	e17
26	35	23	26	e9.7	9.7	6.6	92	12	11	7.4	19	13
27	51	22	26	e9.6	9.5	6.7	85	12	11	7.4	15	12
28	e63	22	22	e9.6	9.0	7.4	e76	12	10	8.9	42	12
29	e54	22	22	9.7	---	20	e75	12	9.8	9.2	21	12
30	45	22	20	9.7	---	18	e56	14	9.6	8.9	53	e12
31	e40	---	e20	9.6	---	16	---	14	---	8.6	55	---
TOTAL	1198	1027	919	453.9	282.1	287.7	932	495	508.4	284.3	516.7	601
MEAN	38.6	34.2	29.6	14.6	10.1	9.28	31.1	16.0	16.9	9.17	16.7	20.0
MAX	63	74	83	25	14	20	92	39	70	18	55	66
MIN	28	22	19	9.6	9.0	6.0	10	12	9.6	7.4	8.2	12
AC-FT	2380	2040	1820	900	560	571	1850	982	1010	564	1020	1190
CFSM	3.25	2.88	2.49	1.23	0.85	0.78	2.61	1.34	1.42	0.77	1.40	1.68
IN.	3.75	3.21	2.87	1.42	0.88	0.90	2.91	1.55	1.59	0.89	1.62	1.88

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2002, BY WATER YEAR (WY)

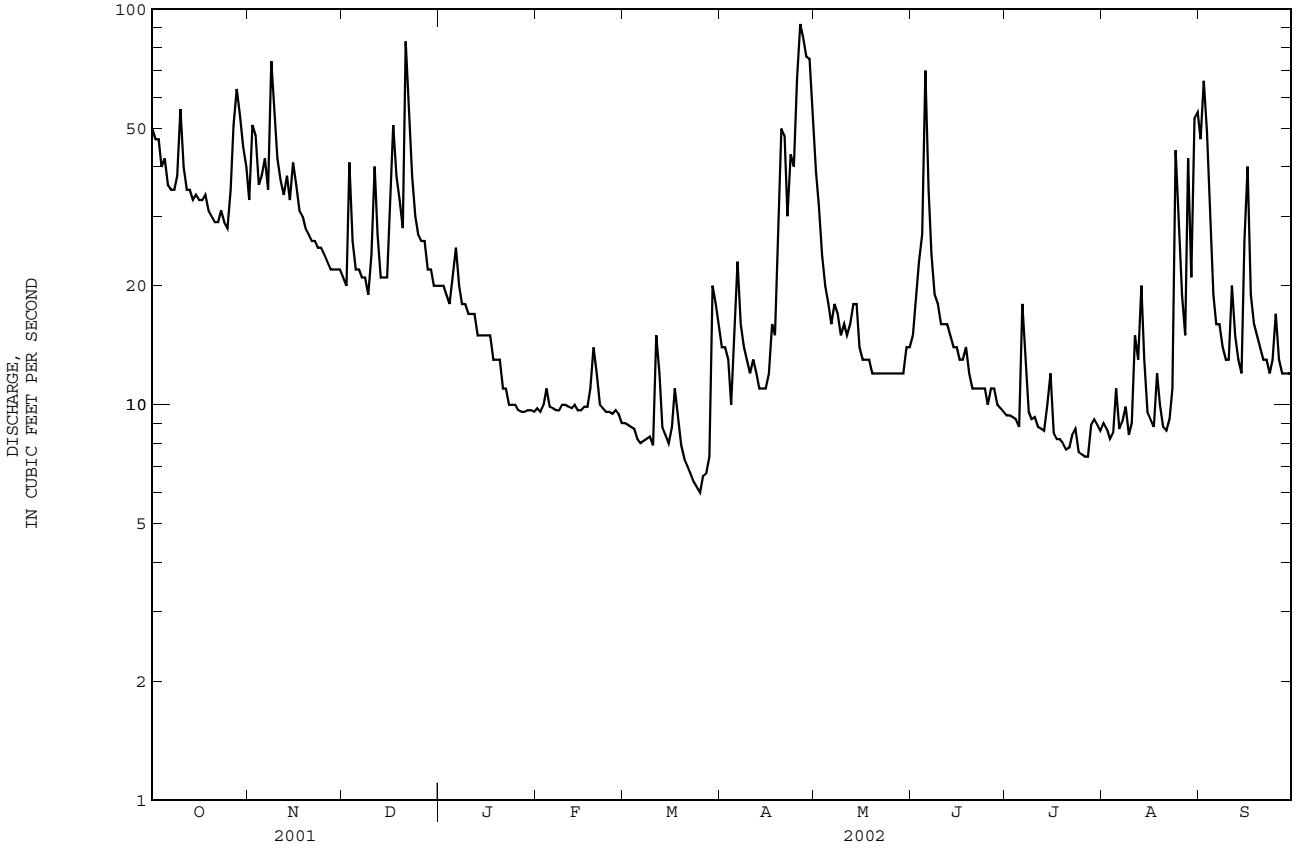
MEAN	66.9	37.6	17.7	15.0	11.6	10.5	16.8	24.7	23.1	16.3	34.8	71.7
MAX	154	75.0	29.6	59.0	26.1	27.5	40.7	68.2	46.4	26.7	83.3	196
(WY)	1991	2000	2002	1992	1996	1989	1998	1993	1996	1991	1998	1998
MIN	24.6	9.77	8.10	6.59	6.34	4.77	5.01	4.58	4.14	3.37	11.3	13.1
(WY)	1992	1994	1995	1995	1990	1990	1997	1990	1997	1994	1994	1997

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1989 - 2002	
ANNUAL TOTAL	11067.3		7505.1			
ANNUAL MEAN	30.3		20.6		28.8	
HIGHEST ANNUAL MEAN					43.9	1998
LOWEST ANNUAL MEAN					9.94	1994
HIGHEST DAILY MEAN	261	Aug 23	92	Apr 26	2510	Sep 22 1998
LOWEST DAILY MEAN	4.6	Mar 16	6.0	Mar 25	3.0	Jul 6 1994
ANNUAL SEVEN-DAY MINIMUM	4.8	Mar 14	6.5	Mar 21	3.2	Jul 27 1994
MAXIMUM PEAK FLOW			457	Dec 21	16200	Sep 21 1998
MAXIMUM PEAK STAGE			4.04	Dec 21	12.42	Sep 21 1998
INSTANTANEOUS LOW FLOW					3.0	Jul 6 1997
ANNUAL RUNOFF (AC-FT)	21950		14890		20880	
ANNUAL RUNOFF (CFSM)	2.55		1.73		2.42	
ANNUAL RUNOFF (INCHES)	34.60		23.46		32.91	
10 PERCENT EXCEEDS	71		41		66	
50 PERCENT EXCEEDS	17		15		15	
90 PERCENT EXCEEDS	7.4		8.7		5.4	

e Estimated

RIO BUCANA BASIN

50113800 RIO CERRILLOS ABOVE LAGO CERRILLOS NEAR PONCE, PR--Continued



RIO BUCANA BASIN

50113950 LAGO CERRILLOS AT DAMSITE NEAR PONCE, PR

LOCATION.--Lat 18°04'41", long 66°34'38", Hydrologic Unit 21010004, on left bank west from intake house of dam, 0.7 mi (1.1 km) southwest from Iglesia San Mateo at Real Abajo, 3.2 mi (5.1 km) northeast from Hospital de Distrito de Ponce, and 2.2 mi (3.5 km) northwest from Escuela Yuca.

DRAINAGE AREA.--17.4 mi^2 (45.1 km^2).

ELEVATION RECORDS

PERIOD OF RECORD.--October 1992 to current year.

REVISED RECORDS.--WDR PR-94-1: 1993, 1994.

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

REMARKS.--Lake is formed by Cerrillos Dam, a rockfilled ungated structure completed in 1992. Elevation of crest is 611 ft (186 m) above mean sea level, with a structural height of 323 ft (98 m) and a length of 1,555 ft (474 m). The dam has a capacity of approximately 47,900 acre-ft (59.1 hm^3). The dam is operated by U.S. Army Corps of Engineers and its purpose is for flood control, water supply, power generation, and recreation. Gage-height and precipitation satellite telemetry at station.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation, 602.84 ft (183.74 m), September 22, 1998; minimum elevation, 416.63 ft (126.99 m), October 1, 1992 (Revised).

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 543.26 ft (165.69 m), October 1; minimum elevation, 495.53 ft (151.04 m), July 2.

Capacity Table

(based on data from U.S. Army Corps of Engineers)

Elevation , in feet	Contents in acre-feet	Elevation, in feet	Contents in acre-feet
328	0	525	16,990
426	3,206	558	25,786
492	10,621	590	37,509

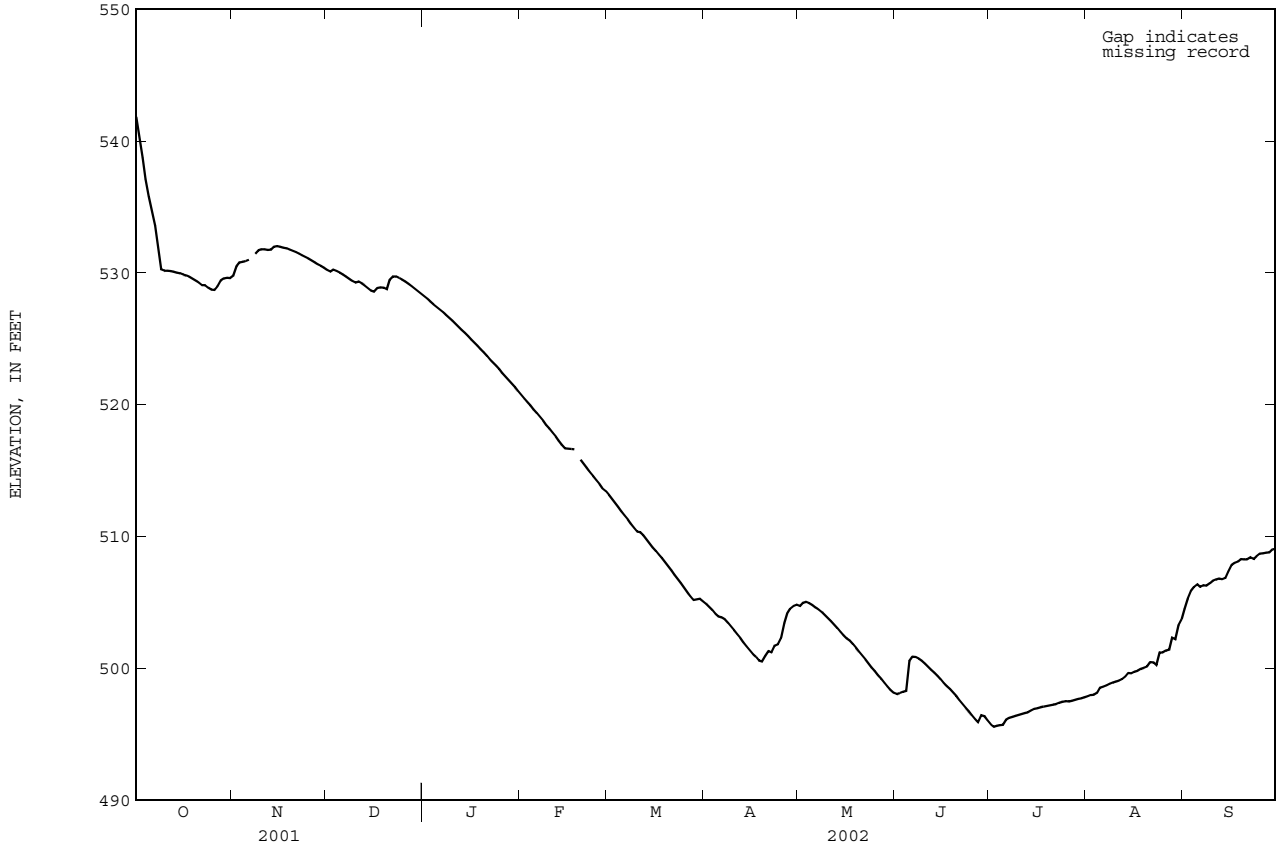
Elevation above NGVD 1929, feet
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	541.86	529.80	530.24	528.26	520.75	513.18	504.93	504.74	498.05	495.76	497.89	504.51
2	540.29	530.50	530.10	528.06	520.47	512.86	504.69	504.97	498.13	495.57	497.97	505.28
3	538.75	530.81	530.25	527.85	520.20	512.57	504.45	505.04	498.23	495.64	498.01	505.88
4	537.12	530.87	530.16	527.64	519.95	512.25	504.17	504.96	498.30	495.69	498.14	506.19
5	535.81	530.90	530.03	527.44	519.65	511.93	503.96	504.80	500.56	495.72	498.54	506.39
6	534.72	531.01	529.89	527.25	519.38	511.61	503.88	504.64	500.90	496.10	498.61	506.19
7	533.60	A	529.74	527.04	519.08	511.30	503.74	504.49	500.88	496.26	498.71	506.30
8	531.90	531.46	529.58	526.83	518.78	511.00	503.48	504.29	500.75	496.34	498.82	506.29
9	530.27	531.74	529.41	526.61	518.48	510.68	503.20	504.06	500.57	496.41	498.92	506.46
10	530.19	531.81	529.27	526.39	518.21	510.38	502.90	503.82	500.36	496.48	498.99	506.66
11	530.18	531.80	529.36	526.16	517.89	510.35	502.60	503.58	500.14	496.55	499.07	506.74
12	530.16	531.77	529.24	525.92	517.59	510.10	502.30	503.32	499.91	496.62	499.20	506.81
13	530.11	531.79	529.06	525.69	517.28	509.80	501.98	503.05	499.69	496.68	499.39	506.77
14	530.03	532.00	528.87	525.46	516.98	509.49	501.67	502.76	499.44	496.81	499.65	506.87
15	529.98	532.04	528.67	525.22	516.70	509.18	501.37	502.53	499.18	496.93	499.63	507.36
16	529.90	532.01	528.59	524.97	516.68	508.91	501.08	502.28	498.91	496.98	499.76	507.85
17	529.81	531.93	528.87	524.73	516.65	508.65	500.88	502.12	498.66	497.05	499.83	508.01
18	529.71	531.87	528.92	524.49	516.63	508.37	500.61	501.84	498.44	497.11	499.96	508.11
19	529.58	531.78	528.89	524.24	A	508.07	500.53	501.55	498.18	497.16	500.04	508.31
20	529.43	531.68	528.76	523.98	515.82	507.74	500.95	501.26	497.90	497.21	500.15	508.28
21	529.29	531.58	529.49	523.71	515.51	507.42	501.30	500.96	497.60	497.26	500.49	508.28
22	529.08	531.47	529.74	523.46	515.21	507.11	501.20	500.67	497.31	497.29	500.46	508.43
23	529.08	531.35	529.74	523.21	514.89	506.79	501.71	500.37	497.02	497.40	500.27	508.31
24	528.90	531.23	529.63	522.96	514.59	506.48	501.81	500.08	496.75	497.46	501.22	508.52
25	528.75	531.11	529.50	522.69	514.28	506.14	502.30	499.80	496.44	497.51	501.22	508.72
26	528.72	530.96	529.35	522.41	513.98	505.82	503.43	499.49	496.16	497.50	501.36	508.73
27	528.99	530.81	529.19	522.14	513.67	505.49	504.15	499.21	495.91	497.54	501.44	508.78
28	529.42	530.67	529.01	521.88	513.48	505.20	504.53	498.90	496.45	497.62	502.33	508.82
29	529.59	530.54	528.83	521.60	---	505.25	504.74	498.63	496.37	497.68	502.21	509.02
30	529.64	530.39	528.64	521.33	---	505.28	504.83	498.36	496.07	497.73	503.28	509.09
31	529.61	---	528.46	521.05	---	505.12	---	498.14	---	497.80	503.74	---
MAX	541.86	---	530.25	528.26	---	513.18	504.93	505.04	500.90	497.80	503.74	509.09
MIN	528.72	---	528.46	521.05	---	505.12	500.53	498.14	495.91	495.57	497.89	504.51

A No gage-height record

RIO BUCANA BASIN

50113950 LAGO CERRILLOS AT DAMSITE NEAR PONCE, PR--Continued



RIO BUCANA BASIN

50114000 RIO CERRILLOS NEAR PONCE, PR

LOCATION.--Lat 18°04'24", long 66°34'53", Hydrologic Unit 21010004, on right bank off Highway 139, 0.8 mi (1.3 km) below Lago Cerrillos Dam, 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 mi^2 (46.1 km^2), excludes 17.4 mi^2 (45.1 km^2) upstream from Lago Cerrillos Dam.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February to April 1964 (monthly measurements only), May 1964 to June 1985, July 1985 to April 1991 (semi-monthly measurements only), May 1991 to current year.

GAGE.--Water-stage recorder. Datum of gage is 253.10 ft (77.145 m), above mean sea level. Prior to March 22, 1977, at site 0.15 mi (0.24 km) upstream and datum 9.90 ft (3.018 m) higher.

REMARKS.--Records poor. Flow regulated by Lago Cerrillos Dam since May 1991. Gage-height and precipitation satellite telemetry at station. Prior to June 1985, some low-flow regulation by construction upstream. Maximum discharge prior to regulation, 22,400 ft^3/s (634 m^3/s), September 16, 1975, gage height, 11.2 ft (3.41 m), site and datum then in use from floodmarks, from rating curve extended above 150 ft^3/s (4.25 m^3/s), on basis of slope-area measurements of peak flow; minimum discharge prior to regulation, 2.2 ft^3/s (0.062 m^3/s), May 28, 1967.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e207	e3.6	e3.3	e3.9	2.8	e2.9	3.3	3.2	5.5	2.5	2.4	2.2
2	e238	2.6	e3.2	e4.5	e2.7	e2.9	3.2	3.2	4.7	2.6	2.3	2.3
3	e238	2.7	e5.5	e4.8	e2.6	e2.9	3.2	3.1	7.1	2.6	2.3	2.2
4	e232	4.1	e5.6	e3.8	e2.7	e2.8	3.2	3.5	4.8	2.4	2.3	2.1
5	e167	e3.6	e4.7	e5.0	e3.0	e2.7	3.1	3.3	9.5	2.4	5.4	2.0
6	e109	e3.0	e4.3	e3.6	e3.1	e2.7	3.2	3.4	5.4	2.5	2.5	2.1
7	e116	e2.9	e4.0	e4.1	e3.1	e2.8	4.0	3.5	5.1	2.4	2.3	2.1
8	e233	e2.4	e4.3	e5.9	e3.0	3.0	3.2	3.2	4.4	2.3	2.6	2.2
9	e219	e2.4	e4.3	e7.1	2.9	2.7	3.1	3.2	4.6	2.3	2.6	2.3
10	e67	e2.9	e3.8	e8.0	2.9	2.6	3.0	3.2	4.4	2.3	2.5	2.2
11	e3.8	e3.0	3.1	e4.8	2.9	3.5	3.0	3.3	4.0	2.3	2.5	2.1
12	e3.3	e3.5	3.1	e4.3	2.9	2.1	2.9	3.3	4.7	2.3	2.4	2.1
13	e4.0	e5.3	3.1	e3.4	3.0	2.3	3.0	3.2	4.6	2.2	2.3	2.1
14	e4.4	e5.4	3.0	e3.4	3.0	2.3	2.9	3.2	4.2	2.4	2.4	2.1
15	e4.5	e4.2	3.0	e4.3	3.0	2.2	2.8	3.1	3.9	2.4	2.3	3.9
16	e4.4	e4.0	2.9	e3.5	3.0	3.2	2.9	2.9	3.7	2.4	2.4	2.0
17	e4.3	e3.8	e3.7	e3.7	3.1	3.1	2.8	2.9	3.3	2.3	2.4	1.8
18	e4.3	e4.5	e5.4	e4.3	3.2	3.0	2.8	3.0	3.2	2.3	2.3	1.8
19	e3.8	e4.1	e28	e4.4	3.3	3.0	2.8	3.0	3.0	2.3	2.2	1.9
20	e3.9	3.0	e11	e4.3	3.2	2.9	3.9	3.0	2.9	2.3	2.3	1.9
21	e4.1	3.0	e4.3	e4.0	3.3	3.0	3.5	3.1	2.7	2.3	2.3	2.0
22	e4.3	3.0	e3.9	e3.7	e3.1	2.9	3.1	3.3	2.7	2.5	2.2	1.9
23	e9.2	2.9	e4.0	e3.5	e3.1	3.0	5.5	3.2	2.7	2.4	2.3	1.9
24	e4.4	2.9	e4.2	e3.3	e3.1	3.0	3.4	3.0	2.8	2.4	2.1	1.9
25	e3.7	2.9	e4.4	e3.2	e3.0	3.1	3.1	3.0	2.6	2.4	2.1	2.1
26	e3.5	2.9	e4.3	e2.9	e3.0	3.1	3.2	3.1	2.6	2.5	2.1	1.9
27	e3.9	2.9	e4.3	e2.9	e2.9	3.1	3.3	3.1	2.7	2.5	2.1	2.0
28	e8.4	e2.5	e4.0	e2.9	e2.9	3.1	3.3	3.1	2.7	2.5	2.2	2.2
29	e6.2	e2.8	e5.2	e2.8	---	4.4	3.2	3.1	2.6	2.6	2.2	2.0
30	e4.3	e3.2	e4.9	2.6	---	5.3	3.2	3.2	2.5	2.5	2.2	1.9
31	e3.9	---	e4.1	2.7	---	3.5	---	3.1	---	2.5	2.2	---
TOTAL	1922.6	100.0	156.9	125.6	83.8	93.1	97.1	98.0	119.6	74.6	74.7	63.2
MEAN	62.0	3.33	5.06	4.05	2.99	3.00	3.24	3.16	3.99	2.41	2.41	2.11
MAX	238	5.4	28	8.0	3.3	5.3	5.5	3.5	9.5	2.6	5.4	3.9
MIN	3.3	2.4	2.9	2.6	2.6	2.1	2.8	2.9	2.5	2.2	2.1	1.8
AC-FT	3810	198	311	249	166	185	193	194	237	148	148	125
CFSM	3.48	0.19	0.28	0.23	0.17	0.17	0.18	0.18	0.22	0.14	0.14	0.12
IN.	4.02	0.21	0.33	0.26	0.18	0.19	0.20	0.20	0.25	0.16	0.16	0.13

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2002, BY WATER YEAR (WY)

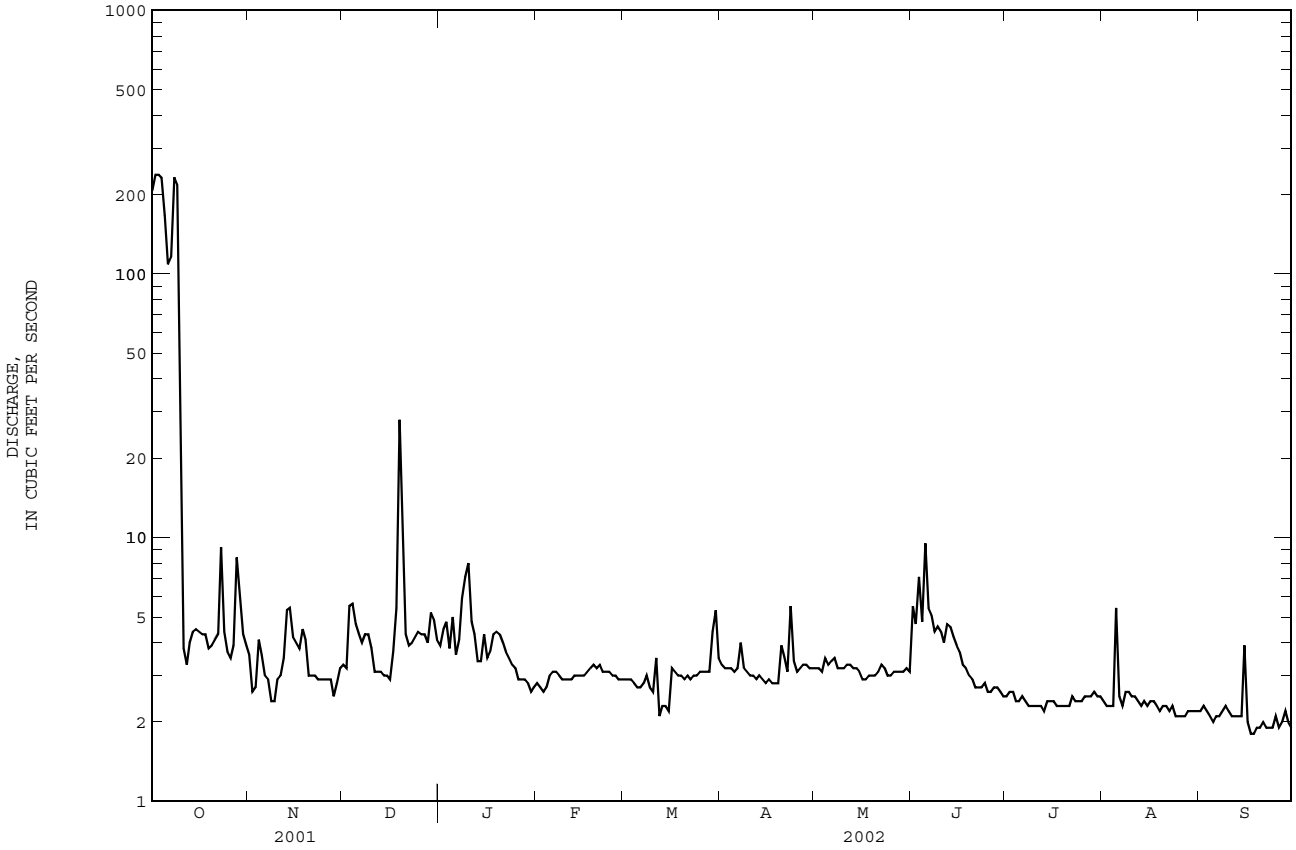
MEAN	62.3	38.8	9.57	13.5	6.71	7.81	9.94	36.3	25.2	19.9	43.7	87.5
MAX	221	137	20.5	74.2	14.7	17.9	31.0	127	107	94.3	195	316
(WY)	2001	2000	1999	1992	1992	1997	1999	2001	1999	2001	2001	2001
MIN	4.93	3.33	4.10	4.05	2.99	3.00	3.24	3.16	3.69	2.41	2.41	2.11
(WY)	1996	2002	2001	2002	2002	2002	2002	2002	1995	2002	2002	2002

e Estimated

RIO BUCANA BASIN

50114000 RIO CERRILLOS NEAR PONCE, PR--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1991 - 2002	
ANNUAL TOTAL	26480.7		3009.2			
ANNUAL MEAN	72.5		8.24		31.1	
HIGHEST ANNUAL MEAN					92.8	2001
LOWEST ANNUAL MEAN					5.35	1995
HIGHEST DAILY MEAN	600	May 9	238	Oct 2	900	Jan 6 1992
LOWEST DAILY MEAN	2.2	Jul 18	1.8	Sep 17	0.64	Aug 19 1992
ANNUAL SEVEN-DAY MINIMUM	2.6	Jul 12	1.9	Sep 17	1.7	Aug 24 1992
MAXIMUM PEAK FLOW					1320	Sep 10 1996
MAXIMUM PEAK STAGE					7.74	Sep 10 1996
ANNUAL RUNOFF (AC-FT)	52520		5970		22520	
ANNUAL RUNOFF (CFSM)	4.08		0.46		1.75	
ANNUAL RUNOFF (INCHES)	55.34		6.29		23.73	
10 PERCENT EXCEEDS	251		4.8		95	
50 PERCENT EXCEEDS	5.0		3.0		5.6	
90 PERCENT EXCEEDS	3.0		2.2		3.6	



RIO BUCANA BASIN

50114000 RIO CERRILLOS NEAR PONCE, PR--Continued

WATER-QUALITY RECORDS

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 mi^2 (46.1 km^2).

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
DEC													
06...	1140	2.4	338	7.7	29.0	3.4	8.5	111	<10	<10	3200	130	44.8
FEB													
28...	0935	3.5	337	7.7	24.0	3.4	8.3	98	<10	<10	E70	--	--
MAY													
23...	1100	3.2	341	7.9	26.5	2.9	8.1	100	<10	<10	E80	150	50.9

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
DEC													
06...	5.06	13.7	.5	.79	123	<1.0	38.0	8.38	.2	21.8	206	1.33	<10
FEB													
28...	--	--	--	--	130	--	--	--	--	--	--	--	<10
MAY													
23...	5.57	13.9	.5	.75	131	<.1	36.3	7.33	.2	22.1	216	1.84	<10

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
DEC													
06...	<.01	.140	.03	<.20	E.02	<2	30.7	20	<.1	<.8	<10	80	<1
FEB													
28...	<.01	.070	<.01	<.20	<.02	--	--	--	--	--	--	--	--
MAY													
23...	<.01	.090	.02	<.20	<.02	<2	37.4	20	<.1	<.8	<10	150	<1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
DEC								
06...	25.3	<.01	<2	<.3	<20	<.01	<16	<.05
FEB								
28...	--	--	--	--	--	--	--	--
MAY								
23...	35.0	<.01	E1	1.1	E30	<.01	<17	<.05

< -- Less than
E -- Estimated value

RIO BUCANA BASIN

50114390 RIO BUCANA AT HWY 14 BRIDGE NEAR PONCE, PR

LOCATION.--Lat 18°02'29", long 66°34'58", Hydrologic Unit 21010004, on left bank, 200 ft (61 m) upstream from bridge on Highway 14 and 4.0 mi (6.4 km) downstream from Lago Cerrillos Dam, 2.8 mi (4.5 km) northeast of Degetau Plaza in Ponce.

DRAINAGE AREA.--24.9 mi^2 (64.5 km^2).

PERIOD OF RECORD.--October 1985 to September 1986 (maximum only), published as "Río Bucaná Floodway Channel at Highway 14 bridge", October 1986 to July 1987 (maximum only), August 1987 to September 2002 (discontinued).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 116.40 ft (35.500 m) above mean sea level. Prior to October 1, 1986, crest-stage gage located at Highway 14 bridge, at elevation of mean sea level.

REMARKS.--Records poor. Flow regulated by Lago Cerrillos Dam 4.0 mi upstream. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	328	4.6	4.0	4.7	4.0	3.1	e4.4	3.9	54	2.8	2.4	2.2
2	375	12	3.8	5.4	3.8	3.1	e4.2	4.6	119	2.7	2.0	2.1
3	375	18	e7.2	5.8	3.9	3.1	e4.1	4.7	181	2.6	1.7	2.1
4	360	4.5	e7.0	4.5	4.1	3.0	e3.9	4.4	85	2.3	1.7	2.1
5	257	4.7	e5.8	6.1	4.6	2.9	e4.3	4.8	325	2.2	10	2.0
6	162	3.9	e5.2	4.4	4.5	2.9	e4.7	3.5	138	2.8	3.1	2.0
7	172	3.7	e4.8	4.9	4.3	3.0	e5.3	3.4	26	2.5	3.4	2.0
8	356	3.2	e5.2	7.0	3.7	3.1	e4.2	3.2	17	2.3	3.1	2.1
9	336	3.2	e5.2	8.6	3.8	3.4	e4.0	4.5	12	2.1	2.0	2.2
10	103	3.7	e4.6	9.7	3.6	3.4	e3.9	5.9	9.6	2.0	2.1	2.3
11	5.0	3.8	6.2	5.7	3.6	8.8	e3.9	6.0	8.4	2.2	2.3	2.5
12	4.1	4.4	5.4	5.0	3.6	5.2	4.1	5.3	7.8	2.5	2.3	2.5
13	5.1	7.0	5.3	3.9	3.5	4.2	4.0	4.9	7.0	2.3	2.2	2.4
14	5.7	7.0	4.6	3.9	3.7	4.2	4.0	4.1	6.1	2.6	2.4	3.3
15	5.7	5.5	4.8	5.0	3.7	4.2	4.6	3.4	5.9	2.8	2.4	55
16	5.6	5.1	5.3	4.0	3.5	9.4	6.6	3.2	6.4	2.3	2.4	e3.7
17	5.5	4.8	4.9	5.2	3.4	4.9	7.7	3.1	5.8	2.3	2.5	e2.7
18	5.5	5.7	7.0	5.6	3.4	4.5	8.5	2.9	4.8	2.2	2.4	e2.7
19	4.8	5.1	39	e5.7	3.9	4.2	6.4	e3.8	4.8	2.1	2.3	e2.7
20	4.9	4.6	14	e5.8	3.7	3.9	31	e3.8	4.7	2.1	2.2	e2.7
21	5.2	3.9	6.1	e4.8	3.5	3.9	15	e4.0	4.3	2.0	2.3	e2.7
22	5.4	3.5	5.3	e4.7	3.4	5.0	7.8	e4.1	4.2	2.0	1.7	e2.5
23	12	3.7	5.2	e4.1	3.4	5.7	11	e4.0	3.9	2.0	1.6	e2.5
24	5.6	3.6	5.3	e4.2	3.4	5.4	8.6	e3.8	3.8	1.9	1.6	e2.6
25	4.5	3.2	5.5	e4.3	3.2	5.3	5.8	e3.9	3.5	1.9	1.7	e3.0
26	4.5	3.2	5.3	e4.0	3.2	4.0	7.1	e3.9	3.4	1.9	1.8	e2.6
27	5.2	3.2	5.3	e3.9	3.2	4.3	9.1	e4.0	3.3	1.8	1.7	e2.7
28	12	3.0	4.8	e4.0	3.1	6.5	6.4	e4.0	3.1	2.3	1.7	e2.9
29	8.5	3.4	6.4	e4.1	---	19	8.9	e4.0	3.0	2.7	2.0	e2.7
30	5.8	3.8	5.9	4.1	---	27	9.5	e4.2	2.8	2.1	1.9	e2.6
31	5.1	---	5.0	4.0	---	e4.8	---	e4.1	---	2.2	2.3	---
TOTAL	2949.7	149.0	209.4	157.1	102.7	175.4	213.0	127.4	1063.6	70.5	75.2	128.1
MEAN	95.2	4.97	6.75	5.07	3.67	5.66	7.10	4.11	35.5	2.27	2.43	4.27
MAX	375	18	39	9.7	4.6	27	31	6.0	325	2.8	10	55
MIN	4.1	3.0	3.8	3.9	3.1	2.9	3.9	2.9	2.8	1.8	1.6	2.0
AC-FT	5850	296	415	312	204	348	422	253	2110	140	149	254
CFSM	3.82	0.20	0.27	0.20	0.15	0.23	0.29	0.17	1.42	0.09	0.10	0.17
IN.	4.41	0.22	0.31	0.23	0.15	0.26	0.32	0.19	1.59	0.11	0.11	0.19

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 2002, BY WATER YEAR (WY)

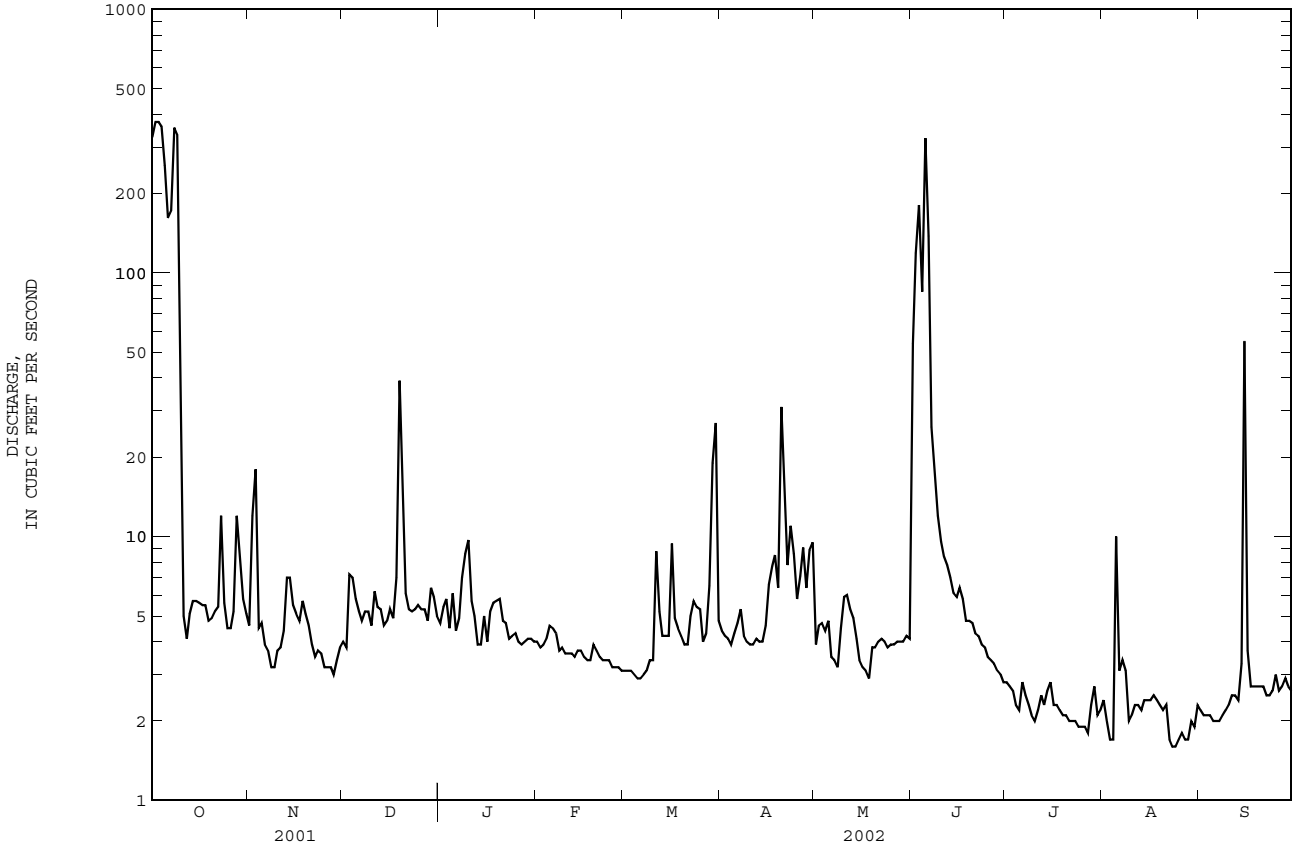
MEAN	122	64.2	14.6	31.8	9.41	12.3	13.3	31.4	37.4	24.2	78.4	161
MAX	527	222	49.1	337	19.3	48.0	42.5	132	194	85.7	417	756
(WY)	1991	1988	1988	1992	1995	1989	1992	2000	1999	2001	1998	1998
MIN	6.34	4.97	4.77	4.51	3.67	3.74	4.74	4.11	4.90	2.27	2.43	4.27
(WY)	1996	2002	2001	1994	2002	2001	1994	2002	1994	2002	2002	2002

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1987 - 2002	
ANNUAL TOTAL	25811.0		5421.1			
ANNUAL MEAN	70.7		14.9		51.2	
HIGHEST ANNUAL MEAN					113	1998
LOWEST ANNUAL MEAN					7.43	1994
HIGHEST DAILY MEAN	577	Aug 23	375	Oct 2	4340	Jan 6 1992
LOWEST DAILY MEAN	3.0	Mar 15	1.6	Aug 23	1.6	Aug 23 2002
ANNUAL SEVEN-DAY MINIMUM	3.2	Mar 13	1.7	Aug 22	1.7	Aug 22 2002
MAXIMUM PEAK FLOW			1370	Oct 2	17400	Oct 7 1985
MAXIMUM PEAK STAGE			11.11	Oct 2	13.48	Oct 7 1985
ANNUAL RUNOFF (AC-FT)	51200		10750		37080	
ANNUAL RUNOFF (CFSM)	2.84		0.60		2.06	
ANNUAL RUNOFF (INCHES)	38.56		8.10		27.93	
10 PERCENT EXCEEDS	223		9.2		125	
50 PERCENT EXCEEDS	5.3		4.0		7.9	
90 PERCENT EXCEEDS	3.8		2.2		4.3	

e Estimated

RIO BUCANA BASIN

50114390 RIO BUCANA AT HWY 14 BRIDGE NEAR PONCE, PR--Continued



RIO PORTUGUES BASIN

50114900 RIO PORTUGUES NEAR TIBES, PR

LOCATION.--Lat 18°06'00", long 66°38'34", Hydrologic Unit 21010004, 1.6 mi (2.6 km), north from Escuela Segunda Unidad of Corral Viejo, 0.3 mi (0.50 km) south from Hacienda Burenes and 6.0 mi (9.6 km) north east from Peñuelas Plaza Church.

DRAINAGE AREA.--7.27 mi^2 (18.8 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1997 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 918 ft (280 m), from topographic map.

REMARKS.--Records poor. Some low-flow regulation due to PRASA intakes (2) 0.85 mi (1.36 km) upstream from station. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	11	6.7	e6.7	4.6	4.1	7.4	9.3	7.4	e4.9	e7.9	24
2	e19	10	6.5	e7.5	4.5	4.1	7.1	27	8.8	e4.6	e6.0	17
3	e18	9.9	25	6.3	5.2	4.1	e6.3	38	21	e4.9	e4.6	20
4	e18	9.7	e9.9	6.5	4.9	3.9	e6.2	27	20	e4.5	e4.2	15
5	e18	11	e8.8	6.8	4.5	3.8	e19	19	50	e4.5	e6.4	11
6	e16	14	e8.0	6.6	4.3	3.7	e23	17	27	e13	e4.9	9.3
7	e16	12	e7.5	6.5	4.2	3.9	e13	15	e18	e5.5	e6.0	8.3
8	e15	21	e7.6	6.1	4.2	4.1	e10	14	e14	e3.6	e6.2	7.1
9	e14	12	e7.2	5.9	4.5	4.1	e8.0	13	e12	e3.4	4.9	6.6
10	e16	9.7	e8.7	5.7	4.5	3.9	e6.0	12	e10	e3.4	5.3	11
11	e13	8.6	e31	5.5	4.2	21	e5.2	11	e9.2	e3.4	6.4	7.3
12	e12	7.8	e29	5.4	4.0	6.7	5.0	9.9	e9.1	e3.9	6.5	8.1
13	e12	8.3	e25	5.4	4.0	4.7	4.8	9.4	e8.5	e3.8	32	9.9
14	e11	8.8	e20	5.3	3.9	4.0	4.7	8.9	e8.1	e6.9	17	7.1
15	e12	19	e17	5.2	3.9	3.8	5.0	8.6	e7.7	e5.9	9.6	26
16	e11	10	e23	5.1	4.0	3.9	4.8	8.4	e7.0	e4.0	12	21
17	e13	8.9	50	5.1	4.0	6.1	6.5	8.2	e7.3	e3.9	8.8	9.9
18	e14	8.7	29	5.1	4.2	4.6	4.8	7.7	e6.4	e2.6	14	7.1
19	e12	8.2	15	4.9	6.2	4.0	4.1	7.4	e7.1	e2.4	11	6.1
20	e11	7.9	12	4.9	4.8	3.9	24	7.1	e7.0	e2.4	8.9	5.6
21	e11	7.6	16	4.8	3.9	3.9	20	7.0	e6.4	e2.5	8.1	5.4
22	e11	7.1	e20	4.9	3.9	3.9	8.4	6.8	e6.1	e3.2	7.7	5.3
23	e12	7.3	e12	4.9	3.9	4.0	25	6.8	e5.7	e2.9	7.7	5.3
24	e11	8.8	e9.9	4.7	3.9	4.0	31	6.8	e5.2	e2.4	8.1	5.9
25	e10	7.9	e8.5	4.9	4.3	4.1	37	6.4	e4.9	e2.9	25	7.4
26	e11	7.6	e7.8	4.9	4.5	4.3	72	6.3	e5.7	e3.1	35	5.8
27	e14	7.3	e7.4	4.8	4.2	4.6	93	7.5	e4.9	e2.9	22	5.2
28	22	7.1	e7.0	4.9	4.4	5.0	44	6.9	e4.6	e3.5	33	5.9
29	15	8.6	e6.6	4.9	---	8.0	18	7.4	e4.4	e3.2	17	5.2
30	15	7.1	e6.5	4.8	---	8.9	12	8.0	e4.6	e11	17	4.8
31	12	---	e6.2	4.7	---	6.8	---	6.6	---	e8.9	28	---
TOTAL	435	292.9	454.8	169.7	121.6	159.9	535.3	354.4	318.1	138.0	391.2	293.6
MEAN	14.0	9.76	14.7	5.47	4.34	5.16	17.8	11.4	10.6	4.45	12.6	9.79
MAX	22	21	50	7.5	6.2	21	93	38	50	13	35	26
MIN	10	7.1	6.2	4.7	3.9	3.7	4.1	6.3	4.4	2.4	4.2	4.8
AC-FT	863	581	902	337	241	317	1060	703	631	274	776	582
CFSM	1.93	1.34	2.02	0.75	0.60	0.71	2.45	1.57	1.46	0.61	1.74	1.35
IN.	2.23	1.50	2.33	0.87	0.62	0.82	2.74	1.81	1.63	0.71	2.00	1.50

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2002, BY WATER YEAR (WY)

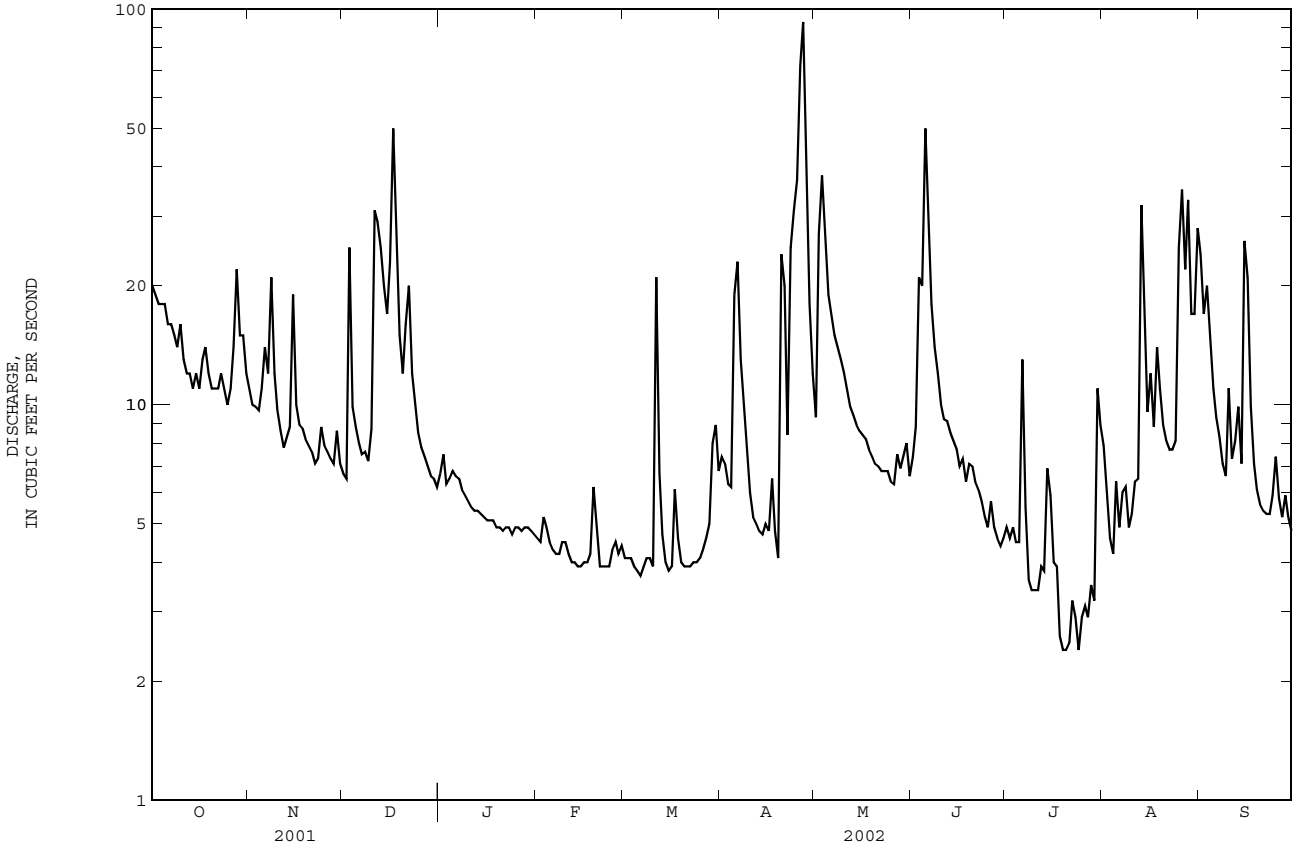
MEAN	31.0	22.8	10.8	6.04	5.20	4.61	11.7	12.6	11.2	9.89	21.9	59.2
MAX	46.4	45.0	14.8	9.51	6.33	5.64	17.8	17.6	17.6	16.1	34.5	147
(WY)	2001	2000	2000	1999	2000	1999	2002	2000	1999	1998	1999	1998
MIN	13.3	6.91	3.98	3.07	4.34	3.52	5.78	5.96	7.80	4.45	12.6	9.79
(WY)	1998	1998	1998	1998	2002	1998	2001	1999	2001	2002	2002	2002

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1998 - 2002	
ANNUAL TOTAL	4138.1		3664.5			
ANNUAL MEAN	11.3		10.0		17.2	
HIGHEST ANNUAL MEAN					22.2	1998
LOWEST ANNUAL MEAN					10.0	2002
HIGHEST DAILY MEAN	135	May 6	93	Apr 27	3000	Sep 22 1998
LOWEST DAILY MEAN	3.2	Apr 1	2.4	Jul 19	1.1	Oct 6 1997
ANNUAL SEVEN-DAY MINIMUM	3.5	Mar 14	2.6	Jul 18	1.7	Oct 1 1997
MAXIMUM PEAK FLOW			341	Aug 13	10000	Sep 21 1998
MAXIMUM PEAK STAGE			9.05	Aug 13	22.46	Sep 21 1998
ANNUAL RUNOFF (AC-FT)	8210		7270		12490	
ANNUAL RUNOFF (CFSM)	1.56		1.38		2.37	
ANNUAL RUNOFF (INCHES)	21.17		18.75		32.23	
10 PERCENT EXCEEDS	24		20		37	
50 PERCENT EXCEEDS	7.4		7.1		8.0	
90 PERCENT EXCEEDS	4.1		4.0		3.9	

e Estimated

RIO PORTUGUES BASIN

50114900 RIO PORTUGUES NEAR TIBES, PR--Continued



RIO PORTUGUES BASIN

50114900 RIO PORTUGUES NEAR TIBES, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORDS.--October 1997 to current water year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 1997 to current water year.

INSTRUMENTATION.--USDH-48 sediment sampler and automatic sediment sampler since 1997.

REMARKS.--Sediment samples were collected by a local observer on a weekly basis. During high flow events sediment samples were collected with automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, e17,500 mg/L September 22, 1998; Minimum daily mean, 1 mg/L several days during Water Year 1999 and 2001.

SEDIMENT LOADS: Maximum daily mean, e143,000 tons (e130,000 tonnes) September 22, 1998; Minimum daily mean, <0.01 ton (<0.01 tonne) March 14, 15, 2001.

EXTREMES FOR CURRENT YEAR 2001.--
SEDIMENT CONCENTRATION: Maximum daily mean, 1,760 mg/L May 6, 2001; Minimum daily mean, 1 mg/L several days.

SEDIMENT LOADS: Maximum daily mean, 2,970 tons (2,694 tonnes) May 6, 2001; Minimum daily mean, <0.01 ton (<0.01 tonne) March 14, 15, 2001.

EXTREMES FOR CURRENT YEAR 2002.--
SEDIMENT CONCENTRATION: Maximum daily mean, 1,260 mg/L April 27, 2002; Minimum daily mean, 2 mg/L several days.

SEDIMENT LOADS: Maximum daily mean, 411 tons (373 tonnes) April 27, 2002; Minimum daily mean, 0.02 ton (0.02 tonne) February 2 and March 24, 2002.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	59	640	154	28	170	18	e14	e58	e2.3
2	46	367	46	28	157	12	e13	e58	e2.3
3	50	476	80	23	98	6.1	e13	e58	e2.3
4	50	431	60	19	31	1.6	e12	e58	e2.3
5	50	459	86	17	12	0.57	e12	e58	e2.3
6	59	561	113	16	11	0.48	e12	e58	e2.3
7	85	1150	392	16	19	1.1	e11	e31	e0.98
8	70	663	128	14	8	0.30	e11	e31	e0.98
9	62	497	84	13	15	0.55	e10	e31	e0.98
10	52	405	57	13	27	0.92	e10	e31	e0.98
11	51	438	64	12	31	0.98	e10	e31	e0.98
12	39	367	39	19	112	12	e10	e31	e0.98
13	33	283	25	15	72	3.1	e9.5	e31	e0.98
14	30	239	19	14	58	2.3	e9.4	e31	e0.98
15	29	195	15	71	1010	983	e9.6	e31	e0.98
16	48	451	100	34	381	37	e8.7	e15	e0.27
17	36	259	26	22	110	6.9	e8.4	e15	e0.27
18	29	186	15	19	47	2.4	e8.3	e15	e0.27
19	24	125	8.1	18	57	2.8	e8.5	e15	e0.27
20	37	394	65	18	68	3.3	e7.4	e15	e0.27
21	55	549	114	e18	e77	e3.7	e7.4	e15	e0.27
22	65	684	156	e17	e72	e3.4	e7.0	e15	e0.27
23	83	1110	494	e17	e72	e3.1	e7.5	e15	e0.27
24	59	517	85	e16	e72	e3.1	e7.0	e15	e0.27
25	45	338	41	e14	e58	e2.3	e6.9	e15	e0.27
26	39	277	29	e14	e58	e2.3	e7.7	e15	e0.27
27	32	239	21	e14	e58	e2.3	e7.7	e15	e0.27
28	29	212	17	e14	e58	e2.3	e7.0	e15	e0.27
29	39	314	54	e14	e58	e2.3	e6.3	e15	e0.27
30	31	190	17	e19	e47	e2.4	e6.3	e15	e0.27
31	23	106	6.5	---	---	---	e6.3	e15	e0.27
TOTAL	1439	---	2610.6	586	---	1122.60	284.9	---	26.94

RIO PORTUGUES BASIN

50114900 RIO PORTUGUES NEAR TIBES, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	e7.4	e15	e0.27	e4.9	e3	e0.04	4.5	5	0.06
2	e6.3	e15	e0.27	e5.0	e3	e0.04	5.3	10	0.15
3	e7.4	e15	e0.27	e4.6	e3	e0.04	4.3	3	0.04
4	e6.3	e15	e0.27	e4.1	e3	e0.04	4.2	3	0.03
5	e6.2	e15	e0.27	e3.9	e3	e0.04	4.2	3	0.04
6	e6.3	e15	e0.27	e3.9	e3	e0.04	4.1	4	0.05
7	e6.3	e15	e0.27	e4.1	e3	e0.04	3.9	5	0.05
8	e6.3	e15	e0.27	e4.2	e3	e0.04	3.7	4	0.04
9	e6.3	e15	e0.27	e4.4	e3	e0.04	3.7	4	0.04
10	e6.3	e15	e0.27	4.2	4	0.04	3.7	3	0.03
11	e5.4	e8	e0.11	4.2	3	0.04	3.7	2	0.02
12	e5.3	e8	e0.11	4.2	2	0.03	3.6	2	0.02
13	e5.3	e8	e0.11	4.2	2	0.02	3.7	1	0.01
14	e5.1	e8	e0.11	4.2	1	0.02	3.7	1	<0.01
15	e5.3	e8	e0.11	4.2	1	0.01	3.6	1	<0.01
16	e5.5	e8	e0.11	4.2	1	0.01	3.5	1	0.01
17	e5.5	e8	e0.11	4.2	1	0.01	3.3	5	0.04
18	e5.1	e8	e0.11	4.2	1	0.01	3.3	10	0.09
19	e4.6	e7	e0.09	4.1	1	0.01	3.3	14	0.13
20	e4.4	e7	e0.09	4.1	1	0.01	3.6	12	0.12
21	e4.2	e7	e0.09	4.2	1	0.01	3.7	10	0.10
22	e4.1	e7	e0.09	4.4	1	0.01	7.0	22	0.55
23	e5.1	e7	e0.09	5.1	5	0.09	5.6	10	0.16
24	e4.2	e7	e0.09	5.3	8	0.11	5.3	11	0.17
25	e4.0	e7	e0.09	5.0	7	0.09	4.8	8	0.11
26	e4.8	e7	e0.09	4.4	6	0.07	4.0	7	0.08
27	e4.7	e7	e0.09	4.3	5	0.06	4.0	7	0.07
28	e4.5	e7	e0.09	4.3	4	0.05	3.8	7	0.07
29	e5.0	e7	e0.09	---	---	---	3.8	6	0.06
30	e7.1	e15	e0.27	---	---	---	3.6	5	0.05
31	e4.7	e7	e0.09	---	---	---	3.3	5	0.05
TOTAL	169.0	---	4.93	122.1	---	1.06	125.8	---	2.46

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

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	3.2	7	0.06	4.4	338	4.0	6.9	11	0.20
2	3.4	7	0.06	4.2	339	3.9	6.6	14	0.25
3	6.9	25	1.0	4.0	335	3.7	6.8	10	0.19
4	5.1	11	0.17	4.0	254	2.7	9.8	30	1.5
5	5.2	11	0.16	3.9	149	1.6	8.0	48	1.0
6	25	694	439	135	1760	2970	7.4	42	0.83
7	7.4	5	0.10	64	833	219	6.9	36	0.66
8	8.9	30	1.5	12	319	10	6.5	31	0.54
9	6.4	15	0.27	7.3	197	4.0	6.3	26	0.44
10	4.9	4	0.05	35	790	423	6.2	21	0.36
11	4.8	3	0.03	21	124	7.5	6.4	17	0.29
12	4.3	1	0.02	13	115	4.2	6.1	12	0.20
13	5.3	7	0.15	10	98	2.8	6.0	8	0.13
14	4.7	5	0.07	9.2	81	2.0	5.9	7	0.10
15	4.2	5	0.05	8.6	64	1.5	8.5	10	0.28
16	4.0	4	0.04	8.3	47	1.1	7.6	16	0.32
17	3.8	4	0.04	8.4	29	0.67	6.3	13	0.22
18	3.8	3	0.03	9.4	24	0.66	5.9	13	0.21
19	3.7	3	0.03	9.3	23	0.61	6.2	22	0.38
20	4.5	6	0.09	8.1	20	0.44	6.8	84	1.5
21	4.7	8	0.11	7.7	30	0.63	6.7	156	2.8
22	4.9	8	0.10	7.5	41	0.83	6.7	217	3.9
23	6.8	17	0.40	7.4	51	1.0	15	142	8.4
24	6.0	6	0.11	7.4	53	1.1	12	44	1.5
25	4.8	4	0.05	7.2	54	1.0	11	37	1.6
26	5.2	8	0.23	7.0	54	1.0	9.2	5	0.11
27	e7.7	e23	e0.56	6.8	54	0.99	9.1	10	0.29
28	4.9	6	0.08	8.5	46	1.1	9.1	5	0.12
29	4.4	4	0.05	7.4	17	0.35	9.2	9	0.24
30	4.5	178	2.2	7.0	13	0.25	9.0	4	0.10
31	---	---	---	7.1	9	0.17	---	---	---
TOTAL	173.4	---	446.81	460.1	---	3671.80	234.1	---	28.66

RIO PORTUGUES BASIN

50114900 RIO PORTUGUES NEAR TIBES, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	9.1	3	0.08	6.3	24	0.40	61	1250	971
2	8.8	2	0.05	6.3	21	0.36	33	244	22
3	8.3	1	0.03	6.1	19	0.31	28	196	18
4	7.9	1	0.03	6.0	16	0.26	25	128	8.6
5	7.4	2	0.03	5.8	14	0.21	19	101	5.3
6	7.4	2	0.04	6.0	11	0.18	20	96	5.2
7	7.3	2	0.03	5.8	9	0.13	22	125	8.6
8	7.1	1	0.03	6.0	6	0.10	40	375	85
9	7.5	3	0.08	5.6	4	0.05	29	163	13
10	8.0	14	0.47	5.8	3	0.05	27	159	14
11	6.4	16	0.28	5.1	3	0.04	30	186	16
12	6.8	18	0.35	4.7	7	0.09	54	955	533
13	6.7	35	0.63	4.5	12	0.14	34	224	21
14	12	70	3.7	5.4	19	0.31	39	284	32
15	11	37	1.2	5.5	12	0.17	27	170	12
16	8.1	21	0.45	5.2	9	0.13	31	181	15
17	7.4	18	0.36	5.1	7	0.09	26	221	15
18	13	69	4.7	5.1	6	0.08	24	135	8.8
19	8.7	26	0.63	10	35	1.8	24	119	7.6
20	7.3	18	0.35	8.2	5	0.11	26	151	11
21	7.0	17	0.32	8.7	9	0.24	83	981	1020
22	14	79	5.9	24	612	216	29	167	14
23	16	80	4.9	94	656	295	31	183	27
24	18	74	3.6	39	222	40	20	99	5.3
25	15	56	2.3	27	181	16	16	42	1.8
26	40	825	400	26	200	14	25	219	31
27	15	206	8.6	19	180	9.1	41	390	66
28	8.8	108	2.6	16	160	7.0	e29	e73	e9.6
29	8.7	72	1.7	14	114	4.4	19	16	0.83
30	7.5	36	0.75	19	206	15	17	15	0.71
31	6.5	23	0.40	14	266	10	---	---	---
TOTAL	322.7	---	444.59	419.2	---	631.75	929	---	2998.34
YEAR	5265.3		11990.54						

e Estimated

RIO PORTUGUES BASIN

50114900 RIO PORTUGUES NEAR TIBES, PR--Continued

WATER-QUALITY RECORDS

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	20	e30	e1.6	11	46	1.3	6.7	35	0.64
2	e19	e30	e1.6	10	16	0.45	6.5	35	0.62
3	e18	e26	e1.3	9.9	6	0.17	25	226	43
4	e18	e37	e1.8	9.7	5	0.12	e9.9	e33	e0.90
5	e18	e49	e2.3	11	16	0.55	e8.8	e52	e1.2
6	e16	e60	e2.6	14	58	2.2	e8.0	e54	e1.2
7	e16	e72	e3.1	12	9	0.32	e7.5	e46	e0.93
8	e15	e83	e3.4	21	112	8.0	e7.6	e38	e0.77
9	e14	e95	e3.6	12	41	1.4	e7.2	e30	e0.58
10	e16	e63	e2.7	9.7	28	0.73	e8.7	e33	e0.98
11	e13	e47	e1.6	8.6	21	0.49	e31	e351	e87
12	e12	e57	e1.8	7.8	18	0.38	e29	e161	e13
13	e12	e66	e2.2	8.3	19	0.44	e25	e131	e8.7
14	e11	e69	e2.1	8.8	24	0.60	e20	e103	e5.5
15	e12	e70	e2.4	19	146	22	e17	e77	e3.6
16	e11	e72	e2.2	10	44	1.3	e23	e157	e18
17	e13	e73	e2.6	8.9	51	1.2	50	740	270
18	e14	e74	e2.7	8.7	42	0.99	29	184	18
19	e12	e58	e1.9	8.2	35	0.79	15	61	2.5
20	e11	e38	e1.2	7.9	35	0.74	12	19	0.62
21	e11	e32	e0.93	7.6	34	0.69	16	75	8.3
22	e11	e29	e0.84	7.1	32	0.61	e20	e67	e4.0
23	e12	e35	e1.2	7.3	29	0.57	e12	e47	e1.6
24	e11	e23	e0.52	8.8	27	0.65	e9.9	e25	e0.69
25	e10	e22	e0.50	7.9	35	0.74	e8.5	e14	e0.32
26	e11	e31	e0.87	7.6	44	0.91	e7.8	e6	e0.13
27	e14	e455	e35	7.3	53	1.0	e7.4	e4	e0.08
28	22	202	19	7.1	50	0.97	e7.0	e4	e0.08
29	15	71	2.8	8.6	43	0.99	e6.6	e4	e0.07
30	15	97	3.8	7.1	36	0.70	e6.5	e4	e0.07
31	12	76	2.6	---	---	---	e6.2	e4	e0.07
TOTAL	435	---	112.76	292.9	---	52.00	454.8	---	493.15

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	e6.7	e7	e0.14	4.6	4	0.05	4.1	14	0.16
2	e7.5	e6	e0.12	4.5	2	0.02	4.1	14	0.16
3	6.3	6	0.09	5.2	5	0.07	4.1	38	0.41
4	6.5	5	0.09	4.9	9	0.12	3.9	64	0.67
5	6.8	5	0.09	4.5	14	0.17	3.8	62	0.63
6	6.6	6	0.11	4.3	19	0.22	3.7	54	0.54
7	6.5	8	0.14	4.2	23	0.27	3.9	45	0.47
8	6.1	9	0.16	4.2	28	0.32	4.1	36	0.40
9	5.9	11	0.18	4.5	32	0.40	4.1	28	0.30
10	5.7	12	0.19	4.5	28	0.34	3.9	19	0.20
11	5.5	10	0.15	4.2	20	0.23	21	196	35
12	5.4	7	0.10	4.0	12	0.13	6.7	68	1.2
13	5.4	6	0.09	4.0	4	0.05	4.7	65	0.83
14	5.3	6	0.09	3.9	4	0.04	4.0	62	0.67
15	5.2	6	0.08	3.9	6	0.06	3.8	57	0.59
16	5.1	6	0.08	4.0	7	0.08	3.9	52	0.55
17	5.1	6	0.08	4.0	8	0.09	6.1	49	0.87
18	5.1	6	0.08	4.2	8	0.09	4.6	6	0.08
19	4.9	6	0.08	6.2	18	0.35	4.0	4	0.05
20	4.9	12	0.16	4.8	18	0.23	3.9	4	0.04
21	4.8	20	0.27	3.9	18	0.19	3.9	4	0.04
22	4.9	29	0.38	3.9	17	0.18	3.9	3	0.03
23	4.9	36	0.48	3.9	17	0.18	4.0	3	0.03
24	4.7	40	0.51	3.9	17	0.18	4.0	2	0.02
25	4.9	41	0.55	4.3	17	0.19	4.1	2	0.03
26	4.9	37	0.49	4.5	16	0.20	4.3	3	0.03
27	4.8	31	0.41	4.2	16	0.18	4.6	3	0.04
28	4.9	25	0.33	4.4	16	0.19	5.0	3	0.04
29	4.9	19	0.25	---	---	---	8.0	21	0.87
30	4.8	13	0.17	---	---	---	8.9	29	0.89
31	4.7	8	0.10	---	---	---	6.8	13	0.25
TOTAL	169.7	---	6.24	121.6	---	4.82	159.9	---	46.09

RIO PORTUGUES BASIN

50114900 RIO PORTUGUES NEAR TIBES, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	7.4	24	0.89	9.3	29	0.73	7.4	52	1.0
2	7.1	16	0.34	27	456	98	8.8	28	0.75
3	e6.3	e16	e0.27	38	500	93	21	125	11
4	e6.2	e16	e0.27	27	91	7.5	20	104	6.6
5	e19	e20	e188	19	22	1.1	50	532	106
6	e23	e313	e71	17	19	0.89	27	114	9.6
7	e13	e56	e1.9	15	19	0.79	e18	e16	e0.78
8	e10	e16	e0.49	14	18	0.68	e14	e6	e0.23
9	e8.0	e24	e0.89	13	17	0.61	e12	e4	e0.11
10	e6.0	e16	e0.27	12	17	0.54	e10	e3	e0.08
11	e5.2	e51	e0.71	11	16	0.49	e9.2	e2	e0.06
12	5.0	61	0.81	9.9	20	0.53	e9.1	e2	e0.04
13	4.8	68	0.88	9.4	25	0.63	e8.5	e2	e0.04
14	4.7	74	0.94	8.9	30	0.71	e8.1	e10	e0.22
15	5.0	72	0.96	8.6	34	0.80	e7.7	e21	e0.43
16	4.8	66	0.86	8.4	38	0.86	e7.0	e22	e0.43
17	6.5	62	1.1	8.2	29	0.63	e7.3	e20	e0.40
18	4.8	11	0.15	7.7	16	0.33	e6.4	e18	e0.47
19	4.1	7	0.08	7.4	11	0.23	e7.1	e16	e0.32
20	24	211	28	7.1	10	0.19	e7.0	e14	e0.27
21	20	188	14	7.0	8	0.15	e6.4	e12	e0.21
22	8.4	89	2.1	6.8	6	0.11	e6.1	e10	e0.17
23	25	313	71	6.8	4	0.08	e5.7	e10	e0.15
24	31	243	32	6.8	4	0.08	e5.2	e10	e0.14
25	37	342	64	6.4	5	0.08	e4.9	e10	e0.13
26	72	999	305	6.3	5	0.09	e5.7	e17	e0.45
27	93	1260	411	7.5	13	0.28	e4.9	e10	e0.13
28	44	405	68	6.9	5	0.10	e4.6	e9	e0.11
29	18	148	7.6	7.4	13	0.36	e4.4	e9	e0.10
30	12	56	1.9	8.0	42	0.91	e4.6	e8	e0.10
31	---	---	---	6.6	44	0.78	---	---	---
TOTAL	535.3	---	1275.41	354.4	---	212.26	318.1	---	140.52

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	e4.9	e8	e0.10	e7.9	e18	e0.47	24	22	1.5
2	e4.6	e7	e0.09	e6.0	e4	e0.06	17	6	0.27
3	e4.9	e6	e0.09	e4.6	e13	e0.19	20	73	8.9
4	e4.5	e6	e0.08	e4.2	e10	e0.11	15	27	1.5
5	e4.5	e8	e0.10	e6.4	e22	e0.61	11	4	0.12
6	e13	e79	e5.9	e4.9	e14	e0.19	9.3	4	0.10
7	e5.5	e21	e0.37	e6.0	e15	e0.26	8.3	4	0.09
8	e3.6	e14	e0.13	e6.2	e13	e0.23	7.1	4	0.08
9	e3.4	e14	e0.13	4.9	11	0.15	6.6	4	0.07
10	e3.4	e15	e0.14	5.3	15	0.21	11	36	2.0
11	e3.4	e16	e0.14	6.4	18	0.36	7.3	20	0.39
12	e3.9	e13	e0.13	6.5	17	0.31	8.1	23	0.53
13	e3.8	e9	e0.09	32	380	147	9.9	38	1.5
14	e6.9	e24	e0.66	17	66	3.8	7.1	23	0.45
15	e5.9	e17	e0.29	9.6	11	0.29	26	215	34
16	e4.0	e15	e0.16	12	31	1.3	21	111	6.7
17	e3.9	e14	e0.15	8.8	19	0.46	9.9	51	1.4
18	e2.6	e16	e0.11	14	45	2.5	7.1	28	0.54
19	e2.4	e31	e0.20	11	9	0.27	6.1	7	0.11
20	e2.4	e48	e0.31	8.9	7	0.17	5.6	7	0.11
21	e2.5	e47	e0.32	8.1	5	0.12	5.4	15	0.22
22	e3.2	e41	e0.35	7.7	4	0.09	5.3	19	0.26
23	e2.9	e36	e0.28	7.7	4	0.08	5.3	21	0.30
24	e2.4	e30	e0.20	8.1	11	0.30	5.9	23	0.37
25	e2.9	e25	e0.19	25	221	30	7.4	21	0.43
26	e3.1	e18	e0.15	35	317	69	5.8	5	0.09
27	e2.9	e11	e0.09	22	161	11	5.2	5	0.06
28	e3.5	e8	e0.08	33	383	115	5.9	11	0.19
29	e3.2	e6	e0.06	17	45	2.2	5.2	10	0.14
30	e11	e95	e14	17	88	6.3	4.8	7	0.09
31	e8.9	e38	e0.94	28	149	13	---	---	---
TOTAL	138.0	---	26.03	391.2	---	406.03	293.6	---	62.51
YEAR	3664.5		2837.82						

e Estimated

RIO PORTUGUES BASIN

50114900 RIO PORTUGUES NEAR TIBES, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

Date	Time	Instantaneous discharge, cfs (00061)	Suspended sediment concentration mg/L (80154)	Suspnd. Suspended sediment load, tons/d (80155)	Suspnd. sediment, sieve diametr percent <.063mm (70331)
APR					
26...	1533	184	7770	3860	100
MAY					
03...	1438	113	7210	2200	98

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

PARTICLE SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

Date	Time	Instantaneous discharge, cfs (00061)	Suspended sediment concentration mg/L (80154)	Suspended sediment load, tons/d (80155)	Suspnd. sediment, falldia nat wat percent <.002mm (70326)	Suspnd. sediment, falldia nat wat percent <.004mm (70327)	Suspnd. sediment, falldia nat wat percent <.008mm (70328)	Suspnd. sediment, falldia nat wat percent <.016mm (70329)	Suspnd. sediment, falldia nat wat percent <.031mm (70330)	Suspnd. sediment, sieve diametr percent <.063mm (70331)	Suspnd. sediment, sieve diametr percent <.125mm (70332)	Suspnd. sediment, sieve diametr percent <.25mm (70333)	Suspnd. sediment, sieve diametr percent <.5 mm (70334)
DEC													
17...	1713	203	5640	3090	47	63	80	94	97	100	100	100	100

Date	Suspnd. sediment, sieve diametr percent <1 mm (70335)
DEC	
17...	100

RIO PORTUGUES BASIN

50115000 RIO PORTUGUES NEAR PONCE, PR

WATER-QUALITY RECORDS

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 Río Chiquito, and 4.7 mi (7.6 km) north of Plaza Degetau in Ponce.

DRAINAGE AREA.--8.82 mi^2 (22.84 km^2).

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
DEC													
06...	1350	8.8	367	8.1	26.0	1.6	7.6	94	<10	<10	E54	170	52.1
FEB													
28...	1140	3.2	372	8.1	24.0	1.3	8.2	97	<10	E10	E20	--	--
MAY													
23...	1300	6.6	338	8.3	27.4	1.1	8.0	101	<10	E45	E55	160	50.3

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
DEC													
06...	8.98	10.4	.4	1.21	162	<1.0	14.2	8.03	<.1	20.6	213	5.07	<10
FEB													
28...	--	--	--	--	168	--	--	--	--	--	--	--	<10
MAY													
23...	9.24	11.2	.4	1.17	156	<.1	14.2	8.42	.1	20.7	209	3.73	<10

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
DEC													
06...	<.01	1.40	.02	<.20	E.05	<2	41.5	<20	<.1	<.8	<10	70	<1
FEB													
28...	<.01	.880	.01	<.20	.03	--	--	--	--	--	--	--	--
MAY													
23...	<.01	.500	<.01	<.20	<.02	3	39.5	20	<.1	E.5	<10	10	<1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
DEC								
06...	E2.5	<.01	<2	<.3	<20	<.01	<17	<.05
FEB								
28...	--	--	--	--	--	--	--	--
MAY								
23...	E1.6	<.01	<2	<.3	E30	<.01	<18	<.05

< -- Less than
E -- Estimated value

RIO PORTUGUES BASIN

50115900 RIO PORTUGUES AT HIGHWAY 14 AT PONCE, PR

LOCATION.--Lat 18°01'09", long 66°36'26", Hydrologic Unit 21010004, on right bank upstream from bridge on Highway 14, 1.70 mi (2.74 km) downstream from Río Chiquito, and 0.6 mi (0.96 km) northeast of Plaza Degetau in Ponce.

DRAINAGE AREA.--18.6 mi^2 (48.17 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Occasional measurements 1963, annual maximum discharge and peaks above base at different datum, from 1965 to 1972. June 1997 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 67.2 ft (20.48 m), from topographic map. Prior to June 18, 1997 non-recording gage crested-stage gage at same site and different datum.

REMARKS.--Records poor. Some low-flow regulation due to Río Portugués dam construction activity upstream. Gage-height and precipitation satellite telemetry at station.

REVISIONS.--Revised figures of discharge for the water year 2001, superseding those published in the report for 2001 are given below.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e934	e129	e51	e20	e14	e8.5	e5.8	e9.0	e15	e21	e14	e200
2	e136	e128	e44	e12	e15	e12	e6.1	e8.8	e14	e20	e14	e69
3	e74	e95	e44	e20	e12	e9.0	e15	e7.8	e14	e20	e13	e60
4	e83	e67	e38	e12	e8.9	e9.0	e11	e7.8	e24	e17	e13	e54
5	e57	e53	e35	e11	e7.4	e9.0	e11	e7.5	e21	e15	e12	e42
6	e71	e44	e33	e12	e7.4	e7.6	e54	e200	e19	e15	e13	e44
7	e289	e43	e31	e12	e8.8	e7.5	e16	e80	e17	e14	e13	e49
8	e172	e42	e29	e12	e9.5	e7.4	e21	e26	e15	e13	e13	e82
9	e90	e36	e28	e12	e11	e7.4	e14	e19	e14	e15	e12	e61
10	e79	e34	e27	e12	e9.5	e7.4	e11	e68	e13	e17	e13	e58
11	e61	e34	e26	e11	e9.5	e7.4	e15	e46	e14	e14	e11	e63
12	e42	e61	e25	e11	e9.5	e7.3	e8.5	e30	e13	e15	e10	e110
13	e35	e37	e24	e11	e9.3	e7.2	e7.5	e22	e12	e15	e9.0	e71
14	e31	e32	e22	e11	e9.5	e7.2	e10	e21	e14	e30	e12	e81
15	e32	e152	e21	e17	e9.5	e7.0	e8.0	e19	e19	e28	e12	e57
16	e34	e119	e20	e19	e9.5	e6.8	e7.5	e20	e17	e17	e11	e64
17	e82	e86	e19	e19	e9.5	e6.3	e7.2	e20	e14	e16	e11	e55
18	e74	e67	e19	e16	e9.5	e6.3	e7.2	e22	e14	e31	e11	e52
19	e58	e58	e19	e12	e8.8	e6.3	e7.1	e21	e12	e20	e23	e52
20	e32	e46	e19	e11	e8.8	e7.8	e8.5	e18	e14	e16	e17	e55
21	e45	e32	e18	e9.5	e9.6	e7.2	e8.7	e18	e13	e15	e20	e350
22	e206	e52	e16	e8.9	e11	e15	e11	e17	e13	e34	e52	e61
23	e251	e51	e19	e16	e16	e6.5	e15	e16	e32	e36	e300	e65
24	e202	e43	e15	e9.5	e17	e12	e13	e16	e30	e40	e81	e44
25	e125	e31	e15	e8.1	e15	e10	e10	e15	e28	e34	e60	e36
26	e105	e30	e20	e14	e11	e7.5	e11	e15	e22	e85	e55	e54
27	e61	e30	e21	e13	e10	e7.5	e16	e14	e21	e34	e42	e85
28	e48	e30	e15	e12	e10	e7.1	e11	e14	e21	e20	e37	e64
29	e201	e31	e11	e15	---	e7.1	e8.4	e20	e22	e20	e32	e42
30	e148	e88	e11	e30	---	e6.4	e8.5	e17	e21	e16	e42	e38
31	e96	---	e12	e13	---	e6.3	---	e16	---	e14	e32	---
TOTAL	3954	1781	747	422.0	296.5	247.0	364.0	850.9	532	717	1010.0	2218
MEAN	128	59.4	24.1	13.6	10.6	7.97	12.1	27.4	17.7	23.1	32.6	73.9
MAX	934	152	51	30	17	15	54	200	32	85	300	350
MIN	31	30	11	8.1	7.4	6.3	5.8	7.5	12	13	9.0	36
AC-FT	7840	3530	1480	837	588	490	722	1690	1060	1420	2000	4400
CFSM	6.86	3.19	1.30	0.73	0.57	0.43	0.65	1.48	0.95	1.24	1.75	3.97
IN.	7.91	3.56	1.49	0.84	0.59	0.49	0.73	1.70	1.06	1.43	2.02	4.44

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2001, BY WATER YEAR (WY)

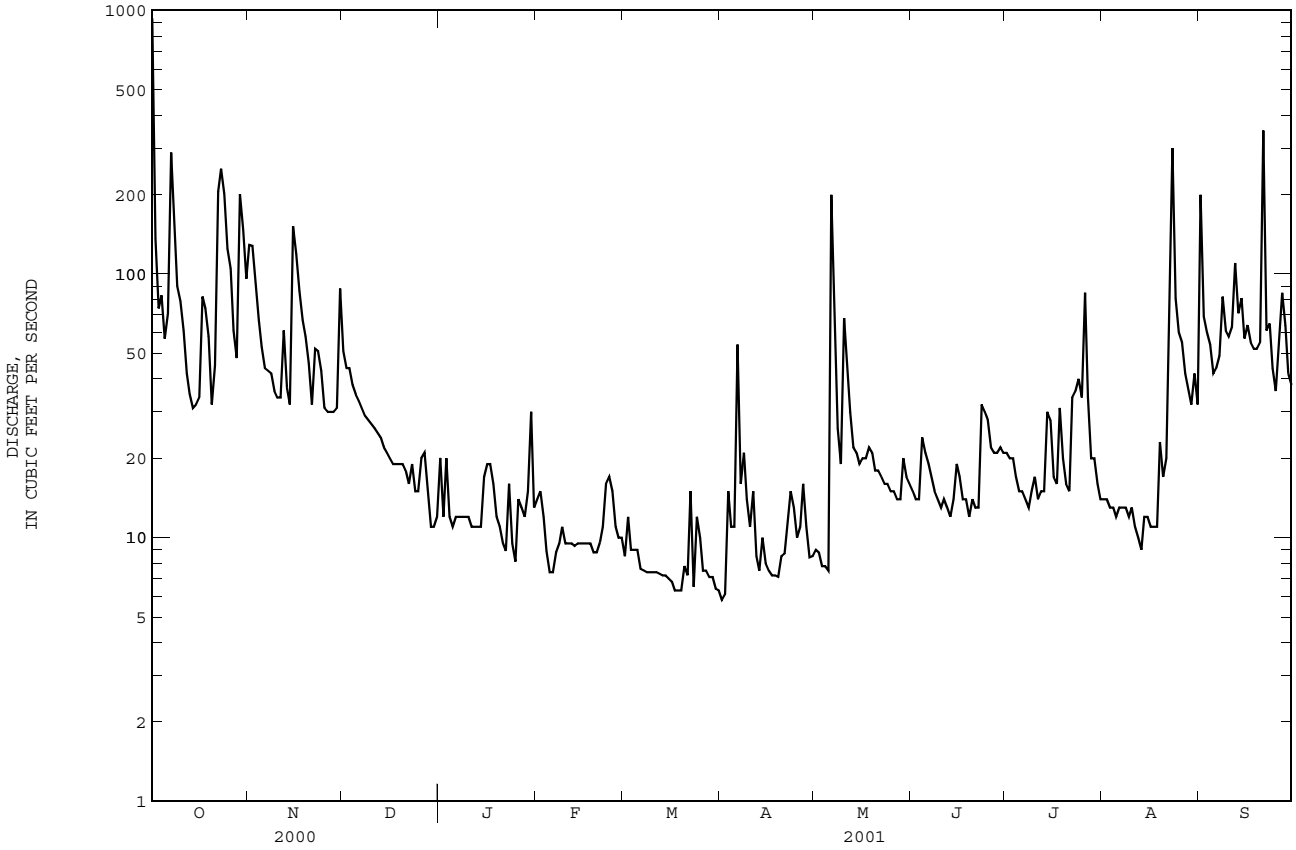
MEAN	97.3	64.7	20.3	14.3	12.8	9.80	22.5	28.6	29.9	19.2	57.1	129
MAX	128	129	31.1	21.7	20.6	17.4	37.0	46.1	60.4	36.8	112	314
(WY)	2001	2000	2000	1999	1998	1999	1998	2000	1999	1999	1998	1998
MIN	68.0	15.1	6.00	6.09	9.14	5.33	12.1	15.9	17.7	3.90	6.79	12.5
(WY)	1999	1998	1998	1998	1999	1998	2001	1999	2000	2000	1997	1997

e Estimated

RIO PORTUGUES BASIN

50115900 RIO PORTUGUES AT HIGHWAY 14 AT PONCE, PR--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1997 - 2001	
ANNUAL TOTAL	14324.1		13139.4			
ANNUAL MEAN	39.1		36.0		45.9	
HIGHEST ANNUAL MEAN					57.8	1998
LOWEST ANNUAL MEAN					36.0	2001
HIGHEST DAILY MEAN	1110	Sep 18	934	Oct 1	5580	Sep 22 1998
LOWEST DAILY MEAN	2.9	Jul 28	5.8	Apr 1	0.97	Jun 18 1997
ANNUAL SEVEN-DAY MINIMUM	3.1	Jul 25	6.6	Mar 27	1.6	Jul 27 1997
MAXIMUM PEAK FLOW					16300	Sep 22 1998
MAXIMUM PEAK STAGE					19.73	Sep 22 1998
ANNUAL RUNOFF (AC-FT)	28410		26060		33290	
ANNUAL RUNOFF (CFSM)	2.10		1.94		2.47	
ANNUAL RUNOFF (INCHES)	28.65		26.28		33.56	
10 PERCENT EXCEEDS	84		72		92	
50 PERCENT EXCEEDS	16		17		17	
90 PERCENT EXCEEDS	4.8		8.1		5.9	



RIO PORTUGUES BASIN

50115900 RIO PORTUGUES AT HIGHWAY 14 AT PONCE, PR--Continued

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e44	e25	e15	e12	e8.4	e5.6	9.7	e47	e30	e8.6	e7.7	92
2	e42	e24	e14	e10	e6.7	e5.6	13	e61	e48	e10	e9.8	27
3	e41	e23	e54	e13	e7.6	e5.8	21	e94	e76	e10	e5.5	21
4	e41	e22	e23	e11	e8.6	e5.7	13	e81	e115	e12	e8.5	35
5	e40	e25	e20	e10	e7.8	e6.3	11	e42	e229	e19	e18	13
6	e36	e32	e17	e9.0	e7.5	e6.9	117	e30	e129	e17	e16	12
7	e36	e28	e16	e8.5	e7.5	e6.1	30	e26	e46	e54	e7.5	8.7
8	e34	e46	e16	e8.0	e8.4	e6.3	19	e29	e24	e12	e9.5	8.5
9	e32	e28	e15	e7.5	e7.8	e5.9	11	e23	e18	e11	e11	7.3
10	e34	e22	e20	7.9	e8.6	e5.2	13	e20	e15	e10	e18	7.4
11	e30	e18	e65	8.0	e8.0	19	16	e18	e14	e8.4	e13	30
12	e28	e17	e50	7.7	e6.7	45	19	e15	e14	e8.2	e19	12
13	e28	e17	e20	7.7	e7.7	9.0	13	e14	e18	e6.8	e18	9.3
14	e25	e20	e30	7.5	e7.9	7.7	19	e13	e14	e8.8	e89	14
15	e28	e42	e31	7.8	e7.2	8.2	18	e12	e16	e34	e17	98
16	e25	e23	e40	7.3	e8.0	12	29	e11	e19	e15	e15	253
17	e30	e21	e100	7.1	e6.5	8.8	19	e11	e22	e9.0	e19	70
18	e32	e20	e61	7.6	e6.1	9.5	30	e15	e15	e8.0	e16	29
19	e28	e17	e34	8.0	e11	6.3	15	e14	e13	e8.8	e26	16
20	e25	e17	e27	7.9	e16	6.9	113	e17	e12	e9.6	e14	11
21	e25	e16	e36	8.3	e9.2	6.7	162	e14	e23	e6.1	e15	8.8
22	e25	e15	e44	9.4	e6.8	7.0	59	e9.2	e15	e4.8	e20	6.8
23	e28	e16	e27	10	e5.8	6.8	41	e13	e17	e5.5	e10	7.0
24	e25	e20	e23	15	e5.5	7.3	145	e17	e12	e3.0	17	7.6
25	e23	e17	e18	17	e5.1	7.0	122	e16	e11	e3.3	19	12
26	e25	e16	e17	16	e5.4	7.5	183	e16	e18	e5.0	73	9.7
27	e32	e16	e15	11	e5.3	8.6	236	e18	e15	e6.1	64	6.9
28	e47	e15	e13	8.3	e5.6	8.6	230	e20	e8.3	e9.0	30	10
29	e34	e19	e12	7.8	---	19	90	e16	e7.6	e11	102	14
30	e34	e15	e11	e7.7	---	22	60	e27	e7.9	e6.7	27	14
31	e28	---	e10	e6.0	---	24	---	e25	---	e25	83	---
TOTAL	985	652	894	290.0	212.7	316.3	1876.7	784.2	1021.8	365.7	817.5	871.0
MEAN	31.8	21.7	28.8	9.35	7.60	10.2	62.6	25.3	34.1	11.8	26.4	29.0
MAX	47	46	100	17	16	45	236	94	229	54	102	253
MIN	23	15	10	6.0	5.1	5.2	9.7	9.2	7.6	3.0	5.5	6.8
AC-FT	1950	1290	1770	575	422	627	3720	1560	2030	725	1620	1730
CFSM	1.71	1.17	1.55	0.50	0.41	0.55	3.36	1.36	1.83	0.63	1.42	1.56
IN.	1.97	1.30	1.79	0.58	0.43	0.63	3.75	1.57	2.04	0.73	1.64	1.74

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2002, BY WATER YEAR (WY)

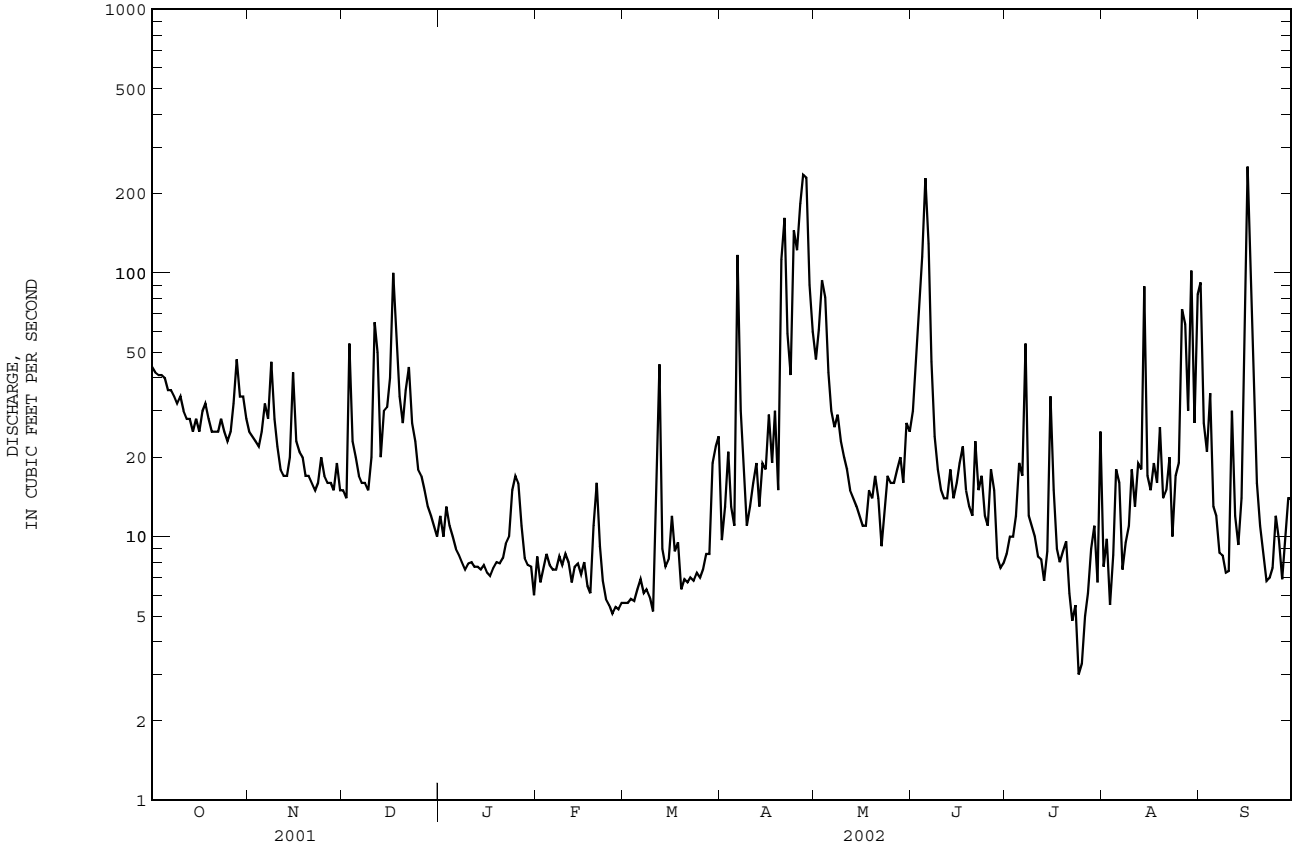
MEAN	84.2	56.1	22.0	13.3	11.8	9.88	30.5	27.9	30.7	18.0	52.0	113
MAX	128	129	31.1	21.7	20.6	17.4	62.6	46.1	60.4	36.8	112	314
(WY)	2001	2000	2000	1999	1998	1999	2002	2000	1999	1999	1998	1998
MIN	31.8	15.1	6.00	6.09	7.60	5.33	12.1	15.9	17.7	3.90	6.79	12.5
(WY)	2002	1998	1998	1998	2002	1998	2001	1999	2000	2000	1997	1997

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1997 - 2002	
ANNUAL TOTAL	9188.4		9086.9			
ANNUAL MEAN	25.2		24.9		41.7	
HIGHEST ANNUAL MEAN					57.8	1998
LOWEST ANNUAL MEAN					24.9	2002
HIGHEST DAILY MEAN	350	Sep 21	253	Sep 16	5580	Sep 22 1998
LOWEST DAILY MEAN	5.8	Apr 1	3.0	Jul 24	0.97	Jun 18 1997
ANNUAL SEVEN-DAY MINIMUM	6.6	Mar 27	4.8	Jul 21	1.6	Jul 27 1997
MAXIMUM PEAK FLOW			499	Sep 16	16300	Sep 22 1998
MAXIMUM PEAK STAGE			10.73	Sep 16	19.73	Sep 22 1998
ANNUAL RUNOFF (AC-FT)	18230		18020		30240	
ANNUAL RUNOFF (CFSM)	1.35		1.34		2.24	
ANNUAL RUNOFF (INCHES)	18.38		18.17		30.49	
10 PERCENT EXCEEDS	52		46		86	
50 PERCENT EXCEEDS	16		15		16	
90 PERCENT EXCEEDS	8.1		6.9		6.1	

e Estimated

RIO PORTUGUES BASIN

50115900 RIO PORTUGUES AT HIGHWAY 14 AT PONCE, PR--Continued



RIO PORTUGUES BASIN

50116200 RIO PORTUGUES AT PONCE, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°00'20", long 66°36'28", 1,300 ft (400 m) south of Las Americas Avenue Bridge, 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 mi^2 (49.0 km^2).

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
DEC													
05...	1535	73	378	8.5	30.0	12	11.9	157	<10	E5450	5100	130	35.8
FEB													
27...	1330	6.0	569	8.1	29.0	23	6.0	77	10	25000	6600	--	--
JUN													
10...	1330	16	467	8.3	32.2	15	14.7	201	<10	E227	E155	160	42.9

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
DEC													
05...	9.87	26.5	1	1.52	120	<1.0	44.8	21.1	E.1	18.7	230	45.6	22
FEB													
27...	--	--	--	--	151	--	--	--	--	--	--	--	24
JUN													
10...	11.6	31.1	1	1.14	138	<.1	54.9	27.0	.1	19.7	271	11.8	21

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
DEC													
05...	.02	.610	.11	E.40	E.06	E1	34.2	60	<.1	<.8	<10	410	<1
FEB													
27...	.03	.350	.49	1.1	.21	--	--	--	--	--	--	--	--
JUN													
10...	<.01	.230	.09	.30	<.02	<2	41.5	60	<.1	<.8	<10	440	M

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
DEC								
05...	37.4	E.01	<2	<.3	<20	<.01	<16	<.05
FEB								
27...	--	--	--	--	--	--	--	--
JUN								
10...	21.3	<.01	<2	<.3	<20	<.01	<17	E.04

RIO PORTUGUES BASIN

50116200 RIO PORTUGUES AT PONCE, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

PESTICIDE ANALYSES

DATE	TIME	DI-CHLOR-PROP, WATER, UNFLTRD UG/L (82183)	2,4,5-T WATER UNFLTRD UG/L (39740)	2,4-D WATER UNFLTRD UG/L (39730)	ALDRIN, WATER, UNFLTRD UG/L (39330)	CARBO-PHENO-THION, WATER, UNFLTRD UG/L (39786)	CHLOR-DANE, TECH-NICAL, WATER, UNFLTRD UG/L (39350)	CHLOR-PYRIFOS WATER UNFLTRD UG/L (38932)	TRIBU-PHOS, WATER, UNFLTRD UG/L (39040)	DIAZI-NON, WATER, UNFLTRD UG/L (39570)	DIEL-DRIN, WATER, UNFLTRD UG/L (39380)	DISUL-FOTON, WATER, UNFLTRD UG/L (39011)	ALPHA-ENDO-SULFAN, WATER, UNFLTRD UG/L (39388)
JUN													
10...	1330	<.02	<.01	<.02	<.01	<.02	<.1	<.01	<.02	<.02	<.006	<.10	<.02

DATE	ENDRIN, WATER, UNFLTRD UG/L (39390)	ETHION, WATER, UNFLTRD UG/L (39398)	FONOFOS WATER UNFLTRD UG/L (82614)	HEPTA-CHLOR EPOXIDE WATER UNFLTRD UG/L (39420)	HEPTA-CHLOR, WATER, UNFLTRD UG/L (39410)	LINDANE WATER, UNFLTRD UG/L (39340)	MALA-THION, WATER, UNFLTRD UG/L (39530)	P,P'-METH-OXY-CHLOR, WATER, UNFLTRD UG/L (39480)	METHYL PARA-THION, WATER, UNFLTRD UG/L (39600)	MIREX, WATER, UNFLTRD UG/L (39755)	P,P'-DDD, WATER, UNFLTRD UG/L (39360)	P,P'-DDE, WATER, UNFLTRD UG/L (39365)	P,P'-DDT, WATER, UNFLTRD UG/L (39370)
JUN													
10...	<.01	<.01	<.01	<.009	<.01	<.006	<.10	<.020	<.02	<.006	<.007	<.006	<.009

DATE	PARA-THION, WATER, UNFLTRD UG/L (39540)	PCBS, WATER, UNFLTRD UG/L (39516)	PHORATE WATER UNFLTRD UG/L (39023)	SILVEX, WATER, UNFLTRD UG/L (39760)	TOXA-PHENE, WATER, UNFLTRD UG/L (39400)
JUN					
10...	<.01	<.1	<.02	<.02	<1

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

RIO GUAYANILLA BASIN

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 mi^2 (49.0 km^2).

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

GAGE.--Water-stage recorder. Elevation of gage is 80 ft (24 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	8.9	10	9.0	4.8	3.3	28	24	22	6.7	6.1	37
2	11	19	10	8.6	4.8	3.2	8.9	34	13	6.6	7.0	53
3	11	13	11	8.2	4.7	3.2	6.4	55	23	6.6	5.9	91
4	33	18	22	8.2	4.6	3.0	5.7	43	38	6.5	6.2	68
5	21	15	89	8.1	5.4	2.8	17	27	86	6.8	13	39
6	14	15	17	8.1	4.4	2.8	31	21	42	9.1	10	30
7	12	13	11	7.7	4.1	2.6	16	28	25	9.1	11	26
8	10	12	11	7.5	4.1	2.6	13	29	19	6.6	14	24
9	16	14	e9.6	7.2	4.1	2.7	8.3	23	16	5.9	9.0	23
10	16	13	e12	6.9	4.3	2.6	6.7	19	14	5.5	9.7	23
11	14	13	e19	6.9	3.8	14	6.4	20	13	5.0	11	23
12	10	12	18	6.5	3.8	8.1	6.2	16	11	5.1	13	21
13	9.6	10	14	6.3	3.7	4.1	6.3	15	11	5.3	31	64
14	9.2	9.0	12	6.2	3.8	3.8	6.2	14	10	7.0	20	60
15	9.3	57	11	5.8	3.8	4.0	6.6	13	9.6	11	12	64
16	9.7	26	10	5.5	3.8	4.4	8.4	12	9.1	4.8	10	83
17	9.9	15	47	5.4	3.7	5.2	8.8	12	10	4.8	12	56
18	9.9	35	30	5.4	3.7	7.6	9.3	11	9.8	4.7	13	42
19	9.7	18	18	5.2	5.2	3.1	8.0	12	9.0	4.8	15	36
20	8.1	14	14	5.1	4.8	2.7	26	11	8.8	4.8	14	32
21	7.8	13	13	5.0	3.5	2.6	41	11	8.4	5.7	14	30
22	7.7	12	18	4.9	3.3	2.7	16	11	8.1	4.5	15	27
23	8.7	12	18	5.4	3.5	2.6	32	11	7.7	5.1	14	26
24	9.3	12	13	5.2	3.5	2.6	39	11	7.8	4.2	14	27
25	8.3	11	11	5.1	3.5	2.6	123	11	7.7	4.2	28	29
26	8.8	11	10	5.2	3.6	2.7	165	10	8.0	4.2	23	26
27	28	10	9.8	5.2	3.7	2.6	96	11	7.7	4.0	28	24
28	15	11	9.8	5.2	3.4	3.2	75	11	7.3	4.2	21	24
29	19	11	9.4	5.2	---	3.3	46	11	6.9	5.0	22	23
30	14	11	9.0	5.0	---	30	31	14	6.8	20	20	22
31	9.4	---	8.9	5.0	---	32	---	14	---	12	31	---
TOTAL	392.4	463.9	525.5	194.2	113.4	172.7	897.2	565	475.7	199.8	472.9	1153
MEAN	12.7	15.5	17.0	6.26	4.05	5.57	29.9	18.2	15.9	6.45	15.3	38.4
MAX	33	57	89	9.0	5.4	32	165	55	86	20	31	91
MIN	7.7	8.9	8.9	4.9	3.3	2.6	5.7	10	6.8	4.0	5.9	21
AC-FT	778	920	1040	385	225	343	1780	1120	944	396	938	2290
CFSM	0.67	0.82	0.90	0.33	0.21	0.29	1.58	0.96	0.84	0.34	0.81	2.03
IN.	0.77	0.91	1.03	0.38	0.22	0.34	1.77	1.11	0.94	0.39	0.93	2.27

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 2002, BY WATER YEAR (WY)

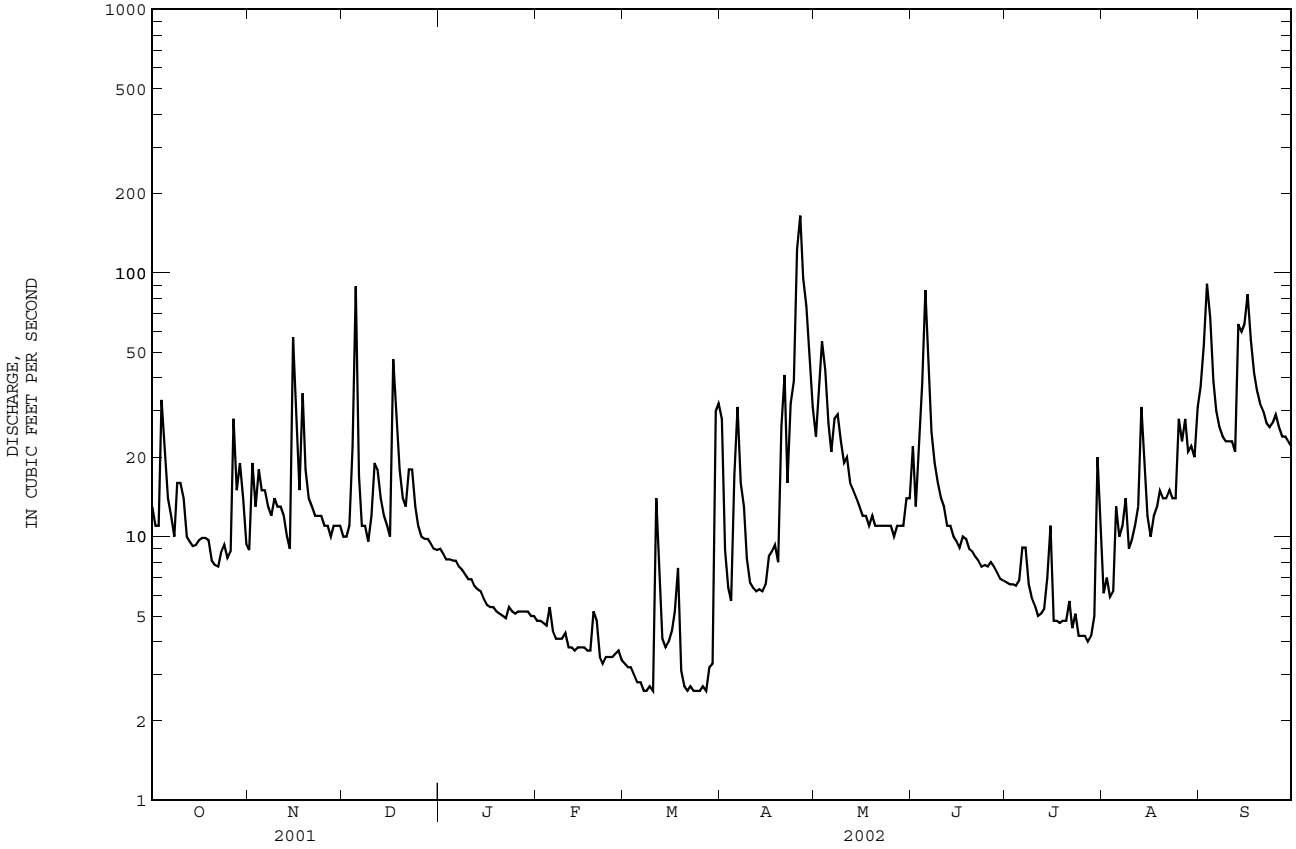
MEAN	59.3	46.1	18.1	10.4	7.45	6.25	11.7	26.6	14.3	11.6	20.6	46.6
MAX	167	110	41.9	27.5	11.6	13.2	31.2	80.4	41.0	25.9	50.5	124
(WY)	1986	1988	1988	1992	1996	1989	1999	1985	1987	1986	2000	1998
MIN	12.7	15.2	4.78	4.06	3.10	2.85	2.76	2.33	2.35	2.45	5.14	3.62
(WY)	2002	1998	1998	1998	1990	1981	1995	1994	1997	1994	1997	1997

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1981 - 2002	
ANNUAL TOTAL	5702.5		5625.7			
ANNUAL MEAN	15.6		15.4		23.0	
HIGHEST ANNUAL MEAN					34.7	1999
LOWEST ANNUAL MEAN					8.94	1994
HIGHEST DAILY MEAN	1470	May 6	165	Apr 26	1500	Oct 7 1985
LOWEST DAILY MEAN	2.8	Apr 2	2.6	Mar 7	0.77	Jul 30 1994
ANNUAL SEVEN-DAY MINIMUM	3.0	Mar 27	2.6	Mar 21	1.1	Sep 4 1994
MAXIMUM PEAK FLOW			1450	Apr 26	18700	May 6 2001
MAXIMUM PEAK STAGE			10.63	Apr 26	21.89	May 6 2001
INSTANTANEOUS LOW FLOW					0.70	Apr 19 1995
ANNUAL RUNOFF (AC-FT)	11310		11160		16690	
ANNUAL RUNOFF (CFSM)	0.83		0.82		1.22	
ANNUAL RUNOFF (INCHES)	11.22		11.07		16.56	
10 PERCENT EXCEEDS	19		31		50	
50 PERCENT EXCEEDS	8.8		10		10	
90 PERCENT EXCEEDS	4.6		3.8		3.5	

e Estimated

RIO GUAYANILLA BASIN

50124200 RIO GUAYANILLA NEAR GUAYANILLA, PR--Continued



RIO GUAYANILLA BASIN

50124700 RIO GUAYANILLA AT CENTRAL RUFINA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°00'40", long 66°46'49", at dirt road bridge, 0.7 mi (1.1 km) from mouth, 0.9 mi (1.4 km) east of Central Rufina, and 0.9 mi (1.4 km) southeast of Guayanilla.

DRAINAGE AREA.--22.8 mi^2 (59.1 km^2).

PERIOD OF RECORD.--Water years 1960-65, 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
DEC													
11...	1300	13	480	8.1	30.5	7.4	8.3	110	<10	430	E20	190	49.9
MAR													
04...	1300	1.7	984	7.9	32.0	6.3	9.7	131	10	E100	E60	--	--
MAY													
24...	1300	6.0	494	8.2	33.0	4.7	9.9	136	<10	510	350	200	53.1

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
DEC													
11...	15.1	18.0	.6	2.37	151	<1.0	42.2	21.1	.1	17.7	257	8.75	12
MAR													
04...	--	--	--	--	249	--	--	--	--	--	--	--	16
MAY													
24...	15.5	25.3	.8	2.46	146	<.1	53.3	28.4	.1	18.2	284	4.61	<10

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
DEC													
11...	.02	1.60	.05	E.30	E.16	E1	43.3	50	<.1	E.6	<10	530	<1
MAR													
04...	.48	5.10	.52	1.4	2.00	--	--	--	--	--	--	--	--
MAY													
24...	<.01	2.90	.02	.20	.49	<2	50.7	60	<.1	E.5	<10	160	<1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
DEC								
11...	26.9	<.01	E1	<.3	<20	<.01	<17	<.05
MAR								
04...	--	--	--	--	--	--	--	--
MAY								
24...	18.6	<.01	<2	<.3	E20	<.01	<17	E.03

RIO GUAYANILLA BASIN

50124700 RIO GUAYANILLA AT CENTRAL RUFINA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

PESTICIDE ANALYSES

DATE	TIME	DI-CHLOR-PROP, WATER, UNFLTRD UG/L (82183)	2,4,5-T WATER UNFLTRD UG/L (39740)	2,4-D WATER UNFLTRD UG/L (39730)	ALDRIN, WATER, UNFLTRD UG/L (39330)	CARBO-PHENO-THION, WATER, UNFLTRD UG/L (39786)	CHLOR-DANE, TECH-NICAL, WATER, UNFLTRD UG/L (39350)	CHLOR-PYRIFOS WATER UNFLTRD UG/L (38932)	TRIBU-PHOS, WATER, UNFLTRD UG/L (39040)	DIAZI-NON, WATER, UNFLTRD UG/L (39570)	DIEL-DRIN, WATER, UNFLTRD UG/L (39380)	DISUL-FOTON, WATER, UNFLTRD UG/L (39011)	ALPHA-ENDO-SULFAN, WATER, UNFLTRD UG/L (39388)
MAY													
24...	1300	<.02	<.01	E.01	<.01	<.02	<.1	<.01	<.02	<.02	<.006	<.10	<.02

DATE	ENDRIN, WATER, UNFLTRD UG/L (39390)	ETHION, WATER, UNFLTRD UG/L (39398)	FONOFOS WATER UNFLTRD UG/L (82614)	HEPTA-CHLOR EPOXIDE WATER UNFLTRD UG/L (39420)	HEPTA-CHLOR, WATER, UNFLTRD UG/L (39410)	LINDANE WATER, UNFLTRD UG/L (39340)	MALA-THION, WATER, UNFLTRD UG/L (39530)	P,P'-METH-OXY-CHLOR, WATER, UNFLTRD UG/L (39480)	METHYL PARA-THION, WATER, UNFLTRD UG/L (39600)	MIREX, WATER, UNFLTRD UG/L (39755)	P,P'-DDD, WATER, UNFLTRD UG/L (39360)	P,P'-DDE, WATER, UNFLTRD UG/L (39365)	P,P'-DDT, WATER, UNFLTRD UG/L (39370)
MAY													
24...	<.01	<.01	<.01	<.009	<.01	<.006	E.01	<.020	<.02	<.006	<.007	<.006	<.009

DATE	PARA-THION, WATER, UNFLTRD UG/L (39540)	PCBS, WATER, UNFLTRD UG/L (39516)	PHORATE WATER UNFLTRD UG/L (39023)	SILVEX, WATER, UNFLTRD UG/L (39760)	TOXA-PHENE, WATER, UNFLTRD UG/L (39400)
MAY					
24...	<.01	<.1	<.02	<.02	<1

< -- Less than
E -- Estimated value

RIO YAUCO BASIN

50125780 LAGO LUCCHETTI AT DAMSITE NEAR YAUCO, PR

LOCATION.--Lat 18°05'37", long 66°51'54", Hydrologic Unit 21010004, at Antonio Lucchetti Dam on Río Yauco, 3.9 mi (6.3 km) north of Yauco.

DRAINAGE AREA.--17.4 mi^2 (45.1 km^2).

ELEVATION RECORDS

PERIOD OF RECORD.--December 1989 to current year. Prior to October 1994, published as Lago Lucchetti at Damsite.

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

REMARKS.--Lago Lucchetti was completed in 1952. The dam is on Río Yauco and is a unit of the Southwestern Puerto Rico Project. It provides 16,500 acre-feet (20.3 hm^3) of usable storage for power generation and irrigation. The dam is a concrete gravity structure with a total length of 591 ft (180 m), a maximum height of 178 ft (54 m), and a maximum width at the base of 150 ft (46 m). An ungated, overflow tupe spillway with a clear length of 171 ft (52 m), and a maximum capacity of 62,800 ft^3/s (1,778 m^3/s) at a design head of 20 ft (6 m). The dam is owned by Puerto Rico Electric Power Authority. Gage-height and precipitation satellite telemetry at station.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation, 577.56 ft (176.04 m), September 22, 1998; minimum elevation, 512.09 ft (156.08 m), September 9, 1994.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 554.45 ft (169.00 m), January 15, minimum elevation, 538.31 ft (164.08 m), August 17.

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
512	1,505	540	5,165
520	2,385	550	7,020
525	2,965	561	9,600
527	3,255	563	10,125
530	3,695	571	12,125
532	3,975	573	12,645
		578	14,061

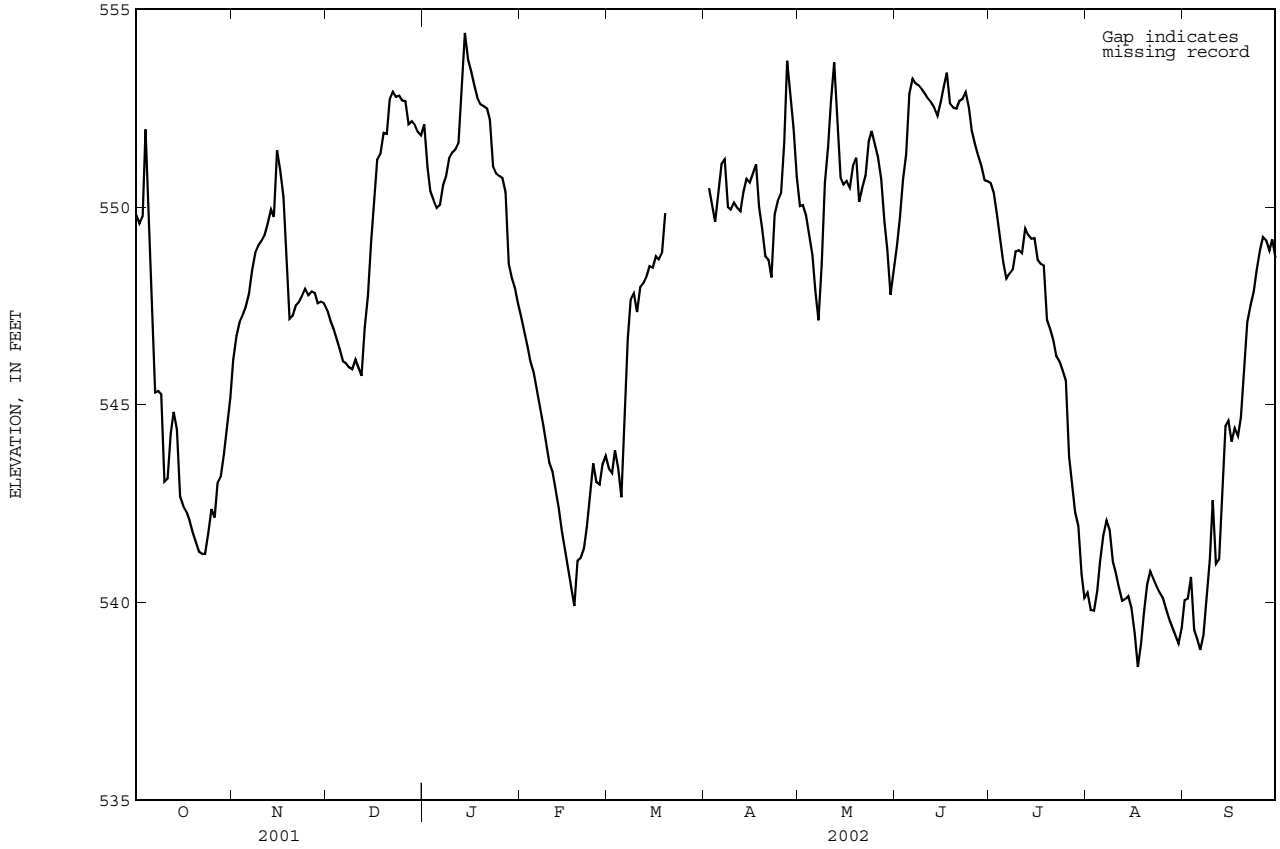
Elevation above NGVD 1929, feet
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	549.80	546.14	547.40	552.09	547.22	543.39	A	550.03	549.02	550.61	540.24	540.06
2	549.58	546.73	547.12	551.02	546.84	543.28	550.48	550.05	549.70	550.35	539.81	540.10
3	549.77	547.09	546.94	550.40	546.47	543.85	550.02	549.79	550.69	549.79	539.80	540.65
4	551.96	547.28	546.68	550.18	546.09	543.40	549.63	549.31	551.35	549.21	540.29	539.30
5	550.55	547.48	546.40	549.99	545.82	542.66	550.40	548.79	552.88	548.63	541.05	539.06
6	548.58	547.80	546.10	550.06	545.39	544.29	551.09	547.90	553.25	548.19	541.70	538.80
7	545.31	548.40	546.05	550.56	544.93	546.68	551.20	547.14	553.14	548.32	542.07	539.18
8	545.35	548.85	545.95	550.78	544.48	547.66	550.00	548.55	553.08	548.42	541.83	540.13
9	545.27	549.03	545.90	551.24	544.01	547.82	549.94	550.62	552.98	548.88	541.03	541.10
10	543.06	549.14	546.14	551.39	543.53	547.35	550.12	551.53	552.87	548.91	540.75	542.58
11	543.14	549.29	545.93	551.47	543.30	547.98	549.99	552.68	552.75	548.84	540.37	540.97
12	544.30	549.59	545.73	551.62	542.81	548.08	549.90	553.66	552.65	549.47	540.04	541.09
13	544.82	549.94	546.96	552.99	542.40	548.23	550.37	552.24	552.52	549.31	540.09	542.71
14	544.38	549.75	547.76	554.41	541.81	548.51	550.72	550.76	552.32	549.20	540.16	544.47
15	542.68	551.44	549.13	553.73	541.36	548.47	550.62	550.58	552.66	549.22	539.86	544.60
16	542.44	550.93	550.06	553.42	540.87	548.76	550.85	550.67	553.03	548.67	539.23	544.07
17	542.30	550.26	551.20	553.10	540.37	548.68	551.08	550.50	553.40	548.56	538.37	544.42
18	542.09	548.63	551.35	552.77	539.91	548.85	550.03	551.05	552.62	548.52	538.96	544.22
19	541.78	547.18	551.88	552.60	541.06	549.85	549.45	551.25	552.52	547.15	539.74	544.69
20	541.54	547.26	551.86	552.55	541.13	A	548.76	550.13	552.50	546.91	540.45	545.75
21	541.29	547.52	552.72	552.50	541.37	A	548.67	550.50	552.68	546.63	540.79	547.10
22	541.23	547.61	552.92	552.21	541.91	A	548.22	550.80	552.73	546.24	540.60	547.51
23	541.23	547.75	552.79	551.04	542.69	A	549.82	551.66	552.91	546.10	540.43	547.86
24	541.76	547.94	552.82	550.85	543.52	A	550.16	551.92	552.52	545.87	540.26	548.39
25	542.36	547.78	552.70	550.79	543.04	A	550.35	551.60	551.93	545.61	540.12	548.89
26	542.15	547.87	552.68	550.74	542.99	A	551.64	551.26	551.59	543.70	539.84	549.24
27	543.02	547.83	552.10	550.38	543.50	A	553.70	550.71	551.30	543.00	539.58	549.16
28	543.18	547.57	552.17	548.57	543.71	A	552.90	549.64	551.04	542.28	539.39	548.90
29	543.76	547.61	552.08	548.20	---	A	552.00	548.93	550.68	541.93	539.18	549.19
30	544.46	547.57	551.91	547.93	---	A	550.78	547.79	550.66	540.73	538.96	548.72
31	545.18	---	551.82	547.56	---	A	---	548.44	---	540.11	539.36	---
MAX	551.96	551.44	552.92	554.41	547.22	---	---	553.66	553.40	550.61	542.07	549.24
MIN	541.23	546.14	545.73	547.56	539.91	---	---	547.14	549.02	540.11	538.37	538.80

A No gage-height record

RIO YAUCO BASIN

50125780 LAGO LUCCHETTI AT DAMSITE NEAR YAUCO, PR--Continued



RIO LOCO BASIN

50128900 LAGO LOCO AT DAMSITE NEAR YAUCO, PR

LOCATION.--Lat 18°02'41", long 66°53'16", Hydrologic Unit 21010004, at Damsite, 2.60 mi (4.18 km) northwest from Yauco Plaza, 0.45 mi (0.72 km) northeast from Escuela Río Cañas and 0.95 mi (1.53 km) northwest from Escuela Susúa Alta.

DRAINAGE AREA.--8.35 mi^2 (21.6 km^2).

ELEVATION RECORDS

PERIOD OF RECORD.--May 1995 to current year.

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

REMARKS.--Lago Loco was completed in 1951. The dam is a concrete gravity structure with a total length of 600 ft (183 m), maximum structural height of 72 ft (21.9 m), the ungated overflow spillway is 150 ft (47.7 m) long with crest at elevation of 230 ft (70.1 m). It has a normal storage capacity of 1,950 acre-feet (2.40 hm^3) as for May 4, 1979. The Loco Dam is owned by the Puerto Rico Electric Power Authority (PREPA) and its part of the Southwestern Puerto Rico Project which was developed for electric power generation and irrigation of the lands in the Lajas Valley, some of the project waters are used for water supply in the Lajas area. The maximum drawdown of the dam is from 230 ft (70.1 m) to 220 ft (67.1 m) and the Capacity Table provided by PREPA includes only that portion of the storage for the dam. Gage-height and precipitation satellite telemetry at station.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation, 235.71 ft (71.84 m), May 6, 2001; minimum elevation, 217.77 ft (66.4 m), June 10, 1997.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 231.35 ft (70.52 m), April 5, 2002; minimum elevation, 222.52 ft (67.82 m), September 11, 2002.

Capacity Table
(based on data from Puerto Rico Electric Power Authority)

Elevation, in feet	Contents, in acre-feet	Elevation, in feet	Contents, in acre-feet
220	0	230	639
225	299	232	787

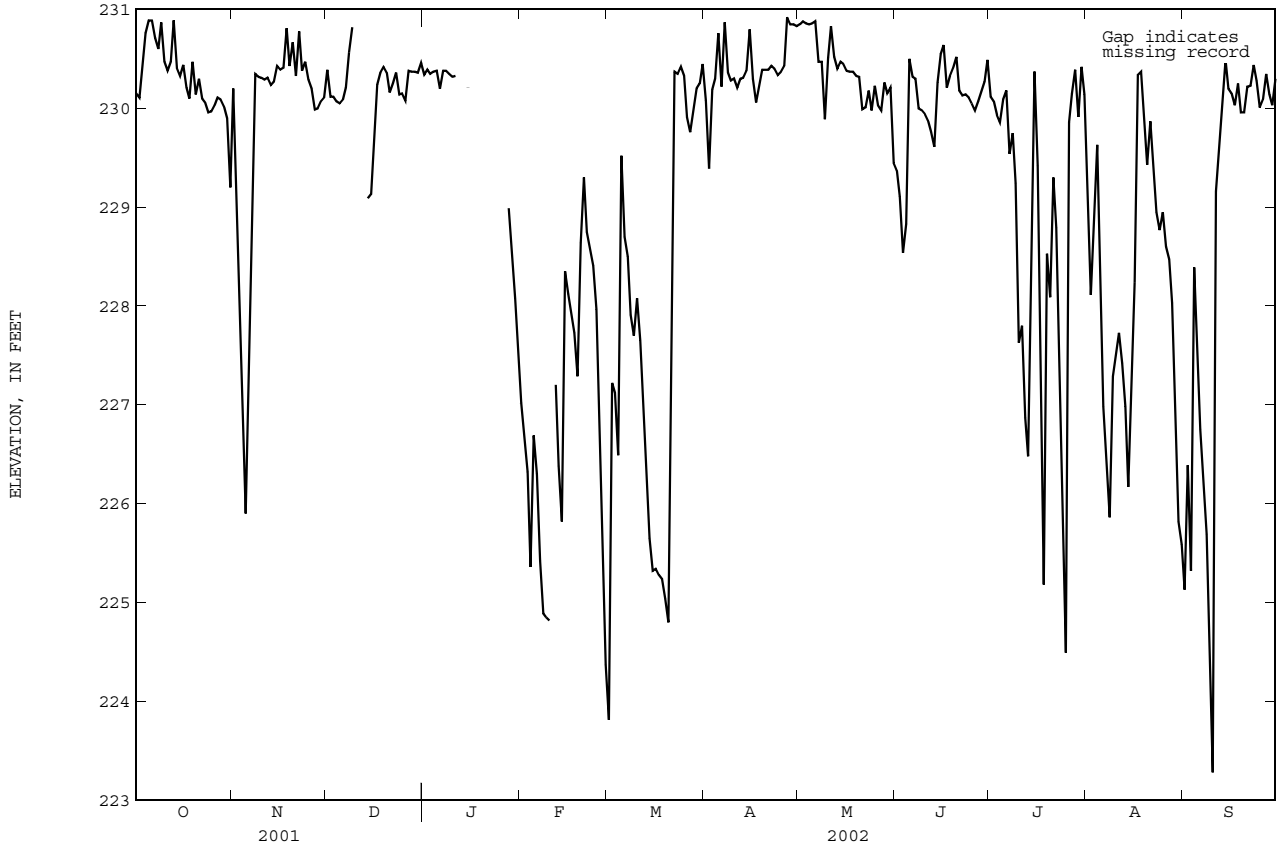
Elevation above NGVD 1929, feet
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	230.15	230.20	230.39	230.34	227.02	223.81	230.08	230.85	229.37	230.12	229.12	225.13
2	230.11	229.39	230.12	230.39	226.66	227.22	229.39	230.88	229.11	230.07	228.11	226.39
3	230.43	228.46	230.12	230.35	226.32	227.12	230.19	230.86	228.54	229.93	228.80	225.32
4	230.76	227.47	230.07	230.37	225.36	226.49	230.30	230.85	228.83	229.86	229.63	228.39
5	230.89	225.90	230.05	230.38	226.69	229.52	230.76	230.86	230.50	230.09	228.29	227.50
6	230.89	226.81	230.09	230.20	226.30	228.70	230.22	230.88	230.32	230.18	226.98	226.75
7	230.71	227.89	230.21	230.38	225.42	228.50	230.87	230.47	230.30	229.54	226.49	226.24
8	230.60	230.35	230.57	230.38	224.89	227.91	230.36	230.47	230.00	229.75	225.86	225.69
9	230.87	230.32	230.82	230.35	224.85	227.70	230.28	229.89	229.98	229.24	227.29	224.77
10	230.47	230.31	A	230.32	224.82	228.08	230.30	230.51	229.94	227.63	227.49	223.28
11	230.38	230.29	A	230.33	A	227.65	230.21	230.83	229.88	227.80	227.73	229.16
12	230.47	230.31	A	A	227.20	226.97	230.30	230.52	229.76	226.87	227.42	229.61
13	230.89	230.24	A	A	226.38	226.28	230.31	230.40	229.61	226.48	226.98	230.10
14	230.41	230.27	229.09	A	225.82	225.65	230.38	230.47	230.26	227.78	226.17	230.49
15	230.33	230.43	229.13	230.21	228.35	225.32	230.80	230.45	230.55	230.37	227.27	230.20
16	230.44	230.39	229.59	A	228.12	225.34	230.30	230.38	230.64	229.42	228.24	230.15
17	230.21	230.41	230.24	A	227.92	225.28	230.06	230.37	230.21	227.35	230.34	230.03
18	230.10	230.81	230.36	A	227.73	225.24	230.22	230.37	230.33	225.18	230.37	230.25
19	230.47	230.43	230.42	A	227.29	225.04	230.39	230.33	230.41	228.53	229.90	229.96
20	230.14	230.67	230.36	A	228.64	224.80	230.39	230.32	230.52	228.09	229.43	229.96
21	230.30	230.33	230.16	A	229.30	228.37	230.39	229.99	230.18	229.30	229.87	230.22
22	230.10	230.78	230.25	A	228.75	230.37	230.43	230.01	230.13	228.79	229.38	230.23
23	230.06	230.38	230.36	A	228.58	230.35	230.40	230.18	230.14	227.20	228.95	230.44
24	229.96	230.47	230.14	A	228.41	230.42	230.34	229.98	230.11	225.68	228.77	230.28
25	229.97	230.29	230.15	A	227.97	230.33	230.37	230.23	230.05	224.49	228.95	230.01
26	230.03	230.20	230.08	A	227.18	229.91	230.43	230.03	229.98	229.86	228.60	230.09
27	230.11	229.99	230.38	A	226.21	229.76	230.92	229.98	230.07	230.15	228.47	230.35
28	230.09	230.00	230.37	228.99	224.37	229.99	230.85	230.26	230.17	230.39	228.03	230.14
29	230.02	230.07	230.37	228.52	---	230.20	230.85	230.15	230.27	229.91	226.73	230.03
30	229.90	230.11	230.36	228.08	---	230.25	230.83	230.21	230.49	230.42	225.82	230.30
31	229.20	---	230.46	227.55	---	230.45	---	229.45	---	230.14	225.59	---
MAX	230.89	230.81	---	---	---	230.45	230.92	230.88	230.64	230.42	230.37	230.49
MIN	229.20	225.90	---	---	---	223.37	229.39	229.45	228.54	224.49	225.59	223.28

A No gage-height record

RIO LOCO BASIN

50128900 LAGO LOCO AT DAMSITE NEAR YAUCO, PR--Continued



CANAL PRINCIPAL DE RIEGO VALLE DE LAJAS BASIN

50128905 CANAL DE RIEGO DE LAJAS BELOW LAGO LOCO DAM, YAUCO, PR

LOCATION.--Lat 18°02'35", long 66°53'18", Hydrologic Unit 21010004, on right side of irrigation conduit outlet upstream from Cipolletti Weir, located downstream from Lago Loco Dam 0.05 mi (0.08 km), 5.4 mi (8.67 km) south east from Sabana Grande Plaza and 0.35 mi (0.56 km) north east from Escuela Río Cañas.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--March 2000 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 197 ft (60 m), from topographic map.

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

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum discharge, 105 ft^3/s (2.974 m^3/s) March 27, 2000, gage height, 2.15 ft (0.655 m) from rating curve extended above 70 ft^3/s (1.98 m^3/s) on basis of step-backwater analysis; no flow many days during the year 2000.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum discharge, 87 ft^3/s (2.464 m^3/s), March 8, gage-height 1.84 ft (0.561 m); minimum daily discharge, 11 ft^3/s (0.312 m^3/s), May 7.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	52	26	27	60	58	43	29	32	50	57	34
2	35	39	26	31	55	48	49	20	32	61	70	34
3	41	34	26	40	55	48	48	19	43	66	50	46
4	41	34	35	34	69	62	51	20	47	66	50	50
5	30	46	35	36	81	76	45	20	40	52	57	48
6	22	52	31	36	79	69	34	14	36	42	58	43
7	22	56	26	37	74	50	33	11	30	42	53	38
8	30	48	23	43	64	59	37	19	24	41	45	37
9	34	37	23	51	54	44	39	32	24	40	37	43
10	32	30	25	58	54	45	39	28	25	67	32	49
11	28	30	19	56	61	65	40	21	28	67	32	53
12	24	30	17	51	67	72	39	22	30	57	39	56
13	24	39	27	51	71	67	38	19	31	45	47	50
14	24	45	24	51	72	64	38	21	29	45	46	46
15	30	38	23	59	62	56	38	25	25	45	41	46
16	36	28	23	63	54	52	41	26	25	63	33	30
17	34	26	25	65	53	53	44	25	34	71	26	23
18	31	25	27	55	53	52	45	22	42	65	26	23
19	31	24	28	44	62	54	42	22	47	55	30	23
20	28	30	28	44	68	54	38	29	52	40	38	23
21	28	32	24	44	73	48	38	30	44	40	42	22
22	32	28	21	55	64	40	35	18	36	56	40	22
23	42	27	22	60	54	40	32	28	36	70	34	29
24	45	26	22	61	54	42	31	38	48	61	28	32
25	42	26	23	56	62	46	33	32	57	51	28	28
26	40	31	28	50	70	56	32	32	58	41	37	27
27	36	35	31	50	69	51	30	32	58	35	53	24
28	35	34	28	59	67	38	29	39	46	35	56	20
29	41	33	27	64	---	38	30	47	36	50	56	21
30	51	29	27	60	---	38	31	53	36	66	44	25
31	56	---	27	61	---	38	---	43	---	64	34	---
TOTAL	1055	1044	797	1552	1781	1623	1142	836	1131	1649	1319	1045
MEAN	34.0	34.8	25.7	50.1	63.6	52.4	38.1	27.0	37.7	53.2	42.5	34.8
MAX	56	56	35	65	81	76	51	53	58	71	70	56
MIN	22	24	17	27	53	38	29	11	24	35	26	20
AC-FT	2090	2070	1580	3080	3530	3220	2270	1660	2240	3270	2620	2070

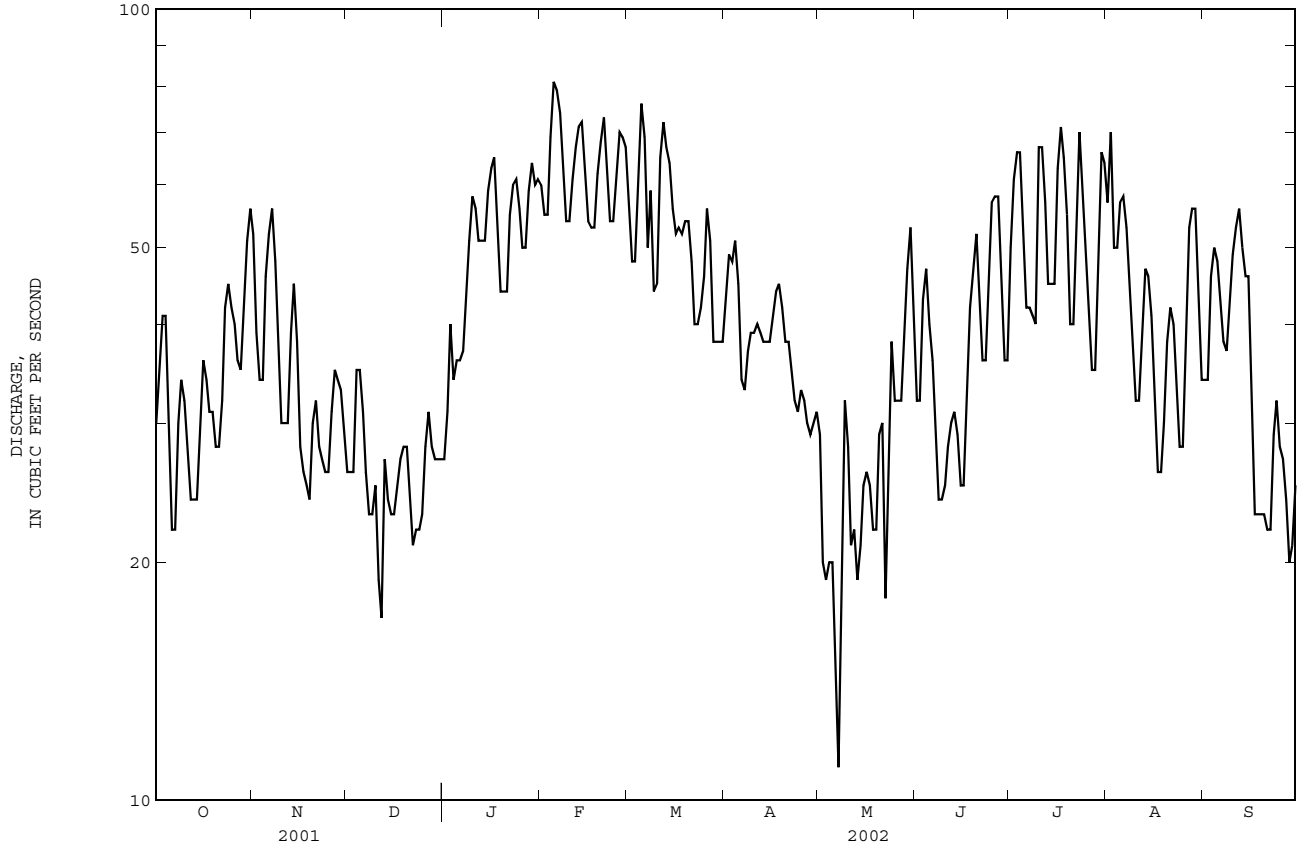
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2002, BY WATER YEAR (WY)

MEAN	28.4	31.0	29.5	47.1	58.8	52.4	36.5	25.6	34.7	46.5	42.5	31.2
MAX	34.0	34.8	33.3	50.1	63.6	52.4	38.1	31.1	37.7	53.2	44.4	36.1
(WY)	2002	2002	2001	2002	2002	2002	2002	2000	2002	2002	2001	2001
MIN	22.7	27.2	25.7	44.1	53.9	52.4	35.0	18.6	31.7	38.7	40.6	22.7
(WY)	2001	2001	2002	2001	2001	2002	2000	2001	2001	2001	2000	2000

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 2000 - 2002	
ANNUAL TOTAL			14974			
ANNUAL MEAN			41.0		41.0	
HIGHEST ANNUAL MEAN					41.0	2002
LOWEST ANNUAL MEAN					41.0	2002
HIGHEST DAILY MEAN	77	Feb 22	81	Feb 5	98	Mar 28 2000
LOWEST DAILY MEAN	14	May 13	11	May 7	4.9	Apr 2 2000
ANNUAL SEVEN-DAY MINIMUM	15	May 13	18	May 2	15	May 13 2001
MAXIMUM PEAK FLOW			87	Mar 8	105	Mar 27 2000
MAXIMUM PEAK STAGE			1.84	Mar 8	2.15	Mar 27 2000
ANNUAL RUNOFF (AC-FT)			29700		29720	
10 PERCENT EXCEEDS			62		62	
50 PERCENT EXCEEDS			39		39	
90 PERCENT EXCEEDS			24		24	

CANAL PRINCIPAL DE RIEGO VALLE DE LAJAS BASIN

50128905 CANAL DE RIEGO DE LAJAS BELOW LAGO LOCO DAM, YAUCO, PR--Continued



CANAL PRINCIPAL DE RIEGO VALLE DE LAJAS BASIN

50128920 CANAL DE RIEGO DE LAJAS ABOVE MAJINAS FILTRATION PLANT, PR

LOCATION.--Lat 18°02'41", long 66°56'59", Hydrologic Unit 21010003, 0.1 mi (0.2 km) south of intersection of Highways 2 and 117, 2.1 mi, (3.4 km) northeast of Escuela Thomas A. Edison, 0.5 mi (0.8 km) southeast of Escuela Dr. Santiago Veve, and 2.6 mi (4.2 km) southeast of Plaza de Sabana Grande.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--February 2000 to current year.

GAGE.--Water stage recorder. Altitude of gage is about 164 ft (50 m) from topographic map.

REMARKS.--Records good.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	48	34	24	58	58	39	25	35	47	A	A
2	34	40	34	24	55	53	45	17	34	56	A	A
3	39	38	32	29	55	53	45	18	40	59	A	A
4	38	38	41	25	58	59	48	19	44	59	A	A
5	29	43	43	33	63	71	44	19	41	53	A	A
6	19	48	40	33	62	67	32	14	38	43	A	A
7	19	51	36	33	60	40	33	9.4	32	42	A	A
8	23	46	33	35	58	54	34	14	24	38	A	A
9	27	39	33	38	54	48	37	30	23	27	A	A
10	27	31	33	42	54	47	36	32	24	56	A	A
11	24	31	23	48	56	52	35	24	27	59	A	A
12	21	31	15	48	60	53	37	24	30	54	A	A
13	21	38	33	48	64	52	36	22	31	45	A	A
14	22	44	31	48	66	54	37	21	29	44	A	A
15	26	40	30	49	61	53	37	28	24	44	A	A
16	32	31	31	51	55	50	40	28	23	52	A	A
17	32	28	29	51	54	50	44	28	28	59	A	A
18	28	28	32	48	54	49	45	23	38	55	A	A
19	30	27	32	42	57	49	43	23	40	52	A	A
20	28	34	31	42	60	49	41	26	45	39	A	A
21	27	37	28	43	63	45	39	28	42	39	A	A
22	32	32	25	47	61	39	36	12	37	45	A	A
23	40	31	24	53	55	39	31	21	37	55	A	A
24	43	32	24	53	55	39	30	40	45	55	A	A
25	39	31	24	53	58	40	30	35	54	47	A	A
26	38	34	24	50	62	47	33	35	52	37	A	A
27	37	39	25	50	62	46	30	35	53	29	A	A
28	37	38	26	54	60	36	29	38	47	29	A	A
29	39	37	27	58	---	36	29	45	37	40	A	A
30	44	34	25	56	---	37	27	52	37	54	A	A
31	48	---	25	57	---	37	---	46	---	56	A	A
TOTAL	973	1099	923	1365	1640	1502	1102	831.4	1091	1469	---	---
MEAN	31.4	36.6	29.8	44.0	58.6	48.5	36.7	26.8	36.4	47.4	---	---
MAX	48	51	43	58	66	71	48	52	54	59	---	---
MIN	19	27	15	24	54	36	27	9.4	23	27	---	---
AC-FT	1930	2180	1830	2710	3250	2980	2190	1650	2160	2910	---	---

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2002, BY WATER YEAR (WY)

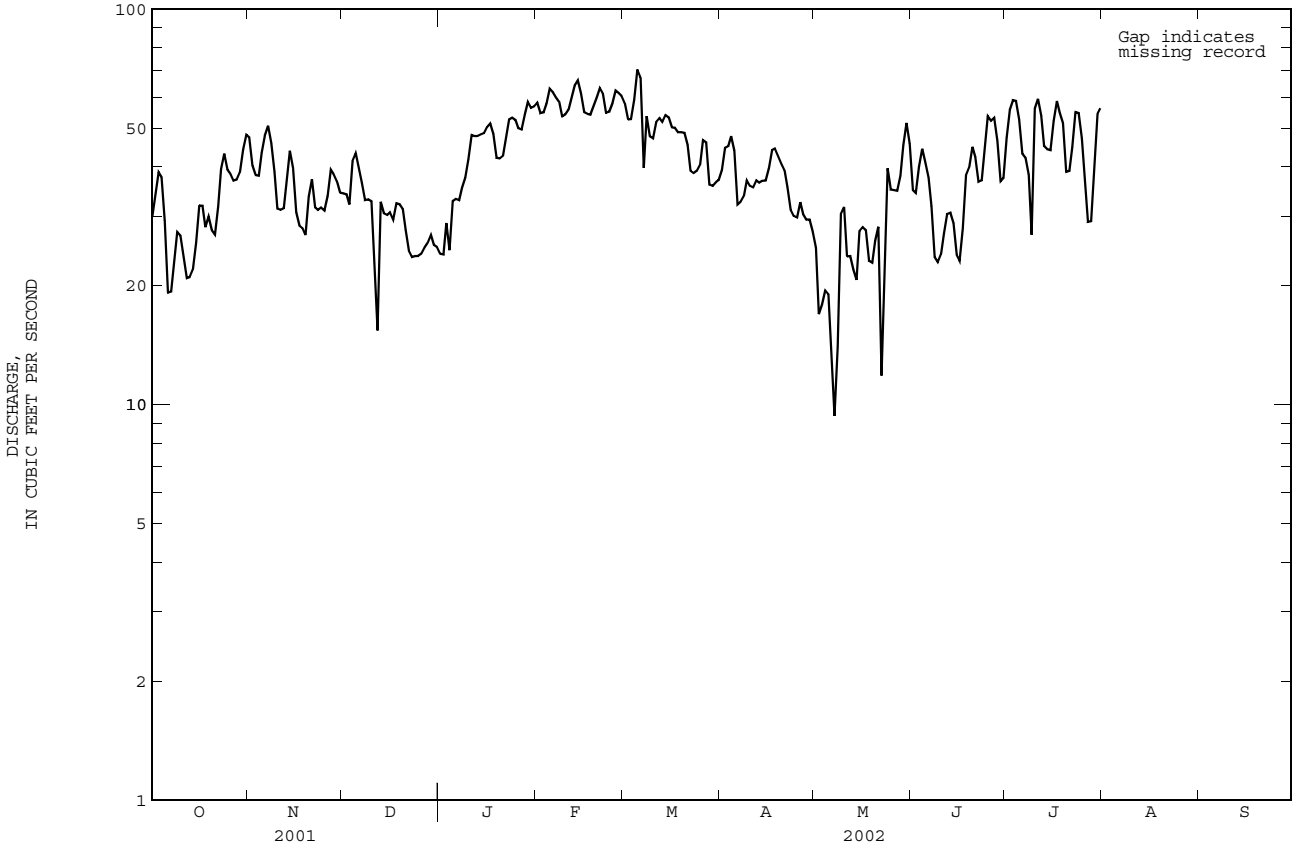
MEAN	26.2	31.8	32.0	45.3	51.0	45.9	34.8	24.7	35.5	48.3	---	---
MAX	31.4	36.6	34.3	46.5	58.6	48.5	36.7	26.8	36.4	49.3	---	---
(WY)	2002	2002	2001	2001	2002	2002	2002	2002	2002	2000	---	---
MIN	20.9	26.9	29.8	44.0	43.4	43.3	32.9	22.6	34.6	47.4	---	---
(WY)	2001	2001	2002	2002	2001	2001	2001	2001	2001	2002	---	---

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 2000 - 2002	
HIGHEST DAILY MEAN	63	Apr 4	71	Mar 5	77	Jul 25 2000
LOWEST DAILY MEAN	8.9	Aug 18	9.4	May 7	7.8	Sep 13 2000
ANNUAL SEVEN-DAY MINIMUM	18	May 12	16	May 2	16	May 2 2002
MAXIMUM PEAK FLOW					199	May 6 2001
MAXIMUM PEAK STAGE					5.43	May 6 2001

A No gage-height record

CANAL PRINCIPAL DE RIEGO VALLE DE LAJAS BASIN

50128920 CANAL DE RIEGO DE LAJAS ABOVE MAJINAS FILTRATION PLANT, PR--Continued



CANAL PRINCIPAL DE RIEGO VALLE DE LAJAS BASIN

50128925 CANAL DE RIEGO DE LAJAS BELOW MAJINAS FILTRATION PLANT, PR

LOCATION.--Lat 18°02'41", long 66°57'01", Hydrologic Unit 21010004, on upstream side from iron platform used as cross way and reference point, downstream of Majinas Filtration Plant intake, 0.08 mi (0.12 km) east of new Highway 2, 0.10 mi (0.16 km) south of Highway 121 and 2.6 mi (4.2 km) southeast of Plaza de Sabana Grande.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--February 2000 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 164 ft (50 m), from topographic map.

REMARKS.--Records fair except those above 50 ft^3/s (1.46 m^3/s), which are poor.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum discharge, 197 ft^3/s (5.58 m^3/s) May 6, 2001, gage height, 5.39 ft (1.64 m) from rating curve extended above 50 ft^3/s (1.416 m^3/s) on basis of logarithmic extension using gage-height and flow comparison with upstream station 50128920 Canal de riego de Lajas above Majinas Filtration Plant, Sabana Grande, PR.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum discharge, 196 ft^3/s (5,54 m^3/s) September 15, gage height, 5.36 ft (1.63 m); minimum daily discharge 5.12 ft^3/s (0.145 m^3/s) September 29.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32.0	42.7	29.3	23.3	A	A	A	A	25.1	39.1	47.0	31.0
2	35.7	37.3	29.2	23.6	A	A	A	A	24.6	46.3	86.5	32.1
3	37.0	36.0	27.2	28.1	A	A	A	A	28.1	48.6	55.7	43.4
4	33.9	36.0	34.3	24.2	A	A	A	A	31.9	48.7	55.7	50.9
5	27.6	40.1	36.0	31.7	A	A	A	A	30.0	43.3	58.5	45.7
6	19.9	44.0	33.2	32.4	A	A	A	A	28.1	35.7	56.7	42.4
7	20.1	46.4	30.4	32.3	A	A	A	6.68	23.8	35.5	52.3	41.0
8	23.5	41.9	27.1	34.5	A	A	A	9.53	17.5	32.5	46.2	39.8
9	26.6	36.1	27.0	36.3	A	A	A	21.5	17.3	23.2	35.4	46.8
10	26.6	29.6	26.6	39.5	A	A	A	22.4	18.5	47.0	21.6	51.3
11	24.1	28.9	18.8	44.5	A	A	A	17.0	20.9	50.0	21.8	54.0
12	21.5	29.3	12.5	44.0	A	A	A	17.2	23.7	46.4	30.2	59.6
13	21.6	34.7	26.1	44.2	A	A	A	15.8	24.1	39.7	38.4	60.5
14	22.9	39.2	24.8	A	A	A	A	14.8	22.7	38.5	36.0	61.6
15	26.3	35.2	24.8	A	A	A	A	20.2	19.2	38.2	28.1	75.3
16	31.4	27.9	25.6	A	A	A	A	20.5	18.9	44.9	21.9	32.8
17	31.2	26.4	24.3	A	A	A	A	20.1	22.0	50.3	12.3	8.33
18	27.4	26.1	26.8	30.6	A	A	A	16.7	30.0	47.5	12.4	9.80
19	29.1	25.1	26.9	28.8	A	A	A	16.6	31.5	44.9	14.5	9.16
20	27.8	29.9	26.2	A	A	A	A	19.0	35.7	34.7	20.6	9.54
21	27.2	32.2	23.6	A	A	A	A	20.6	34.0	34.5	24.1	9.19
22	31.5	27.2	21.3	A	A	A	A	7.94	30.4	39.2	20.7	9.29
23	36.5	27.2	20.7	A	A	A	A	14.7	30.5	47.6	22.6	19.3
24	37.9	27.7	21.1	A	A	A	A	28.7	37.3	47.2	17.0	29.3
25	35.1	27.1	21.3	A	A	A	A	25.7	44.1	41.8	16.3	17.5
26	35.0	29.1	21.7	A	A	A	A	25.6	42.8	33.3	28.4	14.3
27	34.2	35.0	23.0	A	A	A	A	25.4	43.2	26.7	54.1	12.3
28	34.3	34.0	23.9	A	A	A	A	27.5	38.1	26.8	54.2	5.61
29	35.0	31.4	25.5	A	---	A	A	32.2	30.7	35.3	58.0	5.12
30	38.9	29.2	24.2	A	---	A	A	36.8	31.0	47.3	49.4	6.51
31	42.4	---	24.2	A	---	A	---	32.6	---	48.9	32.8	---
TOTAL	934.2	992.9	787.6	---	---	---	---	---	855.7	1263.6	1129.4	933.45
MEAN	30.1	33.1	25.4	---	---	---	---	---	28.5	40.8	36.4	31.1
MAX	42.4	46.4	36.0	---	---	---	---	---	44.1	50.3	86.5	75.3
MIN	19.9	25.1	12.5	---	---	---	---	---	17.3	23.2	12.3	5.12
AC-FT	1850	1970	1560	---	---	---	---	---	1700	2510	2240	1850

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2002, BY WATER YEAR (WY)

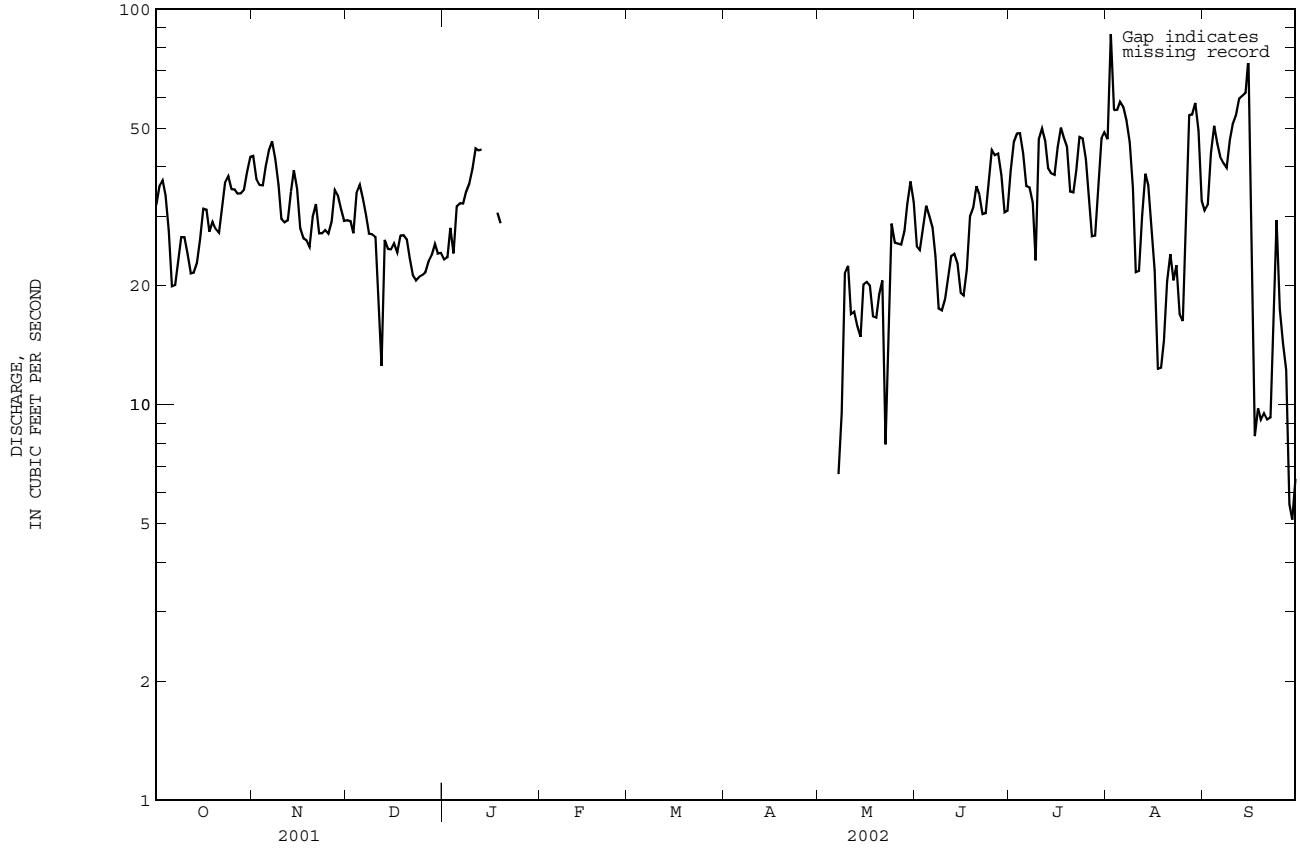
MEAN	22.9	22.7	26.8	---	---	---	---	---	27.6	39.7	33.3	26.5
MAX	30.1	33.1	28.2	---	---	---	---	---	29.9	41.2	36.4	31.1
(WY)	2002	2002	2001	---	---	---	---	---	2001	2001	2002	2002
MIN	15.6	12.4	25.4	---	---	---	---	---	24.2	37.1	27.9	19.1
(WY)	2001	2001	2002	---	---	---	---	---	2000	2000	2001	2000

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 2000 - 2002	
ANNUAL TOTAL	11784.7					
ANNUAL MEAN	32.3				29.6	
HIGHEST ANNUAL MEAN					29.6	2001
LOWEST ANNUAL MEAN					29.6	2001
HIGHEST DAILY MEAN	58.0	Jul 12	86.5	Aug 2	86.5	Aug 2 2002
LOWEST DAILY MEAN	10.0	Aug 19	5.12	Sep 29	5.12	Sep 29 2002
ANNUAL SEVEN-DAY MINIMUM	14	May 12	11	Sep 17	10	Nov 7 2000
MAXIMUM PEAK FLOW			196	Sep 15	197	May 6 2001
MAXIMUM PEAK STAGE			5.36	Sep 15	5.39	May 6 2001
ANNUAL RUNOFF (AC-FT)	23370				21430	
10 PERCENT EXCEEDS	45				44	
50 PERCENT EXCEEDS	32				31	
90 PERCENT EXCEEDS	19				14	

A No gage-height record

CANAL PRINCIPAL DE RIEGO VALLE DE LAJAS BASIN

50128925 CANAL DE RIEGO DE LAJAS BELOW MAJINAS FILTRATION PLANT, PR--Continued



CANAL PRINCIPAL DE RIEGO VALLE DE LAJAS BASIN

50128935 CANAL DE RIEGO DE LAJAS ABOVE LAJAS FILTRATION PLANT AT LAJAS, PR

LOCATION.--Lat 18°02'45", long 66°03'16", Hydrologic Unit 21010003, on upstream side of Lajas Filtration Plant intake 2.8 mi (4.4 km) south of San Germán Plaza, 2.6 mi (4.2 km) east of Cerro Quemado and 1.5 mi (2.4 km) northeast of Universidad de Puerto Rico, Estación Experimental Agrícola and 0.6 mi (0.96 km) northwest from Lajas Plaza.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--January 2001 to September 2002.

GAGE.--Water-stage recorder. Altitude of gage is 131.2 ft (40 m), from topographic map.

REMARKS.--Records fair.

EXTREMES OBSERVED FOR CURRENT PERIOD.--Maximum discharge, 49 ft^3/s (1.388 m^3/s) Nov. 6, 2001, gage height, 2.95 ft (0.899 m) from rating curve extended above 23 ft^3/s (0.651 m^3/s) on basis of step-backwater analysis, but could be higher during period of no gage-height record; no flow many days each year.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	24	26	A	21	23	23	A	A	22	5.6	6.5
2	18	24	26	A	22	21	23	A	A	31	12	6.7
3	19	21	24	A	31	22	21	A	A	30	14	5.9
4	21	24	25	A	31	22	14	A	18	33	13	9.6
5	19	23	29	A	26	26	15	A	18	43	13	11
6	17	26	27	A	27	A	15	A	14	31	12	6.3
7	18	28	28	23	23	A	16	A	17	30	12	12
8	17	27	24	20	28	22	18	A	15	30	10	14
9	19	26	26	21	28	30	A	A	15	10	10	12
10	17	21	26	20	28	32	A	A	15	27	5.0	13
11	18	20	24	22	20	28	A	A	15	31	4.3	9.2
12	15	21	20	26	15	25	A	A	16	27	5.0	12
13	16	21	A	25	14	22	A	A	18	23	7.7	8.4
14	15	23	A	26	17	19	A	A	21	23	5.3	14
15	15	26	A	21	17	22	A	A	18	25	2.9	18
16	18	21	A	19	16	24	A	A	18	24	3.3	23
17	20	17	A	18	18	27	A	A	13	36	4.1	9.0
18	18	17	A	20	18	22	A	A	17	29	3.9	9.6
19	20	16	A	17	18	21	A	A	19	29	3.9	7.9
20	16	18	A	18	19	24	A	A	24	22	2.8	11
21	13	27	A	20	20	24	A	A	24	22	3.0	11
22	15	22	A	18	21	18	A	A	22	22	3.6	11
23	22	20	A	16	20	17	A	A	22	24	4.8	11
24	27	19	A	17	21	19	A	A	22	32	5.1	19
25	25	19	A	18	20	20	A	A	34	27	5.0	A
26	23	17	A	17	20	17	A	A	28	22	4.4	A
27	20	24	A	18	23	21	A	A	27	7.7	5.5	A
28	21	26	A	16	21	22	A	A	28	6.2	13	A
29	21	26	A	17	---	25	A	A	23	4.1	9.7	A
30	23	27	A	19	---	26	A	A	23	4.2	9.5	A
31	24	---	A	18	---	27	---	A	---	8.0	6.5	A
TOTAL	588	671	---	490	603	---	---	---	---	735.2	219.9	---
MEAN	19.0	22.4	---	19.6	21.5	---	---	---	---	23.7	7.09	---
MAX	27	28	---	26	31	---	---	---	---	43	14	---
MIN	13	16	---	16	14	---	---	---	---	4.1	2.8	---
AC-FT	1170	1330	---	972	1200	---	---	---	---	1460	436	---

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2002, BY WATER YEAR (WY)

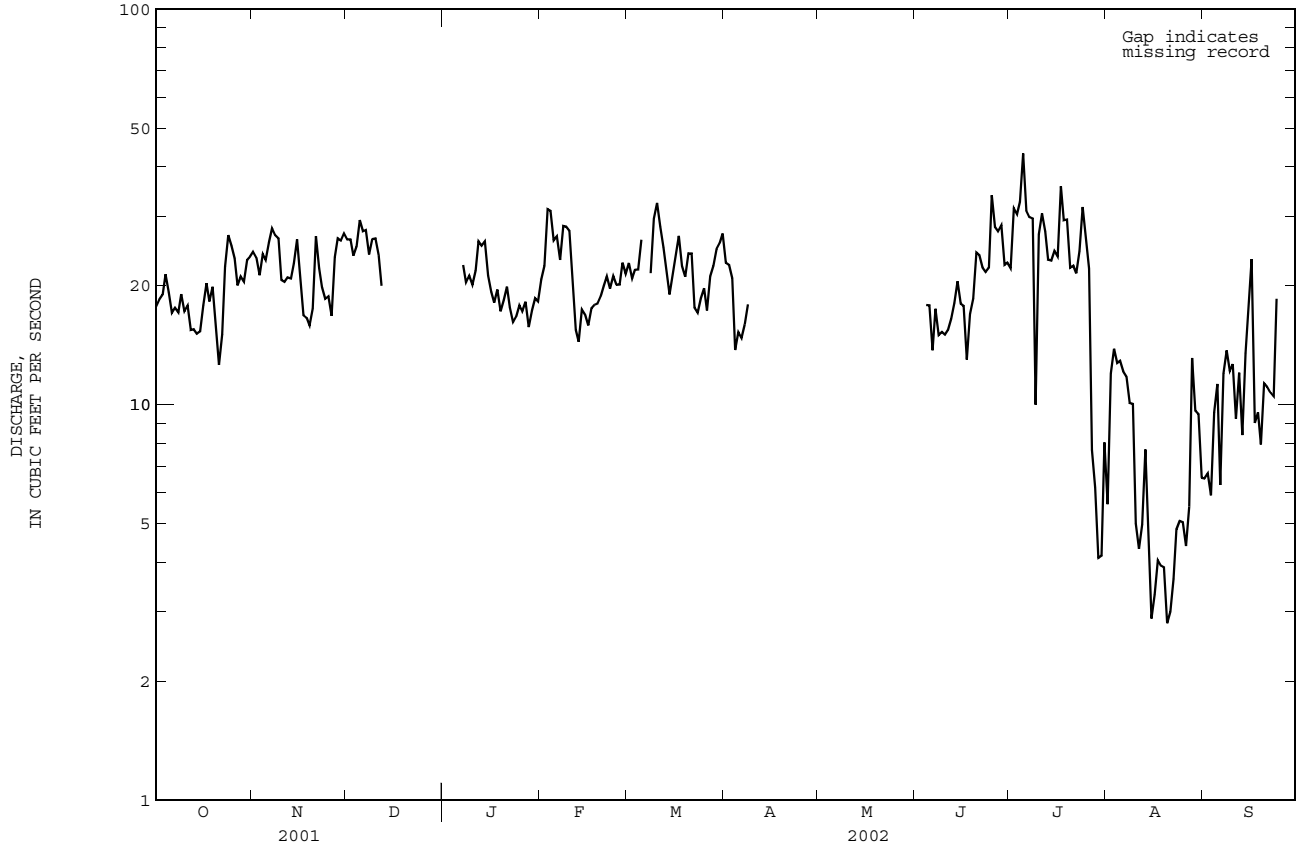
MEAN	19.0	22.4	---	---	21.5	---	---	---	---	23.7	7.09	---
MAX	19.0	22.4	---	---	21.5	---	---	---	---	23.7	7.09	---
(WY)	2002	2002	---	---	2002	---	---	---	---	2002	2002	---
MIN	19.0	22.4	---	---	21.5	---	---	---	---	23.7	7.09	---
(WY)	2002	2002	---	---	2002	---	---	---	---	2002	2002	---

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 2001 - 2002	
HIGHEST DAILY MEAN	41	May 6	43	Jul 5	43	Jul 5 2002
LOWEST DAILY MEAN	9.0	Jul 22	2.8	Aug 20	2.8	Aug 20 2002
ANNUAL SEVEN-DAY MINIMUM	12	Jul 19	3.4	Aug 15	3.4	Aug 15 2002
MAXIMUM PEAK FLOW			49	Nov 6		
MAXIMUM PEAK STAGE			2.95	Nov 6		

A No gage-height record

CANAL PRINCIPAL DE RIEGO VALLE DE LAJAS BASIN

50128935 CANAL DE RIEGO DE LAJAS ABOVE LAJAS FILTRATION PLANT AT LAJAS, PR--Continued



CANAL PRINCIPAL DE RIEGO VALLE DE LAJAS BASIN

50128940 LAJAS IRRIGATION CANAL BELOW LAJAS FILTRATION PLANT AT LAJAS, PR

LOCATION.--Lat 18°02'44", long 66°03'17", Hydrologic Unit 21010003, on downstream side of Lajas Filtration Plant intake 2.8 mi (4.4 km) south of San Germán town plaza, 2.6 mi (4.2 km) east of Cerro Quemado and 1.5 mi (2.4 km) northeast of Universidad de Puerto Rico, Estación Experimental Agrícola and 0.6 mi (0.96 km) northwest from Lajas Plaza.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--January 30 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 131.2 ft (40 m), from topographic map.

REMARKS.--Records fair except for period from August 2 to September 25, which is poor.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum discharge, 190 ft^3/s (5.381 m^3/s) May 6, 2001, gage height, 3.64 ft (1.109 m) from rating curve extended above 23 ft^3/s (0.651 m^3/s) on basis of step-backwater analysis; no flow many days each year.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum discharge, 98.3 ft^3/s (2.784 m^3/s) September 15, gage height, 2.94 ft (0.896 m); no flow many days.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11.7	20.5	16.7	13.0	19.9	24.8	13.6	9.67	15.6	18.1	4.88	4.44
2	11.7	18.5	16.5	11.6	21.6	23.1	14.3	2.14	15.6	26.5	35.9	5.74
3	17.8	17.0	14.2	10.4	24.8	24.2	13.3	1.14	13.4	27.0	29.6	5.17
4	21.2	18.1	15.6	8.60	18.6	23.7	14.1	7.16	11.8	31.2	29.9	11.5
5	18.1	18.0	18.6	13.3	16.4	27.7	18.3	8.65	10.7	33.2	28.0	13.2
6	14.6	21.8	16.3	17.3	16.9	30.5	13.0	5.90	7.81	26.6	26.0	5.37
7	14.1	32.8	16.5	17.9	15.0	2.57	14.6	0.239	10.9	28.1	25.3	17.2
8	12.9	29.2	14.0	15.9	18.0	14.9	11.4	0.252	8.66	26.6	21.0	19.8
9	14.7	25.9	15.2	16.7	17.8	24.8	12.0	5.71	8.81	1.38	18.6	13.5
10	15.6	16.6	15.2	15.4	19.1	26.0	12.6	19.1	9.46	24.2	6.81	13.8
11	14.9	16.4	12.4	18.1	19.1	20.8	14.5	14.4	9.54	25.5	4.55	8.82
12	12.0	16.6	0.213	22.8	19.2	18.2	16.6	14.5	10.5	22.8	7.55	10.8
13	11.9	15.1	11.4	21.7	16.3	16.8	17.8	13.1	12.7	19.1	12.7	4.79
14	12.2	18.1	11.1	22.5	19.1	14.7	18.6	5.15	14.7	19.1	8.07	14.2
15	12.2	23.2	10.0	18.7	18.4	16.2	19.6	11.6	12.1	20.3	1.28	31.4
16	15.4	17.0	11.0	16.3	17.2	18.2	17.7	7.87	12.5	20.8	2.18	29.3
17	17.1	14.1	12.3	14.9	19.3	20.3	18.1	10.8	7.92	31.4	4.31	7.32
18	13.7	14.5	12.5	15.8	19.8	16.5	16.8	7.09	12.2	24.5	3.11	5.94
19	15.1	13.2	12.6	14.2	20.2	14.9	17.2	7.61	12.9	25.1	3.51	3.51
20	13.0	14.4	12.9	15.1	21.8	17.7	18.6	8.10	18.3	18.4	1.10	5.19
21	12.5	21.0	12.7	16.5	22.5	17.5	18.2	12.0	17.8	19.3	1.75	3.26
22	13.8	16.2	19.7	13.8	23.6	12.3	15.2	0.200	16.2	18.1	1.56	6.04
23	16.9	15.1	11.0	13.5	22.2	13.3	10.8	0.677	16.5	22.2	6.95	6.64
24	23.6	14.9	10.2	14.9	23.6	13.8	10.4	6.08	18.0	31.1	3.73	21.0
25	20.0	14.7	9.51	15.5	22.7	12.0	11.7	9.12	24.7	28.4	3.92	A
26	18.5	13.4	9.58	15.8	22.6	9.01	16.0	10.2	19.5	23.0	1.58	A
27	16.2	15.1	10.5	16.7	25.0	12.5	13.6	10.9	19.4	13.8	10.7	A
28	16.6	14.2	12.2	13.5	23.9	14.0	13.0	7.90	20.4	13.0	21.4	A
29	15.8	14.8	13.9	16.1	---	15.7	11.7	9.47	16.7	11.5	12.5	A
30	17.8	16.2	13.2	17.5	---	16.3	9.75	13.4	17.4	17.9	12.4	A
31	19.0	---	13.1	17.5	---	16.4	---	15.8	---	23.3	5.89	---
TOTAL	480.6	536.6	400.803	491.50	564.6	549.38	443.05	255.928	422.70	691.48	356.73	---
MEAN	15.5	17.9	12.9	15.9	20.2	17.7	14.8	8.26	14.1	22.3	11.5	---
MAX	23.6	32.8	19.7	22.8	25.0	30.5	19.6	19.1	24.7	33.2	35.9	---
MIN	11.7	13.2	0.213	8.60	15.0	2.57	9.75	0.200	7.81	1.38	1.10	---
AC-FT	953	1060	795	975	1120	1090	879	508	838	1370	708	---

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2002, BY WATER YEAR (WY)

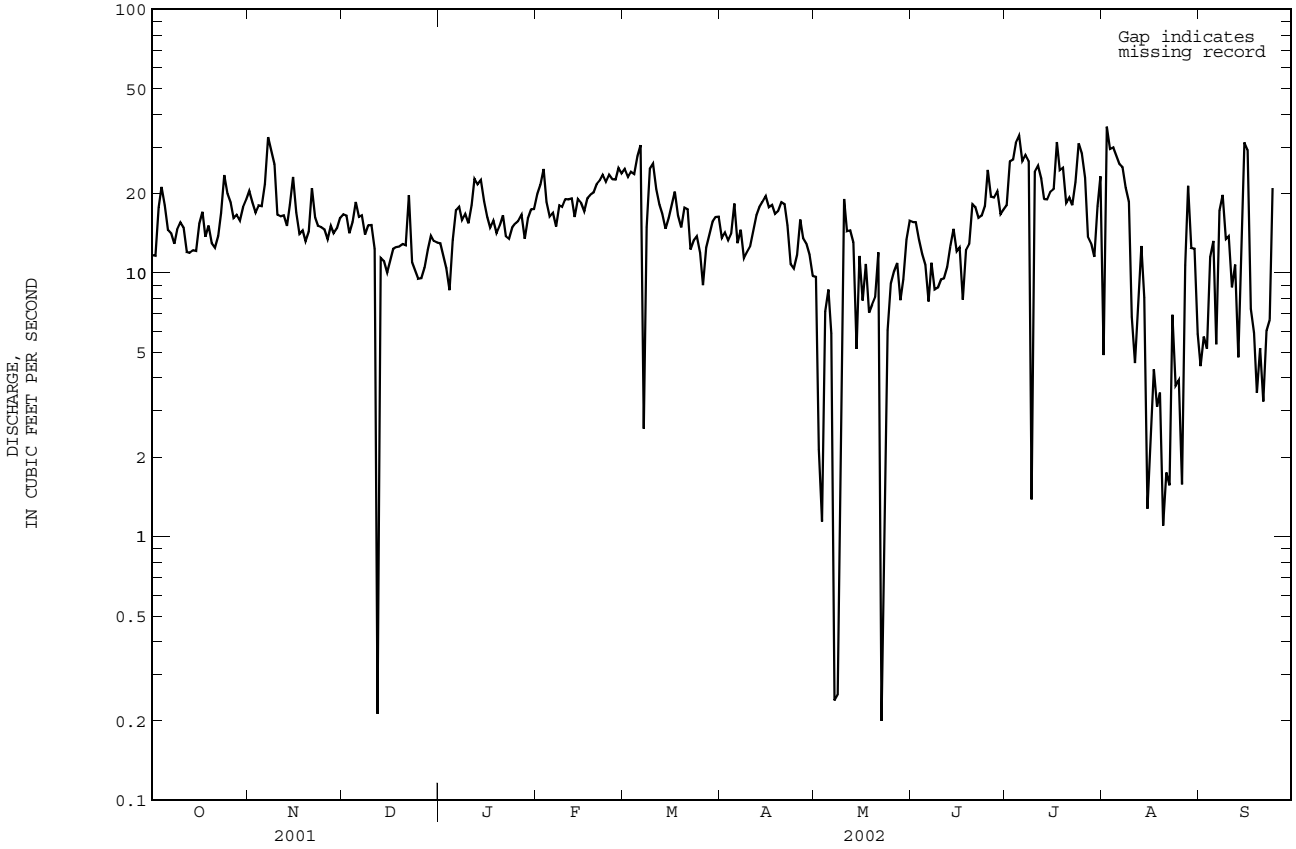
MEAN	15.5	17.9	12.9	15.9	17.8	16.8	13.5	8.88	11.2	17.7	13.0	---
MAX	15.5	17.9	12.9	15.9	20.2	17.7	14.8	9.50	14.1	22.3	14.6	---
(WY)	2002	2002	2002	2002	2002	2002	2002	2001	2002	2002	2001	---
MIN	15.5	17.9	12.9	15.9	15.4	15.9	12.3	8.26	8.28	13.1	11.5	---
(WY)	2002	2002	2002	2002	2001	2001	2001	2002	2001	2001	2002	---

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 2001 - 2002
HIGHEST DAILY MEAN	45.0 May 6	35.9 Aug 2	45.0 May 6 2001
LOWEST DAILY MEAN	0.210 Dec 12	0.200 May 22	0.200 May 22 2002
ANNUAL SEVEN-DAY MINIMUM	5.8 May 14	2.5 Aug 15	2.5 Aug 15 2002
MAXIMUM PEAK FLOW		98 Sep 15	98 Sep 15 2002
MAXIMUM PEAK STAGE		2.94 Sep 15	2.94 Sep 15 2002

A No gage-height records

CANAL PRINCIPAL DE RIEGO VALLE DE LAJAS BASIN

50128940 LAJAS IRRIGATION CANAL BELOW LAJAS FILTRATION PLANT AT LAJAS, PR--Continued



CANAL PRINCIPAL DE RIEGO VALLE DE LAJAS BASIN

50128945 CANAL DE RIEGO DE LAJAS AT BO. PALMAREJO NR LAJAS, PR

LOCATION.--Lat 18°02'14", long 67°04'44", Hydrologic Unit 21010004, 0.2 mi (0.32 km) south from Palmarejo school, 1.6 mi (2.57 km) southwest from Lajas Plaza Church and 0.5 mi (.80 km) northwest from Universidad de Puerto Rico Estación Agrícola.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--January to current year.

GAGE.--Water stage recorder. Altitude of gage is about 98 ft (30 m) from topographic map.

REMARKS.--Records fair. Controlled by Lago Loco dam.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum discharge 97 ft^3/s (2.75 m^3/s) May 6, 2001, gage height, 3.32 ft (1.01 m); no flow many days each year.

EXTREMES OBSERVED FOR CURRENT PERIOD.--Maximum discharge, 72 ft^3/s (2.04 m^3/s) September 15, 2002, gage height, 2.94 ft (0.90 m); no flow many days.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.4	17	13	10	18	15	13	7.9	14	14	2.7	8.5
2	8.5	14	14	8.3	22	15	11	4.0	14	19	20	8.8
3	15	14	11	7.1	30	16	9.1	0.61	12	25	18	7.9
4	17	15	12	6.4	18	14	12	1.4	9.5	31	18	10
5	17	15	16	10	11	16	20	1.7	9.3	32	16	11
6	13	19	13	16	13	15	16	1.0	6.0	23	16	6.8
7	12	24	14	17	10	5.7	18	A	9.0	33	16	14
8	11	21	11	13	14	11	13	A	7.0	31	14	15
9	11	19	13	12	15	12	13	A	7.0	0.38	14	12
10	13	16	11	8.9	17	14	7.5	A	6.8	29	8.2	12
11	13	16	9.0	11	14	14	8.9	A	7.2	29	7.4	8.8
12	9.5	16	0.08	17	11	11	6.3	A	7.5	22	8.8	11
13	9.3	13	5.7	18	10	11	6.5	A	8.2	16	9.6	8.0
14	9.6	16	5.8	19	11	A	A	A	9.8	16	9.5	14
15	9.6	21	5.2	14	12	A	A	A	8.3	19	5.2	28
16	12	17	6.4	10	11	A	A	7.1	8.5	17	6.6	19
17	14	15	8.2	8.7	12	A	A	11	4.7	34	8.1	6.5
18	10	15	8.0	12	12	18	A	8.0	7.7	21	7.3	7.9
19	13	14	7.8	12	12	15	19	8.4	8.9	26	7.1	5.9
20	11	13	7.9	14	12	20	18	7.6	14	14	4.9	6.9
21	11	18	9.3	16	13	21	18	11	13	16	5.8	6.6
22	11	14	17	11	14	15	16	0.28	12	13	5.5	8.0
23	13	13	8.8	10	14	17	12	0.00	12	15	8.3	7.7
24	18	13	7.6	12	15	18	11	4.7	13	29	7.7	15
25	17	13	6.9	13	13	15	12	7.1	24	21	7.8	9.4
26	17	12	6.2	14	13	9.3	13	7.4	15	14	4.4	11
27	15	12	7.1	15	14	13	11	8.0	15	6.4	9.6	9.7
28	16	9.6	8.8	11	13	15	10	6.8	17	6.5	19	6.7
29	15	11	11	14	---	17	9.5	7.6	12	6.7	12	6.9
30	16	13	10	16	---	17	7.6	11	13	13	13	6.2
31	18	---	10	15	---	17	---	15	---	29	8.7	---
TOTAL	404.9	458.6	294.78	391.4	394	---	---	---	325.4	620.98	319.2	309.2
MEAN	13.1	15.3	9.51	12.6	14.1	---	---	---	10.8	20.0	10.3	10.3
MAX	18	24	17	19	30	---	---	---	24	34	20	28
MIN	8.5	9.6	0.08	6.4	10	---	---	---	4.7	0.38	2.7	5.9
AC-FT	803	910	585	776	781	---	---	---	645	1230	633	613

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2002, BY WATER YEAR (WY)

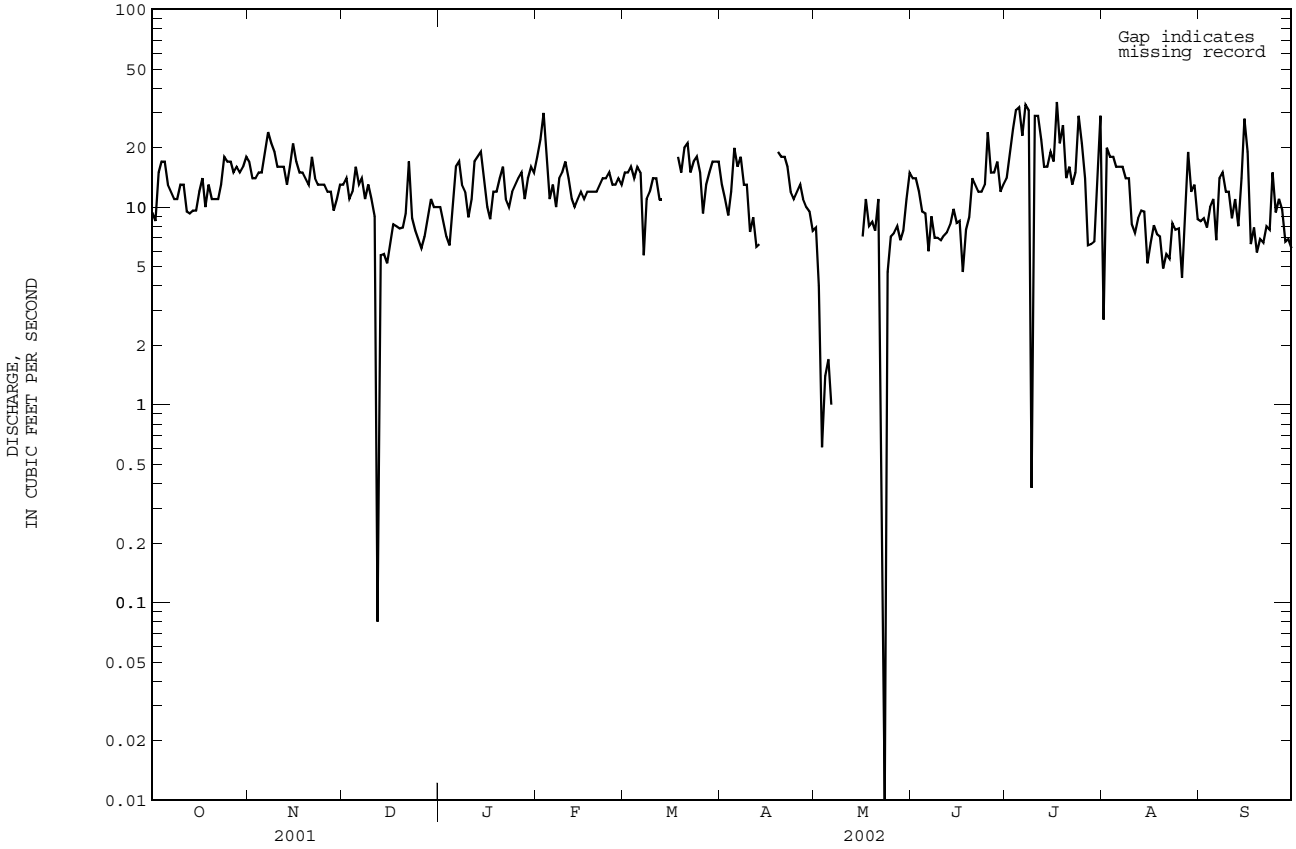
MEAN	13.1	15.3	9.51	12.6	12.5	---	---	---	9.10	17.8	11.9	10.8
MAX	13.1	15.3	9.51	12.6	14.1	---	---	---	10.8	20.0	13.6	11.3
(WY)	2002	2002	2002	2002	2002	---	---	---	2002	2002	2001	2001
MIN	13.1	15.3	9.51	12.6	11.0	---	---	---	7.35	15.6	10.3	10.3
(WY)	2002	2002	2002	2002	2001	---	---	---	2001	2001	2002	2002

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 2001 - 2002	
HIGHEST DAILY MEAN	36	May 6	34	Jul 17	36	May 6 2001
LOWEST DAILY MEAN	0.00	Apr 13	0.00	May 23	0.00	Apr 13 2001
ANNUAL SEVEN-DAY MINIMUM	2.8	May 14	3.5	Apr 30	2.8	May 14 2001
MAXIMUM PEAK FLOW			72	Sep 15	97	May 6 2001
MAXIMUM PEAK STAGE			2.94	Sep 15	3.32	May 6 2001

A No gage-height record

CANAL PRINCIPAL DE RIEGO VALLE DE LAJAS BASIN

50128945 CANAL DE RIEGO DE LAJAS AT BO. PALMAREJO NR LAJAS, PR--Continued



RIO LOCO BASIN

50129700 RIO LOCO AT GUANICA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 17°58'33", long 66°54'52", 0.6 mi (1.0 km) northwest of Guánica Plaza and 1.2 mi (1.9 km) northeast of Ensenada.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--Water years 1975 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	SPECIF. CONDUC- TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER- ATURE, WATER, DEG C (00010)	TURBID- ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS- SOLVED OXYGEN, MG/L (00300)	DIS- SOLVED OXYGEN, PERCENT OF SAT- URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI- FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP- TOCOCCI KF MF, COL/ 100 ML (31673)	HARD- NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)	MAGNES- IUM, WATER, FLTRD, MG/L (00925)
DEC													
11...	1445	404	7.8	25.5	9.3	5.4	65	<10	580	210	150	36.7	15.1
MAR													
04...	1415	1340	8.0	25.0	35	1.9	23	<10	570	850	--	--	--
MAY													
24...	1415	299	7.8	28.7	7.7	5.3	68	<10	420	540	130	30.5	12.3

DATE	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP- TION RATIO (00931)	POTAS- SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR- IDE, WATER, FLTRD, MG/L (00940)	FLUOR- IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI- TUENTS MG/L (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED, MG/L (00530)	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)
DEC													
11...	22.8	.8	2.44	156	<1.0	15.1	24.5	E.1	23.8	234	12	<.01	.500
MAR													
04...	--	--	--	277	--	--	--	--	--	--	12	<.01	<.020
MAY													
24...	12.9	.5	2.18	123	<.1	11.7	12.1	E.1	21.0	176	13	<.01	.520

DATE	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS- PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV- ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV- ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM- IUM, WATER, UNFLTRD RECOV- ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV- ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV- ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV- ERABLE, UG/L (01051)	MANGAN- ESE, WATER, UNFLTRD RECOV- ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV- ERABLE, UG/L (71900)
DEC													
11...	<.01	E.30	E.03	<2	53.2	50	<.1	1.5	<10	250	<1	27.0	<.01
MAR													
04...	.07	1.1	.16	--	--	--	--	--	--	--	--	--	--
MAY													
24...	.03	.20	.02	<2	45.6	30	<.1	11.7	<10	1540	M	114	<.01

DATE	SELEN- IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV- ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV- ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN- OLIC COM- POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
DEC						
11...	<2	<.3	<20	<.01	<16	<.05
MAR						
04...	--	--	--	--	--	--
MAY						
24...	<2	<.3	E20	<.01	<17	<.05

RIO LOCO BASIN

50129700 RIO LOCO AT GUANICA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

PESTICIDE ANALYSES

DATE	TIME	DI-CHLOR-PROP, WATER, UNFLTRD UG/L (82183)	2,4,5-T WATER UNFLTRD UG/L (39740)	2,4-D WATER UNFLTRD UG/L (39730)	ALDRIN, WATER, UNFLTRD UG/L (39330)	CARBO-PHENO-THION, WATER, UNFLTRD UG/L (39786)	CHLOR-DANE, TECH-NICAL, WATER, UNFLTRD UG/L (39350)	CHLOR-PYRIFOS WATER UNFLTRD UG/L (38932)	TRIBU-PHOS, WATER, UNFLTRD UG/L (39040)	DIAZI-NON, WATER, UNFLTRD UG/L (39570)	DIEL-DRIN, WATER, UNFLTRD UG/L (39380)	DISUL-FOTON, WATER, UNFLTRD UG/L (39011)	ALPHA-ENDO-SULFAN, WATER, UNFLTRD UG/L (39388)
MAY													
24...	1415	<.02	<.01	.04	<.01	<.02	<.1	<.01	<.02	<.02	<.006	<.10	<.02

DATE	ENDRIN, WATER, UNFLTRD UG/L (39390)	ETHION, WATER, UNFLTRD UG/L (39398)	FONOFOS WATER UNFLTRD UG/L (82614)	HEPTA-CHLOR EPOXIDE WATER UNFLTRD UG/L (39420)	HEPTA-CHLOR, WATER, UNFLTRD UG/L (39410)	LINDANE WATER, UNFLTRD UG/L (39340)	MALA-THION, WATER, UNFLTRD UG/L (39530)	P,P'-METH-OXY-CHLOR, WATER, UNFLTRD UG/L (39480)	METHYL PARA-THION, WATER, UNFLTRD UG/L (39600)	MIREX, WATER, UNFLTRD UG/L (39755)	P,P'-DDD, WATER, UNFLTRD UG/L (39360)	P,P'-DDE, WATER, UNFLTRD UG/L (39365)	P,P'-DDT, WATER, UNFLTRD UG/L (39370)
MAY													
24...	<.01	<.01	<.01	<.009	<.01	<.006	<.10	<.020	<.02	<.006	<.007	<.006	<.009

DATE	PARA-THION, WATER, UNFLTRD UG/L (39540)	PCBS, WATER, UNFLTRD UG/L (39516)	PHORATE WATER UNFLTRD UG/L (39023)	SILVEX, WATER, UNFLTRD UG/L (39760)	TOXA-PHENE, WATER, UNFLTRD UG/L (39400)
MAY					
24...	<.01	<.1	<.02	<.02	<1

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

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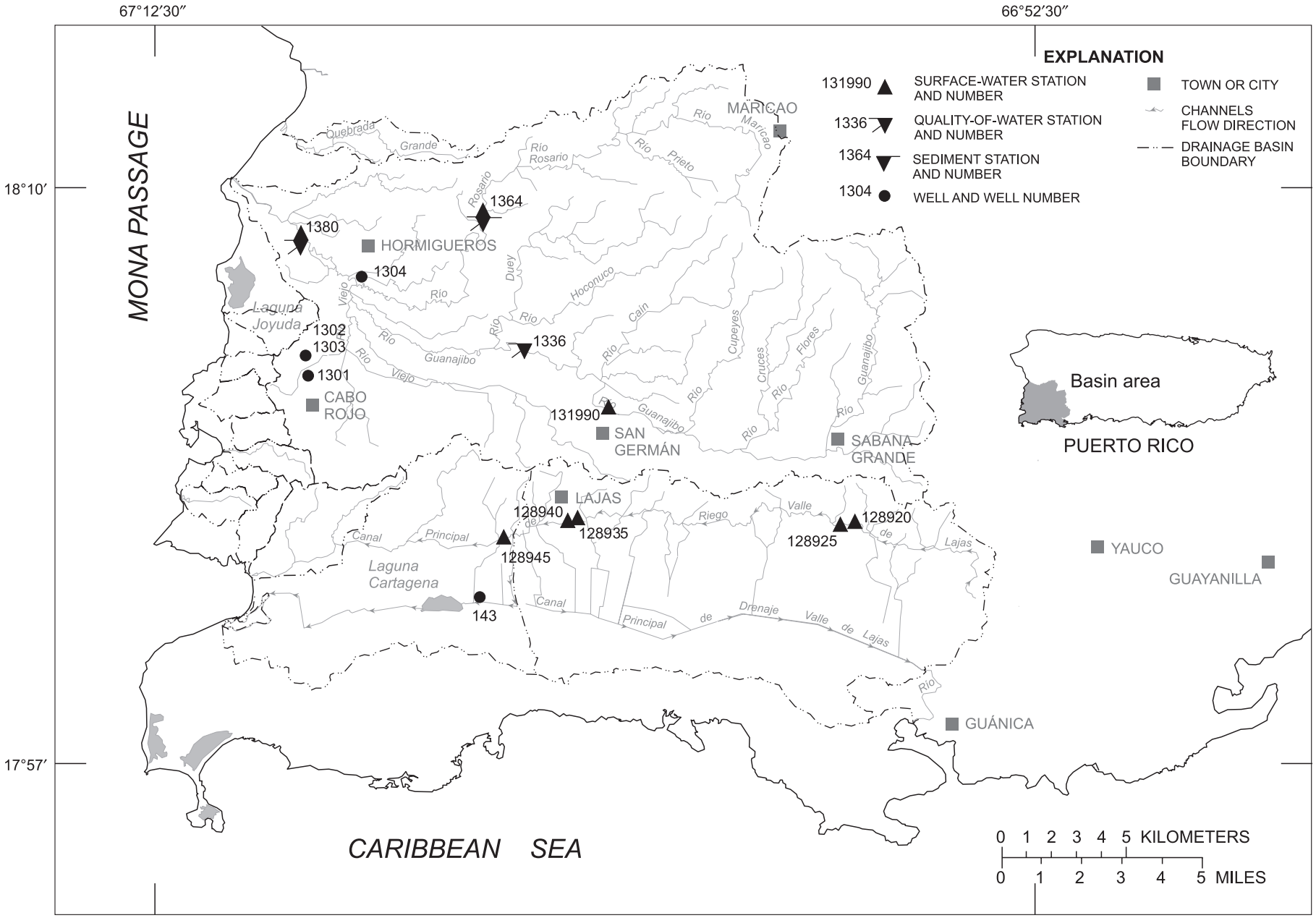


Figure 23. Río Guanajibo basin.

RIO GUANAJIBO BASIN

50131990 RIO GUANAJIBO AT HWY 119 AT SAN GERMAN, PR

LOCATION.--Lat 18°05'06", long 67°02'02", Hydrologic Unit 21010003, on left bank, at bridge on Highway 119, 0.6 mi (1.0 km) southwest of junction of Highways 119 and 2, 0.2 mi (0.3 km) northeast of junction of Highways 119 and 102, 0.7 mi (1.1 km) east from public Plaza of San Germán.

DRAINAGE AREA.--34.6 mi^2 (89.6 km^2).

PERIOD OF RECORD.--April 1991 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 148 ft (45 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. There is a quarry 1.35 mi upstream station. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	15	10	e21	9.8	2.7	27	56	18	6.8	13	20
2	17	17	9.7	e19	8.3	2.8	23	448	14	6.1	11	82
3	18	15	10	e18	8.4	2.8	35	139	40	6.8	21	176
4	65	16	11	17	9.5	2.7	19	75	25	6.4	32	116
5	56	15	30	18	11	2.1	310	55	76	8.3	25	42
6	26	19	13	18	9.2	2.6	277	41	49	19	31	26
7	21	23	31	16	8.0	3.7	109	90	26	19	13	e25
8	e21	20	17	15	7.5	3.8	59	89	21	9.9	15	17
9	20	32	41	14	6.8	3.7	31	60	21	7.5	13	12
10	25	21	114	13	7.9	4.0	25	39	18	6.1	17	9.8
11	21	17	84	13	5.9	22	22	35	16	6.9	13	11
12	17	18	35	12	4.1	24	20	32	15	5.4	13	9.4
13	15	15	27	12	4.4	11	19	45	15	7.7	12	7.3
14	15	20	21	11	5.0	9.6	18	33	14	7.2	24	13
15	14	61	19	11	3.6	8.2	23	29	12	11	59	82
16	17	37	18	10	3.7	21	23	28	12	10	23	65
17	17	22	208	11	3.6	23	30	27	16	8.8	40	23
18	14	27	149	9.7	7.3	23	37	26	e19	5.9	18	11
19	15	16	44	8.9	14	17	26	24	12	4.9	24	8.2
20	13	15	29	7.9	11	11	93	21	26	4.8	17	13
21	26	14	269	6.8	4.9	10	112	21	52	4.7	16	8.2
22	45	13	485	7.4	4.0	9.4	43	20	21	4.5	18	5.4
23	24	12	119	9.1	3.6	7.8	223	20	16	3.7	14	4.3
24	31	12	55	5.9	3.1	5.6	123	19	14	5.2	15	67
25	23	11	41	6.1	3.1	5.4	389	18	11	5.2	18	18
26	19	11	34	6.1	3.7	8.5	480	16	11	4.8	15	11
27	21	10	30	5.6	2.8	11	275	15	9.7	6.4	13	6.6
28	23	10	27	5.4	2.7	11	264	16	8.7	4.6	11	4.5
29	19	10	e26	8.3	---	47	137	15	8.2	6.2	29	4.0
30	20	11	e24	8.4	---	138	82	15	7.6	13	18	3.5
31	16	---	e23	13	---	63	---	14	---	13	21	---
TOTAL	712	555	2053.7	357.6	176.9	517.4	3354	1581	624.2	239.8	622	901.2
MEAN	23.0	18.5	66.2	11.5	6.32	16.7	112	51.0	20.8	7.74	20.1	30.0
MAX	65	61	485	21	14	138	480	448	76	19	59	176
MIN	13	10	9.7	5.4	2.7	2.1	18	14	7.6	3.7	11	3.5
MED	20	16	30	11	5.5	9.4	40	28	16	6.4	17	12
AC-FT	1410	1100	4070	709	351	1030	6650	3140	1240	476	1230	1790
CFSM	0.66	0.53	1.91	0.33	0.18	0.48	3.23	1.47	0.60	0.22	0.58	0.87
IN.	0.77	0.60	2.21	0.38	0.19	0.56	3.61	1.70	0.67	0.26	0.67	0.97

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2002, BY WATER YEAR (WY)

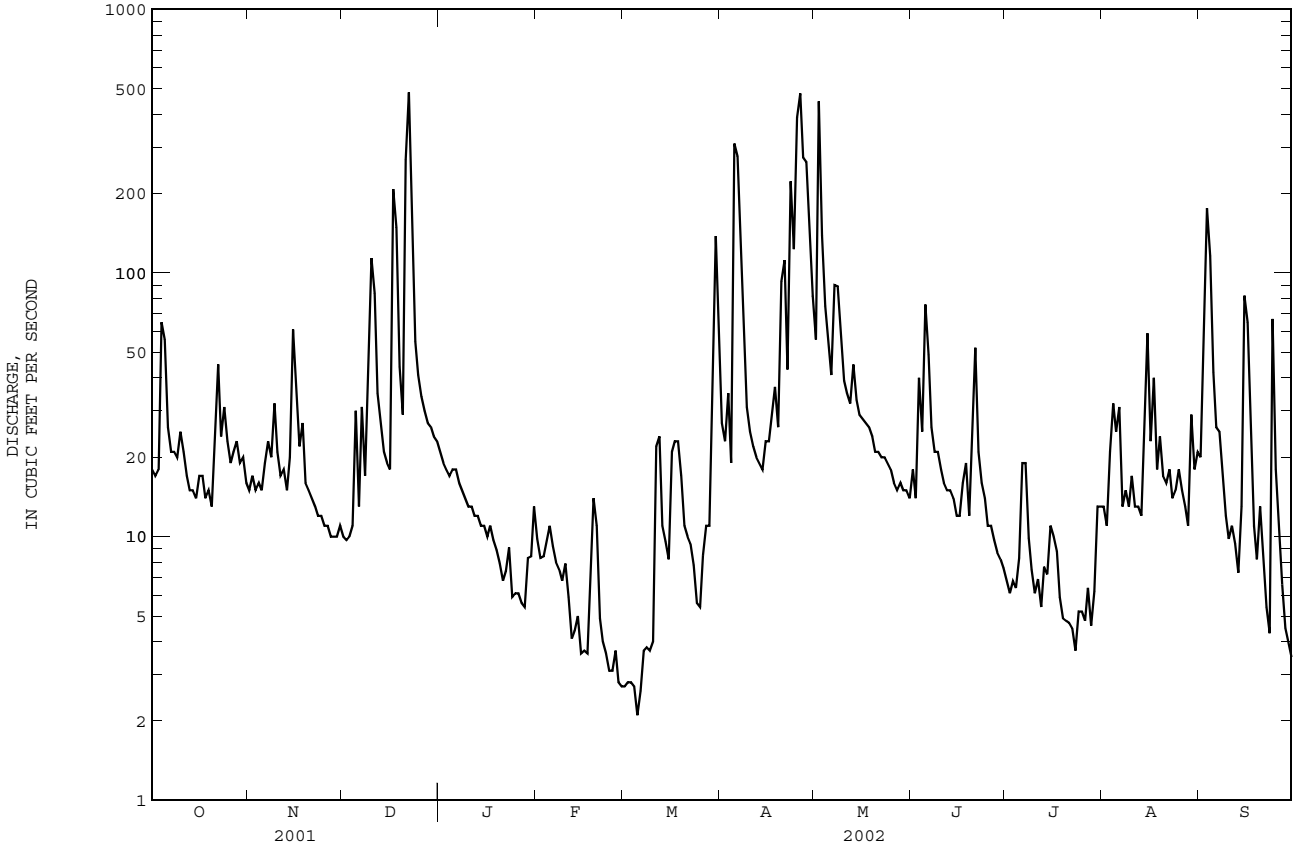
MEAN	165	72.3	33.5	20.9	19.9	12.8	37.3	62.9	25.4	18.9	48.5	201
MAX	632	127	76.5	47.5	45.3	25.8	112	203	61.3	37.6	111	1585
(WY)	1999	1997	1999	1997	1998	1995	2002	2001	1999	1995	2000	1998
MIN	20.4	15.8	8.21	6.10	4.32	3.52	7.79	5.11	3.91	6.68	14.7	11.2
(WY)	1992	1992	1992	1998	1992	1992	1997	1994	1994	1994	2001	1997

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1991 - 2002	
ANNUAL TOTAL	16639.2		11694.8			
ANNUAL MEAN	45.6		32.0		62.0	
HIGHEST ANNUAL MEAN					179	1998
LOWEST ANNUAL MEAN					16.6	1994
HIGHEST DAILY MEAN	4480	May 6	485	Dec 22	17300	Sep 22 1998
LOWEST DAILY MEAN	5.8	Mar 22	2.1	Mar 5	1.5	May 9 1992
ANNUAL SEVEN-DAY MINIMUM	6.8	Mar 4	2.6	Feb 28	1.8	May 6 1992
MAXIMUM PEAK FLOW			4730	Dec 22	29900	May 6 2001
MAXIMUM PEAK STAGE			12.14	Dec 22	21.26	May 6 2001
ANNUAL RUNOFF (AC-FT)	33000		23200		44900	
ANNUAL RUNOFF (CFSM)	1.32		0.93		1.79	
ANNUAL RUNOFF (INCHES)	17.89		12.57		24.34	
10 PERCENT EXCEEDS	61		60		109	
50 PERCENT EXCEEDS	17		16		18	
90 PERCENT EXCEEDS	8.7		5.2		5.5	

e Estimated

RIO GUANAJIBO BASIN

50131990 RIO GUANAJIBO AT HWY 119 AT SAN GERMAN, PR--Continued



RIO GUANAJIBO BASIN

50133600 RIO GUANAJIBO NEAR SAN GERMAN, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°07'18", long 67°03'56", at bridge on Highway 347, 2.2 mi (3.5 km) northwest of San Germán.

DRAINAGE AREA.--45.5 mi^2 (117.8 km^2).

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
DEC													
13...	1310	42	433	7.9	25.5	16	7.3	89	10	2900	250	200	22.8
MAR													
05...	1310	1.4	635	7.9	27.0	2.0	8.2	102	<10	E70	E10	--	--
MAY													
21...	1230	30	561	8.0	27.2	2.2	9.4	117	<10	E145	E30	250	28.5

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
DEC													
13...	34.7	13.1	.4	1.89	185	<1.0	14.6	16.9	E.1	29.6	245	28.0	20
MAR													
05...	--	--	--	--	248	--	--	--	--	--	--	--	<10
MAY													
21...	44.0	15.6	.4	1.79	239	<.1	19.5	21.4	E.1	31.5	306	24.9	<10

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
DEC													
13...	.03	1.40	.05	E.40	E.23	E1	47.7	50	<.1	7.0	M	590	<1
MAR													
05...	.03	1.20	.04	.20	.48	--	--	--	--	--	--	--	--
MAY													
21...	.04	.730	.04	.20	.21	<2	55.6	50	<.1	3.5	M	110	<1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
DEC								
13...	44.1	<.01	E1	<.3	<20	<.01	<16	E.03
MAR								
05...	--	--	--	--	--	--	--	--
MAY								
21...	22.7	<.01	<2	<.3	<20	<.01	<17	<.05

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

RIO GUANAJIBO BASIN

50136400 RIO ROSARIO NEAR HORMIGUEROS, PR

LOCATION.--Lat 18°09'36", long 67°05'08", Hydrologic Unit 21010003, at bridge on Highway 348, 0.5 mi (0.8 km) southwest of Rosario Plaza.

DRAINAGE AREA.--18.3 mi^2 (47.4 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1985 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 50.0 ft (15.2 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	71	41	44	23	15	25	123	21	17	21	e60
2	58	71	67	43	23	15	26	121	21	14	25	e100
3	56	63	57	41	23	16	29	82	26	13	50	e250
4	58	57	55	41	23	16	28	105	28	12	43	e160
5	55	54	41	43	23	16	54	87	27	12	92	e110
6	50	53	e37	40	22	15	77	64	24	40	63	81
7	53	53	e48	38	22	15	56	128	22	19	36	67
8	49	116	41	37	23	15	51	108	21	13	31	61
9	46	81	121	36	21	15	31	73	20	13	29	56
10	69	e66	104	35	20	16	24	65	19	14	36	55
11	63	e58	151	34	19	22	22	65	18	12	41	53
12	50	60	103	33	19	25	20	100	19	29	38	48
13	55	58	79	32	19	16	19	98	20	18	50	151
14	47	151	61	31	19	14	18	68	18	18	113	65
15	46	103	52	30	18	15	19	57	17	28	100	57
16	42	79	88	30	18	26	20	51	16	21	e65	64
17	39	67	345	29	18	39	26	47	17	20	e50	47
18	39	61	163	29	17	34	70	47	16	17	e61	65
19	37	57	86	28	27	19	74	41	32	16	e45	55
20	35	55	71	27	21	16	74	39	26	17	e40	49
21	113	52	108	27	17	15	82	36	28	17	e50	38
22	146	50	82	26	16	14	49	35	18	17	e45	34
23	85	49	77	25	17	13	228	33	16	26	e45	50
24	92	47	66	25	17	13	110	31	15	44	e52	64
25	74	46	61	e25	16	15	132	29	14	27	e48	43
26	72	45	57	e24	16	17	101	28	14	22	e47	36
27	77	e43	53	24	16	15	96	27	16	18	e47	32
28	84	43	51	23	16	15	79	26	14	32	e60	30
29	82	45	49	23	---	22	74	24	13	29	e50	28
30	68	42	47	25	---	28	89	23	14	21	e48	27
31	60	---	46	25	---	21	---	22	---	23	e55	---
TOTAL	1961	1896	2508	973	549	568	1803	1883	590	639	1576	2036
MEAN	63.3	63.2	80.9	31.4	19.6	18.3	60.1	60.7	19.7	20.6	50.8	67.9
MAX	146	151	345	44	27	39	228	128	32	44	113	250
MIN	35	42	37	23	16	13	18	22	13	12	21	27
AC-FT	3890	3760	4970	1930	1090	1130	3580	3730	1170	1270	3130	4040
CFSM	3.46	3.45	4.42	1.72	1.07	1.00	3.28	3.32	1.07	1.13	2.78	3.71
IN.	3.99	3.85	5.10	1.98	1.12	1.15	3.67	3.83	1.20	1.30	3.20	4.14

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2002, BY WATER YEAR (WY)

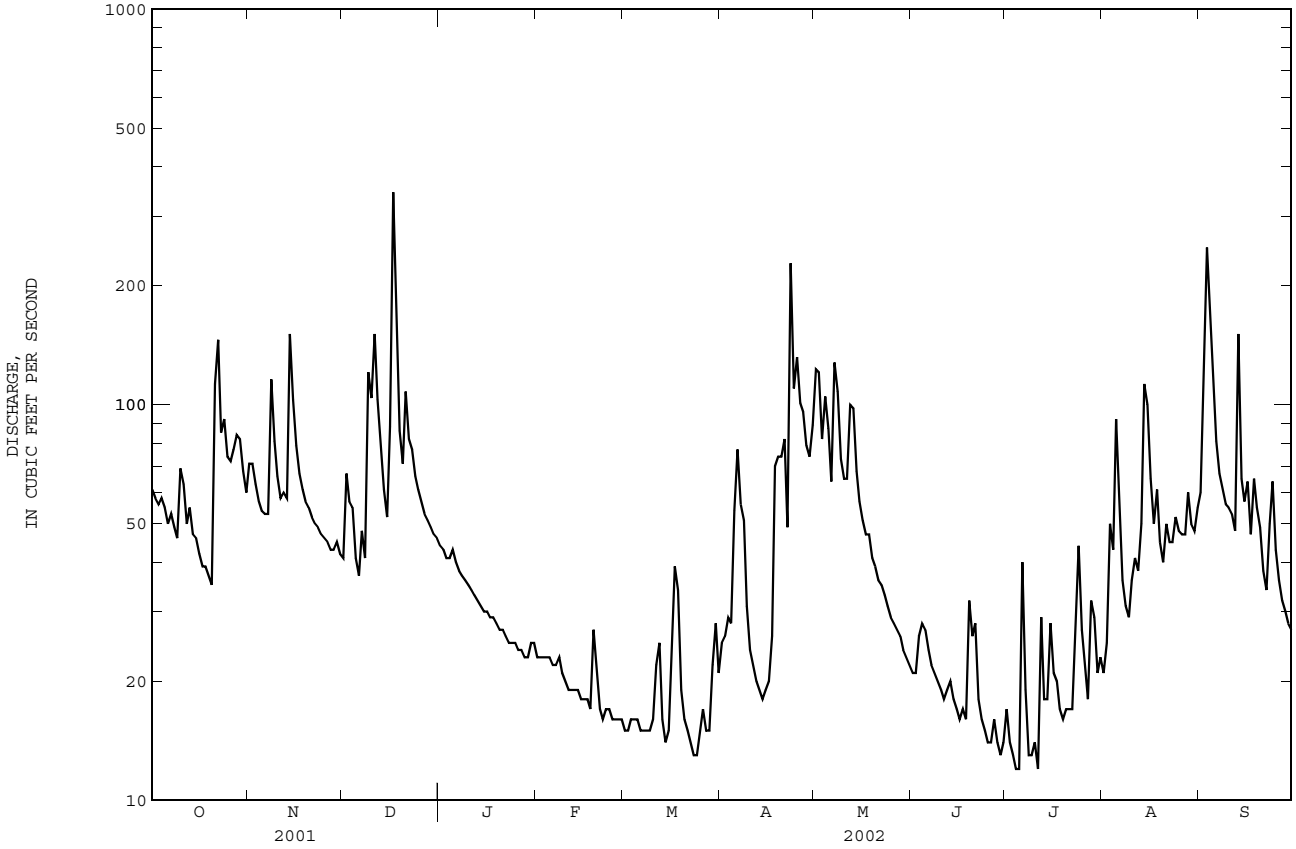
MEAN	108	74.8	36.8	24.5	19.7	20.7	26.3	45.0	44.4	42.7	63.6	103
MAX	206	150	80.9	39.7	37.8	77.0	60.1	122	127	75.2	102	308
(WY)	1986	2000	2002	1997	1995	1989	2002	1993	1999	1989	1989	1998
MIN	33.2	16.1	9.92	15.1	8.55	10.1	11.0	14.8	12.0	20.6	25.1	32.7
(WY)	1992	1992	1992	1994	1992	1992	1998	1997	1992	2002	1991	1986

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1986 - 2002	
ANNUAL TOTAL	19021		16982			
ANNUAL MEAN	52.1		46.5		50.9	
HIGHEST ANNUAL MEAN					75.9	1999
LOWEST ANNUAL MEAN					30.8	1992
HIGHEST DAILY MEAN	388	May 6	345	Dec 17	4420	Sep 22 1998
LOWEST DAILY MEAN	12	Mar 19	12	Jul 4	3.9	May 9 1992
ANNUAL SEVEN-DAY MINIMUM	13	Mar 15	14	Jun 29	4.2	May 6 1992
MAXIMUM PEAK FLOW			2740	Dec 17	13700	Sep 22 1998
MAXIMUM PEAK STAGE			9.37	Dec 17	18.66	Sep 22 1998
INSTANTANEOUS LOW FLOW			11	Jul 4	3.7	May 9 1992
ANNUAL RUNOFF (AC-FT)	37730		33680		36860	
ANNUAL RUNOFF (CFSM)	2.85		2.54		2.78	
ANNUAL RUNOFF (INCHES)	38.67		34.52		37.78	
10 PERCENT EXCEEDS	108		86		116	
50 PERCENT EXCEEDS	41		38		30	
90 PERCENT EXCEEDS	14		16		12	

e Estimated

RIO GUANAJIBO BASIN

50136400 RIO ROSARIO NEAR HORMIGUEROS, PR--Continued



RIO GUANAJIBO BASIN

50136400 RIO ROSARIO NEAR HORMIGUEROS, PR--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 1985 to current year.

INSTRUMENTATION.--USDH-48 sediment sampler since October 1985. Automatic sediment sampler since 1986.

REMARKS.-- Sediment samples were collected by a local observer on a weekly basis. During high flow events sediment samples were collected with automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 15,900 mg/L September 22, 1998; Minimum daily mean, 1 mg/L several days during several years.
SEDIMENT LOADS: Maximum daily mean, 356,000 tons (323,000 tonnes) September 22, 1998; Minimum daily mean, 0.05 ton (0.04 tonne) several days during several years.

EXTREMES FOR CURRENT YEAR 2002.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,280 mg/L December 17, 2001; Minimum daily mean, 1.0 mg/L several days.
SEDIMENT LOADS: Maximum daily mean, 5,420 tons (4,917 tonnes) December 17, 2001; Minimum daily mean, 0.06 ton (0.05 tonne) February 14, 2002.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
DEC													
14...	1130	62	275	7.6	27.5	8.1	8.3	105	<10	260	210	120	21.1
MAR													
05...	1440	18	277	8.2	27.5	2.7	9.1	114	<10	E10	E54	--	--
MAY													
21...	1430	37	255	8.6	29.2	2.0	9.3	121	<10	E30	E10	120	22.5

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
DEC													
14...	16.4	5.86	.2	1.16	112	<1.0	5.8	6.51	<.1	29.5	153	25.8	12
MAR													
05...	--	--	--	--	136	--	--	--	--	--	--	--	<10
MAY													
21...	15.3	6.80	.3	.92	118	<.1	5.5	6.24	E.1	27.2	155	15.6	<10

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
DEC													
14...	<.01	E1.00	<.01	<.20	E.03	E1	34.4	E10	<.1	8.5	M	250	<1
MAR													
05...	<.01	.450	<.01	<.20	.03	--	--	--	--	--	--	--	--
MAY													
21...	<.01	.380	.03	<.20	<.02	<2	30.8	E10	<.1	5.4	M	70	<1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
DEC								
14...	15.7	<.01	<2	<.3	<20	<.01	<16	<.05
MAR								
05...	--	--	--	--	--	--	--	--
MAY								
21...	6.3	<.01	<2	<.3	E20	<.01	<18	<.05

< -- Less than
E -- Estimated value

RIO GUANAJIBO BASIN

50136400 RIO ROSARIO NEAR HORMIGUEROS, PR--Continued

WATER-QUALITY RECORDS

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	61	10	1.7	71	35	9.9	41	1	0.12
2	58	7	1.0	71	32	6.6	67	41	12
3	56	6	0.83	63	6	1.0	57	24	5.6
4	58	21	3.5	57	7	1.1	55	16	2.9
5	55	13	2.1	54	9	1.3	41	4	0.42
6	50	4	0.61	53	8	1.1	e37	e2	e0.24
7	53	11	1.8	53	6	0.89	e48	e5	e0.63
8	49	2	0.23	116	197	125	41	4	0.50
9	46	1	0.13	81	22	5.3	121	205	303
10	69	35	11	e66	e4	e0.71	104	94	29
11	63	27	4.8	e58	e6	e1.0	151	419	361
12	50	9	1.1	60	7	1.2	103	91	27
13	55	25	5.4	58	9	1.4	79	34	7.7
14	47	18	2.4	151	213	216	61	13	2.2
15	46	13	1.6	103	57	18	52	7	0.97
16	42	10	1.1	79	17	3.6	88	93	63
17	39	7	0.73	67	12	2.2	345	1280	5420
18	39	4	0.44	61	8	1.4	163	202	114
19	37	3	0.34	57	7	1.0	86	20	4.9
20	35	3	0.29	55	5	0.78	71	9	1.7
21	113	241	356	52	4	0.57	108	194	125
22	146	253	320	50	3	0.45	82	23	5.5
23	85	67	16	49	3	0.35	77	8	1.7
24	92	113	50	47	2	0.26	66	6	1.1
25	74	31	6.4	46	2	0.19	61	5	0.76
26	72	24	5.6	45	1	0.14	57	3	0.50
27	77	28	6.5	e43	e1	e0.16	53	4	0.53
28	84	41	12	43	2	0.20	51	4	0.59
29	82	30	8.8	45	2	0.23	49	5	0.63
30	68	12	2.2	42	1	0.17	47	4	0.46
31	60	11	1.8	---	---	---	46	2	0.27
TOTAL	1961	---	826.40	1896	---	402.20	2508	---	6493.92

RIO GUANAJIBO BASIN

50136400 RIO ROSARIO NEAR HORMIGUEROS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	44	2	0.24	23	4	0.25	15	4	0.18
2	43	2	0.23	23	4	0.25	15	6	0.23
3	41	2	0.22	23	5	0.28	16	5	0.21
4	41	2	0.22	23	5	0.30	16	4	0.17
5	43	2	0.24	23	4	0.24	16	4	0.15
6	40	2	0.26	22	3	0.17	15	3	0.13
7	38	3	0.28	22	2	0.13	15	4	0.17
8	37	3	0.28	23	3	0.18	15	6	0.23
9	36	2	0.20	21	4	0.21	15	7	0.27
10	35	1	0.12	20	3	0.16	16	6	0.25
11	34	2	0.15	19	2	0.10	22	10	0.86
12	33	2	0.21	19	2	0.08	25	12	0.98
13	32	3	0.27	19	1	0.07	16	3	0.13
14	31	4	0.33	19	1	0.06	14	3	0.12
15	30	5	0.40	18	2	0.10	15	3	0.12
16	30	6	0.45	18	3	0.15	26	10	0.91
17	29	5	0.40	18	3	0.14	39	22	2.9
18	29	4	0.33	17	3	0.14	34	15	1.9
19	28	4	0.32	27	8	0.77	19	5	0.27
20	27	4	0.32	21	5	0.30	16	4	0.16
21	27	5	0.33	17	4	0.16	15	2	0.09
22	26	5	0.33	16	4	0.17	14	2	0.08
23	25	5	0.33	17	4	0.17	13	3	0.11
24	25	5	0.35	17	3	0.15	13	8	0.30
25	e25	e5	e0.34	16	3	0.13	15	13	0.50
26	e24	e5	e0.35	16	3	0.11	17	10	0.46
27	24	6	0.36	16	2	0.10	15	6	0.25
28	23	6	0.36	16	3	0.13	15	6	0.22
29	23	6	0.36	---	---	---	22	9	0.93
30	25	4	0.29	---	---	---	28	17	1.5
31	25	4	0.26	---	---	---	21	8	0.46
TOTAL	973	---	9.13	549	---	5.20	568	---	15.24

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	25	8	0.53	123	123	65	21	4	0.20
2	26	10	0.80	121	101	60	21	3	0.18
3	29	11	1.0	82	11	2.6	26	3	0.22
4	28	16	3.4	105	91	50	28	4	0.32
5	54	40	10	87	40	11	27	9	0.64
6	77	62	14	64	5	0.90	24	20	1.3
7	56	39	6.7	128	199	214	22	14	0.85
8	51	35	4.9	108	87	29	21	4	0.25
9	31	14	1.2	73	6	1.1	20	2	0.13
10	24	9	0.57	65	4	0.73	19	4	0.18
11	22	6	0.39	65	15	3.3	18	8	0.40
12	20	4	0.22	100	121	75	19	12	0.59
13	19	2	0.12	98	104	34	20	9	0.46
14	18	3	0.12	68	24	4.6	18	6	0.30
15	19	3	0.15	57	7	1.1	17	4	0.20
16	20	5	0.29	51	6	0.87	16	4	0.18
17	26	9	1.1	47	7	0.85	17	4	0.18
18	70	109	91	47	7	0.87	16	4	0.17
19	74	60	14	41	6	0.64	32	24	3.8
20	74	74	17	39	4	0.45	26	11	0.91
21	82	72	17	36	3	0.34	28	12	1.0
22	49	18	2.5	35	3	0.26	18	6	0.30
23	228	631	1670	33	2	0.19	16	5	0.22
24	110	117	41	31	3	0.24	15	4	0.17
25	132	216	279	29	4	0.30	14	4	0.17
26	101	66	21	28	4	0.30	14	5	0.18
27	96	75	23	27	4	0.29	16	5	0.23
28	79	48	11	26	4	0.28	14	6	0.23
29	74	31	7.0	24	4	0.26	13	7	0.25
30	89	73	35	23	4	0.25	14	7	0.28
31	---	---	---	22	4	0.23	---	---	---
TOTAL	1803	---	2273.99	1883	---	558.95	590	---	14.49

RIO GUANAJIBO BASIN

50136400 RIO ROSARIO NEAR HORMIGUEROS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	17	8	0.35	21	7	0.43	e60	e49	e8.4
2	14	8	0.29	25	12	0.86	e100	e94	e27
3	13	7	0.23	50	45	16	e250	e650	e1700
4	12	5	0.18	43	28	3.9	e160	e394	e760
5	12	4	0.13	92	96	39	e110	e114	e50
6	40	38	10	63	50	9.8	81	28	6.1
7	19	7	0.41	36	20	1.9	67	28	5.0
8	13	4	0.14	31	19	1.6	61	27	4.4
9	13	4	0.14	29	19	1.5	56	26	4.0
10	14	4	0.15	36	19	1.8	55	26	3.9
11	12	4	0.13	41	25	3.5	53	25	3.6
12	29	18	4.3	38	21	2.3	48	25	3.2
13	18	6	0.34	50	32	6.5	151	394	760
14	18	6	0.36	113	114	50	65	58	11
15	28	11	0.88	100	94	27	57	41	7.0
16	21	9	0.49	e65	e58	e11	64	49	8.4
17	20	8	0.44	e50	e41	e7.0	47	70	8.8
18	17	8	0.37	e61	e27	e4.4	65	325	85
19	16	8	0.33	e45	e24	e3.4	55	44	6.9
20	17	7	0.32	e40	e5	e0.50	49	24	3.4
21	17	7	0.32	e50	e26	e6.9	38	5	0.50
22	17	6	0.30	e45	e23	e2.6	34	4	0.37
23	26	12	1.6	e45	e23	e2.6	50	26	6.9
24	44	31	5.4	e52	e26	e6.9	64	41	7.4
25	27	11	0.89	e48	e24	e3.4	43	23	2.6
26	22	8	0.45	e47	e24	e3.4	36	18	1.7
27	18	7	0.36	e47	e24	e3.4	32	16	1.4
28	32	23	4.4	e60	e49	e8.4	30	13	1.1
29	29	15	1.3	e50	e24	e3.4	28	12	0.90
30	21	7	0.47	e48	e24	e3.4	27	10	0.76
31	23	9	0.60	e55	e44	e6.9	---	---	---
TOTAL	639	---	36.07	1576	---	243.69	2036	---	3489.73
YEAR	16982		14369.01						

e Estimated

RIO GUANAJIBO BASIN

50138000 RIO GUANAJIBO NEAR HORMIGUEROS, PR

LOCATION.--Lat 18°08'36", long 67°08'57", Hydrologic Unit 21010003, at bridge on Highway 100, 1.4 mi (2.3 km) west of Hormigueros, and 2.0 mi (3.2 km) downstream from Río Rosario.

DRAINAGE AREA.--120 mi^2 (311 km^2).

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 November 7, 1980, at site 0.3 mi (0.5 km) upstream at datum 7.36 ft (2.243 m) higher.

REMARKS.--Records fair. Gage-height and precipitation satellite telemetry at station. Daily discharges affected by sewage treatment plant about 2.1 mi (3.4 km) upstream from gage.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	232	156	98	93	49	30	49	339	e61	e37	e46	e67
2	208	194	121	91	46	30	52	449	e52	e35	e41	e211
3	195	185	123	85	47	29	91	381	e55	e37	e73	e445
4	208	157	130	82	49	28	47	345	e82	e36	e115	e309
5	241	129	125	79	48	28	78	280	e205	e41	e154	e134
6	179	126	122	80	46	25	380	153	e148	e68	e110	e89
7	161	192	123	76	47	25	166	313	e85	e65	e69	e78
8	154	217	182	73	46	27	137	539	e70	e44	e64	e62
9	144	189	203	70	45	27	78	e180	e71	e39	e54	e50
10	284	151	410	66	44	39	59	e118	e62	e36	e60	e44
11	279	129	359	65	44	47	54	e106	e57	e37	e51	e47
12	189	123	431	64	41	50	48	e98	e54	e34	e51	e45
13	165	128	361	63	40	36	45	e132	e55	e39	e51	e38
14	157	486	259	62	38	31	45	e96	e52	e38	e79	e49
15	141	718	209	60	38	30	45	e84	e50	e46	e177	e219
16	137	319	193	59	36	42	47	e82	e48	e44	e82	e190
17	137	238	442	59	36	60	52	e82	e59	e41	e121	e86
18	123	186	1330	59	35	61	79	e77	e66	e36	e65	e53
19	115	151	379	57	39	39	138	e123	e49	e33	e84	e44
20	104	134	268	53	41	35	130	e69	e82	e33	e60	e59
21	248	127	349	53	35	32	264	e68	e156	e32	e60	e44
22	401	120	462	54	33	31	122	e66	e72	e32	e63	e37
23	257	114	393	55	33	31	536	e66	e57	e30	e54	e37
24	284	113	225	51	32	31	1120	e64	e52	e34	e54	e196
25	213	108	174	49	32	32	489	e62	e47	e33	e62	e75
26	170	105	148	47	31	32	655	e58	e45	e32	e54	e53
27	209	105	131	47	31	29	538	e56	e43	e36	e54	e45
28	245	102	122	48	30	29	501	e58	e41	e32	e67	e34
29	233	100	111	46	---	30	e395	e55	e40	e36	e119	e36
30	189	100	104	52	---	75	301	e54	e39	e50	e84	e34
31	147	---	97	57	---	119	---	e52	---	e47	e73	---
TOTAL	6149	5402	8184	1955	1112	1190	6741	4705	2055	1213	2351	2910
MEAN	198	180	264	63.1	39.7	38.4	225	152	68.5	39.1	75.8	97.0
MAX	401	718	1330	93	49	119	1120	539	205	68	177	445
MIN	104	100	97	46	30	25	45	52	39	30	41	34
AC-FT	12200	10710	16230	3880	2210	2360	13370	9330	4080	2410	4660	5770
CFSM	1.65	1.50	2.20	0.53	0.33	0.32	1.87	1.26	0.57	0.33	0.63	0.81
IN.	1.91	1.67	2.54	0.61	0.34	0.37	2.09	1.46	0.64	0.38	0.73	0.90

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 2002, BY WATER YEAR (WY)

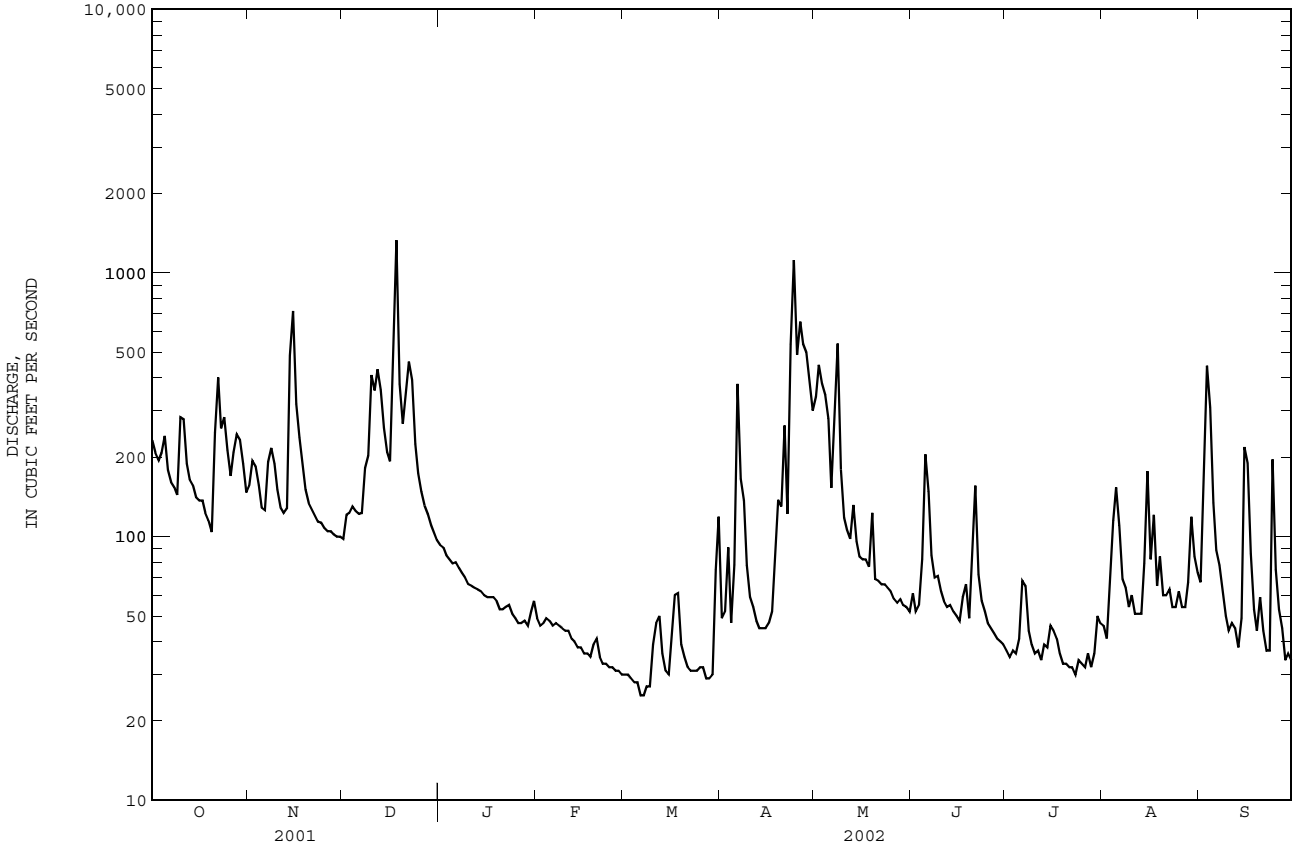
MEAN	453	382	130	61.0	50.6	45.5	75.6	179	110	99.7	215	466
MAX	1254	1518	422	112	119	244	316	698	504	240	757	2075
(WY)	1986	1978	1976	1997	1996	1989	1989	2001	1979	1984	1988	1975
MIN	97.5	42.7	15.4	13.8	13.9	10.6	16.1	12.7	9.23	26.4	42.3	78.5
(WY)	1992	1992	1992	1973	1977	1977	1977	1977	1977	1976	1976	1997

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1973 - 2002	
ANNUAL TOTAL	73029		43967			
ANNUAL MEAN	200		120		191	
HIGHEST ANNUAL MEAN					402	1979
LOWEST ANNUAL MEAN					69.6	1994
HIGHEST DAILY MEAN	12000	May 7	1330	Dec 18	35000	Sep 16 1975
LOWEST DAILY MEAN	18	Mar 19	25	Mar 6	5.0	Jun 18 1977
ANNUAL SEVEN-DAY MINIMUM	19	Mar 16	27	Mar 3	5.5	Jun 17 1977
MAXIMUM PEAK FLOW			2320	Dec 18	128000	Sep 16 1975
MAXIMUM PEAK STAGE			19.80	Dec 18	28.50	Sep 16 1975
INSTANTANEOUS LOW FLOW					4.6	Jun 22 1977
ANNUAL RUNOFF (AC-FT)	144900		87210		138100	
ANNUAL RUNOFF (CFSM)	1.67		1.00		1.59	
ANNUAL RUNOFF (INCHES)	22.64		13.63		21.59	
10 PERCENT EXCEEDS	360		266		416	
50 PERCENT EXCEEDS	119		66		79	
90 PERCENT EXCEEDS	30		34		23	

e Estimated

RIO GUANAJIBO BASIN

50138000 RIO GUANAJIBO NEAR HORMIGUEROS, PR--Continued



RIO GUANAJIBO BASIN

50138000 RIO GUANAJIBO NEAR HORMIGUEROS, PR--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
DEC													
13...	1425	--	281	7.6	24.5	61	5.5	66	20	31000	4500	120	20.4
MAR													
07...	1345	23	430	8.0	25.0	7.1	9.4	112	<10	2100	<10	--	--
MAY													
20...	1245	124	454	7.9	26.9	18	7.4	92	10	230	127	210	31.7

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
DEC													
13...	15.9	7.49	.3	2.98	107	<1.0	12.1	9.21	<.1	21.3	153	--	96
MAR													
07...	--	--	--	--	205	--	--	--	--	--	--	--	<10
MAY													
20...	31.6	11.7	.4	1.71	198	<.1	14.7	14.7	E.1	29.8	255	85.0	30

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
DEC													
13...	<.01	.570	.06	E.70	E.32	7	67.3	E20	<.1	17.9	M	3680	2
MAR													
07...	<.01	.350	.04	<.20	.17	--	--	--	--	--	--	--	--
MAY													
20...	.01	.600	.06	.40	.15	<2	60.5	40	<.1	9.1	M	960	1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
DEC								
13...	164	.01	<2	<.3	E20	<.01	<16	E.03
MAR								
07...	--	--	--	--	--	--	--	--
MAY								
20...	93.9	<.01	<2	<.3	<20	<.01	<17	<.05

RIO GUANAJIBO BASIN

50138000 RIO GUANAJIBO NEAR HORMIGUEROS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

PESTICIDE ANALYSES

DATE	TIME	DI-CHLOR-PROP, WATER, UNFLTRD UG/L (82183)	2,4,5-T WATER UNFLTRD UG/L (39740)	2,4-D WATER UNFLTRD UG/L (39730)	ALDRIN, WATER, UNFLTRD UG/L (39330)	CARBO-PHENO-THION, WATER, UNFLTRD UG/L (39786)	CHLOR-DANE, TECH-NICAL, WATER, UNFLTRD UG/L (39350)	CHLOR-PYRIFOS WATER UNFLTRD UG/L (38932)	TRIBU-PHOS, WATER, UNFLTRD UG/L (39040)	DIAZI-NON, WATER, UNFLTRD UG/L (39570)	DIEL-DRIN, WATER, UNFLTRD UG/L (39380)	DISUL-FOTON, WATER, UNFLTRD UG/L (39011)	ALPHA-ENDO-SULFAN, WATER, UNFLTRD UG/L (39388)
MAY													
20...	1245	<.02	<.01	<.02	<.01	<.02	<.1	<.01	<.02	<.02	<.006	<.10	<.02

DATE	ENDRIN, WATER, UNFLTRD UG/L (39390)	ETHION, WATER, UNFLTRD UG/L (39398)	FONOFOS WATER UNFLTRD UG/L (82614)	HEPTA-CHLOR EPOXIDE WATER UNFLTRD UG/L (39420)	HEPTA-CHLOR, WATER, UNFLTRD UG/L (39410)	LINDANE WATER, UNFLTRD UG/L (39340)	MALA-THION, WATER, UNFLTRD UG/L (39530)	P,P'-METH-OXY-CHLOR, WATER, UNFLTRD UG/L (39480)	METHYL PARA-THION, WATER, UNFLTRD UG/L (39600)	MIREX, WATER, UNFLTRD UG/L (39755)	P,P'-DDD, WATER, UNFLTRD UG/L (39360)	P,P'-DDE, WATER, UNFLTRD UG/L (39365)	P,P'-DDT, WATER, UNFLTRD UG/L (39370)
MAY													
20...	<.01	<.01	<.01	<.009	<.01	<.006	<.10	<.020	<.02	<.006	<.007	<.006	<.009

DATE	PARA-THION, WATER, UNFLTRD UG/L (39540)	PCBS, WATER, UNFLTRD UG/L (39516)	PHORATE WATER UNFLTRD UG/L (39023)	SILVEX, WATER, UNFLTRD UG/L (39760)	TOXA-PHENE, WATER, UNFLTRD UG/L (39400)
MAY					
20...	<.01	<.1	<.02	<.02	<1

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

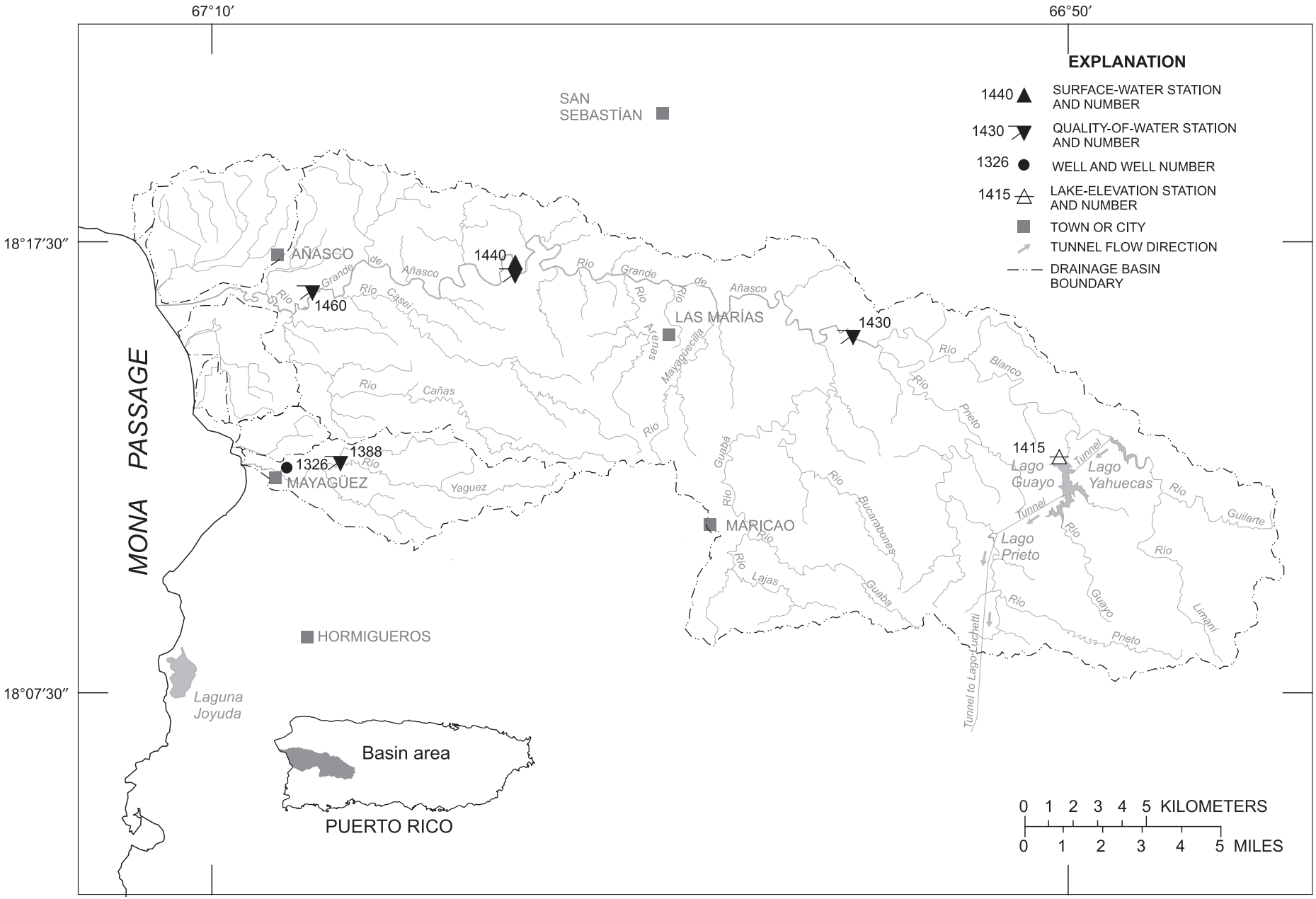


Figure 24. Río Yagüez to Río Grande de Añasco basins.

RIO YAGÜEZ BASIN

50138800 RIO YAGÜEZ NEAR MAYAGÜEZ, 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 Mayagüez Plaza.

DRAINAGE AREA.--6.7 mi^2 (17.3 km^2).

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
DEC													
14...	1330	24	289	7.6	24.0	9.8	8.1	96	<10	E1180	370	120	31.0
MAR													
07...	1535	7.1	310	8.0	25.0	3.0	8.3	100	<10	3200	E164	--	--
MAY													
20...	1530	5.2	309	7.8	28.0	7.4	7.8	98	<10	320	2200	130	36.2

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
DEC													
14...	9.29	9.03	.4	2.08	116	<1.0	6.5	8.90	.1	29.2	166	11.0	12
MAR													
07...	--	--	--	--	90	--	--	--	--	--	--	--	<10
MAY													
20...	10.3	10.6	.4	2.10	133	<.1	6.8	10.4	E.1	30.0	186	2.62	10

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
DEC													
14...	<.01	.580	<.01	<.20	E.04	<2	58.8	E10	<.1	<1.6	<10	210	<1
MAR													
07...	<.01	.670	<.01	<.20	.06	--	--	--	--	--	--	--	--
MAY													
20...	<.01	.660	.02	<.20	<.02	<2	65.9	30	<.1	<.8	M	180	<1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
DEC								
14...	14.9	<.01	<2	<.3	<20	<.01	<16	<.05
MAR								
07...	--	--	--	--	--	--	--	--
MAY								
20...	14.3	<.01	<2	<.3	<20	<.01	<18	<.05

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

RIO GRANDE DE AÑASCO BASIN

50141500 LAGO GUAYO AT DAMSITE NEAR CASTAÑER, PR

LOCATION.--Lat 18°12'46", long 66°50'06", Hydrologic Unit 21010003, at Guayo Dam on Río Guayo, 1.1 mi (1.8 km) southwest of Lago Yahuecas, 2.6 mi (4.2 km) southwest of Lago Prieto, 2.1 mi (3.4 km) north of Castañer, and 6.0 mi (9.6 km) west of Adjuntas.

DRAINAGE AREA.--9.60 mi^2 (24.9 km^2).

ELEVATION RECORDS

PERIOD OF RECORD.--April 1980 to January 1985, June 1989 to current year. Prior to October 1994, published as Lago Guayo near Castañer.

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

REMARKS.--Lago Guayo was completed in 1956. The dam is on Río Guayo and is the largest in the Southwestern Puerto Rico Project. The maximum storage is 17,400 acre-ft (21.5 hm^3) for power and irrigation. The dam is a concrete gravity structure with a total length of 555 ft (169 m), a maximum structural height of 190 ft (58 m), and a maximum width at the base of 145 ft (44 m). The ungated overflow spillway with a crest elevation of 60 ft (18.29 m) and a crest length of 220 ft (67 m) was designed to pass a maximum flood of 30,200 ft^3/s (855 m^3/s), at a reservoir elevation of 70 ft (21.34 m). Timber flashboards that were added to increase storage capacity were subsequently removed and their use discontinued. Gage-height and precipitation satellite telemetry at station. New capacity table based U.S. Geological Survey Water-Resources Investigations Report 99-4053, October 1997.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation,1,465.35 ft (446.64 m), September 22, 1998; minimum elevation recorded, 1,415.43 ft (431.42 m), June 2, 1990, but may have been less during period of no gage-height record June 2-5, 1990.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation,1,457.37 ft (444.21 m), September 7; minimum elevation 1,437.05 ft (438.01 m), October 17.

Capacity Table
(based on data from U.S. Geological Survey Water-Resources Investigations Report 99-4053, Puerto Rico, 1997)

Elevation, in feet	Contents, in acre-feet	Elevation, in feet	Contents, in acre-feet
1,333	0	1,400	2,745
1,353	241	1,440	8,622
1,373	820	1,460	13,436

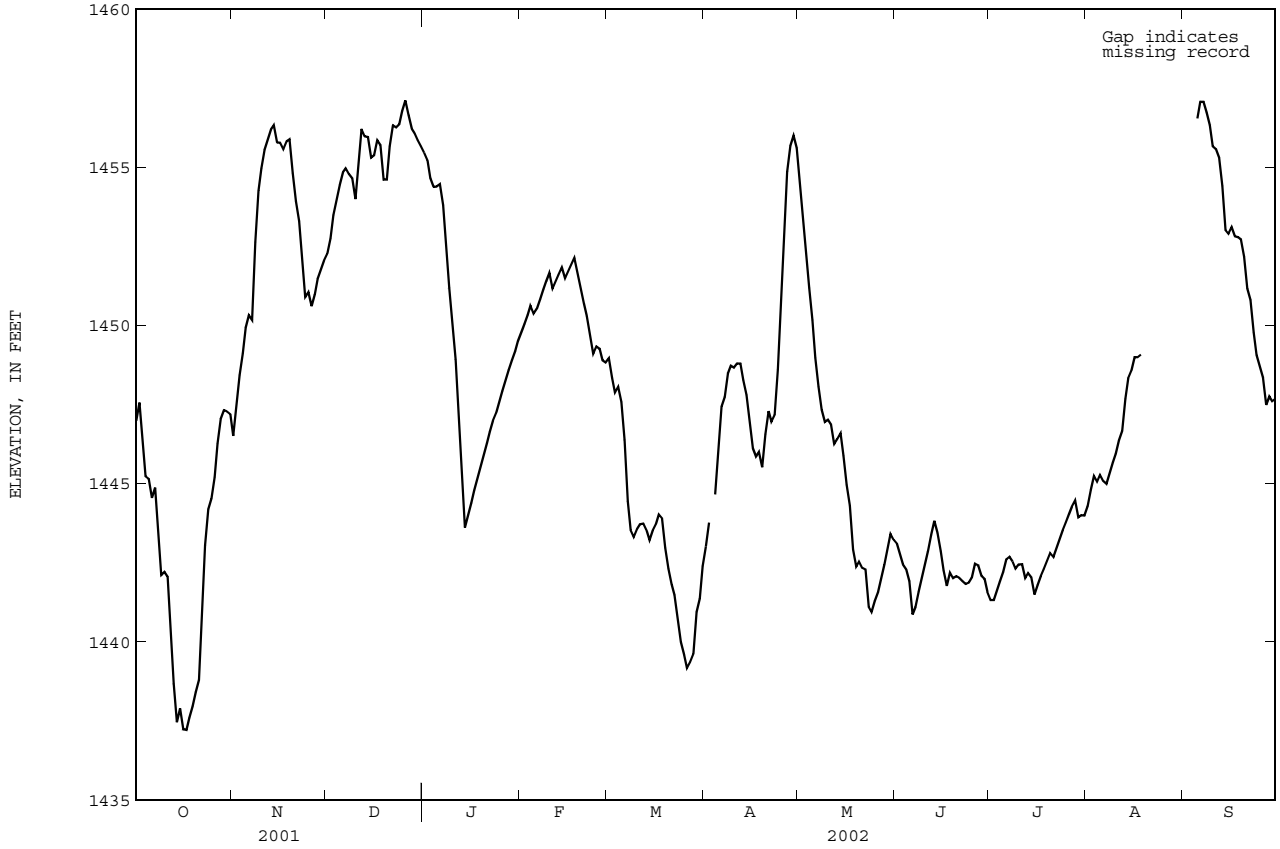
Elevation above NGVD 1929, feet
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1447.00	1446.52	1452.28	1455.47	1449.79	1448.97	1443.02	1454.57	1443.11	1441.33	1444.29	A
2	1447.57	1447.54	1452.76	1455.24	1450.05	1448.35	1443.78	1453.65	1442.80	1441.33	1444.81	A
3	1446.45	1448.44	1453.50	1454.67	1450.34	1447.89	A	1452.52	1442.45	1441.63	1445.26	A
4	1445.25	1449.13	1453.99	1454.39	1450.64	1448.07	1444.67	1451.20	1442.30	1441.92	1445.07	A
5	1445.16	1449.94	1454.45	1454.40	1450.39	1447.59	1446.03	1450.18	1441.92	1442.21	1445.29	1456.56
6	1444.56	1450.34	1454.85	1454.47	1450.54	1446.39	1447.44	1448.99	1440.88	1442.62	1445.09	1457.08
7	1444.88	1450.18	1454.98	1453.82	1450.83	1444.46	1447.74	1448.08	1441.11	1442.70	1445.00	1457.08
8	1443.54	1452.64	1454.80	1452.64	1451.14	1443.55	1448.49	1447.34	1441.59	1442.54	1445.35	1456.74
9	1442.12	1454.27	1454.67	1451.21	1451.41	1443.32	1448.74	1446.96	1442.04	1442.32	1445.68	1456.34
10	1442.22	1454.98	1454.01	1450.08	1451.67	1443.57	1448.68	1447.03	1442.47	1442.45	1445.95	1455.68
11	1442.07	1455.57	1455.12	1448.94	1451.18	1443.73	1448.81	1446.88	1442.87	1442.46	1446.38	1455.59
12	1440.36	1455.89	1456.22	1447.34	1451.41	1443.75	1448.81	1446.26	1443.38	1442.02	1446.67	1455.31
13	1438.69	1456.20	1455.99	1445.55	1451.62	1443.56	1448.28	1446.42	1443.83	1442.18	1447.69	1454.42
14	1437.47	1456.34	1455.97	1443.62	1451.84	1443.22	1447.82	1446.60	1443.44	1442.05	1448.34	1453.02
15	1437.90	1455.80	1455.31	1444.00	1451.50	1443.53	1446.96	1445.89	1442.88	1441.50	1448.58	1452.91
16	1437.24	1455.79	1455.38	1444.40	1451.73	1443.73	1446.13	1444.97	1442.26	1441.81	1449.01	1453.12
17	1437.22	1455.59	1455.87	1444.79	1451.95	1444.03	1445.86	1444.32	1441.78	1442.09	1449.01	1452.83
18	1437.61	1455.83	1455.72	1445.18	1452.15	1443.91	1446.00	1442.93	1442.20	1442.30	1449.09	1452.80
19	1437.96	1455.89	1454.63	1445.55	1451.65	1442.98	1445.53	1442.38	1442.02	1442.55	A	1452.73
20	1438.42	1454.83	1454.63	1445.92	1451.19	1442.32	1446.57	1442.54	1442.08	1442.81	A	1452.19
21	1438.80	1453.94	1455.68	1446.29	1450.70	1441.83	1447.30	1442.34	1442.03	1442.69	A	1451.18
22	1441.18	1453.31	1456.34	1446.65	1450.30	1441.48	1446.97	1442.29	1441.93	1442.95	A	1450.81
23	1443.06	1452.16	1456.27	1447.01	1449.73	1440.78	1447.18	1441.12	1441.84	1443.23	A	1449.79
24	1444.19	1450.90	1456.38	1447.25	1449.11	1439.99	1448.62	1440.96	1441.88	1443.53	A	1449.07
25	1444.54	1451.05	1456.79	1447.60	1449.34	1439.60	1450.58	1441.30	1442.03	1443.78	A	1448.73
26	1445.22	1450.62	1457.12	1447.94	1449.27	1439.18	1453.21	1441.57	1442.47	1444.05	A	1448.36
27	1446.28	1450.99	1456.66	1448.26	1448.91	1439.37	1454.87	1442.03	1442.42	1444.28	A	1447.50
28	1447.06	1451.49	1456.23	1448.60	1448.84	1439.62	1455.69	1442.45	1442.10	1444.48	A	1447.77
29	1447.33	1451.77	1456.07	1448.91	---	1440.95	1456.01	1442.92	1442.00	1443.94	A	1447.61
30	1447.29	1452.07	1455.87	1449.19	---	1441.37	1455.62	1443.42	1441.58	1444.01	A	1447.69
31	1447.21	---	1455.68	1449.53	---	1442.40	---	1443.23	---	1444.00	---	---
MAX	1447.57	1456.34	1457.12	1455.47	1452.15	1448.97	---	1454.57	1443.83	1444.48	---	---
MIN	1437.22	1446.52	1452.28	1443.62	1448.84	1439.18	---	1440.96	1440.88	1441.33	---	---

A No gage-height record

RIO GRANDE DE AÑASCO BASIN

50141500 LAGO GUAYO AT DAMSITE NEAR CASTAÑER, PR--Continued



RIO GRANDE DE ANASCO BASIN

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 Río Blanco and Río Prieto, and 3.7 mi (6.0 km) southwest of Lares Plaza.

DRAINAGE AREA.--26.3 mi^2 (68.1 km^2) this does not include 36.2 mi^2 (93.8 km^2) which contributes only during high floods, and 3.5 mi^2 (9.1 km^2) which contributes only part of its storm runoff.

PERIOD OF RECORD.--Water years 1959-68, 1970 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
DEC													
11...	0920	54	300	7.4	22.7	3.4	8.2	97	<10	E40	E60	130	34.5
FEB													
19...	1150	51	291	7.5	23.1	15	8.3	100	<10	380	2400	--	--
SEP													
11...	1335	E60	222	7.0	27.8	170	7.7	98	10	E16000	E19000	91	24.4

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
DEC													
11...	10.1	11.5	.4	1.67	115	<1.0	19.4	10.3	<.1	33.0	189	27.6	<10
FEB													
19...	--	--	--	--	108	--	--	--	--	--	--	--	16
SEP													
11...	7.25	9.54	.4	2.04	74	<.1	14.9	7.95	E.09	28.0	138	--	82

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
DEC													
11...	<.01	E1.40	.03	<.20	E.04	<2	22.5	E20	<.1	<.8	M	90	<1
FEB													
19...	<.01	1.00	.02	<.20	.07	--	--	--	--	--	--	--	--
SEP													
11...	.02	1.00	.04	.80	.14	<2	33.9	E20	<.1	E.7	M	2160	M

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
DEC								
11...	13.4	<.01	<2	<.3	<20	<.01	<16	<.05
FEB								
19...	--	--	--	--	--	--	--	--
SEP								
11...	112	E.01	<2	<.3	E20	<.01	<16	<.05

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

RIO GRANDE DE AÑASCO BASIN

50144000 RIO GRANDE DE AÑASCO NEAR SAN SEBASTIAN, PR

LOCATION.--Lat 18°17'05", long 67°03'05", Hydrologic Unit 21010003, on left bank, at downstream side of bridge on Highway 108, 0.4 mi (0.6 km) downstream from Quebrada La Zumbadora, 4.4 mi (7.1 km) northwest of Las Marías, 5.4 mi (8.7 km) southwest of San Sebastián.

DRAINAGE AREA.--94.3 mi^2 (244.2 km^2), does not include 36.2 mi^2 (93.8 km^2) which contributes only during high floods, and 3.5 mi^2 (9.1 km^2) which contributes only part of its storm runoff.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1963 to current year.

REVISED RECORDS.--WDR PR-2,000-1: 1999. Revised maximum discharge and revised daily discharges, in cubic feet per second, for water year 1999, are given below. These figures supersede those published in the report for 1999.

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 October 30, 1975, at site 600 ft (180 m) upstream at same datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Transbasin diversion (except during floods) to Río Yauco basin for hydroelectric power and irrigation above Lago Guayo, Yahuecas, and Prieto, combined useable storage 17,300 acre-ft (21.3 hm^3). Limited storm runoff is contributed to basin by 3.5 mi^2 (9.1 km^2) above Río Toro Diversion dam. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e378	e821	e285	e214	e153	e113	e524	e985	224	134	314	e227
2	e337	e699	e528	e212	e149	e113	e255	e723	212	137	424	e966
3	e434	e632	e410	e208	e146	e108	e187	e4180	218	126	522	e1890
4	e338	e471	e397	e204	e143	e113	e155	e1520	349	197	637	e1340
5	e301	e416	e295	e205	e152	e114	e360	e938	258	135	465	744
6	e262	e429	e269	e209	e146	e107	e1820	e697	279	156	325	518
7	e278	e422	e254	e185	e146	e106	e850	e543	204	180	212	316
8	e267	e2320	e249	e181	e152	e122	e1080	e1010	191	268	181	382
9	e241	e1580	e560	e175	e140	e119	e741	426	187	282	276	274
10	e455	e686	e609	e174	e135	e107	e447	779	179	295	402	313
11	e427	e545	e887	e170	e132	e215	e359	783	174	205	439	353
12	e322	e753	e636	e194	e137	e226	e314	721	262	266	424	265
13	e841	e938	e489	e230	e201	e134	e284	574	287	239	367	233
14	e431	e1080	e341	e187	e185	e111	e274	435	188	267	433	232
15	e240	e925	e311	e180	e134	e128	e273	399	169	285	389	220
16	e235	e569	e318	e175	e126	e187	e327	657	166	158	233	288
17	e230	e469	e820	e174	e129	e291	e334	500	159	150	210	235
18	e337	e421	e820	e209	e127	e173	e406	392	156	143	e203	321
19	e446	e394	e368	e230	e162	e128	e499	344	154	126	e287	446
20	e385	e370	e424	e185	e159	e103	e382	318	155	186	e205	302
21	e240	e358	e1350	e178	e128	e101	e1030	301	323	271	e187	223
22	e1070	e343	e1070	e172	e120	e95	e1260	284	171	154	e214	216
23	e1380	e331	e464	e169	e118	e83	e573	275	148	147	e168	263
24	e1300	e328	e360	e164	e111	e93	e2100	267	160	158	e179	312
25	e1550	e314	e323	e171	e110	e101	e1220	263	215	184	e210	208
26	e884	e314	e288	e163	e110	e122	e3680	262	154	143	e179	191
27	e1100	e300	e260	e163	e110	e100	e4670	249	163	125	e155	182
28	e150	e292	e246	e159	e110	e164	e2780	244	157	210	e152	173
29	e1130	e321	e230	e165	---	e126	e2680	238	139	185	e350	164
30	e674	e314	e225	e159	---	e306	e1480	233	127	137	e210	159
31	e493	---	e219	e157	---	e368	---	229	---	142	e251	---
TOTAL	17156	18155	14305	5721	3871	4477	31344	19769	5928	5791	9203	11956
MEAN	553	605	461	185	138	144	1045	638	198	187	297	399
MAX	1550	2320	1350	230	201	368	4670	4180	349	295	637	1890
MIN	150	292	219	157	110	83	155	229	127	125	152	159
AC-FT	34030	36010	28370	11350	7680	8880	62170	39210	11760	11490	18250	23710
CFSM	5.87	6.42	4.89	1.96	1.47	1.53	11.1	6.76	2.10	1.98	3.15	4.23
IN.	6.77	7.16	5.64	2.26	1.53	1.77	12.36	7.80	2.34	2.28	3.63	4.72

e Estimated

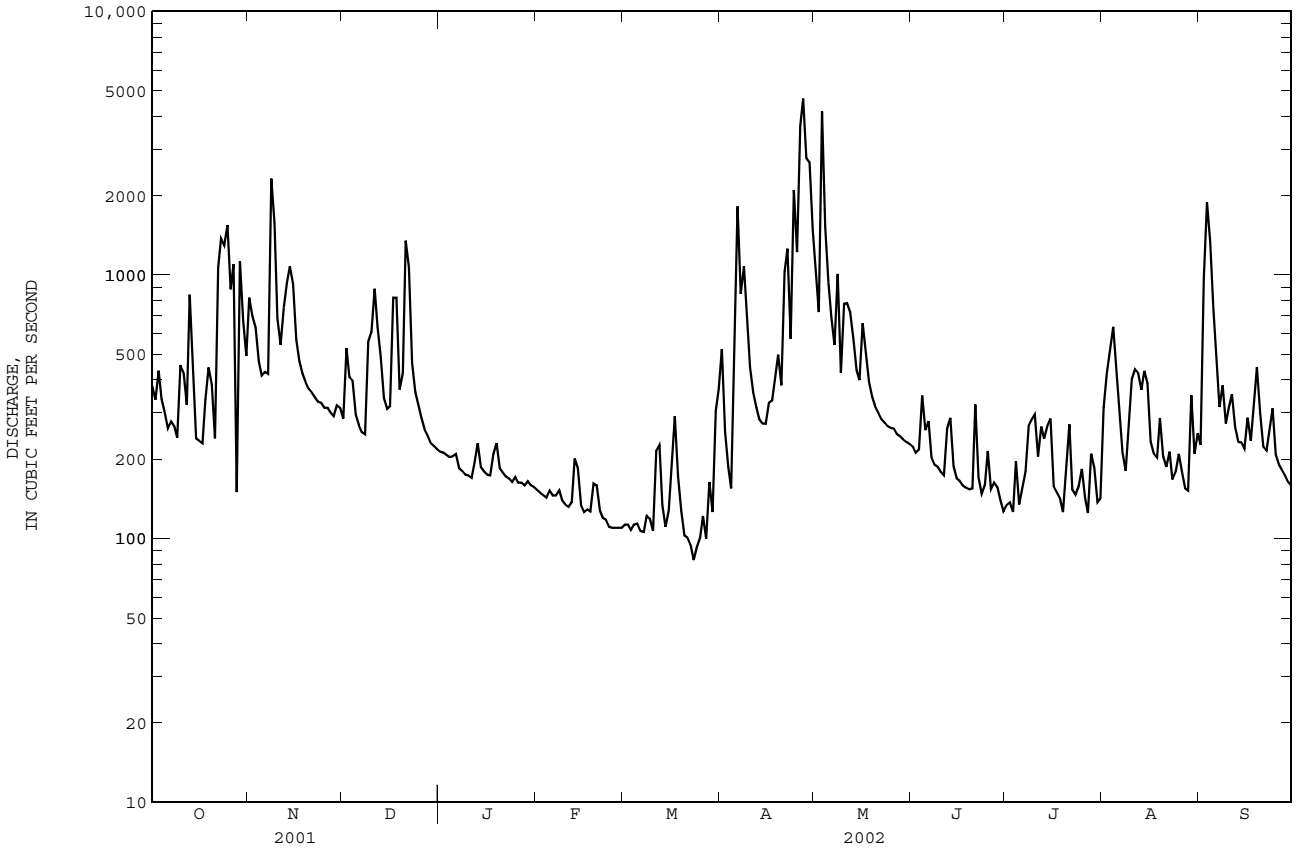
RIO GRANDE DE AÑASCO BASIN

50144000 RIO GRANDE DE AÑASCO NEAR SAN SEBASTIAN, PR--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 2002, BY WATER YEAR (WY)

MEAN	687	461	230	143	116	107	171	395	300	267	374	688
MAX	1514	1297	482	286	345	271	1045	1084	939	657	936	3505
(WY)	1999	2000	1966	1997	1996	1972	2002	1986	1999	1979	1979	1998
MIN	344	182	103	82.4	62.3	54.4	49.3	63.7	71.2	111	152	206
(WY)	1983	1998	1992	1998	1992	1965	1968	1967	1977	1990	1967	1983

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1963 - 2002	
ANNUAL TOTAL	117475		147676			
ANNUAL MEAN	322		405		329	
HIGHEST ANNUAL MEAN					556	1999
LOWEST ANNUAL MEAN					189	1967
HIGHEST DAILY MEAN	2320	Nov 8	4670	Apr 27	69900	Sep 22 1998
LOWEST DAILY MEAN	53	Apr 1	83	Mar 23	32	Apr 18 1965
ANNUAL SEVEN-DAY MINIMUM	58	Mar 13	99	Mar 21	35	Apr 14 1965
MAXIMUM PEAK FLOW					163000	Sep 22 1998
MAXIMUM PEAK STAGE					34.50	Sep 22 1998
INSTANTANEOUS LOW FLOW					31	Apr 19 1965
ANNUAL RUNOFF (AC-FT)	233000		292900		238000	
ANNUAL RUNOFF (CFSM)	3.41		4.29		3.48	
ANNUAL RUNOFF (INCHES)	46.34		58.26		47.34	
10 PERCENT EXCEEDS	704		829		686	
50 PERCENT EXCEEDS	230		254		188	
90 PERCENT EXCEEDS	68		129		75	



RIO GRANDE DE AÑASCO BASIN

50144000 RIO GRANDE DE AÑASCO NEAR SAN SEBASTIAN, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
DEC													
18...	1300	560	181	7.0	23.8	180	7.8	93	20	38000	7500	69	17.0
FEB													
13...	1100	134	247	7.4	23.6	3.2	8.4	100	<10	E10	E60	--	--
SEP													
12...	1140	261	201	6.9	25.8	66	8.8	107	10	3700	2500	85	21.1

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
DEC													
18...	6.47	5.85	.3	1.72	67	<1.0	6.9	5.12	<.1	24.0	107	162	172
FEB													
13...	--	--	--	--	105	--	--	--	--	--	--	--	<10
SEP													
12...	7.76	9.28	.4	1.86	82	<.1	6.8	8.17	E.07	28.9	133	93.7	51

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
DEC													
18...	<.01	1.20	.03	.50	.12	<2	67.7	20	.3	9.4	E10	4130	2
FEB													
13...	<.01	.800	<.01	<.20	.03	--	--	--	--	--	--	--	--
SEP													
12...	<.01	.900	.02	.30	.07	<2	71.0	20	E.1	1.3	M	1420	7

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
DEC								
18...	213	.02	<2	<.3	E10	<.01	<16	E.04
FEB								
13...	--	--	--	--	--	--	--	--
SEP								
12...	110	E.01	<2	<.3	E20	<.01	<16	<.05

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

RIO GRANDE DE AÑASCO BASIN

50146000 RIO GRANDE DE AÑASCO NEAR AÑASCO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°16'00", long 67°08'05", at bridge on Highway 430, 0.2 mi (0.3 km) south of Highway 109 at El Espino and 1.4 mi (2.3 km) east-southeast from Añasco Plaza.

DRAINAGE AREA.--139 mi^2 (360 km^2) this does not include 39.7 mi^2 (102.8 km^2), flow is diverted to south coast.

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
DEC													
18...	0910	1110	153	6.9	23.5	780	7.0	83	20	58000	26000	56	14.1
FEB													
20...	0800	E200	236	7.3	22.3	31	7.7	89	<10	2000	2200	--	--
SEP													
12...	1405	542	210	6.7	28.2	53	7.2	91	<10	4400	24000	87	22.1

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
DEC													
18...	5.07	5.31	.3	1.94	54	<1.0	5.4	5.15	E.1	19.2	89	265	126
FEB													
20...	--	--	--	--	94	--	--	--	--	--	--	--	36
SEP													
12...	7.82	8.16	.4	1.68	78	<.1	8.1	6.26	E.08	29.2	130	190	20

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE, UG/L (01051)
DEC													
18...	<.01	1.10	.05	1.7	.39	E2	196	<20	.2	28.2	40	15300	5
FEB													
20...	<.01	.740	<.01	.20	.08	--	--	--	--	--	--	--	--
SEP													
12...	<.01	.780	.02	.20	.07	<2	40.7	M	.6	E.8	<10	820	1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
DEC								
18...	884	.05	<2	<.3	50	<.01	<16	<.05
FEB								
20...	--	--	--	--	--	--	--	--
SEP								
12...	59.6	E.01	<2	<.3	<20	<.01	<16	<.05

RIO GRANDE DE AÑASCO BASIN

50146000 RIO GRANDE DE AÑASCO NEAR AÑASCO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

PESTICIDE ANALYSES

DATE	TIME	DI-CHLOR-PROP, WATER, UNFLTRD UG/L (82183)	2,4,5-T WATER UNFLTRD UG/L (39740)	2,4-D WATER UNFLTRD UG/L (39730)	ALDRIN, WATER, UNFLTRD UG/L (39330)	CARBO-PHENO-THION, WATER, UNFLTRD UG/L (39786)	CHLOR-DANE, TECH-NICAL, WATER, UNFLTRD UG/L (39350)	CHLOR-PYRIFOS WATER UNFLTRD UG/L (38932)	TRIBU-PHOS, WATER, UNFLTRD UG/L (39040)	DIAZI-NON, WATER, UNFLTRD UG/L (39570)	DIEL-DRIN, WATER, UNFLTRD UG/L (39380)	DISUL-FOTON, WATER, UNFLTRD UG/L (39011)	ALPHA-ENDO-SULFAN, WATER, UNFLTRD UG/L (39388)
SEP													
12...	1405	<.02	<.01	.09	<.01	<.02	<.1	<.01	<.02	<.02	<.006	<.10	<.02

DATE	ENDRIN, WATER, UNFLTRD UG/L (39390)	ETHION, WATER, UNFLTRD UG/L (39398)	FONOFOS WATER UNFLTRD UG/L (82614)	HEPTA-CHLOR EPOXIDE WATER UNFLTRD UG/L (39420)	HEPTA-CHLOR, WATER, UNFLTRD UG/L (39410)	LINDANE WATER, UNFLTRD UG/L (39340)	MALA-THION, WATER, UNFLTRD UG/L (39530)	P,P'-METH-OXY-CHLOR, WATER, UNFLTRD UG/L (39480)	METHYL PARA-THION, WATER, UNFLTRD UG/L (39600)	MIREX, WATER, UNFLTRD UG/L (39755)	P,P'-DDD, WATER, UNFLTRD UG/L (39360)	P,P'-DDE, WATER, UNFLTRD UG/L (39365)	P,P'-DDT, WATER, UNFLTRD UG/L (39370)
SEP													
12...	<.01	<.01	<.01	<.009	<.01	<.006	<.10	<.020	<.01	<.006	<.007	<.006	<.009

DATE	PARA-THION, WATER, UNFLTRD UG/L (39540)	PCBS, WATER, UNFLTRD UG/L (39516)	PHORATE WATER UNFLTRD UG/L (39023)	SILVEX, WATER, UNFLTRD UG/L (39760)	TOXA-PHENE, WATER, UNFLTRD UG/L (39400)
SEP					
12...	<.01	<.1	<.02	<.02	<1

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

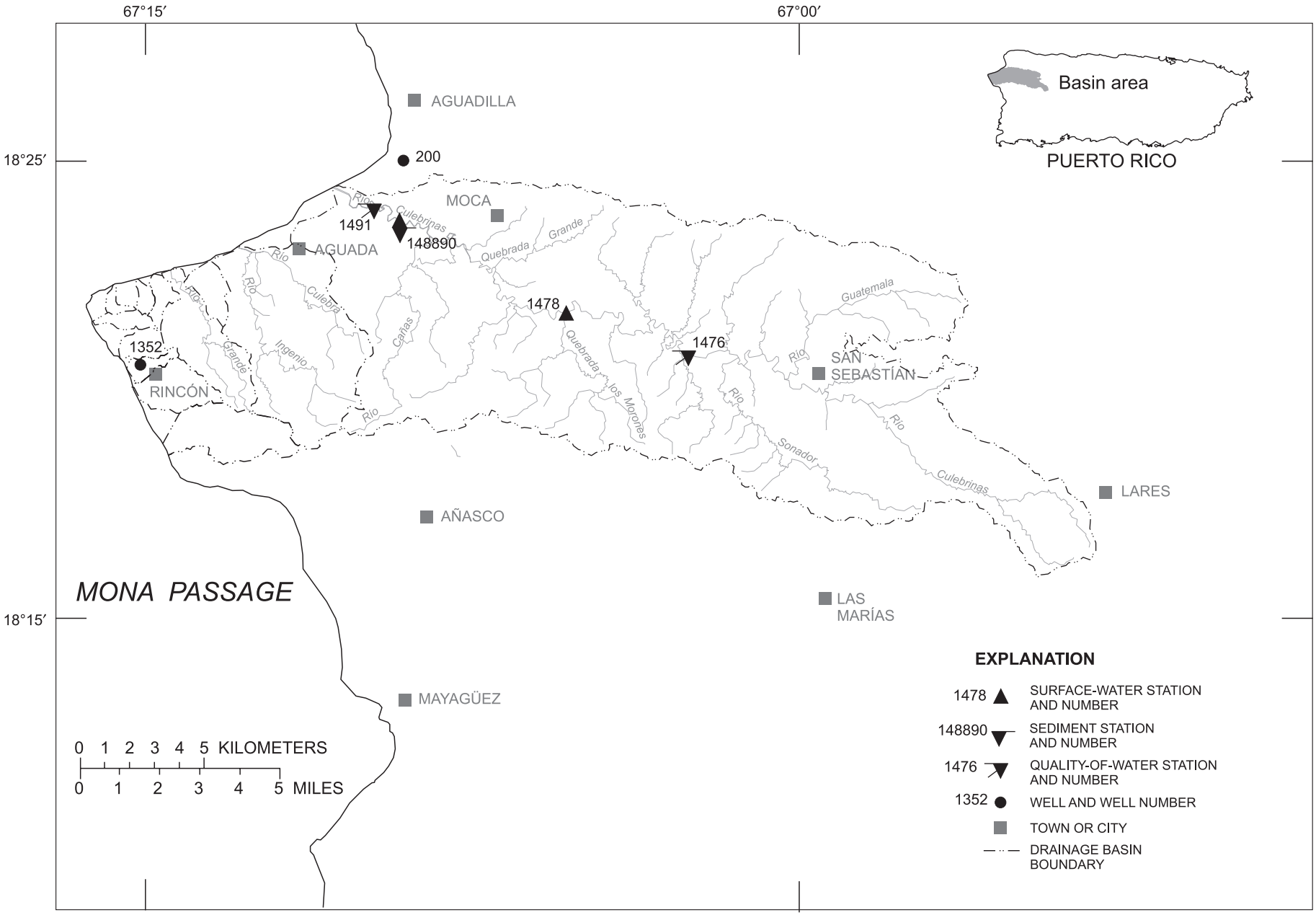


Figure 25. Río Culebrinas basin.

RIO CULEBRINAS BASIN

50147600 RIO CULEBRINAS NEAR SAN SEBASTIAN, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°20'51", long 67°02'40", at bridge on Highway 423, 1.3 mi (2.1 km) south of Quebrada El Salto Bridge on Highway 111, and 2.1 mi (3.4 km) west of Central La Plata.

DRAINAGE AREA.--58.2 mi^2 (150.7 km^2).

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
DEC													
18...	1555	93	280	7.2	25.3	39	8.1	99	10	34000	E1110	110	36.1
FEB													
20...	1200	46	277	7.5	23.5	13	8.8	103	<10	2900	400	--	--
SEP													
12...	0850	479	300	6.9	25.0	71	7.0	84	20	23000	8800	130	45.5

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE WATER, FLTRD, TONS/D (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)
DEC													
18...	4.76	9.81	.4	2.42	108	<1.0	8.2	10.7	<.1	29.2	166	41.5	26
FEB													
20...	--	--	--	--	100	--	--	--	--	--	--	--	<10
SEP													
12...	4.86	9.71	.4	2.67	120	<.1	12.1	9.39	E.10	18.6	175	226	52

DATE	NITRITE WATER, UNFLTRD MG/L AS N (00615)	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE,, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE,, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE,, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE,, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE,, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE,, UG/L (01051)
DEC													
18...	.03	1.20	.06	.40	.07	<2	32.7	30	E.1	E.6	<10	520	M
FEB													
20...	.01	1.10	.06	<.20	.10	--	--	--	--	--	--	--	--
SEP													
12...	.02	.910	.05	.50	.10	<2	47.5	20	.2	.8	M	1230	1

DATE	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE,, UG/L (01055)	MERCURY WATER, UNFLTRD RECOV-ERABLE,, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE,, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE,, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
DEC								
18...	34.6	<.01	<2	<.3	<20	<.01	--	<.05
FEB								
20...	--	--	--	--	--	--	--	--
SEP								
12...	68.6	.01	<2	<.3	40	<.01	<16	<.05

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

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, 1.0 mi (1.6 km) below Quebrada Los Morones confluence, 1.1 mi (1.8 km) above Quebrada Las Marías confluence, 2.8 mi (4.5 km) southeast of Moca Plaza, at bridge 404 road over Culebrina river.

DRAINAGE AREA.--71.2 mi^2 (184 km^2).

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

GAGE.--Water-stage recorder. Elevation of gage is 45 ft (14 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

REVISION.--The historical maximum discharge for the period of record have been revised to 41,200 ft^3/s, September 16, 1975, gage height, 36.60 ft.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	268	646	154	141	e64	e42	108	433	143	83	414	374
2	244	e376	562	137	64	e42	225	328	160	83	207	1930
3	268	e265	718	131	e64	e42	101	210	206	200	133	1340
4	257	e428	278	125	e65	e41	83	169	274	175	466	1920
5	212	227	190	e126	e64	42	768	145	201	131	197	715
6	199	188	171	e137	e62	44	363	128	129	550	115	351
7	201	e465	158	e132	61	44	117	122	115	300	104	272
8	221	2190	e148	250	e60	47	264	114	107	407	116	233
9	211	852	154	128	e59	50	133	e488	117	270	1580	892
10	1540	393	156	118	e58	53	93	876	139	157	4560	513
11	455	2400	e2140	113	e56	83	82	423	118	141	863	893
12	595	1750	e1370	109	e55	82	73	181	113	277	831	359
13	612	2180	e906	122	e55	58	67	152	207	213	327	244
14	293	2200	e439	109	e55	51	65	175	239	169	290	199
15	e196	e603	e336	101	54	47	61	221	159	198	390	479
16	e173	e411	e355	96	54	51	148	1610	124	124	271	277
17	198	e361	e1450	e94	e53	62	90	409	110	165	190	485
18	194	e304	e2450	93	e53	48	61	361	95	415	169	2680
19	487	297	e514	92	e86	44	217	236	89	223	2070	531
20	444	274	e696	87	69	43	230	169	86	141	312	389
21	183	255	3840	85	47	42	238	145	85	124	200	266
22	153	236	501	84	45	41	198	129	90	165	187	226
23	504	218	335	80	45	48	490	120	83	150	508	227
24	311	210	295	79	44	50	371	110	191	118	2620	196
25	316	197	222	e78	44	54	553	160	145	106	563	187
26	234	e189	196	76	47	49	277	169	104	100	1220	185
27	e422	e181	180	73	44	44	2360	117	202	94	1530	174
28	2660	e173	168	71	e42	60	730	102	125	240	382	167
29	2320	e175	159	e68	---	55	706	97	95	142	1130	161
30	437	e161	153	66	---	43	409	94	87	98	359	159
31	656	---	148	e64	---	46	---	98	---	92	563	---
TOTAL	15464	18805	19542	3265	1569	1548	9681	8291	4138	5851	22867	17024
MEAN	499	627	630	105	56.0	49.9	323	267	138	189	738	567
MAX	2660	2400	3840	250	86	83	2360	1610	274	550	4560	2680
MIN	153	161	148	64	42	41	61	94	83	83	104	159
AC-FT	30670	37300	38760	6480	3110	3070	19200	16450	8210	11610	45360	33770
CFSM	7.01	8.80	8.85	1.48	0.79	0.70	4.53	3.76	1.94	2.65	10.4	7.97
IN.	8.08	9.83	10.21	1.71	0.82	0.81	5.06	4.33	2.16	3.06	11.95	8.89

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2002, BY WATER YEAR (WY)

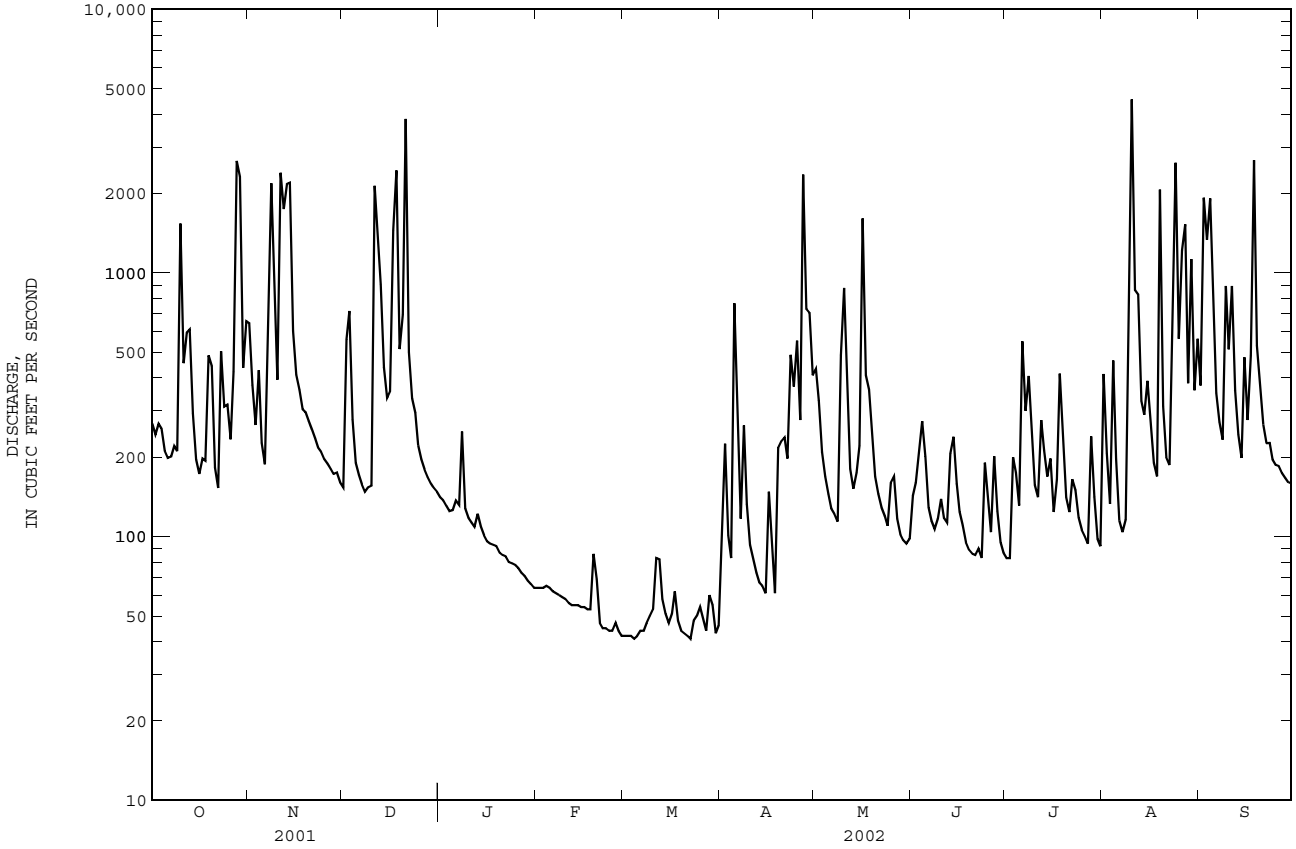
MEAN	619	344	156	94.2	76.9	74.7	136	450	387	294	352	566
MAX	1086	799	630	530	371	319	621	2054	773	847	831	1651
(WY)	1973	1982	2002	1997	1996	1981	1986	1986	1998	1979	1979	1998
MIN	231	108	72.1	51.2	37.0	30.4	26.4	96.7	73.1	66.7	119	145
(WY)	1968	1979	1992	1979	1992	1979	1970	1973	1997	1994	1970	1986

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1967 - 2002	
ANNUAL TOTAL	135493		128045			
ANNUAL MEAN	371		351		298	
HIGHEST ANNUAL MEAN					457	1986
LOWEST ANNUAL MEAN					179	1977
HIGHEST DAILY MEAN	4260	Sep 18	4560	Aug 10	17000	Sep 22 1998
LOWEST DAILY MEAN	26	Apr 18	41	Mar 4	19	Apr 16 1979
ANNUAL SEVEN-DAY MINIMUM	29	Apr 12	42	Feb 27	20	Apr 13 1979
MAXIMUM PEAK FLOW			19600	Dec 21	41200	Sep 16 1975
MAXIMUM PEAK STAGE			25.82	Dec 21	36.60	Sep 16 1975
INSTANTANEOUS LOW FLOW			38	Mar 5	16	Apr 17 1979
ANNUAL RUNOFF (AC-FT)	268800		254000		215700	
ANNUAL RUNOFF (CFSM)	5.21		4.93		4.18	
ANNUAL RUNOFF (INCHES)	70.79		66.90		56.81	
10 PERCENT EXCEEDS	842		716		604	
50 PERCENT EXCEEDS	180		171		135	
90 PERCENT EXCEEDS	38		54		43	

e Estimated

RIO CULEBRINAS BASIN

50147800 RIO CULEBRINAS AT HIGHWAY 404 NEAR MOCA, PR--Continued



RIO CULEBRINAS BASIN

50148890 RIO CULEBRINAS AT MARGARITA DAM NEAR AGUADA, PR

LOCATION.--Lat 18°23'40", long 67°09'04", Hydrologic Unit 21010003, on right bank 40 ft upstream of Margarita Dam spillway 0.2 mi (0.32 km) upstream of Highway 2 at Aguadilla Filtration Plant water intake at Río Culebrinas, 1.05 mi (1.69 km) northeast of Central Coloso and 2.55 mi (4.10 km) southeast from Aguadilla Plaza.

DRAINAGE AREA.--94.6 mi^2 (245 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1998 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 48.6 ft. (14.8 m), from topographic map. For mean sea level elevations add 3.0 ft to gage-height readings.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	319	1260	e176	149	73	44	122	483	139	81	247	651
2	290	788	e470	151	71	44	248	530	178	77	404	1260
3	329	534	e375	137	69	46	178	261	239	175	159	1240
4	346	440	e340	133	69	44	90	198	352	259	241	1300
5	261	491	e250	145	68	42	379	168	284	149	448	1270
6	248	389	e210	149	65	36	740	153	147	550	137	618
7	234	1340	e180	151	66	39	166	141	126	668	118	397
8	269	1790	e160	280	60	53	261	130	142	384	167	343
9	307	1410	e460	145	62	53	171	212	115	453	371	890
10	1000	726	e550	129	59	53	104	704	162	167	2110	1010
11	798	965	e750	130	58	86	96	806	117	143	1460	988
12	813	1830	e450	122	61	92	77	230	148	254	1070	737
13	1360	1920	e280	137	53	63	66	169	186	393	564	417
14	646	1910	e200	122	63	56	66	208	264	173	382	314
15	356	1270	e170	119	55	49	56	192	237	242	461	660
16	272	645	e190	109	56	39	166	881	127	126	494	473
17	298	530	e500	110	56	55	127	826	138	104	256	575
18	270	467	e800	106	49	52	65	349	100	385	293	1220
19	843	428	e300	107	62	39	275	333	94	352	1280	1090
20	1290	400	881	98	97	39	392	185	86	132	730	547
21	428	370	1200	96	56	41	339	161	94	115	317	378
22	284	315	1220	97	49	39	246	141	97	133	254	297
23	440	292	378	90	47	32	525	131	79	172	476	323
24	669	283	352	89	46	53	556	116	139	144	1130	291
25	352	e250	245	92	53	39	626	142	223	127	1330	250
26	488	e240	213	86	62	52	555	216	110	103	910	239
27	456	e220	194	84	47	46	860	152	194	91	2050	226
28	1550	e198	180	83	41	104	1400	121	180	298	1040	217
29	1910	e198	167	81	---	68	536	106	106	218	1420	206
30	1090	e195	165	75	---	44	730	101	88	103	765	207
31	807	---	157	77	---	51	---	105	---	92	985	---
TOTAL	19023	22094	12163	3679	1673	1593	10218	8651	4691	6863	22069	18634
MEAN	614	736	392	119	59.8	51.4	341	279	156	221	712	621
MAX	1910	1920	1220	280	97	104	1400	881	352	668	2110	1300
MIN	234	195	157	75	41	32	56	101	79	77	118	206
AC-FT	37730	43820	24130	7300	3320	3160	20270	17160	9300	13610	43770	36960
CFSM	6.49	7.79	4.15	1.25	0.63	0.54	3.60	2.95	1.65	2.34	7.53	6.57
IN.	7.48	8.69	4.78	1.45	0.66	0.63	4.02	3.40	1.84	2.70	8.68	7.33

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2002, BY WATER YEAR (WY)

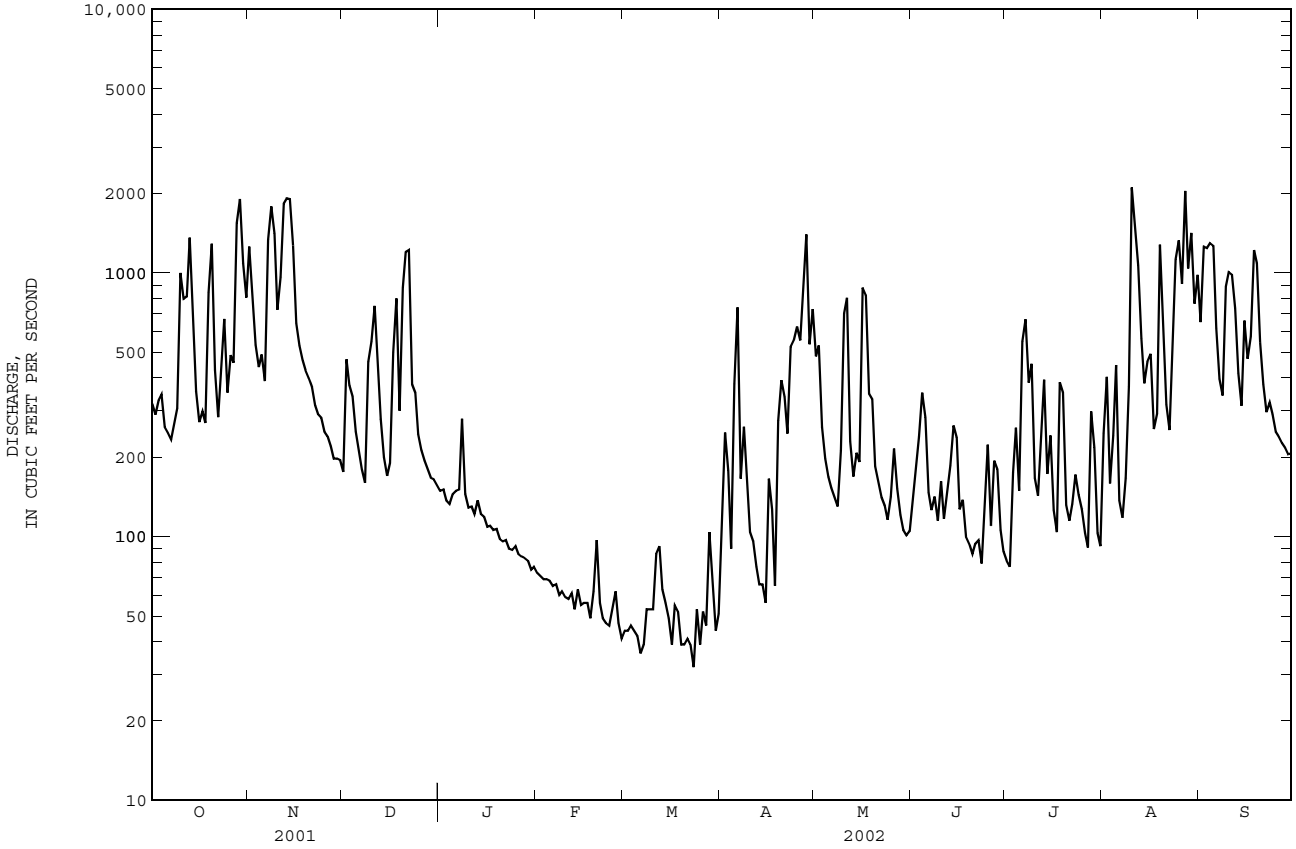
MEAN	651	580	228	126	67.8	114	193	326	346	318	549	701
MAX	778	792	392	207	95.3	318	341	421	632	408	949	970
(WY)	2000	2000	2002	1999	1999	1999	2002	2001	1999	2001	1998	1998
MIN	588	252	92.7	71.6	52.1	35.5	89.8	257	156	221	213	482
(WY)	2001	2001	2001	2001	2001	2000	2000	2000	2002	2002	2000	1999

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1998 - 2002	
ANNUAL TOTAL	137074		131351			
ANNUAL MEAN	376		360		337	
HIGHEST ANNUAL MEAN					362	1999
LOWEST ANNUAL MEAN					308	2001
HIGHEST DAILY MEAN	2140	May 10	2110	Aug 10	3860	Sep 22 1998
LOWEST DAILY MEAN	20	Apr 18	32	Mar 23	17	Apr 18 2000
ANNUAL SEVEN-DAY MINIMUM	27	Apr 12	40	Mar 19	26	Apr 13 2000
MAXIMUM PEAK FLOW			3520	Nov 14	5480	Sep 22 1998
MAXIMUM PEAK STAGE			14.59	Nov 14	18.28	Sep 22 1998
ANNUAL RUNOFF (AC-FT)	271900		260500		244100	
ANNUAL RUNOFF (CFSM)	3.97		3.80		3.56	
ANNUAL RUNOFF (INCHES)	53.90		51.65		48.39	
10 PERCENT EXCEEDS	981		932		844	
50 PERCENT EXCEEDS	235		206		194	
90 PERCENT EXCEEDS	41		56		51	

e Estimated

RIO CULEBRINAS BASIN

50148890 RIO CULEBRINAS AT MARGARITA DAM NEAR AGUADA, PR--Continued



RIO CULEBRINAS BASIN

50148890 RIO CULEBRINAS AT MARGARITA DAM NEAR AGUADA, PR--Continued

WATER-QUALITY RECORD

PERIOD OF RECORD.--July 1998 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 2001 to September 2002.

INSTRUMENTATION.--USDH-48 and automatic sediment sampler since 2001.

REMARKS.-- Sediment samples were collected by a local observer on a weekly basis. During high flow events sediment samples were collected with automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,950 mg/L August 27, 2002; Minimum daily mean, 5 mg/L February 3-6, 2002.

SEDIMENT LOADS: Maximum daily mean, 13,200 tons (11,975 tonnes) August 27, 2002; Minimum daily mean, 0.67 ton (0.61 tonne) March 6, 2002.

EXTREMES FOR CURRENT YEAR 2002.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,950 mg/L August 27, 2002; Minimum daily mean, 5 mg/L February 3-6, 2002.

SEDIMENT LOADS: Maximum daily mean, 13,200 tons (11,975 tonnes) August 27, 2002; Minimum daily mean, 0.67 ton (0.61 tonne) March 6, 2002.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	319	231	199	1260	1350	5530	e176	e99	e47
2	290	205	160	788	841	2210	e470	e415	e514
3	329	258	259	534	510	770	e375	e380	e385
4	346	264	264	440	415	514	e340	e264	e256
5	261	182	128	491	508	746	e250	e169	e112
6	248	165	111	389	377	417	e210	e148	e85
7	234	160	102	1340	1300	5860	e180	e121	e59
8	269	197	145	1790	1660	10500	e160	e83	e35
9	307	232	196	1410	1530	6030	e460	e415	e514
10	1000	807	5230	726	810	1650	e550	e510	e770
11	798	811	2720	965	792	3310	e750	e841	e2210
12	813	706	2060	1830	1800	11000	e450	e415	e514
13	1360	1380	5990	1920	1820	11900	e280	e201	e154
14	646	681	1430	1910	1820	11500	e200	e134	e70
15	356	285	284	1270	1430	6080	e170	e107	e48
16	272	186	137	645	670	1180	e190	e134	e70
17	298	224	197	530	524	752	e500	e524	e750
18	270	182	133	467	435	548	e800	e841	e2210
19	843	659	3550	428	349	404	e300	e264	e256
20	1290	1240	5620	400	309	334	881	740	4310
21	428	459	607	370	282	283	1200	1110	6270
22	284	265	203	315	255	218	1220	1180	6320
23	440	344	670	292	228	180	378	380	385
24	669	756	1850	283	201	154	352	264	256
25	352	246	235	e250	e179	e127	245	169	112
26	488	447	813	e240	e169	e112	213	148	85
27	456	398	850	e220	e148	e85	194	134	70
28	1550	1430	9780	e198	e139	e75	180	121	59
29	1910	1850	12200	e198	e126	e67	167	107	48
30	1090	1200	4810	e195	e112	e59	165	93	42
31	807	820	2850	---	---	---	157	83	35
TOTAL	19023	---	63783	22094	---	82595	12163	---	27051

RIO CULEBRINAS BASIN

50148890 RIO CULEBRINAS AT MARGARITA DAM NEAR AGUADA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	149	79	32	73	7	1.5	44	8	1.0
2	151	76	31	71	6	1.2	44	12	1.4
3	137	72	27	69	5	0.96	46	14	1.7
4	133	68	24	69	5	0.96	44	13	1.6
5	145	67	26	68	5	0.98	42	8	0.89
6	149	67	27	65	5	0.96	36	7	0.67
7	151	82	36	66	6	1.0	39	7	0.73
8	280	241	230	60	6	0.94	53	12	2.0
9	145	81	32	62	6	1.0	53	9	1.3
10	129	68	24	59	7	1.1	53	10	1.6
11	130	61	21	58	8	1.2	86	15	3.7
12	122	57	19	61	8	1.4	92	21	5.5
13	137	54	20	53	9	1.3	63	25	4.2
14	122	52	17	63	10	1.7	56	23	3.6
15	119	49	16	55	10	1.6	49	22	2.9
16	109	46	14	56	11	1.6	39	20	2.2
17	110	42	12	56	11	1.6	55	20	2.9
18	106	38	11	49	10	1.4	52	19	2.7
19	107	34	9.8	62	19	4.0	39	19	2.0
20	98	30	7.8	97	33	9.3	39	19	2.0
21	96	25	6.6	56	15	2.3	41	18	2.0
22	97	21	5.6	49	11	1.4	39	18	1.8
23	90	17	4.2	47	11	1.3	32	17	1.5
24	89	13	3.1	46	11	1.4	53	22	3.3
25	92	11	2.7	53	12	1.7	39	21	2.7
26	86	11	2.6	62	13	2.1	52	44	6.3
27	84	11	2.5	47	13	1.7	46	38	4.7
28	83	11	2.5	41	10	1.1	104	71	33
29	81	11	2.4	---	---	---	68	54	9.9
30	75	10	2.0	---	---	---	44	48	5.7
31	77	9	1.8	---	---	---	51	49	6.7
TOTAL	3679	---	672.6	1673	---	48.70	1593	---	122.19

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	122	78	28	483	344	569	139	64	28
2	248	250	185	530	443	894	178	96	57
3	178	123	71	261	66	46	239	157	124
4	90	57	14	198	60	32	352	274	384
5	379	354	725	168	53	24	284	129	135
6	740	739	2350	153	47	19	147	58	23
7	166	121	61	141	40	15	126	45	15
8	261	59	41	130	34	12	142	44	18
9	171	56	26	212	121	299	115	33	10
10	104	55	16	704	758	2200	162	46	22
11	96	54	14	806	824	2830	117	30	9.4
12	77	53	11	230	225	141	148	45	19
13	66	52	9.3	169	187	85	186	81	68
14	66	51	9.1	208	182	108	264	216	190
15	56	50	7.6	192	179	132	237	257	210
16	166	128	121	881	855	3970	127	125	43
17	127	85	36	826	775	2990	138	116	43
18	65	47	8.2	349	336	461	100	107	29
19	275	257	400	333	279	350	94	98	25
20	392	388	532	185	145	72	86	89	21
21	339	197	181	161	104	45	94	80	20
22	246	167	112	141	70	26	97	71	19
23	525	490	979	131	54	19	79	62	13
24	556	540	1010	116	40	13	139	162	173
25	626	567	1270	142	66	40	223	253	221
26	555	548	1200	216	138	95	110	88	26
27	860	764	4100	152	61	32	194	175	171
28	1400	1360	7350	121	29	9.5	180	153	104
29	536	475	1110	106	26	7.4	106	56	16
30	730	634	1980	101	25	6.8	88	51	12
31	---	---	---	105	25	7.1	---	---	---
TOTAL	10218	---	23957.2	8651	---	15549.8	4691	---	2248.4

RIO CULEBRINAS BASIN

50148890 RIO CULEBRINAS AT MARGARITA DAM NEAR AGUADA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	81	50	11	247	236	439	651	553	1120
2	77	50	10	404	680	961	1260	1080	6290
3	175	208	232	159	348	154	1240	1210	5740
4	259	267	287	241	235	412	1300	1250	5850
5	149	61	25	448	453	1070	1270	1240	5820
6	550	866	3130	137	100	37	618	512	1060
7	668	1020	2410	118	96	30	397	182	196
8	384	428	825	167	138	81	343	110	102
9	453	919	1770	371	326	886	890	663	3530
10	167	190	86	2110	1680	12100	1010	1040	3640
11	143	158	61	1460	1400	7320	988	983	3860
12	254	256	298	1070	1070	3950	737	674	1560
13	393	359	536	564	534	1060	417	377	436
14	173	132	64	382	206	212	314	240	204
15	242	169	133	461	390	666	660	477	1480
16	126	71	24	494	454	823	473	309	439
17	104	51	14	256	180	125	575	427	1140
18	385	438	679	293	230	206	1220	1080	6320
19	352	437	611	1280	891	6340	1090	1040	4730
20	132	103	37	730	739	1770	547	604	952
21	115	51	16	317	216	195	378	298	324
22	133	75	36	254	79	54	297	123	99
23	172	124	65	476	425	897	323	144	143
24	144	94	43	1130	1080	5350	291	113	92
25	127	62	22	1330	1320	6100	250	94	64
26	103	39	11	910	895	3340	239	88	57
27	91	31	7.7	2050	1950	13200	226	92	56
28	298	265	490	1040	1060	4240	217	98	57
29	218	194	157	1420	1160	7760	206	97	54
30	103	95	27	765	807	2120	207	95	53
31	92	90	22	985	844	3490	---	---	---
TOTAL	6863	---	12139.7	22069	---	85388	18634	---	55468
YEAR	131351		369023.59						

e Estimated

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

Date	Time	Instan-taneous dis-charge, cfs (00061)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment load, tons/d (80155)	Suspnd. sedi-ment, sieve diametr percent <.063mm (70331)
JUL					
06...	2049	1730	1970	9220	97
AUG					
15...	2155	728	990	1950	99
19...	1655	2630	2200	15600	98

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, 2.3 mi (3.7 km) northeast of Aguada Plaza.

DRAINAGE AREA.--97.0 mi^2 (251.1 km^2).

PERIOD OF RECORD.--Water years 1958, 1970 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	TIME	INSTAN-TANEOUS DIS-CHARGE, CFS (00061)	SPECIF. CONDUC-TANCE, WAT UNF US/CM 25 DEGC (00095)	PH, WATER, UNFLTRD FIELD, STD UNITS (00400)	TEMPER-ATURE, WATER, DEG C (00010)	TURBID-ITY, WAT UNF LAB, HACH 2100AN NTU (99872)	DIS-SOLVED OXYGEN, MG/L (00300)	DIS-SOLVED OXYGEN, PERCENT OF SAT-URATION (00301)	COD, HIGH LEVEL, WATER, UNFLTRD MG/L (00340)	FECAL COLI-FORM, M-FC 0.7U MF COL/ 100 ML (31625)	FECAL STREP-TOCOCCI KF MF, COL/ 100 ML (31673)	HARD-NESS, WATER, UNFLTRD MG/L AS CACO3 (00900)	CALCIUM WATER, FLTRD, MG/L (00915)
DEC													
19...	0730	E200	339	7.4	24.4	73	7.0	84	10	21000	25000	140	46.0
FEB													
20...	1250	E100	306	7.4	24.0	17	7.6	91	<10	230	E182	--	--
SEP													
13...	1000	--	267	6.7	25.0	170	6.0	73	30	54000	4700	120	40.1

DATE	MAGNES-IUM, WATER, FLTRD, MG/L (00925)	SODIUM, WATER, FLTRD, MG/L (00930)	SODIUM ADSORP-TION RATIO (00931)	POTAS-SIUM, WATER, FLTRD, MG/L (00935)	ANC, WAT UNF FIXED END PT, FIELD, MG/L AS CACO3 (00410)	SULFIDE WATER UNFLTRD MG/L (00745)	SULFATE WATER, FLTRD, MG/L (00945)	CHLOR-IDE, WATER, FLTRD, MG/L (00940)	FLUOR-IDE, WATER, FLTRD, MG/L (00950)	SILICA, WATER, FLTRD, MG/L (00955)	RESIDUE WATER, FLTRD, SUM OF CONSTI-TUENTS MG/L (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED, MG/L (00530)	NITRITE WATER, UNFLTRD MG/L AS N (00615)
DEC													
19...	5.87	11.1	.4	2.35	139	<1.0	7.7	12.7	.1	27.1	197	80	.01
FEB													
20...	--	--	--	--	123	--	--	--	--	--	--	20	<.01
SEP													
13...	4.74	8.46	.3	2.90	110	<.1	7.9	9.19	E.08	20.2	159	156	.02

DATE	NITRITE + NITRATE WATER UNFLTRD MG/L AS N (00630)	AMMONIA WATER, UNFLTRD MG/L AS N (00610)	AMMONIA + ORG-N, WATER, UNFLTRD MG/L AS N (00625)	PHOS-PHORUS, WATER, UNFLTRD MG/L (00665)	ARSENIC WATER UNFLTRD UG/L (01002)	BARIUM, WATER, UNFLTRD RECOV-ERABLE,, UG/L (01007)	BORON, WATER, UNFLTRD RECOV-ERABLE,, UG/L (01022)	CADMIUM WATER, UNFLTRD UG/L (01027)	CHROM-IUM, WATER, UNFLTRD RECOV-ERABLE,, UG/L (01034)	COPPER, WATER, UNFLTRD RECOV-ERABLE,, UG/L (01042)	IRON, WATER, UNFLTRD RECOV-ERABLE,, UG/L (01045)	LEAD, WATER, UNFLTRD RECOV-ERABLE,, UG/L (01051)	MANGAN-ESE, WATER, UNFLTRD RECOV-ERABLE,, UG/L (01055)
DEC													
19...	.730	.06	.50	.07	<2	52.3	20	E.1	1.3	<10	1640	1	143
FEB													
20...	.870	.04	.30	.07	--	--	--	--	--	--	--	--	--
SEP													
13...	.580	.03	.90	.17	<2	65.8	20	E.1	2.2	M	4250	2	247

DATE	MERCURY WATER, UNFLTRD RECOV-ERABLE,, UG/L (71900)	SELEN-IUM, WATER, UNFLTRD UG/L (01147)	SILVER, WATER, UNFLTRD RECOV-ERABLE,, UG/L (01077)	ZINC, WATER, UNFLTRD RECOV-ERABLE,, UG/L (01092)	CYANIDE WATER UNFLTRD MG/L (00720)	PHEN-OLIC COM-POUNDS, WATER, UNFLTRD UG/L (32730)	MBAS, WATER, UNFLTRD MG/L (38260)
DEC							
19...	E.01	<2	<.3	<20	<.01	--	<.05
FEB							
20...	--	--	--	--	--	--	--
SEP							
13...	.02	<2	<.3	E10	<.01	<16	<.05

RIO CULEBRINAS BASIN

50149100 RIO CULEBRINAS NEAR AGUADA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

PESTICIDE ANALYSES

DATE	TIME	DI-CHLOR-PROP, WATER, UNFLTRD UG/L (82183)	2,4,5-T WATER UNFLTRD UG/L (39740)	2,4-D WATER UNFLTRD UG/L (39730)	ALDRIN, WATER, UNFLTRD UG/L (39330)	CARBO-PHENO-THION, WATER, UNFLTRD UG/L (39786)	CHLOR-DANE, TECH-NICAL, WATER, UNFLTRD UG/L (39350)	CHLOR-PYRIFOS WATER UNFLTRD UG/L (38932)	TRIBU-PHOS, WATER, UNFLTRD UG/L (39040)	DIAZI-NON, WATER, UNFLTRD UG/L (39570)	DIEL-DRIN, WATER, UNFLTRD UG/L (39380)	DISUL-FOTON, WATER, UNFLTRD UG/L (39011)	ALPHA-ENDO-SULFAN, WATER, UNFLTRD UG/L (39388)
SEP 13...	1000	<.02	<.01	.17	<.01	<.02	<.1	<.01	<.02	<.02	<.006	<.10	<.02

DATE	ENDRIN, WATER, UNFLTRD UG/L (39390)	ETHION, WATER, UNFLTRD UG/L (39398)	FONOFOS WATER UNFLTRD UG/L (82614)	HEPTA-CHLOR EPOXIDE WATER UNFLTRD UG/L (39420)	HEPTA-CHLOR, WATER, UNFLTRD UG/L (39410)	LINDANE WATER, UNFLTRD UG/L (39340)	MALA-THION, WATER, UNFLTRD UG/L (39530)	P,P'-METH-OXY-CHLOR, WATER, UNFLTRD UG/L (39480)	METHYL PARA-THION, WATER, UNFLTRD UG/L (39600)	MIREX, WATER, UNFLTRD UG/L (39755)	P,P'-DDD, WATER, UNFLTRD UG/L (39360)	P,P'-DDE, WATER, UNFLTRD UG/L (39365)	P,P'-DDT, WATER, UNFLTRD UG/L (39370)
SEP 13...	<.01	<.01	<.01	<.009	<.01	<.006	<.10	<.020	<.01	<.006	<.007	<.006	<.009

DATE	PARA-THION, WATER, UNFLTRD UG/L (39540)	PCBS, WATER, UNFLTRD UG/L (39516)	PHORATE WATER UNFLTRD UG/L (39023)	SILVEX, WATER, UNFLTRD UG/L (39760)	TOXA-PHENE, WATER, UNFLTRD UG/L (39400)
SEP 13...	<.01	<.1	<.02	<.02	<1

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

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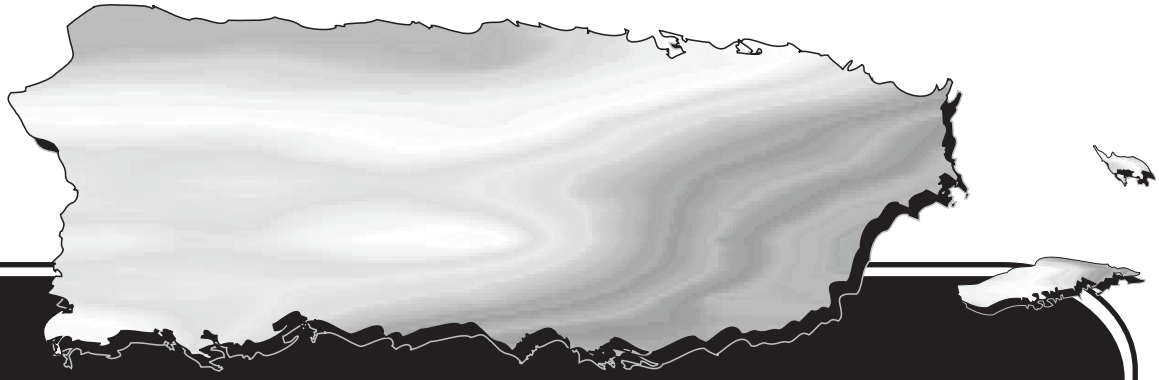

Discharge at Partial-Record Stations in Puerto Rico

Discharge at Partial-Record Stations in Puerto Rico

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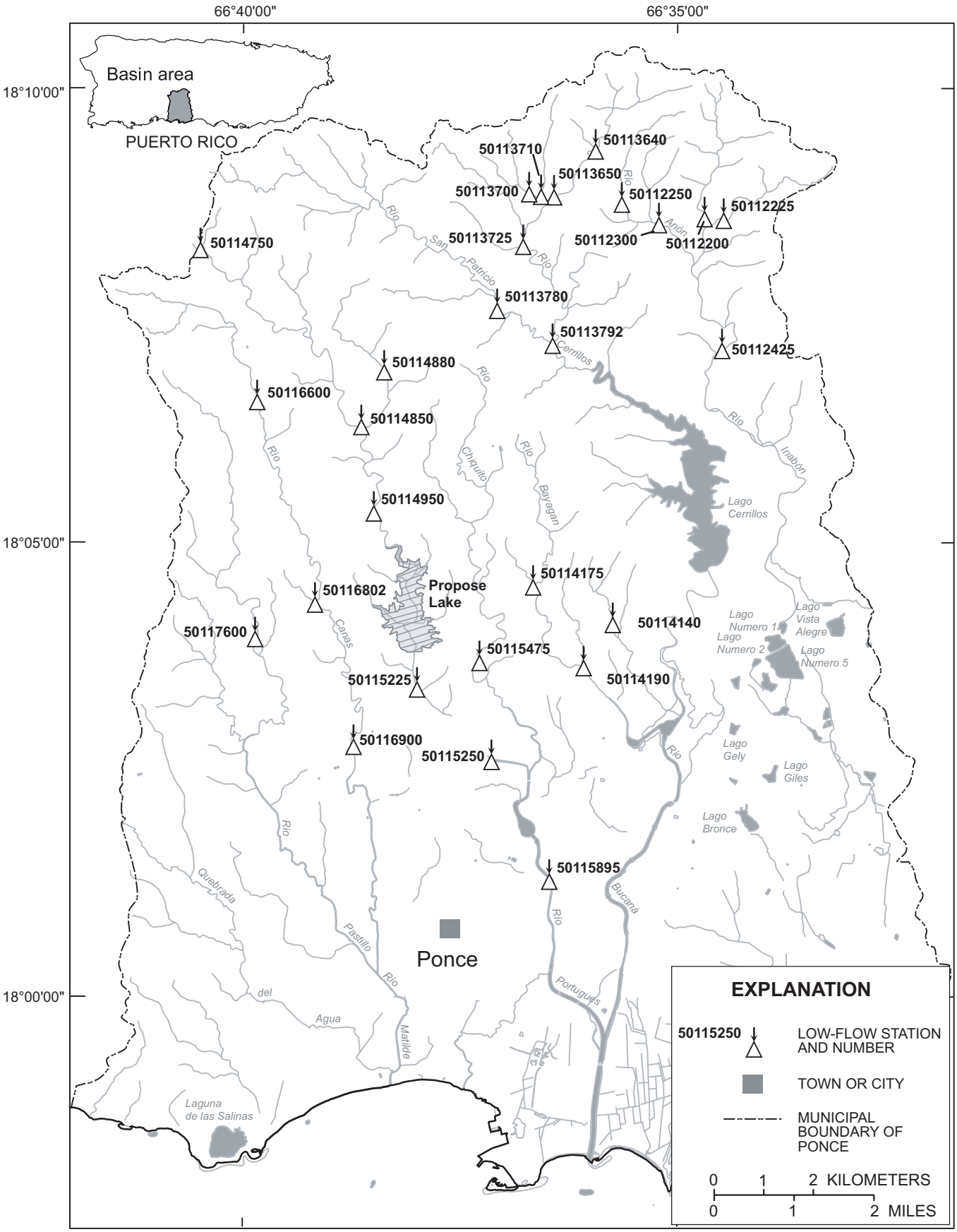


Figure 26. Location of low-flow partial-record stations in Ponce, Puerto Rico.

DISCHARGE AT PARTIAL-RECORD STATIONS

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are useable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

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 2002-03.

PUBLICATION RECORD

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA mi^2 (km^2)	DATE	TIME	STREAM-FLOW ft^3/s (m^3/s)
		Río Inabón basin				
50112200	Río Inabón near Salto de Inabón, PR	Lat 18°08'35", long 66°34'41", Hydrologic Unit 21010004, at barrio Anón, 1.8 mi (2.9 km) southwest of Cerro Maravilla, 2.3 (3.7 km) southeast of Cerro de Punta, and 1.8 (2.9 km) south of Monte Jayuya.	1.30 (3.37)	3/19/02	1040	1.02 (0.029)
				5/20/02	1005	2.37 (0.067)
				6/17/02	1045	2.88 (0.082)
50112225	Quebrada Emajagua near Anón, PR	Lat 18°08'34", long 66°34'28", Hydrologic Unit 21010004,at barrio Anón 1.5 mi (2.4 km) southwest of Cerro Maravilla, 1.9 mi (3.1 km) south of Monte Jayuya, and 2.5 mi (4.2 km) southeast of Cerro de Punta.	0.91 (2.36)	3/19/02	1000	0.60 (0.017)
				3/26/02	1245	0.51 (0.014)
				5/20/02	0915	1.63 (0.046)
				6/17/02	0950	2.49 (0.070)
				9/03/02	0925	3.33 (0.049)
50112250	Río Anón at Anón, PR	Lat 18°08'45", Long 66°35'38", Hydrologic Unit 21010004,at barrio Anón, 2.7 mi (4.3 km) southwest of Cerro Maravilla, 2.1 mi (3.4 km) southwest of Monte Jayuya, and 2.0 mi (3.2 km) south of Cerro de Punta.	0.57 (1.48)	3/19/02	1300	1.05 (0.029)
				3/27/02	0915	0.79 (0.022)
				5/20/02	1150	1.91 (0.054)
				6/17/02	1215	2.13 (0.060)
				9/03/02	1030	3.87 (0.110)
				2/26/03	1145	1.03 (0.029)
50112300	Río Anón near Anón, PR	Lat 18°08'29", long 66°35'13", Hydrologic Unit 21010004, at barrio Anón, 2.3 mi (3.7 km) southwest of Cerro Maravilla, 2.1 mi (3.4 km) southwest of Monte Jayuya, and 2.3 mi (3.7 km) southeast of Cerro de Punta.	1.58 (4.09)	3/19/02	1145	0.81 (0.023)
				5/20/02	1100	1.66 (0.047)
				6/17/02	1135	2.28 (0.064)
50112425	Río Inabón near Real Anón, PR	Lat 18°07'06", long 66°34'29", Hydrologic Unit 21010004, at barrio Anón 1.9 mi (3.0 km) northwest of Cerro Augustinillo, 0.7 mi (1.1 km) east of Cerro Santo Domingo, and 2.6 mi (4.2 km) northeast of Pico Pinto.	6.46 (16.7)	3/19/02	0900	3.55 (0.100)
				3/27/02	1020	2.76 (0.078)
				5/20/02	0815	8.05 (0.230)
				6/17/02	0855	11.0 (0.312)
				9/03/02	1135	38.3 (1.085)

DISCHARGE AT PARTIAL-RECORD STATIONS

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA mi^2 (km^2)	DATE	TIME	STREAM-FLOW ft^3/s (m^3/s)
		Río Bucaná basin				
50113640	Río Prieto at Anón, PR	Lat 18°09'19", long 66°35'56", Hydrologic Unit 21010004, at barrio Anón, 1.4 mi (2.2 km) southwest of Cerro de Punta, 1.8 mi (2.9 km) southwest of Monte Jayuya, and 2.9 mi (4.7 km) west of Cerro Maravilla.	1.22 (3.16)	3/26/02	1245	1.00 (0.028)
				5/22/02	1425	2.61 (0.074)
				6/19/02	1230	2.76 (0.078)
50113650	Río Prieto at Highway 139, PR	Lat 18°08'48", long 66°36'25", Hydrologic Unit 21010004, at barrio Anón at Highway 139, 2.1 mi (3.4 km) southwest of Cerro de Punta, 2.6 mi (4.2 km) southwest of Monte Jayuya, and 3.5 mi (5.6 km) southwest of Cerro Maravilla.	1.67 (4.32)	3/26/02	1020	1.29 (0.036)
				5/22/02	1105	3.29 (0.093)
				6/19/02	1015	2.56 (0.072)
50113700	Quebrada Jamiel near Ponce, PR	Lat 18°08'51", long 66°36'42", Hydrologic Unit 21010004, at barrio Anón at Highway 139, 2.2 mi (3.5 km) southwest of Cerro de Punta, 2.9 mi (4.7 km) southwest of Monte Jayuya, and 3.8 mi (6.1 km) southwest of Cerro Maravilla.	0.54 (1.40)	3/26/02	1205	0.31 (0.009)
				5/22/02	1320	0.62 (0.018)
				6/19/02	1335	0.54 (0.015)
50113710	Río Blanco at Highway 139, PR	Lat 18°08'49", long 66°36'34", Hydrologic Unit 21010004, at barrio Anón at Highway 139, 2.2 mi (3.5 km) southwest of Cerro de Punta, 2.7 mi (4.3 km) southwest of Monte Jayuya, 3.7 mi (6.0 km) southwest of Cerro Maravilla.	0.54 (1.40)	3/26/02	1105	0.36 (0.010)
				5/22/02	1150	0.74 (0.021)
				6/19/02	1055	0.79 (0.022)
50113725	Río Cerrillos at Anón, PR	Lat 18°08'16", long 66°36'47", Hydrologic Unit 21010004, at barrio Anón, 2.8 mi (4.5 km) southwest of Cerro de Punta, 3.3 mi (5.3 km) southwest of Monte Jayuya, and 4.1 mi (6.6 km) southwest of Cerro Maravilla.	3.76 (9.74)	3/25/02	0950	2.82 (0.080)
				3/26/02	0920	2.62 (0.074)
				5/22/02	1000	5.81 (0.164)
				6/19/02	0920	5.89 (0.167)
				9/04/02	1110	12.8 (0.362)
50113780	Río San Patricio near San Patricio, PR	Lat 18°07'34", long 66°37'04", Hydrologic Unit 21010004, near barrio San Patricio, 3.7 mi (6.0 km) southwest of Cerro de Punta, 4.1 mi (6.6 km) southwest of Monte Jayuya, 4.6 mi (7.4 km) southwest of Cerro Maravilla.	4.97 (12.9)	3/26/02	1015	3.95 (0.112)
				3/27/02	0840	3.11 (0.088)
				6/11/02	0800	5.61 (0.159)
				6/20/02	0925	4.72 (0.134)
				9/05/02	0740	7.99 (0.226)
50113792	Río Cerrillos near Anón, PR	Lat 18°07'11", long 66°36'26", Hydrologic Unit 21010004, downstream of confluence with Río San Patricio, 2.2 mi (3.5 km) northwest of Pico Pinto, 1.4 mi (2.2 km) northwest of Cerro Santo Domingo, and 3.9 mi (6.3 km) northwest of Cerro Augustinillo.	11.4 (29.5)	3/25/02	1130	6.57 (0.186)
				6/11/02	1020	14.6 (0.413)
				6/20/02	0755	10.7 (0.303)

DISCHARGE AT PARTIAL-RECORD STATIONS

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA mi^2 (km^2)	DATE	TIME	STREAM-FLOW ft^3/s (m^3/s)
		Río Bucaná basin				
50114140	Quebrada Ausubo at Machuelo Arriba, PR	Lat 18°04'06", long 66°35'44", Hydrologic Unit 21010004, at barrio Machuelo Arriba, 1.3 mi (2.1 km) southeast of Pico Pinto, 3.8 mi (6.1 km) south-west of Cerro Augustinillo, and 4.0 mi (6.4 km) northeast of plaza Degetau in Ponce.	0.53 (1.37)	3/25/02	1025	0.06 (0.002)
				5/22/02	0815	0.05 (0.001)
				6/19/02	0740	0.13 (0.004)
50114175	Río Bayagán downstream of Highway 505, PR	Lat 18°04'31", long 66°36'39", Hydrology Unit 21010004, at barrio Machuelo Arriba, 1.2 mi (1.9 km) southwest of Pico Pinto, 4.4 mi (7.1 km) south-west of Cerro Augustinillo, and 4.2 mi (6.8 km) north of plaza Degetau in Ponce.	1.74 (4.51)	3/25/02	0825	0.05 (0.001)
				5/22/02	0700	0.09 (0.002)
				6/19/02	0615	0.24 (0.007)
50114190	Río Bayagán at Machuelo Arriba, PR	Lat 18°03'38", long 66°36'04", Hydrologic Unit 21010004, at barrio Machuelo Arriba, 1.9 mi (3.1 km) south of Pico Pinto, 4.4 mi (7.1 km) southwest of Cerro Augustinillo, and 3.3 mi (5.3 km) northeast of Plaza Degetau in Ponce.	2.82 (7.30)	3/25/02	0855	0.13 (0.004)
				3/26/02	1130	0.26 (0.007)
				5/22/02	0730	0.29 (0.008)
				6/19/02	0650	0.97 (0.027)
				9/05/02	0855	0.52 (0.015)
50114750	Río Portugués at Guaraguao, PR	Lat 18°08'13", long 66°40'27", Hydrologic Unit 21010004, at barrio Guaraguao, 3.6 mi (5.8 km) southeast of Cerro El Gigante, 1.8 mi (2.9 km) north-east of Cerro Garrote, and 2.3 mi (3.7 km) southwest from La Pica.	2.30 (5.96)	3/20/02	1325	1.95 (0.055)
				4/02/02	0955	2.10 (0.059)
				5/21/02	1345	3.71 (0.105)
				6/18/02	1300	3.93 (0.111)
				9/09/02	0850	3.54 (0.100)
50114850	Río Portugués at Highway 503, PR	Lat 18°06'17", long 66°38'38", Hydrologic Unit 21010004, at barrio Tibes at Highway 503, 0.6 mi (1.0 km) west of Cerro del Diablo, 3.9 mi (6.3 km) southeast of Cerrote de Peñulas.	5.35 (13.8)	3/20/02	1125	3.01 (0.085)
				4/03/02	0915	4.19 (0.119)
				5/21/02	1200	5.06 (0.143)
				6/18/02	1105	7.96 (0.225)
				9/09/02	1020	6.12 (0.173)
50114880	Tributario de Río Portugués at Tibes, PR	Lat 18°06'46", long 66°38'20", Hydrologic Unit 21010004, at barrio Tibes, 0.9 mi (1.4 km) upstream from Río Portugués, 0.7 mi (1.1 km) northwest of Cerro del Diablo, and 4.1 mi (6.6 km) southeast of Cerrote de Peñuelas.	1.17 (3.03)	3/20/02	1210	0.26 (0.007)
				4/02/02	1100	0.28 (0.008)
				5/21/02	1250	0.30 (0.008)
				6/18/02	1205	0.81 (0.023)
				9/09/02	1120	0.76 (0.022)
50114950	Río Portugués downstream of Highway 10, PR	Lat 18°05'20", long 66°38'30", Hydrogic Unit 21010004, at barrio Tibes, 0.9 mi (1.4 km) northeast of Corral Viejo, 1.2 mi (1.9 km) southwest of Cerro del Diablo, and 4.5 mi (7.2 km) southeast of Cerrote de Peñuelas.	8.18 (21.2)	3/20/02	1030	3.86 (0.109)
				5/21/02	1050	7.02 (0.199)
				6/18/02	1015	11.1 (0.314)

DISCHARGE AT PARTIAL-RECORD STATIONS

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA mi^2 (km^2)	DATE	TIME	STREAM-FLOW ft^3/s (m^3/s)
		Río Bucaná basin				
50115225	Río Portugués near Portugués, PR	Lat 18°03'24", long 66°38'00", Hydrologic Unit 21010004, at barrio Tibes, 0.8 mi (1.3 km) east of Escuela Industrial de Niñas, 1.2 mi (1.9 km) north of El Madrigal, and 3.3 mi (5.3 km) south of Cerro del Diablo.	10.6 (27.4)	3/20/02	0820	4.18 (0.118)
				4/03/02	0800	6.50 (0.184)
				5/21/02	0900	7.54 (0.214)
				6/18/02	0615	7.61 (0.216)
				9/10/02	1100	7.50 (0.212)
50115250	Río Portugués near Magueyes, PR	Lat 18°02'36", long 66°37'08" Hydrologic Unit 21010004, at barrio Portugués, 3.3 mi (5.3 km) southwest of Pico Pinto, 1.0 mi (1.6 km) southwest of Cerro El Gato, and 2.1 mi (3.4 km) northwest of Plaza Degetau in Ponce.	12.1 (31.3)	5/21/02	0800	6.98 (0.198)
				6/12/02	1300	8.94 (0.253)
				12/11/02	1440	6.94 (0.196)
50115475	Río Chiquito near Portugués, PR	Lat 18°03'41", long 66°37'16", Hydrologic Unit 21010004, at barrio Portugués, 2.3 mi (3.7 km) southwest of Pico Pinto, 0.9 mi (1.4 km) northwest of Cerro El Gato, and 3.3 mi (5.3 km) northwest of Plaza Degetau in Ponce.	3.40 (8.81)	3/20/02	0730	0.19 (0.005)
				4/02/02	1240	0.78 (0.022)
				5/24/02	0720	0.14 (0.004)
				6/18/02	0805	0.91 (0.026)
				9/10/02	0945	0.44 (0.012)
50115895	Río Portugués near Caserio Dr. Pila, PR	Lat 18°01'17", long 66°36'28", Hydrologic Unit 21010004, at Ponce at Highway 14, 2.3 mi (3.7 km) southeast of Cerro El Gato, 2.9 mi (4.7 km) west of Central Mercedita, and 0.7 mi (1.1 km) northeast of Plaza Degetau in Ponce.	18.2 (47.1)	5/21/02	0700	7.83 (0.222)
				6/12/02	1210	13.7 (0.388)
				6/18/02	0710	10.7 (0.303)
				12/11/02	1210	10.7 (0.303)
		Río Matilde basin				
50116600	Río Canas at Guaraguao, PR	Lat 18°06'34", long 66°39'50", Hydrologic Unit 21010004, at barrio Guaraguao at Highway 501, 2.0 mi (3.2 km) northeast of Corral Viejo, 2.6 mi (4.2 km) southeast of Cerrote de Peñuelas, and 1.9 mi (3.1 km) northwest of Cerro del Diablo.	1.79 (4.64)	3/21/02	0755	1.33 (0.038)
				4/15/02	0925	1.28 (0.036)
				5/23/02	0655	2.50 (0.071)
				6/13/02	0710	2.55 (0.072)
				9/10/02	1235	2.84 (0.080)
50116802	Río Canas near Magueyes, PR	Lat 18°04'20", long 66°39'10", Hydrologic Unit 21010004, at barrio Magueyes about 300 ft (91 m) west of Highway 123, 4.6 mi (7.4 km) southeast of Cerrote de Peñuelas, and 2.5 mi (4.0 km) southwest of Cerro del Diablo.	4.02 (10.4)	3/21/02	0845	1.53 (0.043)
				4/15/02	1030	1.81 (0.051)
				5/23/02	0755	2.58 (0.073)
				6/13/02	0755	3.60 (0.102)
				9/11/02	1245	6.47 (0.183)

DISCHARGE AT PARTIAL-RECORD STATIONS

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA mi^2 (km^2)	DATE	TIME	STREAM-FLOW ft^3/s (m^3/s)
		Río Matilde basin				
50116900	Río Canas at Magueyes, PR	Lat 18°02'45", long 66°38'44", Hydrologic Unit 21010004, at barrio Magueyes, 0.7 mi (1.1 km) south of Escuela Industrial de Niñas, 6.3 mi (10.1 km) southeast of Cerrote de Peñuelas, and 4.1 mi (6.6 km) southwest of Cerro del Diablo.	5.68 (14.7)	3/21/02	0930	1.53 (0.043)
				4/15/02	1135	1.80 (0.051)
				5/23/02	0855	2.41 (0.068)
				6/13/02	0850	3.43 (0.097)
				9/11/02	0910	7.63 (0.216)
50117600	Río Pastillo at Highway 501, PR	Lat 18°03'56", long 66°39'51", Hydrologic Unit 21010004, at barrio Marueño at Highway 501, 1.4 mi (2.2 km) northwest of Escuela Industrial de Niñas, 3.3 mi (5.3 km) southwest of Cerro del Diablo, and 4.5 mi (7.2 km) southeast of Cerrote de Peñuelas.	2.95 (7.64)	3/21/02	1015	0.13 (0.004)
				5/24/02	0915	0.17 (0.005)
				6/13/02	0935	0.55 (0.016)

Water-Quality at Partial Record Stations in Puerto Rico and U.S. Virgin Islands

Water-quality at partial record stations in Puerto Rico and U.S.VI

MISCELLANEOUS STATION ANALYSES

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

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sampling depth, feet (00003)	Temperature, water, deg C (00010)	Specif. conductance, wat unf uS/cm 25 degC (00095)	pH, water, unfltrd field, std units (00400)	Transparency Secchi disc, inches (00077)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	Fecal coliform, M-FC 0.7u MF col/100 mL (31625)	Fecal streptococci KF MF, col/100 mL (31673)	ANC, wat unf fixed end pt, field, mg/L as CaCO3 (00410)	Residue total at 105 deg. C, suspended, mg/L (00530)	Nitrite water, unfltrd mg/L as N (00615)
50010720 LAGO GUAJATACA NO. 3 NR MOUTH NR QUEBRADILLAS, PR (LAT 18 22 05N LONG 066 54 36W)													
NOV 2001													
09...	1115	1.50	26.9	277	7.9	48.0	7.2	92	184	268	116	<10	<.01
09...	1120	23.0	24.1	327	7.7	--	7.4	--	--	--	116	--	--
MAR 2002													
20...	1030	1.50	--	--	--	--	--	--	--	--	--	<10	<.01
JUL													
17...	0920	1.50	29.3	243	7.7	64.0	9.1	120	<2	E8	120	<10	<.01
17...	0925	16.4	28.9	252	7.8	--	5.8	--	--	--	139	--	--
50025110 LAGO DOS BOCAS NO. 3 AT WEST BRANCH NR UTUADO, PR (LAT 18 19 15N LONG 066 40 11W)													
NOV 2001													
14...	1140	1.50	25.1	230	7.7	11.0	8.5	105	580	93	80	30	.01
14...	1145	6.50	25.1	230	7.7	--	8.5	--	--	--	80	--	--
MAR 2002													
25...	1200	--	--	--	--	--	--	--	--	--	--	<10	.02
JUL													
12...	0935	1.50	29.3	215	7.9	9.00	8.3	109	480	730	84	23	.03
12...	0940	9.80	28.1	207	7.7	--	5.1	--	--	--	80	--	--
50039900 LAGO CARITE NO. 3 AT RIO DE LA PLATA NR CAYEY, PR (LAT 18 05 04N LONG 066 06 03W)													
NOV 2001													
06...	1135	1.50	25.8	89	7.3	32.0	7.3	96	240	400	80	<10	<.01
06...	1145	6.60	25.6	86	7.2	--	6.4	--	--	--	23	--	--
APR 2002													
03...	1230	--	--	--	--	--	--	--	--	--	--	<10	<.01
JUL													
15...	0850	1.50	26.9	87	6.4	24.0	7.7	101	46	210	27	71	<.01
15...	0855	13.1	24.8	79	7.3	--	6.3	--	--	--	30	--	--
50044400 LAGO LA PLATA NO. 5 NR MOUTH NR NARANJITO, PR (LAT 18 19 33N LONG 066 12 28W)													
NOV 2001													
01...	1200	1.50	30.0	328	8.1	37.0	11.4	152	10	6	116	16	.02
01...	1205	19.7	27.1	342	8.1	--	1.1	--	--	--	120	--	--
MAR 2002													
14...	1305	--	--	--	--	--	--	--	--	--	--	15	.02
JUL													
10...	0915	1.50	29.6	290	8.0	32.0	9.3	123	E8	E2	115	14	<.01
10...	0920	19.7	28.0	283	8.1	--	.5	--	--	--	118	--	--
50057500 LAGO LOIZA NO. 4 NR MOUTH NR CAGUAS, PR (LAT 18 16 51N LONG 066 00 35W)													
NOV 2001													
02...	1200	1.50	29.7	327	7.6	28.0	8.5	112	84	32	97	<10	.06
02...	1205	19.7	27.5	342	7.3	--	1.1	--	--	--	98	--	--
MAR 2002													
13...	1240	--	--	--	--	--	--	--	--	--	--	<10	.05
JUL													
11...	0945	1.50	29.6	289	6.8	36.0	3.3	44	E29	E16	100	<10	.03
11...	0950	19.7	28.4	278	6.8	--	.3	--	--	--	104	--	--

< = Less than
E = Estimated value

MISCELLANEOUS STATION ANALYSES

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATION--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Nitrite + nitrate water unfltrd mg/L as N (00630)	Ammonia water, unfltrd mg/L as N (00610)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Total nitro-gen, water, unfltrd mg/L as NO3 (71887)	Phos-phorus, water, unfltrd mg/L (00665)	Chloro-phyll a phyto-plank-ton, fluoro, ug/L (70953)	Chloro-phyll b phyto-plank-ton, fluoro, ug/L (70954)	Biomass plank-ton, ash wgt mg/L (81353)	Biomass plank-ton, dry wgt mg/L (81354)
50010720 LAGO GUAJATACA NO. 3 NR MOUTH NR QUEBRADILLAS, PR (LAT 18 22 05N LONG 066 54 36W)									
NOV 2001									
09...	.020	.05	E.50	--	E.02	7.4	E.5	273	279
09...	--	--	--	--	--	--	--	--	--
MAR 2002									
20...	.100	.03	.30	1.8	<.02	7.9	.8	253	260
JUL									
17...	.030	.04	<.20	--	.02	2.9	.3	257	263
17...	--	--	--	--	--	--	--	--	--
50025110 LAGO DOS BOCAS NO. 3 AT WEST BRANCH NR UTUADO, PR (LAT 18 19 15N LONG 066 40 11W)									
NOV 2001									
14...	.800	.06	E.60	--	E.08	6.4	<.1	733	748
14...	--	--	--	--	--	--	--	--	--
MAR 2002									
25...	.310	.02	.70	4.5	.04	E45.7	E2.9	249	260
JUL									
12...	.290	.02	.70	4.4	.09	23.7	<.1	555	576
12...	--	--	--	--	--	--	--	--	--
50039900 LAGO CARITE NO. 3 AT RIO DE LA PLATA NR CAYEY, PR (LAT 18 05 04N LONG 066 06 03W)									
NOV 2001									
06...	.030	.04	E.30	--	<.02	30.6	13.2	271	281
06...	--	--	--	--	--	--	--	--	--
APR 2002									
03...	.090	.09	<.20	--	<.02	E3.1	E1.1	270	276
JUL									
15...	<.020	<.01	.20	--	.02	E8.3	2.6	270	282
15...	--	--	--	--	--	--	--	--	--
50044400 LAGO LA PLATA NO. 5 NR MOUTH NR NARANJITO, PR (LAT 18 19 33N LONG 066 12 28W)									
NOV 2001									
01...	.290	.07	E.50	--	E.09	19.9	E.8	274	283
01...	--	--	--	--	--	--	--	--	--
MAR 2002									
14...	.790	.07	1.4	9.7	.22	E104	<.1	252	279
JUL									
10...	<.020	<.01	.40	--	.05	49.1	<.1	269	282
10...	--	--	--	--	--	--	--	--	--
50057500 LAGO LOIZA NO. 4 NR MOUTH NR CAGUAS, PR (LAT 18 16 51N LONG 066 00 35W)									
NOV 2001									
02...	.940	.13	E.60	--	E.20	4.0	.5	473	485
02...	--	--	--	--	--	--	--	--	--
MAR 2002									
13...	.960	.08	.50	6.5	.20	E13.8	E3.8	251	260
JUL									
11...	.690	.11	.50	5.3	.14	6.4	1.4	258	265
11...	--	--	--	--	--	--	--	--	--

MISCELLANEOUS STATION ANALYSES

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATION--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sampling depth, feet (00003)	Temperature, water, deg C (00010)	Specif. conductance, wat unf uS/cm 25 degC (00095)	pH, water, unfltrd field, std units (00400)	Transparency Secchi disc, inches (00077)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	Fecal coliform, M-FC 0.7u MF col/100 mL (31625)	Fecal streptococci KF MF, col/100 mL (31673)	ANC, wat unf fixed end pt, field, mg/L as CaCO3 (00410)	Residue total at 105 deg. C, suspended, mg/L (00530)	Nitrite water, unfltrd mg/L as N (00615)
50047537 LAGO DE CIDRA NR RIO BAYAMON MOUTH, PR (LAT 18 11 02N LONG 066 08 06W)													
NOV 2001													
16...	1130	1.50	26.9	227	6.9	36.0	11.5	150	16	57	82	<10	<.01
16...	1135	13.1	25.2	252	6.7	--	3.1	--	--	--	82	--	--
JUL 2002													
19...	0920	1.50	28.0	218	6.8	26.0	6.5	85	E8	E8	83	<10	<.01
19...	0925	13.1	27.6	258	6.8	--	1.0	--	--	--	84	--	--
50047549 LAGO DE CIDRA NR DAMSITE, PR (LAT 18 11 52N LONG 066 08 24W)													
NOV 2001													
16...	1020	1.50	26.1	218	6.4	36.0	9.4	123	8	3	82	32	.01
16...	1100	49.0	23.8	153	6.5	--	.3	--	--	--	44	--	--
JUL 2002													
19...	0845	1.50	28.8	213	5.6	48.0	7.1	95	40	E20	82	<10	<.01
19...	0850	43.0	23.8	211	6.3	--	.2	--	--	--	83	--	--

Date	Nitrite + nitrate water unfltrd mg/L as N (00630)	Ammonia water, unfltrd mg/L as N (00610)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Phosphorus, water, unfltrd mg/L (00665)	Chlorophyll a phytoplankton, fluoro, ug/L (70953)	Chlorophyll b phytoplankton, fluoro, ug/L (70954)	Biomass plankton, ash wgt mg/L (81353)	Biomass plankton, dry wgt mg/L (81354)
50047537 LAGO DE CIDRA NR RIO BAYAMON MOUTH, PR (LAT 18 11 02N LONG 066 08 06W)								
NOV 2001								
16...	.040	.08	E.70	E.03	3.0	E.2	271	277
16...	--	--	--	--	--	--	--	--
JUL 2002								
19...	<.020	.02	.50	.03	6.3	1.6	262	269
19...	--	--	--	--	--	--	--	--
50047549 LAGO DE CIDRA NR DAMSITE, PR (LAT 18 11 52N LONG 066 08 24W)								
NOV 2001								
16...	.130	.19	E.60	E.02	2.9	E.1	269	275
16...	--	--	--	--	--	--	--	--
JUL 2002								
19...	<.020	.01	.40	.02	3.3	.5	264	270
19...	--	--	--	--	--	--	--	--

MISCELLANEOUS STATION ANALYSES

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

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sampling depth, feet (00003)	Temperature, water, deg C (00010)	Specif. conductance, wat unf uS/cm 25 degC (00095)	pH, water, unfltrd field, std units (00400)	Transparency Secchi disc, inches (00077)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	Fecal coliform, M-FC 0.7u MF col/ 100 mL (31625)	Fecal streptococci KF MF, col/ 100 mL (31673)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)
50010790 LAGO GUAJATACA NO. 1 NR DAMSITE NR QUEBRADILLAS PR (LAT 18 23 56N LONG 066 55 23W)													
NOV 2001													
09...	1030	1.50	26.9	286	7.8	100	5.7	73	60	71	130	45.3	3.40
09...	1040	78.7	24.9	304	7.1	--	.1	--	--	--	140	48.7	3.28
MAR 2002													
20...	0930	--	--	--	--	--	--	--	--	--	140	48.6	3.71
20...	0940	--	--	--	--	--	--	--	--	--	140	51.2	3.61
JUL													
17...	0840	1.50	29.2	243	7.6	134	7.4	97	<2	<2	120	42.2	3.66
17...	0850	78.7	24.6	309	6.8	--	.1	--	--	--	150	54.3	3.20
50020050 LAGO GARZAS NO. 1 NR DAMSITE NR ADJUNTAS, PR (LAT 18 08 21N LONG 066 44 35W)													
NOV 2001													
08...	1115	1.50	23.2	152	7.5	74.0	5.5	71	80	44	62	17.3	4.50
08...	1125	68.9	21.1	167	6.6	--	--	--	--	--	55	15.4	4.03
MAR 2002													
19...	1300	--	--	--	--	--	--	--	--	--	68	18.7	5.14
19...	1315	--	--	--	--	--	--	--	--	--	69	19.1	5.12
JUL													
16...	1145	1.50	25.8	158	7.1	50.0	7.4	98	E7	<2	71	19.5	5.39
16...	1150	82.0	21.0	164	6.7	--	.1	--	--	--	65	18.1	4.78
50027090 LAGO DOS BOCAS NO. 1 NR DAMSITE NR UTUADO, PR (LAT 18 20 09N LONG 066 40 04W)													
NOV 2001													
14...	1230	1.50	25.8	186	7.7	5.00	7.6	95	420	128	72	19.9	5.49
14...	1235	68.9	23.6	153	7.4	--	2.4	--	--	--	59	16.4	4.33
MAR 2002													
26...	1245	--	--	--	--	--	--	--	--	--	88	23.5	7.05
26...	1305	--	--	--	--	--	--	--	--	--	83	22.4	6.53
JUL													
12...	0900	1.50	28.6	213	7.2	60.0	7.4	96	52	E9	85	22.6	7.00
12...	0910	65.6	26.4	187	7.0	--	.1	--	--	--	72	18.7	6.04
50039950 LAGO CARITE NO. 1 NR DAMSITE NR CAYEY, PR (LAT 18 04 39N LONG 066 06 19W)													
NOV 2001													
06...	1200	1.50	25.6	92	7.2	32.0	6.3	83	240	400	24	3.57	3.76
06...	1205	52.5	22.9	170	6.6	--	.1	--	--	--	37	7.75	4.19
APR 2002													
03...	1305	--	--	--	--	--	--	--	--	--	37	7.30	4.55
03...	1315	--	--	--	--	--	--	--	--	--	29	4.71	4.12
JUL													
15...	0915	1.50	26.8	87	7.1	24.0	8.0	105	E9	E5	25	3.88	3.62
15...	0920	59.0	23.1	93	6.5	--	.2	--	--	--	19	3.42	2.61
50044950 LAGO LA PLATA NO. 3 NR DAMSITE NR NARANJITO, PR (LAT 18 20 18N LONG 066 14 01W)													
NOV 2001													
01...	1055	1.50	29.7	337	7.2	55.0	8.3	110	11	2	120	26.1	12.5
01...	1100	65.6	24.9	370	6.6	--	.2	--	--	--	120	29.8	12.2
MAR 2002													
14...	1210	--	--	--	--	--	--	--	--	--	110	27.1	10.4
14...	1220	--	--	--	--	--	--	--	--	--	94	21.9	9.42
JUL													
10...	0815	1.50	29.7	287	6.6	48.0	7.0	92	E4	<2	110	26.3	11.8
10...	0830	55.8	24.4	368	6.9	--	.2	--	--	--	100	24.5	10.1

< = Less than
E = Estimated value

MISCELLANEOUS STATION ANALYSES

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATION--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Sodium, water, fltrd, mg/L (00930)	Sodium adsorp-tion ratio (00931)	Potas-sium, water, fltrd, mg/L (00935)	ANC, wat unf fixed end pt, field, mg/L as CaCO3 (00410)	Sulfate water, fltrd, mg/L (00945)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Residue water, fltrd, sum of consti-tuents mg/L (70301)	Residue total at 105 deg. C, sus-pended, mg/L (00530)	Nitrite water, unfltrd mg/L as N (00615)	Nitrite + nitrate water unfltrd mg/L as N (00630)	Ammonia water, unfltrd mg/L as N (00610)
50010790 LAGO GUAJATACA NO. 1 NR DAMSITE NR QUEBRADILLAS PR (LAT 18 23 56N LONG 066 55 23W)													
NOV 2001													
09...	5.38	.2	2.07	121	8.1	7.50	E.1	6.1	150	<10	<.01	<.020	.04
09...	4.66	.2	2.14	131	7.9	7.27	.1	7.4	160	--	--	--	--
MAR 2002													
20...	5.75	.2	2.02	--	23.9	12.1	E.1	6.9	183	<10	<.01	<.020	<.01
20...	5.57	.2	2.06	--	7.2	8.96	E.1	7.6	173	--	--	--	--
JUL													
17...	5.83	.2	1.92	116	8.4	8.03	.1	6.9	147	<10	<.01	<.020	<.01
17...	4.82	.2	1.79	147	7.0	7.14	.11	7.5	174	--	--	--	--
50020050 LAGO GARZAS NO. 1 NR DAMSITE NR ADJUNTAS, PR (LAT 18 08 21N LONG 066 44 35W)													
NOV 2001													
08...	5.98	.3	1.44	62	3.1	5.46	<.1	17.0	92	<10	<.01	<.020	.03
08...	5.18	.3	1.81	67	.7	5.23	<.1	15.0	88	--	--	--	--
MAR 2002													
19...	6.32	.3	1.26	--	2.4	6.11	E.1	17.9	103	<10	<.01	<.020	.04
19...	6.35	.3	1.34	--	2.3	6.09	E.1	19.1	107	--	--	--	--
JUL													
16...	6.69	.3	1.09	77	2.5	6.05	E.1	20.2	108	<10	<.01	<.020	<.01
16...	5.86	.3	1.54	85	.5	5.51	E.1	18.5	106	--	--	--	--
50027090 LAGO DOS BOCAS NO. 1 NR DAMSITE NR UTUADO, PR (LAT 18 20 09N LONG 066 40 04W)													
NOV 2001													
14...	8.00	.4	2.08	153	12.1	9.01	.1	21.1	169	24	.01	.990	.08
14...	6.58	.4	2.28	184	8.2	7.95	E.1	18.9	175	--	--	--	--
MAR 2002													
26...	11.4	.5	1.95	--	15.5	11.3	E.1	15.1	137	<10	.01	.270	.01
26...	10.5	.5	1.98	--	14.0	10.7	E.1	18.3	135	--	--	--	--
JUL													
12...	11.6	.5	1.96	82	13.9	11.2	E.1	22.5	140	<10	.02	.170	.02
12...	9.75	.5	1.91	75	10.1	9.07	E.1	18.5	119	--	--	--	--
50039950 LAGO CARITE NO. 1 NR DAMSITE NR CAYEY, PR (LAT 18 04 39N LONG 066 06 19W)													
NOV 2001													
06...	8.51	.7	.81	72	3.1	8.77	<.1	17.3	89	<10	<.01	.030	.04
06...	8.13	.6	.90	174	.2	9.01	<.1	18.1	153	--	--	--	--
APR 2002													
03...	9.53	.7	.96	--	2.8	8.87	.1	18.5	73	11	<.01	.090	.07
03...	8.90	.7	.83	--	2.5	8.61	.1	18.8	70	--	--	--	--
JUL													
15...	8.36	.7	.84	27	2.6	8.83	<.1	17.5	62	<10	<.01	<.020	<.01
15...	6.30	.6	.91	23	2.1	7.33	<.1	12.6	49	--	--	--	--
50044950 LAGO LA PLATA NO. 3 NR DAMSITE NR NARANJITO, PR (LAT 18 20 18N LONG 066 14 01W)													
NOV 2001													
01...	25.3	1	4.45	118	12.8	27.1	.2	20.3	200	10	<.01	<.020	.02
01...	18.7	.7	3.28	144	1.0	23.8	.2	20.3	196	--	--	--	--
MAR 2002													
14...	26.6	1	2.79	--	13.2	27.2	.1	27.2	202	<10	<.01	<.020	.01
14...	13.8	.6	3.04	--	9.1	14.9	.1	18.5	147	--	--	--	--
JUL													
10...	18.7	.8	2.60	110	11.5	23.6	.1	20.5	181	44	<.01	<.020	<.01
10...	15.5	.7	2.77	105	6.8	18.7	.1	19.5	161	--	--	--	--

MISCELLANEOUS STATION ANALYSES

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATION--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Total nitro-gen, water, unfltrd mg/L as NO3 (71887)	Phos-phorus, water, unfltrd mg/L (00665)	Chloro-phyll a phyto-plank-ton, fluoro, ug/L (70953)	Chloro-phyll b phyto-plank-ton, fluoro, ug/L (70954)	Biomass plank-ton, ash wgt mg/L (81353)	Biomass plank-ton, dry wgt mg/L (81354)
50010790 LAGO GUAJATACA NO. 1 NR DAMSITE NR QUEBRADILLAS PR (LAT 18 23 56N LONG 066 55 23W)							
NOV 2001							
09...	E.40	--	<.02	5.1	.6	267	273
09...	--	--	--	--	--	--	--
MAR 2002							
20...	.20	--	<.02	E1.9	<.1	245	252
20...	--	--	--	--	--	--	--
JUL							
17...	<.20	--	.02	3.4	.6	265	272
17...	--	--	--	--	--	--	--
50020050 LAGO GARZAS NO. 1 NR DAMSITE NR ADJUNTAS, PR (LAT 18 08 21N LONG 066 44 35W)							
NOV 2001							
08...	E.30	--	<.02	2.1	E.2	285	291
08...	--	--	--	--	--	--	--
MAR 2002							
19...	<.20	--	<.02	E4.8	E.6	242	249
19...	--	--	--	--	--	--	--
JUL							
16...	<.20	--	.02	4.1	.4	268	275
16...	--	--	--	--	--	--	--
50027090 LAGO DOS BOCAS NO. 1 NR DAMSITE NR UTUADO, PR (LAT 18 20 09N LONG 066 40 04W)							
NOV 2001							
14...	E.80	--	E.11	6.1	<.1	694	708
14...	--	--	--	--	--	--	--
MAR 2002							
26...	.40	3.0	<.02	E7.3	E.6	247	254
26...	--	--	--	--	--	--	--
JUL							
12...	<.20	--	.02	5.7	E.4	266	273
12...	--	--	--	--	--	--	--
50039950 LAGO CARITE NO. 1 NR DAMSITE NR CAYEY, PR (LAT 18 04 39N LONG 066 06 19W)							
NOV 2001							
06...	E.30	--	<.02	15.4	5.1	268	275
06...	--	--	--	--	--	--	--
APR 2002							
03...	.30	1.7	.14	E10.3	E4.9	265	276
03...	--	--	--	--	--	--	--
JUL							
15...	<.20	--	.03	E8.2	3.0	268	279
15...	--	--	--	--	--	--	--
50044950 LAGO LA PLATA NO. 3 NR DAMSITE NR NARANJITO, PR (LAT 18 20 18N LONG 066 14 01W)							
NOV 2001							
01...	E.30	--	<.02	4.5	E.4	253	261
01...	--	--	--	--	--	--	--
MAR 2002							
14...	.30	--	<.02	E2.9	E.4	248	255
14...	--	--	--	--	--	--	--
JUL							
10...	.20	--	.03	8.2	1.1	267	277
10...	--	--	--	--	--	--	--

MISCELLANEOUS STATION ANALYSES

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATION--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sampling depth, feet (00003)	Temperature, water, deg C (00010)	Specif. conductance, wat unf uS/cm 25 degC (00095)	pH, water, unfltrd field, std units (00400)	Transparency Secchi disc, inches (00077)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	Fecal coliform, M-FC 0.7u MF col/100 mL (31625)	Fecal streptococci KF MF, col/100 mL (31673)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)
50047549 LAGO DE CIDRA NR DAMSITE, PR (LAT 18 11 52N LONG 066 08 24W)													
NOV 2001													
16...	1020	1.50	26.1	218	6.4	36.0	9.4	123	8	3	--	--	--
16...	1100	49.0	23.8	153	6.5	--	.3	--	--	--	39	8.54	4.41
JUL 2002													
19...	0845	1.50	28.8	213	5.6	48.0	7.1	95	40	E20	73	15.1	8.58
19...	0850	43.0	23.8	211	6.3	--	.2	--	--	--	69	15.5	7.28
50058800 LAGO LOIZA NO. 7 NR DAMSITE NR TRUJILLO ALTO, PR (LAT 18 19 29N LONG 066 00 47W)													
NOV 2001													
02...	1100	1.50	29.4	278	7.8	65.0	7.6	100	34	43	86	21.8	7.70
02...	1110	26.2	27.6	266	7.3	--	.7	--	--	--	80	20.2	7.14
MAR 2002													
13...	1200	--	--	--	--	--	--	--	--	--	110	27.9	10.8
13...	1210	--	--	--	--	--	--	--	--	--	130	31.2	13.8
JUL													
11...	0905	1.50	29.2	244	5.7	55.0	3.1	41	58	E11	79	19.6	7.37
11...	0920	16.4	28.8	236	6.5	--	.3	--	--	--	77	19.1	7.19

Date	Sodium, water, fltrd, mg/L (00930)	Sodium adsorption ratio (00931)	Potassium, water, fltrd, mg/L (00935)	ANC, wat unf fixed end pt, field, mg/L as CaCO3 (00410)	Sulfate water, fltrd, mg/L (00945)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue total at 105 deg. C, suspended, mg/L (00530)	Nitrite water, unfltrd mg/L as N (00615)	Nitrite + nitrate water unfltrd mg/L as N (00630)	Ammonia water, unfltrd mg/L as N (00610)
50047549 LAGO DE CIDRA NR DAMSITE, PR (LAT 18 11 52N LONG 066 08 24W)													
NOV 2001													
16...	--	--	--	82	11.2	16.0	E.1	17.2	--	32	.01	.130	.19
16...	9.47	.7	4.08	44	9.5	9.61	E.1	11.8	84	--	--	--	--
JUL 2002													
19...	17.8	.9	2.77	82	5.3	18.4	.1	18.6	136	<10	<.01	<.020	.01
19...	15.0	.8	3.61	83	1.9	15.7	.1	17.4	126	--	--	--	--
50058800 LAGO LOIZA NO. 7 NR DAMSITE NR TRUJILLO ALTO, PR (LAT 18 19 29N LONG 066 00 47W)													
NOV 2001													
02...	22.3	1	3.49	90	12.9	22.8	.2	21.0	166	<10	<.01	<.020	E.05
02...	18.2	.9	3.51	84	11.1	20.3	.1	21.7	152	--	--	--	--
MAR 2002													
13...	26.2	1	2.52	--	14.4	27.3	.1	27.1	206	<10	.02	.130	.04
13...	20.0	.7	2.70	--	12.2	22.9	.1	21.8	205	--	--	--	--
JUL													
11...	20.5	1	2.53	85	10.9	21.7	E.1	25.1	159	<10	.01	.070	.09
11...	19.9	1	2.42	80	10.4	20.6	E.1	24.3	152	--	--	--	--

Date	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Total nitrogen, water, unfltrd mg/L as NO3 (71887)	Phosphorus, water, unfltrd mg/L (00665)	Chlorophyll a phytoplankton, fluoro, ug/L (70953)	Chlorophyll b phytoplankton, fluoro, ug/L (70954)	Biomass plankton, ash wgt mg/L (81353)	Biomass plankton, dry wgt mg/L (81354)
50047549 LAGO DE CIDRA NR DAMSITE, PR (LAT 18 11 52N LONG 066 08 24W)							
NOV 2001							
16...	E.60	--	E.02	2.9	E.1	269	275
16...	--	--	--	--	--	--	--
JUL 2002							
19...	.40	--	.02	3.3	.5	264	270
19...	--	--	--	--	--	--	--
50058800 LAGO LOIZA NO. 7 NR DAMSITE NR TRUJILLO ALTO, PR (LAT 18 19 29N LONG 066 00 47W)							
NOV 2001							
02...	E.30	--	E.03	5.8	.5	267	273
02...	--	--	--	--	--	--	--
MAR 2002							
13...	.40	2.3	.05	E21.6	E3.0	245	253
13...	--	--	--	--	--	--	--
JUL							
11...	.60	3.0	.05	E10.2	1.0	262	269
11...	--	--	--	--	--	--	--

MISCELLANEOUS STATION ANALYSES

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

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

PESTICIDE ANALYSES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Di-chlor-prop, water, unfltrd ug/L (82183)	2,4,5-T water unfltrd ug/L (39740)	2,4-D water unfltrd ug/L (39730)	Aldrin, water, unfltrd ug/L (39330)	Carbo-pheno-thion, water, unfltrd ug/L (39786)	Chlor-dane, tech-nical, water, unfltrd ug/L (39350)	Chlor-pyrifos water unfltrd ug/L (38932)	Tribu-phos, water, unfltrd ug/L (39040)	Diazi-non, water, unfltrd ug/L (39570)	Diel-drin, water, unfltrd ug/L (39380)	Disul-foton, water, unfltrd ug/L (39011)	alpha-Endo-sulfan, water, unfltrd ug/L (39388)
50010790 LAGO GUAJATACA NO. 1 NR DAMSITE NR QUEBRADILLAS PR (LAT 18 23 56N LONG 066 55 23W)													
JUL 17...	0840	<.02	<.01	.06	<.01	<.02	<.1	<.01	<.02	<.02	<.006	<.10	<.02
50020050 LAGO GARZAS NO. 1 NR DAMSITE NR ADJUNTAS, PR (LAT 18 08 21N LONG 066 44 35W)													
JUL 16...	1145	<.02	<.01	E.02	<.01	<.02	<.1	<.01	<.02	<.02	<.006	<.10	<.02
50027090 LAGO DOS BOCAS NO. 1 NR DAMSITE NR UTUADO, PR (LAT 18 20 09N LONG 066 40 04W)													
JUL 12...	0900	<.02	<.01	.03	<.01	<.02	<.1	<.01	<.02	<.02	<.006	<.10	<.02
50039950 LAGO CARITE NO. 1 NR DAMSITE NR CAYEY, PR (LAT 18 04 39N LONG 066 06 19W)													
JUL 15...	0915	<.02	<.01	<.02	<.01	<.02	<.1	<.01	<.02	<.02	<.006	<.10	<.02
50044950 LAGO LA PLATA NO. 3 NR DAMSITE NR NARANJITO, PR (LAT 18 20 18N LONG 066 14 01W)													
JUL 10...	0815	<.02	<.01	E.02	<.01	<.02	<.1	<.01	<.02	<.02	<.006	<.10	<.02

Date	Endrin, water, unfltrd ug/L (39390)	Ethion, water, unfltrd ug/L (39398)	Fonofos water unfltrd ug/L (82614)	Hepta-chlor epoxide water unfltrd ug/L (39420)	Hepta-chlor, water, unfltrd ug/L (39410)	Lindane water, unfltrd ug/L (39340)	Mala-thion, water, unfltrd ug/L (39530)	p,p'-Meth-oxy-chlor, water, unfltrd ug/L (39480)	Methyl para-thion, water, unfltrd ug/L (39600)	Mirex, water, unfltrd ug/L (39755)	p,p'-DDD, water, unfltrd ug/L (39360)	p,p'-DDE, water, unfltrd ug/L (39365)	p,p'-DDT, water, unfltrd ug/L (39370)
50010790 LAGO GUAJATACA NO. 1 NR DAMSITE NR QUEBRADILLAS PR (LAT 18 23 56N LONG 066 55 23W)													
JUL 17...	<.01	<.01	<.01	<.009	<.01	<.006	<.10	<.020	<.02	<.006	<.007	<.006	<.009
50020050 LAGO GARZAS NO. 1 NR DAMSITE NR ADJUNTAS, PR (LAT 18 08 21N LONG 066 44 35W)													
JUL 16...	<.01	<.01	<.01	<.009	<.01	<.006	<.10	<.020	<.02	<.006	<.007	<.006	<.009
50027090 LAGO DOS BOCAS NO. 1 NR DAMSITE NR UTUADO, PR (LAT 18 20 09N LONG 066 40 04W)													
JUL 12...	<.01	<.01	<.01	<.009	<.01	<.006	<.10	<.020	<.01	<.006	<.007	<.006	<.009
50039950 LAGO CARITE NO. 1 NR DAMSITE NR CAYEY, PR (LAT 18 04 39N LONG 066 06 19W)													
JUL 15...	<.01	<.01	<.01	<.009	<.01	<.006	<.10	<.020	<.01	<.006	<.007	<.006	<.009
50044950 LAGO LA PLATA NO. 3 NR DAMSITE NR NARANJITO, PR (LAT 18 20 18N LONG 066 14 01W)													
JUL 10...	<.01	<.01	<.01	<.009	<.01	<.006	<.10	<.020	<.02	<.006	<.007	<.006	<.009

< = Less than
E = Estimated value

MISCELLANEOUS STATION ANALYSES

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATION--Continued

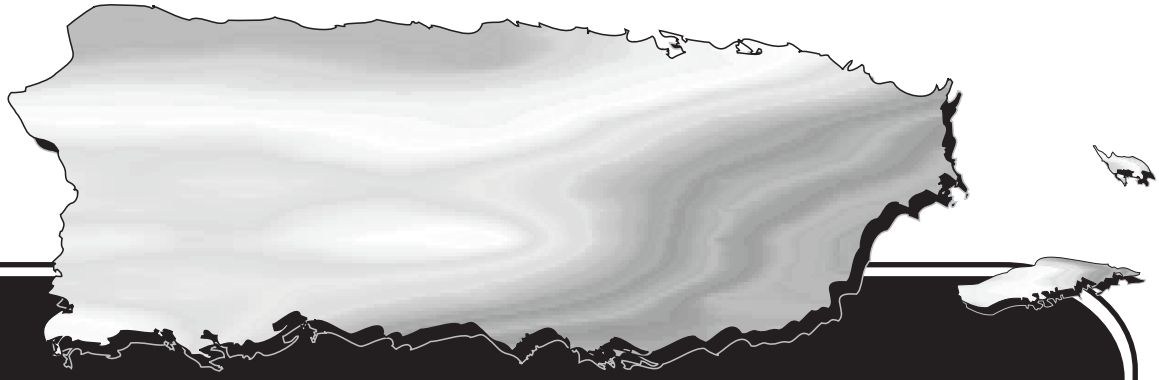
WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Para-thion, water, unfltrd ug/L (39540)	PCBs, water, unfltrd ug/L (39516)	Phorate water unfltrd ug/L (39023)	Silvex, water, unfltrd ug/L (39760)	Toxa-phene, water, unfltrd ug/L (39400)
50010790 LAGO GUAJATACA NO. 1 NR DAMSITE NR QUEBRADILLAS PR (LAT 18 23 56N LONG 066 55 23W)					
JUL					
17...	<.01	<.1	<.02	<.02	<1
50020050 LAGO GARZAS NO. 1 NR DAMSITE NR ADJUNTAS, PR (LAT 18 08 21N LONG 066 44 35W)					
JUL					
16...	<.01	<.1	<.02	<.02	<1
50027090 LAGO DOS BOCAS NO. 1 NR DAMSITE NR UTUADO, PR (LAT 18 20 09N LONG 066 40 04W)					
JUL					
12...	<.01	<.1	<.02	<.02	<1
50039950 LAGO CARITE NO. 1 NR DAMSITE NR CAYEY, PR (LAT 18 04 39N LONG 066 06 19W)					
JUL					
15...	<.01	<.1	<.02	<.02	<1
50044950 LAGO LA PLATA NO. 3 NR DAMSITE NR NARANJITO, PR (LAT 18 20 18N LONG 066 14 01W)					
JUL					
10...	<.01	<.1	<.02	<.02	<1

Date	Time	Di-chlor-prop, water, unfltrd ug/L (82183)	2,4,5-T water unfltrd ug/L (39740)	2,4-D water unfltrd ug/L (39730)	Aldrin, water, unfltrd ug/L (39330)	Carbo-pheno-thion, water, unfltrd ug/L (39786)	Chlor-dane, tech-nical, water, unfltrd ug/L (39350)	Chlor-pyrifos water unfltrd ug/L (38932)	Tribu-phos, water, unfltrd ug/L (39040)	Diazi-non, water, unfltrd ug/L (39570)	Diel-drin, water, unfltrd ug/L (39380)	Disul-foton, water, unfltrd ug/L (39011)	alpha-Endo-sulfan, water, unfltrd ug/L (39388)
50047549 LAGO DE CIDRA NR DAMSITE, PR (LAT 18 11 52N LONG 066 08 24W)													
JUL 2002													
19...	0845	<.02	<.01	E.01	--	--	--	--	--	--	--	--	--
50058800 LAGO LOIZA NO. 7 NR DAMSITE NR TRUJILLO ALTO, PR (LAT 18 19 29N LONG 066 00 47W)													
JUL													
11...	0905	<.02	<.01	.04	<.01	<.02	<.1	<.01	<.02	<.02	<.006	<.10	<.02

Date	Endrin, water, unfltrd ug/L (39390)	Ethion, water, unfltrd ug/L (39398)	Fonofos water unfltrd ug/L (82614)	Hepta-chlor epoxide water unfltrd ug/L (39420)	Hepta-chlor, water, unfltrd ug/L (39410)	Lindane water, unfltrd ug/L (39340)	Mala-thion, water, unfltrd ug/L (39530)	p,p'-Meth-oxy-chlor, water, unfltrd ug/L (39480)	Methyl para-thion, water, unfltrd ug/L (39600)	Mirex, water, unfltrd ug/L (39755)	p,p'-DDD, water, unfltrd ug/L (39360)	p,p'-DDE, water, unfltrd ug/L (39365)	p,p'-DDT, water, unfltrd ug/L (39370)
50058800 LAGO LOIZA NO. 7 NR DAMSITE NR TRUJILLO ALTO, PR (LAT 18 19 29N LONG 066 00 47W)													
JUL													
11...	<.01	<.01	<.01	<.009	<.01	<.006	<.10	<.020	<.02	<.006	<.007	<.006	<.009

Date	Para-thion, water, unfltrd ug/L (39540)	PCBs, water, unfltrd ug/L (39516)	Phorate water unfltrd ug/L (39023)	Silvex, water, unfltrd ug/L (39760)	Toxa-phene, water, unfltrd ug/L (39400)
50047549 LAGO DE CIDRA NR DAMSITE, PR (LAT 18 11 52N LONG 066 08 24W)					
JUL 2002					
19...	--	--	--	<.02	--
50058800 LAGO LOIZA NO. 7 NR DAMSITE NR TRUJILLO ALTO, PR (LAT 18 19 29N LONG 066 00 47W)					
JUL					
11...	<.01	<.1	<.02	<.02	<1



Ground-Water Records for Puerto Rico

Ground-water records for Puerto Rico

GROUND-WATER LEVELS

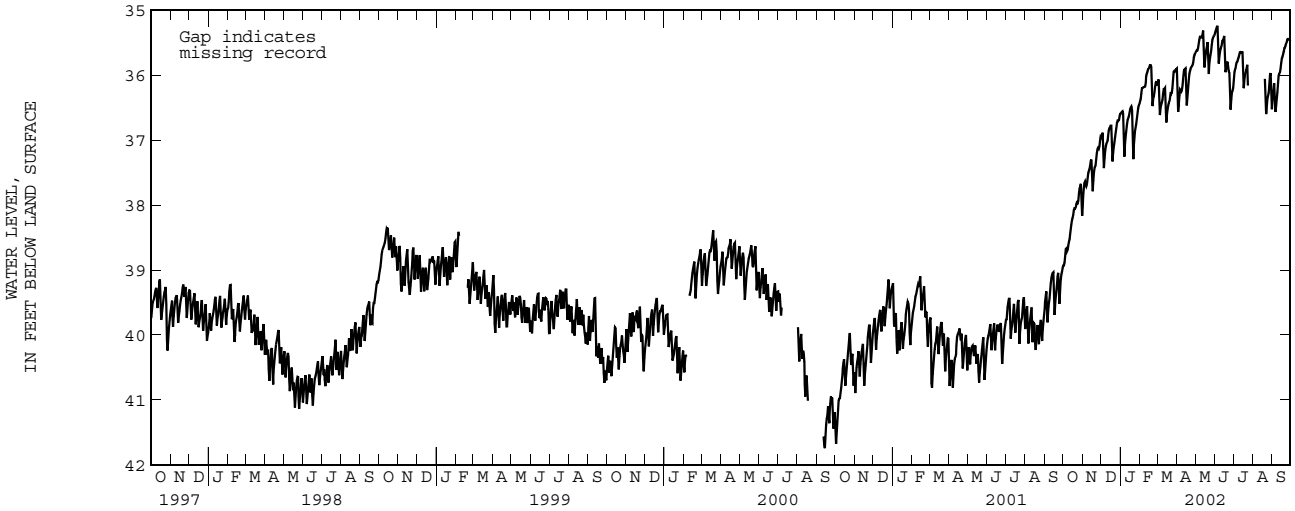
RIO GUAJATACA BASIN

182422067015100. Local number, 165.
LOCATION.--Lat 18°24'22", long 67°01'51", Hydrologic Unit 21010003, 5.60 mi northeast of Moca plaza, 4.70 mi southeast of Aguadilla US Naval Reservation radio antenna, and 1.63 mi northwest of La Virgen del Rosario Church. Name: Saltos 1 Well, Isabela.
AQUIFER.--Cibao Formation. Aguada Limestone.
WELL CHARACTERISTICS.--Drilled production water-table well, diameter 16 in (0.40 m), cased 16 in (0.40 m) 0-40.0 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).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 689 ft (210 m), above mean sea level. Measuring point: Hole on pump base, 0.50 ft (0.15 m), above land-surface datum. Prior to October 6, 1988, hole on top of pipe on top of pump base, 0.80 ft (0.24 m), above land-surface datum. Prior to November 1985, hole on top of pump base, 1.00 ft (0.30 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recoder (ADR), replaced by an Electronic Data Logger (EDL), installed on February 18, 1998. Formerly published as 182421067015000. Well is affected by nearby pumping.
PERIOD OF RECORD.--January 1982 to March 1985, November 1985 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 35.17 ft (10.7 m), below land-surface datum, June 6, 2002; lowest water level measured, 70.6 ft (21.5 m), below land-surface datum, June 18, 1982.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38.93	38.09	36.94	36.59	36.42	36.18	35.90	35.66	35.39	36.15	---	36.48
2	38.93	37.95	36.98	36.59	36.39	36.10	35.89	35.64	35.33	35.98	---	36.29
3	38.93	37.81	36.91	36.58	36.35	36.07	36.64	35.62	35.32	35.93	---	36.26
4	38.84	37.70	36.86	36.55	36.20	36.07	36.49	35.62	35.27	35.93	---	36.22
5	38.71	37.63	37.50	36.56	36.20	36.69	36.42	35.62	35.25	35.88	---	36.02
6	38.64	37.65	37.37	36.62	36.19	36.54	36.22	35.56	35.23	35.80	---	36.62
7	38.69	37.72	37.19	37.39	36.18	36.47	36.22	35.49	35.90	35.80	---	36.51
8	38.74	37.70	37.14	37.12	36.18	36.44	36.25	35.42	35.74	35.78	---	36.45
9	38.64	37.65	37.06	36.99	36.18	36.41	36.25	35.40	35.67	35.74	---	36.29
10	38.58	37.53	37.05	36.89	36.16	36.36	36.19	35.42	35.60	35.72	---	36.25
11	38.54	37.49	37.02	36.81	36.06	36.21	36.10	35.42	35.58	35.66	---	36.04
12	38.50	37.46	36.98	36.72	35.98	36.22	35.96	35.42	35.55	35.64	---	35.98
13	38.43	37.43	36.90	36.67	35.98	36.21	35.92	35.35	35.47	35.65	---	35.98
14	38.34	37.35	36.82	36.66	35.92	36.19	35.91	35.28	35.47	35.66	---	35.94
15	38.27	37.30	36.82	36.61	35.90	36.81	35.90	35.92	35.46	35.65	---	35.86
16	38.21	37.30	36.79	36.55	35.90	36.65	35.89	35.84	35.42	35.62	---	35.76
17	38.19	37.86	36.76	36.50	35.86	36.56	36.52	35.73	35.38	36.26	---	35.74
18	38.11	37.71	36.79	36.50	35.83	36.49	36.41	35.63	35.98	36.14	---	35.70
19	38.06	37.53	37.42	36.47	35.86	36.44	36.25	35.59	35.93	36.01	---	35.66
20	38.05	37.45	37.24	36.61	35.89	36.42	36.18	35.54	35.88	35.97	36.06	35.62
21	38.07	37.40	37.13	37.41	36.55	36.39	36.00	35.44	35.78	35.95	36.06	35.54
22	38.01	37.42	37.07	37.18	36.40	36.28	35.97	36.09	35.80	35.89	36.66	35.60
23	37.95	37.35	36.99	37.06	36.33	36.24	35.91	35.88	35.91	35.85	36.54	35.51
24	37.97	37.23	36.91	36.91	36.32	36.33	35.89	35.81	35.96	35.83	36.40	35.53
25	37.97	37.16	36.85	36.82	36.20	36.22	35.86	35.71	35.95	36.49	36.33	35.47
26	37.90	37.11	36.76	36.79	36.15	36.18	35.87	35.67	36.61	---	36.30	35.44
27	37.74	37.12	36.71	36.71	36.09	35.97	35.83	35.59	36.45	---	36.25	35.44
28	37.75	37.14	36.70	36.62	36.10	35.92	35.78	35.48	36.30	---	36.05	35.44
29	37.69	37.06	36.72	36.56	---	35.95	35.69	35.43	36.24	---	35.96	35.46
30	37.66	36.95	36.67	36.46	---	35.94	35.69	35.42	36.24	---	35.98	35.45
31	38.24	---	36.60	36.47	---	35.91	---	35.40	---	---	36.57	---
MEAN	38.30	37.48	36.96	36.74	36.13	36.29	36.07	35.58	35.74	---	---	35.88

WTR YR 2002 MEAN 36.47 HIGHEST 35.17 JUNE 6, 2002 LOWEST 38.99 OCT. 1, 2001



GROUND-WATER LEVELS

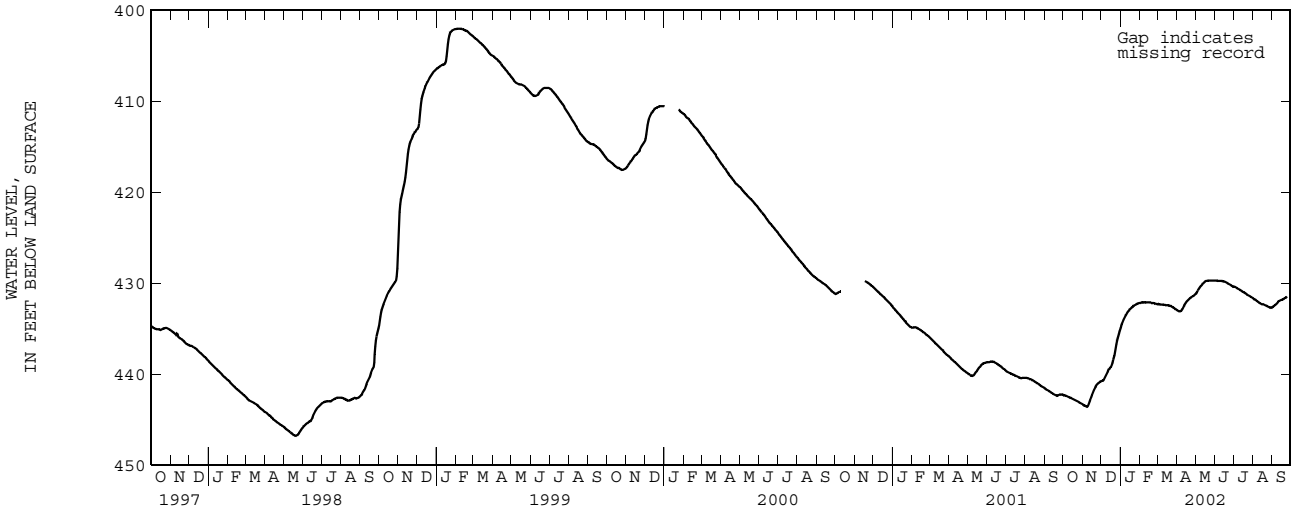
RIO GUAJATACA BASIN--Continued

182647066552400. Local number, 202.
LOCATION.--Lat 18°26'47", long 66°55'24", Hydrologic Unit 21010002, 2.22 mi southeast of Quebradillas plaza, 1.29 mi north of José de Diego School , and 1.99 mi northwest of El Calvario Church. Name: Carmelo Barreto García Well, Quebradillas.
AQUIFER.--Aguada Limestone.
WELL CHARACTERISTICS.--Drilled water-table well, diameter 20 in (0.51 m), cased 20 in (0.51 m) 0-296 ft (0-90.2 m), diameter 13 in (0.33 m), cased 13 in (0.33 m) 0-550 ft (0-168 m), perforated 270-529 ft (82.3-161 m). Depth 550 ft (168 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 475 ft (145 m), above mean sea level, from topographic map. Measuring point: Hole on steel plate, 1.11 ft (0.34 m), above land-surface datum. Priot to February 18, 1998, hole on side of casing, 1.50 ft (0.46 m,), above land-surface datum. Prior July 25, 1986, top of shelter floor, 3.30 ft (1.00 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on February 18, 1998.
PERIOD OF RECORD.--November 1985 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 401.9 ft (122 m), below land-surface datum, February 6, 1999; lowest water level recorded, 453.9 ft (138 m), below land-surface datum, May 14, 15, 16, 1995.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	442.28	443.34	440.80	435.00	432.19	432.33	432.96	431.22	429.72	430.44	431.65	432.71
2	442.33	443.36	440.79	434.81	432.19	432.30	433.00	431.16	429.72	430.37	431.71	432.64
3	442.37	443.43	440.74	434.61	432.16	432.32	433.06	431.08	429.72	430.40	431.78	432.61
4	442.38	443.44	440.70	434.44	432.12	432.33	433.08	431.00	429.73	430.46	431.81	432.55
5	442.40	443.47	440.72	434.29	432.15	432.36	433.10	430.89	429.75	430.49	431.82	432.47
6	442.42	443.53	440.58	434.10	432.13	432.35	433.11	430.76	429.75	430.52	431.86	432.42
7	442.45	443.57	440.43	433.92	432.12	432.36	433.12	430.66	429.77	430.58	431.95	432.35
8	442.46	443.61	440.30	433.81	432.12	432.37	433.11	430.58	429.76	430.63	432.00	432.29
9	442.51	443.61	440.13	433.68	432.15	432.36	433.04	430.44	429.75	430.67	432.04	432.20
10	442.55	443.55	440.00	433.54	432.13	432.37	432.89	430.35	429.75	430.70	432.10	432.15
11	442.57	443.41	439.86	433.41	432.11	432.37	432.80	430.25	429.75	430.73	432.16	432.06
12	442.61	443.22	439.73	433.30	432.11	432.40	432.66	430.18	429.77	430.78	432.21	432.00
13	442.61	443.01	439.60	433.20	432.12	432.41	432.53	430.10	429.77	430.83	432.23	431.98
14	442.63	442.78	439.49	433.10	432.12	432.41	432.42	430.01	429.80	430.88	432.26	431.94
15	442.73	442.65	439.41	433.00	432.11	432.43	432.31	429.92	429.82	430.93	432.30	431.90
16	442.73	442.45	439.32	432.90	432.13	432.45	432.21	429.87	429.83	430.97	432.35	431.86
17	442.76	442.23	439.24	432.83	432.11	432.45	432.09	429.83	429.85	430.99	432.33	431.84
18	442.79	442.07	439.13	432.77	432.13	432.45	431.99	429.79	429.89	431.03	432.34	431.81
19	442.82	441.87	438.91	432.70	432.17	432.46	431.92	429.77	429.94	431.09	432.37	431.77
20	442.86	441.72	438.60	432.65	432.23	432.49	431.83	429.76	429.96	431.14	432.43	431.73
21	442.90	441.58	438.32	432.60	432.20	432.50	431.76	429.74	429.99	431.20	432.46	431.65
22	442.94	441.47	438.12	432.55	432.18	432.51	431.71	429.74	430.06	431.22	432.49	431.66
23	442.97	441.34	437.78	432.49	432.20	432.54	431.65	429.73	430.08	431.27	432.51	431.58
24	443.02	441.25	437.31	432.44	432.25	432.59	431.60	429.73	430.12	431.32	432.54	431.56
25	443.06	441.14	436.90	432.40	432.25	432.63	431.54	429.72	430.18	431.35	432.61	431.53
26	443.10	441.06	436.54	432.38	432.27	432.65	431.53	429.72	430.22	431.40	432.63	431.49
27	443.13	441.00	436.24	432.33	432.29	432.68	431.47	429.72	430.23	431.43	432.68	---
28	443.18	440.96	435.97	432.29	432.30	432.75	431.40	429.72	430.29	431.47	432.69	---
29	443.21	440.88	435.72	432.26	---	432.81	431.34	429.72	430.34	431.53	432.68	---
30	443.26	440.83	435.47	432.23	---	432.87	431.29	429.72	430.41	431.57	432.73	---
31	443.31	---	435.21	432.22	---	432.90	---	429.72	---	431.60	432.71	---
MEAN	442.75	442.39	438.78	433.17	432.17	432.49	432.28	430.15	429.92	430.97	432.27	---

WTR YR 2002 MEAN 434.15 HIGHEST 429.69 JUNE 11, 2002 LOWEST 443.66 NOV. 8, 2001



GROUND-WATER LEVELS

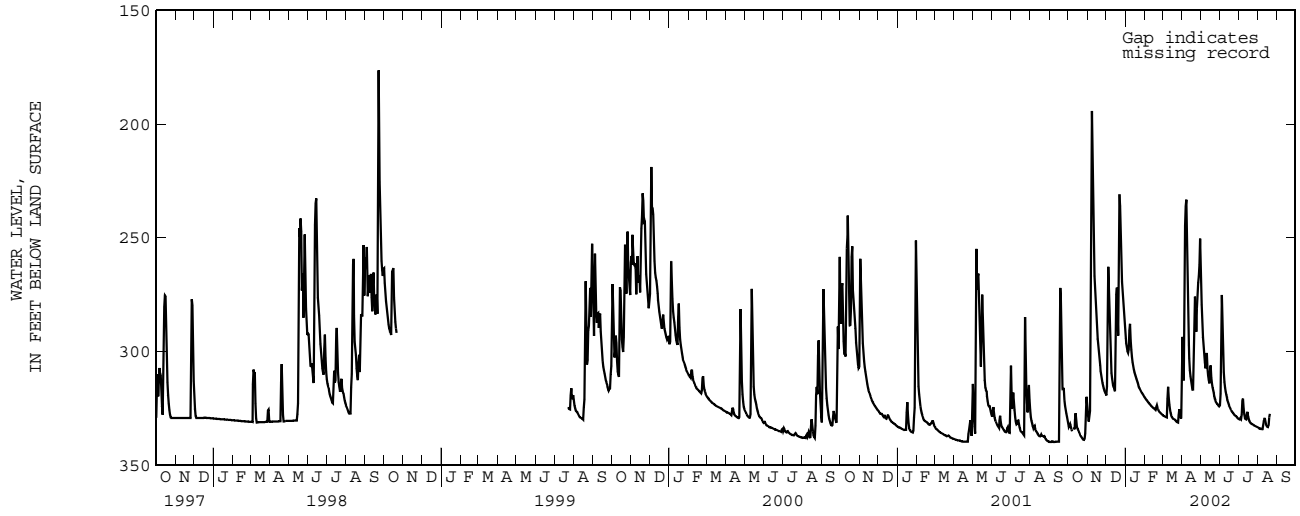
RIO CAMUY BASIN

182723066511200. Local number, 1026.
LOCATION.--Lat 18°27'23", long 66°51'12", Hydrologic Unit 21010002, 1.60 mi south of the intersection of Hwy 119 with Hwy 2, 1.35 mi east of Hwy 119 of, and 0.01 mi east of Hwy 486. Name: Zanja 4 Well, Camuy.
AQUIFER.--Aguada Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 12 in (0.30 m). Depth 585 ft (178 m).
INSTRUMENTATION.--Pressure transducer with integrated electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 360 ft (110 m), above mean sea level, from topographic map. Measuring point: Shelter floor on top of the 4 in (0.10 m) casing, 3.00 ft (0.91 m), above land-surface datum.
REMARKS.--Recording observation well. Eletronic Data Logger (EDL), installed on February 25, 1997, removed on September 26, 2002. Record is poor when the water level is below the level of the pressure transducer, which is set at 339 ft (103 m), below land-surface datum.
PERIOD OF RECORD.--February 25, 1997 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 161.8 ft (49.3 m), below land-surface datum, September 22, 1998; lowest water level recorded, >339.75 ft (>103.6 m), below land-surface datum, September 5, 2001.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	330.88	326.06	318.86	292.82	320.07	327.80	329.52	254.34	324.31	329.67	333.30	---
2	332.73	327.61	319.78	295.42	320.57	328.04	285.82	261.93	322.99	329.81	333.49	---
3	333.83	329.14	311.00	297.45	320.99	328.22	301.27	274.71	314.36	329.88	333.74	---
4	331.72	332.34	252.87	298.59	321.32	328.43	312.75	284.38	265.01	329.09	333.86	---
5	332.37	324.46	272.63	300.96	321.67	328.53	312.85	291.09	285.26	329.30	333.90	---
6	333.81	327.75	288.06	299.99	322.12	328.70	237.55	296.04	297.66	329.95	333.97	---
7	334.81	277.50	297.16	297.98	322.47	328.86	251.89	298.72	306.41	325.63	334.13	---
8	335.33	194.99	302.15	283.28	322.79	329.01	220.16	303.25	311.85	318.22	334.22	---
9	---	193.39	307.98	292.32	323.13	329.04	246.20	306.36	314.71	323.27	334.02	---
10	332.60	222.41	310.87	297.54	323.48	312.55	274.12	308.49	316.90	326.67	330.86	---
11	334.19	239.12	312.98	300.70	323.73	318.51	286.70	296.17	318.41	328.43	330.58	---
12	334.42	262.29	314.45	303.88	324.00	322.02	294.98	305.13	319.80	329.58	329.09	---
13	325.83	271.27	315.22	305.64	324.28	324.49	299.65	309.44	320.93	329.85	329.30	---
14	328.22	275.54	315.97	307.26	324.54	326.46	306.41	311.53	321.83	330.08	331.83	---
15	332.11	281.60	316.82	308.61	324.82	327.75	310.18	313.25	322.62	325.42	332.07	---
16	334.09	287.25	318.08	309.79	325.04	328.55	311.66	314.78	323.44	327.68	332.97	---
17	333.82	292.40	286.65	310.64	325.22	329.05	313.67	302.21	324.25	329.33	333.27	---
18	334.84	296.06	263.31	311.56	325.48	329.46	315.74	310.05	324.70	330.31	333.26	---
19	335.23	299.08	280.53	312.45	325.80	329.73	317.63	312.88	325.30	330.89	331.85	---
20	336.06	301.59	289.96	313.31	323.24	329.90	315.80	315.10	325.95	331.24	326.01	---
21	336.96	305.12	296.15	314.25	324.17	330.03	300.39	316.55	326.52	331.57	328.73	---
22	337.30	307.44	224.76	315.03	325.37	330.19	279.47	317.72	326.82	331.80	---	---
23	337.73	309.60	237.15	315.73	325.67	330.54	272.16	319.03	327.18	331.93	---	---
24	338.21	311.21	234.96	316.23	326.31	330.86	286.88	320.13	327.59	332.03	---	---
25	338.58	313.16	253.69	316.59	326.67	331.04	295.74	321.11	327.93	332.20	---	---
26	338.90	314.56	267.39	317.29	326.90	331.19	266.23	321.91	328.25	332.51	---	---
27	338.99	315.60	271.31	317.81	327.20	331.33	283.11	322.51	328.45	332.62	---	---
28	337.95	316.80	276.58	318.24	327.46	324.42	256.41	322.82	328.62	332.77	---	---
29	334.05	317.68	282.13	318.68	---	326.34	277.27	323.19	328.95	332.97	---	---
30	319.43	318.00	286.26	319.12	---	328.06	246.38	323.61	329.35	333.04	---	---
31	320.27	---	289.79	319.62	---	329.55	---	324.09	---	333.17	---	---
MEAN	---	293.03	287.60	307.38	324.09	327.70	286.95	306.53	318.88	329.71	---	---

WTR YR 2002 MEAN 312.80 HIGHEST 191.18 NOV. 8, 2001 LOWEST 339.00 OCT. 27, 2001



GROUND-WATER LEVELS

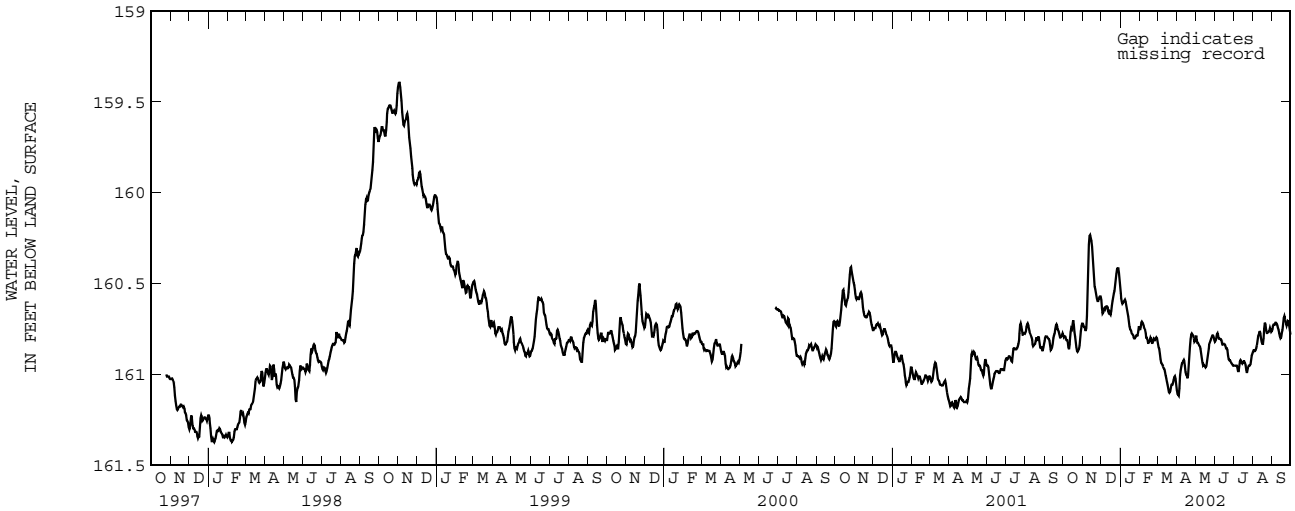
RIO GRANDE DE ARECIBO BASIN

182756066454700. Local number, 1051
LOCATION.--Lat 18°27'56", long 66°45'47", Hydrologic Unit 21010002, 0.04 mi north of Hwy 653, 1.86 mi west of Hwy 129, and 1.55 mi west of the University of Puerto Rico, Arecibo Campus. Name: Barreto 1 Well, Arecibo.
AQUIFER.--Aymamón Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (0.15 m). Depth 300 ft (91.4 m).
INSTRUMENTATION.--Pressure transducer with integrated electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 164 ft (50.0 m), above mean sea level, from topographic map. Measuring point: Top of white PVC cap 3.37 ft (1.03 m), above land-surface datum.
REMARKS.--Recording observation well. Electronic Data Logger (EDL), installed on October 24, 1997. Well is affected by marine tides.
PERIOD OF RECORD.--October 24, 1997 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 159.4 ft (48.6 m), below land-surface datum, November 1, 2, 3, 1998; lowest water level recorded, 161.4 ft (49.2 m), below land-surface datum, January 6, 1998.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	160.77	160.72	160.57	160.54	160.75	160.81	161.07	160.80	160.82	160.95	160.88	160.76
2	160.80	160.72	160.61	160.57	160.76	160.83	161.10	160.78	160.82	160.95	160.87	160.74
3	160.79	160.73	160.66	160.59	160.72	160.85	161.11	160.80	160.81	160.95	160.86	160.73
4	160.79	160.74	160.67	160.61	160.71	160.85	161.11	160.82	160.79	160.95	160.87	160.72
5	160.79	160.74	160.65	160.61	160.71	160.87	161.12	160.83	160.77	160.95	160.87	160.73
6	160.81	160.75	160.63	160.60	160.72	160.90	161.03	160.82	160.78	160.95	160.86	160.72
7	160.81	160.77	160.64	160.60	160.73	160.93	160.98	160.84	160.80	160.95	160.85	160.71
8	160.81	160.72	160.64	160.59	160.74	160.94	160.97	160.84	160.80	160.97	160.83	160.72
9	160.83	160.64	160.62	160.59	160.75	160.94	160.94	160.85	160.80	160.99	160.80	160.72
10	160.87	160.46	160.63	160.61	160.76	160.95	160.94	160.87	160.81	160.97	160.78	160.74
11	160.85	160.32	160.62	160.63	160.79	160.96	160.93	160.90	160.80	160.94	160.78	160.75
12	160.82	160.25	160.64	160.65	160.80	160.97	160.92	160.92	160.82	160.92	160.76	160.76
13	160.79	160.23	160.66	160.67	160.79	160.97	160.92	160.95	160.83	160.92	160.76	160.79
14	160.74	160.24	160.66	160.69	160.82	161.00	160.93	160.95	160.84	160.93	160.79	160.79
15	160.75	160.26	160.65	160.72	160.83	161.01	160.97	160.94	160.83	160.94	160.81	160.81
16	160.75	160.27	160.68	160.75	160.82	161.03	161.00	160.96	160.83	160.94	160.83	160.78
17	160.70	160.32	160.66	160.75	160.82	161.05	161.00	160.95	160.83	160.93	160.83	160.76
18	160.70	160.39	160.64	160.76	160.80	161.06	161.01	160.97	160.84	160.92	160.83	160.75
19	160.75	160.44	160.60	160.77	160.79	161.09	161.03	160.94	160.85	160.93	160.77	160.70
20	160.78	160.50	160.59	160.78	160.82	161.10	160.98	160.92	160.86	160.94	160.72	160.68
21	160.80	160.53	160.56	160.78	160.83	161.10	160.93	160.89	160.85	160.96	160.71	160.68
22	160.84	160.53	160.55	160.79	160.82	161.09	160.87	160.87	160.88	160.99	160.74	160.71
23	160.86	160.55	160.53	160.80	160.80	161.06	160.82	160.84	160.91	160.99	160.77	160.70
24	160.88	160.57	160.49	160.80	160.80	161.05	160.79	160.83	160.92	160.97	160.77	160.73
25	160.87	160.59	160.47	160.80	160.81	161.06	160.77	160.82	160.92	160.96	160.77	160.73
26	160.87	160.60	160.42	160.79	160.81	161.05	160.78	160.81	160.92	160.95	160.76	160.71
27	160.85	160.59	160.42	160.78	160.80	161.04	160.78	160.80	160.93	160.95	160.77	160.70
28	160.83	160.58	160.41	160.79	160.79	161.02	160.79	160.79	160.94	160.95	160.75	160.72
29	160.77	160.57	160.42	160.78	---	161.01	160.81	160.78	160.94	160.94	160.74	160.74
30	160.75	160.57	160.46	160.75	---	161.01	160.83	160.79	160.95	160.90	160.77	160.77
31	160.72	---	160.49	160.73	---	161.04	---	160.80	---	160.89	160.76	---
MEAN	160.80	160.53	160.58	160.70	160.78	160.99	160.94	160.86	160.85	160.95	160.80	160.74

WTR YR 2002 MEAN 160.79 HIGHEST 160.22 NOV. 13, 14, 2001 LOWEST 161.18 APR. 3, 2002



GROUND-WATER LEVELS

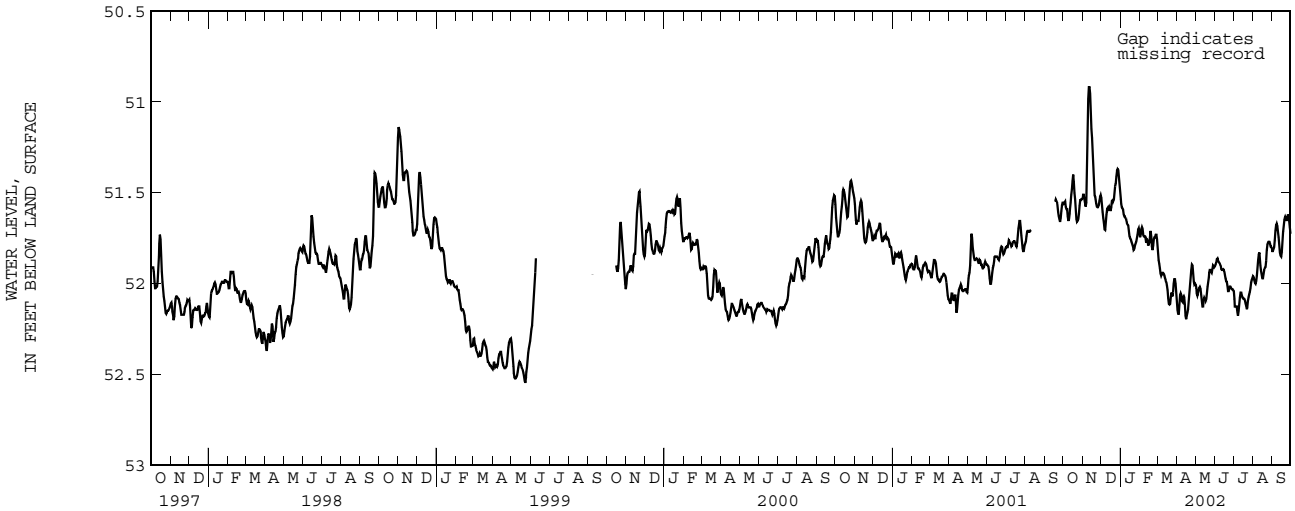
RIO GRANDE DE ARECIBO BASIN--Continued

182737066370900. Local number, 204.
LOCATION.--Lat 18°27'37", long 66°37'09", Hydrologic Unit 21010002, 5.26 mi west of Barceloneta plaza, 1.58 mi north of Hwy 2 km 63.7, and 3.67 mi southwest of Escuela Agustín Balseiro. Name: Gilberto Rivera Well, Arecibo.
AQUIFER.--Aymamón Limestone.
WELL CHARACTERISTICS.--Abandoned unused water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Depth 57.0 ft (17.37 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is 48.0 ft (14.63 m), above mean sea level. Measuring point: Air hole on pump base, 0.50 ft (0.15 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on November 7, 1997. Well is affected by marine tides.
PERIOD OF RECORD.--October 1985 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 50.0 ft (15.2 m), below land-surface datum, May 14, 1986; lowest water level recorded, 53.1 ft (16.2 m), below land-surface datum, January 29, 1995.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51.55	51.54	51.51	51.52	51.73	51.77	52.07	52.00	51.91	52.04	51.96	51.82
2	51.56	51.52	51.55	51.55	51.76	51.83	52.13	52.01	51.90	52.04	51.96	51.83
3	51.56	51.50	51.58	51.57	51.70	51.86	52.16	52.04	51.89	52.13	51.97	51.81
4	51.55	51.52	51.63	51.59	51.70	51.88	52.17	52.07	51.88	52.12	51.99	51.81
5	51.55	51.55	51.65	51.58	51.68	51.90	52.16	52.06	51.85	52.13	52.00	51.79
6	51.61	51.56	51.68	51.61	51.72	51.93	52.08	52.04	51.87	52.12	52.00	51.73
7	51.57	51.59	51.72	51.63	51.74	51.96	52.05	52.03	51.88	52.13	51.97	51.69
8	51.61	51.52	51.69	51.63	51.74	51.95	52.06	52.02	51.88	52.18	51.94	51.67
9	51.65	51.34	51.64	51.63	51.74	51.94	52.07	52.02	51.89	52.17	51.89	51.67
10	51.66	51.04	51.60	51.65	51.74	51.94	52.12	52.04	51.89	52.13	51.85	51.70
11	51.63	50.93	51.58	51.65	51.78	51.94	52.08	52.08	51.91	52.09	51.83	51.73
12	51.60	50.91	51.59	51.68	51.77	51.95	52.07	52.11	51.93	52.06	51.83	51.76
13	51.58	50.93	51.60	51.67	51.74	51.96	52.07	52.14	51.92	52.04	51.88	51.82
14	51.53	50.98	51.58	51.69	51.78	51.98	52.08	52.11	51.93	52.06	51.92	51.84
15	51.49	51.14	51.58	51.73	51.79	51.98	52.15	52.07	51.92	52.07	51.94	51.85
16	51.47	51.16	51.60	51.75	51.78	52.00	52.20	52.08	51.92	52.08	51.96	51.85
17	51.40	51.24	51.60	51.75	51.77	52.02	52.19	52.09	51.94	52.08	51.98	51.80
18	51.40	51.32	51.56	51.76	51.71	52.05	52.16	52.10	51.96	52.08	51.96	51.73
19	51.48	51.38	51.53	51.78	51.71	52.11	52.16	52.07	51.98	52.09	51.93	51.70
20	51.52	51.50	51.55	51.78	51.77	52.11	52.12	52.03	51.99	52.10	51.92	51.66
21	51.55	51.53	51.55	51.80	51.82	52.12	52.06	52.00	51.99	52.12	51.91	51.64
22	51.62	51.52	51.53	51.81	51.81	52.10	52.02	51.98	52.03	52.13	51.91	51.63
23	51.67	51.55	51.47	51.82	51.77	52.05	51.98	51.95	52.05	52.15	51.84	51.63
24	51.65	51.57	51.46	51.80	51.74	52.05	51.95	51.93	52.03	52.11	51.79	51.65
25	51.66	51.58	51.44	51.78	51.75	52.06	51.90	51.92	52.02	52.08	51.78	51.66
26	51.63	51.58	51.38	51.78	51.74	52.08	51.89	51.93	52.01	52.07	51.77	51.62
27	51.60	51.58	51.38	51.76	51.72	52.02	51.91	51.94	52.02	52.05	51.77	51.62
28	51.54	51.56	51.36	51.74	51.74	51.98	51.97	51.94	52.03	52.04	51.77	51.64
29	51.54	51.53	51.39	51.72	---	51.97	52.01	51.90	52.03	52.01	51.79	51.67
30	51.54	51.52	51.44	51.69	---	51.98	52.00	51.90	52.03	51.98	51.80	51.71
31	51.53	---	51.48	51.70	---	52.02	---	51.91	---	51.98	51.79	---
MEAN	51.56	51.39	51.55	51.70	51.75	51.98	52.07	52.02	51.95	52.09	51.89	51.72

WTR YR 2002 MEAN 51.81 HIGHEST 50.91 NOV. 11, 12, 2001 LOWEST 52.25 APR. 16, 18, 2002



GROUND-WATER LEVELS

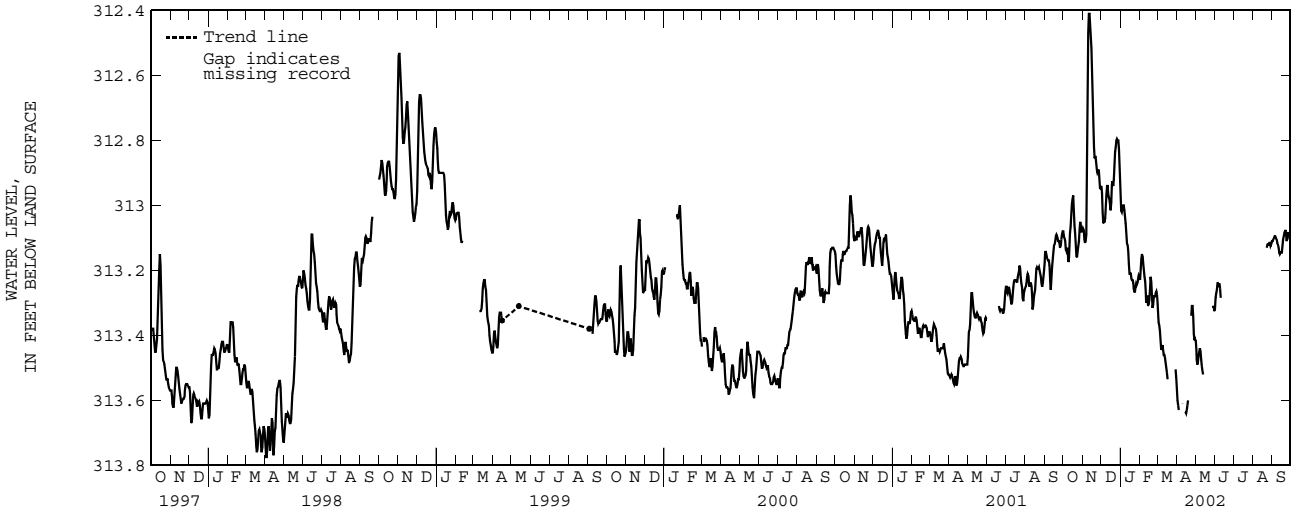
RIO GRANDE DE ARECIBO BASIN--Continued

182616066364100. Local number, 1052.
LOCATION.--Lat 18°26'16", long 66°36'41", Hydrologic Unit 21010002, 3.00 west of the intersection of Hwy 140 with Hwy 2 at Cruce Dávila, 0.32 mi southwest of Hwy 22, 0.15 mi north of Hwy 2, and 0.22 mi northeast of the intersection of Hwy 2 with Hwy 639. Name: Encantada Well, Arecibo.
AQUIFER.--Aguada Limestone.AQUIFER.--Tertiary Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 20 in (0.51 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 312 ft (95.0 m), above mean sea level, from topographic map. Measuring point: On shelter floor 3.40 ft (1.04 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), installed on August 23, 1996, replaced by an Electronic Data Logger (EDL), installed on January 13, 1997, removed on September 30, 2002. Well is affected by marine tides.
PERIOD OF RECORD.--August 23, 1996 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 312.23 ft (95.2 m), below land-surface datum, September 13, 14, 1996; lowest water level recorded, 313.84 ft (95.7 m), below land-surface datum, April 3, 1998.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	313.07	313.08	312.94	312.97	313.23	313.28	313.54	313.41	313.34	---	---	313.11
2	313.09	313.07	312.94	313.00	313.23	313.33	313.59	313.42	313.30	---	---	313.11
3	313.10	313.07	312.98	313.03	313.17	313.36	313.61	313.47	313.27	---	---	313.11
4	313.10	313.08	313.06	313.01	313.16	313.36	313.62	313.48	313.27	---	---	313.10
5	313.12	313.13	313.05	313.01	313.14	313.38	313.64	313.50	313.25	---	---	313.10
6	313.15	313.10	313.05	312.99	313.17	313.39	---	313.46	313.23	---	---	313.09
7	313.13	313.12	313.05	313.01	313.19	313.44	---	313.46	313.25	---	---	313.10
8	313.13	313.06	313.03	313.02	313.21	313.45	---	313.44	313.24	---	---	313.10
9	313.16	312.90	312.98	313.05	313.23	313.43	---	313.44	313.24	---	---	313.11
10	313.19	312.52	312.95	313.06	313.24	313.43	313.62	313.46	313.27	---	---	313.12
11	313.13	312.42	312.93	313.11	313.30	313.46	313.60	313.49	313.30	---	---	313.12
12	313.10	312.40	312.95	313.12	313.30	313.46	---	313.50	---	---	---	313.14
13	313.07	312.42	312.97	313.12	313.26	313.46	313.55	313.52	---	---	---	313.15
14	313.06	312.47	312.98	313.16	313.30	313.48	---	313.52	---	---	---	313.15
15	313.00	312.50	312.98	313.20	313.32	313.49	313.63	---	---	---	---	313.14
16	312.99	312.53	313.01	313.22	313.29	313.51	313.64	---	---	---	---	313.15
17	312.97	312.62	313.02	313.20	313.29	313.52	313.64	---	---	---	---	313.14
18	312.97	312.71	312.96	313.22	313.23	313.55	313.62	---	---	---	---	313.11
19	313.05	312.79	312.91	313.23	313.21	---	313.61	---	---	---	---	313.10
20	313.07	312.85	312.94	313.23	313.26	---	313.59	---	---	---	---	313.09
21	313.10	312.86	312.94	313.23	313.30	---	---	---	---	---	---	313.08
22	313.14	312.84	312.90	313.25	313.33	---	---	---	---	---	---	313.08
23	313.17	312.86	312.84	313.26	313.28	---	---	---	---	---	313.14	313.07
24	313.15	312.88	312.83	313.27	313.28	---	313.37	---	---	---	313.12	313.10
25	313.13	312.90	312.81	313.26	313.28	---	313.31	---	---	---	313.12	313.12
26	313.12	312.90	312.79	313.24	313.28	---	313.31	---	---	---	313.12	313.09
27	313.10	312.89	312.80	313.24	313.26	---	313.31	---	---	---	313.12	313.08
28	313.05	312.89	312.80	313.25	313.27	---	313.37	---	---	---	313.11	313.09
29	313.05	312.95	312.80	313.23	---	---	313.42	313.32	---	---	313.12	313.10
30	313.08	312.95	312.85	313.22	---	313.49	313.41	313.31	---	---	313.13	313.11
31	313.08	---	312.91	313.21	---	313.52	---	313.31	---	---	313.11	---
MEAN	313.09	312.83	312.93	313.15	313.25	---	---	---	---	---	---	313.11

WTR YR 2002 MEAN 313.16 HIGHEST 312.40 NOV. 12, 2001 LOWEST 313.71 APR. 15, 2002



GROUND-WATER LEVELS

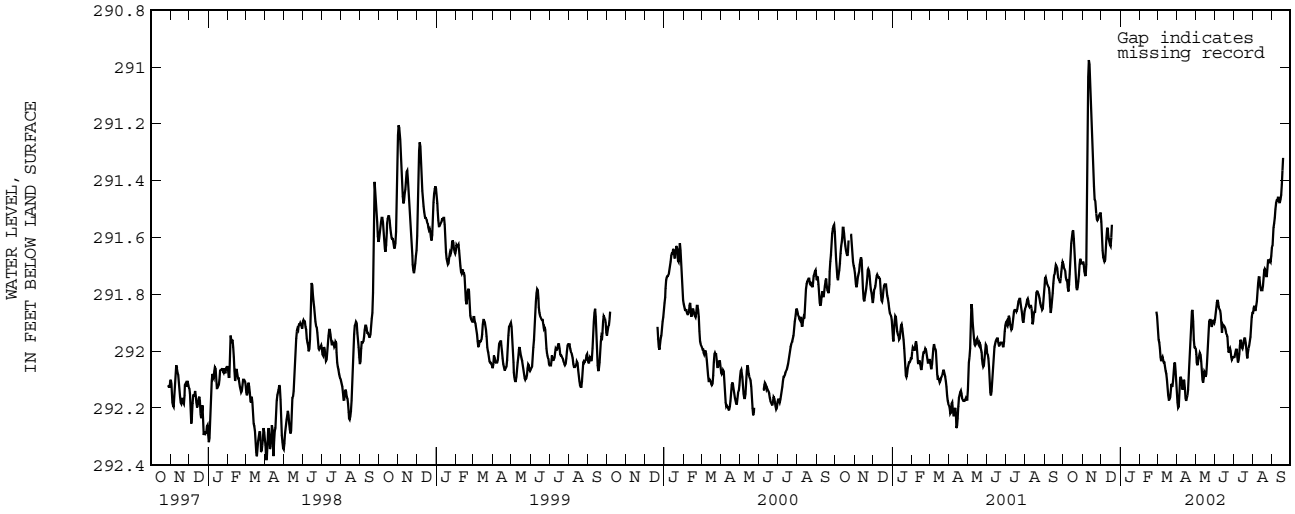
RIO GRANDE DE ARECIBO BASIN--Continued

182626066345100. Local number, 1053.
LOCATION.--Lat 18°26'26", long 66°34'51", Hydrologic Unit 21010002, 1.45 mi south of Hwy 682, 1.15 mi northwest of the intersection of Hwy 140 with Hwy 2 (Cruce Dávila), 0.48 mi north of Hwy 2, and approximately 100 feet south of Hwy 22. Name: Tiburones Well, Barceloneta.
AQUIFER.--Aymamón Limestone.
WELL CHARACTERISTICS.--Drilled water-table well, diameter 12 in (0.30 m). Depth 320 ft (97.5 m).
INSTRUMENTATION.--Pressure transducer with integrated electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 295 ft (89.9 m), above mean sea level, from topographic map. Measuring point: Hole on floor of instrument shelter, 3.15 ft (0.96 m), above land-surface datum. Prior October 27, 1997, top of 4 in (0.10 m) PVC cap, above shelter floor, 3.40 ft (1.04 m), above land-surface datum.
REMARKS.--Recording observation well. Electronic Data Logger (EDL), re-installed on October 27, 1997. Well is affected by marine tides.
PERIOD OF RECORD.--May 14, 1996 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 290.88 ft (88.7 m), below land-surface datum, September 13, 14, 1996; lowest water level measured, 292.34 ft (89.1 m), below land-surface datum, April 13, 14, 2001.

Depth to water level, feet below land surface, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	291.68	291.69	291.52	---	---	291.89	292.13	291.99	291.90	292.02	291.86	291.63
2	291.70	291.69	291.57	---	---	291.93	292.17	291.99	291.88	292.02	291.87	291.63
3	291.71	291.68	291.62	---	---	291.96	292.19	292.03	291.86	292.02	291.83	291.58
4	291.71	291.71	291.67	---	---	291.96	292.21	292.05	291.84	292.01	291.85	291.55
5	291.72	291.73	291.67	---	---	291.98	292.18	292.05	291.82	292.00	291.86	291.55
6	291.76	291.73	291.68	---	---	292.00	292.12	292.03	291.82	291.99	291.85	291.51
7	291.74	291.74	291.69	---	---	292.04	292.08	292.02	291.84	292.00	291.83	291.49
8	291.76	291.65	291.67	---	---	292.03	292.10	292.01	291.85	292.04	291.82	291.47
9	291.79	291.42	291.62	---	---	292.02	292.10	292.00	291.85	292.04	291.77	291.47
10	291.79	291.09	291.58	---	---	292.02	292.14	292.02	291.86	292.02	291.75	291.47
11	291.74	290.98	291.56	---	---	292.04	292.13	292.05	291.88	292.00	291.73	291.45
12	291.72	290.97	291.57	---	---	292.04	292.10	292.09	291.93	291.96	291.75	291.47
13	291.69	291.01	291.60	---	---	292.04	292.10	292.11	291.94	291.96	291.76	291.48
14	291.63	291.05	291.61	---	---	292.07	292.11	292.11	291.90	291.98	291.79	291.47
15	291.61	291.12	291.62	---	---	292.07	292.15	292.08	291.91	291.99	291.78	291.46
16	291.59	291.16	291.63	---	---	292.09	292.18	292.06	291.91	291.99	291.79	291.44
17	291.57	291.23	291.63	---	---	292.11	292.17	292.09	291.91	291.97	291.78	291.39
18	291.58	291.31	291.57	---	---	292.14	292.16	292.09	291.92	291.96	291.76	291.34
19	291.63	291.38	291.54	---	---	292.17	292.15	292.07	291.93	291.95	291.72	291.30
20	291.68	291.46	---	---	---	292.17	292.12	292.02	291.94	291.96	291.71	---
21	291.71	291.47	---	---	---	292.17	292.07	291.97	291.94	291.98	291.71	---
22	291.76	291.47	---	---	---	292.16	292.02	291.93	291.96	292.00	291.72	---
23	291.79	291.50	---	---	---	292.12	291.97	291.90	292.01	292.03	291.75	---
24	291.78	291.53	---	---	---	292.11	291.93	291.89	292.00	292.02	291.72	---
25	291.77	291.54	---	---	---	292.13	291.87	291.89	291.99	291.99	291.69	---
26	291.74	291.54	---	---	---	292.12	291.85	291.89	291.99	291.99	291.67	---
27	291.72	291.53	---	---	291.86	292.09	291.86	291.91	292.01	291.97	291.69	---
28	291.67	291.52	---	---	291.86	292.06	291.93	291.92	292.03	291.96	291.68	---
29	291.68	291.52	---	---	---	292.03	291.99	291.89	292.03	291.94	291.68	---
30	291.69	291.51	---	---	---	292.05	291.98	291.89	292.02	291.89	291.69	---
31	291.69	---	---	---	---	292.09	---	291.90	---	291.87	291.64	---
MEAN	291.70	291.43	---	---	---	292.06	292.08	292.00	291.92	291.98	291.76	---

WTR YR 2002 MEAN 291.82 HIGHEST 290.95 NOV. 11, 2001 LOWEST 292.27 APR. 4, 5, 2002



GROUND-WATER LEVELS

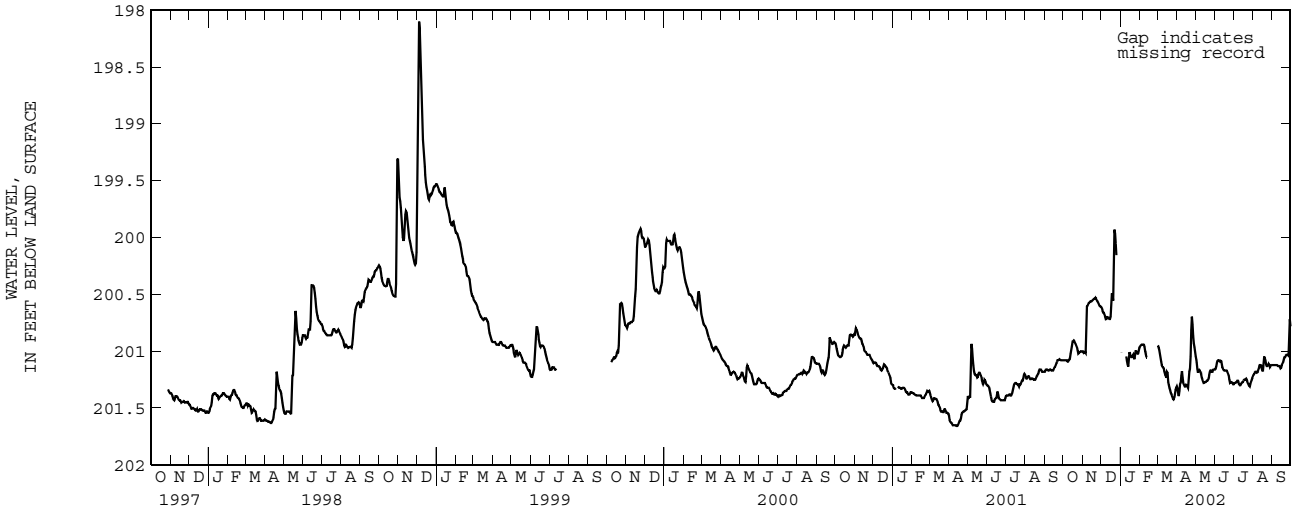
RIO GRANDE DE ARECIBO BASIN--Continued

182603066333601. Local number, 1054.
LOCATION.--Lat 18°26'03", long 66°33'36", Hydrologic Unit 21010002, 0.70 mi south of the intersection of Hwy 140 with Hwy 22, 0.35 mi east of the intersection of Hwy 140 with Hwy 2, and 1.35 mi northeast of the intersection of Hwy 140 with Hwy 666. Name: Florida Afuera 2 Well, Barceloneta.
AQUIFER.--Aymamón Limestone.
WELL CHARACTERISTICS.--Drilled water-table well, diameter 16 in (0.41 m), cased 0-270 ft (0-82.3 m), screened 200-270 ft (61.0-82.3 m). Depth 270 ft (82.3 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 213.3 ft (65.0 m), above mean sea level from topographic map. Measuring point: Shelter floor on top of the 4 in (0.10 m) casing, 4.00 ft (1.22 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), installed on August 23, 1996, replaced by an Electronic Data Logger (EDL), installed on January 17, 1997.
PERIOD OF RECORD.--August 23, 1996 to September 30, 2002, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 198.03 ft (60.36 m), below land-surface datum, December 4, 5, 1998; lowest water level recorded, 201.67 ft (61.5 m), below land-surface datum, April 13, 14, 15, 2001.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	201.08	201.00	200.61	---	200.97	200.95	201.31	201.03	201.16	201.30	201.23	201.12
2	201.08	201.00	200.61	---	200.95	200.95	201.31	201.06	201.16	201.28	201.21	201.12
3	201.08	201.02	200.63	201.02	200.95	200.96	201.35	201.09	201.15	201.28	201.20	201.12
4	201.08	201.01	200.66	201.00	200.94	200.98	201.38	201.11	201.12	201.28	201.20	201.12
5	201.08	201.01	200.66	---	200.94	201.00	201.41	201.20	201.09	201.28	201.18	201.12
6	201.08	201.00	200.66	---	200.94	201.04	201.29	201.18	201.08	201.27	201.18	201.12
7	201.08	201.03	200.69	---	200.94	201.07	201.29	201.16	201.08	201.27	201.18	201.12
8	201.08	200.61	200.71	---	200.95	201.11	201.27	201.17	201.08	201.25	201.20	201.12
9	201.10	200.60	200.73	---	200.98	201.13	201.16	201.17	201.09	201.27	201.17	201.12
10	201.08	200.60	200.70	201.03	201.02	201.14	201.19	201.19	201.09	201.28	201.17	201.13
11	201.07	200.58	200.70	201.06	201.03	201.14	201.27	201.22	201.08	201.30	201.14	201.13
12	201.07	200.57	200.70	201.11	201.05	201.16	201.28	201.25	201.10	201.30	201.12	201.13
13	201.05	200.57	200.71	201.12	201.05	201.20	201.30	201.25	201.14	201.30	201.12	201.13
14	200.99	200.56	200.71	201.15	201.05	201.20	201.29	201.28	201.14	201.28	201.12	201.14
15	200.98	200.56	200.72	201.00	---	201.23	201.33	201.28	201.16	201.27	201.13	201.16
16	200.93	200.56	200.71	201.02	---	201.24	201.29	201.27	201.17	201.27	201.17	201.13
17	200.91	200.55	200.68	201.03	---	201.12	201.30	201.27	201.17	201.27	201.17	201.11
18	200.91	200.55	200.49	201.05	---	201.26	201.30	201.27	201.17	201.25	201.17	201.11
19	200.90	200.54	200.49	201.05	---	201.28	201.32	201.26	201.17	201.25	201.04	201.09
20	200.92	200.54	200.52	201.05	---	201.32	201.32	201.26	201.17	201.25	201.05	201.06
21	200.93	200.54	200.59	201.03	---	201.33	201.19	201.26	201.17	201.24	201.07	201.05
22	200.94	200.53	199.92	201.03	---	201.36	201.17	201.24	201.19	201.24	201.10	201.05
23	200.96	200.53	199.94	201.06	---	201.37	201.14	201.23	201.20	201.26	201.13	201.05
24	200.97	200.55	199.99	201.08	---	201.38	200.95	201.19	201.22	201.27	201.13	201.03
25	201.02	200.55	200.12	201.00	---	201.39	200.68	201.17	201.28	201.29	201.13	201.03
26	201.02	200.57	200.19	201.00	---	201.41	200.71	201.17	201.27	201.29	201.11	201.03
27	201.01	200.57	---	201.00	---	201.43	200.82	201.17	201.27	201.32	201.11	201.04
28	201.01	200.59	---	201.02	---	201.42	200.91	201.19	201.27	201.30	201.14	201.04
29	201.00	200.60	---	201.02	---	201.40	200.95	201.17	201.28	201.27	201.14	200.70
30	201.00	200.61	---	201.02	---	201.35	200.98	201.16	201.28	201.27	201.12	200.74
31	201.00	---	---	200.97	---	201.33	---	201.16	---	201.24	201.12	---
MEAN	201.01	200.67	---	---	---	201.21	201.18	201.20	201.17	201.27	201.14	201.07

WTR YR 2002 MEAN 201.05 HIGHEST 199.77 DEC. 22, 2001 LOWEST 201.44 MAR. 28, 2002



GROUND-WATER LEVELS

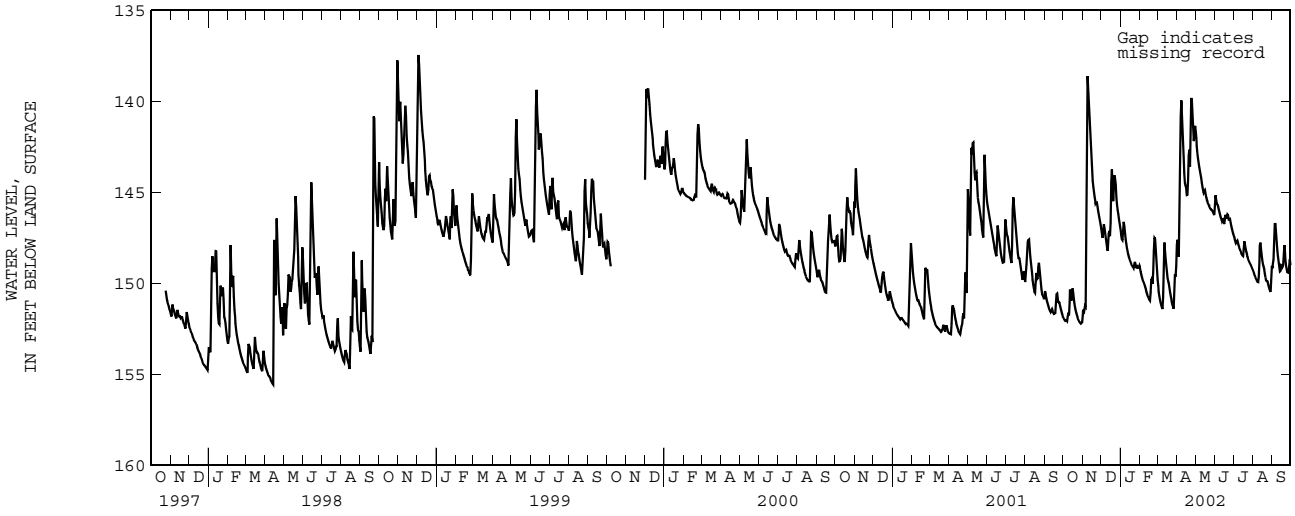
RIO GRANDE DE ARECIBO BASIN--Continued

182209066340600. Local number, 1057.
LOCATION.--Lat 18°22'09", long 66°34'06", Hydrologic Unit 21010002, 0.20 north of the intersection of Hwy 140 with Hwy 642, 1.15 mi south of the intersection of Hwy 140 with Hwy 641, and approximately 100 ft west of Hwy 140. Name: PRASA Florida 1 Well, Florida.
AQUIFER.--Cibao Formation.
WELL CHARACTERISTICS.--Drilled water-table well, diameter 12 in (0.30 m), Depth 200 ft (61.0 m).
INSTRUMENTATION.--Pressure transducer with integrated data logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 607 ft (185 m), above mean sea level from topographic map. Measuring point: Hole in concrete base 1.10 ft (0.33 m), above land-surface datum. Prior to September 20, 1996, shelter floor 4.00 ft (1.22 m), above land-surface datum.
REMARKS.--Recording observation well. Electronic Data Logger (EDL), installed on August 12, 1996.
PERIOD OF RECORD.--August 12, 1996 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 137.07 ft (41.8 m), below land-surface datum, November 8, 2001; lowest water level recorded, 157.63 ft (48.0 m), below land-surface datum, August 14, 1996.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	151.82	152.18	146.91	147.03	149.08	149.63	148.29	141.46	146.30	147.34	149.22	149.03
2	151.90	151.32	147.18	147.25	149.29	149.99	147.44	141.80	145.01	147.44	149.32	149.34
3	151.96	151.59	147.39	147.47	149.46	150.29	147.75	142.20	145.29	147.55	149.43	148.51
4	152.03	151.79	147.61	147.65	149.60	150.56	148.30	142.66	145.59	147.66	149.52	148.87
5	152.06	151.09	146.65	147.59	149.74	150.79	148.76	143.02	145.64	147.76	149.63	147.00
6	151.98	151.39	146.86	146.56	149.86	150.96	143.40	143.24	145.69	147.84	149.71	146.46
7	152.05	151.21	147.10	146.68	149.89	151.12	142.33	143.50	145.87	147.59	149.80	147.03
8	152.10	142.47	147.40	147.08	150.01	151.25	139.39	143.71	146.01	147.74	149.88	147.55
9	151.53	138.20	147.67	147.42	150.14	151.36	140.49	143.88	146.15	147.86	149.96	147.99
10	151.70	139.00	147.93	147.72	150.26	151.46	141.68	144.09	146.30	147.97	149.93	148.39
11	151.83	140.31	148.16	147.95	150.36	150.12	142.52	144.32	146.43	148.06	149.32	148.68
12	150.18	141.35	148.27	148.15	150.48	147.54	143.11	144.60	146.52	148.15	148.33	148.95
13	150.51	142.10	147.50	148.33	150.59	147.98	143.65	144.80	146.63	148.26	147.55	149.22
14	150.86	142.63	147.04	148.49	150.68	148.46	144.21	144.95	146.43	148.36	147.95	149.48
15	151.05	143.11	147.20	148.61	150.76	148.87	144.74	145.11	146.56	148.43	148.28	149.15
16	150.21	143.64	147.62	148.70	150.85	149.23	144.52	144.76	146.69	148.49	148.60	148.88
17	150.33	144.14	145.70	148.78	150.92	149.57	144.97	145.01	146.80	148.52	148.85	149.21
18	150.69	144.59	143.17	148.89	150.97	149.85	145.34	145.20	146.16	147.59	149.07	149.00
19	151.00	144.81	144.32	148.97	150.05	149.91	144.92	145.35	146.31	147.79	149.10	149.05
20	151.24	145.11	145.23	149.05	149.57	150.16	143.72	145.48	146.51	148.00	149.36	147.72
21	151.44	145.36	145.73	149.09	149.94	150.38	142.18	145.57	146.27	148.18	149.59	148.09
22	151.58	145.56	143.72	149.13	150.11	150.61	143.12	145.65	146.15	148.34	149.77	148.51
23	151.71	145.69	144.40	149.17	148.70	150.79	144.06	145.71	146.38	148.46	149.93	148.85
24	151.84	145.47	144.13	148.75	147.75	150.95	140.21	145.79	146.60	148.57	149.80	149.15
25	151.94	145.66	144.99	148.92	147.23	151.11	139.40	145.86	146.35	148.66	149.96	149.26
26	152.03	145.89	145.53	149.07	147.85	151.22	140.60	145.92	146.56	148.75	150.11	149.54
27	152.09	146.14	145.84	149.18	148.58	151.35	141.33	145.96	146.75	148.83	150.24	149.27
28	152.16	146.28	146.07	149.11	149.12	151.45	141.97	145.98	146.92	148.90	150.36	149.60
29	152.20	146.52	146.33	149.03	---	149.58	142.40	146.04	147.07	148.97	150.41	148.53
30	152.23	146.66	146.57	149.23	---	149.42	141.20	146.11	147.21	149.05	150.52	148.83
31	152.11	---	146.80	149.02	---	149.85	---	146.19	---	149.13	149.06	---
MEAN	151.56	145.71	146.36	148.32	149.71	150.19	143.53	144.64	146.31	148.20	149.44	148.64

WTR YR 2002 MEAN 147.72 HIGHEST 137.07 NOV. 8, 2001 LOWEST 152.23 OCT. 30, 2001



GROUND-WATER LEVELS

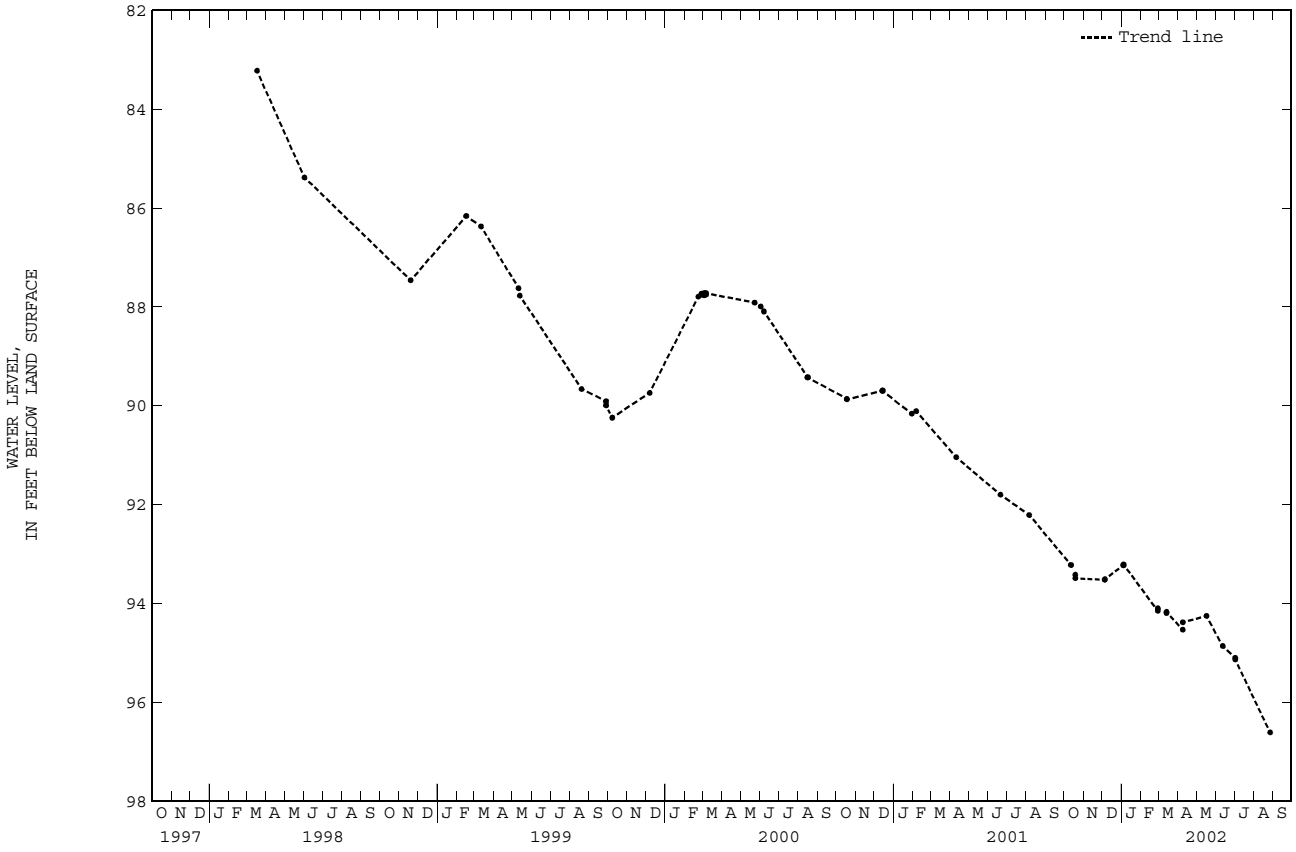
RIO GRANDE DE ARECIBO BASIN--Continued

182544066341500. Local number, 205.
LOCATION.--Lat 18°25'44", long 66°34'15", Hydrologic Unit 21010002, 300 ft (91.4 m) west of Hwy 140, 0.50 mi southwest of Cruce Dávila, and 1.30 mi southwest of intersection of Hwy 140 with Hwy 22. Name: NC-5 Cruce Dávila Well, Barceloneta.
AQUIFER.--Montebello/Cibao Limestone.
WELL CHARACTERISTICS.--Deep test well, diameter 2.5 in (0.06 m) 0-1,070 ft (0-326.1 m), open screened 1,070-2,564 ft (326.1-781.5 m). Depth 2,564 ft (781.5 m).
DATUM.--Elevation of land-surface datum is about 312 ft (95.1 m), above mean sea level, from topographic map. Measuring point: Top of black PVC pipe, 1.25 ft (0.38 m), above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--December 1986 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 9.16 ft (2.79 m), below land-surface datum, August 18, 1987; lowest water level measured, 96.61 ft (29.45 m), below land-surface datum, August 27, 2002.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 12	93.22	DEC 05	93.51	FEB 28	94.15	MAR 14	94.17	MAY 17	94.25	JUL 02	95.13
OCT 19	93.42	JAN 04	93.23	28	94.10	APR 09	94.53	JUN 12	94.86	AUG 27	96.61
19	93.49	04	93.21	MAR 14	94.19	09	94.38	JUL 02	95.10	27	96.53
DEC 05	93.52										

WATER YEAR 2002 HIGHEST 93.21 JAN. 4, 2002 LOWEST 96.61 AUG. 27, 2002



GROUND-WATER LEVELS

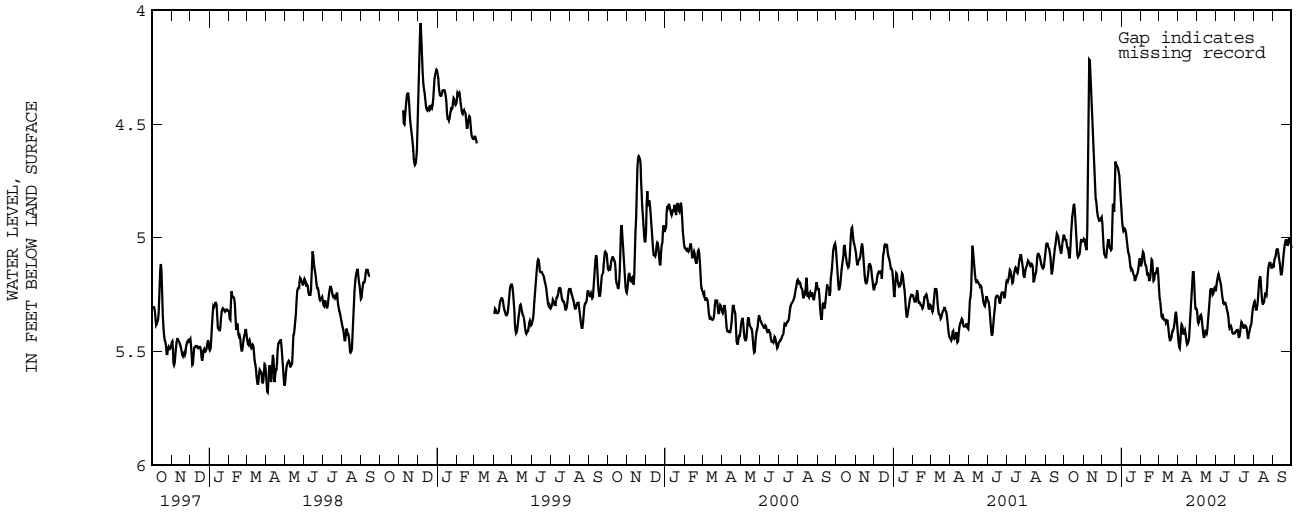
RIO GRANDE DE MANATI BASIN

182757066325600. Local number, 206.
LOCATION.--Lat 18°27'57", long 66°32'56", Hydrologic Unit 21010002, 0.84 mi northwest of Barceloneta plaza, 0.64 mi west of Central Plazuela, and 1.96 mi southeast of Escuela Agustín Balseiro. Name: Plazuela 2 Well, Barceloneta.
AQUIFER.--Aymamón Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 16 in (0.41 m), cased 16 in (0.41 m) 0-85.0 ft (0-25.9 m) open hole 85.0-101 ft (25.9-30.8 m). Depth 101 ft (30.8 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 7.00 ft (2.1 m), above mean sea level, from topographic map. Measuring point: Hole in horizontal steel plate, 1.30 ft (0.40 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on November 7, 1997. Well is affected by marine tides.
PERIOD OF RECORD.--October 1985 to September 30, 2002, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 3.75 ft (1.14 m), below land-surface datum, September 11, 1988; lowest water level recorded, 6.03 ft (1.84 m), below land-surface datum, September 15, 1995.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.98	5.02	4.91	4.89	5.12	5.17	5.40	5.31	5.24	5.42	5.29	5.13
2	5.00	5.01	4.96	4.92	5.13	5.22	5.44	5.32	5.22	5.42	5.28	5.13
3	5.01	5.00	5.01	4.94	5.09	5.26	5.47	5.35	5.19	5.41	5.28	5.10
4	5.01	5.02	5.07	4.97	5.07	5.27	5.49	5.38	5.18	5.41	5.31	5.09
5	5.01	5.04	5.07	4.97	5.05	5.29	5.48	5.37	5.16	5.41	5.32	5.09
6	5.05	5.05	5.08	4.96	5.08	5.33	5.42	5.36	5.16	5.40	5.31	5.06
7	5.04	5.06	5.09	4.96	5.10	5.36	5.38	5.35	5.18	5.41	5.29	5.05
8	5.05	4.85	5.08	4.97	5.12	5.34	5.38	5.34	5.19	5.44	5.26	5.05
9	5.09	4.48	5.04	4.99	5.12	5.35	5.39	5.34	5.20	5.44	5.20	5.05
10	5.09	4.23	5.02	5.02	5.13	5.36	5.43	5.36	5.22	5.42	5.18	5.08
11	5.05	4.20	5.00	5.04	5.16	5.36	5.42	5.39	5.25	5.40	5.17	5.10
12	5.00	4.24	5.02	5.07	5.17	5.36	5.40	5.42	5.27	5.37	5.17	5.11
13	4.98	4.31	5.04	5.07	5.14	5.36	5.41	5.44	5.28	5.37	5.22	5.16
14	4.91	4.38	5.04	5.09	5.18	5.39	5.42	5.44	5.29	5.38	5.26	5.16
15	4.90	4.44	5.05	5.12	5.19	5.35	5.44	5.41	5.29	5.39	5.29	5.16
16	4.87	4.50	5.06	5.14	5.18	5.37	5.47	5.41	5.28	5.40	5.29	5.13
17	4.85	4.57	5.04	5.14	5.16	5.39	5.47	5.42	5.29	5.39	5.29	5.10
18	4.85	4.66	4.85	5.13	5.11	5.42	5.46	5.42	5.30	5.38	5.28	5.06
19	4.91	4.73	4.85	5.15	5.08	5.45	5.45	5.39	5.31	5.39	5.25	5.04
20	4.96	4.81	4.88	5.16	5.12	5.45	5.43	5.35	5.33	5.39	5.24	5.02
21	5.00	4.84	4.89	5.16	5.18	5.45	5.38	5.31	5.33	5.41	5.25	5.01
22	5.06	4.84	4.64	5.18	5.20	5.44	5.34	5.28	5.37	5.43	5.25	5.01
23	5.09	4.87	4.69	5.19	5.17	5.41	5.28	5.24	5.40	5.45	5.18	5.01
24	5.08	4.90	4.67	5.18	5.15	5.41	5.23	5.23	5.40	5.43	5.14	5.03
25	5.08	4.91	4.69	5.17	5.16	5.41	5.16	5.22	5.39	5.41	5.12	5.04
26	5.07	4.92	4.68	5.16	5.15	5.40	5.14	5.23	5.39	5.41	5.11	5.01
27	5.05	4.93	4.71	5.16	5.13	5.38	5.16	5.24	5.41	5.38	5.11	5.00
28	5.00	4.92	4.71	5.14	5.13	5.36	5.23	5.26	5.42	5.39	5.11	5.01
29	5.01	4.92	4.74	5.12	---	5.32	5.31	5.23	5.42	5.36	5.13	5.01
30	5.02	4.91	4.78	5.09	---	5.33	5.31	5.22	5.42	5.32	5.14	5.04
31	5.01	---	4.83	5.09	---	5.37	---	5.22	---	5.31	5.11	---
MEAN	5.00	4.75	4.91	5.08	5.13	5.36	5.37	5.33	5.29	5.40	5.22	5.07

WTR YR 2002 MEAN 5.16 HIGHEST 4.19 NOV. 10, 2001 LOWEST 5.54 APR. 3, 4, 5, 2002



GROUND-WATER LEVELS

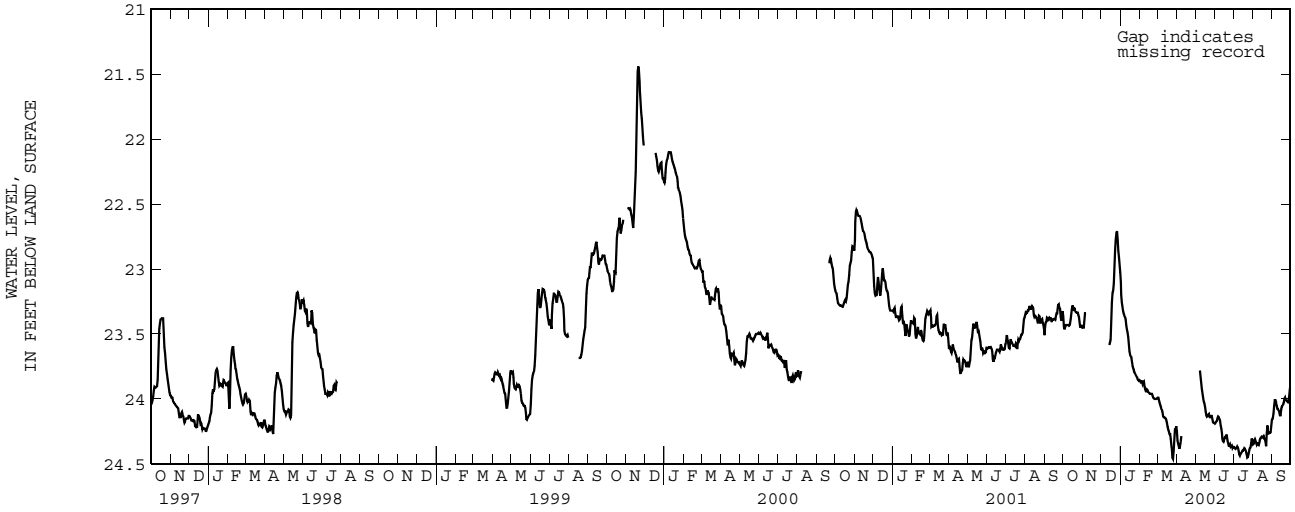
RIO GRANDE DE MANATI BASIN--Continued

182549066304300. Local number, 166.
LOCATION.--Lat 18°25'49", long 66°30'43", Hydrologic Unit 21010002, 0.95 mi east of the Río Grande de Manatí Hwy 2 bridge, 0.40 mi southwest of Central Monserrate, 1.07 mi east of the intersection of Hwy 666 with Hwy 2, 1.20 mi west of the intersection of Hwy 685 with Hwy 2, 0.01 mi north of Hwy 2. Name: PRASA 166 USGS Observation Manatí Well, Manatí.
AQUIFER.--Alluvial deposits.
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 (0-42.7 m), slotted 80.0-90.0 ft (24.7-27.4 m), and 130-140 ft (39.6-42.7 m). Depth 101 ft (30.8 m).
INSTRUMENTATION.--Pressure transducer with integrated data logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 29.5 ft (9.00 m), above mean-sea level, from topographic map. Measuring point: A hole in the side of the 20 in (0.51 m) diameter well casing, 1.65 ft (0.50 m) above land-surface datum. Prior May 31, 1996, top of 14 in (0.36 m) casing, 0.80 ft (0.24 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), installed on May 31, 1996. Formerly published as 182542066305200. From September 9, 1998, monthly measurements only. Electronic Data Logger (EDL), installed on March 29, 1999, removed on September 30, 2002. Station was flooded by Río Grande de Manatí on September 1998 and November 2001.
PERIOD OF RECORD.--January 1982 to December 1984, discontinued, May 31, 1996 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 21.38 ft (6.52 m), below land-surface datum, November 21, 1999; lowest water level measured, 26.36 ft (8.04 m), below land-surface datum, February 3, 1983.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.31	23.45	---	23.04	23.85	23.99	24.20	---	24.19	24.36	24.35	24.15
2	23.42	23.45	---	23.16	23.87	23.99	24.29	---	24.19	24.38	24.35	24.16
3	23.47	23.45	---	23.24	23.87	23.99	24.35	---	24.18	24.37	24.34	24.13
4	23.46	23.45	---	23.27	23.86	24.01	24.34	---	24.17	24.39	24.30	24.09
5	23.43	23.34	---	23.31	23.87	24.03	24.39	---	24.17	24.38	24.32	24.02
6	23.43	23.34	---	23.34	23.90	24.05	24.38	---	24.13	24.38	24.33	24.00
7	23.43	23.34	---	23.35	23.84	24.06	24.34	---	24.14	24.37	24.35	24.02
8	23.43	---	---	23.37	23.89	24.08	24.32	23.76	24.14	24.36	24.36	24.04
9	23.43	---	---	23.37	23.92	24.08	24.25	23.80	24.16	24.39	24.33	24.07
10	23.43	---	---	23.41	23.93	24.12	---	23.85	24.18	24.41	24.37	24.08
11	23.44	---	---	23.46	23.95	24.14	---	23.90	24.23	24.44	24.34	24.07
12	23.42	---	---	23.47	23.93	24.14	---	23.94	24.23	24.43	24.33	24.10
13	23.42	---	---	23.51	23.92	24.14	---	23.97	24.30	24.41	24.31	24.10
14	23.36	---	23.60	23.54	23.94	24.15	---	24.01	24.31	24.42	24.30	24.15
15	23.33	---	23.57	23.62	23.95	24.15	---	24.03	24.34	24.40	24.29	24.10
16	23.28	---	23.56	23.65	23.95	24.18	---	24.04	24.32	24.40	24.29	24.06
17	23.28	---	23.53	23.67	23.96	24.19	---	24.08	24.30	24.40	24.30	24.06
18	23.32	---	23.30	23.67	23.96	24.24	---	24.11	24.29	24.38	24.28	24.05
19	23.30	---	23.21	23.70	23.96	24.23	---	24.14	24.30	24.38	24.29	24.04
20	23.31	---	23.16	23.74	23.96	24.27	---	24.13	24.26	24.39	24.32	24.02
21	23.33	---	23.17	23.76	23.96	24.27	---	24.13	24.30	24.40	24.30	23.98
22	23.33	---	23.05	23.76	23.99	24.27	---	24.11	24.33	24.43	24.36	24.00
23	23.34	---	22.91	23.79	23.99	24.35	---	24.12	24.35	24.44	24.37	24.00
24	23.33	---	22.80	23.80	24.00	24.37	---	24.14	24.37	24.46	24.15	24.02
25	23.34	---	22.74	23.80	24.00	24.38	---	24.14	24.35	24.43	24.26	24.01
26	23.37	---	22.71	23.82	24.00	24.52	---	24.14	24.35	24.42	24.27	24.03
27	23.37	---	22.71	23.82	24.00	24.40	---	24.12	24.39	24.38	24.26	24.02
28	23.45	---	22.83	23.84	24.00	24.40	---	24.14	24.34	24.38	24.26	24.00
29	23.45	---	22.89	23.85	---	24.22	---	24.17	24.38	24.37	24.26	23.96
30	23.42	---	22.92	23.86	---	24.25	---	24.19	24.38	24.32	24.25	23.89
31	23.45	---	23.01	23.86	---	24.22	---	24.18	---	24.29	24.17	---
MEAN	23.38	---	---	23.58	23.94	24.19	---	---	24.27	24.39	24.30	24.05

WTR YR 2002 MEAN 23.96 HIGHEST 22.69 DEC. 27, 2001 LOWEST 24.56 MAR. 26, 2002



GROUND-WATER LEVELS

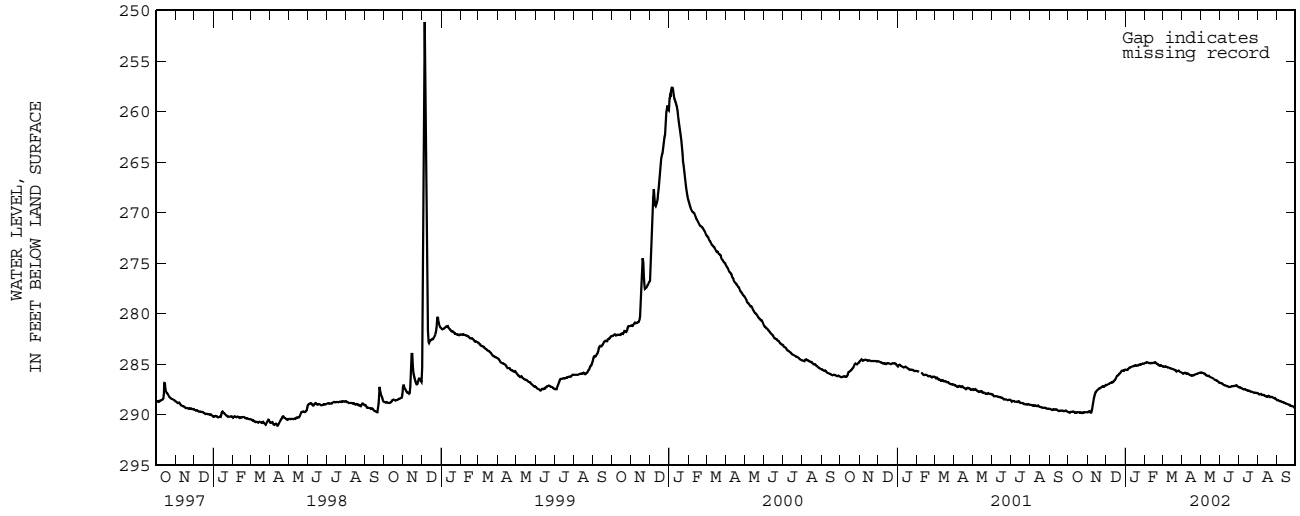
RIO GRANDE DE MANATI BASIN--Continued

182506066280200. Local number, 1076.
LOCATION.--Lat 18°25'06", long 66°28'02", Hydrologic Unit 21010002, 0.72 mi southwest of the intersection of Hwy 686 with Hwy 670, 0.73 mi southeast of intersection of Hwy 149 with Hwy 670, and 0.78 mi northeast of Escuela Sabana Seca. Name: Piezometer Hill 2, Manatí.
AQUIFER.--Aymamón Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), screened 360-410 ft (110-125 m). Depth 410 ft (125 m).
INSTRUMENTATION.--Pressure transducer with integrated electronic data logger--60 minutes interval.
DATUM.--Elevation of land-surface datum is about 312 ft (95.0 m), above mean sea level, from topographic map. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 3.76 ft (1.15 m), above land-surface datum.
REMARKS.--Recording observation well. Electronic Data Logger (EDL), installed on May 28, 1996.
PERIOD OF RECORD.--May 28, 1996 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 249.79 ft (76.1 m), below land-surface datum, December 5, 1998; lowest water level recorded, 293.09 ft (89.3 m), below land-surface datum, September 5, 6, 1996.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	289.71	289.77	287.07	285.52	284.92	285.23	285.83	285.84	286.86	287.26	287.85	288.57
2	289.77	289.71	287.11	285.56	284.89	285.21	285.85	285.83	286.83	287.27	287.89	288.51
3	289.82	289.70	287.03	285.58	284.86	285.23	285.93	285.83	286.91	287.27	288.00	288.59
4	289.78	289.66	287.01	285.54	284.77	285.26	285.95	285.85	286.90	287.33	288.02	288.65
5	289.72	289.64	286.99	285.57	284.84	285.24	285.91	285.89	286.93	287.33	287.95	288.63
6	289.73	289.72	286.92	285.48	284.87	285.24	285.88	285.91	286.95	287.33	287.91	288.63
7	289.72	289.86	286.86	285.33	284.85	285.23	285.86	285.92	287.05	287.42	288.01	288.66
8	289.69	289.71	286.89	285.34	284.87	285.27	285.95	285.92	287.08	287.47	288.07	288.72
9	289.69	289.33	286.81	285.32	284.91	285.30	285.98	285.97	287.08	287.49	288.04	288.73
10	289.70	289.05	286.83	285.30	284.91	285.31	285.92	286.07	287.10	287.50	288.01	288.77
11	289.74	288.54	286.83	285.29	284.87	285.30	285.94	286.14	287.15	287.46	288.06	288.74
12	289.78	288.24	286.80	285.23	284.85	285.37	285.98	286.16	287.18	287.48	288.12	288.78
13	289.83	288.01	286.76	285.20	284.92	285.40	286.01	286.13	287.17	287.53	288.16	288.86
14	289.77	287.80	286.68	285.19	284.89	285.41	286.06	286.12	287.22	287.60	288.14	288.88
15	289.82	287.66	286.57	285.17	284.87	285.43	286.09	286.18	287.24	287.62	288.20	288.91
16	289.76	287.65	286.54	285.10	284.87	285.48	286.13	286.26	287.23	287.61	288.26	288.91
17	289.77	287.56	286.46	285.14	284.80	285.49	286.12	286.30	287.24	287.60	288.21	288.94
18	289.75	287.48	286.19	285.15	284.82	285.49	286.12	286.30	287.26	287.62	288.13	288.96
19	289.74	287.43	286.19	285.10	284.89	285.50	286.12	286.36	287.25	287.69	288.13	288.99
20	289.78	287.38	286.14	285.14	284.99	285.56	286.16	286.39	287.18	287.70	288.23	289.01
21	289.85	287.35	286.04	285.13	284.96	285.57	286.05	286.41	287.16	287.76	288.27	289.02
22	289.80	287.38	286.01	285.11	284.98	285.58	286.04	286.44	287.21	287.71	288.26	289.11
23	289.75	287.33	285.93	285.04	285.07	285.63	286.05	286.45	287.18	287.75	288.23	289.11
24	289.81	287.26	285.86	285.06	285.19	285.72	285.99	286.53	287.14	287.79	288.26	289.15
25	289.85	287.21	285.76	285.03	285.12	285.71	285.95	286.56	287.18	287.80	288.31	289.16
26	289.79	287.18	285.64	285.07	285.07	285.69	285.98	286.63	287.15	287.85	288.33	289.13
27	289.72	287.22	285.62	285.02	285.11	285.63	285.93	286.63	287.10	287.82	288.36	289.20
28	289.75	287.26	285.62	284.97	285.14	285.66	285.90	286.63	287.08	287.80	288.39	289.24
29	289.75	287.20	285.68	284.93	---	285.74	285.85	286.65	287.16	287.85	288.35	289.30
30	289.74	287.06	285.62	284.92	---	285.79	285.87	286.76	287.25	287.85	288.48	289.23
31	289.76	---	285.55	284.93	---	285.82	---	286.79	---	287.83	288.50	---
MEAN	289.76	288.21	286.39	285.21	284.93	285.47	285.98	286.25	287.11	287.59	288.17	288.90

WTR YR 2002 MEAN 287.01 HIGHEST 284.69 FEB. 4, 2002 LOWEST 289.90 NOV. 7, 2001



GROUND-WATER LEVELS

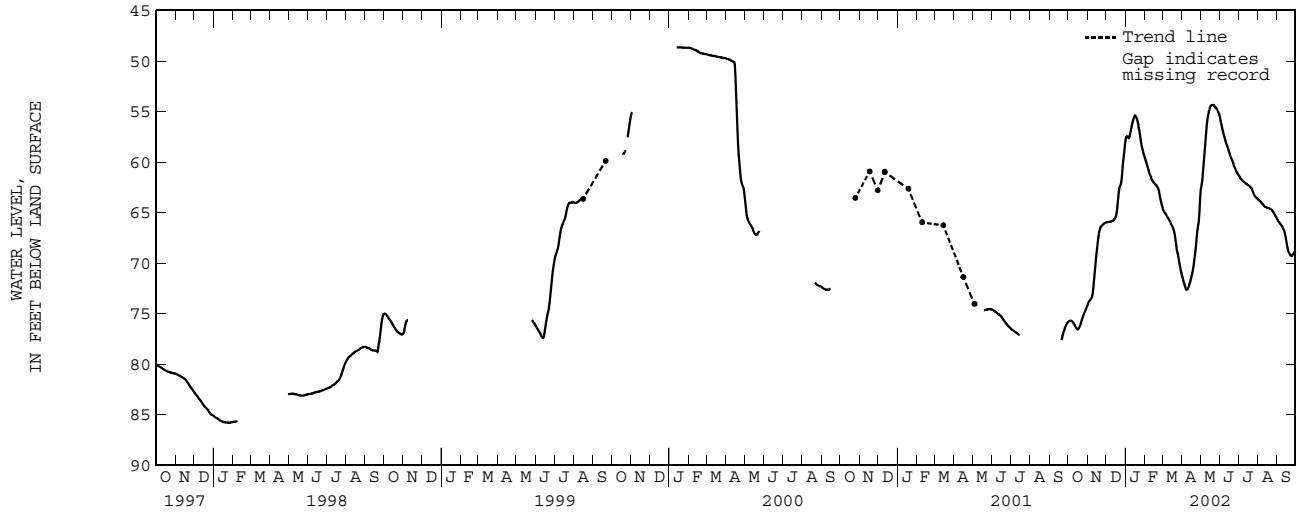
RIO GRANDE DE MANATI BASIN--Continued

182308066260400. Local number, 210.
LOCATION.--Lat 18°23'01", long 66°25'52", Hydrologic Unit 21010002, 4.88 mi southeast of Manatí plaza, 5.24 mi southwest of Vega Baja plaza, and 2.25 mi west of Escuela Evaristo Camacho. Name: Gelo Martínez Well, Vega Baja.
AQUIFER.--Lares Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in (0.20 m), cased 8 in (0.20 m). Depth 83.0 ft (25.3 m).
INSTRUMENTATION.--Pressure transducer with integrated data logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 574 ft (174.9 m), above mean sea level, from topographic map. Measuring point: Top of shelter floor, 3.30 ft (1.01 m), above land-surface datum. Prior to January 14, 1993, hole on side of casing, 2.00 ft (0.61 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on November 17, 1997, removed on September 30, 2002. From October 1, 2000 to May 19, 2001, tapedowns measurements only.
PERIOD OF RECORD.--October 1985 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 40.56 ft (12.4 m), below land-surface datum, May 22, 1986; lowest water level recorded, 85.50 ft (26.1 m), below land-surface datum, October 14, 15, 1994.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75.85	74.21	65.98	57.82	59.54	64.45	71.05	62.95	55.39	61.28	63.64	65.62
2	75.78	74.06	65.95	57.55	59.75	64.63	71.31	62.47	55.69	61.37	63.70	65.72
3	75.74	73.93	65.95	57.46	59.94	64.78	71.55	62.28	56.05	61.45	63.77	65.82
4	75.71	73.81	65.93	57.42	60.16	64.87	71.80	62.06	56.37	61.53	63.83	65.90
5	75.69	73.70	65.92	57.48	60.39	64.97	72.01	61.44	56.63	61.62	63.88	65.98
6	75.70	73.62	65.91	57.60	60.62	65.06	72.22	60.38	56.93	61.69	63.94	66.06
7	75.72	73.56	65.90	57.62	60.83	65.13	72.41	59.58	57.19	61.77	64.02	66.14
8	75.77	73.46	65.89	57.44	61.01	65.24	72.57	58.85	57.40	61.84	64.10	66.24
9	75.84	73.28	65.88	57.12	61.17	65.36	72.64	57.96	57.65	61.90	64.17	66.32
10	75.92	72.88	65.87	56.79	61.31	65.48	72.63	57.20	57.88	61.97	64.24	66.42
11	76.03	72.26	65.83	56.48	61.46	65.58	72.54	56.58	58.08	62.01	64.32	66.55
12	76.15	71.49	65.79	56.18	61.61	65.67	72.41	55.99	58.23	62.05	64.38	66.72
13	76.26	70.80	65.75	55.94	61.76	65.78	72.25	55.56	58.35	62.11	64.43	66.92
14	76.36	70.09	65.71	55.73	61.87	65.90	72.07	55.23	58.53	62.17	64.47	67.19
15	76.45	69.32	65.65	55.54	61.96	66.06	71.85	54.95	58.74	62.21	64.50	67.52
16	76.51	68.84	65.56	55.40	62.04	66.17	71.61	54.70	58.94	62.26	64.52	67.89
17	76.56	68.29	65.39	55.40	62.11	66.31	71.37	54.51	59.13	62.30	64.53	68.30
18	76.53	67.67	65.10	55.50	62.19	66.44	71.10	54.40	59.30	62.34	64.53	68.62
19	76.42	67.20	64.59	55.68	62.26	66.63	70.76	54.35	59.44	62.40	64.55	68.82
20	76.27	66.89	63.90	55.89	62.34	66.88	70.39	54.37	59.62	62.45	64.60	68.96
21	76.11	66.65	63.17	56.15	62.41	67.23	69.98	54.35	59.80	62.52	64.64	69.08
22	75.90	66.50	62.66	56.45	62.51	67.64	69.42	54.33	59.98	62.59	64.68	69.18
23	75.68	66.40	62.46	56.76	62.66	68.08	68.92	54.38	60.19	62.68	64.72	69.25
24	75.48	66.32	62.31	57.03	62.94	68.52	68.33	54.50	60.35	62.81	64.77	69.29
25	75.28	66.25	62.14	57.49	63.36	68.82	67.52	54.59	60.48	63.00	64.84	69.27
26	75.12	66.18	61.74	57.97	63.67	69.05	66.89	54.63	60.64	63.16	64.92	69.20
27	74.98	66.12	60.82	58.35	63.96	69.36	66.43	54.66	60.80	63.28	65.04	69.13
28	74.83	66.09	60.03	58.63	64.20	69.75	66.09	54.75	60.94	63.38	65.14	69.04
29	74.68	66.04	59.49	58.88	---	70.13	65.60	54.88	61.05	63.47	65.25	68.94
30	74.54	66.00	58.91	59.15	---	70.45	64.28	54.99	61.16	63.54	65.40	68.84
31	74.37	---	58.29	59.36	---	70.75	---	55.18	---	63.59	65.51	---
MEAN	75.75	69.73	64.02	57.04	61.79	66.81	70.33	56.68	58.70	62.35	64.48	67.63

WTR YR 2002 MEAN 64.61 HIGHEST 54.33 MAY 22, 2002 LOWEST 76.57 OCT. 17, 2001



GROUND-WATER LEVELS

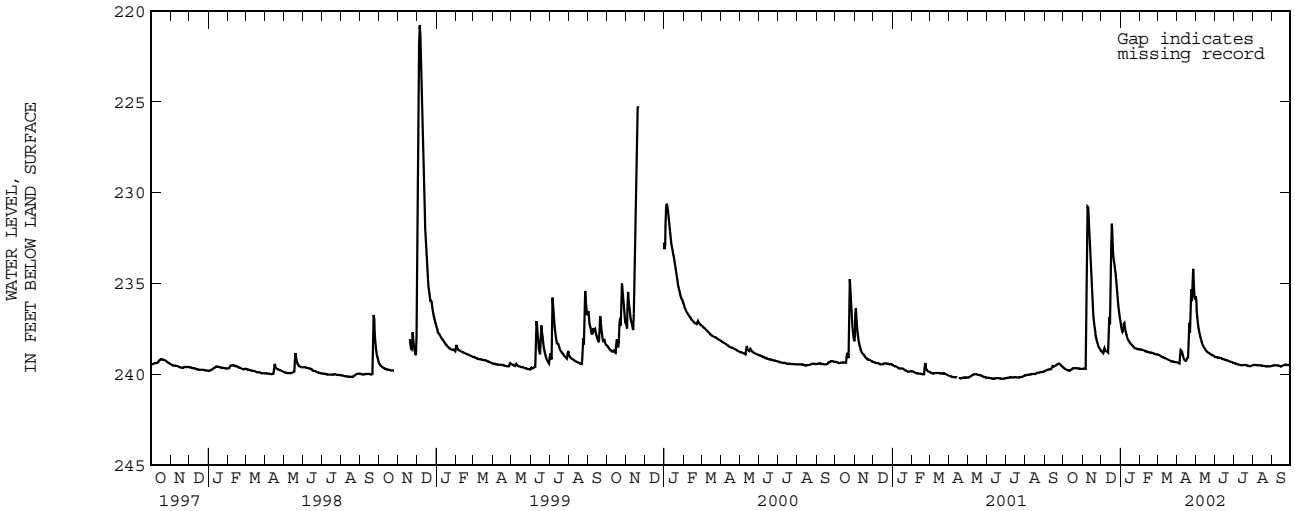
RIO CIBUCO BASIN

182614066261500. Local number, 1101.
LOCATION.--Lat 18°26'14", long 66°26'15", Hydrologic Unit 21010002, 1.80 mi east of the intersection of Hwy 686 with Hwy 670, 0.30 mi south of Hwy 2, 0.70 mi northeast of Ramirez de Arellano School, and 0.32 mi north of Hwy 670. Name: Palo Alto 2 Well, Vega Baja.
AQUIFER.--Aymamón Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), screened 265-310 ft (80.8-94.5 m). Depth 310 ft (94.5 m). INSTRUMENTATION.-Pressure transducer with integrated electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 245.5 ft (74.8 m), above mean sea level, from topographic survey. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 3.79 ft (1.16 m), above land-surface datum.
REMARKS.--Recording observation well. Electronic Data Logger (EDL), installed on May 28, 1996.
PERIOD OF RECORD.--May 28, 1996 to September 30, 2002, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 220.55 ft (67.2 m), below land-surface datum, December 6 1998; lowest water level recorded, 240.24 ft (73.2 m), below land-surface datum, June 11, 2001.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	239.59	239.68	238.68	237.11	238.61	238.89	239.32	235.69	239.01	239.36	239.49	239.51
2	239.62	239.68	238.72	237.30	238.63	238.90	239.34	235.67	239.03	239.37	239.48	239.50
3	239.65	239.68	238.77	237.46	238.63	238.92	239.35	236.24	239.04	239.38	239.47	239.50
4	239.68	239.67	238.81	237.60	238.63	238.93	239.37	236.70	239.05	239.39	239.46	239.49
5	239.70	239.67	238.83	237.72	238.64	238.95	239.39	237.07	239.05	239.40	239.46	239.48
6	239.72	239.68	238.50	237.43	238.65	238.97	239.40	237.35	239.06	239.41	239.46	239.49
7	239.75	239.67	238.62	237.05	238.67	238.99	238.52	237.57	239.06	239.42	239.48	239.48
8	239.76	235.50	238.68	237.32	238.68	239.01	238.81	237.75	239.07	239.43	239.48	239.49
9	239.76	231.41	238.70	237.55	238.69	239.03	238.61	237.91	239.08	239.44	239.48	239.49
10	239.79	230.13	238.74	237.72	238.71	239.05	238.83	238.05	239.09	239.46	239.48	239.50
11	239.79	231.52	238.76	237.85	238.72	239.06	238.99	238.16	239.11	239.47	239.48	239.51
12	239.77	232.56	238.78	237.95	238.73	239.08	239.08	238.26	239.12	239.47	239.48	239.51
13	239.76	233.50	238.80	238.04	238.74	239.09	239.14	238.35	239.12	239.48	239.49	239.53
14	239.74	234.30	236.68	238.11	238.76	239.11	239.19	238.43	239.14	239.48	239.49	239.54
15	239.71	235.01	236.99	238.18	238.77	239.12	239.23	238.50	239.15	239.48	239.50	239.57
16	239.68	235.62	237.46	238.23	238.77	239.14	239.25	238.57	239.16	239.48	239.52	239.54
17	239.66	236.14	234.39	238.28	238.78	239.15	239.22	238.62	239.18	239.47	239.52	239.53
18	239.64	236.58	231.29	238.33	238.79	239.17	239.10	238.67	239.19	239.47	239.52	239.51
19	239.63	236.96	232.12	238.37	238.79	239.19	239.05	238.71	239.20	239.47	239.52	239.50
20	239.64	237.27	233.04	238.40	238.80	239.21	239.08	238.75	239.21	239.47	239.53	239.48
21	239.63	237.53	233.82	238.44	238.81	239.23	236.83	238.78	239.22	239.48	239.54	239.47
22	239.64	237.76	233.61	238.47	238.82	239.24	237.48	238.81	239.23	239.49	239.54	239.46
23	239.64	237.94	234.24	238.50	238.84	239.26	237.89	238.83	239.25	239.50	239.55	239.45
24	239.65	238.09	234.23	238.54	238.85	239.27	234.96	238.85	239.27	239.51	239.55	239.47
25	239.66	238.22	234.73	238.55	238.86	239.28	235.67	238.86	239.28	239.52	239.55	239.47
26	239.67	238.33	235.21	238.57	238.87	239.28	236.28	238.89	239.29	239.53	239.54	239.48
27	239.67	238.42	235.65	238.58	238.89	239.29	233.68	238.91	239.31	239.54	239.54	239.47
28	239.68	238.51	236.03	238.59	238.88	239.30	234.69	238.92	239.32	239.53	239.53	239.47
29	239.68	238.57	236.38	238.60	---	239.31	235.40	238.94	239.34	239.53	239.53	239.46
30	239.67	238.62	236.66	238.61	---	239.31	236.03	238.96	239.34	239.51	239.54	239.45
31	239.68	---	236.90	238.61	---	239.31	---	238.99	---	239.50	239.52	---
MEAN	239.69	236.87	236.54	238.07	238.75	239.13	238.04	238.15	239.17	239.47	239.51	239.49

WTR YR 2002 MEAN 238.57 HIGHEST 228.12 NOV. 9, 2001 LOWEST 239.81 OCT. 10, 2001



GROUND-WATER LEVELS

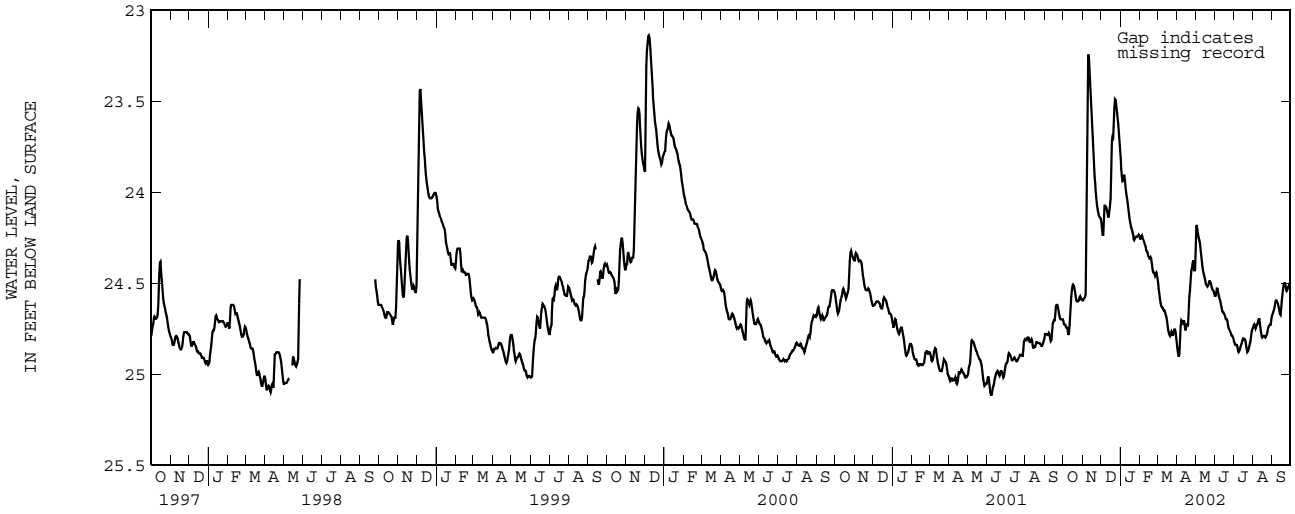
RIO CIBUCO BASIN--Continued

182712066251700. Local number, 1102.
LOCATION.--Lat 18°27'12", long 66°25'17", Hydrologic Unit 21010002, 0.60 mi north of the intersection of Hwy 687 with Hwy 2, 0.55 mi southeast of the eastern shoreline of Laguna Tortuguero, 0.32 mi east of Laguna Rica, and 0.12 mi west of Hwy 687. Name: Piezometer Tortuguero 3, Vega Baja.
AQUIFER.--Aymamón Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), screened 68.0-218 ft (20.7-66.4 m). Depth 218 ft (66.4 m).
INSTRUMENTATION.--Pressure transducer with integrated electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 30.0 ft (9.00 m), above mean sea level, from topographic map. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 3.42 ft (1.04 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on June 10, 1999.
PERIOD OF RECORD.--May 31, 1996 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 23.13 ft (7.05 m), below land-surface datum, December 7, 8, 1999; lowest water level recorded, 25.26 ft (7.70 m), below land-surface datum, June 21, 22, 23, 1996.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.70	24.59	24.15	23.80	24.25	24.47	24.82	24.40	24.57	24.81	24.75	24.68
2	24.72	24.60	24.18	23.85	24.26	24.49	24.85	24.19	24.57	24.82	24.74	24.67
3	24.73	24.59	24.22	23.89	24.25	24.52	24.88	24.18	24.57	24.83	24.73	24.66
4	24.73	24.59	24.25	23.93	24.24	24.54	24.90	24.19	24.54	24.84	24.73	24.65
5	24.73	24.58	24.22	23.95	24.24	24.57	24.91	24.22	24.52	24.84	24.75	24.64
6	24.75	24.58	24.08	23.92	24.26	24.60	24.87	24.24	24.54	24.84	24.75	24.61
7	24.74	24.54	24.07	23.90	24.26	24.62	24.75	24.26	24.56	24.84	24.73	24.60
8	24.75	24.08	24.08	23.92	24.28	24.63	24.72	24.27	24.58	24.86	24.73	24.59
9	24.77	23.60	24.08	23.96	24.28	24.63	24.69	24.29	24.59	24.88	24.72	24.60
10	24.80	23.26	24.10	24.00	24.30	24.64	24.73	24.33	24.60	24.88	24.70	24.61
11	24.74	23.23	24.11	24.02	24.31	24.65	24.73	24.36	24.62	24.87	24.70	24.62
12	24.71	23.28	24.13	24.04	24.33	24.65	24.70	24.39	24.64	24.86	24.70	24.64
13	24.68	23.36	24.14	24.07	24.32	24.65	24.71	24.43	24.65	24.84	24.73	24.66
14	24.59	23.44	24.13	24.10	24.34	24.67	24.72	24.44	24.66	24.84	24.76	24.68
15	24.56	23.52	24.08	24.13	24.35	24.68	24.76	24.46	24.66	24.82	24.78	24.67
16	24.52	23.59	24.07	24.16	24.36	24.69	24.76	24.47	24.66	24.81	24.80	24.61
17	24.51	23.65	24.00	24.17	24.37	24.72	24.73	24.49	24.68	24.80	24.80	24.58
18	24.51	23.74	23.75	24.20	24.36	24.75	24.72	24.51	24.68	24.81	24.79	24.55
19	24.52	23.81	23.69	24.20	24.36	24.77	24.73	24.51	24.70	24.81	24.79	24.51
20	24.54	23.89	23.70	24.22	24.38	24.78	24.73	24.52	24.70	24.81	24.79	24.50
21	24.56	23.94	23.70	24.23	24.41	24.79	24.60	24.52	24.70	24.84	24.80	24.50
22	24.59	23.97	23.55	24.25	24.44	24.79	24.55	24.51	24.72	24.86	24.80	24.50
23	24.60	24.01	23.50	24.27	24.44	24.77	24.53	24.49	24.75	24.88	24.79	24.52
24	24.60	24.05	23.48	24.26	24.44	24.77	24.45	24.49	24.75	24.88	24.78	24.54
25	24.60	24.08	23.51	24.25	24.46	24.78	24.42	24.49	24.76	24.87	24.76	24.55
26	24.60	24.10	23.54	24.25	24.46	24.79	24.42	24.50	24.76	24.86	24.74	24.53
27	24.59	24.12	23.58	24.24	24.44	24.78	24.37	24.52	24.78	24.84	24.74	24.52
28	24.57	24.13	23.61	24.25	24.45	24.76	24.38	24.53	24.79	24.83	24.73	24.52
29	24.58	24.14	23.65	24.24	---	24.75	24.42	24.54	24.79	24.81	24.73	24.50
30	24.59	24.14	23.70	24.24	---	24.76	24.45	24.54	24.79	24.77	24.73	24.50
31	24.59	---	23.74	24.23	---	24.78	---	24.55	---	24.76	24.68	---
MEAN	24.64	23.97	23.90	24.10	24.34	24.69	24.67	24.41	24.66	24.84	24.75	24.58

WTR YR 2002 MEAN 24.46 HIGHEST 23.23 NOV. 10, 2001 LOWEST 24.94 APR. 4, 2002



GROUND-WATER LEVELS

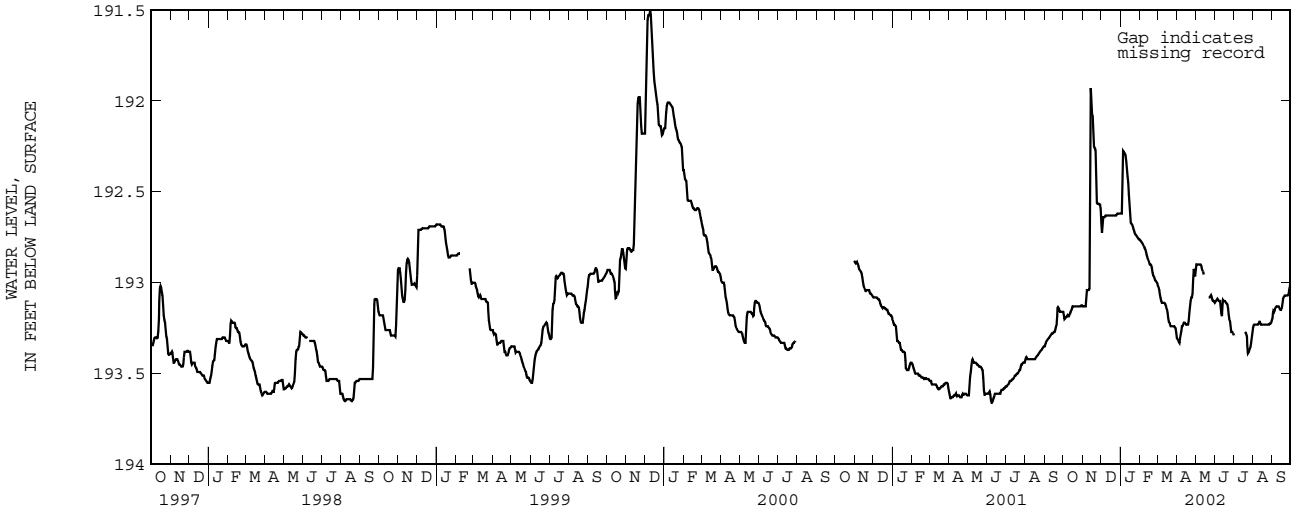
RIO CIBUCO BASIN--Continued

182615066235300. Local number, 211.
LOCATION.--Lat 18°26'07", long 66°23'32", Hydrologic Unit 21010002, 4.46 mi southeast of Manatí plaza, 5.48 mi southwest of Vega Baja plaza, and 1.22 mi east of Hwy 155 km 58.3. Name: Rosario 2 Well, Vega Baja.
AQUIFER.--Aguada Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 14 in (0.36 m) 0-200 ft (0-61.0 m), diameter 12 in (0.30 m), 200-250 ft (61.0-76.2 m), cased 12 in (0.30 m) 0-250 ft (0-76.2 m), perforated 210-250 ft (64.0-76.2 m), diameter 10 in (0.25 m) 250-270 ft (76.2-82.3 m), open hole; concrete sealed 0-200 ft (0-61.0 m). Depth 270 ft (82.3 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 230 ft (70.1 m), above mean sea level, from topographic map. Measuring point: Top of shelter floor, 3.10 ft (0.94 m), above land-surface datum. Prior to April 11, 1994, hole on side of casing, 1.15 ft (0.35 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on November 5, 1997, removed on September 30, 2002.
PERIOD OF RECORD.--October 1985 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 191.29 ft (58.3 m), below land-surface datum, May 16, 1986; lowest water level recorded, 194.1 ft (59.2 m), below land-surface datum, Mar. 31, April 1 to 7, 1995.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	193.16	193.13	192.62	192.62	192.76	193.00	193.30	192.97	193.11	193.29	193.26	193.20
2	193.16	193.13	192.73	192.62	192.77	193.02	193.31	192.90	193.11	193.29	193.24	193.19
3	193.20	193.13	192.72	192.62	192.77	193.02	193.31	192.90	193.10	---	193.23	193.15
4	193.20	193.13	192.64	192.62	192.78	193.03	193.32	192.90	193.10	---	193.23	193.16
5	193.19	193.13	192.64	192.27	192.78	193.05	193.33	192.90	193.09	---	193.23	193.16
6	193.19	193.13	192.64	192.28	192.79	193.08	193.33	192.90	193.09	---	193.23	193.14
7	193.19	193.13	192.64	192.28	192.79	193.09	193.28	192.90	193.10	---	193.23	193.14
8	193.18	193.04	192.63	192.29	192.81	193.11	193.29	192.90	193.10	---	193.23	193.13
9	193.18	193.04	192.63	192.29	192.81	193.11	193.24	192.90	193.10	---	193.23	193.13
10	193.19	193.04	192.63	192.32	192.82	193.11	193.24	192.90	193.10	---	193.23	193.13
11	193.18	193.04	192.63	192.35	192.83	193.11	193.24	192.91	193.17	---	193.22	193.13
12	193.17	193.04	192.63	192.40	192.84	193.11	193.22	192.93	193.17	---	193.21	193.13
13	193.17	193.03	192.63	192.43	192.86	193.11	193.22	192.93	193.20	---	193.22	193.14
14	193.15	191.92	192.63	192.47	192.86	193.12	193.22	192.95	193.09	---	193.23	193.15
15	193.16	191.94	192.63	192.56	192.88	193.13	193.22	192.96	193.10	---	193.23	193.15
16	193.13	192.08	192.63	192.56	192.88	193.14	193.23	---	193.10	---	193.23	193.15
17	193.13	192.07	192.63	192.67	192.90	193.15	193.23	---	193.10	---	193.23	193.13
18	193.13	192.10	192.63	192.67	192.90	193.18	193.23	---	193.10	---	193.23	193.10
19	193.13	192.24	192.63	192.68	192.90	193.21	193.23	---	193.11	193.27	193.23	193.08
20	193.13	192.26	192.63	192.68	192.91	193.22	193.23	---	193.11	193.27	193.23	193.08
21	193.13	192.26	192.63	192.70	192.93	193.22	193.19	---	193.12	193.28	193.23	193.07
22	193.13	192.27	192.63	192.70	192.96	193.24	193.14	193.08	193.12	193.29	193.23	193.07
23	193.13	192.28	192.63	192.71	192.96	193.24	193.12	193.08	193.16	193.30	193.23	193.07
24	193.13	192.56	192.63	192.73	192.97	193.24	193.08	193.08	193.19	193.39	193.23	193.07
25	193.13	192.56	192.63	192.73	192.98	193.24	193.08	193.08	193.21	193.39	193.23	193.07
26	193.13	192.57	192.63	192.74	192.99	193.24	193.08	193.07	193.21	193.38	193.23	193.07
27	193.13	192.56	192.62	192.74	192.99	193.24	193.04	193.07	193.27	193.37	193.23	193.07
28	193.13	192.57	192.62	192.75	193.00	193.24	192.92	193.09	193.27	193.36	193.23	193.06
29	193.13	192.57	192.62	192.75	---	193.24	192.93	193.10	193.27	193.35	193.22	193.02
30	193.13	192.57	192.62	192.76	---	193.25	192.96	193.10	193.27	193.31	193.23	193.03
31	193.12	---	192.62	192.76	---	193.25	---	193.10	---	193.29	193.21	---
MEAN	193.15	192.65	192.64	192.57	192.87	193.15	193.19	---	193.14	---	193.23	193.11

WTR YR 2002 MEAN 192.99 HIGHEST 191.92 NOV. 14, 2001 LOWEST 193.39 JULY APR. 23, 2002



GROUND-WATER LEVELS

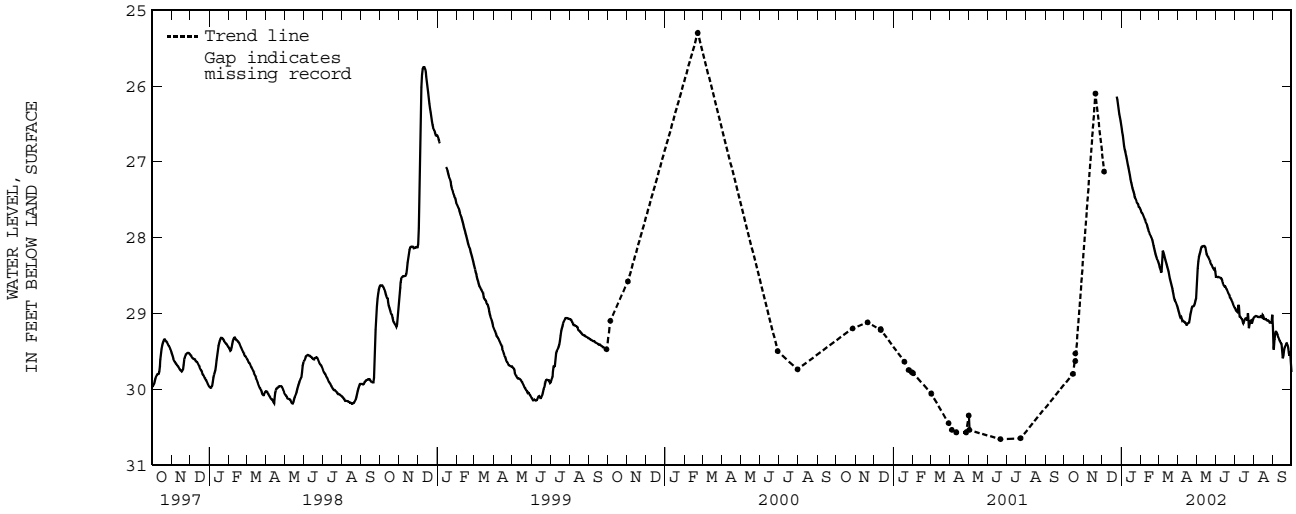
RIO CIBUCO BASIN--Continued

182647066201700. Local number, 70.
LOCATION.--Lat 18°26'47", long 66°20'17", Hydrologic Unit 21010002, 1.52 mi north of Vega Alta plaza, 4.78 mi southwest of Dorado plaza, and 2.01 mi northwest of Escuela Industrial para Mujeres Penitenciary. Name: Sabana Hoyos Well, Vega Alta.
AQUIFER.--Limestone of Tertiary Age.
WELL CHARACTERISTICS.--Drilled unused water table well, diameter 8 in (0.20 m), cased 0-90.0 ft (0-27.4 m), perforated. Depth 90.0 ft (27.4 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 49.0 ft (14.9 m), above mean sea level, from topographic map. Measuring point: Top of casing wooden cover, 1.20 ft (0.36 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on February 17, 1998. Only monthly tapedown measurements published on water years 2000 and 2001, and from October 1 to December 23, 2001.
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, October 26, 1976; lowest water level recorded, 31.12 ft (9.48 m), below land-surface datum, May 12, 13, 1995.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	26.54	27.63	28.33	28.92	28.79	28.51	28.92	29.06	29.40
2	---	---	---	26.60	27.67	28.35	28.95	28.55	28.52	28.93	29.05	29.53
3	---	---	---	26.62	27.67	28.38	28.99	28.45	28.51	28.95	29.04	29.40
4	---	---	---	26.68	27.68	28.40	29.01	28.36	28.53	28.96	29.04	29.30
5	---	---	---	26.77	27.71	28.43	29.05	28.27	28.52	28.97	29.03	29.25
6	---	---	---	26.82	27.72	28.45	29.06	28.24	28.52	28.98	29.05	29.24
7	---	---	---	26.86	27.75	28.47	29.03	28.20	28.53	28.99	29.04	29.25
8	---	---	---	26.89	27.76	28.16	29.11	28.18	28.53	28.79	29.05	29.27
9	---	---	---	26.94	27.80	28.19	29.10	28.13	28.54	29.04	29.05	29.31
10	---	---	---	26.97	27.81	28.21	29.10	28.12	28.53	29.05	29.05	29.31
11	---	---	---	27.03	27.83	28.25	29.11	28.11	28.56	29.05	29.05	29.36
12	---	---	---	27.06	27.86	28.28	29.12	28.12	28.59	29.06	29.05	29.36
13	---	---	---	27.11	27.89	28.31	29.12	28.11	28.60	29.08	29.03	29.38
14	---	---	---	27.15	27.91	28.34	29.12	28.11	28.62	29.08	29.06	29.40
15	---	---	---	27.20	27.93	28.37	29.14	28.12	28.64	29.15	29.05	29.41
16	---	---	---	27.26	27.96	28.41	29.16	28.14	28.65	29.12	29.00	29.59
17	---	---	---	27.28	27.97	28.43	29.14	28.21	28.64	29.10	29.07	29.60
18	---	---	---	27.33	27.99	28.47	29.13	28.23	28.67	29.08	29.08	29.51
19	---	---	---	27.36	28.01	28.52	29.13	28.24	28.68	29.06	29.08	29.46
20	---	---	---	27.39	28.05	28.56	29.12	28.26	28.70	29.07	29.07	29.44
21	---	---	---	27.41	28.08	28.59	29.04	28.27	28.72	29.06	29.08	29.43
22	---	---	---	27.46	28.13	28.63	29.00	28.29	28.74	29.13	29.09	29.40
23	---	---	---	27.47	28.16	28.66	28.96	28.31	28.76	28.87	29.10	29.40
24	---	---	26.13	27.48	28.20	28.69	28.92	28.33	28.79	29.23	29.10	29.39
25	---	---	26.15	27.51	28.23	28.72	28.91	28.35	28.80	29.16	29.09	29.44
26	---	---	26.21	27.53	28.26	28.77	28.91	28.36	28.82	29.13	29.12	29.48
27	---	---	26.27	27.55	28.28	28.82	28.90	28.38	28.83	29.08	29.12	29.58
28	---	---	26.34	27.56	28.30	28.83	28.89	28.40	28.86	29.11	29.12	29.54
29	---	---	26.40	27.60	---	28.84	28.85	28.41	28.88	29.14	29.13	29.48
30	---	---	26.43	27.60	---	28.87	28.82	28.43	28.90	29.11	29.09	29.81
31	---	---	26.49	27.61	---	28.89	---	28.39	---	29.08	28.95	---
MEAN	---	---	---	27.18	27.94	28.50	29.03	28.29	28.66	29.05	29.06	29.42

WTR YR 2002 MEAN 28.51 HIGHEST 26.07 DEC. 24, 2001 LOWEST 29.95 SEPT. 30, 2002



GROUND-WATER LEVELS

RIO CIBUCO BASIN--Continued

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	29.80	OCT 19	26.63	DEC 28	26.32	JAN 03	26.62	MAY 16	28.15	AUG 01	29.07
19	29.53	NOV 20	26.10	28	26.34	MAR 08	28.52	JUN 17	28.64	SEP 05	29.26
19	29.60	DEC 04	27.13	JAN 03	26.65	APR 09	29.11	17	28.65	05	29.24
19	29.61	04	27.14	03	26.63	MAY 16	28.14	JUL 02	28.93		

WATER YEAR 2002 HIGHEST 26.10 NOV. 20, 2001 LOWEST 29.80 OCT. 15, 2001

GROUND-WATER LEVELS

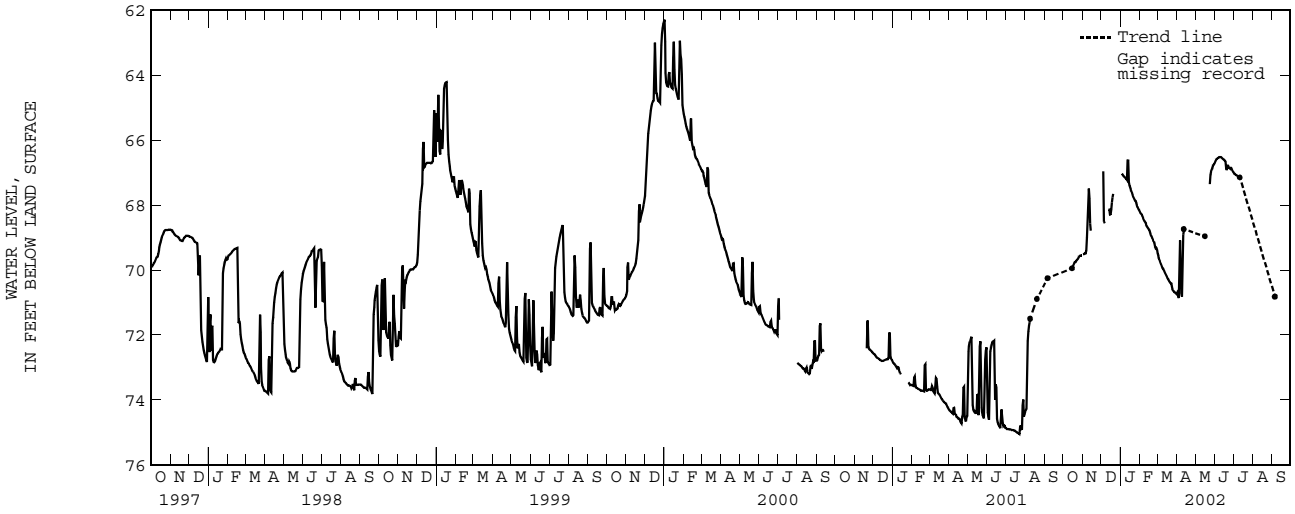
RIO CIBUCO BASIN--Continued

182515066194000. Local number, 212.
LOCATION.--Lat 18°25'15", long 66°19'40", Hydrologic Unit 21010002, 5.15 mi southwest of Dorado plaza, 0.49 mi north of Vega Alta plaza, and 1.04 mi northwest of Escuela Industrial para Mujeres Penitenciary. Name: Ponderosa 1 Well, Vega Alta.
AQUIFER.--Aguada Limestone-Cibao Formation.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m) 0-136 ft (0-41.1 m), perforated 121-131 ft (36.9-39.9 m); bentonite packed 0.50-121 ft (0.15-36.9 m). Depth 136 ft (39.9 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 98.0 ft (29.9 m), above mean sea level, from topographic map. Measuring point: Top of 4 in (0.10 m) casing, 2.55 ft (0.78 m), above land-surface datum. Prior to November 3, 1989, hole on top of shelter floor casing, 3.00 ft (0.91 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on February 17, 1998. Water levels affected by nearby pumping well.
PERIOD OF RECORD.--October 1985 to September 5, 2002, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 62.21 ft (19.0 m), below land-surface datum, January 3, 2000; lowest water level recorded, 75.33 ft (22.9 m), below land-surface datum, February 27, March 4, 5, 6, 1995

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	68.18	69.44	70.74	---	66.72	66.99	---	---
2	---	69.54	---	---	68.24	69.54	70.76	---	66.68	67.01	---	---
3	---	69.52	---	67.03	68.27	69.58	70.62	---	66.62	67.05	---	---
4	---	69.51	---	67.03	68.28	69.64	70.85	---	66.59	67.06	---	---
5	---	69.49	68.46	67.07	68.30	69.69	70.88	---	66.56	67.07	---	---
6	---	69.49	68.53	67.10	68.38	69.75	69.31	---	66.55	67.08	---	---
7	---	69.48	68.53	67.12	68.44	69.79	68.87	---	66.54	67.10	---	---
8	---	69.31	68.51	67.15	68.47	69.85	70.61	---	66.53	67.11	---	---
9	---	68.69	---	67.16	68.51	69.92	70.80	---	66.52	67.12	---	---
10	---	68.07	---	67.18	68.54	69.95	70.84	---	66.52	67.15	---	---
11	---	67.66	---	67.21	68.56	69.97	69.02	---	66.52	67.15	---	---
12	---	67.33	---	67.22	68.63	70.01	68.79	---	66.54	---	---	---
13	---	68.28	68.28	66.04	68.66	70.05	---	---	66.55	---	---	---
14	---	68.85	68.00	67.21	68.69	70.10	---	---	66.57	---	---	---
15	---	68.73	68.28	67.36	68.73	70.14	---	---	66.59	---	---	---
16	69.94	---	68.30	67.44	68.74	70.18	---	---	66.60	---	---	---
17	69.88	---	68.26	67.48	68.80	70.22	---	---	66.62	---	---	---
18	69.86	---	68.01	67.55	68.87	70.26	---	---	66.64	---	---	---
19	69.80	---	67.83	67.58	68.93	70.30	---	---	66.67	---	---	---
20	69.76	---	67.70	67.66	68.95	70.33	---	---	67.05	---	---	---
21	69.75	---	67.60	67.73	68.99	70.37	---	---	66.79	---	---	---
22	69.75	---	---	67.76	69.05	70.40	---	---	66.78	---	---	---
23	69.70	---	---	67.77	69.12	70.43	---	---	66.79	---	---	---
24	69.67	---	---	67.84	69.13	70.42	---	67.58	66.92	---	---	---
25	69.66	---	---	67.86	69.24	70.55	---	67.14	66.82	---	---	---
26	69.63	---	---	67.89	69.32	70.60	---	67.01	66.89	---	---	---
27	69.58	---	---	67.97	69.34	70.65	---	66.91	66.87	---	---	---
28	69.57	---	---	68.04	69.27	70.65	---	66.92	66.87	---	---	---
29	69.55	---	---	68.07	---	70.69	---	66.80	66.92	---	---	---
30	69.55	---	---	68.11	---	70.70	---	66.77	66.95	---	---	---
31	69.54	---	---	68.16	---	70.72	---	66.75	---	---	---	---
MEAN	---	---	---	---	68.74	70.16	---	---	66.69	---	---	---

WTR YR 2002 MEAN 68.43 HIGHEST 65.60 JAN. 13, 2002 LOWEST 70.92 APR. 6, 2002



GROUND-WATER LEVELS

RIO CIBUCO BASIN--Continued

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	69.93	DEC 04	66.96	MAR 01	69.44	APR 12	68.74	JUN 17	66.62	JUL 11	67.15
15	69.95	JAN 03	67.04	01	69.50	MAY 16	68.96	17	66.63	SEP 05	70.82
DEC 04	66.95	03	67.03	APR 12	68.79	16	68.98	JUL 11	67.17	05	70.81

WATER YEAR 2002 HIGHEST 66.62 JUN. 17, 2002 LOWEST 70.82 SEP. 5, 2002

GROUND-WATER LEVELS

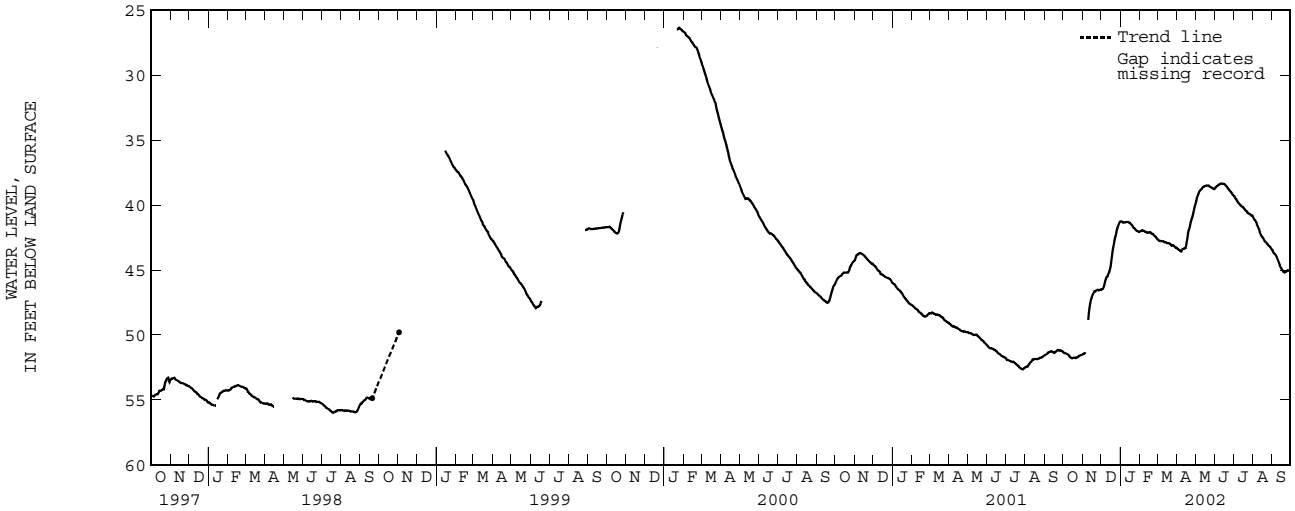
RIO CIBUCO BASIN--Continued

182330066185700. Local number, 213.
LOCATION.--Lat 18°23'30", long 66°18'57", Hydrologic Unit 21010002, 1.82 mi southeast of Vega Alta plaza, 4.23 mi west of Toa Alta plaza, and 1.27 mi northwest off the intersection of Hwy 820 with Hwy 823. Name: Pampano 2 Well, Vega Alta.
AQUIFER.--Río Indio Limestone-Lares Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 20 in (0.51 m), cased 20 in (0.51 m) 0-130 ft (0-39.6 m), diameter 14 in (0.36 m), cased 12 in (0.30 m) 0-220 ft (0-67.1 m); open hole 220-330 ft (67.6-101 m). Depth 330 ft (101 m).
INSTRUMENTATION.--Pressure transducer with integrated data logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 394 ft (120 m), above mean sea level, from topographic map. Measuring point: Top of plexiglass plate, 9.34 ft (2.84 m), above land-surface datum. Prior April 27, 1993, hole on side of casing, 2.95 ft (0.90 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on February 17, 1998, removed on September 30, 2002.
PERIOD OF RECORD.--October 1985 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 26.27 ft (8.01 m), below land-surface datum, January 25, 2000; lowest water level recorded, 65.68 ft (20.0 m), below land-surface datum, August 20, 1995.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51.28	51.53	46.50	41.24	42.07	42.64	43.28	39.93	38.74	39.27	40.83	43.47
2	51.34	51.48	46.53	41.24	42.03	42.66	43.32	39.75	38.68	39.31	40.92	43.49
3	51.40	51.46	46.48	41.27	42.01	42.69	43.40	39.59	38.66	39.36	41.06	43.60
4	51.40	51.43	46.45	41.27	41.95	42.73	43.45	39.44	38.52	39.45	41.13	43.69
5	51.40	51.39	46.41	41.34	41.95	42.76	43.44	39.32	38.55	39.49	41.17	43.75
6	51.43	51.42	46.19	41.34	41.96	42.77	43.45	39.18	38.48	39.55	41.24	43.80
7	51.46	51.50	45.95	41.32	41.96	42.76	43.53	39.03	38.45	39.66	41.38	43.83
8	51.47	---	45.78	41.32	42.00	42.78	43.60	38.92	38.42	39.75	41.52	43.92
9	51.51	---	45.63	41.32	42.04	42.79	43.56	38.84	38.38	39.81	41.62	44.02
10	51.54	49.16	45.55	41.31	42.07	42.78	43.43	38.82	38.35	39.88	41.73	44.16
11	51.60	48.53	45.49	41.30	42.07	42.77	43.38	38.78	38.36	39.92	41.87	44.28
12	51.68	48.07	45.42	41.29	42.08	42.83	43.34	38.74	38.35	39.97	42.02	44.42
13	51.72	47.72	45.32	41.31	42.13	42.86	43.34	38.64	38.33	40.04	42.13	44.59
14	51.76	47.44	45.20	41.35	42.12	42.85	43.34	38.57	38.35	40.10	42.21	44.70
15	51.80	47.24	45.06	41.36	42.13	42.87	43.34	38.56	38.37	40.13	42.34	44.79
16	51.79	47.12	44.85	41.36	42.15	42.91	43.31	38.56	38.37	40.16	42.45	44.89
17	51.79	46.98	44.59	41.40	42.08	42.92	42.95	38.53	38.39	40.19	42.48	44.97
18	51.77	46.86	44.13	41.48	42.08	42.93	42.64	38.49	38.45	40.24	42.53	45.04
19	51.74	46.77	43.74	41.51	42.13	42.92	42.41	38.50	38.51	40.32	42.62	45.13
20	51.76	46.68	43.40	41.59	42.22	42.96	41.92	38.50	38.53	40.37	42.75	45.21
21	51.78	46.63	43.12	41.66	42.21	42.98	41.97	38.49	38.59	40.44	42.82	45.19
22	51.74	46.64	42.91	41.73	42.22	42.99	41.72	38.49	38.69	40.47	42.87	45.17
23	51.71	46.60	42.54	41.78	42.27	43.04	41.46	38.51	38.74	40.53	42.90	45.14
24	51.72	46.56	42.49	41.80	42.37	43.11	41.26	38.56	38.78	40.59	42.95	45.15
25	51.71	46.54	42.22	41.85	42.40	43.12	41.09	38.60	38.88	40.62	43.02	45.09
26	51.66	46.52	41.97	41.92	42.41	43.11	40.98	38.64	38.94	40.69	43.09	45.02
27	51.60	46.55	41.77	41.97	42.47	43.10	40.78	38.66	38.99	40.68	43.15	45.02
28	51.59	46.58	41.64	41.99	42.54	43.14	40.56	38.66	39.04	40.71	43.18	45.01
29	51.58	46.54	41.54	42.00	---	43.20	40.30	38.70	39.11	40.78	43.20	45.05
30	51.54	46.49	41.40	42.03	---	43.25	40.10	38.78	39.22	40.78	43.31	45.07
31	51.54	---	41.29	42.08	---	43.27	---	38.77	---	40.79	43.37	---
MEAN	51.61	---	44.24	41.54	42.15	42.92	42.49	38.82	38.61	40.13	42.25	44.56

WTR YR 2002 MEAN 43.10 HIGHEST 37.38 JUNE 17, 2002 LOWEST 51.80 OCT. 15, 16, 17, 2001



GROUND-WATER LEVELS

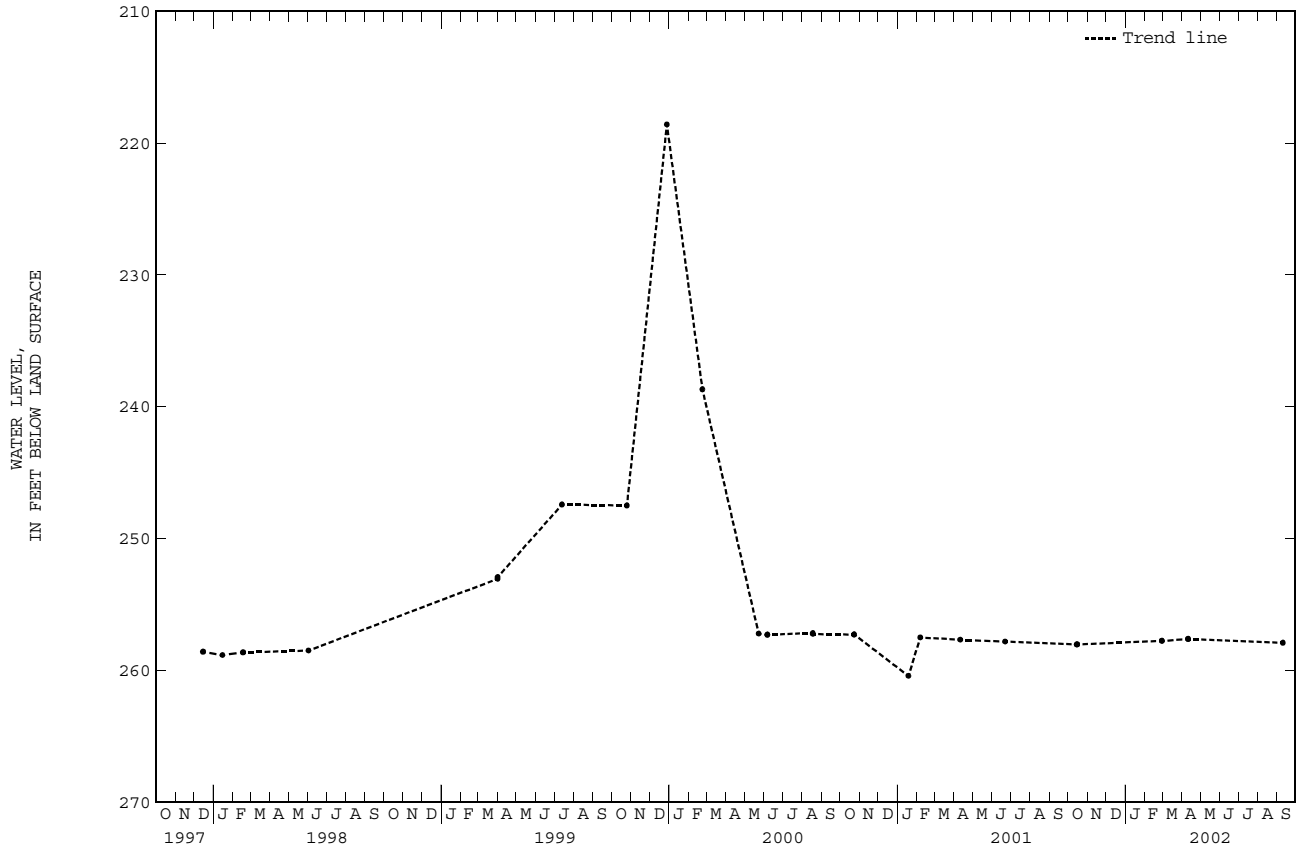
RIO CIBUCO BASIN--Continued

182426066260400. Local number, 1103.
LOCATION.--Lat 18°24'26", long 66°26'04", Hydrologic Unit 21010002, 1.30 mi south of Hwy 670, 1.80 mi south southeast of Escuela C. Ramírez de Arellano, and 2.30 mi south southwest of Morovis exit of the Hwy 22. Name: Perica.
AQUIFER.--Cibao Limestone.
WELL CHARACTERISTICS.--Diameter 4 in (0.10 m), open screened 360-400 ft (110-122 m). Depth 400 ft (122 m).
DATUM.--Elevation of land-surface datum is about 492 ft (150 m), above mean sea level, from topographic map. Measuring point: Top of steel 3.00 ft (0.91 m), above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--December 1, 1995 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 200.27 ft (61.04 m), below land-surface datum, January 30, 1997; lowest water level measured, 258.84 ft (78.89 m), below land-surface datum, January 15, 1998.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	258.02	FEB 28	257.78	FEB 28	257.77	APR 11	257.61	APR 11	257.62	SEP 10	257.90
15	258.03										

WATER YEAR 2002 HIGHEST 257.61 APR. 11, 2002 LOWEST 258.03 OCT. 15, 2001



GROUND-WATER LEVELS

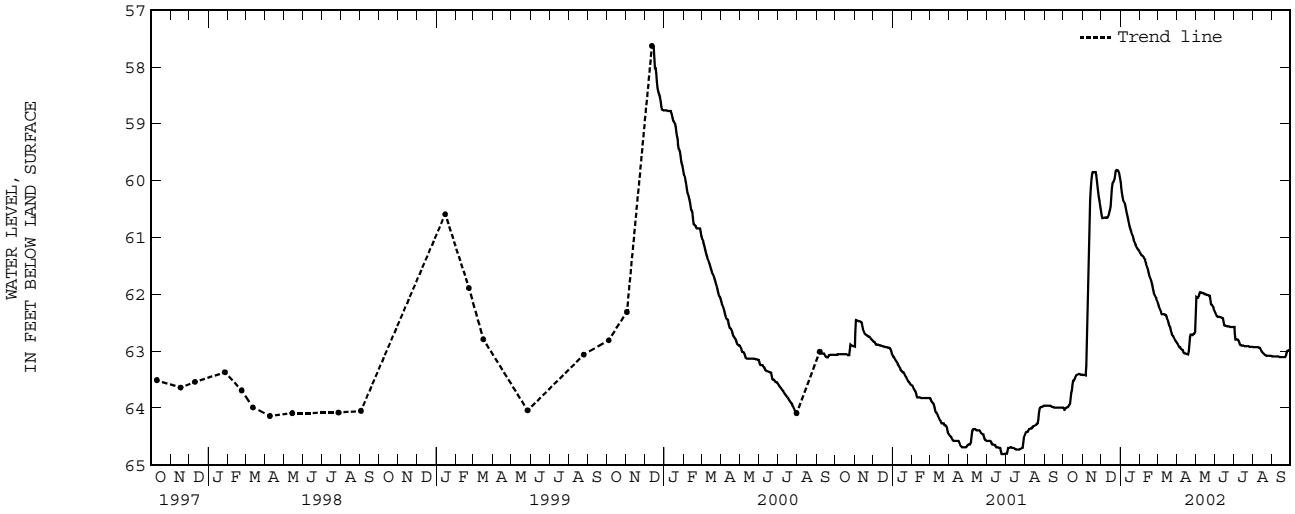
RIO DE LA PLATA BASIN

182526066165001. Local number, 1127.
LOCATION.--Lat 18°25'26", long 66°16'50", Hydrologic Unit 21010005, 1.03 mi north of Hwy 2, 0.93 mi west of the intersection of Hwy 659 with Hwy 693, and 0.03 mi north of Hwy 659. Name: Piezometer Santa Rosa USGS 2, Dorado.
AQUIFER.--Aguada Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m) 0-140 ft (0-42.7 m), screened 120-130 ft (36.6-39.6 m). Depth 140 ft (42.7 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 91.8 ft (28.0 m), above mean sea level, from topographic map. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 3.31 ft (1.01 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed in February 6, 1997, removed on Septemebr 30, 2002. Only monthly tapedown measurements published on water years 1998, 1999, and partial 2000.
PERIOD OF RECORD.--February 2, 1995 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 57.63 ft (17.56 m), below land-surface datum, December 11-14, 1999; lowest water level recorded, 64.9 ft (19.8 m), below land-surface datum, May 2-5, 10-15, 1995.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	63.99	63.41	60.53	60.00	61.26	62.12	62.84	62.65	62.29	62.57	62.92	63.09
2	63.99	63.42	60.62	60.08	61.27	62.16	62.86	62.05	62.32	62.57	62.93	63.09
3	64.02	63.42	60.66	60.16	61.29	62.19	62.87	62.05	62.33	62.58	62.93	63.09
4	64.04	63.42	60.66	60.24	61.32	62.21	62.89	62.06	62.38	62.79	62.93	63.09
5	64.01	63.42	60.65	60.31	61.32	62.24	62.93	62.06	62.39	62.79	62.93	63.09
6	63.99	63.43	60.65	60.35	61.33	62.26	62.93	62.06	62.39	62.79	62.93	63.09
7	63.99	63.43	60.65	60.37	61.34	62.29	62.93	62.03	62.39	62.79	62.93	63.09
8	63.99	63.09	60.64	60.40	61.35	62.35	62.96	61.97	62.40	62.79	62.93	63.09
9	63.98	62.14	60.65	60.43	61.39	62.35	62.97	61.96	62.40	62.81	62.93	63.09
10	63.97	61.66	60.65	60.50	61.41	62.35	62.97	61.97	62.40	62.82	62.94	63.09
11	63.95	61.20	60.65	60.56	61.45	62.35	62.99	61.97	62.41	62.88	62.94	63.09
12	63.93	60.81	60.64	60.61	61.49	62.35	63.03	61.97	62.41	62.89	62.94	63.10
13	63.93	60.46	60.63	60.66	61.50	62.36	63.03	61.98	62.41	62.90	62.94	63.10
14	63.73	60.22	60.58	60.71	61.55	62.36	63.04	61.98	62.42	62.90	62.96	63.10
15	63.73	60.05	60.52	60.78	61.60	62.36	63.04	61.98	62.42	62.90	62.99	63.10
16	63.64	59.93	60.50	60.82	61.65	62.39	63.04	62.00	62.54	62.90	63.01	63.10
17	63.52	59.86	60.40	60.86	61.69	62.43	63.05	62.00	62.55	62.90	63.02	63.10
18	63.52	59.84	60.20	60.89	61.70	62.45	63.05	62.00	62.55	62.91	63.04	63.10
19	63.52	59.85	60.07	60.93	61.74	62.51	63.05	62.01	62.55	62.91	63.04	63.10
20	63.48	59.85	60.03	60.94	61.79	62.54	63.06	62.01	62.56	62.91	63.06	63.10
21	63.46	59.85	60.02	60.99	61.84	62.56	62.97	62.01	62.56	62.91	63.07	63.10
22	63.43	59.85	60.00	61.03	61.89	62.61	62.81	62.02	62.56	62.91	63.08	63.10
23	63.42	59.85	59.97	61.05	61.95	62.65	62.71	62.02	62.56	62.91	63.08	63.10
24	63.41	59.95	59.84	61.08	61.99	62.66	62.71	62.02	62.56	62.91	63.08	63.06
25	63.41	60.04	59.81	61.12	62.01	62.72	62.71	62.03	62.57	62.91	63.08	63.00
26	63.40	60.14	59.82	61.14	62.03	62.72	62.72	62.18	62.57	62.92	63.08	62.99
27	63.40	60.25	59.82	61.16	62.06	62.74	62.72	62.18	62.57	62.92	63.08	62.99
28	63.41	60.31	59.82	61.19	62.09	62.76	62.69	62.19	62.57	62.92	63.08	62.99
29	63.41	60.39	59.82	61.20	---	62.78	62.69	62.19	62.57	62.92	63.08	62.99
30	63.41	60.46	59.87	61.22	---	62.81	62.69	62.23	62.57	62.92	63.08	62.96
31	63.41	---	59.95	61.22	---	62.82	---	62.26	---	62.92	63.09	---
MEAN	63.69	61.13	60.30	60.74	61.62	62.47	62.90	62.07	62.47	62.85	63.00	63.07

WTR YR 2002 MEAN 62.20 HIGHEST 59.81 DEC. 24, 25, 2001 LOWEST 64.04 OCT. 4, 2001



GROUND-WATER LEVELS

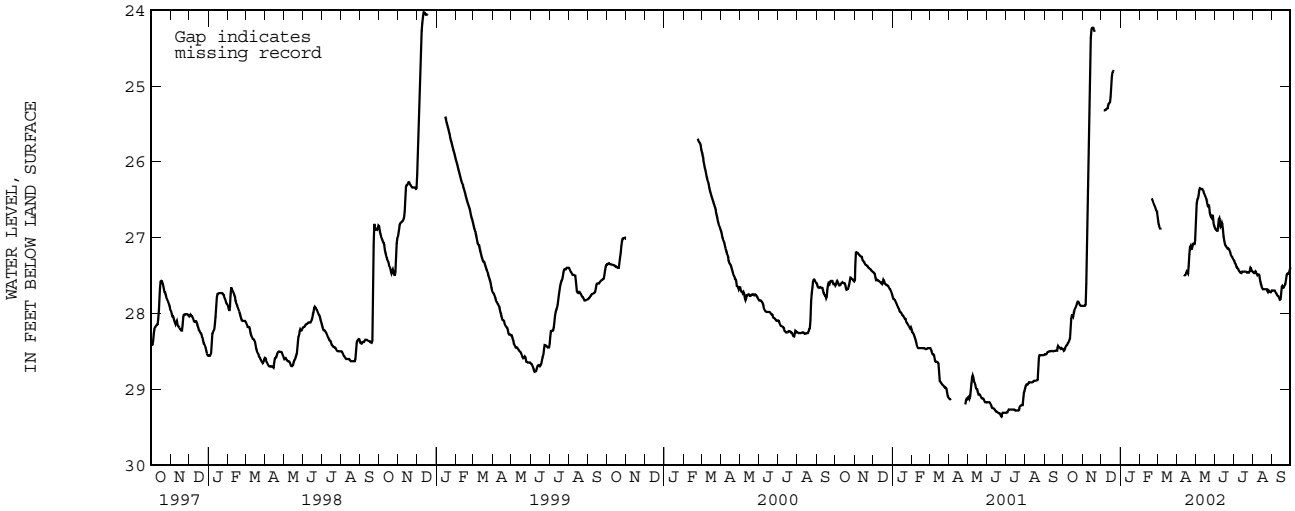
RIO DE LA PLATA BASIN--Continued

182548066164401. Local number, 1128.
LOCATION.--Lat 18°25'48", long 66°16'44", Hydrologic Unit 2101005, 1.47 mi north of Hwy 2, 0.60 mi south of Hwy 695, 0.04 mi south of the intersection of Hwy 694 with 659, and 0.02 mi east of Hwy 659. Name: Piezometer Maguayo USGS 2, Dorado.
AQUIFER.--Aguada Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m) 0-110 ft (0-33.5 m), screened 95.0-105 ft (29.0-32.0 m). Depth 110 ft (33.5 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 39.4 ft (12.0 m), above mean sea level, from topographic map. Measuring point: On shelter floor, 3.66 ft (1.12 m), above land-surface datum. Prior to April 12, 2002, metal bar on pulley casing, 3.80 ft (1.16 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on February 6, 1997.
PERIOD OF RECORD.--June 22, 1995 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 24.02 ft (7.32 m), below land-surface datum, December 11, 12, 1998; lowest water level recorded, 29.44 ft (8.85 m), below land-surface datum, June 23, 24, 2001.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28.47	27.90	---	---	---	26.68	---	27.00	26.87	27.29	27.45	27.70
2	28.48	27.90	---	---	---	26.77	---	26.66	26.88	27.30	27.46	27.70
3	28.50	27.90	---	---	---	26.81	---	26.59	26.89	27.32	27.47	27.70
4	28.47	27.90	---	---	---	26.84	---	26.51	26.91	27.34	27.47	27.70
5	28.45	27.90	25.32	---	---	26.86	---	26.49	26.91	27.35	27.45	27.70
6	28.43	27.90	25.32	---	---	26.88	---	26.48	26.91	27.39	27.45	27.70
7	28.42	27.88	25.32	---	---	26.91	---	26.40	26.79	27.40	27.47	27.73
8	28.42	27.34	25.32	---	---	---	---	26.35	26.73	27.40	27.49	27.73
9	28.39	26.49	25.31	---	---	---	---	26.35	26.76	27.42	27.50	27.75
10	28.39	25.91	25.30	---	---	---	---	26.36	26.83	27.43	27.47	27.77
11	28.35	25.38	25.30	---	---	---	---	26.36	26.89	27.45	27.50	27.77
12	28.34	25.02	25.29	---	---	---	27.49	26.36	26.81	27.46	27.50	27.78
13	28.33	24.69	25.23	---	---	---	27.49	26.36	26.81	27.47	27.57	27.81
14	28.08	24.45	25.23	---	---	---	27.50	26.39	26.84	27.47	27.60	27.83
15	28.05	24.28	25.22	---	---	---	27.49	26.41	26.95	27.45	27.64	27.80
16	28.00	24.24	25.21	---	---	---	27.50	26.43	27.02	27.45	27.65	27.68
17	28.05	24.23	25.07	---	---	---	27.45	26.45	27.06	27.45	27.68	27.62
18	28.03	24.23	24.91	---	---	---	27.45	26.47	27.10	27.45	27.68	27.66
19	27.97	24.24	24.83	---	---	---	27.47	26.51	27.11	27.45	27.68	27.66
20	27.95	24.28	24.81	---	26.47	---	27.48	26.55	27.12	27.45	27.68	27.66
21	27.93	24.29	24.81	---	26.49	---	27.26	26.59	27.14	27.45	27.68	27.63
22	27.91	---	24.77	---	26.52	---	27.19	26.61	27.14	27.46	27.68	27.62
23	27.89	---	---	---	26.54	---	27.07	26.52	27.14	27.46	27.68	27.61
24	27.85	---	---	---	26.56	---	27.15	26.66	27.16	27.46	27.68	27.51
25	27.84	---	---	---	26.58	---	27.16	26.69	27.16	27.46	27.73	27.49
26	27.85	---	---	---	26.61	---	27.14	26.72	27.20	27.46	27.71	27.47
27	27.86	---	---	---	26.63	---	27.08	26.73	27.23	27.46	27.69	27.48
28	27.89	---	---	---	26.65	---	27.08	26.75	27.24	27.42	27.72	27.48
29	27.90	---	---	---	---	---	27.08	26.65	27.26	27.38	27.72	27.44
30	27.90	---	---	---	---	---	27.09	26.81	27.27	27.44	27.73	27.41
31	27.90	---	---	---	---	---	---	26.83	---	27.45	27.70	---
MEAN	28.14	---	---	---	---	---	---	26.55	27.00	27.42	27.60	27.65

WTR YR 2002 MEAN 27.07 HIGHEST 24.23 NOV. 17, 18, 2001 LOWEST 28.50 OCT. 2, 3, 2001



GROUND-WATER LEVELS

RIO DE LA PLATA BASIN--Continued

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 16	28.00	DEC 04	25.32	FEB 19	26.45	MAR 08	26.96	JUN 21	27.13	AUG 21	27.68
16	28.04	FEB 19	26.44	MAR 08	26.94	APR 12	27.57	21	27.14	21	27.67
16	28.07										

WATER YEAR 2002 HIGHEST 25.32 DEC. 4, 2001 LOWEST 28.07 OCT. 16, 2001

GROUND-WATER LEVELS

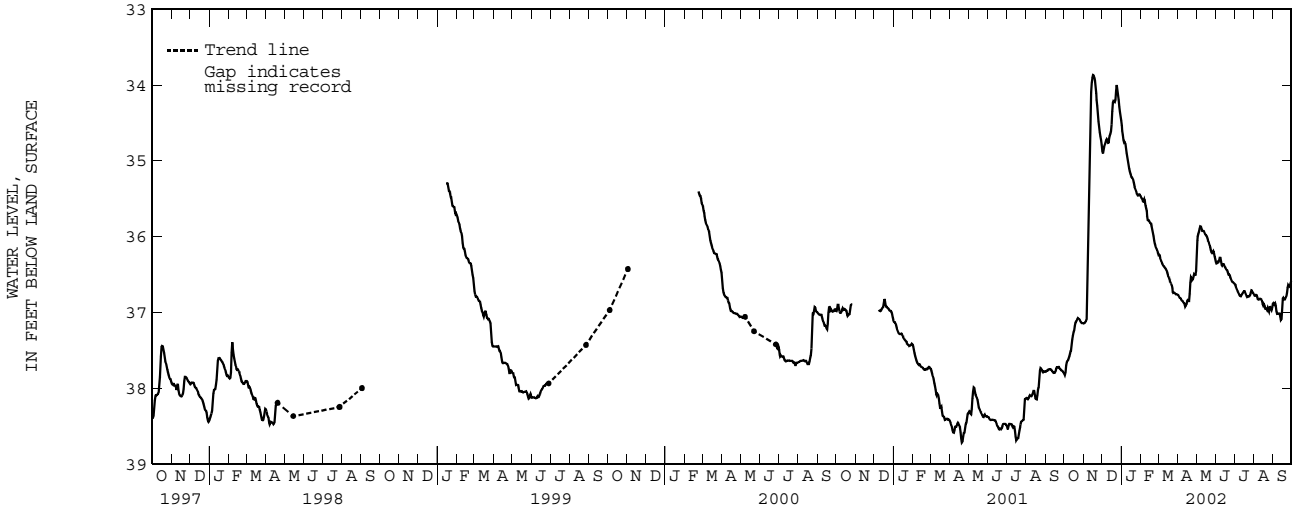
RIO DE LA PLATA BASIN--Continued

182620066163400. Local number, 1129.
LOCATION.--Lat 18°26'20", long 66°16'34", Hydrologic Unit 2101005, 1.85 mi south of Dorado plaza, 0.70 mi southwest of Laboratorio Dorado, 0.65 mi northwest of the intersection of Hwy 695 with Hwy 693, and 0.09 mi north of Hwy 695. Name: Piezometer Higuillar USGS 1, Dorado.
AQUIFER.--Aguada Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m) 0-490 ft (0-149.4 m), screened 470-480 ft (143.3-146.3 m). Depth 490 ft (149.4 m)
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 49.2 ft (15.0 m), above mean sea level, from topographic map. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 3.60 ft (1.10 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), installed on May 16, 1996, replaced by an Electronic Data Logger (EDL), installed on February 23, 1998. Well screened below freshwater/saltwater interface at approximately 305 ft (93.0 m), below land-surface datum.
PERIOD OF RECORD.--May 16, 1996 to May 15, 1998. From May 15, 1998 to September 30, 1998, bi-monthly measurements only. January 15, 1999 to June 30, 1999. From June 30, 1999 to August 27, 1999, bi-monthly measurements only. February 23, 2000 to September 30, 2002, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 33.83 ft (10.3 m), below land-surface datum, November 17, 2001; lowest water level recorded, 39.89 ft (12.2 m), below land-surface datum, June 2, 3, 4, 9, 1996.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37.80	37.15	34.83	34.49	35.47	36.24	36.77	36.41	36.33	36.62	36.75	36.89
2	37.81	37.14	34.92	34.58	35.48	36.25	36.77	36.08	36.35	36.63	36.77	36.86
3	37.84	37.15	34.89	34.63	35.51	36.23	36.78	36.02	36.36	36.64	36.79	36.90
4	37.74	37.13	34.82	34.69	35.50	36.26	36.80	35.98	36.34	36.67	36.77	36.89
5	37.66	37.12	34.80	34.76	35.57	36.31	36.82	35.95	36.33	36.68	36.77	36.88
6	37.65	37.11	34.78	34.76	35.51	36.30	36.81	35.93	36.35	36.72	36.78	36.95
7	37.63	37.08	34.74	34.74	35.51	36.35	36.83	35.87	36.29	36.73	36.82	37.02
8	37.63	36.44	34.72	34.80	35.57	36.36	36.85	35.86	36.27	36.74	36.84	37.02
9	37.58	35.30	34.71	34.87	35.61	36.38	36.85	35.88	36.29	36.77	36.83	37.01
10	37.58	34.90	34.75	34.93	35.65	36.39	36.86	35.92	36.36	36.78	36.82	37.02
11	37.51	34.63	34.78	34.98	35.68	36.40	36.88	35.93	36.39	36.79	36.82	37.01
12	37.51	34.39	34.74	35.04	35.78	36.41	36.88	35.92	36.38	36.79	36.82	37.02
13	37.50	34.18	34.68	35.08	35.79	36.43	36.94	35.93	36.37	36.76	36.83	37.09
14	37.37	34.01	34.66	35.13	35.79	36.43	36.91	35.93	36.36	36.76	36.83	37.12
15	37.34	33.93	34.63	35.16	35.78	36.46	36.91	35.97	36.37	36.74	36.86	37.06
16	37.27	33.88	34.59	35.19	35.83	36.50	36.88	35.97	36.40	36.73	36.92	36.85
17	37.26	33.86	34.45	35.21	35.82	36.52	36.83	35.99	36.41	36.71	36.90	36.79
18	37.22	33.89	34.24	35.23	35.84	36.54	36.85	36.00	36.43	36.73	36.88	36.83
19	37.14	33.90	34.22	35.22	35.89	36.57	36.85	36.04	36.44	36.75	36.93	36.83
20	37.13	33.98	34.20	35.26	35.93	36.59	36.85	36.05	36.45	36.77	36.97	36.84
21	37.12	34.07	34.23	35.31	35.97	36.61	36.66	36.08	36.49	36.80	36.93	36.80
22	37.10	34.15	34.22	35.33	36.02	36.63	36.56	36.11	36.51	36.80	36.97	36.80
23	37.08	34.24	34.18	35.36	36.08	36.65	36.51	36.12	36.49	36.79	36.97	36.78
24	37.08	34.31	33.97	35.38	36.11	36.71	36.59	36.16	36.53	36.79	36.92	36.71
25	37.09	34.44	34.03	35.41	36.14	36.75	36.56	36.20	36.55	36.78	37.02	36.64
26	37.09	34.52	34.10	35.43	36.15	36.74	36.57	36.22	36.56	36.79	36.96	36.64
27	37.11	34.59	34.15	35.45	36.17	36.74	36.49	36.21	36.59	36.76	36.91	36.66
28	37.13	34.66	34.24	35.46	36.20	36.75	36.50	36.21	36.60	36.72	36.95	36.66
29	37.14	34.70	34.33	35.45	---	36.76	36.51	36.18	36.60	36.70	36.95	36.62
30	37.14	34.75	34.38	35.44	---	36.76	36.50	36.26	36.62	36.73	36.99	36.59
31	37.14	---	34.45	35.45	---	36.76	---	36.27	---	36.74	36.88	---
MEAN	37.37	35.05	34.50	35.10	35.80	36.51	36.75	36.05	36.43	36.74	36.88	36.86

WTR YR 2002 MEAN 36.17 HIGHEST 33.83 NOV. 17, 2001 LOWEST 37.84 OCT. 3, 2001



GROUND-WATER LEVELS

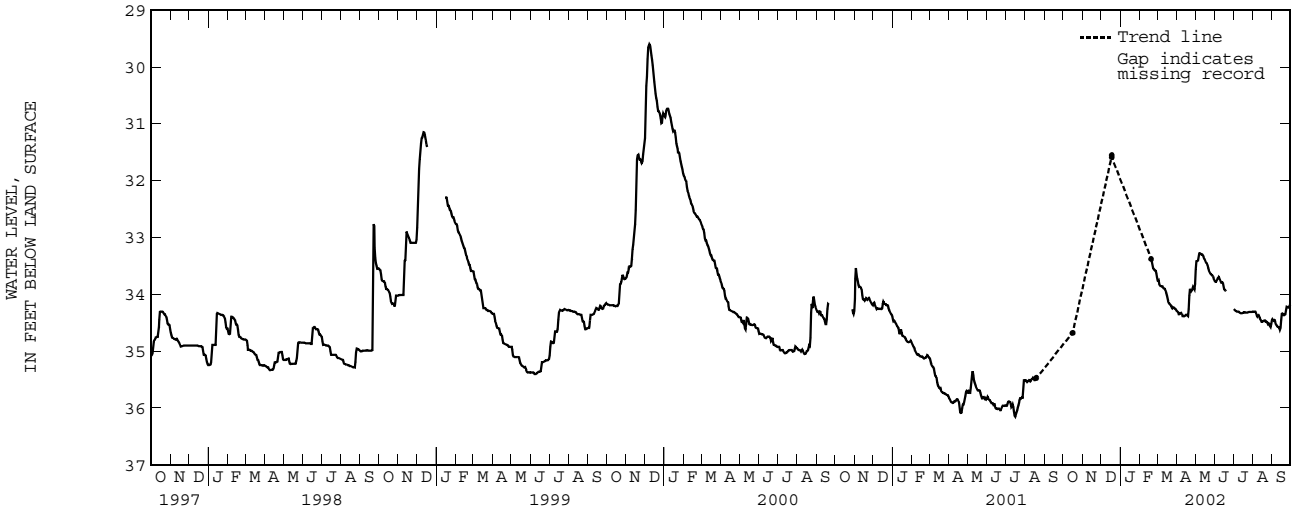
RIO DE LA PLATA BASIN--Continued

182620066163403. Local number, 1130.
LOCATION.--Lat 18°26'20", long 66°16'34", Hydrologic Unit 2101005, 1.85 mi south of Dorado plaza, 0.70 mi southwest of Laboratorio Dorado, 0.65 mi northwest of the intersection of Hwy 695 with Hwy 693, and 0.09 mi north of Hwy 695. Name: Piezometer Higuillar USGS 4, Dorado.
AQUIFER.--Aguada Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m) 0-100 ft (0-30.5 m), screened 80.0-90.0 ft (24.4-27.4 m). Depth 100 ft (30.5 m)
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 49.2 ft (15.0 m), above mean sea level, from topographic map. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 3.60 ft (1.10 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on February 6, 1997. From October 1 2001 to February 19, 2002, tapedowns measurements only.
PERIOD OF RECORD.--January 23, 1995 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 29.58 ft (9.02 m), below land-surface datum, December 8, 9, 1999; lowest water level recorded, 36.15 ft (11.02 m), below land-surface datum, May 1, 11, 13, 1995 and July 16, 17, 2001.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	33.72	34.28	33.70	33.76	34.24	34.31	34.44
2	---	---	---	---	---	33.79	34.30	33.42	33.78	34.27	34.30	34.44
3	---	---	---	---	---	33.72	34.30	33.42	33.78	34.27	34.30	34.46
4	---	---	---	---	---	33.78	34.33	33.42	33.78	34.28	34.30	34.46
5	---	---	---	---	---	33.84	34.37	33.41	33.73	34.29	34.30	34.44
6	---	---	---	---	---	33.84	34.33	33.41	33.74	34.30	34.30	34.47
7	---	---	---	---	---	33.86	34.33	33.28	33.69	34.30	34.36	34.53
8	---	---	---	---	---	33.86	34.33	33.27	33.70	34.30	34.39	34.53
9	---	---	---	---	---	33.85	34.32	33.28	33.72	34.30	34.39	34.55
10	---	---	---	---	---	33.86	34.38	33.29	33.76	34.31	34.36	34.58
11	---	---	---	---	---	33.89	34.38	33.30	33.79	34.32	34.37	34.57
12	---	---	---	---	---	33.90	34.38	33.29	33.79	34.33	34.40	34.57
13	---	---	---	---	---	33.90	34.39	33.31	33.78	34.33	34.43	34.61
14	---	---	---	---	---	33.90	34.38	33.33	33.79	34.33	34.44	34.64
15	---	---	---	---	---	33.96	34.38	33.37	33.81	34.33	34.47	34.54
16	---	---	---	---	---	34.00	34.37	33.38	33.91	34.33	34.49	34.36
17	---	---	---	---	---	34.04	34.35	33.40	33.92	34.32	34.48	34.32
18	---	---	---	---	---	34.10	34.37	33.44	33.92	34.31	34.46	34.35
19	---	---	---	---	---	34.15	34.37	33.45	33.94	34.32	34.47	34.35
20	---	---	---	---	33.41	34.15	34.39	33.46	33.96	34.32	34.47	34.38
21	---	---	---	---	33.45	34.17	34.13	33.50	---	34.32	34.45	34.35
22	---	---	---	---	33.52	34.19	33.91	33.57	---	34.32	34.48	34.35
23	---	---	---	---	33.56	34.19	33.89	33.58	---	34.32	34.49	34.35
24	---	---	---	---	33.55	34.21	33.97	33.60	---	34.32	34.47	34.22
25	---	---	---	---	33.58	34.25	33.93	33.62	---	34.32	34.53	34.22
26	---	---	---	---	33.58	34.24	33.93	33.64	---	34.31	34.51	34.23
27	---	---	---	---	33.59	34.23	33.86	33.65	---	34.31	34.51	34.23
28	---	---	---	---	33.68	34.23	33.87	33.67	---	34.31	34.54	34.24
29	---	---	---	---	---	34.25	33.90	33.66	---	34.31	34.57	34.20
30	---	---	---	---	---	34.25	33.92	33.71	---	34.31	34.57	34.18
31	---	---	---	---	---	34.27	---	33.72	---	34.31	34.47	---
MEAN	---	---	---	---	---	34.02	34.21	33.47	---	34.31	34.43	34.41

WTR YR 2002 MEAN 34.08 HIGHEST 33.27 MAY 6, 2002 LOWEST 34.64 SEPT. 14, 2002



GROUND-WATER LEVELS

RIO DE LA PLATA BASIN--Continued

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 16	34.68	FEB 19	33.38	APR 12	34.40	AUG 21	34.45	SEP 05	34.44
DEC 18	31.55	APR 12	34.38	JUN 21	33.95	21	34.46	05	34.43
18	31.59								

WATER YEAR 2002 HIGHEST 31.55 DEC. 18, 2001 LOWEST 34.68 OCT. 16, 2001

GROUND-WATER LEVELS

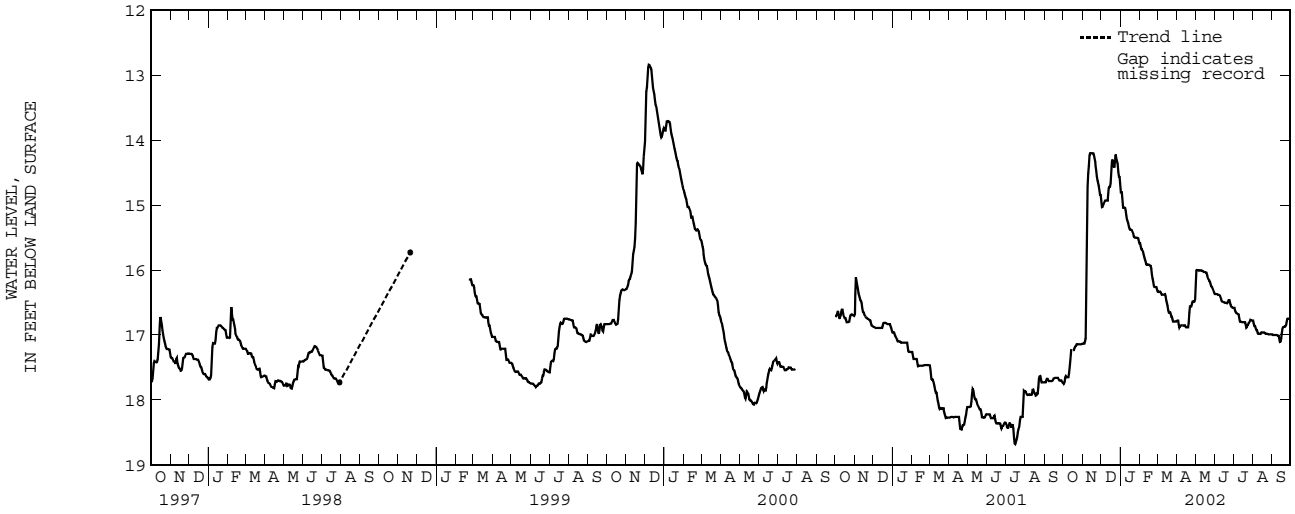
RIO DE LA PLATA BASIN--Continued

182657066162700. Local number, 1131.
LOCATION.--Lat 18°26'57", long 66°16'27", Hydrologic Unit 21010005, 1.16 mi south of Dorado plaza, 0.45 mi west of Laboratorio Dorado, 1.79 mi southeast of Dorado airport main gate, and 0.19 mi west of the PR Aqueduct and Sewer Authority San Antonio public supply well (San Antonio 3). Name: Piezometer San Antonio USGS 1, Dorado.
AQUIFER.--Aguada Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m), 0-290 ft (0-88.4 m), screened 270-280 ft (82.3-85.3 m). Depth 290 ft (88.4 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 19.6 ft (6.00 m), above mean sea level, from topographic map. Measuring point: Shelter floor on top of 4 in (0.10 m), casing, 3.35 ft (1.02 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on November 21, 1997.
PERIOD OF RECORD.--October 19, 1994 to September 30, 2002, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 12.83 ft (3.91 m), below land-surface datum, December 7, 8, 1999; lowest water level recorded, 19.56 ft (5.96 m), below land-surface datum, May 3, 4, 1995.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.74	17.13	14.85	14.80	15.59	16.33	16.79	16.43	16.37	16.58	16.78	16.99
2	17.74	17.13	15.04	14.80	15.59	16.34	16.78	16.02	16.37	16.58	16.78	17.00
3	17.77	17.13	15.03	14.80	15.68	16.34	16.78	16.00	16.37	16.58	16.86	17.00
4	17.70	17.13	15.03	14.80	15.68	16.33	16.78	16.00	16.37	16.64	16.86	17.00
5	17.62	17.13	14.98	15.04	15.68	16.34	16.91	16.00	16.38	16.64	16.86	17.00
6	17.65	17.07	14.98	15.04	15.72	16.34	16.86	16.01	16.38	16.67	16.92	17.00
7	17.65	17.04	14.93	15.04	15.76	16.33	16.86	16.01	16.38	16.67	16.92	17.00
8	17.65	16.33	14.93	15.04	15.80	16.38	16.85	16.01	16.39	16.68	16.93	17.00
9	17.65	14.94	14.93	15.05	15.83	16.38	16.85	16.00	16.39	16.68	16.98	17.01
10	17.65	14.51	14.93	15.12	15.87	16.38	16.85	16.01	16.40	16.69	16.98	17.01
11	17.53	14.51	14.93	15.19	15.89	16.38	16.85	16.01	16.44	16.79	16.98	17.01
12	17.45	14.28	14.93	15.25	15.92	16.38	16.86	16.01	16.48	16.79	16.98	17.01
13	17.45	14.20	14.77	15.25	15.92	16.38	16.86	16.02	16.48	16.79	16.98	17.11
14	17.23	14.20	14.72	15.31	15.92	16.37	16.85	16.03	16.49	16.80	16.99	17.11
15	17.20	14.20	14.72	15.35	15.91	16.45	16.85	16.03	16.49	16.80	16.96	17.10
16	---	14.20	14.72	15.38	15.92	16.49	16.88	16.03	16.50	16.80	16.96	17.02
17	17.24	14.20	14.61	15.38	15.93	16.53	16.88	16.04	16.50	16.80	16.96	16.92
18	17.24	14.20	14.37	15.38	15.93	16.58	16.88	16.04	16.50	16.80	16.96	16.88
19	17.23	14.21	14.30	15.39	15.94	16.66	16.88	16.04	16.50	16.80	16.96	16.88
20	17.18	14.26	14.30	15.39	16.02	16.65	16.88	16.10	16.51	16.80	16.96	16.87
21	17.18	14.31	14.41	15.44	16.12	16.65	16.75	16.12	16.51	16.87	16.98	16.87
22	17.17	14.36	14.41	15.45	16.14	16.65	16.56	16.13	16.51	16.90	16.98	16.87
23	17.14	14.44	14.41	15.49	16.21	16.72	16.56	16.16	16.46	16.85	16.98	16.87
24	17.14	14.50	14.18	15.50	16.26	16.72	16.56	16.17	16.46	16.85	16.98	16.84
25	17.14	14.62	14.26	15.50	16.26	16.72	16.56	16.18	16.46	16.84	16.99	16.76
26	17.14	14.62	14.33	15.50	16.26	16.79	16.49	16.24	16.54	16.81	16.99	16.75
27	17.14	14.71	14.33	15.50	16.26	16.79	16.48	16.25	16.54	16.81	16.99	16.75
28	17.14	14.71	14.41	15.50	16.27	16.79	16.48	16.26	16.57	16.77	16.99	16.75
29	17.14	14.84	14.56	15.51	---	16.79	16.48	16.28	16.58	16.77	16.99	16.75
30	17.14	14.84	14.56	15.51	---	16.79	16.49	16.31	16.58	16.78	16.99	16.75
31	17.14	---	14.57	15.59	---	16.79	---	16.34	---	16.78	16.99	---
MEAN	---	15.13	14.66	15.27	15.94	16.53	16.75	16.11	16.46	16.76	16.95	16.93

WTR YR 2002 MEAN 16.24 HIGHEST 14.11 DEC. 24, 2001 LOWEST 17.77 OCT. 2, 3, 2001



GROUND-WATER LEVELS

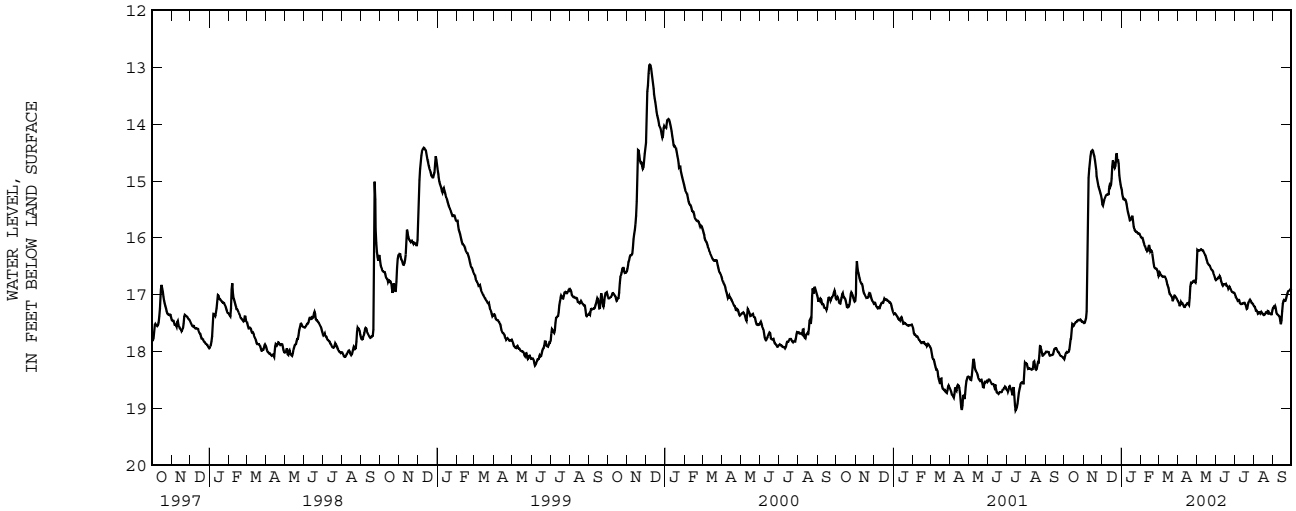
RIO DE LA PLATA BASIN--Continued

182657066162701. Local number, 1132.
LOCATION.--Lat 18°26'57", long 66°16'27", Hydrologic Unit 21010005, 20.0 ft (6.10 m) north of San Antonio 1. Name: Piezometer San Antonio USGS 3, Dorado.
AQUIFER.--Aguada Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m), 0-80.0 ft (0-24.4 m), screened 65.0-75.0 ft (19.8-22.9 m). Depth 80.0 ft (24.4 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 19.6 ft (6.00 m), above mean sea level, from topographic map. Measuring point: Shelter floor on top of 4 in (0.10 m), casing, 3.32 ft (1.01 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on February 6, 1997.
PERIOD OF RECORD.--October 19, 1994 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 12.93 ft (3.94 m), below land-surface datum, December 8, 1999; lowest water level recorded, 19.05 ft (5.80 m), below land-surface datum, April 21, 2001.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.12	17.49	15.35	15.14	15.98	16.66	17.09	16.65	16.74	16.97	17.19	17.25
2	18.14	17.50	15.46	15.18	16.00	16.69	17.12	16.22	16.74	16.99	17.20	17.20
3	18.05	17.50	15.40	15.26	16.00	16.60	17.13	16.20	16.72	17.02	17.22	17.23
4	18.04	17.49	15.36	15.30	16.00	16.61	17.18	16.23	16.73	17.06	17.27	17.22
5	18.00	17.42	15.31	15.34	16.06	16.64	17.23	16.23	16.70	17.05	17.28	17.19
6	18.02	17.41	15.30	15.32	16.09	16.65	17.10	16.23	16.69	17.10	17.27	17.29
7	18.02	17.18	15.26	15.31	16.13	16.68	17.15	16.22	16.70	17.10	17.32	17.33
8	18.01	16.27	15.24	15.35	16.15	16.68	17.15	16.20	16.64	17.08	17.34	17.35
9	17.99	15.06	15.24	15.37	16.19	16.69	17.14	16.20	16.74	17.10	17.30	17.35
10	17.94	14.83	15.24	15.46	16.22	16.68	17.19	16.21	16.78	17.15	17.32	17.37
11	17.79	14.74	15.24	15.51	16.22	16.68	17.19	16.22	16.80	17.15	17.31	17.37
12	17.77	14.61	15.23	15.58	16.25	16.68	17.24	16.22	16.85	17.18	17.35	17.40
13	17.77	14.51	15.03	15.61	16.20	16.70	17.19	16.24	16.84	17.15	17.29	17.52
14	17.53	14.47	15.12	15.67	16.15	16.74	17.19	16.27	16.82	17.16	17.32	17.52
15	17.50	14.46	15.09	15.72	16.10	16.79	17.18	16.29	16.81	17.15	17.32	17.38
16	17.55	14.45	15.06	15.66	16.26	16.85	17.17	16.32	16.82	17.15	17.34	17.20
17	17.54	14.50	14.85	15.68	16.22	16.86	17.13	16.37	16.81	17.13	17.36	17.13
18	17.53	14.56	14.64	15.59	16.22	16.92	17.16	16.40	16.81	17.15	17.36	17.10
19	17.49	14.58	14.63	15.63	16.24	16.99	17.17	16.44	16.87	17.18	17.35	17.09
20	17.49	14.69	14.70	15.78	16.31	17.00	17.19	16.46	16.82	17.23	17.33	17.13
21	17.48	14.75	14.79	15.82	16.40	17.00	16.91	16.47	16.90	17.27	17.30	17.08
22	17.47	14.87	14.75	15.84	16.48	17.02	16.80	16.50	16.90	17.20	17.34	17.07
23	17.46	14.95	14.74	15.87	16.53	17.05	16.78	16.48	16.85	17.15	17.31	17.03
24	17.44	15.00	14.39	15.89	16.53	17.10	16.81	16.52	16.87	17.14	17.27	16.98
25	17.45	15.07	14.63	15.89	16.55	17.13	16.77	16.54	16.89	17.12	17.32	16.95
26	17.45	15.12	14.70	15.89	16.54	17.04	16.78	16.57	16.92	17.10	17.34	16.93
27	17.43	15.15	14.54	15.91	16.55	17.03	16.74	16.56	16.95	17.08	17.31	16.93
28	17.44	15.19	14.84	15.93	16.59	17.01	16.77	16.60	16.96	17.14	17.35	16.92
29	17.47	15.24	14.95	15.93	---	17.04	16.78	16.63	16.96	17.14	17.34	16.91
30	17.48	15.27	15.02	15.92	---	17.05	16.79	16.66	16.96	17.16	17.35	16.89
31	17.47	---	15.10	15.94	---	17.07	---	16.71	---	17.16	17.23	---
MEAN	17.69	15.48	15.01	15.62	16.26	16.85	17.04	16.39	16.82	17.13	17.31	17.18

WTR YR 2002 MEAN 16.57 HIGHEST 14.38 DEC. 24, 2001 LOWEST 18.15 OCT. 2, 3, 2001



GROUND-WATER LEVELS

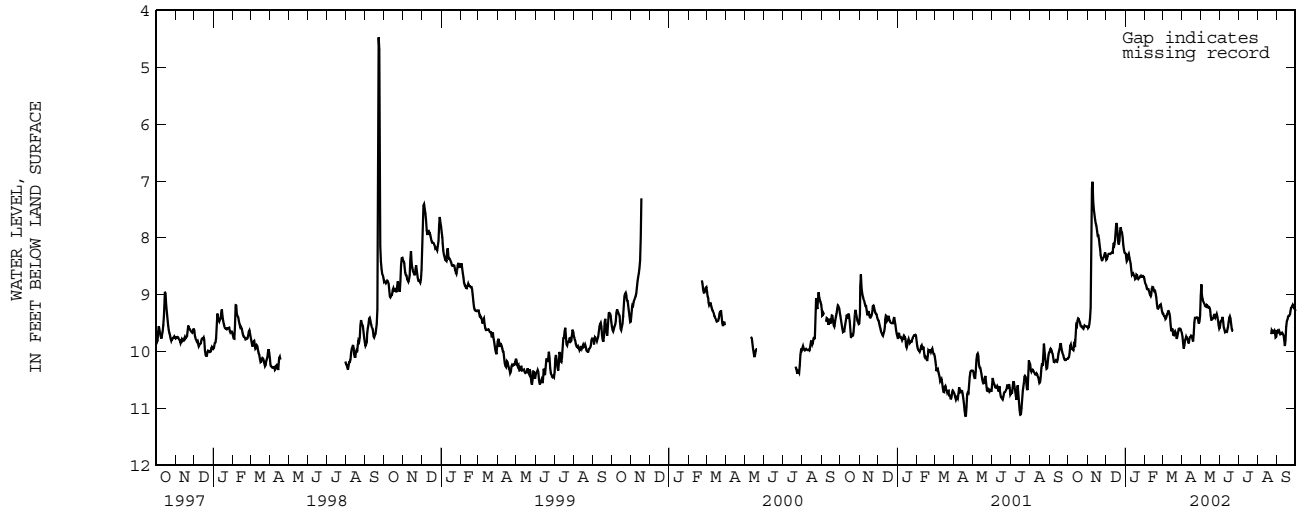
RIO DE LA PLATA BASIN--Continued

182654066150600. Local number, 1133.
LOCATION.--Lat 18°26'54", long 66°15'06", Hydrologic Unit 21010005, 0.92 mi southeast of the Dorado bridge, 0.66 mi east of Hwy 693, 0.09 mi north of the intersection of Hwy 165 with Hwy 867, and 0.01 mi east of Hwy 165. Name: Piezometer USGS 1, Toa Baja.
AQUIFER.--Tertiary Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m), 0-165 ft (0-50.3 m), screened 25.0-165 ft (7.62-50.3 m) . Depth 167 ft (50.9 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 7.00 ft (2.10 m), above mean sea level, from topographic map. Measuring point: Top of shelter floor on top of 4 in (0.10 m) casing, 3.60 ft (1.10 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on November 25, 1997. Water levels affected by marine tides.
PERIOD OF RECORD.-- November 16, 1992 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 3.04 ft (0.93 m), below land-surface datum, September 10, 1996; lowest water level recorded, 11.19 ft (3.41 m), below land-surface datum April 19, 20, 2001.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.12	9.55	8.36	8.24	8.76	9.32	9.65	9.28	9.59	---	---	9.64
2	10.12	9.60	8.41	8.32	8.81	9.35	9.70	8.77	9.55	---	---	9.62
3	10.09	9.58	8.33	8.38	8.81	9.33	9.78	8.87	9.41	---	---	9.70
4	9.98	9.57	8.31	8.45	8.89	9.38	9.93	9.05	9.50	---	---	9.62
5	9.83	9.45	8.28	8.34	8.91	9.38	9.96	9.08	9.41	---	---	9.67
6	9.93	9.38	8.28	8.26	8.89	9.38	9.81	9.12	9.37	---	---	9.69
7	9.95	9.08	8.28	8.30	8.91	9.48	9.80	9.13	9.56	---	---	9.71
8	9.93	7.48	8.29	8.38	8.95	9.34	9.74	9.18	9.59	---	---	9.68
9	10.00	6.77	8.26	8.42	9.00	9.38	9.72	9.19	9.64	---	---	9.66
10	9.95	7.26	8.26	8.49	9.00	9.31	9.80	9.23	9.68	---	---	9.67
11	9.76	7.46	8.25	8.64	9.05	9.28	9.77	9.20	9.62	---	---	9.71
12	9.91	7.55	8.28	8.66	8.96	9.30	9.89	9.16	9.68	---	---	9.71
13	9.94	7.64	8.06	8.60	8.85	9.33	9.82	9.22	9.63	---	---	9.90
14	9.48	7.73	8.12	8.63	8.88	9.46	9.76	9.23	9.61	---	---	9.90
15	9.58	7.77	8.11	8.66	8.86	9.61	9.74	9.23	9.54	---	---	9.69
16	9.51	7.82	7.99	8.69	8.96	9.67	9.75	9.21	9.43	---	---	9.44
17	9.40	7.93	7.79	8.76	8.92	9.54	9.69	9.29	9.39	---	---	9.50
18	9.43	8.00	7.69	8.67	8.95	9.68	9.76	9.44	9.38	---	---	9.39
19	9.43	7.92	7.86	8.62	9.01	9.74	9.79	9.44	9.46	---	---	9.38
20	9.48	8.12	8.01	8.69	9.08	9.69	9.85	9.44	9.55	---	---	9.38
21	9.52	8.13	8.13	8.73	9.24	9.64	9.55	9.41	9.66	---	---	9.35
22	9.58	8.29	8.10	8.72	9.25	9.66	9.42	9.42	9.61	---	9.75	9.35
23	9.55	8.32	8.00	8.71	9.25	9.70	9.39	9.32	9.66	---	9.64	9.25
24	9.56	8.39	7.76	8.69	9.21	9.77	9.42	9.36	---	---	9.60	9.22
25	9.61	8.40	7.87	8.69	9.20	9.78	9.39	9.38	---	---	9.69	9.23
26	9.59	8.38	7.91	8.65	9.16	9.69	9.41	9.43	---	---	9.69	9.17
27	9.54	8.35	7.91	8.68	9.18	9.64	9.40	9.33	---	---	9.58	9.18
28	9.54	8.33	8.08	8.69	9.27	9.57	9.50	9.36	---	---	9.67	9.23
29	9.56	8.27	8.18	8.68	---	9.63	9.51	9.42	---	---	9.67	9.24
30	9.56	8.24	8.23	8.67	---	9.60	9.44	9.48	---	---	9.83	9.27
31	9.56	---	8.30	8.70	---	9.61	---	9.60	---	---	9.65	---
MEAN	9.71	8.29	8.12	8.57	9.01	9.52	9.67	9.27	---	---	---	9.51

WTR YR 2002 MEAN 9.13 HIGHEST 6.58 NOV. 8, 9, 2001 LOWEST 10.17 OCT. 2, 2001



GROUND-WATER LEVELS

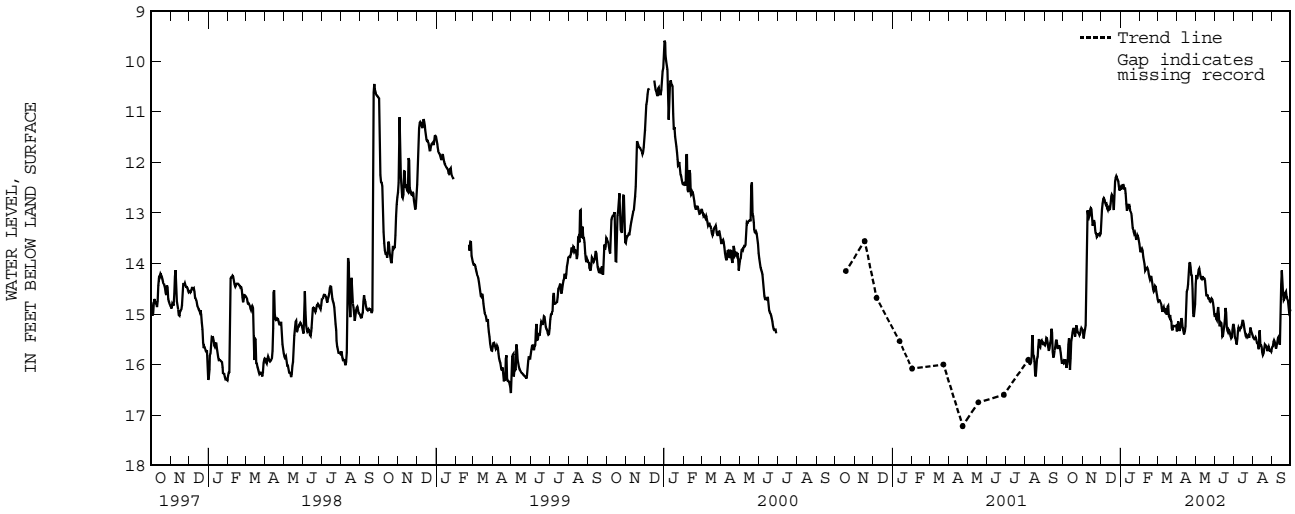
RIO DE LA PLATA BASIN--Continued

182530066135400. Local number, 216.
LOCATION.--Lat 18°25'30", long 66°13'54", Hydrologic Unit 21010005, 2.61 mi northeast of Toa Alta plaza, 2.73 mi southwest of Sabana Seca US Naval Radio Station, and 1.76 mi southeast of Hwy 2 km 17.7. Name: Campanilla Navy Well, Toa Baja.
AQUIFER.--Aguada Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 16 in (0.41 m) 0-106 ft (0-32.3 m), cased 16 in (0.41 m) 0-20.0 ft (0-6.10 m), cased 12 in (0.30 m) 0-106 ft (0-32.3 m), perforated 20.0-106 ft (6.10-32.3 m), diameter 10 in (10.25 m) 106-140 ft (32.3-42.7 m), cased 10 in (0.25 m) 106-140 ft (32.3-42.7 m), perforated 106-140 ft (32.3-42.7 m). Depth 140 ft (42.7 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 13.0 ft (3.96 m), above mean sea level, from topographic map. Measuring point: 3.27 ft (0.99 m), above land-surface datum. Prior to August 6, 2001, hole on side of casing, 1.80 ft (0.55 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on November 6, 1998. Water levels affected by nearby pumping well. From October 2000 to August 6, 2001, tapedowns measurements only.
PERIOD OF RECORD.--October 1985 to June 29, 2000. Shelter found destroyed on June 29, 2000, replaced on August 6, 2001 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 9.38 ft (2.86 m), below land-surface datum, June 23, 1987; lowest water level recorded, 18.40 ft (5.61 m), below land-surface datum, September 24, 1994.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.89	15.33	13.36	12.44	13.66	14.67	15.24	14.62	15.08	15.23	15.44	15.60
2	15.96	15.30	13.00	12.53	13.78	14.75	15.45	14.19	15.04	15.24	15.46	15.69
3	15.99	15.48	12.86	12.51	13.78	14.76	15.11	14.27	14.94	15.40	15.49	15.59
4	15.94	15.49	12.76	12.53	13.68	14.74	15.18	14.31	15.24	15.49	15.50	15.52
5	15.86	15.26	12.69	12.45	13.74	14.72	15.35	14.27	14.99	15.46	15.47	15.51
6	16.05	15.35	12.72	12.41	13.76	14.74	15.32	14.17	14.95	15.62	15.46	15.58
7	16.08	15.10	12.73	12.53	13.97	14.78	15.27	14.08	14.77	15.58	15.54	15.69
8	15.91	14.28	12.86	12.55	13.90	14.81	15.13	14.12	15.23	15.40	15.59	15.68
9	15.91	12.85	12.81	12.45	14.13	14.96	15.04	14.24	15.21	15.28	15.57	15.58
10	15.30	13.05	12.83	12.79	14.16	14.95	15.23	14.27	15.23	15.24	15.68	15.52
11	15.67	13.08	12.97	12.83	14.08	14.85	15.30	14.32	15.10	15.34	15.72	15.43
12	16.09	13.11	12.89	13.08	14.12	14.89	15.35	14.30	15.26	15.28	15.02	15.49
13	16.13	13.00	12.89	12.74	14.08	14.98	15.42	14.23	15.38	15.27	15.63	15.57
14	15.63	12.90	12.87	12.91	14.08	14.94	15.35	14.30	15.52	15.27	15.60	15.65
15	15.44	12.91	12.99	12.83	14.15	14.82	15.34	14.29	15.35	15.16	15.63	14.75
16	15.49	12.94	12.84	12.89	14.26	15.11	15.14	14.30	15.31	15.11	15.69	14.08
17	15.23	13.25	12.79	12.99	14.27	14.92	14.52	14.39	15.16	15.16	15.84	14.20
18	15.35	13.25	12.56	12.96	14.37	14.80	14.60	14.59	15.07	15.24	15.80	14.51
19	15.24	13.16	12.71	13.07	14.19	14.89	14.45	14.66	14.69	15.34	15.77	14.71
20	15.46	13.13	12.60	13.25	14.30	15.19	14.38	14.59	15.25	15.38	15.60	14.75
21	15.43	13.28	12.95	13.34	14.38	14.94	14.01	14.66	15.26	15.47	15.60	14.66
22	15.23	13.42	12.94	13.31	14.48	15.10	14.00	14.72	15.39	15.43	15.64	14.69
23	15.22	13.36	12.42	13.44	14.55	15.13	13.95	14.66	15.32	15.41	15.62	14.47
24	15.35	13.46	12.32	13.39	14.57	15.18	14.20	14.72	15.29	15.45	15.73	14.64
25	15.37	13.50	12.28	13.40	14.49	15.38	14.24	14.77	15.37	15.46	15.74	14.68
26	15.38	13.43	12.25	13.50	14.40	15.27	14.24	14.75	15.40	15.41	15.66	14.71
27	15.40	13.43	12.34	13.56	14.53	15.22	14.78	14.72	15.49	15.53	15.65	14.74
28	15.44	13.44	12.34	13.43	14.58	15.25	15.24	14.68	15.48	15.23	15.74	14.96
29	15.33	13.40	12.42	13.44	---	15.23	14.88	14.75	15.44	15.31	15.71	14.99
30	15.28	13.48	12.54	13.50	---	15.25	14.99	14.81	15.17	15.37	15.74	14.91
31	15.27	---	12.57	13.57	---	15.22	---	14.94	---	15.38	15.74	---
MEAN	15.59	13.75	12.71	12.99	14.16	14.98	14.89	14.47	15.21	15.35	15.62	15.09

WTR YR 2002 MEAN 14.57 HIGHEST 11.77 DEC. 25, 26, 2001 LOWEST 16.17 OCT. 6, 2001



GROUND-WATER LEVELS

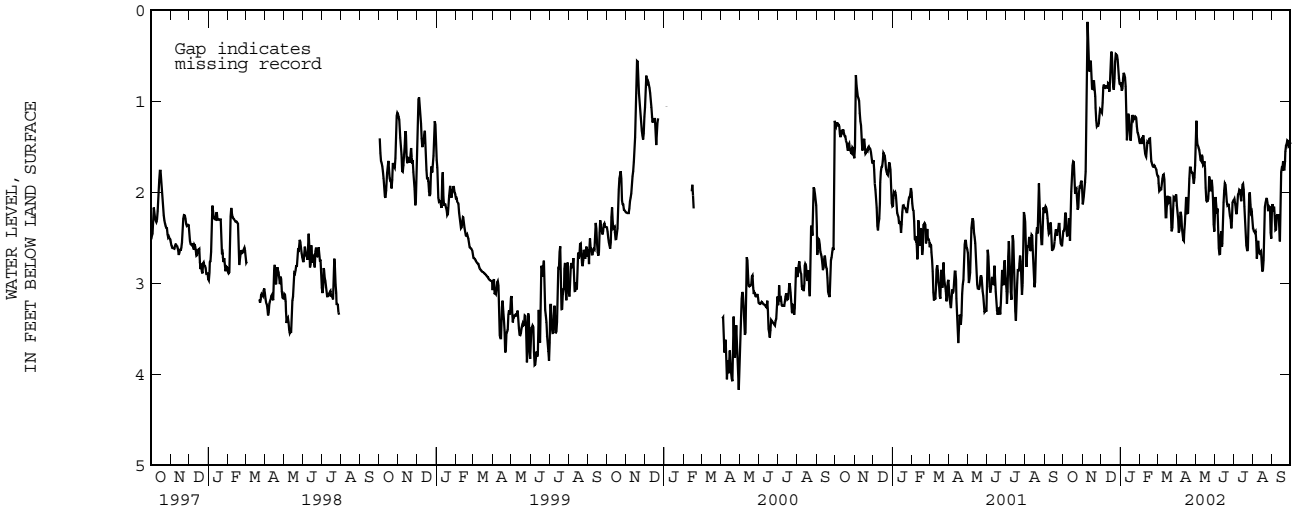
RIO DE LA PLATA BASIN--Continued

182655066142400. Local number, 217.
LOCATION.--Lat 18°26'55", long 66°14'24", Hydrologic Unit 21010005, 4.00 mi northeast of Toa Alta plaza, 3.40 mi northwest of Hwy 2 km 17.7, and 3.49 mi northwest of Sabana Seca US Naval Radio Station. Name: Piezometer Monserrate 2, Toa Baja.
AQUIFER.-Alluvial Deposits.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m) 0-80.0 ft (0-24.4 m), perforated 10.0-80.0 ft (3.05-24.4 m). Depth 80.0 ft (24.4 m).
INSTRUMENTATION.--Pressure transducer with integrated electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 3.30 ft (1.00 m), above mean sea level, from topographic map. Measuring point: Top of shelter floor, 3.45 ft (1.05 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on November 6, 1997. Water levels affected by nearby pumping. Station flooded by Río de La Plata on September 10, 1996, September 22, 1998, and January 5, 1992.
PERIOD OF RECORD.--November 1985 to September 30, 2002, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, +0.08 ft (+0.02 m), below land-surface datum, November 9, 2001; lowest water level recorded, 4.24 ft (1.29 m), below land-surface datum, April 29, 2000.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.42	2.06	1.12	0.80	1.48	1.83	2.05	1.65	2.37	2.13	2.39	2.10
2	2.44	2.21	1.10	0.79	1.46	1.82	2.24	1.17	2.08	2.05	2.40	2.16
3	2.41	2.01	1.15	0.86	1.40	1.84	2.20	1.26	2.03	2.10	2.43	2.27
4	2.37	2.09	0.89	0.91	1.44	1.96	2.39	1.47	2.25	2.11	2.44	2.08
5	2.11	1.84	0.81	0.81	1.50	2.02	2.51	1.46	2.22	2.18	2.45	2.24
6	2.34	1.94	0.83	0.69	1.34	1.94	2.33	1.51	2.14	2.25	2.42	2.33
7	2.49	1.61	0.87	0.69	1.41	1.99	2.23	1.52	2.55	2.24	2.64	2.50
8	2.47	0.80	0.84	0.74	1.46	1.95	2.20	1.56	2.68	2.04	2.83	2.32
9	2.48	0.01	0.83	0.74	1.57	1.88	2.34	1.61	2.69	2.02	2.45	2.22
10	2.34	0.25	0.84	0.93	1.59	1.82	2.46	1.68	2.67	2.01	2.62	2.27
11	2.23	0.41	0.85	1.39	1.62	1.80	2.47	1.63	2.27	1.94	2.63	2.29
12	2.51	0.70	0.87	1.47	1.60	1.81	2.58	1.55	2.59	2.02	2.70	2.20
13	2.56	0.65	0.73	1.10	1.47	1.91	2.49	1.68	2.61	2.06	2.65	2.58
14	1.98	0.54	0.89	1.18	1.43	2.27	2.41	1.73	2.52	2.14	2.68	2.51
15	2.01	0.57	0.90	1.16	1.49	2.28	2.29	1.66	2.21	1.90	2.63	1.94
16	1.73	0.84	0.69	1.40	1.42	2.27	2.09	1.66	2.02	1.95	2.87	1.62
17	1.68	0.89	0.51	1.42	1.41	1.98	2.02	1.81	1.94	1.88	2.88	1.85
18	1.65	0.85	0.40	1.45	1.41	2.10	2.21	2.10	1.86	2.07	2.84	1.63
19	1.69	0.71	0.58	1.14	1.66	2.15	2.26	2.08	1.97	2.25	2.66	1.69
20	2.04	0.85	0.79	1.17	1.66	2.07	2.20	2.13	2.05	2.32	2.20	1.81
21	2.00	0.89	0.88	1.19	1.71	2.07	1.94	2.07	2.16	2.56	2.13	1.69
22	1.93	1.01	0.87	1.22	1.71	2.03	1.77	2.08	2.13	2.61	2.11	1.63
23	1.99	1.14	0.67	1.17	1.73	2.34	1.69	1.81	2.15	2.64	2.07	1.48
24	2.17	1.28	0.47	1.18	1.71	2.44	1.77	1.85	2.13	2.66	2.06	1.51
25	2.22	1.28	0.49	1.19	1.71	2.42	1.78	1.91	2.28	2.57	2.17	1.44
26	2.12	1.26	0.49	1.16	1.73	2.36	1.79	2.07	2.25	2.09	2.23	1.42
27	1.91	1.28	0.50	1.21	1.74	2.10	1.79	1.81	2.33	1.98	2.17	1.46
28	1.97	1.22	0.59	1.34	1.78	2.01	1.90	1.92	2.47	2.03	2.15	1.54
29	1.92	1.10	0.70	1.35	---	2.11	1.91	1.97	2.16	2.24	2.19	1.44
30	1.87	1.08	0.79	1.38	---	2.09	1.77	2.21	2.07	2.22	2.70	1.46
31	1.88	---	0.83	1.41	---	2.00	---	2.50	---	2.21	2.32	---
MEAN	2.13	1.11	0.77	1.12	1.56	2.05	2.14	1.78	2.26	2.18	2.46	1.92

WTR YR 2002 MEAN 1.79 HIGHEST +0.08 NOV. 9, 2001 LOWEST 2.89 AUG. 17, 2002



GROUND-WATER LEVELS

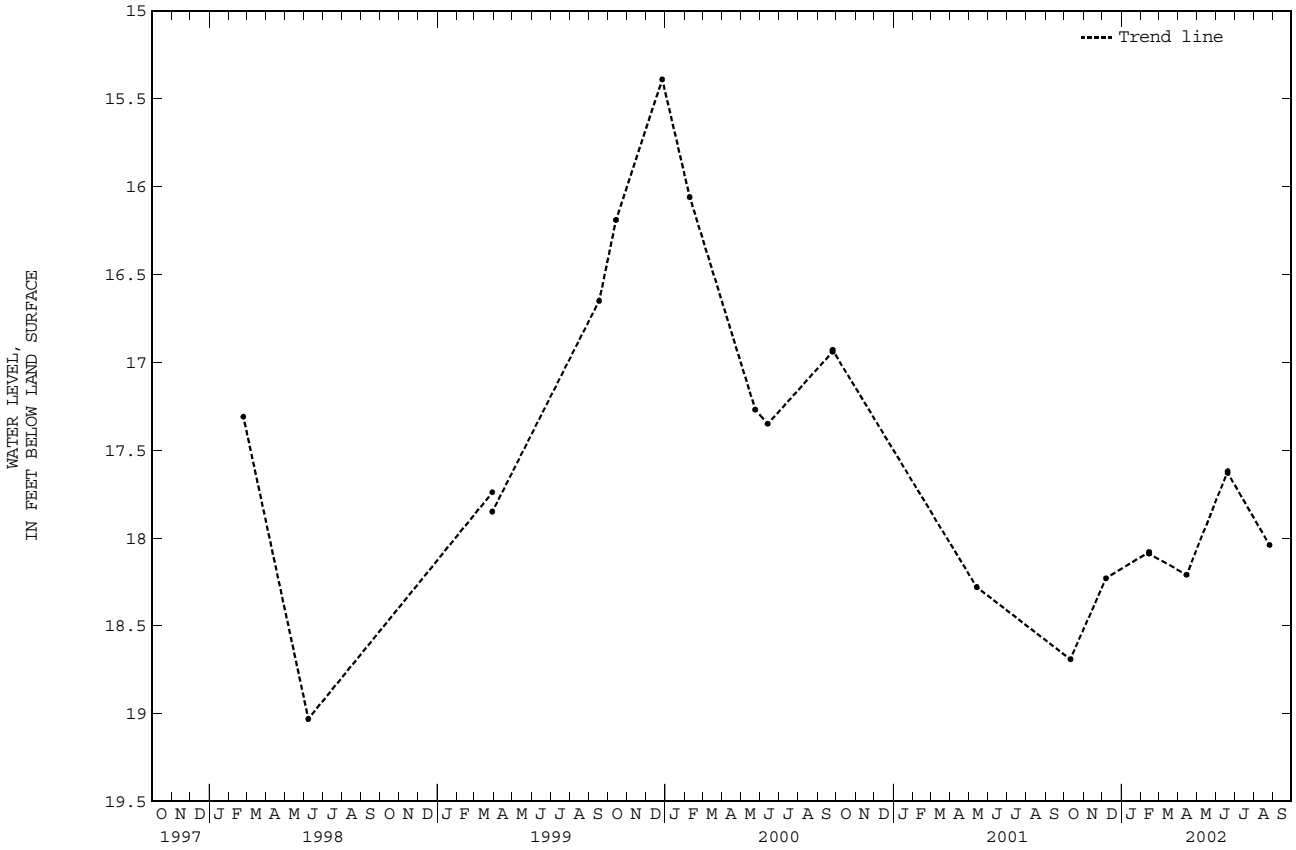
RIO DE LA PLATA BASIN--Continued

180649066095500. Local number, 1134.
LOCATION.--Lat 18°06'49", long 66°09'55", Hydrologic Unit 21010005, 0.10 mi southeast of Cayey plaza, 0.50 mi northwest of the intersection of Hwy 1 with Hwy 15, and 1.30 mi west of Cayey exit from Hwy 52. Name: Minima.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Abandoned production well, diameter 13 in (0.34 m), screened 40.0-90.0 ft (12.2-27.4 m). Depth 125 ft (38.1 m).
DATUM.--Elevation of land-surface datum is about 1,296 ft (395 m), above mean sea level, from topographic map. Measuring point: On highest part of motor support, 1.86 ft (0.57 m), above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--February 28, 1998 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.39 ft (4.69 m), below land-surface datum, December 27, 1999; lowest water level measured, 19.03 ft (5.80 m), below land-surface datum, June 11, 1998.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 11	18.69	FEB 14	18.09	JUN 20	17.62	AUG 26	18.04
DEC 07	18.23	APR 15	18.21	20	17.63	26	18.03
FEB 14	18.08						

WATER YEAR 2002 HIGHEST 17.62 JUN. 20, 2002 LOWEST 18.69 OCT. 11, 2001



GROUND-WATER LEVELS

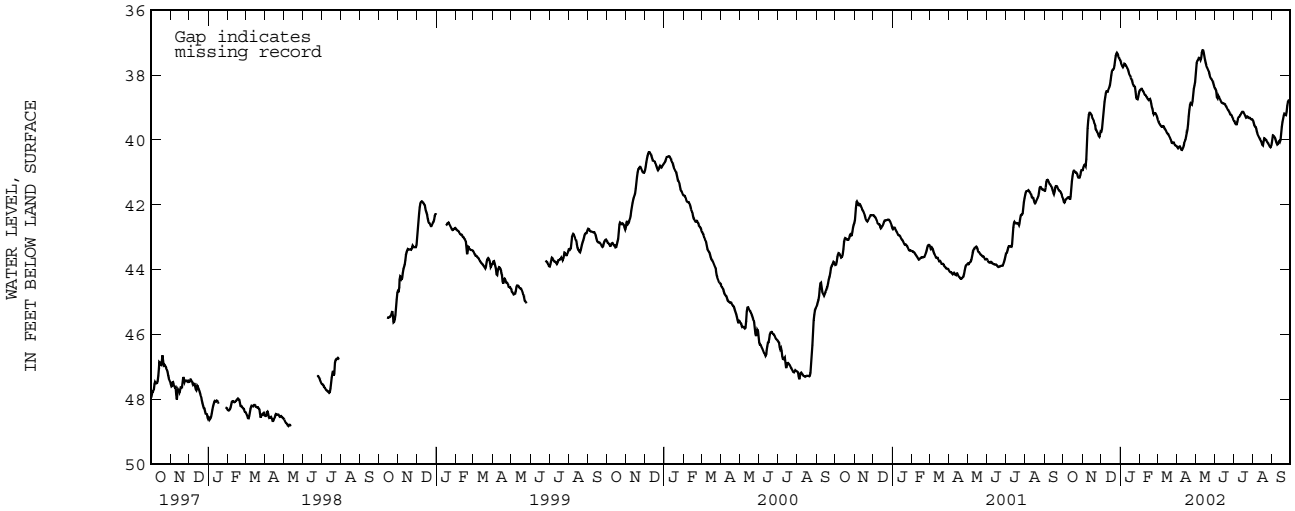
RIO HONDO TO RIO PUERTO NUEVO BASINS

182441066082600. Local number, 219.
LOCATION.--Lat 18°24'41", long 66°08'26", Hydrologic Unit 21010005, 0.47 mi west of Fort Buchanan main gate, 1.74 mi northeast of Bayamón plaza, and 1.88 mi southwest of PR National Cementery. Name: Buchanan Park Well, Bayamón.
AQUIFER.--Cibao Formation.
WELL CHARACTERISTICS.--Drilled water-table well, diameter 10 in (0.25 m), cased 10 in (0.25 m) 0-270 ft (0-82.3 m), perforated 46.0-68.5 ft (14.0-20.7 m), 88.0-120 ft (26.8-36.6 m), 160-191 ft (48.8-58.2 m), 240-270 ft (73.2-82.3 m). Depth 270 ft (82.3 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 66.0 ft (20.1 m), above mean sea level, from topographic map. Measuring point: Hole on side of casing, 0.75 ft (0.23 m), above land-surface datum. Prior June 30, 1986, top of shelter floor, 3.59 ft (1.09 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on January 28, 1998, removed on September 30, 2002.
PERIOD OF RECORD.--December 1985 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 34.9 ft (10.7 m), below land-surface datum, November 12, 13, 14, 1989; lowest water level recorded, 55.67 ft (17.0 m), below land-surface datum, May 13, 1995.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41.79	40.95	39.72	37.57	38.48	39.34	40.19	38.15	38.40	39.39	39.38	40.01
2	41.88	40.92	39.78	37.63	38.45	39.39	40.21	37.86	38.42	39.41	39.43	39.87
3	41.95	40.85	39.56	37.67	38.44	39.43	40.26	37.66	38.46	39.43	39.52	39.86
4	41.92	40.80	39.39	37.71	38.41	39.47	40.26	37.60	38.55	39.50	39.58	39.89
5	41.87	40.74	39.15	37.77	38.44	39.50	40.23	37.57	38.82	39.51	39.58	39.91
6	41.83	40.78	38.90	37.77	38.49	39.54	40.19	37.53	38.61	39.54	39.62	39.95
7	41.80	40.82	38.76	37.68	38.52	39.56	40.21	37.49	38.65	39.51	39.70	40.02
8	41.79	40.38	38.63	37.64	38.56	39.60	40.28	37.48	38.69	39.39	39.80	40.09
9	41.77	39.78	38.53	37.69	38.61	39.61	40.34	37.50	38.72	39.31	39.84	40.12
10	41.76	39.52	38.49	37.70	38.64	39.60	40.30	37.58	38.76	39.30	39.88	40.16
11	41.78	39.29	38.52	37.74	38.63	39.57	40.29	37.38	38.81	39.27	39.92	40.08
12	41.83	39.19	38.52	37.77	38.66	39.62	40.19	37.27	38.85	39.27	39.95	40.02
13	41.86	39.14	38.46	37.83	38.70	39.67	40.13	37.23	38.87	39.21	39.98	40.05
14	41.64	39.20	38.41	37.91	38.73	39.67	40.07	37.27	38.88	39.18	40.00	40.07
15	41.36	39.19	38.37	37.97	38.77	39.70	40.04	37.36	38.88	39.15	40.06	39.94
16	41.19	39.26	38.24	37.99	38.78	39.76	39.94	37.49	38.89	39.13	40.12	39.70
17	41.04	39.32	38.10	38.05	38.73	39.80	39.84	37.59	38.90	39.14	40.19	39.50
18	40.96	39.34	37.93	38.12	38.76	39.82	39.74	37.67	38.91	39.17	40.15	39.41
19	40.94	39.41	37.86	38.13	38.84	39.83	39.65	37.75	38.96	39.22	39.96	39.30
20	40.96	39.47	37.86	38.24	38.95	39.88	39.40	37.77	38.98	39.26	39.95	39.21
21	41.02	39.52	37.84	38.28	39.04	39.92	39.16	37.82	39.02	39.31	39.98	39.19
22	41.00	39.63	37.79	38.32	39.08	39.95	39.00	37.87	39.06	39.33	40.00	39.23
23	41.01	39.68	37.63	38.35	39.26	40.02	38.89	37.91	39.09	39.29	40.01	39.25
24	41.07	39.71	37.47	38.35	39.18	40.09	38.85	37.99	39.11	39.29	40.05	39.24
25	41.15	39.74	37.38	38.38	39.18	40.10	38.93	38.05	39.17	39.30	40.09	39.03
26	41.16	39.79	37.33	38.66	39.18	40.11	38.90	38.10	39.22	39.33	40.12	38.87
27	41.15	39.86	37.32	38.73	39.20	40.08	38.73	38.12	39.24	39.33	40.14	38.81
28	41.18	39.92	37.39	38.75	39.26	40.08	38.50	38.15	39.24	39.32	40.20	38.77
29	41.06	39.89	37.46	38.75	---	40.14	38.36	38.19	39.28	39.37	40.23	38.79
30	40.94	39.75	37.49	38.64	---	40.17	38.29	38.27	39.33	39.36	40.23	38.80
31	40.92	---	37.52	38.54	---	40.19	---	38.33	---	39.37	40.15	---
MEAN	41.41	39.86	38.25	38.08	38.78	39.78	39.65	37.74	38.89	39.32	39.93	39.57

WTR YR 2002 MEAN 39.27 HIGHEST 37.21 MAY 13, 2002 LOWEST 41.96 OCT. 3, 2002



GROUND-WATER LEVELS

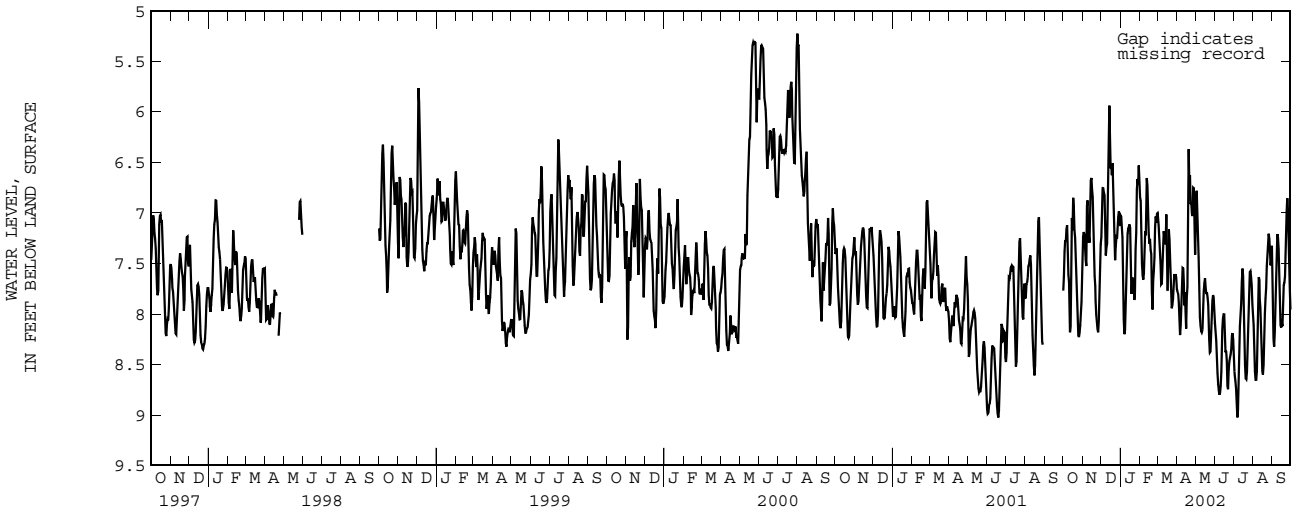
RIO HONDO TO RIO PUERTO NUEVO BASINS--Continued

182531066075900. Local number, 652.
LOCATION.--Lat 18°25'31", long 66°06'59", Hydrologic Unit 21010005, 0.07 mi north of Hwy 22, 0.32 mi southwest of the intersection of Hwy 165 with Hwy 28, and 1.40 mi south of the Cataño ferry building. Name: Piezometer USGS Building 652, Guaynabo.
AQUIFER.--Aymamón Limestone.
WELL CHARACTERISTICS.--Drilled water-table well, diameter 4 in (0.10 m), cased 0-192 ft (0-58.5 m). Depth 192 ft (58.5 m).
INSTRUMENTATION.--Pressure transducer with integrated electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 10.0 ft (3.05 m), above mean sea level, from topographic map. Measuring point: Shelter floor on top of the 4 in (0.10 m) casing, 3.27 ft (1.00 m), above land-surface datum.
REMARKS.--Recording observation well. Electronic Data Logger (EDL), installed on May 14, 1997. Water level affected by marine tides.
PERIOD OF RECORD.--May 14, 1997 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 3.10 ft (0.94 m), below land-surface datum, September 24, 2002; lowest water level recorded, 9.16 ft (2.79 m), below land-surface datum, October 1, 1998.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.80	7.62	7.24	7.05	6.82	6.91	7.67	7.36	8.05	8.26	8.00	7.35
2	7.74	7.27	7.24	7.00	6.87	7.09	7.84	7.02	8.13	8.53	8.04	7.82
3	7.52	7.20	6.77	7.06	6.89	7.06	7.72	6.64	8.22	8.61	8.19	8.15
4	7.25	7.18	6.74	7.22	7.44	7.18	7.87	6.92	8.31	8.61	8.49	8.35
5	7.29	7.25	6.78	7.27	7.57	7.32	7.90	7.20	8.54	8.72	8.64	8.30
6	7.28	7.43	6.82	7.94	7.66	7.44	8.19	7.33	8.63	8.76	8.66	8.06
7	7.04	7.49	6.84	8.17	7.66	7.56	8.23	7.55	8.75	9.05	8.64	7.81
8	7.20	7.56	7.49	8.23	7.53	7.86	7.99	8.00	8.76	9.00	8.49	7.58
9	7.60	6.30	7.35	8.09	7.29	7.54	7.96	8.06	8.84	8.90	8.05	7.19
10	7.62	7.45	7.33	7.79	7.08	7.52	7.59	8.17	8.72	8.55	7.75	7.23
11	7.74	7.14	7.28	7.56	7.36	7.17	7.50	8.17	8.70	8.26	7.52	7.26
12	8.16	7.31	6.95	7.24	6.81	7.19	7.60	8.19	8.45	7.98	7.81	7.45
13	8.20	7.28	7.00	7.17	6.50	7.28	7.82	8.12	8.23	8.02	7.90	7.78
14	8.04	6.82	6.40	7.14	6.97	7.26	8.01	7.81	8.08	7.77	7.98	8.02
15	6.72	6.54	5.48	7.14	6.93	7.36	7.56	7.74	8.01	7.60	8.25	8.20
16	7.38	6.77	6.82	7.09	7.47	6.67	8.37	7.65	8.00	7.50	8.47	8.07
17	6.96	6.77	6.30	7.20	7.14	7.94	7.92	7.64	8.01	7.74	8.65	8.11
18	6.74	6.91	6.79	7.83	7.37	7.60	7.76	7.84	8.40	8.06	8.55	8.13
19	7.16	7.21	6.46	7.77	7.36	7.21	7.70	7.76	8.36	8.44	8.46	7.71
20	7.18	7.57	6.56	7.65	7.45	7.12	5.68	7.81	8.37	8.57	8.16	7.72
21	7.31	7.68	7.10	7.63	8.14	7.41	7.06	7.86	8.55	8.70	7.84	7.66
22	7.57	7.77	7.18	7.73	7.77	7.50	6.39	7.96	8.87	8.59	7.86	7.59
23	7.79	7.97	7.50	7.64	7.57	7.70	6.87	8.21	8.62	8.56	7.63	7.43
24	7.93	8.04	7.44	8.08	7.59	7.86	6.96	8.30	8.48	8.27	7.43	7.10
25	8.15	8.11	7.22	7.49	7.29	8.03	6.83	8.47	8.46	8.00	7.46	6.89
26	8.27	8.18	7.27	7.23	6.98	7.79	7.18	8.28	8.40	7.92	7.23	6.82
27	8.19	8.18	7.24	7.16	7.09	7.91	6.88	8.19	8.40	7.65	7.18	7.10
28	8.18	7.97	7.03	6.38	7.10	7.54	6.62	7.92	8.30	7.53	7.33	7.34
29	8.04	7.80	7.03	6.95	---	7.67	6.89	7.82	8.14	7.63	7.42	7.68
30	7.95	7.38	6.94	6.48	---	7.60	7.47	7.81	8.24	7.64	7.62	7.84
31	7.82	---	7.21	6.58	---	7.61	---	7.87	---	7.81	7.30	---
MEAN	7.61	7.41	6.96	7.39	7.28	7.45	7.47	7.80	8.40	8.23	7.97	7.66

WTR YR 2002 MEAN 7.64 HIGHEST 3.10 SEPT. 24, 2002 LOWEST 9.09 JULY 8, 2002



GROUND-WATER LEVELS

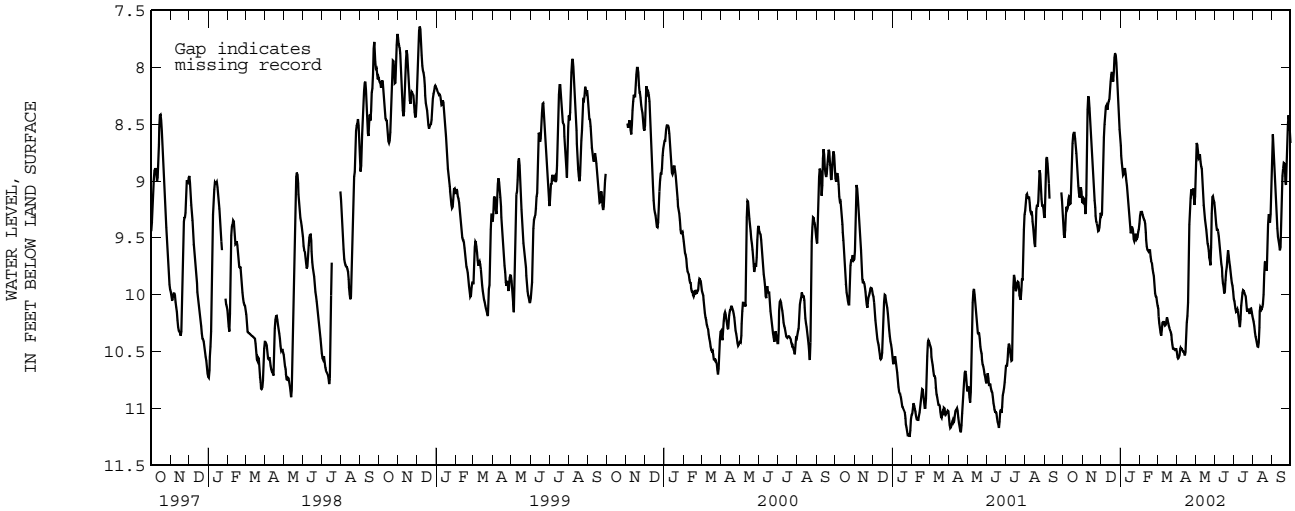
RIO HONDO TO RIO PUERTO NUEVO BASINS--Continued

182511066045401. Local number, 1152.
LOCATION.--Lat 18°25'11, long 66°04'54", Hydrologic Unit 21010005, 1.58 mi northeast of Fort Buchannan Military main. gate, 2.95 mi southeast of Cataño plaza, and 2.45 mi southeast of US Naval Reservation in Miramar. Name: Piezometer La Esperanza 2, San Juan.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in (0.10 m), cased 4 in (0.10 m), 0-40.0 ft (0-12.2 m), perforated 30.0-40.0 ft ((9.15-12.2 m). Depth 40.0 ft (12.2 m).
INSTRUMENTATION.--Electronic water level logger--15-minutes interval.
DATUM.--Elevation of land-surface datum is about 13.0 ft (3.96 m), above mean sea level, from topographic map. Measuring point: On shelter foor, 3.13 ft (0.95 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on April 8, 1998.
PERIOD OF RECORD.--July 1989 to September 30, 2002, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 7.63 ft (2.32 m), below land-surface datum, December 6, 1998; lowest water level recorded, 11.9 ft (3.63 m), below land-surface datum, July 15, 16, 1991.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.35	9.22	9.27	8.65	9.34	10.10	10.49	9.04	9.20	10.01	10.20	8.72
2	9.42	9.16	9.34	8.73	9.27	10.10	10.52	8.79	9.29	10.07	10.23	8.58
3	9.52	9.17	9.24	8.82	9.28	10.15	10.57	8.67	9.35	10.05	10.25	8.60
4	9.48	9.13	8.99	8.86	9.26	10.23	10.55	8.66	9.42	10.11	10.30	8.74
5	9.38	9.19	8.71	8.93	9.28	10.27	10.56	8.71	9.43	10.13	10.36	8.80
6	9.23	9.25	8.52	8.97	9.32	10.31	10.52	8.77	9.42	10.17	10.38	8.94
7	9.22	9.33	8.48	8.91	9.32	10.36	10.46	8.84	9.47	10.12	10.41	9.06
8	9.29	8.92	8.38	8.88	9.35	10.36	10.47	8.75	9.50	10.14	10.44	9.24
9	9.19	8.48	8.32	8.91	9.34	10.26	10.48	8.78	9.58	10.17	10.47	9.37
10	9.14	8.26	8.35	8.97	9.41	10.23	10.47	8.88	9.63	10.23	10.45	9.46
11	9.13	8.25	8.38	9.02	9.49	10.25	10.51	8.86	9.71	10.26	10.39	9.52
12	9.16	8.30	8.35	9.06	9.54	10.23	10.49	8.93	9.75	10.31	10.19	9.53
13	9.24	8.42	8.30	9.15	9.61	10.28	10.51	9.05	9.78	10.12	10.10	9.59
14	9.15	8.55	8.30	9.21	9.60	10.26	10.52	9.18	9.89	10.08	10.11	9.63
15	8.92	8.67	8.27	9.31	9.62	10.27	10.55	9.24	9.91	10.01	10.12	9.53
16	8.73	8.73	8.16	9.36	9.62	10.20	10.46	9.32	9.95	9.96	10.14	9.25
17	8.61	8.81	8.09	9.44	9.60	10.20	10.30	9.36	10.03	9.96	10.09	8.98
18	8.58	8.90	8.04	9.48	9.62	10.24	10.19	9.41	9.92	9.97	10.07	8.93
19	8.57	9.00	8.04	9.40	9.71	10.26	10.18	9.45	9.82	10.00	9.93	8.85
20	8.58	9.14	8.11	9.40	9.70	10.29	9.96	9.53	9.77	9.99	9.71	8.83
21	8.67	9.20	8.14	9.43	9.74	10.30	9.49	9.57	9.74	10.03	9.72	8.86
22	8.72	9.27	7.95	9.50	9.80	10.32	9.28	9.58	9.61	10.11	9.72	8.95
23	8.79	9.34	7.88	9.52	9.81	10.34	9.22	9.66	9.61	10.16	9.80	9.05
24	8.88	9.37	7.87	9.54	9.86	10.37	9.08	9.69	9.70	10.14	9.78	9.02
25	9.00	9.38	7.91	9.48	9.95	10.42	9.07	9.70	9.72	10.12	9.45	8.72
26	9.08	9.42	8.01	9.46	10.02	10.46	9.16	9.78	9.78	10.14	9.32	8.59
27	9.13	9.46	8.12	9.48	10.01	10.49	9.05	9.39	9.82	10.18	9.28	8.42
28	9.16	9.41	8.25	9.54	10.03	10.47	9.08	9.18	9.89	10.14	9.32	8.42
29	9.07	9.41	8.36	9.46	---	10.48	9.19	9.11	9.91	10.11	9.41	8.51
30	9.04	9.29	8.50	9.44	---	10.49	9.23	9.16	9.94	10.13	9.17	8.61
31	9.15	---	8.59	9.41	---	10.47	---	9.18	---	10.17	8.84	---
MEAN	9.05	9.01	8.36	9.22	9.59	10.31	10.02	9.17	9.68	10.11	9.94	8.98

WTR YR 2002 MEAN 9.45 HIGHEST 7.87 DEC. 24, 2001 LOWEST 10.62 APR. 5, 2002



GROUND-WATER LEVELS

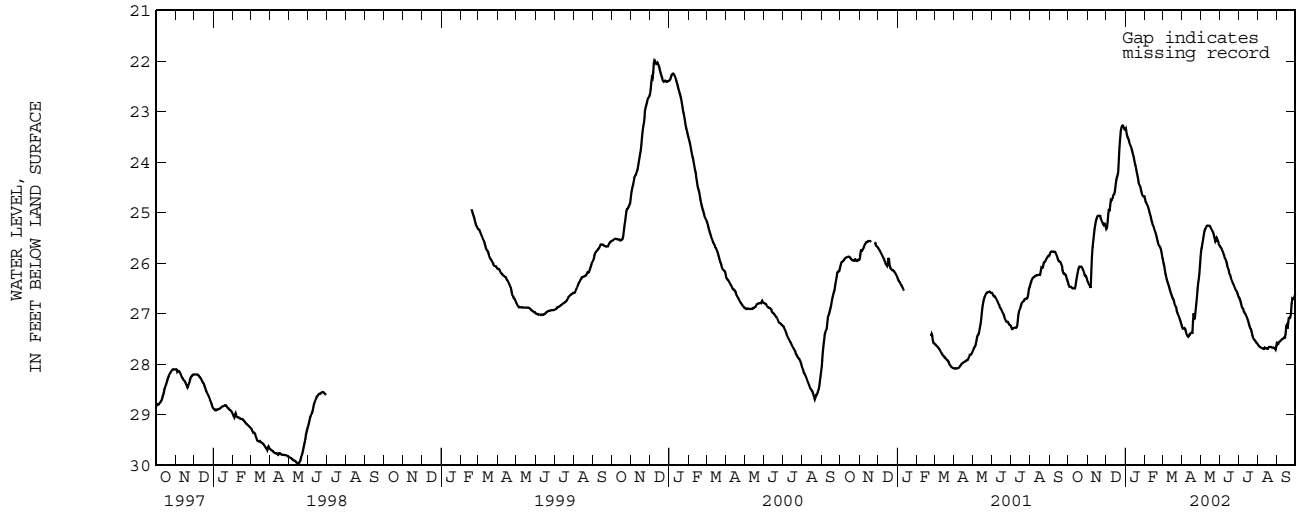
RIO HONDO TO RIO PUERTO NUEVO BASINS--Continued

182435066052700. Local number, 1153.
LOCATION.--Lat 18°24'35", long 66°05'27", Hydrologic Unit 21010005, 2.94 mi southeast of Cataño plaza, 0.44 mi north of Escuela Superior Gabriela Mistral, and 1.19 mi northeast of WAPA TV radio anthena. Name: Piezometer Salud Mental 1, San Juan.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m), 0-83.0 ft (0-25.3 m), perforated 73.0-83.0 ft (22.2-25.3 m). Depth 83.0 ft (25.3 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 85.0 ft (25.9 m), above mean sea level, from topographic map. Measuring point: Hole on well shaft, 2.85 ft (0.87 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on April 8, 1998, removed on September 30, 2002.
PERIOD OF RECORD.--April 1989 to July 1, 1998, discontinued, February 17, 1999 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 21.97 ft (6.69 m), below land-surface datum, December 8, 9, 1999; lowest water level recorded, 32.82 ft (10.0 m), below land-surface datum, September 25-28, 1994.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.38	26.35	25.30	23.34	24.69	25.88	27.23	25.95	25.65	26.66	27.60	27.57
2	26.43	26.37	25.36	23.34	24.78	25.95	27.26	25.72	25.67	26.68	27.62	27.60
3	26.47	26.39	25.24	23.40	24.80	25.99	27.29	25.73	25.69	26.70	27.64	27.60
4	26.46	26.42	25.14	23.50	24.81	26.03	27.30	25.67	25.71	26.73	27.65	27.58
5	26.47	26.44	24.90	23.50	24.84	26.09	27.28	25.58	25.73	26.77	27.66	27.56
6	26.47	26.47	24.96	23.54	24.88	26.18	27.29	25.51	25.77	26.84	27.68	27.54
7	26.48	26.51	24.98	23.59	24.91	26.26	27.31	25.42	25.81	26.87	27.68	27.53
8	26.50	25.98	24.74	23.63	24.98	26.30	27.37	25.35	25.85	26.89	27.69	27.52
9	26.50	25.76	24.76	23.66	25.02	26.35	27.41	25.33	25.88	26.91	27.69	27.51
10	26.50	25.62	24.76	23.69	25.07	26.39	27.43	25.31	25.91	26.96	27.70	27.50
11	26.50	25.52	24.72	23.73	25.10	26.43	27.45	25.27	25.94	26.97	27.70	27.49
12	26.50	25.38	24.71	23.79	25.15	26.47	27.46	25.26	26.00	27.00	27.66	27.47
13	26.50	25.29	24.64	23.85	25.20	26.52	27.42	25.26	26.04	27.02	27.68	27.47
14	26.37	25.21	24.65	23.88	25.23	26.56	27.42	25.26	26.07	27.04	27.69	27.48
15	26.32	25.15	24.61	23.95	25.26	26.60	27.42	25.26	26.10	27.08	27.69	27.36
16	26.24	25.11	24.52	24.02	25.31	26.64	27.38	25.26	26.16	27.12	27.69	27.15
17	26.16	25.08	24.38	24.07	25.34	26.68	27.38	25.28	26.22	27.17	27.70	27.30
18	26.12	25.06	24.34	24.12	25.38	26.71	27.38	25.30	26.22	27.21	27.69	27.30
19	26.07	25.06	24.28	24.20	25.43	26.71	27.38	25.33	26.29	27.27	27.66	27.11
20	26.07	25.06	24.24	24.26	25.48	26.78	26.89	25.35	26.32	27.29	27.66	27.07
21	26.07	25.06	24.17	24.32	25.53	26.82	27.10	25.38	26.35	27.31	27.66	27.09
22	26.07	25.08	23.78	24.39	25.59	26.84	27.13	25.42	26.38	27.36	27.66	27.08
23	26.07	25.12	23.64	24.43	25.62	26.87	26.99	25.46	26.41	27.41	27.67	27.07
24	26.09	25.14	23.43	24.45	25.65	26.93	26.85	25.50	26.44	27.44	27.67	26.91
25	26.12	25.18	23.35	24.48	25.67	26.97	26.76	25.54	26.47	27.48	27.67	26.69
26	26.15	25.21	23.30	24.54	25.69	27.00	26.61	25.61	26.50	27.50	27.67	26.71
27	26.20	25.24	23.28	24.61	25.73	27.01	26.43	25.49	26.54	27.52	27.68	26.72
28	26.27	25.25	23.27	24.64	25.81	27.06	26.35	25.51	26.55	27.53	27.68	26.70
29	26.23	25.19	23.29	24.66	---	27.10	26.27	25.54	26.58	27.55	27.70	26.67
30	26.27	25.26	23.33	24.69	---	27.14	26.10	25.59	26.63	27.57	27.72	26.62
31	26.31	---	23.39	24.66	---	27.18	---	25.62	---	27.59	27.58	---
MEAN	26.30	25.53	24.31	24.03	25.25	26.59	27.11	25.45	26.13	27.14	27.67	27.23

WTR YR 2002 MEAN 26.06 HIGHEST 23.27 DEC. 28, 2001 LOWEST 27.72 AUG. 30, 2002



GROUND-WATER LEVELS

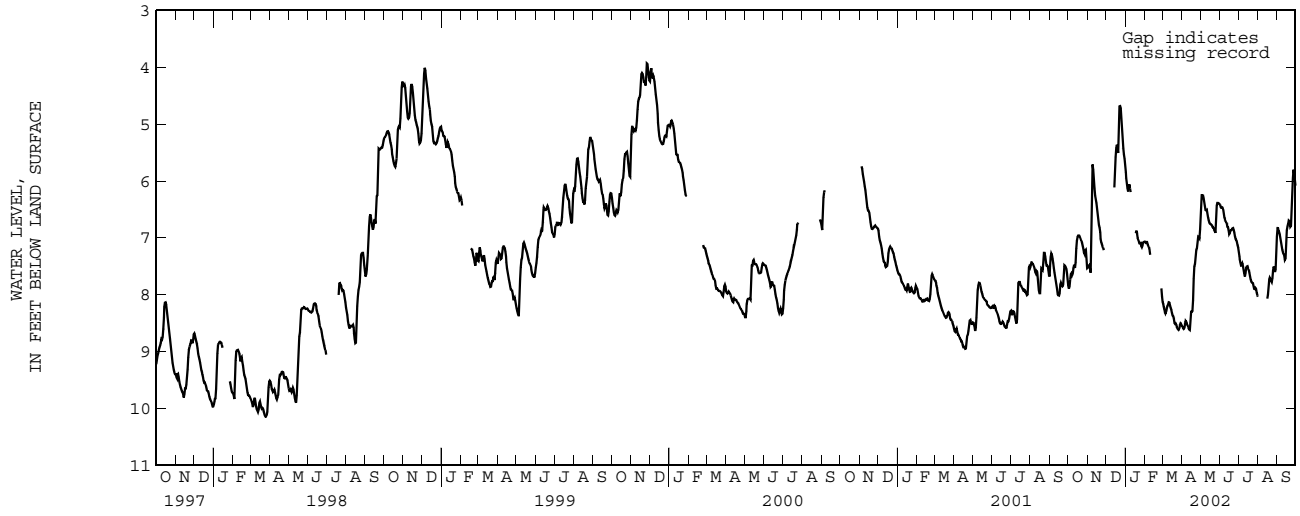
RIO HONDO TO RIO PUERTO NUEVO BASINS--Continued

182445066043401. Local number, 1154.
LOCATION.--Lat 18°24'45", long 66°04'34", Hydrologic Unit 21010005, 0.28 mi northeast of Dr. Pedreira School, 3.52 mi southeast of Cataño plaza, and 0.53 mi south of Hiram Bithorn Stadium main gate. Name: Piezometer Alsacia 2, San Juan.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in (0.10 m), cased 4 in (0.10 m), 0-27.0 ft (0-8.23 m), perforated 21.0-27.0 ft (6.40-8.23 m). Depth 27.0 ft (8.23 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 13.0 ft (3.96 m), above mean sea level, from topographic map. Measuring point: Hole on well shaft, 3.58 ft (1.09 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR) replaced by an Electronic Data Logger (EDL), installed on January 26, 1998, removed on September 30, 2002.
PERIOD OF RECORD.--July 1989 to November 27, 1991, Temporary discontinued, September 9, 1993 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 2.60 ft (0.79 m), below land-surface datum, November 25, 1999; lowest water level recorded, 13.65 ft (4.16 m), below land-surface datum, October 6, 7, 1994.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.80	7.55	---	5.80	7.06	8.10	8.53	6.69	6.41	7.20	8.03	6.89
2	7.88	7.49	---	5.89	7.07	8.16	8.54	6.44	6.42	7.30	8.04	6.78
3	7.91	7.53	---	6.00	7.10	8.18	8.58	6.25	6.47	7.35	---	6.85
4	7.80	7.45	---	6.08	7.04	8.23	8.60	6.25	6.47	7.41	---	6.89
5	7.67	7.50	---	6.17	7.10	8.28	8.61	6.25	6.47	7.46	---	6.91
6	7.62	7.59	---	6.19	7.13	8.32	8.56	6.26	6.46	7.52	---	6.97
7	7.64	7.63	---	6.05	7.14	8.34	8.46	6.34	6.52	7.44	---	7.05
8	7.68	6.61	---	6.07	7.18	8.27	8.46	6.40	6.61	7.47	---	7.12
9	7.59	5.68	---	6.19	7.24	8.20	8.50	6.48	6.68	7.53	---	7.18
10	7.49	5.74	---	6.20	7.35	8.20	8.52	6.55	6.68	7.60	---	7.24
11	7.49	5.86	---	---	---	8.15	8.55	6.49	6.73	7.66	---	7.27
12	7.49	6.04	---	---	---	8.12	8.59	6.53	6.73	7.70	---	7.29
13	7.57	6.21	---	---	---	8.16	8.60	6.62	6.79	7.53	---	7.34
14	7.29	6.30	6.17	---	---	8.22	8.62	6.67	6.81	7.53	---	7.45
15	7.09	6.34	6.06	---	---	8.24	8.62	6.72	6.81	7.48	---	7.29
16	7.01	6.43	5.67	---	---	8.29	8.29	6.75	6.92	7.52	8.10	6.93
17	6.96	6.56	5.49	6.94	---	8.35	8.31	6.75	6.95	7.56	8.04	6.80
18	6.96	6.64	5.34	6.90	---	8.38	8.29	6.77	6.88	7.56	7.96	6.80
19	6.96	6.75	5.38	6.85	---	8.38	8.29	6.76	6.89	7.66	7.79	6.71
20	6.96	6.81	5.47	7.00	---	8.47	7.91	6.80	6.84	7.69	7.68	6.68
21	7.01	6.84	5.54	7.01	---	8.52	7.53	6.82	6.87	7.77	7.71	6.73
22	7.03	6.97	4.68	7.05	---	8.51	7.48	6.82	6.80	7.77	7.73	6.77
23	7.06	7.06	4.70	7.05	---	8.49	7.44	6.85	6.86	7.79	7.78	6.84
24	7.12	7.09	4.67	7.14	---	8.56	7.25	6.86	6.87	7.79	7.77	6.74
25	7.16	7.13	4.77	7.05	---	8.57	7.18	6.90	6.95	7.81	7.64	6.20
26	7.22	7.17	5.00	7.13	---	8.60	7.19	6.93	7.00	7.89	7.50	6.12
27	7.28	7.19	5.15	7.15	7.81	8.62	6.98	6.48	7.04	7.91	7.51	5.77
28	7.28	7.25	5.35	7.17	7.96	8.62	6.98	6.39	7.04	7.90	7.58	5.83
29	7.16	---	5.49	7.08	---	8.57	7.01	6.38	7.10	7.86	7.62	5.92
30	7.25	---	5.58	7.08	---	8.50	7.01	6.39	7.15	7.94	7.49	6.01
31	7.52	---	5.64	7.07	---	8.50	---	6.39	---	7.99	7.06	---
MEAN	7.35	---	---	---	---	8.36	8.05	6.58	6.77	7.63	---	6.78

WTR YR 2002 MEAN 7.16 HIGHEST 4.67 DEC. 24, 2001 LOWEST 8.66 MAR. 26, 27, 2002



GROUND-WATER LEVELS

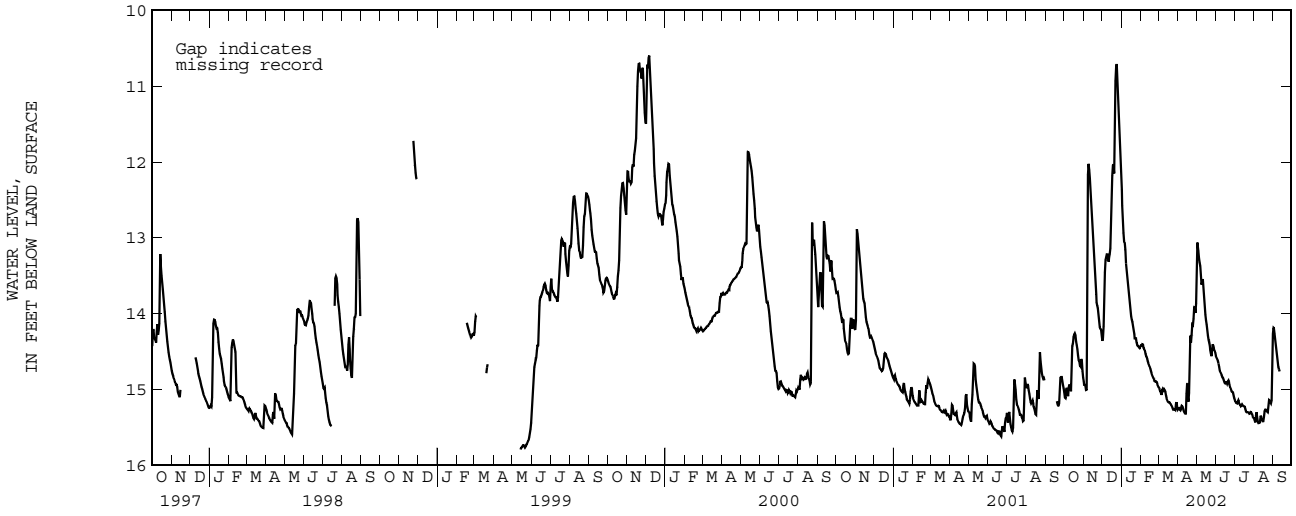
RIO HONDO TO RIO PUERTO NUEVO BASINS--Continued

182443066041502. Local number, 1155.
LOCATION.--Lat 18°24'43", long 66°04'15", Hydrologic Unit 21010005, 2.29 mi east of Fort Buchannan main gate, 3.83 mi southeast of Cataño plaza, and 0.16 mi southwest of Hospital del Maestro. Name: Piezometer Muñoz Marin 1C, San Juan.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in (0.10 m), cased 4 in (0.10), 0-33.0 ft (0-10.1 m), perforated 33.0-40.0 ft (10.1-12.2 m). Depth 40.0 ft (12.2 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 16.0 ft (4.88 m), above mean sea level, from topographic map. Measuring point: Hole on well shaft, 3.00 ft (0.91 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on January 26, 1998.
PERIOD OF RECORD.--February 1989 to September 12, 2002, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 8.80 ft (2.68 m), below land-surface datum, September 10, 1996; lowest water level recorded, 16.18 ft (4.93 m), below land-surface datum, October 5, 6, 7, 1994.

Depth to water level, feet below land surface, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.01	14.88	14.33	12.26	14.42	14.96	15.26	13.73	14.54	15.13	15.38	14.20
2	15.07	14.91	14.39	12.47	14.42	14.98	15.27	13.05	14.57	15.15	15.38	14.17
3	15.14	14.96	14.25	12.68	14.43	14.99	15.23	13.07	14.59	15.16	15.43	14.21
4	15.09	14.91	14.09	12.85	14.38	15.01	15.26	13.13	14.60	15.18	15.44	14.31
5	14.94	14.99	13.60	13.01	14.44	15.03	15.27	13.21	14.65	15.18	15.26	14.39
6	15.02	15.03	13.31	13.08	14.47	15.06	15.28	13.32	14.67	15.19	15.34	14.46
7	15.08	14.98	13.28	13.04	14.46	15.08	15.21	13.33	14.73	15.13	15.41	14.54
8	15.10	12.36	13.23	13.28	14.51	14.94	15.22	13.41	14.77	15.16	15.44	14.60
9	14.85	11.97	13.21	13.40	14.55	15.04	15.23	13.57	14.77	15.19	15.45	14.67
10	15.02	12.08	13.23	13.52	14.57	14.99	15.27	13.67	14.80	15.20	15.44	14.74
11	14.92	12.13	13.32	13.61	14.58	15.00	15.29	13.50	14.83	15.21	15.44	14.73
12	15.00	12.30	13.31	13.70	14.61	15.02	15.30	13.59	14.85	15.23	15.32	14.80
13	15.05	12.51	13.21	13.79	14.65	15.05	15.32	13.74	14.85	15.19	15.37	---
14	14.41	12.66	13.22	13.86	14.67	15.11	15.31	13.86	14.87	15.21	15.37	---
15	14.45	12.88	13.06	13.94	14.68	15.13	15.32	13.96	14.90	15.21	15.42	---
16	14.34	13.03	12.60	14.00	14.71	15.15	14.79	14.06	14.92	15.23	15.42	---
17	14.28	13.20	12.27	14.07	14.74	15.17	15.05	14.12	14.92	15.22	15.42	---
18	14.28	13.36	12.09	14.09	14.78	15.17	15.14	14.17	14.89	15.24	15.31	---
19	14.24	13.47	12.00	14.14	14.80	15.17	15.18	14.26	14.92	15.28	15.27	---
20	14.33	13.61	12.10	14.20	14.82	15.18	14.91	14.32	14.93	15.30	15.26	---
21	14.40	13.68	12.20	14.24	14.84	15.20	14.22	14.37	14.87	15.30	15.27	---
22	14.43	13.80	11.00	14.30	14.86	15.20	14.36	14.40	14.90	15.30	15.28	---
23	14.51	13.90	10.86	14.35	14.89	15.23	14.40	14.45	14.94	15.30	15.30	---
24	14.59	13.89	10.64	14.30	14.90	15.25	14.16	14.50	14.96	15.30	15.30	---
25	14.63	13.97	10.77	14.35	14.90	15.26	14.13	14.55	14.98	15.31	15.14	---
26	14.63	14.07	10.97	14.41	14.89	15.27	14.17	14.57	15.01	15.33	15.14	---
27	14.74	14.13	11.18	14.42	14.92	15.25	13.96	14.40	15.04	15.30	15.16	---
28	14.65	14.22	11.43	14.43	14.94	15.27	13.87	14.41	15.03	15.30	15.17	---
29	14.55	14.18	11.69	14.43	---	15.27	13.97	14.45	15.05	15.31	15.19	---
30	14.70	14.24	11.89	14.46	---	15.13	14.01	14.48	15.10	15.34	15.10	---
31	14.81	---	12.08	14.45	---	15.21	---	14.49	---	15.36	14.33	---
MEAN	14.72	13.68	12.54	13.78	14.67	15.12	14.85	13.94	14.85	15.24	15.29	---

WTR YR 2002 MEAN 14.42 HIGHEST 10.58 DEC. 23, 2001 LOWEST 15.45 AUG. 8, 9, 10, 2002



GROUND-WATER LEVELS

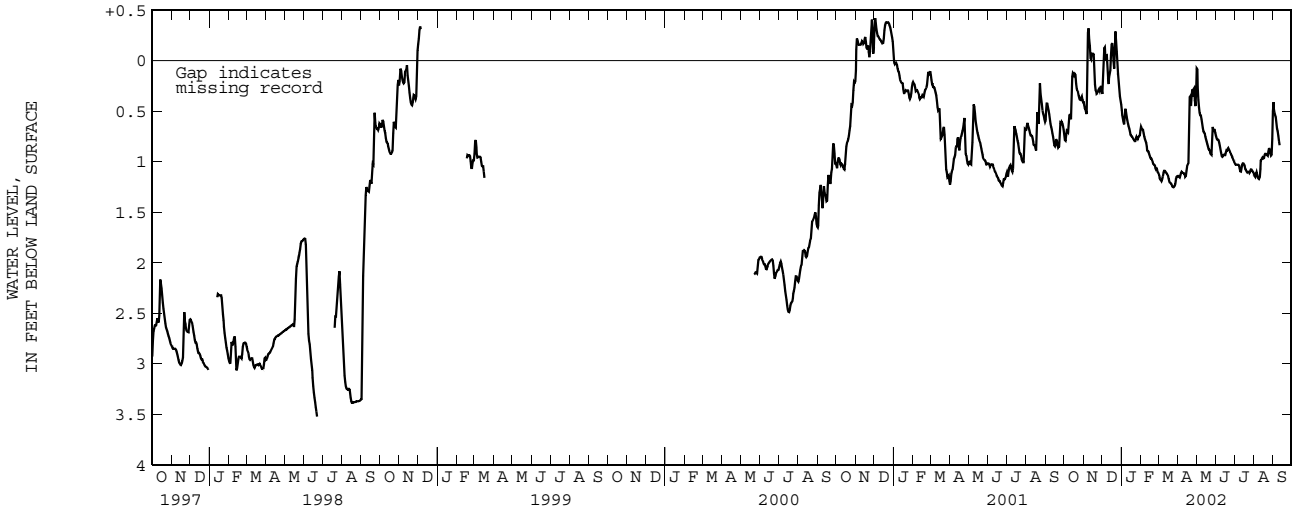
RIO HONDO TO RIO PUERTO NUEVO BASINS--Continued

182417066042700. Local number, 1156.
LOCATION.--Lat 18°24'17", long 66°04'27", Hydrologic Unit 21010005, 3.96 mi southeast of Cataño plaza, 1.00 mi southwest of Escuela J.J. Osuna, and 2.26 mi east of WAPA TV radio anthena. Name: Piezometer Las Américas 1, San Juan.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled observation well, cased 4 in (0.10 m), 0-80.0 ft (0-24.4 m), 4 in (0.10 m), perforated pipe 80-90.0 ft (24.4-27.4 m). Depth 90.0 ft (27.4 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 16.0 ft (4.89 m), above mean sea level, from topographic map. Measuring point: Hole on well shaft, 3.37 ft (1.03 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR) replaced by an Electronic Data Logger (EDL), installed on February 23, 1998, and re-installed on May 22, 2000. Well affected by pumping during June 1994. [+, above land-surface datum].
PERIOD OF RECORD.--October 1989 to March 19, 1999, discontinued, May 22, 2000 to September 12, 2002, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, +2.30 ft (+0.70 m), above land-surface datum, January 9-12, 1993; lowest water level recorded, 6.92 ft (2.11 m) below land-surface datum, October 6-9, 1994.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.70	0.41	0.32	0.46	0.65	1.11	1.14	0.16	0.74	1.00	1.11	0.37
2	0.77	0.41	0.34	0.52	0.65	1.12	1.14	+0.01	0.75	1.02	1.14	0.45
3	0.80	0.46	0.08	0.55	0.68	1.14	1.14	0.18	0.78	1.03	1.14	0.50
4	0.78	0.47	+0.01	0.59	0.68	1.18	1.16	0.34	0.78	1.03	1.16	0.53
5	0.69	0.49	+0.23	0.62	0.69	1.17	1.15	0.43	0.78	1.03	1.09	0.55
6	0.69	0.52	+0.03	0.64	0.74	1.19	1.12	0.49	0.79	1.03	1.12	0.57
7	0.70	0.54	0.03	0.47	0.76	1.19	1.10	0.54	0.83	1.03	1.15	0.66
8	0.71	+0.14	+0.13	0.48	0.79	1.15	1.10	0.54	0.85	1.03	1.16	0.69
9	0.55	+0.42	0.02	0.53	0.80	1.14	1.11	0.55	0.90	1.04	1.17	0.71
10	0.53	+0.22	0.12	0.57	0.83	1.09	1.11	0.61	0.92	1.09	1.17	0.78
11	0.54	+0.19	0.22	0.61	0.87	1.09	1.12	0.64	0.96	1.10	1.14	0.81
12	0.57	+0.10	0.24	0.63	0.90	1.09	1.11	0.69	0.94	1.10	1.00	0.86
13	0.59	0.04	0.09	0.67	0.89	1.10	1.15	0.71	0.95	1.03	0.98	---
14	0.21	+0.07	0.17	0.67	0.91	1.11	1.15	0.71	0.92	1.03	0.98	---
15	0.10	+0.07	0.02	0.72	0.93	1.12	1.13	0.73	0.94	1.00	0.96	---
16	0.14	+0.07	+0.13	0.74	0.95	1.12	1.05	0.78	0.93	1.03	0.96	---
17	0.12	+0.07	+0.19	0.74	0.97	1.15	1.04	0.78	0.94	1.02	0.98	---
18	0.17	+0.06	+0.16	0.76	0.97	1.18	1.02	0.82	0.88	1.07	0.95	---
19	0.09	0.18	+0.05	0.75	0.97	1.20	1.01	0.83	0.89	1.08	0.92	---
20	0.19	0.29	0.06	0.78	1.00	1.21	0.44	0.87	0.89	1.08	0.92	---
21	0.26	0.29	0.10	0.78	1.02	1.21	0.29	0.88	0.86	1.11	0.92	---
22	0.29	0.32	+0.37	0.79	1.03	1.22	0.42	0.88	0.87	1.10	0.93	---
23	0.29	0.33	+0.21	0.80	1.03	1.23	0.47	0.90	0.89	1.10	0.94	---
24	0.33	0.31	+0.15	0.79	1.04	1.25	0.23	0.92	0.89	1.10	0.94	---
25	0.36	0.31	+0.04	0.75	1.09	1.25	0.34	0.93	0.92	1.10	0.85	---
26	0.38	0.27	0.08	0.75	1.06	1.26	0.37	0.93	0.93	1.12	0.88	---
27	0.39	0.29	0.17	0.78	1.08	1.24	0.20	0.62	0.94	1.08	0.89	---
28	0.39	0.31	0.24	0.77	1.10	1.24	0.35	0.69	0.97	1.07	0.94	---
29	0.35	0.24	0.33	0.75	---	1.20	0.43	0.69	0.96	1.08	0.94	---
30	0.36	0.26	0.38	0.75	---	1.15	0.47	0.68	1.00	1.09	0.92	---
31	0.41	---	0.41	0.73	---	1.15	---	0.69	---	1.10	0.63	---
MEAN	0.43	0.18	0.06	0.68	0.90	1.17	0.84	0.65	0.89	1.06	1.00	---

WTR YR 2002 MEAN 0.71 HIGHEST +0.42 NOV. 9, 2001 LOWEST 1.28 MAR. 24, 25, 26, 2002



+ above land-surface datum

GROUND-WATER LEVELS

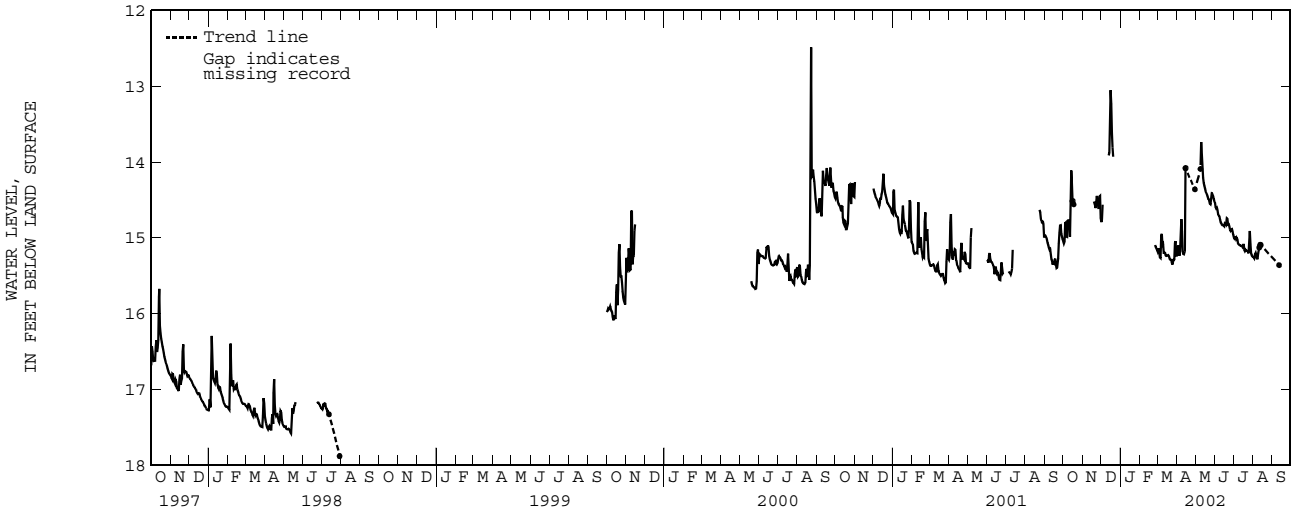
RIO HONDO TO RIO PUERTO NUEVO BASINS--Continued

182349066032600. Local number, 1157.
LOCATION.--Lat 18°23'49", long 66°03'26", Hydrologic Unit 21010005, 5.15 mi southeast of Cataño plaza, 1.28 mi south of Escuela J.J. Osuna, and 0.69 mi southwest of University of Puerto Rico main gate. Name: Piezometer Jardín Botánico 1, San Juan.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled water-table well, diameter 4 in (0.10 m) cased 4.0 in (0.10 m), 0-45.0 ft (0-13.72 m), perforated 35.0-45.0 ft (10.67-13.72 m). Depth 45.0 ft (13.72 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 32.0 ft (9.75 m), above mean sea level, from topographic map. Measuring point: Hole on well shaft, 2.84 ft (0.86 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on May 22, 1998. Well level is affected by water level in nearby Río Piedras river.
PERIOD OF RECORD.--March 1989 to September 12, 2002, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 6.96 ft (2.12 m), below land-surface datum, September 10, 1996; lowest water level recorded, 17.87 ft (5.45 m), below land-surface datum, October 7, 1994.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.04	---	14.77	---	---	15.18	15.24	13.83	14.51	14.98	15.26	---
2	15.05	---	14.81	---	---	15.18	15.22	---	14.55	15.00	15.24	---
3	15.10	---	14.70	---	---	15.12	15.08	---	14.63	15.01	15.27	---
4	15.00	---	14.43	---	---	15.16	15.12	---	14.59	14.99	15.27	---
5	14.61	---	---	---	---	15.23	15.24	---	14.61	15.00	15.17	---
6	14.98	---	---	---	---	15.28	15.23	---	14.66	15.03	15.23	---
7	14.99	---	---	---	---	15.25	15.11	---	14.71	14.96	15.25	---
8	14.99	---	---	---	---	14.71	14.81	---	14.70	15.06	15.27	---
9	14.68	---	---	---	---	15.19	14.70	---	14.73	15.08	15.29	---
10	14.84	---	---	---	---	15.00	15.14	13.62	14.79	15.09	15.12	---
11	14.79	---	---	---	---	15.17	15.21	13.85	14.80	15.09	15.20	---
12	14.91	---	---	---	---	15.22	15.22	13.93	14.82	15.11	15.06	---
13	15.06	---	13.84	---	---	15.17	15.22	14.17	14.82	15.10	---	---
14	14.15	---	13.99	---	---	15.22	15.18	14.24	14.84	15.11	---	---
15	14.07	---	13.76	---	---	15.24	15.19	14.31	14.82	15.10	---	---
16	14.48	---	13.12	---	---	15.24	12.97	14.32	14.86	15.13	---	---
17	14.55	---	12.98	---	---	15.23	---	14.38	14.83	15.05	---	---
18	---	---	13.49	---	---	15.23	---	14.39	14.78	15.13	---	---
19	---	14.50	13.73	---	---	15.22	---	14.42	14.84	15.19	---	---
20	---	14.54	13.89	---	---	15.26	---	14.44	14.80	15.16	---	---
21	---	14.56	13.97	---	---	15.28	---	14.47	14.68	15.16	---	---
22	---	14.60	---	---	---	15.29	---	14.50	14.82	15.18	---	---
23	---	14.61	---	---	---	15.29	---	14.48	14.83	15.16	---	---
24	---	14.45	---	---	---	15.29	---	14.54	14.81	15.18	---	---
25	---	14.44	---	---	15.09	15.36	---	14.55	14.88	15.16	---	---
26	---	14.60	---	---	15.10	15.35	---	14.56	14.90	15.25	---	---
27	---	14.52	---	---	15.14	15.28	---	14.41	14.91	14.83	---	---
28	---	14.72	---	---	15.13	15.30	---	14.41	14.87	14.99	---	---
29	---	14.19	---	---	---	15.27	---	14.42	14.90	15.18	---	---
30	---	14.70	---	---	---	14.87	---	14.45	14.93	15.23	---	---
31	---	---	---	---	---	15.22	---	14.52	---	15.23	---	---
MEAN	---	---	---	---	---	15.20	---	---	14.77	15.09	---	---

WTR YR 2002 MEAN 14.82 HIGHEST 11.68 MAY 10, 2002 LOWEST 15.38 MAR. 25, 2002



GROUND-WATER LEVELS

RIO HONDO TO RIO PUERTO NUEVO BASINS--Continued

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	14.56	FEB 25	14.98	MAY 09	14.09	MAY 09	15.05	JUL 08	15.06	AUG 13	15.09
18	14.57	MAR 12	15.23	09	14.08	JUN 14	14.79	08	15.05	SEP 12	15.36
DEC 13	13.74	12	15.21	09	14.04	14	14.80	AUG 13	15.10	12	15.35
FEB 25	14.96	APR 30	14.36								

WATER YEAR 2002 HIGHEST 13.74 DEC. 13, 2001 LOWEST 15.36 SEPT. 12, 2002

GROUND-WATER LEVELS

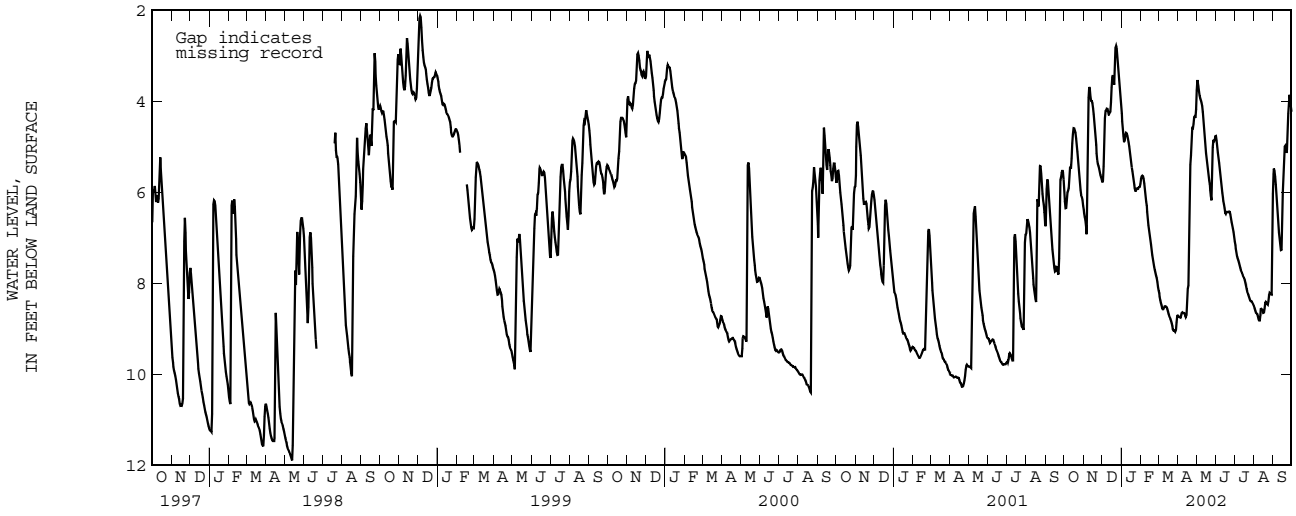
RIO HONDO TO RIO PUERTO NUEVO BASINS--Continued

182406066034700. Local number, 1158.
LOCATION.--Lat 18°24'06", long 66°03'47", Hydrologic Unit 21010005, 4.65 mi southeast of Cataño plaza, 0.89 mi south of Escuela J.J. Osuna, and 0.78 mi southwest of University of Puerto Rico main gate. Name: Piezometer Jardín Botánico 3, San Juan.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled water-table well, diameter 4 in (0.10 m) cased 4.0 in (0.10 m), 0-48.0 ft (0-14.6 m), perforated 38.0-48.0 ft (11.6-14.6 m). Depth 48.0 ft.(14.6 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 32.0 ft (9.75 m), above mean sea level, from topographic map. Measuring point: Hole on well shaft, 2.91 ft (0.88 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on May 22, 1998, removed on September 30, 2002.
PERIOD OF RECORD.--June 1991 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 2.05 ft (0.62 m), below land-surface datum, December 4, 1998; lowest water level recorded, 13.43 ft (4.09 m), below land-surface datum, November 8, 9, 1994.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.81	6.36	5.75	4.19	5.74	8.13	8.71	3.96	4.73	7.04	8.47	5.73
2	6.10	6.39	5.81	4.35	5.66	8.19	8.71	3.54	4.79	7.12	8.53	5.46
3	6.29	6.52	5.67	4.52	5.63	8.26	8.74	3.51	4.92	7.20	8.58	5.49
4	6.41	6.56	5.18	4.67	5.63	8.33	8.75	3.61	5.06	7.27	8.63	5.58
5	6.27	6.66	4.51	4.85	5.66	8.41	8.75	3.72	5.19	7.37	8.66	5.72
6	6.05	6.82	4.22	4.93	5.74	8.45	8.76	3.83	5.27	7.44	8.66	5.93
7	5.96	7.02	4.22	4.78	5.86	8.52	8.67	3.91	5.43	7.47	8.69	6.22
8	5.97	5.46	4.17	4.69	6.00	8.57	8.63	3.96	5.57	7.53	8.76	6.45
9	5.84	4.13	4.15	4.69	6.15	8.57	8.65	3.99	5.70	7.57	8.81	6.64
10	5.48	3.70	4.18	4.72	6.25	8.57	8.65	4.06	5.83	7.64	8.81	6.81
11	5.44	3.66	4.25	4.78	6.34	8.51	8.65	4.13	5.94	7.68	8.81	6.96
12	5.45	3.82	4.32	4.85	6.50	8.50	8.65	4.33	6.09	7.74	8.58	7.07
13	5.50	3.98	4.25	4.94	6.65	8.51	8.69	4.54	6.15	7.74	8.56	7.21
14	5.01	3.99	4.25	5.03	6.80	8.51	8.73	4.74	6.23	7.80	8.56	7.34
15	4.83	3.99	4.21	5.15	6.89	8.54	8.76	4.91	6.29	7.84	8.59	7.19
16	4.60	4.10	3.83	5.27	7.01	8.59	8.66	5.06	6.40	7.86	8.65	6.21
17	4.58	4.20	3.55	5.40	7.08	8.64	8.17	5.20	6.50	7.90	8.66	5.77
18	4.62	4.36	3.39	5.50	7.20	8.71	8.06	5.29	6.44	7.96	8.63	5.62
19	4.66	4.52	3.46	5.57	7.32	8.72	8.03	5.44	6.42	8.02	8.47	5.03
20	4.72	4.68	3.58	5.69	7.43	8.76	6.77	5.57	6.43	8.08	8.40	4.97
21	4.90	4.86	3.69	5.79	7.51	8.82	5.54	5.68	6.44	8.17	8.42	4.98
22	5.03	5.05	2.85	5.88	7.60	8.85	5.25	5.79	6.43	8.20	8.44	5.09
23	5.18	5.23	2.80	5.94	7.68	8.92	5.13	5.87	6.41	8.23	8.47	5.18
24	5.38	5.35	2.76	5.99	7.74	8.98	4.60	6.02	6.45	8.27	8.47	4.93
25	5.56	5.41	2.93	5.93	7.81	9.03	4.57	6.13	6.52	8.31	8.31	4.28
26	5.71	5.43	3.11	5.91	7.86	9.03	4.61	6.22	6.62	8.36	8.22	4.25
27	5.86	5.53	3.30	5.92	7.91	9.04	4.37	5.16	6.69	8.39	8.20	3.83
28	6.04	5.57	3.53	5.92	8.03	9.05	4.31	4.85	6.76	8.39	8.24	3.88
29	6.09	5.66	3.70	5.89	---	9.08	4.34	4.84	6.83	8.39	8.24	4.05
30	6.11	5.67	3.88	5.88	---	8.99	4.38	4.92	6.91	8.42	8.26	4.16
31	6.23	---	4.03	5.88	---	8.72	---	4.80	---	8.45	6.34	---
MEAN	5.54	5.16	3.98	5.27	6.77	8.66	7.24	4.76	6.05	7.87	8.46	5.60

WTR YR 2002 MEAN 6.28 HIGHEST 2.75 DEC. 23, 24, 2001 LOWEST 9.10 MAR. 29, 30, 2002



GROUND-WATER LEVELS

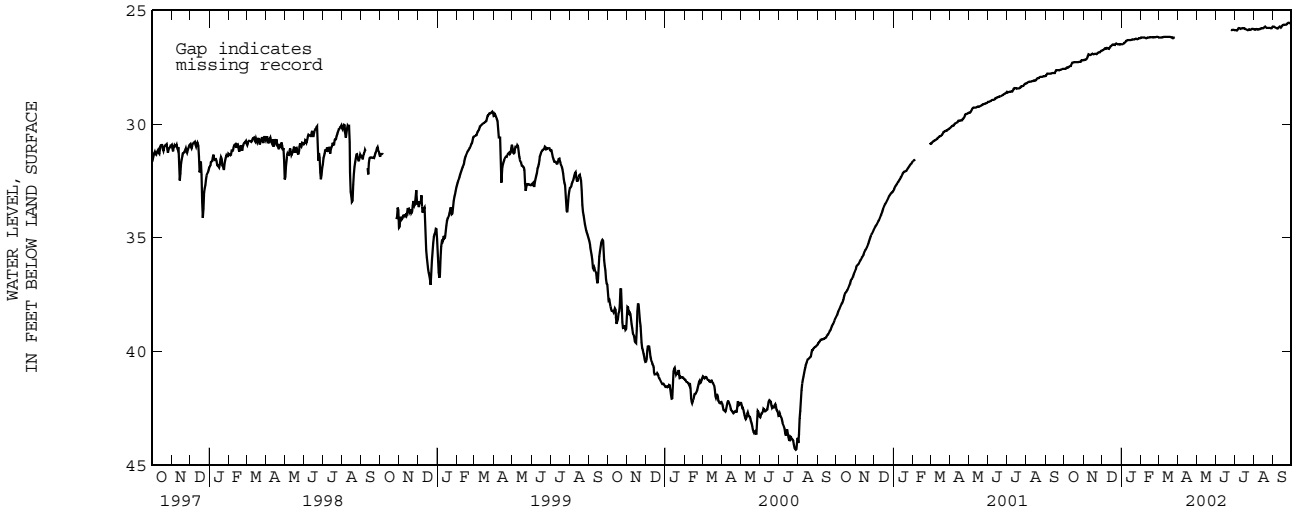
RIO HONDO TO RIO PUERTO NUEVO BASINS--Continued

182451066080200. Local number, 1159.
LOCATION.--Lat 18°24'50", long 66°08'05", Hydrologic Unit 21010005, 1.70 mi west of Fort Buchanan main gate, 0.20 mi southeast of oil refinery, and 0.90 mi east of Goya Products plant. Name: Piezometer Ft. Buchanan 1, Bayamón.
AQUIFER.--Mucarabones Sand.
WELL CHARACTERISTICS.--Drilled water-table well, diameter 4 in (0.10 m), screened 209-249 ft (63.7-75.9 m). Depth 249 ft (75.89 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 46.0 ft (14.0 m), about mean sea level, from topographic map. Measuring point: 3.33 ft (1.01 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), installed Sept. 12, 1997, replaced by an Electronic Data Logger (EDL), installed on September 10, 1998, removed on September 30, 2002. Well is affected by nearby pumping.
PERIOD OF RECORD.--September 12, 1997 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 25.54 ft (7.78 m), below land-surface datum, September 25, 2002; lowest water level recorded, 44.38 ft (13.53 m), below land-surface datum, July 28, 29, 2000.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27.56	27.19	26.76	26.47	26.19	26.18	---	---	---	25.86	25.82	25.70
2	27.56	27.18	26.77	26.48	26.19	26.18	---	---	---	25.86	25.83	25.70
3	27.56	27.17	26.73	26.48	26.19	26.18	---	---	---	25.86	25.84	25.72
4	27.56	27.16	26.71	26.47	26.19	26.18	---	---	---	25.87	25.84	25.75
5	27.50	27.15	26.66	26.46	26.19	26.18	---	---	---	25.87	25.82	25.75
6	27.50	27.15	26.67	26.44	26.19	26.19	---	---	---	25.88	25.82	25.76
7	27.50	27.12	26.68	26.38	26.19	26.19	---	---	---	25.82	25.84	25.78
8	27.50	27.05	26.66	26.38	26.21	26.17	---	---	---	25.76	25.84	25.79
9	27.47	26.91	26.65	26.35	26.21	26.18	---	---	---	25.79	25.82	25.77
10	27.46	26.94	26.67	26.31	26.23	26.16	---	---	---	25.80	25.82	25.77
11	27.44	26.95	26.69	26.30	26.20	26.15	---	---	---	25.80	25.81	25.71
12	27.44	26.97	26.69	26.29	26.19	26.16	---	---	---	25.81	25.78	25.71
13	27.44	26.96	26.65	26.30	26.19	26.16	---	---	---	25.77	25.81	25.74
14	27.30	26.93	26.62	26.29	26.19	26.16	---	---	---	25.78	25.78	25.75
15	27.30	26.90	26.58	26.30	26.19	26.15	---	---	---	25.78	25.77	25.68
16	27.28	26.91	26.54	26.29	26.18	26.16	---	---	---	25.78	25.77	25.64
17	27.27	26.92	26.52	26.29	26.17	26.16	---	---	---	25.79	25.77	25.63
18	27.27	26.93	26.50	26.28	26.17	26.16	---	---	---	25.80	25.73	25.64
19	27.27	26.90	26.49	26.27	26.17	26.16	---	---	---	25.83	25.70	25.61
20	27.26	26.89	26.51	26.27	26.18	26.16	---	---	---	25.84	25.72	25.62
21	27.27	26.90	26.51	26.27	26.19	26.17	---	---	---	25.86	25.77	25.62
22	27.27	26.92	26.52	26.27	26.18	26.17	---	---	---	25.86	25.76	25.62
23	27.27	26.91	26.45	26.27	26.17	26.18	---	---	---	25.85	25.76	25.62
24	27.27	26.87	26.46	26.25	26.18	26.20	---	---	---	25.83	25.76	25.59
25	27.26	26.84	26.48	26.24	26.17	26.21	---	---	25.85	25.83	25.76	25.54
26	27.26	26.84	26.48	26.27	26.16	26.20	---	---	25.85	25.86	25.76	25.54
27	27.25	26.83	26.48	26.27	26.16	26.17	---	---	25.86	25.84	25.77	25.54
28	27.25	26.84	26.49	26.24	26.16	26.17	---	---	25.85	25.84	25.77	25.55
29	27.20	26.77	26.50	26.22	---	---	---	---	25.85	25.81	25.77	25.56
30	27.18	26.77	26.49	26.21	---	---	---	---	25.85	25.81	25.77	25.58
31	27.19	---	26.48	26.22	---	---	---	---	---	25.81	25.72	---
MEAN	27.36	26.96	26.58	26.32	26.18	---	---	---	---	25.82	25.78	25.67

WTR YR 2002 MEAN 26.31 HIGHEST 25.54 SEPT. 25, 2002 LOWEST 27.56 OCT. 1-4, 2001



GROUND-WATER LEVELS

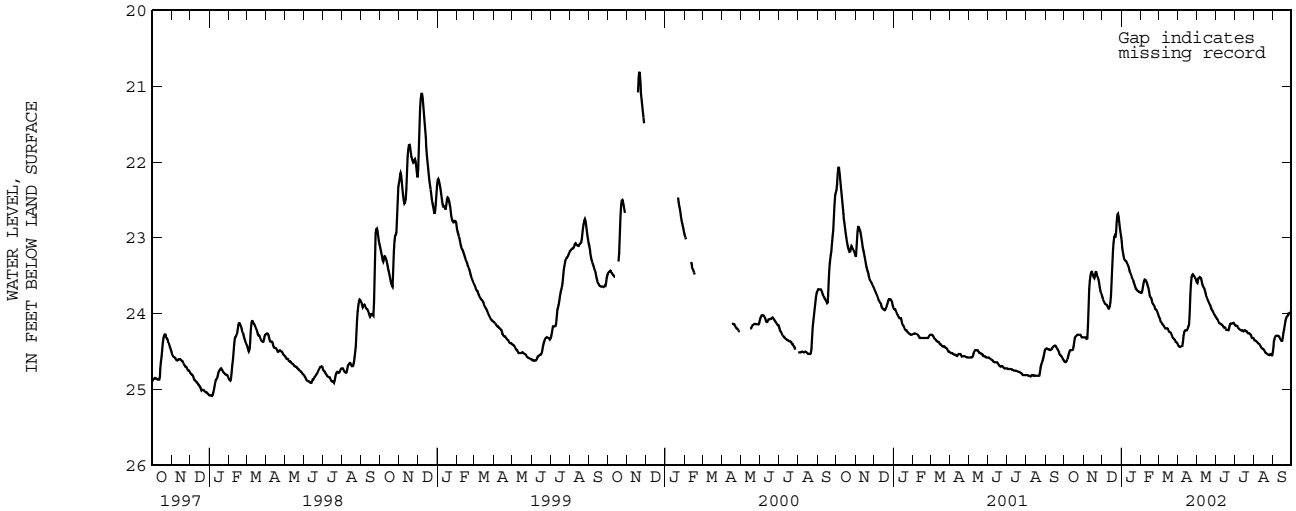
RIO GRANDE DE LOIZA BASIN

181352066025300. Local number, 1176.
LOCATION.--Lat 18°13'52", long 66°02'53", Hydrologic Unit 21010005, 0.96 mi southwest of Caguas plaza, 1.02 mi northwest of Escuela Antonio S. Pedreira, and 0.30 mi southeast of Hwy 156 km 59.1. Name: Piezometer CJ 19A, Caguas.
AQUIFER.--Unconsolidated deposits of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m), 0-67.0 ft (0-20.4 m), screened 50.0-65.0 ft (15.2-19.8 m). Depth 67.0 ft (20.4 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 262 ft (79.8 m), above mean sea level, from topographic map. Measuring point: Top of casing 3.48 ft (1.06 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on September 29, 1999, removed on September 30, 2002.
PERIOD OF RECORD.-- June 1992 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 20.75 ft (6.32 m), below land-surface datum, November 20, 21, 1999; lowest water level recorded, 25.70 ft (7.83 m), below land-surface datum, May 31, 1995.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.61	24.31	23.76	23.02	23.72	24.02	24.39	23.58	24.03	24.15	24.32	24.47
2	24.63	24.31	23.80	23.10	23.72	24.04	24.41	23.59	24.06	24.14	24.35	24.39
3	24.64	24.31	23.82	23.16	23.72	24.05	24.43	23.60	24.06	24.16	24.36	24.35
4	24.64	24.31	23.83	23.20	23.67	24.07	24.44	23.55	24.07	24.16	24.36	24.32
5	24.63	24.31	23.86	23.26	23.61	24.10	24.44	23.53	24.09	24.16	24.36	24.30
6	24.62	24.33	23.87	23.29	23.58	24.11	24.44	23.52	24.11	24.16	24.37	24.29
7	24.59	24.34	23.88	23.29	23.55	24.12	24.43	23.52	24.13	24.18	24.38	24.29
8	24.55	24.32	23.88	23.31	23.55	24.14	24.43	23.53	24.13	24.20	24.39	24.29
9	24.52	24.02	23.89	23.31	23.56	24.15	24.42	23.53	24.14	24.20	24.40	24.29
10	24.49	23.74	23.91	23.32	23.58	24.16	24.31	23.59	24.14	24.21	24.40	24.30
11	24.48	23.60	23.93	23.35	23.59	24.17	24.26	23.62	24.15	24.22	24.41	24.30
12	24.48	23.52	23.93	23.36	23.62	24.19	24.23	23.64	24.16	24.22	24.43	24.32
13	24.48	23.47	23.93	23.39	23.65	24.20	24.22	23.65	24.16	24.22	24.44	24.34
14	24.48	23.44	23.88	23.44	23.67	24.19	24.22	23.67	24.18	24.22	24.45	24.35
15	24.48	23.45	23.83	23.46	23.74	24.20	24.22	23.70	24.18	24.24	24.46	24.37
16	24.47	23.48	23.70	23.47	23.78	24.20	24.22	23.74	24.18	24.23	24.47	24.35
17	24.41	23.51	23.48	23.50	23.78	24.20	24.22	23.77	24.19	24.22	24.47	24.27
18	24.34	23.53	23.28	23.52	23.80	24.24	24.18	23.78	24.21	24.22	24.48	24.23
19	24.31	23.53	23.10	23.54	23.83	24.24	24.16	23.82	24.22	24.23	24.49	24.18
20	24.30	23.46	23.02	23.57	23.87	24.25	24.13	23.83	24.21	24.23	24.52	24.13
21	24.29	23.44	22.97	23.60	23.87	24.25	23.85	23.85	24.22	24.23	24.52	24.07
22	24.28	23.46	22.98	23.62	23.88	24.26	23.66	23.87	24.22	24.25	24.53	24.06
23	24.28	23.49	23.01	23.63	23.91	24.30	23.54	23.88	24.17	24.26	24.53	24.05
24	24.28	23.51	22.84	23.67	23.93	24.31	23.50	23.90	24.14	24.25	24.54	24.03
25	24.28	23.53	22.72	23.68	23.95	24.32	23.48	23.93	24.13	24.26	24.55	24.03
26	24.28	23.57	22.68	23.68	23.95	24.33	23.48	23.95	24.13	24.27	24.55	24.01
27	24.28	23.62	22.69	23.70	23.96	24.34	23.50	23.96	24.13	24.27	24.53	24.00
28	24.28	23.69	22.76	23.71	23.99	24.34	23.51	23.97	24.13	24.29	24.53	23.98
29	24.31	23.71	22.84	23.71	---	24.37	23.52	23.99	24.12	24.32	24.53	23.99
30	24.31	23.73	22.91	23.71	---	24.38	23.54	24.01	24.12	24.32	24.57	23.99
31	24.31	---	22.96	23.73	---	24.38	---	24.02	---	24.32	24.53	---
MEAN	24.43	23.77	23.42	23.46	23.75	24.21	24.06	23.74	24.14	24.23	24.46	24.21

WTR YR 2002 MEAN 23.99 HIGHEST 22.66 DEC. 26, 2001 LOWEST 24.64 OCT. 3, 4, 2001



GROUND-WATER LEVELS

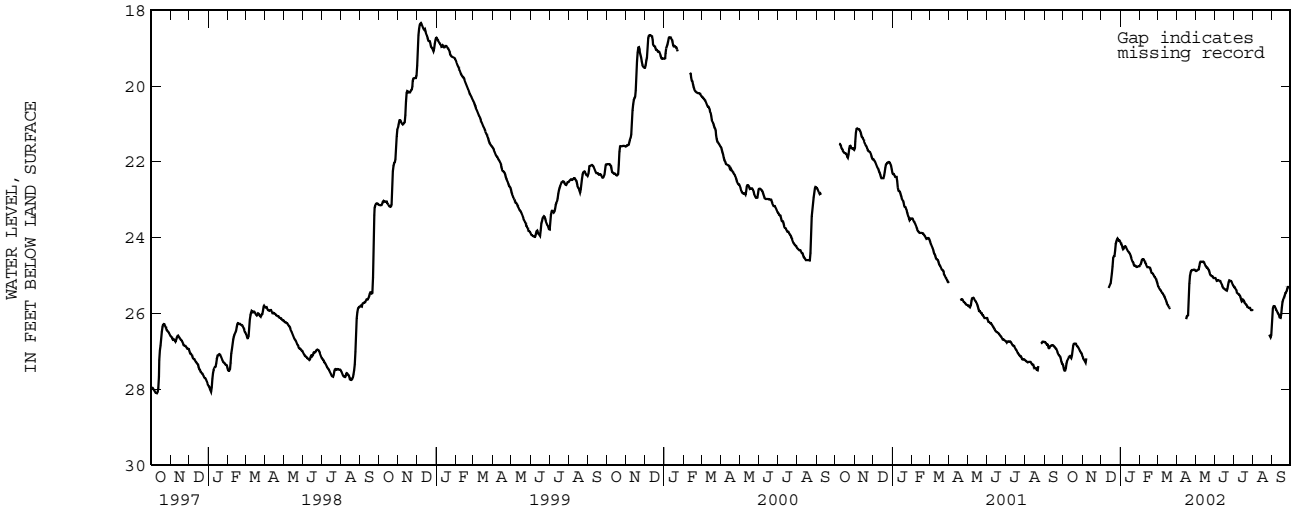
RIO GRANDE DE LOIZA BASIN--Continued

181311066022500. Local number, 1177.
LOCATION.--Lat 18°13'11", long 66°02'25", Hydrologic Unit 21010005, 1.13 mi south of the intersection of Hwy 156 with Hwy 52, 0.15 mi southeast of the inserction of Hwy 172 with Hwy 1, and 0.20 mi northeast of Escuela Antonio S. Pereira. Name: Piezometer Caguas-Juncos 11, Caguas.
AQUIFER.--Unconsolidated deposits of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), 0-110 ft (0-33.5 m), screened 66.0-96.0 ft (20.1-29.3 m). Depth 110 ft (33.5 m).
INSTRUMENTATION.--Electronic water level logger--60-minute interval.
DATUM.--Elevation of land-surface datum is about 282 ft (85.9 m), above mean sea level. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 3.04 ft (0.24 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), installed on May 2, 1997. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on September 17, 1999, removed on September 30, 2002.
PERIOD OF RECORD.--May 2, 1997 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 18.34 ft (5.59 m), below land-surface datum, December 6, 7, 8, 1998; lowest water level recorded, 28.73 ft (8.76 m), below land-surface datum, August 22, 1997.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27.34	27.12	---	24.12	24.75	25.22	---	24.87	25.07	25.28	25.91	26.12
2	27.44	27.15	---	24.16	24.72	25.26	---	24.89	25.07	25.29	25.97	25.93
3	27.51	27.20	---	24.19	24.70	25.30	---	24.87	25.07	25.31	---	25.83
4	27.51	27.23	---	24.21	24.61	25.31	---	24.87	25.14	25.34	---	25.81
5	27.51	27.25	---	24.31	24.56	25.35	---	24.86	25.14	25.34	---	25.81
6	27.38	27.28	---	24.31	24.57	25.38	---	24.85	25.13	25.40	---	25.81
7	27.28	27.32	---	24.27	24.57	25.39	---	24.84	25.13	25.44	---	25.88
8	27.24	27.06	---	24.23	24.58	25.42	---	24.70	25.14	25.48	---	25.92
9	27.21	---	---	24.23	24.64	25.46	---	24.64	25.14	25.48	---	25.92
10	27.18	---	---	24.25	24.68	25.48	---	24.64	25.14	25.51	---	25.99
11	27.15	---	---	24.28	24.70	25.48	---	24.64	25.20	25.51	---	26.00
12	27.13	---	---	24.31	24.72	25.55	---	24.65	25.20	25.55	---	26.04
13	27.13	---	25.35	24.35	24.78	25.58	---	24.64	25.27	25.61	---	26.11
14	27.18	---	25.30	24.38	24.78	25.59	---	24.64	25.28	25.68	---	26.12
15	27.18	---	25.29	24.38	24.78	25.66	---	24.65	25.34	25.69	---	26.12
16	27.06	---	25.21	24.42	24.80	25.71	26.21	24.68	25.34	25.65	---	25.94
17	26.90	---	25.22	24.45	24.80	25.76	26.10	24.73	25.36	25.64	---	25.76
18	26.82	---	24.94	24.54	24.80	25.78	26.07	24.76	25.36	25.68	---	25.66
19	26.80	---	24.94	24.57	24.89	25.81	26.06	24.79	25.40	25.73	---	25.64
20	26.80	---	24.58	24.62	24.93	25.84	26.05	24.80	25.40	25.74	---	25.57
21	26.80	---	24.51	24.65	24.95	25.87	25.37	24.80	25.41	25.77	---	25.55
22	26.80	---	24.50	24.67	24.95	25.91	25.07	24.86	25.30	25.77	---	25.47
23	26.84	---	24.49	24.74	24.97	---	24.95	24.86	25.21	25.81	---	25.46
24	26.87	---	24.21	24.74	25.02	---	24.89	24.92	25.13	25.84	---	25.45
25	26.88	---	24.14	24.74	25.04	---	24.86	24.98	25.14	25.85	---	25.40
26	26.92	---	24.07	24.76	25.04	---	24.86	24.99	25.14	25.85	---	25.31
27	26.93	---	24.03	24.78	25.11	---	24.86	25.02	25.14	25.85	26.53	25.30
28	26.99	---	24.02	24.78	25.14	---	24.86	25.01	25.17	25.85	26.59	25.30
29	27.02	---	24.08	24.77	---	---	24.83	25.03	25.19	25.91	26.60	25.31
30	27.03	---	24.08	24.75	---	---	24.86	25.06	25.24	25.91	26.66	25.31
31	27.08	---	24.08	24.76	---	---	---	25.07	---	25.91	26.50	---
MEAN	27.09	---	---	24.47	24.81	---	---	24.83	25.21	25.63	---	25.73

WTR YR 2002 MEAN 25.43 HIGHEST 24.00 DEC. 27, 2001 LOWEST 27.51 OCT. 2-5, 2001



GROUND-WATER LEVELS

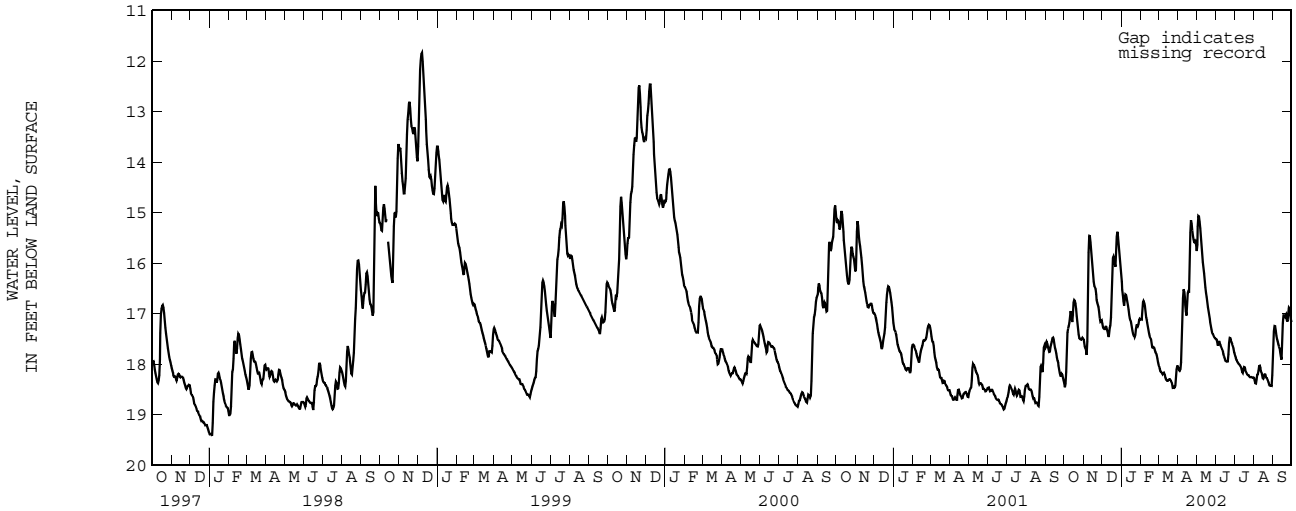
RIO GRANDE DE LOIZA BASIN--Continued

181446066013400. Local number, 1178.
LOCATION.--Lat 18°14'46", long 66°01'34", Hydrologic Unit 21010005, 0.63 mi east of Hwy 1, 1.59 mi west of the intersection of Hwy 189 with Hwy 931, and 0.70 mi northeast of the intersection of Hwy 189 with Hwy 1. Name: Piezometer Caguas-Juncos 20, Caguas.
AQUIFER.--Unconsolidated deposits of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), caser 4 in (0.10 m), 0-37.0 ft (0-11.3 m), screened 25.0-35.0 ft (7.62-11.3 m). Depth 35.0 ft (11.3 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 187.0 ft (57.0 m), above mean sea level, from topographic map. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 3.63 ft (1.11 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), installed on May 5, 1997. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on September 29, 1999.
PERIOD OF RECORD.--May 5, 1997 to September 30, 2002, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 11.75 ft (3.58 m), below land-surface datum, December 7, 1998; lowest water level recorded, 19.89 ft (6.06 m), below land-surface datum, July 15, 16, 17, 1997.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.34	17.52	17.15	16.29	17.11	18.01	18.03	15.69	17.50	17.79	18.26	17.65
2	18.42	17.51	17.24	16.46	17.12	18.03	18.04	15.83	17.51	17.83	18.28	17.44
3	18.49	17.61	17.29	16.59	17.12	18.06	18.09	15.45	17.51	17.84	18.37	17.26
4	18.28	17.68	17.29	16.66	16.82	18.11	18.15	15.10	17.61	17.92	18.39	17.23
5	18.04	17.68	17.32	16.84	16.74	18.15	18.12	15.04	17.66	17.91	18.38	17.28
6	17.46	17.76	17.29	16.84	16.75	18.16	18.10	15.12	17.53	17.95	18.23	17.39
7	17.29	17.87	17.23	16.63	16.80	18.16	17.82	15.24	17.56	17.97	18.19	17.48
8	17.30	17.24	17.29	16.61	16.89	18.21	17.39	15.37	17.62	17.99	18.20	17.53
9	17.19	16.07	17.33	16.65	17.03	18.19	16.86	15.58	17.63	18.01	18.05	17.57
10	17.16	15.51	17.36	16.73	17.12	18.17	16.53	15.75	17.66	18.01	18.02	17.64
11	16.97	15.41	17.46	16.80	17.14	18.16	16.50	15.92	17.69	18.04	18.04	17.66
12	16.93	15.52	17.46	16.87	17.21	18.23	16.60	16.04	17.73	18.06	18.11	17.70
13	17.03	15.65	17.34	16.96	17.30	18.30	16.75	16.15	17.77	18.13	18.14	17.84
14	17.15	15.82	17.24	17.09	17.35	18.31	16.89	16.25	17.83	18.18	18.17	17.87
15	17.18	15.96	17.23	17.11	17.43	18.31	17.02	16.42	17.85	18.16	18.23	17.95
16	16.85	16.13	16.91	17.14	17.47	18.35	17.05	16.54	17.91	18.07	18.32	17.30
17	16.72	16.30	16.43	17.22	17.48	18.31	16.65	16.64	17.93	18.04	18.25	17.08
18	16.75	16.43	15.96	17.30	17.52	18.31	16.54	16.70	17.95	18.09	18.22	17.00
19	16.76	16.46	15.85	17.37	17.65	18.28	16.57	16.83	17.95	18.14	18.18	17.09
20	16.84	16.49	15.89	17.43	17.69	18.31	16.56	16.92	17.93	18.15	18.23	17.09
21	16.97	16.55	15.96	17.44	17.67	18.32	15.62	16.99	17.95	18.19	18.27	16.98
22	17.13	16.69	16.07	17.45	17.66	18.34	15.17	17.07	17.66	18.21	18.28	17.06
23	17.20	16.76	16.08	17.47	17.69	18.38	15.13	17.14	17.51	18.22	18.28	17.11
24	17.36	16.81	15.57	17.38	17.75	18.47	15.30	17.20	17.45	18.21	18.34	17.17
25	17.46	16.84	15.37	17.23	17.78	18.47	15.41	17.28	17.52	18.23	18.37	17.11
26	17.50	16.90	15.39	17.22	17.79	18.46	15.50	17.34	17.53	18.26	18.42	16.88
27	17.50	17.03	15.57	17.23	17.85	18.44	15.56	17.40	17.58	18.26	18.43	16.88
28	17.52	17.15	15.70	17.26	17.92	18.49	15.61	17.40	17.63	18.25	18.43	16.92
29	17.52	17.17	15.91	17.16	---	18.39	15.57	17.43	17.65	18.26	18.42	17.08
30	17.48	17.12	16.00	17.09	---	18.15	15.58	17.47	17.74	18.27	18.44	17.14
31	17.48	---	16.17	17.11	---	18.05	---	17.48	---	18.27	18.00	---
MEAN	17.36	16.72	16.59	17.02	17.35	18.26	16.62	16.41	17.68	18.09	18.26	17.31

WTR YR 2002 MEAN 17.31 HIGHEST 15.02 MAY 4, 5, 2002 LOWEST 18.50 OCT. 3, 2001



GROUND-WATER LEVELS

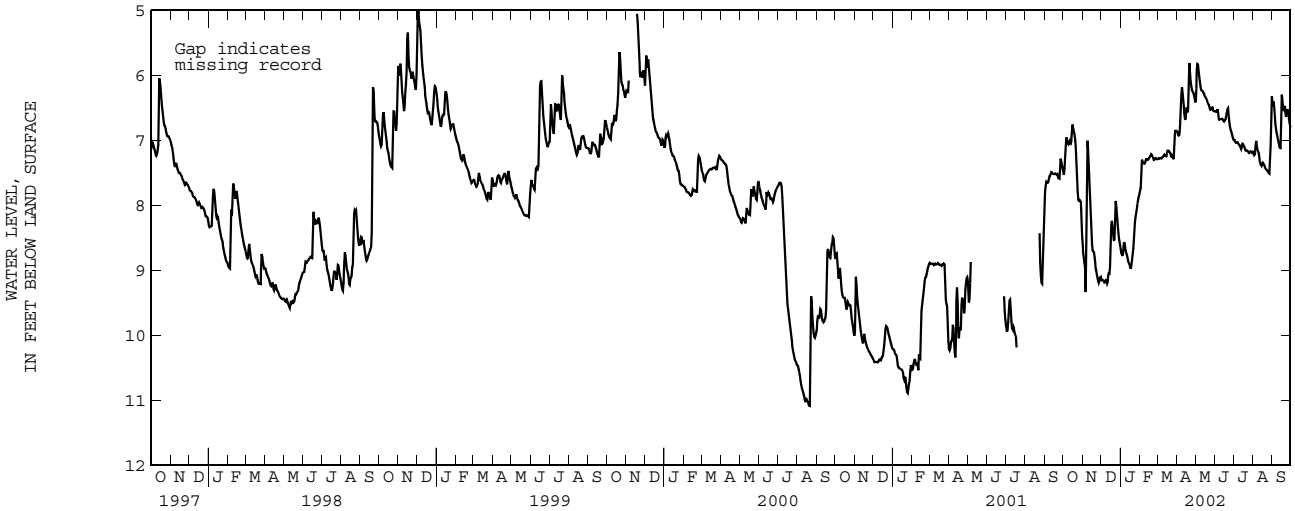
RIO GRANDE DE LOIZA BASIN--Continued

181539066014500. Local number, 1179.
LOCATION.--Lat 18°15'39", long 66°01'45", Hydrologic Unit 21010005, 0.55 mi southeast of the intersection of Hwy 1 with Hwy 30, 0.75 mi southeast of the inserction of Hwy 1 with Hwy 52, and 0.06 mi north of Hwy 796. Name: Piezometer Caguas-Juncos 15, Caguas.
AQUIFER.--Unconsolidated deposits of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), 0-70.0 ft (0-21.3 m), screened 25.0-70.0 ft (7.62-21.3 m). Depth 70.0 ft (21.3 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 167.3 ft (51.0 m), above mean sea level, from topographic map. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 3.75 ft (1.14 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), installed on May 5, 1997. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on September 2, 1999, removed on September 30, 2002.
PERIOD OF RECORD.--May 5, 1997 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 4.92 ft (1.50 m), below land-surface datum, December 3, 1998; lowest water level recorded, 11.11 ft (3.39 m), below land-surface datum, August 11, 22, 2000.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.45	8.56	9.11	8.66	7.80	7.29	6.89	6.43	6.55	6.99	7.16	6.38
2	7.51	8.67	9.16	8.71	7.75	7.28	6.84	6.40	6.55	6.99	7.19	6.51
3	7.55	8.77	9.15	8.74	7.72	7.27	6.90	6.00	6.56	6.99	7.22	6.37
4	7.30	8.84	9.15	8.76	7.29	7.28	6.92	5.85	6.55	7.02	7.23	6.43
5	7.22	8.93	9.16	8.80	7.30	7.28	6.92	5.80	6.54	7.03	7.20	6.52
6	6.92	8.97	9.17	8.65	7.33	7.27	6.90	5.87	6.50	7.04	6.95	6.71
7	6.98	9.70	9.21	8.54	7.35	7.27	6.65	5.97	6.65	7.03	7.06	6.80
8	7.04	7.88	9.16	8.59	7.36	7.28	6.43	6.07	6.68	7.03	7.13	6.86
9	7.04	6.99	9.15	8.67	7.36	7.27	6.16	6.13	6.68	7.04	7.15	6.91
10	7.07	7.02	9.18	8.72	7.32	7.24	6.21	6.22	6.67	7.07	7.18	6.96
11	6.98	7.37	9.23	8.76	7.29	7.26	6.33	6.22	6.67	7.07	7.23	7.01
12	7.03	7.74	9.12	8.78	7.29	7.21	6.44	6.24	6.67	7.09	7.30	7.06
13	7.07	8.00	9.06	8.84	7.30	7.23	6.53	6.24	6.66	7.12	7.34	7.11
14	7.04	8.22	9.04	8.88	7.30	7.24	6.61	6.25	6.67	7.14	7.36	7.12
15	7.00	8.38	9.07	8.89	7.28	7.24	6.70	6.28	6.69	7.05	7.39	7.12
16	6.73	8.55	8.85	8.91	7.29	7.25	6.66	6.31	6.71	7.05	7.39	6.27
17	6.78	8.65	8.42	8.98	7.25	7.15	6.46	6.33	6.71	7.06	7.33	6.32
18	6.86	8.74	8.19	8.97	7.24	7.17	6.52	6.34	6.68	7.09	7.36	6.47
19	6.87	8.68	8.28	8.86	7.23	7.15	6.61	6.36	6.68	7.12	7.36	6.52
20	6.94	8.76	8.38	8.80	7.20	7.17	6.45	6.39	6.56	7.15	7.39	6.57
21	7.02	8.83	8.50	8.70	7.24	7.19	5.75	6.43	6.60	7.16	7.42	6.42
22	7.18	8.94	8.57	8.62	7.24	7.19	5.87	6.44	6.45	7.15	7.44	6.52
23	7.43	8.99	8.49	8.50	7.29	7.25	6.02	6.46	6.57	7.16	7.45	6.60
24	7.69	9.03	7.89	8.31	7.31	7.25	6.15	6.49	6.68	7.16	7.46	6.67
25	7.88	9.09	7.97	8.20	7.28	7.25	6.18	6.53	6.76	7.17	7.48	6.53
26	7.94	9.14	8.09	8.15	7.27	7.21	6.25	6.53	6.82	7.20	7.49	6.51
27	7.91	9.19	8.22	8.08	7.27	7.29	6.23	6.52	6.86	7.19	7.51	6.59
28	7.92	9.20	8.35	8.02	7.29	7.29	6.28	6.48	6.88	7.17	7.51	6.64
29	7.94	9.13	8.47	7.92	---	6.94	6.30	6.51	6.92	7.17	7.08	6.73
30	7.94	9.09	8.54	7.89	---	6.83	6.36	6.55	6.96	7.19	7.10	6.78
31	8.40	---	8.59	7.85	---	6.85	---	6.54	---	7.19	6.26	---
MEAN	7.31	8.60	8.74	8.57	7.34	7.20	6.45	6.30	6.67	7.10	7.26	6.67

WTR YR 2002 MEAN 7.35 HIGHEST 5.73 APR. 21, 2002 LOWEST 9.23 DEC. 11, 2001



GROUND-WATER LEVELS

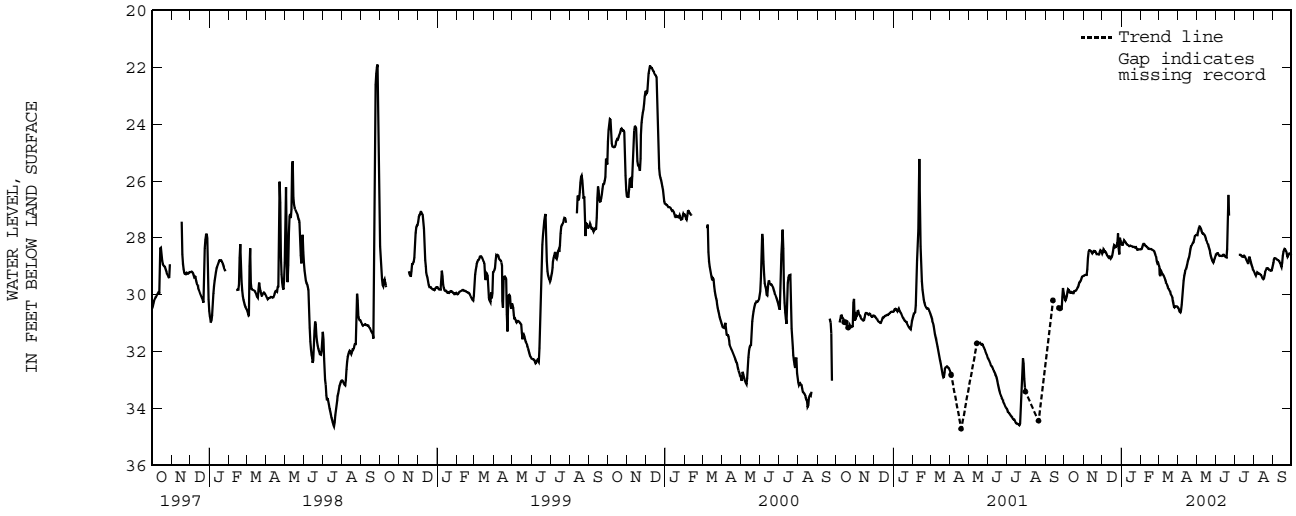
RIO GRANDE DE LOIZA BASIN--Continued

181550065593200. Local number, 50.
LOCATION.--Lat 18°15'50", long 65°59'32", Hydrologic Unit 21010005, 1.36 mi northwest of Gurabo plaza, 0.70 mi north of Estación Experimental Agrícola, and 2.42 mi southwest of Escuela José M. Gallardo. Name: Piezometer USGS 50, Gurabo.
AQUIFER.--Unconsolidated deposits of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 13 in (0.34 m), cased 4 in (0.10 m), 0-145 ft (0-44.2 m). Depth 145 ft (44.2 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 148 ft (45.1 m), above mean sea level, from topographic map. Measuring point: Top of 12 in (0.30 m) casing, 2.09 ft (0.64 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on September 30, 1999. Water level is affected by water level in Lago Loiza.
PERIOD OF RECORD.--December 1960 to March 1985, discontinued, and September 1991 to September 30, 2002, discontinued
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.6 ft (3.86 m), below land-surface datum, September 9, 1975; lowest water level measured, 44.4 ft (13.5 m), below land-surface datum, June 18, 1975.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29.96	29.35	28.54	28.21	28.40	28.92	30.43	27.87	28.61	---	29.15	28.95
2	30.11	29.33	28.58	28.24	28.40	28.97	30.44	27.93	28.58	---	29.19	28.78
3	30.22	29.32	28.43	28.25	28.39	29.01	30.51	27.88	28.53	---	29.25	28.74
4	30.18	29.31	28.37	28.24	28.25	29.56	30.58	27.79	28.54	---	29.32	28.70
5	30.12	29.30	28.49	28.07	28.23	29.14	30.61	27.70	28.54	---	29.32	28.73
6	29.97	29.30	28.49	28.11	28.19	29.16	30.64	27.60	28.61	---	29.20	28.73
7	29.83	29.30	28.48	28.14	28.23	29.20	30.45	27.61	28.64	---	29.23	28.76
8	29.78	28.89	28.58	28.14	28.26	29.26	30.26	27.62	28.64	28.60	29.25	28.77
9	29.89	28.53	28.61	28.20	28.29	29.29	29.92	27.70	28.61	28.59	29.26	28.79
10	29.95	28.47	28.65	28.23	28.31	29.33	29.62	27.81	28.64	28.60	29.26	28.80
11	29.92	28.41	28.67	28.26	28.31	29.37	29.39	27.84	28.64	28.59	29.28	28.82
12	29.91	28.46	28.71	28.26	28.33	29.44	29.28	27.85	28.64	28.61	29.31	28.86
13	29.90	28.45	28.71	28.28	28.37	29.54	29.19	27.86	28.61	28.65	29.29	28.92
14	29.94	28.48	28.62	28.30	28.38	29.58	29.13	27.88	28.57	28.68	29.34	29.00
15	29.91	28.54	28.72	28.27	28.38	29.63	29.10	27.94	28.61	28.66	29.39	29.04
16	29.98	28.55	28.74	28.28	28.40	29.72	28.98	28.01	28.64	28.63	29.46	28.71
17	29.91	28.48	28.64	28.29	28.39	29.76	28.90	28.07	28.67	28.63	29.43	28.55
18	29.84	28.43	28.59	28.32	28.40	29.81	28.76	28.13	28.69	28.66	29.42	28.43
19	29.88	28.48	28.40	28.31	28.41	29.84	28.74	28.19	28.69	28.70	29.24	28.42
20	29.85	28.48	28.29	28.32	28.44	29.90	28.62	28.24	28.09	28.75	29.16	28.37
21	29.83	28.49	28.22	28.31	28.44	29.96	28.50	28.35	26.92	28.81	29.12	28.43
22	29.80	28.57	28.34	28.33	28.45	30.03	28.33	28.41	26.08	28.86	29.08	28.46
23	29.75	28.58	28.32	28.33	28.49	30.05	28.30	28.48	28.35	28.91	29.06	28.48
24	29.74	28.57	28.32	28.33	28.59	30.18	28.26	28.60	---	28.87	29.07	28.70
25	29.58	28.58	28.18	28.32	28.63	30.25	28.20	28.68	---	28.59	29.10	28.65
26	29.56	28.59	28.18	28.40	28.66	30.39	28.16	28.76	---	28.74	29.13	28.60
27	29.56	28.58	27.51	28.42	28.97	30.47	28.15	28.82	---	28.81	29.15	28.56
28	29.49	28.41	29.22	28.41	28.82	30.43	27.95	28.85	---	28.89	29.17	28.53
29	29.42	28.45	27.95	28.40	---	30.40	27.92	28.88	---	28.99	29.13	28.57
30	29.37	28.47	28.05	28.40	---	30.41	27.91	28.72	---	29.04	29.16	28.59
31	29.35	---	28.16	28.40	---	30.41	---	28.74	---	29.11	28.98	---
MEAN	29.82	28.70	28.44	28.28	28.42	29.72	29.17	28.16	---	---	29.22	28.68

WTR YR 2002 MEAN 28.83 HIGHEST 25.65 JUNE 22, 2002 LOWEST 30.64 APR. 5, 6, 2002



GROUND-WATER LEVELS

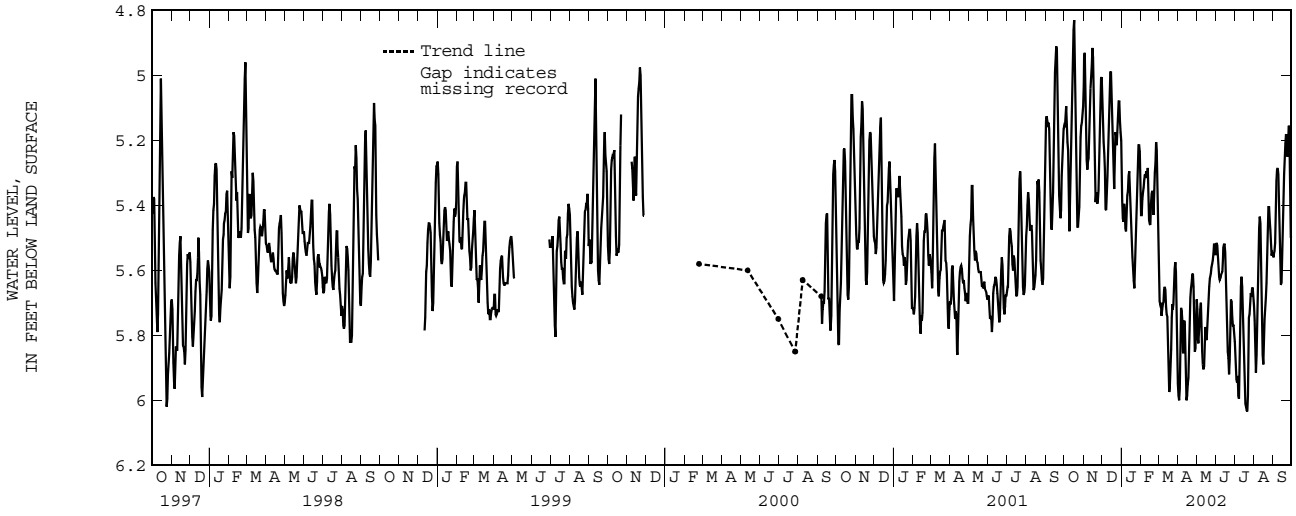
RIO GRANDE DE LOIZA BASIN--Continued

182515065594100. Local number, 222.
LOCATION.--Lat 18°25'15", long 65°59'41", Hydrologic Unit 21010005, 3.56 mi northwest of Carolina plaza, 1.21 mi northwest of Extensión El Comandante School, and 0.74 mi southwest of Vistamar School. Name: Piezometer Campo Rico TW-1, Carolina.
AQUIFER.--Surficial Deposits.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m). Depth 100 ft (30.5 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 10.0 ft (3.05 m), above mean sea level, from topographic map. Measuring point: Hole on side of casing, 0.90 ft (0.27 m), above land-surface datum. Prior July 28, 1986, top of shelter floor, 3.10 ft (0.94 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on June 28, 1999, removed on September 30, 2002. Well level affected by marine tides.
PERIOD OF RECORD.--February 1986 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 4.33 ft (1.32 m), below land-surface datum, September 6, 1995; lowest water level recorded, 7.42 ft (2.26 m), below land-surface datum, February 9, 1986.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.15	5.07	5.00	5.22	5.38	5.51	5.91	5.72	5.57	5.82	5.70	5.57
2	5.16	4.99	5.12	5.38	5.48	5.63	5.99	5.66	5.53	5.82	5.72	5.55
3	5.16	4.90	5.15	5.39	5.38	5.66	5.98	5.78	5.50	5.90	5.79	5.55
4	5.10	4.96	5.26	5.49	5.38	5.73	6.02	5.83	5.54	5.88	5.91	5.53
5	5.09	5.10	5.22	5.41	5.34	5.68	5.91	5.82	5.56	5.99	5.92	5.50
6	5.20	5.21	5.36	5.38	5.35	5.72	5.73	5.75	5.60	5.90	5.80	5.36
7	5.21	5.31	5.46	5.45	5.29	5.76	5.70	5.75	5.64	5.95	5.69	5.29
8	5.25	5.27	5.37	5.49	5.32	5.68	5.75	5.69	5.62	6.02	5.67	5.29
9	5.47	5.26	5.35	5.47	5.31	5.73	5.76	5.71	5.63	5.97	5.49	5.28
10	5.49	5.25	5.27	5.37	5.28	5.67	5.94	5.81	5.60	5.83	5.45	5.33
11	5.38	5.14	5.14	5.37	5.34	5.65	5.77	5.89	5.62	5.68	5.42	5.44
12	5.39	5.10	5.12	5.34	5.29	5.65	5.74	5.89	5.59	5.62	5.49	5.50
13	5.31	4.98	5.08	5.28	5.28	5.67	5.82	5.92	5.54	5.62	5.64	5.66
14	5.19	5.03	5.00	5.31	5.45	5.75	5.84	5.87	5.52	5.68	5.73	5.63
15	5.01	4.91	4.98	5.39	5.44	5.72	5.98	5.77	5.52	5.76	5.82	5.65
16	4.91	4.92	5.00	5.42	5.47	5.76	6.02	5.78	5.52	5.82	5.90	5.53
17	4.81	4.97	5.10	5.48	5.45	5.86	5.95	5.83	5.57	5.86	5.88	5.51
18	4.85	5.11	5.18	5.53	5.34	5.94	5.95	5.80	5.62	5.99	5.77	5.35
19	5.00	5.25	5.21	5.59	5.39	6.01	5.91	5.75	5.71	6.03	5.73	5.26
20	5.11	5.39	5.34	5.60	5.32	5.90	5.80	5.73	5.85	6.01	5.70	5.24
21	5.25	5.39	5.36	5.66	5.44	5.89	5.69	5.66	5.85	6.05	5.67	5.18
22	5.44	5.33	5.19	5.65	5.42	5.80	5.68	5.64	5.89	6.02	5.61	5.18
23	5.49	5.40	5.16	5.57	5.32	5.69	5.63	5.61	5.95	5.95	5.51	5.19
24	5.44	5.39	5.21	5.48	5.28	5.72	5.65	5.63	5.80	5.78	5.42	5.27
25	5.43	5.38	5.22	5.39	5.26	5.72	5.58	5.59	5.71	5.71	5.39	5.23
26	5.38	5.33	5.13	5.33	5.15	5.69	5.64	5.59	5.67	5.76	5.42	5.15
27	5.24	5.13	5.11	5.29	5.31	5.61	5.66	5.57	5.72	5.65	5.47	5.16
28	5.14	5.13	5.05	5.23	5.42	5.58	5.83	5.57	5.77	5.69	5.48	5.27
29	5.17	5.01	5.11	5.20	---	5.57	5.87	5.53	5.77	5.67	5.55	5.52
30	5.12	5.01	5.17	5.23	---	5.64	5.81	5.51	5.77	5.64	5.56	5.48
31	5.12	---	5.18	5.24	---	5.74	---	5.53	---	5.67	5.53	---
MEAN	5.21	5.15	5.18	5.41	5.35	5.72	5.82	5.72	5.66	5.83	5.64	5.39

WTR YR 2002 MEAN 5.51 HIGHEST 4.80 OCT. 18, 2001 LOWEST 6.29 APR. 3, 2002



GROUND-WATER LEVELS

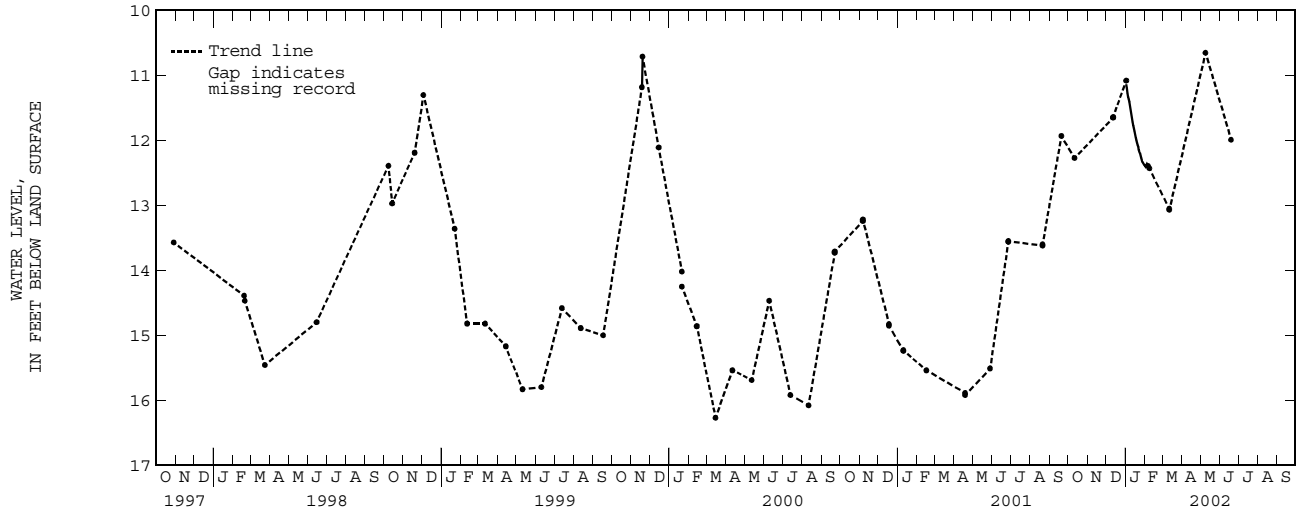
RIO GRANDE DE LOIZA BASIN--Continued

181540065580300. Local number, 1180.
LOCATION.--Lat 18°15'40", long 65°58'03", Hydrologic Unit 21010005, 0.75 mi northeast of the intersection of Hwy 181 with Hwy 30, 0.88 mi south of the intersection of Hwy 943 with Hwy 181, and 0.01 mi west of Hwy 181. Name: Piezometer Caguas-Juncos 18, Gurabo.
AQUIFER.--Unconsolidated deposits of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), 0-65.0 ft (0-19.8 m), screened 25.0-65.0 ft (7.62-19.8 m). Depth 65.0 ft (19.8 m).
DATUM.--Elevation of land-surface datum is about 164.0 ft (50.0 m), above mean sea level, from topographic map. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 3.75 ft (1.14 m), above land-surface datum.
REMARKS.--Observation well. Shelter with instrumentation found destroyed due to construction in the area, September 30, 1997. Since then, tapedown measurements only.Electronic Data Logger (EDL), installed from January 2, 2002 to February 8, 2002.
PERIOD OF RECORD.--June 23, 1997 to June 19, 2002, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.65 ft (3.25 m), below land-surface datum, May 9, 2002; lowest water level measured, 16.27 ft (4.96 m) below land-surface datum, March 15, 2000.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	12.39	---	---	---	---	---	---	---
2	---	---	---	11.12	12.39	---	---	---	---	---	---	---
3	---	---	---	11.15	12.42	---	---	---	---	---	---	---
4	---	---	---	11.23	12.35	---	---	---	---	---	---	---
5	---	---	---	11.31	12.37	---	---	---	---	---	---	---
6	---	---	---	11.35	12.38	---	---	---	---	---	---	---
7	---	---	---	11.38	12.41	---	---	---	---	---	---	---
8	---	---	---	11.44	---	---	---	---	---	---	---	---
9	---	---	---	11.51	---	---	---	---	---	---	---	---
10	---	---	---	11.56	---	---	---	---	---	---	---	---
11	---	---	---	11.62	---	---	---	---	---	---	---	---
12	---	---	---	11.68	---	---	---	---	---	---	---	---
13	---	---	---	11.75	---	---	---	---	---	---	---	---
14	---	---	---	11.79	---	---	---	---	---	---	---	---
15	---	---	---	11.84	---	---	---	---	---	---	---	---
16	---	---	---	11.88	---	---	---	---	---	---	---	---
17	---	---	---	11.93	---	---	---	---	---	---	---	---
18	---	---	---	11.98	---	---	---	---	---	---	---	---
19	---	---	---	12.02	---	---	---	---	---	---	---	---
20	---	---	---	12.06	---	---	---	---	---	---	---	---
21	---	---	---	12.09	---	---	---	---	---	---	---	---
22	---	---	---	12.12	---	---	---	---	---	---	---	---
23	---	---	---	12.17	---	---	---	---	---	---	---	---
24	---	---	---	12.18	---	---	---	---	---	---	---	---
25	---	---	---	12.21	---	---	---	---	---	---	---	---
26	---	---	---	12.25	---	---	---	---	---	---	---	---
27	---	---	---	12.29	---	---	---	---	---	---	---	---
28	---	---	---	12.32	---	---	---	---	---	---	---	---
29	---	---	---	12.34	---	---	---	---	---	---	---	---
30	---	---	---	12.35	---	---	---	---	---	---	---	---
31	---	---	---	12.37	---	---	---	---	---	---	---	---
MEAN	---	---	---	---	---	---	---	---	---	---	---	---

WTR YR 2002 MEAN 11.95 HIGHEST 11.06 JAN. 2, 2002 LOWEST 12.47 FEB. 8, 2002



GROUND-WATER LEVELS

RIO GRANDE DE LOIZA BASIN--Continued

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 11	12.27	DEC 12	11.64	JAN 02	11.07	MAR 12	13.05	MAY 09	10.65
DEC 12	11.65	JAN 02	11.08	FEB 08	12.43	12	13.07	JUN 19	11.99

WATER YEAR 2002 HIGHEST 10.65 MAY 09, 2002 LOWEST 13.07 MAR. 12, 2002

GROUND-WATER LEVELS

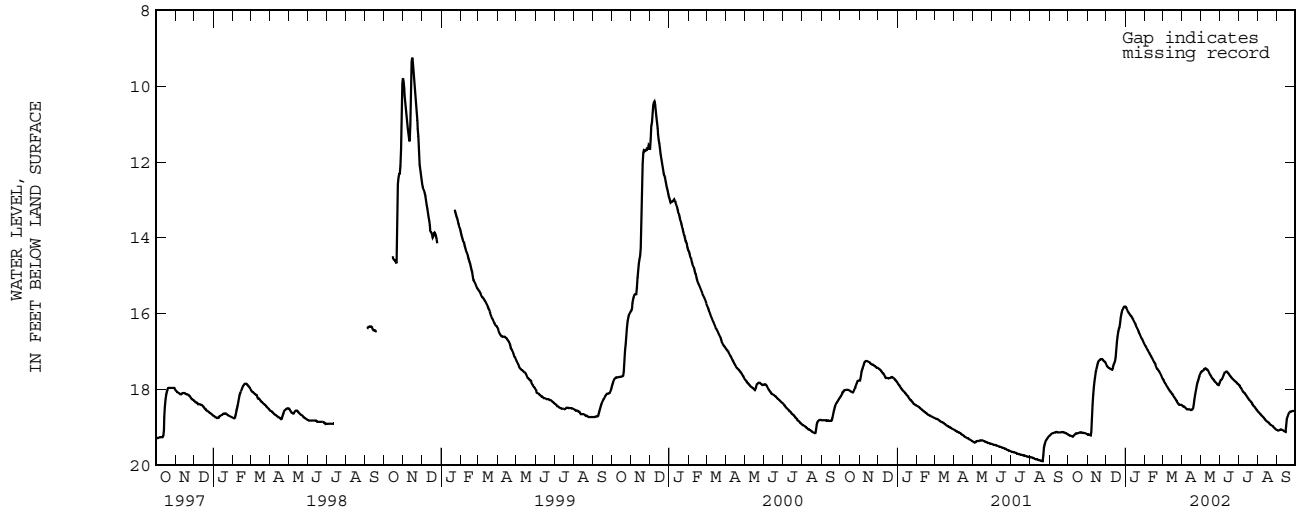
RIO GRANDE DE LOIZA BASIN--Continued

181513065554601. Local number, 1181.
LOCATION.--Lat 18°15'13", long 65°55'46", Hydrologic Unit 21010005, 2.86 mi east of Gurabo plaza, 3.57 mi southwest of Hwy 186 km 4.7, and 1.39 mi southwest of Hwy 185 km 15.7. Name: Piezometer CJ 3B, Juncos.
AQUIFER.--Unconsolidated deposits of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m), 0-38.0 ft (0-11.6 m), screened 25.0-35.0 ft (7.62 m). Depth 38.0 ft (11.6 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes punch.
DATUM.--Elevation of land-surface datum is about 187 ft (57.0 m), above mean sea level, from topographic map. Measuring point: Top of casing 2.96 ft (0.90 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Data Recorder (ADR) change to an Electronic Data Logger (EDL), installed on February 17, 2000.
PERIOD OF RECORD.--September 1991 to September 30, 2002, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 9.18 ft (2.80 m), below land-surface datum, November 15, 16, 1998; lowest water level recorded, 20.31 ft (6.19 m), below land-surface datum, September 19, 1994.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.18	19.18	17.31	15.81	16.81	17.70	18.41	17.58	17.83	17.87	18.57	19.08
2	19.20	19.19	17.36	15.84	16.85	17.72	18.42	17.56	17.79	17.88	18.59	19.08
3	19.22	19.19	17.39	15.85	16.87	17.75	18.44	17.53	17.76	17.90	18.61	19.08
4	19.22	19.20	17.41	15.88	16.90	17.77	18.45	17.52	17.74	17.94	18.63	19.08
5	19.22	19.20	17.43	15.93	16.94	17.81	18.45	17.51	17.73	17.95	18.64	19.08
6	19.23	19.21	17.44	15.96	16.97	17.83	18.46	17.49	17.68	17.97	18.66	19.06
7	19.24	19.23	17.45	15.98	16.99	17.85	18.48	17.48	17.64	18.00	18.69	19.06
8	19.25	19.02	17.46	16.01	17.03	17.90	18.50	17.47	17.59	18.05	18.70	19.06
9	19.25	18.58	17.47	16.04	17.06	17.92	18.52	17.44	17.56	18.06	18.72	19.07
10	19.24	18.24	17.48	16.06	17.09	17.94	18.52	17.45	17.54	18.08	18.74	19.08
11	19.20	18.03	17.49	16.07	17.12	17.98	18.52	17.47	17.53	18.10	18.75	19.08
12	19.18	17.84	17.43	16.11	17.14	18.00	18.52	17.48	17.52	18.11	18.77	19.10
13	19.18	17.73	17.37	16.14	17.17	18.03	18.52	17.48	17.54	18.14	18.79	19.11
14	19.16	17.59	17.32	16.17	17.20	18.05	18.53	17.51	17.55	18.17	18.81	19.12
15	19.16	17.49	17.30	16.20	17.23	18.07	18.54	17.54	17.57	18.19	18.83	19.12
16	19.16	17.44	17.22	16.23	17.27	18.10	18.55	17.59	17.59	18.21	18.85	18.79
17	19.16	17.35	17.10	16.28	17.29	18.12	18.54	17.61	17.61	18.24	18.86	18.76
18	19.15	17.29	16.84	16.32	17.33	18.14	18.54	17.64	17.64	18.26	18.87	18.71
19	19.14	17.26	16.66	16.35	17.38	18.17	18.52	17.67	17.66	18.29	18.88	18.66
20	19.14	17.23	16.54	16.39	17.43	18.20	18.49	17.70	17.68	18.30	18.90	18.62
21	19.13	17.21	16.44	16.42	17.45	18.23	18.33	17.72	17.71	18.32	18.92	18.60
22	19.14	17.21	16.38	16.46	17.47	18.25	18.21	17.74	17.72	18.34	18.94	18.59
23	19.14	17.20	16.34	16.50	17.50	18.28	18.12	17.76	17.74	18.37	18.95	18.58
24	19.14	17.20	16.15	16.52	17.52	18.30	18.02	17.78	17.75	18.40	18.96	18.58
25	19.14	17.20	16.05	16.56	17.54	18.33	17.93	17.80	17.77	18.42	18.97	18.58
26	19.15	17.21	15.96	16.61	17.58	18.35	17.84	17.81	17.79	18.44	18.98	18.57
27	19.15	17.24	15.92	16.64	17.61	18.37	17.79	17.83	17.80	18.46	19.01	18.57
28	19.15	17.26	15.87	16.67	17.65	18.40	17.74	17.85	17.81	18.47	19.02	18.57
29	19.16	17.27	15.85	16.70	---	18.42	17.67	17.87	17.83	18.51	19.04	18.58
30	19.17	17.28	15.82	16.74	---	18.40	17.62	17.90	17.86	18.52	19.06	18.58
31	19.18	---	15.81	16.77	---	18.41	---	17.88	---	18.55	19.07	---
MAX	19.25	19.23	17.49	16.77	17.65	18.42	18.55	17.90	17.86	18.55	19.07	19.12

WTR YR 2002 LOW 19.25 HIGHEST 15.79 DEC. 31, 2001 LOWEST 19.26 OCT. 9, 2001



GROUND-WATER LEVELS

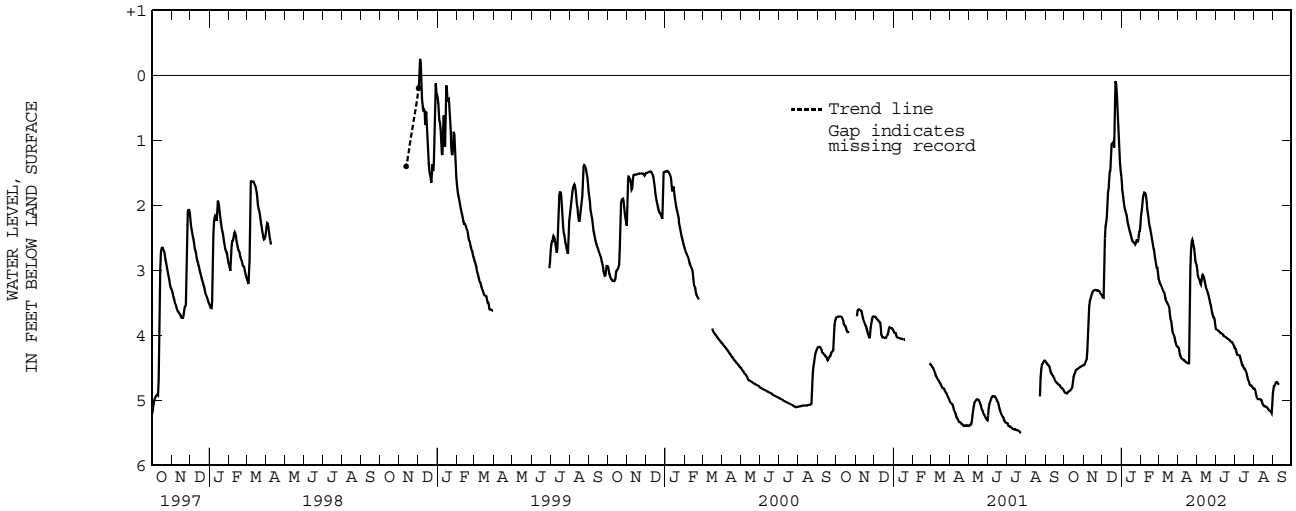
RIO HERRERA TO RIO ANTON RUIZ BASINS

182344065490801. Local number, 1201.
LOCATION.--Lat 18°23'44", long 65°49'08", Hydrologic Unit 2101005, 0.35 mi west of Hwy 187, 1.30 mi southwest of the intersection of Hwy 187 with Hwy 3, and 1.83 mi south of Punta San Agustín. Name: Piezometer USGS RE-2A, Río Grande.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 0-22.0 ft (0-6.70 m), screened 3.00-22.0 ft (0.90-6.70 m). Depth 18.0 ft (5.49 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is 5.78 ft (1.76 m), above mean sea level, from survey. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 5.60 ft (1.71 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), installed on December 24, 1996 replaced by an Eletronic Data Logger (EDL), installed on January 14, 1997.
PERIOD OF RECORD.--December 24, 1996 to September 12, 2002, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, +0.36 ft (+0.11 m), above land-surface datum, December 4, 5, 1998; lowest water level recorded, 6.02 ft (1.83 m), below land-surface datum, August 19, 1997.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.84	4.46	3.38	1.57	2.20	3.12	4.18	2.90	3.90	4.20	4.82	4.86
2	4.88	4.46	3.41	1.71	2.10	3.14	4.18	2.95	3.91	4.21	4.82	4.79
3	4.89	4.45	3.43	1.79	2.07	3.17	4.20	3.05	3.91	4.21	4.82	4.79
4	4.89	4.44	3.42	1.87	1.89	3.20	4.25	3.09	3.92	4.22	4.87	4.78
5	4.90	4.40	2.68	1.94	1.88	3.22	4.32	3.12	3.92	4.29	4.94	4.74
6	4.90	4.39	2.35	2.03	1.80	3.22	4.32	3.13	3.94	4.30	4.94	4.72
7	4.88	4.36	2.29	2.06	1.81	3.26	4.35	3.18	3.94	4.30	4.98	4.72
8	4.87	4.12	2.23	2.11	1.81	3.28	4.36	3.20	3.95	4.30	4.98	4.72
9	4.86	3.84	2.13	2.14	1.83	3.30	4.37	3.23	3.97	4.31	4.98	4.74
10	4.86	3.62	1.83	2.17	1.92	3.33	4.37	3.09	3.97	4.31	4.98	4.76
11	4.85	3.49	1.74	2.27	2.00	3.34	4.39	3.08	3.98	4.38	4.99	4.76
12	4.84	3.46	1.72	2.30	2.09	3.40	4.39	3.06	3.98	4.38	4.99	---
13	4.83	3.42	1.51	2.34	2.14	3.46	4.39	3.11	3.99	4.46	4.99	---
14	4.82	3.39	1.48	2.39	2.23	3.48	4.41	3.14	4.01	4.46	5.00	---
15	4.79	3.35	1.45	2.42	2.31	3.49	4.41	3.20	4.02	4.46	5.06	---
16	4.67	3.33	1.06	2.46	2.35	3.50	4.42	3.25	4.02	4.51	5.06	---
17	4.62	3.31	1.05	2.50	2.40	3.54	4.43	3.27	4.03	4.51	5.08	---
18	4.60	3.31	1.04	2.54	2.45	3.54	4.43	3.30	4.03	4.51	5.09	---
19	4.58	3.30	1.04	2.56	2.53	3.59	4.43	3.34	4.04	4.55	5.10	---
20	4.54	3.30	1.00	2.56	2.57	3.74	4.43	3.37	4.05	4.56	5.10	---
21	4.53	3.30	1.22	2.57	2.64	3.75	3.16	3.40	4.06	4.60	5.10	---
22	4.53	3.31	0.08	2.58	2.68	3.79	2.82	3.47	4.06	4.67	5.11	---
23	4.52	3.31	0.10	2.58	2.73	3.92	2.59	3.48	4.07	4.68	5.11	---
24	4.51	3.30	0.12	2.62	2.84	3.94	2.54	3.54	4.08	4.68	5.13	---
25	4.50	3.31	0.38	2.54	2.85	3.97	2.53	3.54	4.10	4.73	5.15	---
26	4.50	3.32	0.64	2.53	2.96	3.98	2.60	3.64	4.10	4.77	5.16	---
27	4.49	3.32	0.81	2.54	2.96	4.01	2.64	3.66	4.11	4.77	5.17	---
28	4.48	3.33	1.04	2.59	2.96	4.07	2.69	3.72	4.11	4.77	5.17	---
29	4.48	3.37	1.26	2.43	---	4.12	2.85	3.73	4.14	4.78	5.18	---
30	4.47	3.37	1.40	2.40	---	4.14	2.88	3.73	4.15	4.79	5.21	---
31	4.46	---	1.51	2.40	---	4.17	---	3.80	---	4.82	4.92	---
MEAN	4.69	3.65	1.57	2.31	2.32	3.59	3.81	3.32	4.02	4.50	5.03	---

WTR YR 2002 MEAN 3.57 HIGHEST 0.07 DEC. 21, 22, 2001 LOWEST 5.21 AUG. 29, 30, 2002



+ above land-surface datum

GROUND-WATER LEVELS

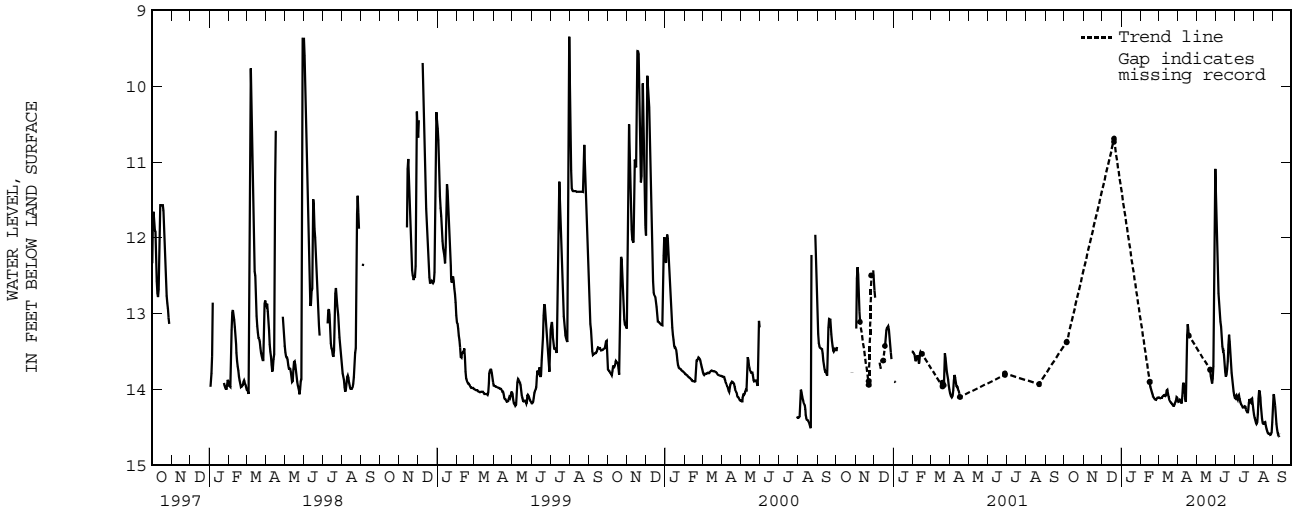
RIO HERRERA TO RIO ANTON RUIZ BASINS--Continued

182223065455900. Local number, 1202.
LOCATION.--Lat 18°22'23", long 65°45'59", Hydrologic Unit 21010005, 0.06 mi south of Hwy 2 and 0.27 mi east of Hwy 191. Name: Piezometer Río Mameyes 2. Río Grande.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled piezometer well, constructed in 1993 as part of a study of northeast of Puerto Rico, diameter 2 in (0.05 m), screened 13.0-24.0 ft (3.96-7.32 m). Depth 24.0 ft (7.32 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land surface datum is about 28.2 ft (8.59 m), above mean sea level, from topographic map. Measuring point: On shelter floor, 6.65 ft (2.03 m), above land-surface datum.
REMARKS.--Recording observation well. Electronic Data Logger (EDL), installed on Sept. 25, 1997. Formerly published as local number RM-02. From April 19, 2001 to February 15, 2002, tapedowns measurements only.
PERIOD OF RECORD.--September 25, 1997 to September 11, 2002, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 9.30 ft (2.83 m), below land-surface datum, July 30, 31, 1999; lowest water level recorded, 14.63 ft (4.43 m), below land-surface datum, September 11, 2002.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	14.11	14.14	---	11.19	14.10	14.31	14.16
2	---	---	---	---	---	14.10	14.16	---	11.60	14.12	14.36	14.00
3	---	---	---	---	---	14.11	14.17	---	11.99	14.12	14.39	14.13
4	---	---	---	---	---	14.12	14.15	---	12.37	14.07	14.42	14.16
5	---	---	---	---	---	14.12	14.12	---	12.65	14.09	14.46	14.27
6	---	---	---	---	---	14.11	14.16	---	12.82	14.13	14.45	14.40
7	---	---	---	---	---	14.11	14.19	---	12.91	14.13	14.43	14.50
8	---	---	---	---	---	14.11	14.16	---	13.09	14.05	14.22	14.55
9	---	---	---	---	---	14.07	14.01	---	13.12	14.10	14.02	14.60
10	---	---	---	---	---	14.09	13.88	---	13.22	14.15	14.01	14.61
11	---	---	---	---	---	14.08	13.94	---	13.36	14.18	14.07	14.62
12	---	---	---	---	---	14.07	14.02	---	13.50	14.20	14.15	---
13	---	---	---	---	---	14.10	14.09	---	13.47	14.20	14.24	---
14	---	---	---	---	---	14.05	14.15	---	13.49	14.23	14.35	---
15	---	---	---	---	---	13.98	14.18	---	13.60	14.24	14.42	---
16	---	---	---	---	13.95	14.03	13.48	---	13.72	14.23	14.46	---
17	---	---	---	---	13.98	14.07	13.13	---	13.82	14.24	14.44	---
18	---	---	---	---	14.01	14.12	13.15	---	13.84	14.21	14.46	---
19	---	---	---	---	14.04	14.14	13.31	---	13.77	14.25	14.41	---
20	---	---	---	---	14.07	14.16	---	---	13.69	14.28	14.45	---
21	---	---	---	---	14.09	14.17	---	---	13.57	14.29	14.51	---
22	---	---	---	---	14.11	14.18	---	---	13.26	14.31	14.53	---
23	---	---	---	---	14.12	14.19	---	---	13.30	14.29	14.57	---
24	---	---	---	---	14.13	14.20	---	13.80	13.44	14.24	14.58	---
25	---	---	---	---	14.14	14.21	---	13.85	13.60	14.11	14.59	---
26	---	---	---	---	14.14	14.22	---	13.90	13.73	14.14	14.58	---
27	---	---	---	---	14.11	14.21	---	13.94	13.83	14.19	14.59	---
28	---	---	---	---	14.11	14.17	---	13.77	13.91	14.16	14.61	---
29	---	---	---	---	---	14.18	---	13.62	13.99	14.09	14.58	---
30	---	---	---	---	---	14.12	---	12.82	14.05	14.15	14.57	---
31	---	---	---	---	---	14.08	---	10.99	---	14.23	14.30	---
MEAN	---	---	---	---	---	14.12	---	---	13.26	14.18	14.40	---

WTR YR 2002 MEAN 13.99 HIGHEST 10.95 MAY 31, 2002 LOWEST 14.63 SEPT. 11, 2002



GROUND-WATER LEVELS

RIO HERRERA TO RIO ANTON RUIZ BASINS--Continued

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 05	13.37	DEC 20	10.69	FEB 15	13.91	MAY 23	13.74	JUN 19	13.71
05	13.50	20	10.73	APR 19	13.32	23	13.75	SEP 11	14.63
05	13.38	FEB 15	13.90	19	13.29	JUN 19	13.76	11	14.58

WATER YEAR 2002 HIGHEST 10.69 DEC. 20, 2001 LOWEST 14.63 SEPT. 11, 2002

GROUND-WATER LEVELS

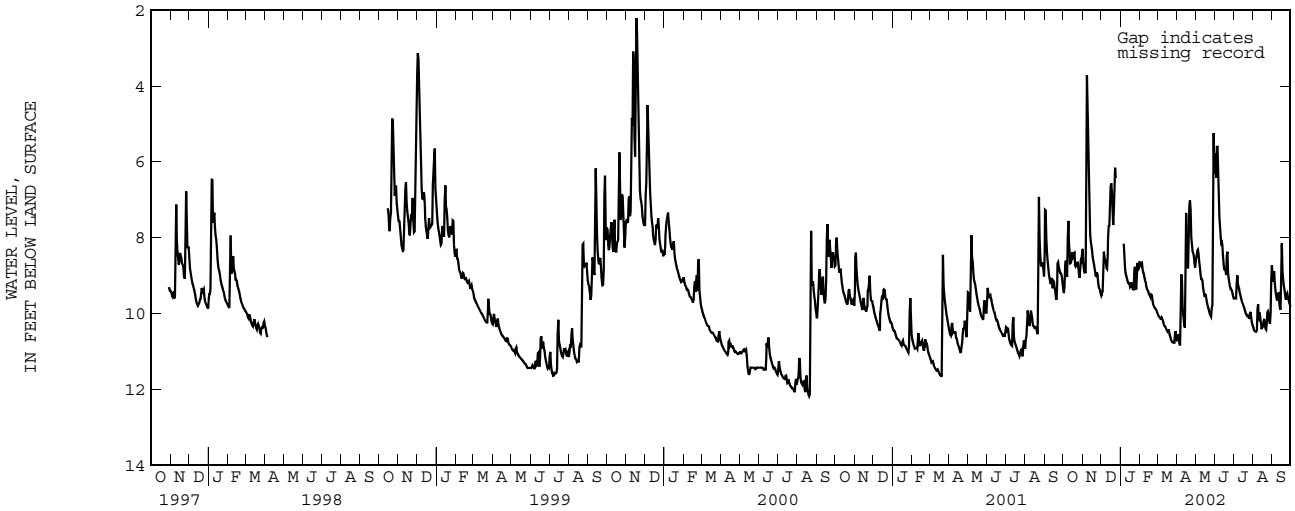
RIO HERRERA TO RIO ANTON RUIZ BASINS--Continued

181217065453000. Local number, 1203.
LOCATION.--Lat 18°12'17", long 65°45'30", Hydrologic Unit 21010005, 0.01 mi south of Hwy 927 at Km 8.0 and 0.62 mi south of Hwy 31. Name: Piezometer Carlos Arroyo 1, Naguabo.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), screened 29.0-32.0 ft (8.84-9.75 m). Depth 32.0 ft (9.75 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 16.0 ft (4.87 m), above mean sea level, from topographic map. Measuring point: Shelter floor, 4.80 ft (1.46 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), installed on October 26, 1997. Well is affected by stage in nearby Ro Blanco. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on September 27, 1999.
PERIOD OF RECORD.--October 26, 1997 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 1.66 ft (0.51 m), below land-surface datum, November 13, 1999; lowest water level recorded, 12.20 ft (3.72 m), below land-surface datum, August 21, 22, 2000.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.31	8.12	9.52	---	8.59	9.98	10.74	8.84	6.90	9.59	10.33	8.94
2	9.42	8.47	9.54	---	8.71	10.02	10.73	8.43	4.92	9.62	10.37	9.08
3	9.50	8.71	9.42	---	8.85	10.05	10.60	8.61	6.65	9.58	10.43	9.26
4	9.04	8.86	9.45	---	8.53	10.09	10.51	8.32	6.19	9.62	10.46	8.70
5	8.43	8.97	8.28	---	8.81	10.11	10.73	8.38	5.02	9.60	10.50	9.08
6	8.79	8.84	8.47	7.98	8.90	10.11	10.86	8.26	6.19	9.61	10.48	9.31
7	8.98	9.04	8.60	8.34	8.95	10.17	10.84	8.64	6.86	8.79	10.50	9.46
8	9.10	4.33	8.54	8.70	9.00	10.11	9.41	8.67	7.34	9.21	10.42	9.57
9	6.96	3.12	8.78	8.91	9.13	10.10	8.53	8.91	7.62	9.28	9.36	9.67
10	8.16	6.09	8.81	9.00	9.15	10.20	9.76	9.03	7.86	9.34	10.16	9.65
11	8.20	6.96	8.84	9.04	9.21	10.25	9.97	9.15	8.10	9.44	10.26	9.32
12	8.59	7.41	8.12	9.12	9.33	10.31	10.14	9.03	8.23	9.50	9.78	9.63
13	8.79	7.77	7.88	9.18	9.36	10.34	10.25	9.26	8.04	9.58	10.18	9.79
14	8.57	8.03	7.52	9.21	9.38	10.35	10.34	9.39	8.32	9.66	10.14	9.91
15	8.71	8.17	7.86	9.17	9.43	10.39	10.42	9.47	8.61	9.69	10.39	9.89
16	8.28	8.25	6.72	9.28	9.51	10.43	6.64	9.58	8.77	9.75	10.45	7.55
17	8.48	8.44	6.58	9.35	9.51	10.46	8.07	9.44	8.89	9.79	10.27	8.76
18	8.65	8.60	6.56	9.22	9.55	10.50	8.58	9.59	8.77	9.84	10.42	9.00
19	8.19	8.64	7.04	9.15	9.60	10.38	8.84	9.65	8.96	9.91	10.03	9.19
20	8.61	8.76	7.59	9.37	9.42	10.51	8.78	9.76	9.03	9.97	10.27	9.31
21	8.85	8.87	7.76	9.35	9.63	10.59	6.88	9.83	7.92	10.01	10.38	9.43
22	8.67	8.97	6.86	9.40	9.72	10.64	7.43	9.89	8.83	10.03	10.43	9.52
23	8.77	9.04	6.38	9.34	9.78	10.69	6.62	9.93	9.03	10.06	10.43	9.61
24	8.70	8.99	5.95	8.46	9.81	10.72	7.92	9.98	9.13	10.09	10.03	9.67
25	8.57	8.86	6.92	9.09	9.86	10.75	8.05	10.03	9.26	10.03	9.93	9.35
26	8.91	9.09	---	9.36	9.88	10.78	8.28	10.07	9.33	10.14	9.97	9.59
27	9.03	9.28	---	9.38	9.88	10.77	8.43	10.09	9.39	10.15	10.15	9.55
28	9.09	9.32	---	8.57	9.94	10.76	8.37	9.63	9.32	9.91	10.25	9.70
29	8.59	9.36	---	8.77	---	10.79	8.60	9.92	9.45	10.01	10.30	9.73
30	8.61	9.44	---	8.93	---	10.33	8.73	4.76	9.53	10.17	9.66	9.81
31	8.64	---	---	8.71	---	10.60	---	5.74	---	10.27	8.52	---
MEAN	8.68	8.23	---	---	9.34	10.40	9.13	9.04	8.08	9.75	10.17	9.37

WTR YR 2002 MEAN 9.12 HIGHEST 2.66 NOV. 9, 2001 LOWEST 10.87 APR. 6, 2002



GROUND-WATER LEVELS

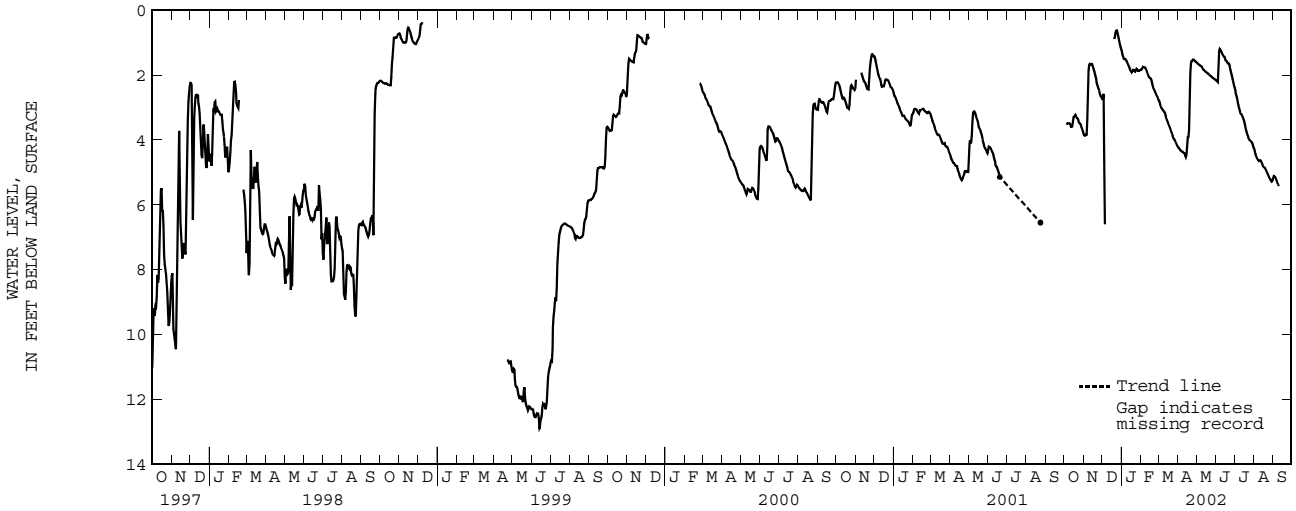
RIO HERRERA TO RIO ANTON RUIZ BASINS--Continued

182131065421100. Local number, 1205.
LOCATION.--Lat. 18°21'31", long. 65°42'11", Hydrologic Unit 21010005, 1.39 mi southeast of the intersection of Hwy 992 with Hwy 3, 0.40 mi southeast of the intersection of Hwy 983 with Hwy 3, 0.12 mi northwest of the intersection with Hwy 940 with Hwy 983, and 0.03 mi southwest of Hwy 983. Name: Piezometer USGS RP-4, Luquillo.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m) 0-39.0 ft (0-11.9 m), screened 4.00-39.0 ft (1.20-11.9 m). Depth 39.0 ft (11.9 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 14.0 ft (4.27 m), above mean sea level, from topographic survey. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 4.42 ft (1.35 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on July 23, 1999, removed on September 11, 2002. Water levels affected by nearby pumping well. Well affected by pumping on Dec. 5, 2001.
PERIOD OF RECORD.--August 15, 1995 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.32 ft (0.10 m), below land-surface datum, December 10, 1998; lowest water level recorded, 14.05 ft (4.28 m), below land-surface datum, August 21, 1997.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	3.81	2.71	1.25	1.84	2.76	4.19	1.61	2.16	2.38	4.26	5.19
2	---	3.86	2.78	1.30	1.84	2.79	4.24	1.63	2.17	2.44	4.27	5.12
3	---	3.88	2.68	1.38	1.84	2.82	4.25	1.64	2.19	2.56	4.38	5.12
4	---	3.87	2.49	1.44	1.76	2.89	4.27	1.66	2.22	2.61	4.47	5.13
5	3.57	3.84	7.13	1.50	1.76	2.95	4.31	1.68	2.23	2.68	4.51	5.16
6	3.49	3.84	6.09	1.52	1.77	2.99	4.33	1.69	1.38	2.77	4.54	5.19
7	3.49	3.84	---	1.50	1.77	3.04	4.35	1.71	1.19	2.87	4.60	5.27
8	3.50	2.89	---	1.52	1.77	3.06	4.36	1.72	1.22	2.99	4.62	5.31
9	3.49	1.98	---	1.57	1.80	3.10	4.38	1.74	1.25	3.04	4.64	5.35
10	3.50	1.72	---	1.59	1.86	3.12	4.39	1.75	1.27	3.13	4.67	5.40
11	3.50	1.67	---	1.63	1.90	3.14	4.41	1.77	1.32	3.19	4.63	5.44
12	3.58	1.67	---	1.68	1.94	3.18	4.42	1.84	1.37	3.22	4.64	---
13	3.63	1.71	---	1.73	1.99	3.28	4.44	1.85	1.40	3.22	4.66	---
14	3.58	1.66	---	1.80	2.04	3.33	4.51	1.87	1.42	3.27	4.68	---
15	3.58	1.67	---	1.85	2.09	3.37	4.55	1.89	1.44	3.33	4.75	---
16	3.31	1.73	---	1.87	2.09	3.43	4.37	1.91	1.46	3.39	4.82	---
17	3.30	1.81	---	1.92	2.11	3.49	3.95	1.92	1.56	3.46	4.82	---
18	3.30	1.87	---	1.93	2.14	3.54	3.91	1.94	1.57	3.55	4.86	---
19	3.23	1.93	---	1.86	2.24	3.58	3.92	1.95	1.58	3.65	4.86	---
20	3.24	2.03	0.89	1.84	2.32	3.65	3.46	1.97	1.61	3.74	4.88	---
21	3.30	2.07	0.92	1.85	2.39	3.71	2.20	1.99	1.66	3.80	4.95	---
22	3.33	2.21	0.77	1.89	2.43	3.75	1.69	2.00	1.62	3.85	4.98	---
23	3.33	2.28	0.65	1.91	2.47	3.81	1.58	2.02	1.69	3.89	5.02	---
24	3.40	2.34	0.63	1.90	2.51	3.86	1.59	2.03	1.78	3.95	5.06	---
25	3.48	2.40	0.64	1.81	2.57	3.92	1.55	2.05	1.90	3.99	5.12	---
26	3.48	2.45	0.74	1.82	2.62	3.96	1.52	2.06	1.96	4.01	5.16	---
27	3.50	2.53	0.82	1.86	2.63	3.99	1.54	2.08	2.03	4.04	5.19	---
28	3.55	2.62	0.92	1.89	2.70	4.00	1.57	2.10	2.14	4.05	5.24	---
29	3.61	2.66	1.02	1.87	---	4.06	1.58	2.11	2.21	4.07	5.28	---
30	3.66	2.67	1.11	1.87	---	4.10	1.60	2.13	2.32	4.09	5.30	---
31	3.73	---	1.19	1.87	---	4.15	---	2.14	---	4.21	5.23	---
MEAN	---	2.52	---	1.72	2.11	3.45	3.38	1.89	1.71	3.40	4.81	---

WTR YR 2002 MEAN 2.88 HIGHEST 0.63 DEC. 24, 25, 2001 LOWEST 7.13 DEC. 5, 2001



GROUND-WATER LEVELS

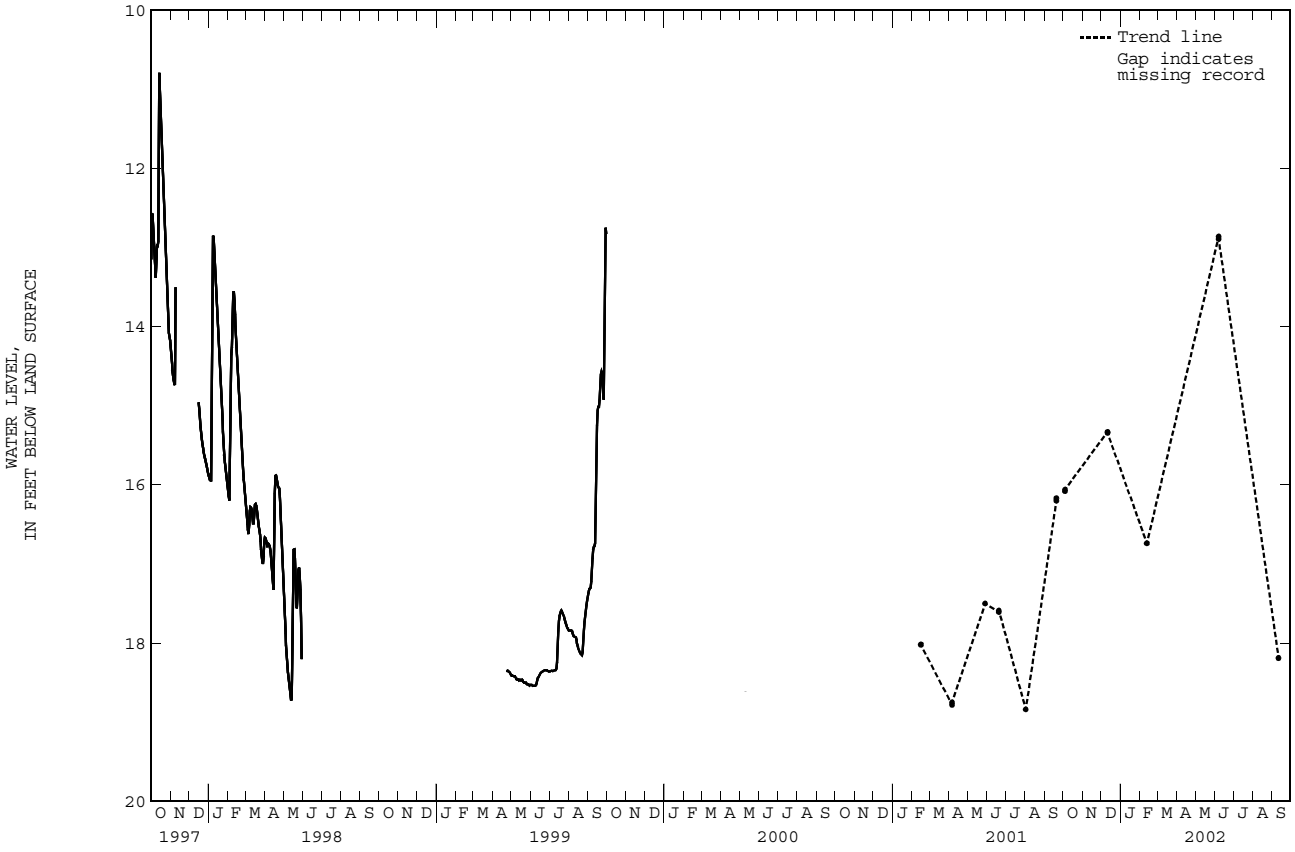
RIO HERRERA TO RIO ANTON RUIZ BASINS--Continued

181823065401900. Local number, 1206.
LOCATION.--Lat 18°18'23", long 65°40'19", Hydrologic Unit 2101005, 1.72 mi southwest of the intersection of Hwy 3 with Hwy 976, 1.44 mi west of Hwy 3, 1.33 mi northwest of Hwy 982, and 0.49 mi south of Hwy 976. Name: Piezometer Río Fajardo No. 4, Fajardo.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 2 in (0.05 m), cased 6 in (0.15 m) 0-40.0 ft (0-12.2 m), screened 20.0-40.0 ft (6.10-12.2 m). Depth 40.0 ft (12.2 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is 86.3 ft (26.3 m), above mean sea level, from topographic survey. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 2.90 ft (0.88 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on May 22, 1998.
PERIOD OF RECORD.--August 31, 1993 to September 11 2002, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 10.7 ft (03.26 m), below land-surface datum, October 14, 15, 1997; lowest water level recorded, 18.82 ft (5.74 m), below land-surface datum, July 21-25, 1997.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 04	16.08	DEC 11	15.33	FEB 12	16.74	JUN 07	12.89	SEP 11	18.16
04	16.06	11	15.34	JUN 07	12.86	SEP 11	18.19		

WATER YEAR 2002 HIGHEST 12.86 JUNE 07, 2002 LOWEST 18.19 SEPT. 11, 2002



GROUND-WATER LEVELS

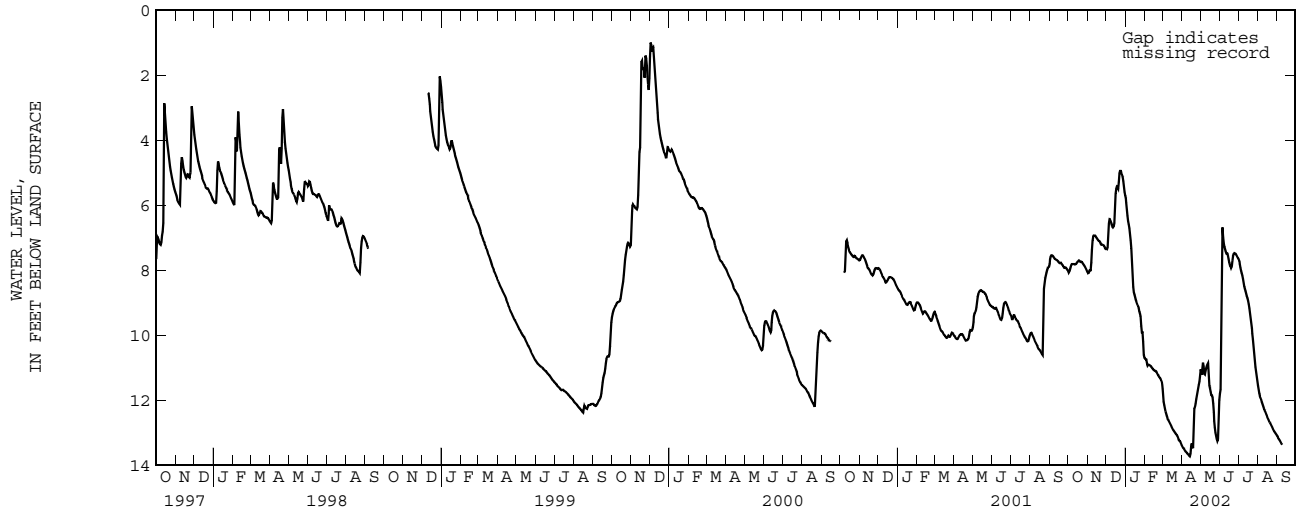
RIO HERRERA TO RIO ANTON RUIZ BASINS--Continued

181917065382701. Local number, 1207.
LOCATION.--Lat 18°19'17", long 65°38'27", Hydrologic Unit 2101005, 1.20 mi northwest of Punta Barrancas, 0.81 mi east of Hwy 3, 0.82 mi south of Hwy 195, and 0.61 mi east of Hwy 194. Name: Piezometer RF-12, Fajardo.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m) 0-34.0 ft (0-10.4 m), screened 3.75-34.0 ft (1.14-10.4 m). Depth 34.0 ft (10.4 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is 13.7 ft (4.18 m), above mean sea level, from topographic survey. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 4.16 ft (1.27 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on May 14, 1999.
PERIOD OF RECORD.--August 11, 1995 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.58 ft (0.18 m), below land-surface datum, December 3, 1999; lowest water level recorded, 13.74 ft (4.19 m), below land-surface datum, April 15, 2002.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.00	8.05	7.32	5.74	10.69	11.48	13.36	11.07	11.87	7.64	11.49	13.09
2	8.05	8.08	7.36	5.83	10.74	11.81	13.40	11.03	11.72	7.67	11.61	13.12
3	8.09	8.10	7.34	5.99	10.74	11.97	13.45	11.27	11.62	7.74	11.73	13.16
4	7.98	8.06	7.25	6.21	10.76	12.11	13.47	11.15	9.83	7.86	11.84	13.19
5	7.92	7.99	6.66	6.43	10.96	12.19	13.49	10.88	6.51	7.96	11.91	13.22
6	7.85	8.00	6.44	6.54	10.92	12.31	13.52	10.79	6.85	8.06	11.94	13.24
7	7.81	7.99	6.42	6.62	10.90	12.39	13.57	11.11	7.11	8.12	12.03	13.28
8	7.80	7.53	6.45	6.78	10.91	12.45	13.59	11.26	7.22	8.20	12.10	13.32
9	7.80	7.19	6.52	7.00	10.93	12.52	13.61	11.15	7.32	8.31	12.15	13.36
10	7.81	6.99	6.60	7.16	10.94	12.57	13.63	11.05	7.39	8.44	12.21	13.38
11	7.80	6.93	6.65	7.49	10.96	12.61	13.66	10.98	7.46	8.54	12.26	---
12	7.81	6.92	6.69	7.83	10.96	12.64	13.67	10.92	7.49	8.60	12.30	---
13	7.82	6.93	6.67	8.36	11.01	12.69	13.70	10.88	7.46	8.68	12.32	---
14	7.81	6.93	6.63	8.64	11.02	12.72	13.72	10.83	7.50	8.76	12.37	---
15	7.80	6.96	6.46	8.72	11.05	12.76	13.74	11.47	7.60	8.83	12.42	---
16	7.75	7.01	5.73	8.79	11.08	12.81	13.55	11.62	7.70	8.89	12.48	---
17	7.73	7.03	5.55	8.87	11.09	12.84	13.30	11.66	7.81	8.98	12.54	---
18	7.71	7.07	5.43	8.94	11.10	12.89	13.36	11.82	7.85	9.09	12.57	---
19	7.69	7.09	5.42	8.99	11.10	12.92	13.46	11.86	7.90	9.24	12.61	---
20	7.72	7.11	5.46	9.04	11.13	12.95	13.50	11.84	7.96	9.39	12.67	---
21	7.75	7.11	5.50	9.09	11.16	12.99	12.27	11.99	7.81	9.55	12.69	---
22	7.75	7.15	5.07	9.13	11.21	13.01	12.24	12.22	7.61	9.71	12.73	---
23	7.73	7.19	4.96	9.17	11.24	13.04	12.18	12.51	7.51	9.87	12.77	---
24	7.77	7.21	4.91	9.35	11.27	13.05	12.02	12.75	7.47	10.02	12.81	---
25	7.79	7.20	4.97	9.32	11.31	13.08	11.91	12.93	7.47	10.23	12.85	---
26	7.82	7.22	5.02	9.52	11.32	13.10	11.80	13.06	7.48	10.47	12.90	---
27	7.84	7.22	5.07	9.89	11.37	13.18	11.67	13.14	7.49	10.70	12.94	---
28	7.88	7.24	5.17	9.91	11.42	13.24	11.59	13.24	7.53	10.89	12.97	---
29	7.91	7.28	5.34	9.89	---	13.24	11.45	13.26	7.56	11.06	13.00	---
30	7.95	7.37	5.52	10.50	---	13.26	11.39	13.13	7.61	11.20	13.03	---
31	8.00	---	5.65	10.70	---	13.30	---	12.11	---	11.34	13.06	---
MEAN	7.84	7.34	6.01	8.27	11.05	12.71	12.98	11.77	7.99	9.16	12.43	---

WTR YR 2002 MEAN 9.87 HIGHEST 4.89 DEC. 24, 2001 LOWEST 13.74 APR. 15, 2002



GROUND-WATER LEVELS

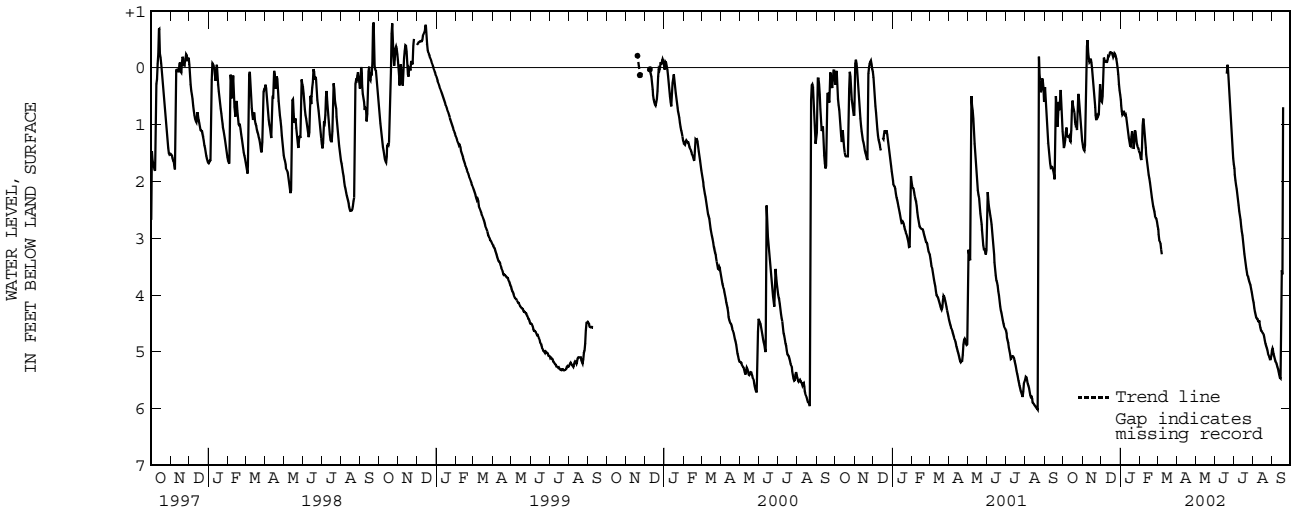
RIO HERRERA TO RIO ANTON RUIZ BASINS--Continued

182234065440000. Local number, 1208.
LOCATION.--Lat 18°22'34", long 65°44'00", Hydrologic Unit 2101005, 0.70 mi south of Balneario de Luquillo, 1.10 mi west of Luquillo, and 1.00 mi northwest of intersectin of Hwy 991 with Hwy 992. Name: Piezometer Quebrada Mata de Platanos 1, Luquillo.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--PVC cased ran levels, diameter 4 in (0.10 m) screened 5.00-25.0 ft (1.52-7.62 m). Depth 25.0 ft (7.62 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface is about 2.39 ft (0.73 m), about mean sea level, from topographic map. Measuring point: Floor of shelter, 5.60 ft (1.71 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), installed on September 17, 1997. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on August 24, 1999, removed on September 14, 2002.
PERIOD OF RECORD.--September 17, 1997 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, +3.02 ft (+0.92 m), above land-surface datum, September 18, 2002; lowest water level measured, 6.03 ft (1.84 m), below land-surface datum, August 19-22, 2001.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.21	1.33	0.49	0.52	1.49	2.76	---	---	---	1.67	4.07	4.98
2	1.36	1.37	0.68	0.61	1.55	2.81	---	---	---	1.73	4.10	4.91
3	1.46	1.43	0.52	0.72	1.63	2.88	---	---	---	1.82	4.18	5.01
4	1.26	1.45	0.48	0.82	1.62	2.98	---	---	---	1.94	4.27	5.05
5	1.29	1.47	+0.18	0.85	1.20	3.08	---	---	---	2.02	4.32	5.10
6	0.98	1.25	+0.17	0.78	0.84	3.03	---	---	---	2.11	4.37	5.15
7	1.12	0.63	+0.10	0.74	0.95	3.16	---	---	---	2.16	4.42	5.18
8	1.26	+0.11	+0.13	0.86	1.04	3.24	---	---	---	2.30	4.40	5.19
9	1.16	+0.65	+0.10	0.80	1.20	3.32	---	---	---	2.36	4.44	5.25
10	1.26	+0.32	+0.11	0.84	1.34	---	---	---	---	2.48	4.49	5.28
11	1.18	+0.19	+0.09	0.92	1.48	---	---	---	---	2.57	4.45	5.32
12	1.22	+0.14	+0.20	1.03	1.56	---	---	---	---	2.63	4.48	5.38
13	1.35	+0.04	+0.21	1.10	1.68	---	---	---	---	2.72	4.55	5.43
14	1.25	+0.18	+0.17	1.20	1.75	---	---	---	---	2.86	4.60	5.48
15	0.97	+0.14	+0.26	1.28	1.85	---	---	---	---	2.90	4.64	5.45
16	0.53	+0.04	+0.27	1.33	1.92	---	---	---	---	3.00	4.63	3.54
17	0.63	0.07	+0.27	1.42	1.97	---	---	---	---	3.10	4.67	3.59
18	0.75	0.24	+0.26	1.35	2.07	---	---	---	---	3.21	4.67	3.68
19	0.72	0.39	+0.26	1.07	2.14	---	---	---	---	3.34	4.71	+2.28
20	0.87	0.50	+0.19	1.17	2.25	---	---	---	0.27	3.40	4.77	---
21	1.05	0.62	+0.18	1.25	2.32	---	---	---	+0.06	3.51	4.83	---
22	0.97	0.78	+0.26	1.40	2.40	---	---	---	+0.04	3.56	4.89	---
23	1.02	0.88	+0.25	1.46	2.47	---	---	---	0.13	3.65	4.91	---
24	1.17	0.97	+0.22	1.12	2.50	---	---	---	0.45	3.63	4.95	---
25	0.44	0.78	+0.18	1.08	2.58	---	---	---	0.73	3.70	4.99	---
26	0.48	0.90	+0.12	1.19	2.64	---	---	---	0.93	3.73	5.06	---
27	0.61	0.82	+0.03	1.29	2.64	---	---	---	1.10	3.79	5.05	---
28	0.78	0.85	0.05	1.39	2.67	---	---	---	1.26	3.80	5.14	---
29	0.94	0.22	0.20	1.38	---	---	---	---	1.37	3.86	5.12	---
30	1.07	0.36	0.37	1.43	---	---	---	---	1.51	3.92	5.14	---
31	1.23	---	0.43	1.47	---	---	---	---	---	3.97	5.00	---
MEAN	1.02	0.52	+0.03	1.09	1.85	---	---	---	---	2.95	4.66	---

WTR YR 2002 MEAN 1.94 HIGHEST +3.02 SEPT. 18, 2002 LOWEST 5.51 SEPT. 14, 2002



+ above land-surface datum

GROUND-WATER LEVELS

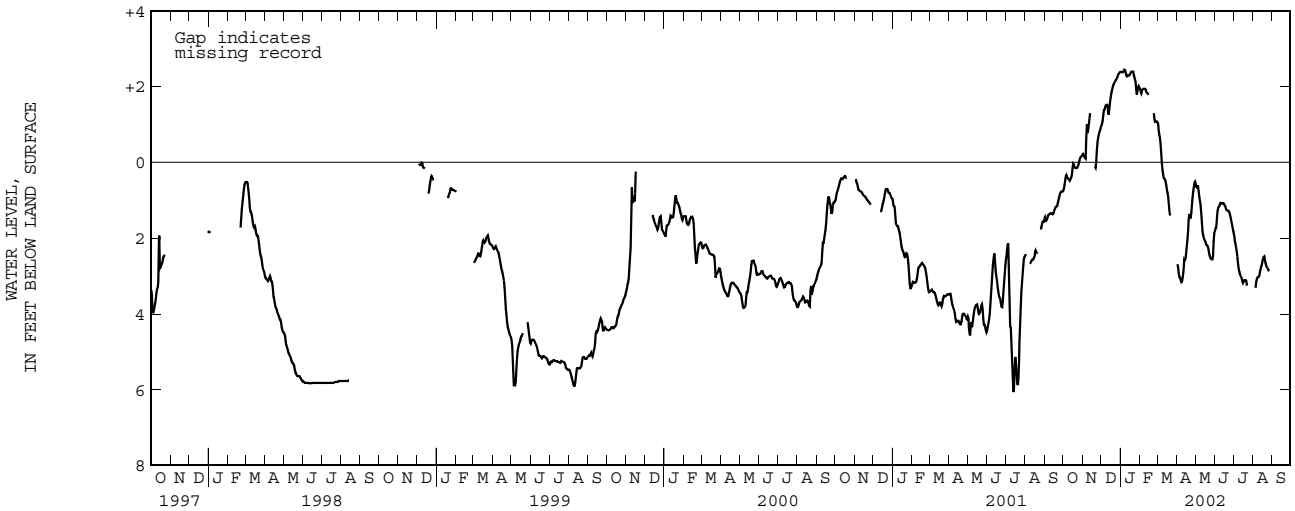
RIO HUMACAO TO QUEBRADA AGUAS VERDES BASINS

180358065503700. Local number, 1226.
LOCATION.--Lat 18°03'58", long 65°50'37", Hydrologic Unit 21010004, 2.01 mi east of Central Roig, 1.37 mi north of Yabucoa Sun Oil Refinery, and 0.19 mi east of Hwy 53. Name: Piezometer Yabucoa USGS Brackish, Yabucoa.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled piezometer well, constructed in 1993 as part of study of Valle de Yabucoa, diameter 2 in (0.05 m), screened in brackish water, 320-340 ft (97.5-104 m). Depth 350 ft (107 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 2.00 ft (0.61 m), above mean sea level, from topographic map. Measuring point: Top of shelter floor, 7.30 ft (2.22 m), above land-surface datum.
REMARKS.--Recording observation well. Electronic Data Logger (EDL), installed on September 16, 1997.
PERIOD OF RECORD.--September 16, 1997 to August 28,2002, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, +2.44 (+0.74 m), above land-surface datum, January 7, 8, 2002; lowest water level recorded, 6.19 ft (1.89 m), below land-surface datum, July 14, 2001.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.77	+0.18	+0.95	+2.40	+1.94	+1.08	---	0.51	1.97	1.85	---	---
2	0.73	+0.26	+0.96	+2.39	+1.94	+1.03	2.64	0.63	1.68	1.92	---	---
3	0.65	+0.20	+1.07	+2.38	+1.80	+0.93	2.73	0.67	1.78	2.02	---	---
4	0.53	+0.20	+1.12	+2.38	+1.86	+0.78	2.83	0.65	1.64	2.11	---	---
5	0.41	+0.13	+1.39	+2.38	+1.92	+0.71	3.03	0.59	1.35	2.18	3.38	---
6	0.32	+0.11	+1.37	+2.39	+1.94	+0.59	3.02	0.65	1.23	2.29	3.23	---
7	0.34	+0.09	+1.42	+2.44	+1.94	+0.41	3.07	0.85	1.19	2.41	3.08	---
8	0.40	+1.26	+1.49	+2.44	+1.94	+0.14	3.15	0.95	1.18	2.56	3.08	---
9	0.41	+0.75	+1.52	+2.42	+1.94	0.14	3.17	1.06	1.13	2.75	3.02	---
10	0.46	+0.81	+1.53	+2.32	+1.94	0.25	3.11	1.16	1.07	2.84	3.02	---
11	0.44	+0.93	+1.51	+2.27	+1.89	0.37	2.99	1.47	1.07	2.92	3.02	---
12	0.48	+1.09	+1.42	+2.28	+1.86	0.43	2.84	1.71	1.09	2.98	2.95	---
13	0.48	+1.24	+1.21	+2.30	+1.83	0.43	2.60	1.88	1.09	2.98	2.89	---
14	0.41	+1.37	+1.31	+2.30	+1.83	0.47	2.52	1.95	1.07	3.04	2.78	---
15	0.38	---	+1.54	+2.30	+1.80	0.55	2.65	2.01	1.07	3.11	2.75	---
16	0.27	---	+1.63	+2.30	+1.76	0.67	2.47	2.04	1.09	3.17	2.69	---
17	0.03	---	+1.78	+2.35	---	0.79	2.30	2.07	1.10	3.19	2.56	---
18	0.04	---	+1.85	+2.39	---	0.83	2.14	2.16	1.16	3.10	2.56	---
19	0.08	---	+1.93	+2.40	---	1.00	1.95	2.19	1.20	3.11	2.44	---
20	0.14	---	+2.00	+2.40	---	1.22	1.69	2.19	1.25	3.11	2.52	---
21	0.15	0.11	+2.06	+2.40	---	1.40	1.29	2.21	1.28	3.11	2.59	---
22	0.15	0.13	+2.09	+2.39	---	1.40	1.42	2.31	1.27	3.13	2.72	---
23	0.15	0.13	+2.11	+2.26	+1.39	---	1.48	2.39	1.27	3.37	2.72	---
24	0.13	+0.17	+2.15	+2.26	+1.21	---	1.44	2.44	1.28	---	2.78	---
25	0.12	+0.47	+2.17	+2.12	+1.06	---	1.24	2.50	1.34	---	2.78	---
26	0.05	+0.60	+2.20	+2.12	+1.08	---	1.04	2.54	1.42	---	2.84	---
27	+0.04	+0.70	+2.24	+1.71	+1.08	---	0.81	2.56	1.49	---	2.92	---
28	+0.09	+0.77	+2.30	+1.88	+1.09	---	0.72	2.56	1.58	---	---	---
29	+0.13	+0.82	+2.33	+1.94	---	---	0.57	2.55	1.66	---	---	---
30	+0.15	+0.87	+2.36	+2.01	---	---	0.51	2.41	1.76	---	---	---
31	+0.18	---	+2.39	+2.03	---	---	---	1.74	---	---	---	---
MEAN	0.26	---	+1.72	+2.27	---	---	---	1.73	1.33	---	---	---

WTR YR 2002 MEAN 0.41 HIGHEST +2.44 JAN. 7, 8, 2002 LOWEST 3.43 AUG. 5, 2002



+ above land-surface datum

GROUND-WATER LEVELS

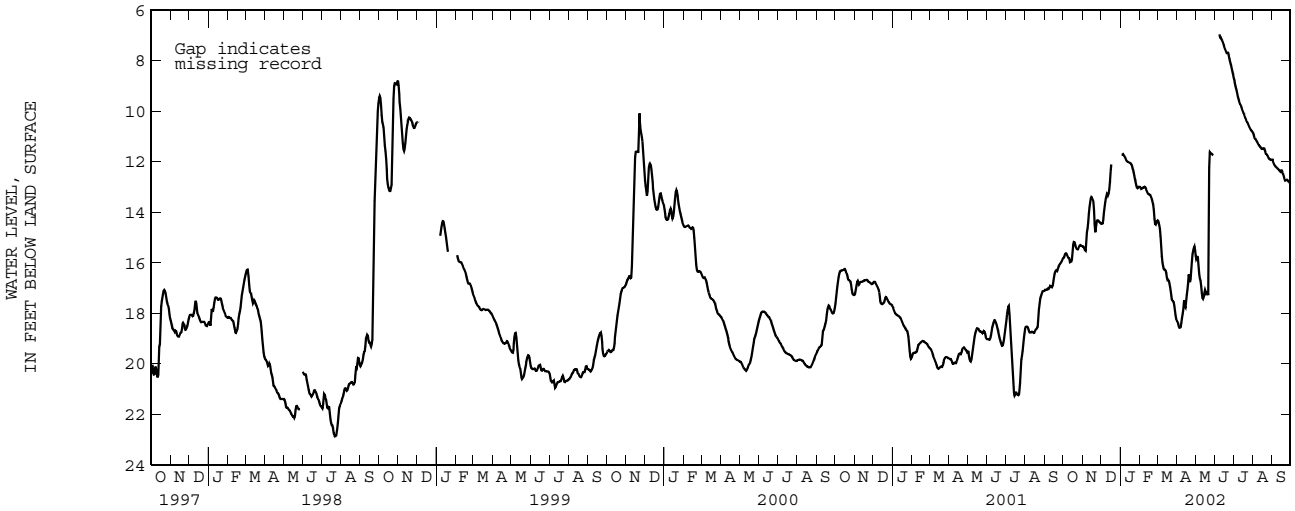
RIO HUMACAO TO QUEBRADA AGUAS VERDES BASINS--Continued

180415065513900. Local number, 96.
LOCATION.--Lat 18°04'15", long 65°51'39", Hydrologic Unit 21010005, 2.44 mi northwest of Escuela Eugenio María de Hostos 4.67 mi southwest of Escuela Segunda Unidad Luciano, and 3.93 mi southwest of Escuela Asunción López. Name: Yabucoa 7 Well, Yabucoa.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 16 in (0.41 m), cased 0-10.0 ft (0-3.05 m), diameter 6 in (0.15 m), cased about 0-183 ft (0-55.8 m), perforated 56.0-81.0 ft (17.1-24.7 m), 102-123 ft, (31.1-37.5 m), 144-181 ft (43.9-55.2 m). Depth 181 ft (55.2 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 25.0 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 datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on August 3, 1999, removed on September 30, 2002.
PERIOD OF RECORD.--April 25, 1978 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 6.74 ft (2.05 m), below land-surface datum, June 7, 2002; lowest water level recorded, 28.29 ft (8.62 m) below land-surface datum, September 20, 1980.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.83	15.35	14.44	---	12.99	14.32	18.26	15.61	---	8.64	10.82	11.90
2	15.81	15.35	14.48	---	13.02	14.31	18.29	15.84	---	8.74	10.88	11.93
3	15.80	15.35	14.45	11.69	13.07	14.37	18.36	15.89	---	8.83	10.98	11.99
4	15.65	15.39	14.45	11.76	13.08	14.47	18.47	15.78	---	8.95	11.07	12.07
5	15.64	15.49	14.15	11.68	13.04	14.55	18.56	15.71	---	9.05	11.08	12.12
6	15.61	15.51	13.89	11.72	13.02	14.75	18.57	16.00	---	9.14	11.12	12.16
7	15.65	15.54	13.72	11.75	13.03	15.16	18.56	16.33	---	9.24	11.17	12.20
8	15.71	14.84	13.51	11.79	12.99	15.56	18.53	16.58	6.77	9.40	11.22	12.22
9	15.78	14.71	13.42	11.83	12.99	15.89	18.21	16.67	7.15	9.48	11.24	12.23
10	15.82	14.56	13.29	11.90	13.02	16.06	18.15	16.76	7.00	9.58	11.31	12.27
11	15.81	14.20	13.23	11.96	13.06	16.20	17.92	17.08	7.14	9.65	11.34	12.29
12	15.97	13.91	13.34	12.00	13.12	16.28	17.79	17.32	7.17	9.71	11.37	12.32
13	16.00	13.70	13.31	12.00	13.17	16.27	17.36	17.45	7.18	9.77	11.40	12.35
14	15.94	13.51	13.17	12.02	13.23	16.27	17.58	17.41	7.22	9.85	11.42	12.38
15	15.96	13.39	12.97	12.03	13.28	16.35	17.88	17.29	7.31	9.92	11.47	12.40
16	15.80	13.39	12.61	12.05	13.31	16.50	17.66	17.10	7.39	9.98	11.50	12.30
17	15.39	13.45	12.19	12.05	13.31	16.69	17.39	17.07	7.48	10.04	11.47	12.38
18	15.21	13.52	12.02	12.08	13.31	16.69	17.15	17.24	7.54	10.11	11.51	12.46
19	15.16	13.61	---	12.13	13.36	16.66	16.99	17.20	7.60	10.20	11.42	12.51
20	15.22	14.16	---	12.24	13.43	16.76	16.65	17.14	7.67	10.24	11.51	12.61
21	15.32	14.74	---	12.31	13.54	16.90	16.27	17.19	7.71	10.32	11.59	12.71
22	15.40	14.84	---	12.40	13.65	17.03	16.78	17.37	7.65	10.40	11.68	12.74
23	15.43	14.60	---	12.47	13.75	17.24	16.74	12.85	7.72	10.42	11.71	12.75
24	15.48	14.40	---	12.62	14.06	17.40	16.53	11.60	7.85	10.44	11.70	12.72
25	15.47	14.32	---	12.74	14.43	17.47	16.10	11.64	7.97	10.50	11.76	12.69
26	15.42	14.31	---	12.87	14.50	17.51	15.78	11.67	8.08	10.57	11.82	12.73
27	15.34	14.33	---	12.99	14.47	17.51	15.53	11.67	8.16	10.62	11.87	12.76
28	15.30	14.35	---	13.04	14.36	17.60	15.53	11.69	8.28	10.67	11.91	12.78
29	15.30	14.40	---	13.03	---	17.79	15.32	11.72	8.39	10.73	11.92	12.81
30	15.32	14.43	---	12.99	---	17.99	15.39	11.66	8.51	10.76	11.94	12.84
31	15.34	---	---	12.98	---	18.18	---	---	---	10.79	11.92	---
MEAN	15.58	14.46	---	---	13.41	16.35	17.28	---	---	9.89	11.46	12.42

WTR YR 2002 MEAN 13.41 HIGHEST 6.74 JUNE. 7, 2002 LOWEST 18.57 APR. 5, 6, 2002



GROUND-WATER LEVELS

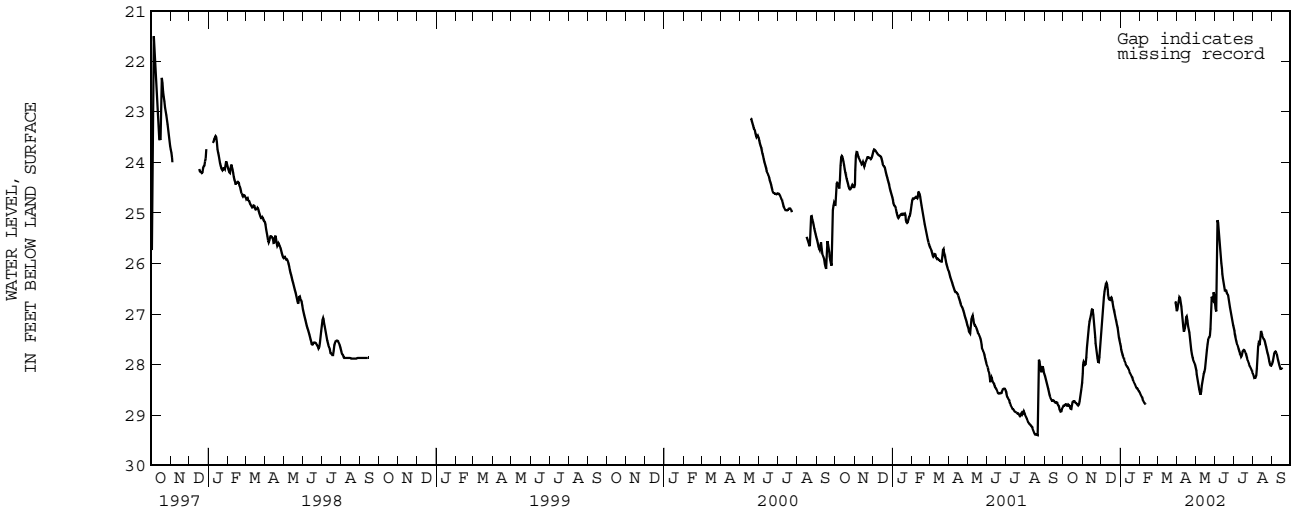
RIO HUMACAO TO QUEBRADA AGUAS VERDES BASINS--Continued

175855066023100. Local number, 1227.
LOCATION.--Lat 17°58'55", long 66°02'31", Hydrologic Unit 21010004, 0.25 mi north of Hwy 3 @ km 128.5, and 1.74 mi northeast of Arroyo plaza. Name: Fidel 2 Well, Arroyo.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Unused water-table well, diameter 15 in (0.38 m). Depth 116 ft (35.4 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 41.0 ft (12.5 m), above mean sea level, from topographic map. Measuring point: Shelter floor, 3.28 ft (1.00 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), installed on December 11, 1996. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on May 18, 2000.
PERIOD OF RECORD.--December 11, 1996 to September 30, 1998, discontinued, May 18, 2000 to September 18, 2002, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 21.39 ft (6.52 m), below land-surface datum, October 5, 1997; lowest water level recorded, 29.42 ft (8.97 m), below land-surface datum, August 22, 2001.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28.84	28.29	27.41	27.62	28.55	---	26.92	28.04	26.72	27.26	28.17	27.98
2	28.82	28.07	27.25	27.68	28.57	---	26.97	28.09	26.83	27.30	28.19	27.94
3	28.81	27.94	27.08	27.73	28.61	---	26.83	28.16	26.96	27.37	28.26	27.92
4	28.81	27.94	26.91	27.78	28.62	---	26.78	28.23	26.94	27.43	28.28	27.81
5	28.80	27.99	26.74	27.82	28.66	---	26.70	28.32	25.17	27.49	28.24	27.77
6	28.78	28.02	26.59	27.85	28.70	---	26.63	28.38	25.12	27.55	28.28	27.74
7	28.80	27.96	26.51	27.89	28.72	---	26.74	28.46	25.27	27.59	28.18	27.74
8	28.83	27.75	26.44	27.92	28.75	---	26.79	28.53	25.48	27.61	27.98	27.76
9	28.79	27.57	26.39	27.96	28.77	---	26.91	28.58	25.62	27.67	27.73	27.80
10	28.80	27.44	26.39	27.99	28.78	---	27.05	28.61	25.78	27.71	27.55	27.89
11	28.81	27.32	26.46	28.03	28.81	---	27.18	28.46	25.94	27.76	27.59	27.93
12	28.83	27.19	26.57	28.04	---	---	27.32	28.37	26.05	27.79	27.60	27.98
13	28.86	27.12	26.66	28.06	---	27.82	27.38	28.29	26.15	27.82	27.59	28.04
14	28.89	27.07	26.71	28.07	---	---	27.28	28.22	26.26	27.88	27.34	28.07
15	28.87	27.00	26.72	28.12	---	---	27.28	28.15	26.34	27.77	27.34	28.10
16	28.75	26.94	26.73	28.15	---	---	27.11	28.14	26.41	27.74	27.42	28.06
17	28.73	26.89	26.64	28.18	---	---	27.03	28.03	26.50	27.71	27.43	28.09
18	28.73	26.95	26.70	28.20	---	---	27.08	27.91	26.56	27.71	27.49	28.11
19	28.72	27.09	26.72	28.23	---	---	27.18	27.76	26.51	27.72	27.49	---
20	28.73	27.25	26.81	28.26	---	---	27.29	27.65	26.56	27.75	27.52	---
21	28.76	27.40	26.89	28.30	---	27.16	27.31	27.54	26.61	27.79	27.57	---
22	28.77	27.53	26.94	28.32	---	---	27.41	27.48	26.58	27.85	27.63	---
23	28.77	27.63	27.00	28.34	---	---	27.54	27.47	26.66	27.87	27.68	---
24	28.79	27.73	27.07	28.37	---	---	27.67	27.45	26.73	27.90	27.74	---
25	28.81	27.83	27.12	28.40	---	---	27.76	27.44	26.83	27.94	27.80	---
26	28.82	27.92	27.19	28.43	---	---	27.82	27.14	26.91	27.98	27.83	---
27	28.77	27.98	27.25	28.46	---	---	27.89	26.75	26.97	28.01	27.91	---
28	28.69	27.93	27.30	28.48	---	---	27.92	26.57	27.05	28.05	27.98	---
29	28.60	27.77	27.44	28.48	---	26.79	27.95	26.85	27.11	28.06	28.01	---
30	28.51	27.57	27.50	28.51	---	26.74	27.98	26.61	27.18	28.09	28.03	---
31	28.42	---	27.56	28.53	---	26.79	---	26.53	---	28.13	28.03	---
MEAN	28.76	27.57	26.89	28.14	---	---	27.26	27.81	26.39	27.75	27.80	---

WTR YR 2002 MEAN 27.65 HIGHEST 25.06 JUNE. 5, 2002 LOWEST 28.89 OCT. 14, 15, 2001



GROUND-WATER LEVELS

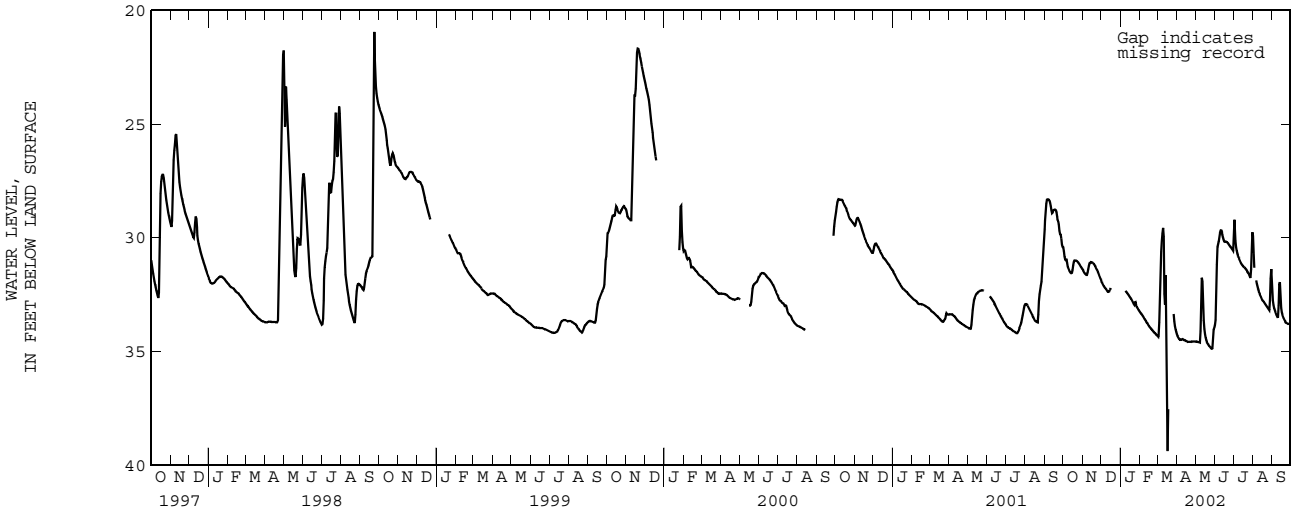
RIO HUMACAO TO QUEBRADA AGUAS VERDES BASINS--Continued

175855066050500. Local number, 1228.
LOCATION.--Lat 17°58'55", long 66°05'05", Hydrologic Unit 21010004, 1.97 mi east-southeast of the intersection of Hwy 16 with Hwy 3, 1.00 mi west of the intersection of Hwy 3 with Hwy 178, and 0.04 mi south of Hwy 3. Name: Algarrobos Domestic Well, Guayama.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 9 in (0.23 m). Depth 57.0 ft (17.4 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 89.0 ft (27.1 m), above mean sea level. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 2.95 ft (0.90 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), installed on May 24, 1997. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on September 30, 1999, removed on September 30, 2002. Well affected by pumping on Mar. 18, 2002.
PERIOD OF RECORD.--May 24, 1997 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 18.19 ft (5.54 m), below land-surface datum, June 26, 1997; lowest water level recorded, 34.19 ft (10.42 m), below land-surface datum, July 19, 20, 2001.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30.41	31.37	31.84	---	33.24	34.30	34.18	34.55	33.94	30.57	29.59	32.25
2	30.43	31.41	31.91	---	33.29	34.33	34.28	34.55	33.73	29.31	30.23	32.64
3	30.73	31.44	31.98	---	33.32	34.35	34.34	34.56	33.49	29.10	31.12	32.86
4	30.92	31.51	32.04	---	33.35	34.20	34.39	34.57	31.87	29.94	31.53	33.04
5	30.99	31.55	32.10	---	33.40	33.24	34.43	34.58	30.49	30.30	---	33.14
6	30.96	31.59	32.14	---	33.44	31.88	34.47	34.59	30.32	30.50	31.77	33.21
7	30.96	31.62	32.18	---	33.48	30.91	34.49	34.59	30.23	30.63	31.96	33.30
8	31.22	31.64	32.22	---	33.53	30.33	34.48	34.61	30.07	30.73	32.09	33.37
9	31.31	31.62	32.24	32.31	33.57	29.94	34.47	34.61	29.87	30.80	32.19	33.42
10	31.33	31.45	32.29	32.35	33.62	29.66	34.46	33.59	29.68	30.89	32.30	33.49
11	31.45	31.31	32.34	32.39	33.66	29.47	34.46	32.06	29.65	30.95	32.37	33.54
12	31.47	31.16	32.38	32.42	33.70	30.42	34.47	31.45	29.70	31.02	32.44	32.43
13	31.51	31.11	32.37	32.46	33.74	34.52	34.49	32.36	29.81	31.09	32.50	31.70
14	31.54	31.07	32.37	32.50	33.77	31.36	34.50	33.39	29.93	31.14	32.56	32.19
15	31.57	31.07	32.35	32.54	33.83	31.93	34.51	33.87	30.03	31.18	32.62	32.95
16	31.52	31.08	32.23	32.59	33.88	36.67	34.53	34.15	30.14	31.22	32.70	33.21
17	31.31	31.09	32.17	32.63	33.91	38.84	34.54	34.32	30.20	31.26	32.75	33.35
18	31.10	31.11	---	32.67	33.95	39.91	34.56	34.45	30.16	31.29	32.79	33.43
19	31.01	31.14	---	32.71	33.98	35.16	34.57	34.55	30.16	31.31	32.81	33.50
20	30.99	31.17	---	32.77	34.02	---	34.58	34.61	30.18	31.34	32.85	33.57
21	30.99	31.21	---	32.83	34.05	---	34.57	34.66	30.20	31.38	32.91	33.61
22	31.00	31.25	---	32.87	34.09	---	34.57	34.70	30.22	31.40	32.95	33.68
23	31.01	31.31	---	32.91	34.12	---	34.57	34.74	30.25	31.46	32.99	33.72
24	31.04	31.36	---	32.96	34.16	---	34.57	34.77	30.30	31.51	33.02	33.75
25	31.07	31.41	---	32.73	34.18	---	34.56	34.80	30.34	31.54	33.07	33.77
26	31.10	31.46	---	32.92	34.20	---	34.56	34.82	30.37	31.56	33.11	33.77
27	31.14	31.55	---	33.01	34.25	33.15	34.56	34.87	30.40	31.66	33.15	33.78
28	31.19	31.62	---	33.06	34.27	33.54	34.55	34.90	30.45	31.72	33.19	33.78
29	31.23	31.68	---	33.11	---	33.80	34.55	34.83	30.50	31.78	32.29	33.79
30	31.29	31.76	---	33.14	---	33.96	34.55	34.09	30.54	30.96	31.27	33.80
31	31.32	---	---	33.20	---	34.08	---	33.99	---	29.93	31.49	---
MEAN	31.13	31.37	---	---	33.79	---	34.49	34.23	30.57	30.95	---	33.27

WTR YR 2002 MEAN 32.51 HIGHEST 28.89 JUNE. 3, 2002 LOWEST 39.92 MAR. 18, 2002



GROUND-WATER LEVELS

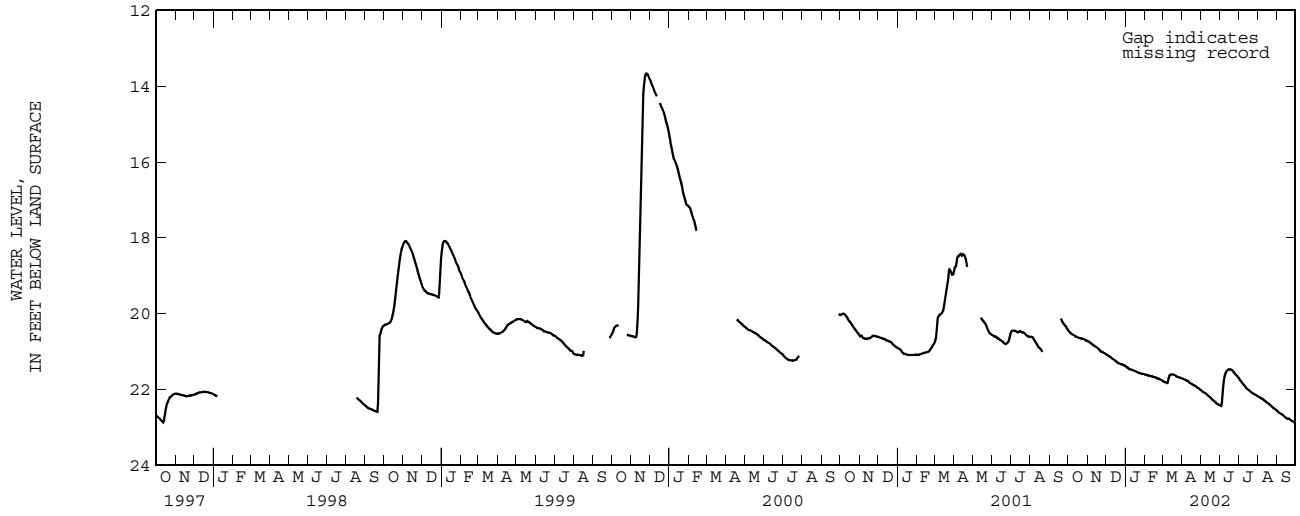
RIO HUMACAO TO QUEBRADA AGUAS VERDES BASINS--Continued

1757280660722000. Local number, 1229.
LOCATION.--Lat 17°57'28", long 66°07'22", Hydrologic Unit 21010004, 0.65 mi west of Central Machete. 0.75 mi northwest of Playita Machete, 2.00 mi south of the intersection of Hwy 15 with Hwy 3, and 1.13 mi southeast of intersection of Hwy 710 with Hwy 3. Name: Barranca Dug Well, Guayama.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Hand-dug unused water-table well, diameter 9 in (0.23 m). Depth 38.0 ft (11.7 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 59.1 ft (18.0 m), above mean sea level, from topographic map. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 5.00 ft (1.52 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), installed on April 3, 1997. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on September 27, 1999, removed on September 30, 2002.
PERIOD OF RECORD.--April 3, 1997 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 13.66 ft (4.16 m), below land-surface datum, November 25, 26, 27, 1999; lowest water level recorded, 24.21 ft (7.38 m), below land-surface datum, June 7, 8, 9, 1997.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.43	20.72	21.07	21.37	21.61	21.77	21.71	22.01	22.42	21.69	22.18	22.56
2	20.45	20.73	21.08	21.39	21.61	21.78	21.71	22.02	22.43	21.71	22.19	22.58
3	20.47	20.73	21.09	21.41	21.61	21.79	21.72	22.03	22.44	21.73	22.20	22.59
4	20.49	20.74	21.10	21.42	21.61	21.80	21.73	22.04	22.44	21.75	22.21	22.61
5	20.51	20.76	21.11	21.42	21.62	21.81	21.73	22.06	22.27	21.77	22.22	22.62
6	20.53	20.77	21.13	21.44	21.63	21.81	21.74	22.07	22.03	21.79	22.23	22.63
7	20.54	20.79	21.14	21.46	21.63	21.82	21.75	22.08	21.84	21.82	22.24	22.64
8	20.55	20.80	21.14	21.47	21.64	21.83	21.75	22.09	21.72	21.84	22.24	22.65
9	20.56	20.81	21.16	21.47	21.64	21.84	21.77	22.10	21.64	21.86	22.26	22.67
10	20.57	20.82	21.17	21.47	21.65	21.82	21.77	22.11	21.58	21.88	22.27	22.67
11	20.58	20.84	21.19	21.48	21.65	21.73	21.78	22.12	21.54	21.90	22.28	22.69
12	20.58	20.85	21.20	21.49	21.65	21.66	21.79	22.13	21.52	21.92	22.30	22.70
13	20.60	20.85	21.21	21.49	21.66	21.63	21.80	22.15	21.50	21.95	22.31	22.72
14	20.61	20.87	21.22	21.50	21.66	21.61	21.83	22.17	21.48	21.97	22.32	22.73
15	20.61	20.88	21.23	21.51	21.67	21.60	21.84	22.19	21.48	21.98	22.33	22.75
16	20.62	20.89	21.24	21.51	21.68	21.60	21.84	22.20	21.47	22.00	22.35	22.76
17	20.63	20.90	21.25	21.52	21.68	21.60	21.85	22.21	21.47	22.01	22.36	22.77
18	20.64	20.92	21.27	21.53	21.68	21.60	21.87	22.23	21.47	22.03	22.37	22.78
19	20.64	20.93	21.29	21.54	21.69	21.61	21.88	22.24	21.48	22.04	22.38	22.77
20	20.64	20.94	21.30	21.55	21.69	21.62	21.88	22.27	21.48	22.05	22.40	22.77
21	20.65	20.96	21.31	21.55	21.71	21.62	21.89	22.28	21.49	22.07	22.41	22.79
22	20.65	20.99	21.31	21.56	21.72	21.63	21.90	22.29	21.50	22.08	22.42	22.80
23	20.66	21.00	21.32	21.57	21.71	21.64	21.92	22.30	21.53	22.09	22.44	22.81
24	20.66	21.00	21.33	21.57	21.72	21.66	21.92	22.32	21.55	22.10	22.46	22.82
25	20.67	21.01	21.33	21.57	21.73	21.67	21.93	22.33	21.57	22.11	22.47	22.83
26	20.67	21.02	21.34	21.58	21.74	21.67	21.95	22.34	21.59	22.12	22.49	22.84
27	20.68	21.03	21.34	21.59	21.75	21.68	21.96	22.36	21.61	22.13	22.50	22.85
28	20.68	21.04	21.35	21.59	21.76	21.68	21.97	22.38	21.63	22.13	22.52	22.86
29	20.70	21.05	21.36	21.59	---	21.69	21.98	22.40	21.64	22.15	22.52	22.88
30	20.71	21.06	21.37	21.59	---	21.69	21.99	22.39	21.67	22.16	22.54	22.89
31	20.71	---	21.37	21.60	---	21.70	---	22.41	---	22.17	22.55	---
MEAN	20.60	20.89	21.24	21.51	21.67	21.70	21.84	22.20	21.72	21.97	22.35	22.73

WTR YR 2002 MEAN 21.70 HIGHEST 20.41 OCT. 1, 2001 LOWEST 22.89 SEPT. 30, 2002



GROUND-WATER LEVELS

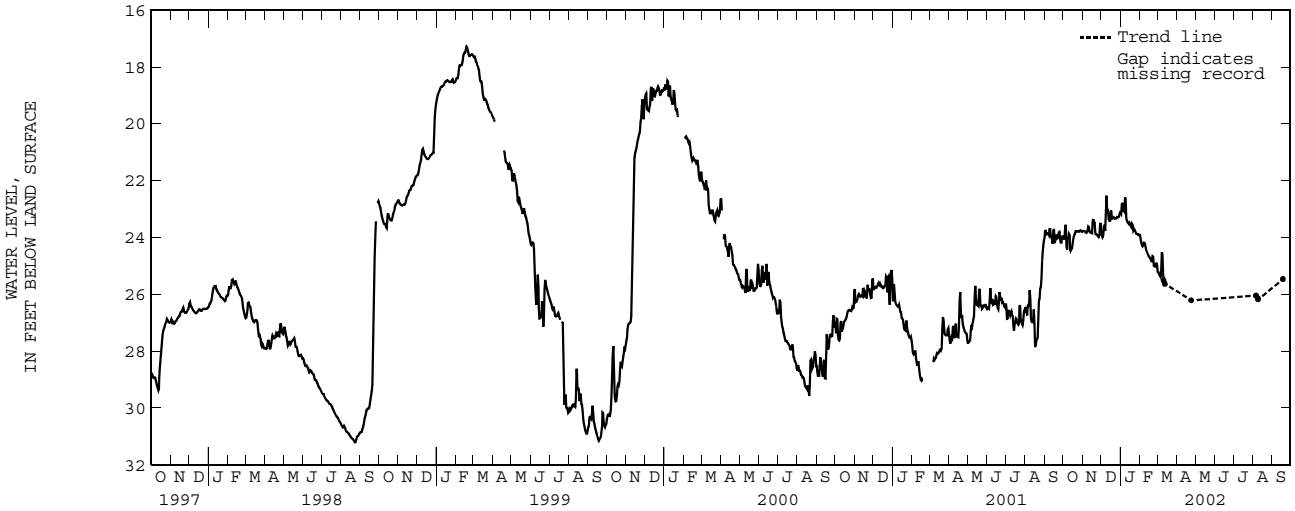
RIO HUMACAO TO QUEBRADA AGUAS VERDES BASINS--Continued

175719066085500. Local number, 1230.
LOCATION.--Lat 17°57'20", long 66°09'02", Hydrologic Unit 2101004, 1.00 mi east of the intersection of Hwy 3 with Hwy 707, 0.28 mi south of Hwy 3, and 0.25 mi northwest of the Phillips Petroleum oil refinery. Name: Phillips Petroleum 13 Well, Guayama.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m). Depth 99.0 ft (30.2 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 33.0 ft (10.1 m), above mean sea level, from topographic map. Measuring point: Top of 4 in (0.10 m) casing, 2.83 ft (0.86 m), above land-surface datum. Prior September 18, 2002, shelter floor on top of 4 in (0.10 m) casing, 3.21 ft (0.98 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on April 15, 1998, removed on August 9, 2002. Sampling performed on June 7, 1996 by private company. From March 13 to September 30, 2002, tapedowns masurements only.
PERIOD OF RECORD.--September 25, 1991 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 14.47 ft (4.41 m), below land-surface datum, March 22, 24, 1993; lowest water level recorded, 31.22 ft (9.52 m), below land-surface datum, August 24, 1998.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.98	23.80	23.75	23.12	23.86	25.20	---	---	---	---	---	---
2	24.09	23.77	23.89	23.13	23.97	25.22	---	---	---	---	---	---
3	24.00	23.76	23.99	23.16	24.18	25.23	---	---	---	---	---	---
4	24.08	23.77	24.00	22.51	24.21	25.27	---	---	---	---	---	---
5	23.18	23.78	23.87	23.04	24.31	25.32	---	---	---	---	---	---
6	23.93	23.80	23.38	23.05	24.31	25.35	---	---	---	---	---	---
7	24.66	23.83	23.73	23.05	24.21	25.40	---	---	---	---	---	---
8	24.21	23.83	23.81	23.12	24.16	24.96	---	---	---	---	---	---
9	23.90	23.79	22.30	22.05	24.23	24.08	---	---	---	---	---	---
10	24.08	23.69	22.76	23.30	24.32	25.12	---	---	---	---	---	---
11	23.64	23.53	23.27	23.38	24.40	25.43	---	---	---	---	---	---
12	24.17	23.73	22.78	23.44	24.44	25.58	---	---	---	---	---	---
13	24.59	23.81	23.42	23.46	24.51	---	---	---	---	---	---	---
14	24.33	23.83	23.30	23.52	24.56	---	---	---	---	---	---	---
15	24.49	23.84	23.47	23.51	24.62	---	---	---	---	---	---	---
16	24.30	23.86	23.44	23.45	24.67	---	---	---	---	---	---	---
17	24.16	23.86	22.76	23.58	24.69	---	---	---	---	---	---	---
18	23.99	22.98	23.33	23.62	24.72	---	---	---	---	---	---	---
19	23.93	23.73	23.35	23.65	24.77	---	---	---	---	---	---	---
20	23.90	23.19	23.31	23.37	24.84	---	---	---	---	---	---	---
21	23.76	23.76	23.29	23.74	24.87	---	---	---	---	---	---	---
22	23.79	23.87	23.28	23.79	24.45	---	---	---	---	---	---	---
23	23.79	23.88	23.37	23.69	24.92	---	---	---	---	---	---	---
24	23.77	23.88	23.28	23.73	25.08	---	---	---	---	---	---	---
25	23.78	23.90	23.38	23.76	24.89	---	---	---	---	---	---	---
26	23.79	23.92	23.27	23.83	25.03	---	---	---	---	---	---	---
27	23.78	23.97	23.29	23.90	25.09	---	---	---	---	---	---	---
28	23.80	23.99	23.29	23.86	24.67	---	---	---	---	---	---	---
29	23.72	23.87	23.28	23.90	---	---	---	---	---	---	---	---
30	23.77	23.22	23.27	23.87	---	---	---	---	---	---	---	---
31	23.81	---	23.10	23.95	---	---	---	---	---	---	---	---
MEAN	23.97	23.75	23.36	23.44	24.54	---	---	---	---	---	---	---

WTR YR 2002 MEAN 23.90 HIGHEST 21.91 JAN. 5, 2002 LOWEST 25.66 MAR. 12, 2002



GROUND-WATER LEVELS

RIO HUMACAO TO QUEBRADA AGUAS VERDES BASINS--Continued

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 11	23.48	JAN 10	23.28	FEB 20	24.95	AUG 06	26.04	AUG 09	26.18
11	23.52	FEB 06	24.30	MAR 13	25.63	06	26.05	SEP 18	25.46
NOV 15	23.84	06	24.31	APR 24	26.21	AUG 09	26.14	18	25.45
DEC 13	23.42	FEB 20	24.84						

WATER YEAR 2002 HIGHEST 23.28 JAN. 10, 2002 LOWEST 26.21 APR. 24, 2002

GROUND-WATER LEVELS

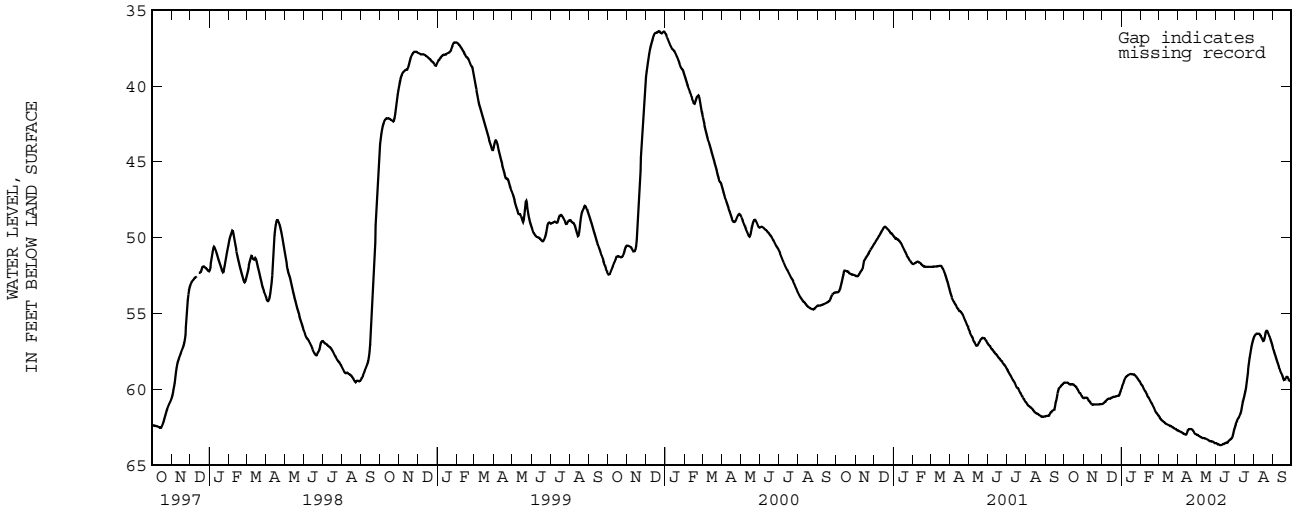
RIO HUMACAO TO QUEBRADA AGUAS VERDES BASINS--Continued

175858066100200. Local number, 6.
LOCATION.--Lat 17°58'58", long 66°10'02", Hydrologic Unit 21010004, 4.23 mi northeast of Central Aguirre Church, 4.08 mi northeast of Colegio del Perpetuo Socorro Church, and 1.77 mi northwest of Hwy 3 km 144.2. Name: Juana 5 Well, Guayama.
AQUIFER.--Alluvium of Quaternary 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.
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 127 ft (38.7 m), above mean sea level, from topographic map. Measuring point: Top of shelter floor, 1.60 ft (0.49 m), above land-surface datum. After August 7, 1981, top of 16 in (0.41 m) casing, 1.55 ft (0.47 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital recorde (ADR), replaced by an Electronic Data Logger (EDL), installed on April 15, 1998, removed on September 30, 2002.
PERIOD OF RECORD.--November 1960 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 26.20 ft (7.99 m), below land-surface datum, Decenber 10, 1979; lowest water level recorded, 65.95 ft (20.1 m), below land-surface datum, June 2, 1968.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	59.57	60.62	60.99	59.98	59.60	61.71	62.71	62.99	63.57	62.59	56.61	57.34
2	59.57	60.61	60.99	59.88	59.71	61.77	62.71	63.02	63.57	62.51	56.53	57.41
3	59.58	60.57	60.93	59.71	59.73	61.85	62.77	63.02	63.58	62.34	56.49	57.57
4	59.58	60.56	60.93	59.71	59.79	61.90	62.79	63.05	63.64	62.31	56.42	57.68
5	59.58	60.56	60.85	59.53	59.87	61.96	62.83	63.08	63.64	62.12	56.35	57.82
6	59.58	60.56	60.84	59.40	59.98	62.00	62.83	63.10	63.64	62.05	56.35	57.96
7	59.58	60.57	60.83	59.31	60.06	62.07	62.83	63.13	63.68	61.96	56.34	58.10
8	59.61	60.62	60.73	59.23	60.12	62.09	62.86	63.17	63.69	61.93	56.33	58.23
9	59.67	60.69	60.68	59.17	60.19	62.14	62.90	63.20	63.69	61.80	56.34	58.35
10	59.70	60.77	60.67	59.15	60.26	62.17	62.94	63.21	63.69	61.72	56.36	58.48
11	59.69	60.81	60.63	59.11	60.35	62.20	62.95	63.22	63.68	61.59	56.41	58.58
12	59.69	60.84	60.63	59.05	60.46	62.24	62.97	63.23	63.65	61.49	56.48	58.72
13	59.69	60.94	60.63	59.06	60.52	62.28	62.99	63.24	63.65	61.17	56.55	58.85
14	59.68	60.97	60.63	59.03	60.56	62.29	62.99	63.24	63.62	60.96	56.61	58.91
15	59.69	61.02	60.62	59.01	60.62	62.33	63.00	63.27	63.61	60.77	56.68	59.02
16	59.70	61.02	60.57	59.01	60.72	62.36	62.98	63.28	63.61	60.63	56.79	59.14
17	59.71	61.02	60.57	59.01	60.78	62.37	62.78	63.30	63.54	60.43	56.86	59.29
18	59.77	61.01	60.56	59.02	60.89	62.38	62.70	63.32	63.53	60.24	56.75	59.40
19	59.80	61.01	60.52	59.02	60.95	62.41	62.63	63.35	63.54	60.06	56.54	59.40
20	59.83	61.01	60.50	59.02	61.03	62.42	62.63	63.37	63.51	59.77	56.31	59.37
21	59.86	61.01	60.50	59.02	61.10	62.44	62.63	63.39	63.51	59.43	56.17	59.31
22	59.97	61.01	60.50	59.04	61.19	62.49	62.63	63.42	63.41	59.10	56.15	59.24
23	60.01	61.01	60.49	59.09	61.28	62.49	62.64	63.44	63.36	58.75	56.15	59.19
24	60.06	61.00	60.46	59.11	61.40	62.51	62.68	63.44	63.36	58.44	56.27	59.20
25	60.19	61.00	60.46	59.17	61.50	62.53	62.69	63.45	63.30	58.13	56.37	59.24
26	60.26	61.00	60.45	59.20	61.56	62.58	62.73	63.46	63.29	57.82	56.48	59.30
27	60.27	61.00	60.43	59.31	61.61	62.61	62.80	63.47	63.26	57.55	56.60	59.41
28	60.31	61.00	60.43	59.34	61.68	62.61	62.89	63.47	63.13	57.31	56.75	59.47
29	60.42	60.99	60.34	59.43	---	62.64	62.96	63.48	62.99	57.09	56.92	59.47
30	60.48	60.99	60.19	59.44	---	62.64	62.99	63.57	62.75	56.93	57.00	59.51
31	60.57	---	60.10	59.52	---	62.71	---	63.57	---	56.78	57.19	---
MEAN	59.86	60.86	60.60	59.26	60.63	62.30	62.81	63.29	63.49	60.19	56.52	58.77

WTR YR 2002 MEAN 60.71 HIGHEST 56.14 AUG. 22, 23, 2002 LOWEST 63.69 JUNE 8, 9, 10, 2002



GROUND-WATER LEVELS

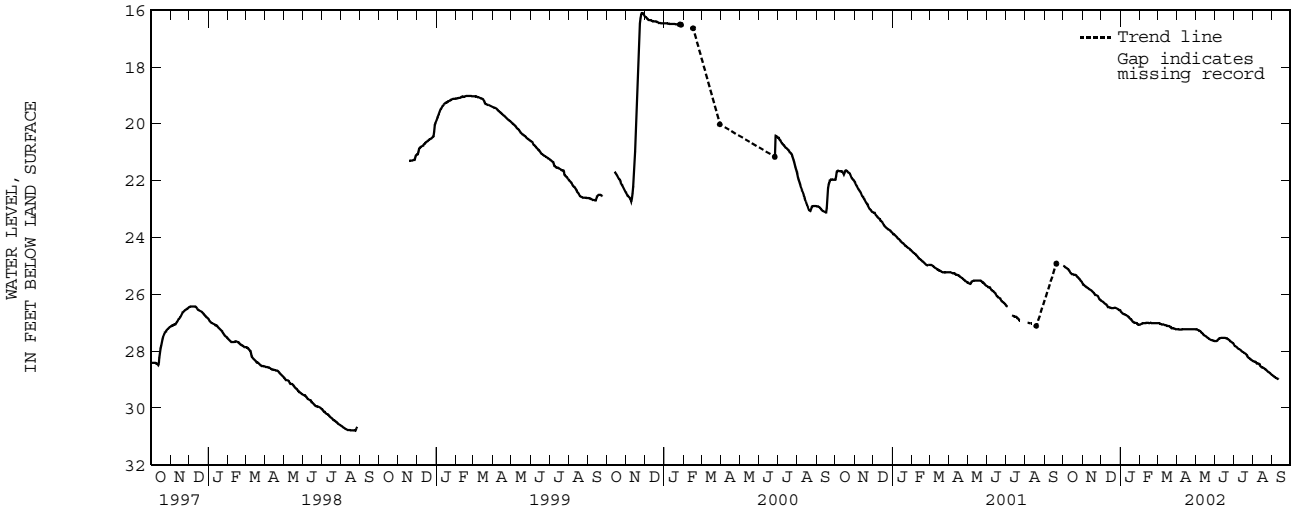
RIO HUMACAO TO QUEBRADA AGUAS VERDES BASINS--Continued

180002066132200. Local number, 1231.
LOCATION.--Lat 18°00'02", long 66°13'22", Hydrologic Unit 21010004, 3.30 mi southwest of Cerro Guaraco, 8.71 mi southwest of Cayey plaza, and 2.80 mi southeast of Hwy 1 km 82.3 on Rabo del Buey. Name: Piezometer Aguirre HW 1, Salinas.
AQUIFER.--Fractured, volcanic rock, water-table aquifer.
WELL CHARACTERISTICS.--Drilled observation well, diameter 7 in (0.18 m), 0-39.5 ft (0-12.0 m), cased 4 in (0.10 m), 0-38.2 ft (0-11.6 m), screened 32.0-37.0 ft (9.75-11.3 m). Depth 39.5 ft (12.0 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 190 ft (58.0 m), above mean sea level. Measuring point: Hole on side of 4 in (0.10 m) casing, 2.84 ft (0.87 m), above land-surface datum. Prior October 13, 1988, top of shelter floor, 3.48 ft (1.06 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on February 10, 1998. Formerly published as local number and name HW-TW-01.
PERIOD OF RECORD.--April 14, 1988 to September 13, 2002, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 16.09 ft (4.90 m), below land-surface datum, November 27, 28, 1999; lowest water level recorded, 37.45 ft (11.4 m), below land-surface datum, September 10, 1996.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25.00	25.57	26.22	26.57	27.07	27.00	27.22	27.22	27.64	27.72	28.34	28.85
2	25.00	25.65	26.24	26.61	27.07	27.01	27.22	27.22	27.64	27.77	28.36	28.85
3	25.02	25.67	26.26	26.62	27.04	27.01	27.23	27.23	27.64	27.81	28.36	28.87
4	25.02	25.68	26.26	26.65	27.04	27.02	27.23	27.24	27.64	27.82	28.37	28.88
5	25.06	25.69	26.28	26.67	27.02	27.02	27.24	27.25	27.65	27.84	28.37	28.90
6	25.06	25.72	26.31	26.70	27.01	27.03	27.24	27.26	27.62	27.85	28.38	28.92
7	25.08	25.73	26.32	26.70	27.01	27.05	27.24	27.27	27.58	27.87	28.42	28.93
8	25.10	25.74	26.35	26.70	27.01	27.05	27.24	27.28	27.55	27.89	28.43	28.96
9	25.11	25.77	26.35	26.72	27.01	27.06	27.24	27.30	27.54	27.92	28.43	28.96
10	25.13	25.78	26.37	26.73	27.01	27.06	27.23	27.31	27.54	27.93	28.44	28.97
11	25.17	25.79	26.41	26.74	27.00	27.06	27.23	27.35	27.53	27.94	28.45	28.98
12	25.17	25.82	26.44	26.76	27.00	27.07	27.23	27.36	27.53	27.95	28.46	29.01
13	25.23	25.83	26.45	26.77	27.00	27.08	27.22	27.38	27.53	27.96	28.51	---
14	25.25	25.85	26.45	26.79	26.99	27.08	27.23	27.41	27.53	28.00	28.53	---
15	25.28	25.85	26.47	26.81	27.01	27.10	27.23	27.44	27.53	28.01	28.56	---
16	25.29	25.87	26.47	26.84	27.01	27.10	27.23	27.45	27.53	28.03	28.57	---
17	25.29	25.90	26.48	26.87	27.01	27.11	27.23	27.47	27.53	28.04	28.57	---
18	25.30	25.91	26.48	26.88	27.00	27.11	27.23	27.48	27.53	28.06	28.59	---
19	25.31	25.94	26.48	26.90	27.00	27.11	27.23	27.49	27.54	28.07	28.60	---
20	25.31	25.97	26.48	26.93	27.01	27.12	27.23	27.53	27.54	28.09	28.62	---
21	25.32	26.01	26.48	26.97	27.01	27.13	27.23	27.53	27.55	28.10	28.63	---
22	25.32	26.02	26.48	26.98	27.01	27.15	27.23	27.54	27.57	28.12	28.65	---
23	25.35	26.03	26.47	26.99	27.01	27.15	27.23	27.57	27.59	28.16	28.67	---
24	25.39	26.04	26.47	27.00	27.01	27.18	27.22	27.58	27.60	28.18	28.68	---
25	25.41	26.05	26.49	27.00	27.01	27.19	27.22	27.59	27.62	28.22	28.72	---
26	25.42	26.06	26.50	27.00	27.01	27.19	27.22	27.60	27.65	28.24	28.73	---
27	25.44	26.07	26.51	27.01	27.01	27.20	27.22	27.61	27.67	28.25	28.75	---
28	25.47	26.16	26.52	27.01	27.01	27.20	27.22	27.61	27.68	28.26	28.76	---
29	25.50	26.18	26.54	27.07	---	27.21	27.22	27.62	27.70	28.29	28.78	---
30	25.54	26.19	26.55	27.07	---	27.22	27.22	27.63	27.71	28.31	28.81	---
31	25.56	---	26.55	27.07	---	27.22	---	27.64	---	28.32	28.82	---
MEAN	25.25	25.88	26.42	26.84	27.01	27.11	27.23	27.43	27.59	28.03	28.56	---

WTR YR 2002 MEAN 27.10 HIGHEST 24.95 OCT. 1, 2001 LOWEST 29.05 SEPT. 13, 2002



GROUND-WATER LEVELS

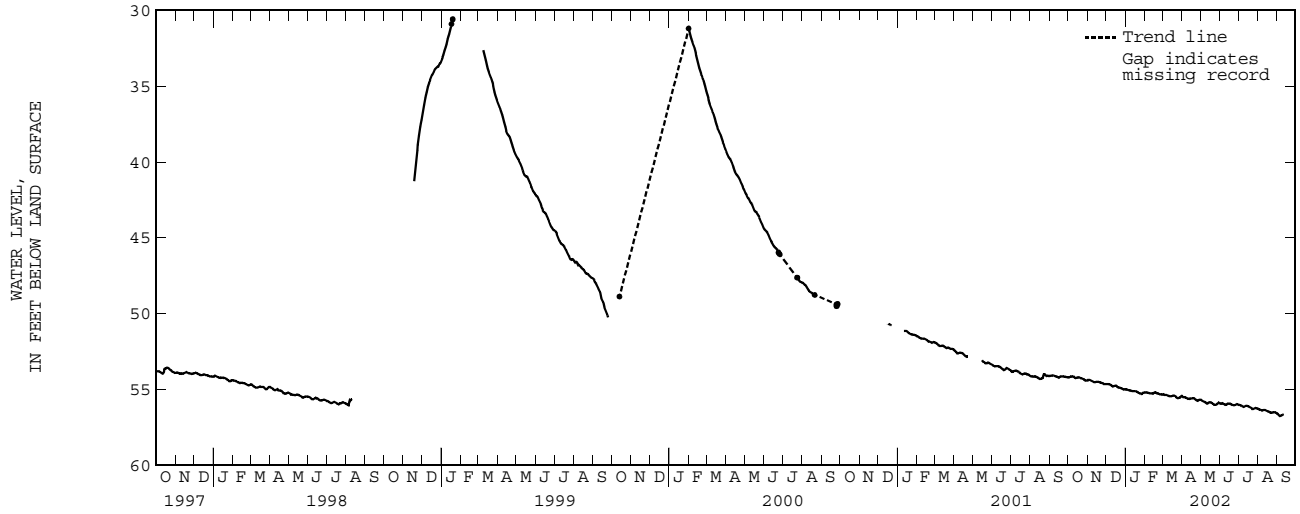
RIO HUMACAO TO QUEBRADA AGUAS VERDES BASINS--Continued

180001066122002. Local number, 1232.
LOCATION.--Lat 18°00'01", long 66°12'20", Hydrologic Unit 21010004, 8.27 mi southwest of Cayey plaza, 2.38 mi soutwest of Cerro Garau, and 3.45 mi southeast of Hwy 1 km 82.3. Name: Piezometer Aguirre HW 3C, Guayama.
AQUIFER.--Fractured, volcanic rock, water-table aquifer.
WELL CHARACTERISTICS.--Drilled observation well, diameter 7 in (0.18 m), 0-220 ft (0-67.0 m), cased 4 in (0.10 m), 0-150 ft (0-45.7 m), open hole 150-220 ft (45.7-67.0 m). Depth 220 ft (67.0 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 270 ft (82.6 m), above mean sea level. Measuring point: Top of shelter floor, 3.32 ft (1.01 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on April 15, 1998. Aquifer test performed during May 24, 25, 26, 1989.
PERIOD OF RECORD.--December 15, 1988 to September 13, 2002, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 26.29 ft (8.01 m), below land-surface datum, December 15, 1990; lowest water level recorded, 59.82 ft (18.2 m), below land-surface datum, March 1, 1996.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54.20	54.42	54.64	54.97	55.20	55.34	55.43	55.67	55.92	56.02	56.26	56.58
2	54.21	54.39	54.66	54.99	55.19	55.33	55.43	55.69	55.93	56.02	56.28	56.61
3	54.22	54.35	54.64	55.01	55.20	55.32	55.49	55.70	55.95	56.02	56.32	56.66
4	54.19	54.37	54.64	55.01	55.20	55.34	55.51	55.73	55.94	56.05	56.33	56.69
5	54.15	54.38	54.66	55.04	55.21	55.36	55.51	55.78	55.92	56.05	56.34	56.73
6	54.14	54.41	54.66	55.05	55.22	55.37	55.51	55.79	55.90	56.06	56.37	56.76
7	54.14	54.43	54.67	55.05	55.23	55.36	55.53	55.81	55.97	56.11	56.39	56.76
8	54.15	54.45	54.70	55.06	55.24	55.37	55.54	55.82	55.98	56.14	56.39	56.71
9	54.15	54.44	54.71	55.07	55.25	55.39	55.59	55.85	56.00	56.16	56.38	56.69
10	54.15	54.49	54.75	55.09	55.27	55.41	55.61	55.88	56.00	56.16	56.37	56.67
11	54.18	54.50	54.81	55.10	55.26	55.42	55.62	55.91	56.01	56.13	56.35	56.67
12	54.22	54.51	54.82	55.11	55.26	55.44	55.62	55.94	56.00	56.11	56.34	56.70
13	54.26	54.52	54.79	55.11	55.27	55.45	55.63	55.91	55.96	56.08	56.36	---
14	54.25	54.51	54.78	55.12	55.28	55.45	55.61	55.87	55.95	56.08	56.37	---
15	54.24	54.50	54.77	55.11	55.27	55.44	55.61	55.85	55.93	56.09	56.41	---
16	54.22	54.50	54.77	55.09	55.21	55.44	55.59	55.85	55.94	56.11	56.44	---
17	54.20	54.49	54.73	55.11	55.20	55.43	55.59	55.84	55.93	56.10	56.45	---
18	54.19	54.48	54.75	55.14	55.20	55.42	55.58	55.86	55.93	56.15	56.45	---
19	54.20	54.50	54.83	55.14	55.21	55.40	55.59	55.89	55.98	56.17	56.47	---
20	54.24	54.52	54.86	55.17	55.23	55.41	55.57	55.92	56.00	56.19	56.49	---
21	54.26	54.52	54.87	55.20	55.26	55.43	55.57	55.95	56.02	56.22	56.53	---
22	54.26	54.54	54.87	55.21	55.25	55.44	55.61	55.98	56.03	56.24	56.56	---
23	54.26	54.56	54.87	55.24	55.27	55.49	55.65	56.00	56.03	56.27	56.53	---
24	54.30	54.56	54.90	55.26	55.32	55.54	55.69	56.01	56.03	56.29	56.53	---
25	54.32	54.58	54.92	55.27	55.32	55.56	55.72	56.02	56.04	56.28	56.52	---
26	54.32	54.59	54.93	55.29	55.32	55.57	55.77	56.02	56.02	56.29	56.51	---
27	54.33	54.62	54.95	55.30	55.33	55.57	55.75	56.00	56.01	56.25	56.51	---
28	54.40	54.65	54.99	55.30	55.33	55.56	55.73	55.97	55.98	56.23	56.50	---
29	54.42	54.65	55.01	55.21	---	55.56	55.68	55.97	55.98	56.24	56.50	---
30	54.41	54.64	55.01	55.21	---	55.54	55.67	55.83	55.99	56.25	56.53	---
31	54.42	---	54.99	55.21	---	55.44	---	55.89	---	56.25	56.58	---
MEAN	54.25	54.50	54.80	55.14	55.25	55.44	55.60	55.88	55.98	56.16	56.43	---

WTR YR 2002 MEAN 55.45 HIGHEST 54.09 OCT. 17, 2001 LOWEST 56.78 SEPT. 7, 2002



GROUND-WATER LEVELS

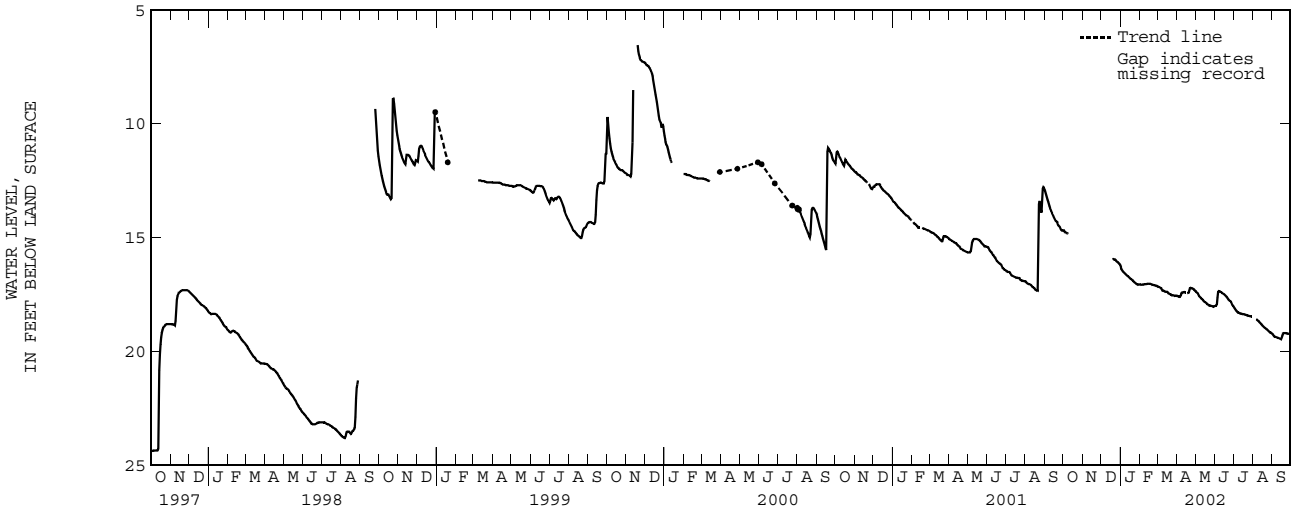
RIO HUMACAO TO QUEBRADA AGUAS VERDES BASINS--Continued

175947066130601. Local number, 1233.
LOCATION.--Lat 17°59'47", long 66°13'06", Hydrologic Unit 21010004, 2.70 mi northeast of Central Aguirre Church, 6.16 mi northwest of Guayama School, and 2.70 mi northeast of Hwy 3 km 151.3. Name: Piezometer Aguirre HW 5B, Salinas.
AQUIFER.--Fractured, volcanic rock, water-table aquifer.
WELL CHARACTERISTICS.--Drilled observation well, diameter 7 in (0.18 m), 0-52.0 ft (0-15.8 m), cased 4 in (0.10 m), 0-51.0 ft (0-15.5 m), screened 41.0-46.0 ft (12.5-14.0 m). Depth 52.0 ft (15.8 m).
INSTRUMENTATION.--Data collector platform--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 145 ft (44.2 m), above mean sea level. Measuring point: Hole on side of casing, 3.00 ft (0.91 m), above land-surface datum. Prior October 13, 1989 top of shelter floor, 3.47 ft (1.06 m), above land-surface datum.
REMARKS.--Recording observation well. Electronic Data Logger (EDL), installed on April 15, 1998, replaced by a Data Collector Platform (DCP), installed on August 3, 2000.
PERIOD OF RECORD.--April 13, 1988 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 5.55 ft (1.69 m), below land-surface datum, November 13, 1999; lowest water level recorded, 28.55 ft (8.70 m), below land-surface datum, August 14, 15, 1996.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.67	---	---	16.21	17.05	17.15	17.55	17.36	18.02	18.03	---	19.24
2	14.69	---	---	16.35	17.08	17.16	17.56	17.38	18.01	18.07	---	19.25
3	14.68	---	---	16.39	17.08	17.16	17.59	17.40	18.01	18.10	---	19.26
4	14.76	---	---	16.43	17.07	17.18	17.60	17.42	18.01	18.13	---	19.33
5	14.78	---	---	16.47	17.07	17.20	17.60	17.45	17.87	18.18	---	19.36
6	14.79	---	---	16.51	17.07	17.21	17.61	17.46	17.41	18.21	18.58	19.37
7	14.81	---	---	16.54	17.06	17.22	17.62	17.56	17.35	18.24	18.60	19.38
8	14.81	---	---	16.57	17.06	17.23	17.51	17.59	17.36	18.29	18.63	19.39
9	14.82	---	---	16.59	17.05	17.32	17.43	17.62	17.37	18.30	18.65	19.41
10	14.84	---	---	16.63	17.05	17.33	17.41	17.65	17.38	18.31	18.67	19.41
11	---	---	---	16.65	17.05	17.33	17.41	17.69	17.41	18.33	18.70	19.42
12	---	---	---	16.68	17.04	17.35	17.41	17.72	17.42	18.34	18.73	19.43
13	---	---	---	16.70	17.04	17.38	17.40	17.73	17.44	18.35	18.75	19.45
14	---	---	---	16.72	17.03	17.38	17.40	17.77	17.46	18.35	18.77	19.46
15	---	---	---	16.75	17.03	17.38	17.41	17.81	17.48	18.36	18.81	19.47
16	---	---	---	16.78	17.03	17.38	17.42	17.84	17.49	18.37	18.83	19.48
17	---	---	---	16.80	17.03	17.38	---	17.85	17.51	18.37	18.88	19.33
18	---	---	---	16.83	17.04	17.42	17.43	17.87	17.54	18.38	18.91	19.26
19	---	---	15.96	16.85	17.06	17.47	17.44	17.89	17.56	18.39	18.93	19.21
20	---	---	15.95	16.88	17.06	17.48	17.45	17.93	17.59	18.40	18.96	19.20
21	---	---	15.95	16.90	17.08	17.49	17.40	17.95	17.63	18.40	18.98	19.20
22	---	---	15.96	16.92	17.08	17.49	17.25	17.96	17.67	18.42	19.01	19.20
23	---	---	15.95	16.95	17.09	17.51	17.22	17.98	17.72	18.43	19.03	19.21
24	---	---	15.97	16.97	17.10	17.53	17.22	17.99	17.75	18.43	19.05	19.22
25	---	---	16.02	17.00	17.11	17.54	17.23	18.00	17.78	18.44	19.08	19.22
26	---	---	16.04	17.02	17.11	17.54	17.23	18.01	17.80	18.45	19.10	19.23
27	---	---	16.09	17.04	17.11	17.55	17.25	18.01	17.82	18.46	19.12	19.23
28	---	---	16.10	17.07	17.12	17.56	17.27	18.03	17.85	18.46	19.16	19.23
29	---	---	16.11	17.07	---	17.56	17.29	18.04	17.96	18.47	19.17	19.23
30	---	---	16.15	17.06	---	17.56	17.32	18.04	17.99	18.48	19.18	19.24
31	---	---	16.18	17.06	---	17.55	---	18.03	---	18.48	19.22	---
MEAN	---	---	---	16.75	17.07	17.39	---	17.78	17.66	18.34	---	19.31

WTR YR 2002 MEAN 17.65 HIGHEST 14.67 OCT. 1, 2001 LOWEST 19.49 SEPT. 15, 2002



GROUND-WATER LEVELS

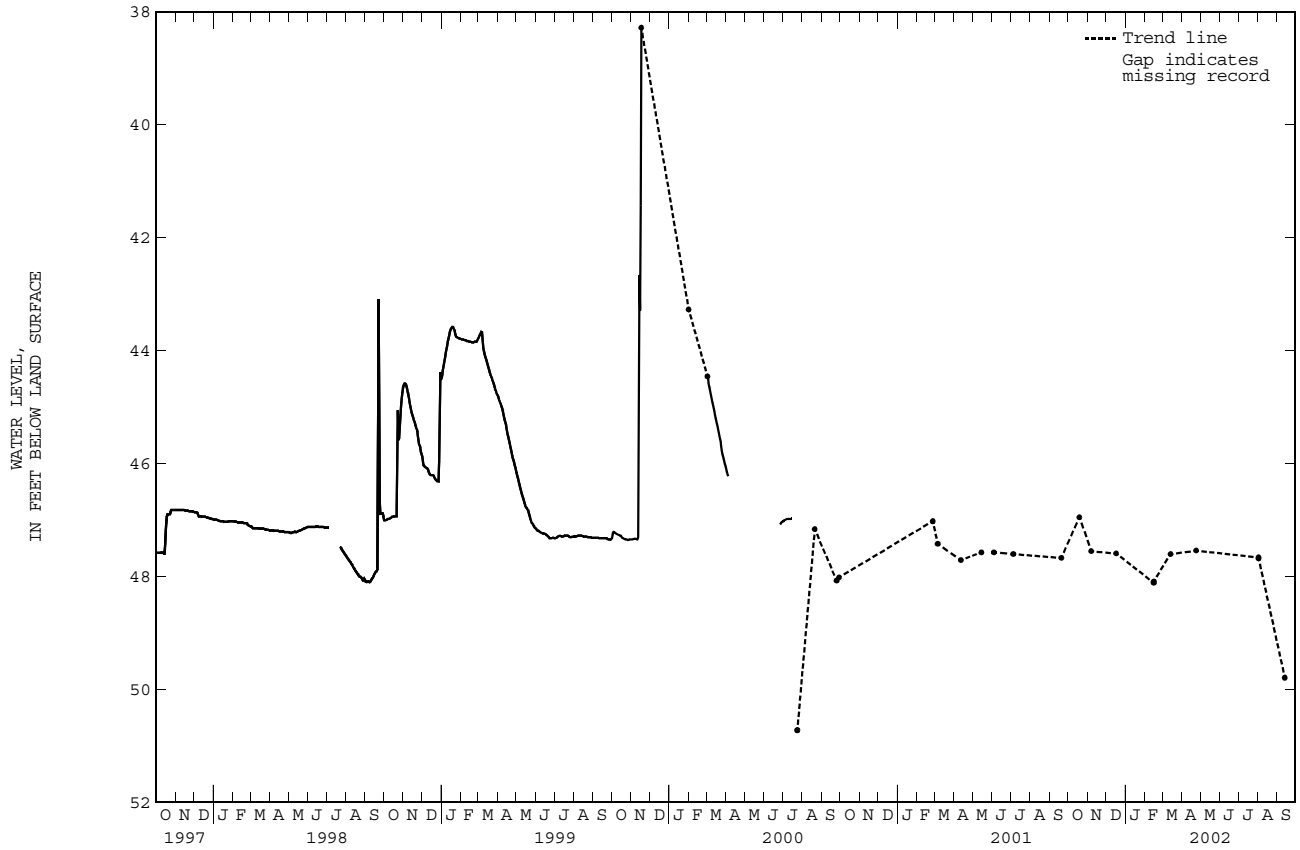
RIO HUMACAO TO QUEBRADA AGUAS VERDES BASINS--Continued

175957066123400. Local number, 1234.
LOCATION.--Lat 17°59'57", long 66°12'34", Hydrologic Unit 21010004, 3.11 northeast of Central Aguirre Church, 5.76 mi northwest of Guayama School, and 2.03 mi northeast of Hwy 3 km 151.3. Name: Piezometer Aguirre HW 13 Well.
AQUIFER.--Fractured, volcanic rock, water-table aquifer.
WELL CHARACTERISTICS.--Drilled observation well, diameter 7 in (0.18 m), 0-69.0 ft (0-21.0 m), cased 4 in (0.10 m), 0-69.0 ft (0-21.0 m), screened 4.00-69.0 ft (1.22-21.0 m). Depth 49.0 ft (14.93 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 203 ft (61.9 m), above mean sea level. Measuring point: Hole on side of casing, 2.33 ft (0.71 m), above land-surface datum. Prior October 14, 1988, top of shelter floor, 3.47 ft (1.06 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on July 22, 1998. For water years 2000, 2001 and 2002, tapedowns measurements only.
PERIOD OF RECORD.--April 14, 1988 to September 13, 2002, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 34.39 ft (10.5 m), below land-surface datum, October 27, 1990; lowest water level measured, 50.72 ft (15.46 m), below land-surface datum, July 24, 2000.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	46.95	FEB 15	48.11	MAR 14	47.60	AUG 02	47.66	SEP 13	49.79	SEP 13	48.36
NOV 07	47.55	15	48.09	APR 24	47.54	02	47.68	13	50.56	13	48.87
DEC 18	47.59										

WATER YEAR 2002 HIGHEST 46.95 OCT. 19, 2001 LOWEST 50.56 SEPT. 13, 2002



GROUND-WATER LEVELS

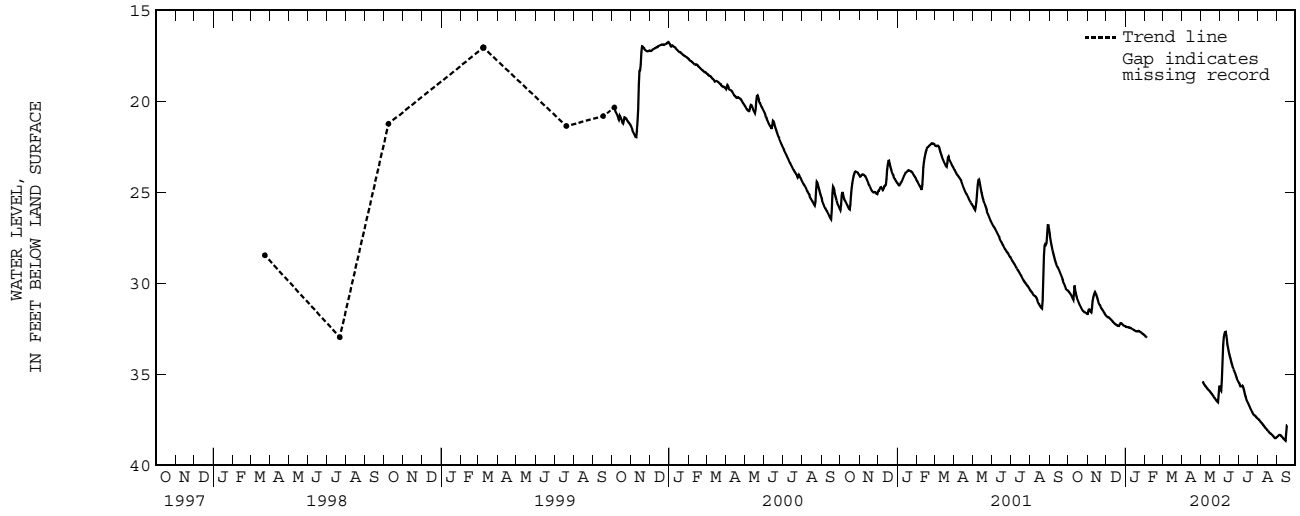
RIO HUMACAO TO QUEBRADA AGUAS VERDES BASINS--Continued

175841066104500. Local number, 1238.
LOCATION.--Lat 17°58'41", long 66°10'45", Hydrologic Unit 21010004, on east side of Hwy 713, 1.00 mi south of Hwy 53, and 0.70 mi north of Hwy 3. Name: PRASA Villodas.
AQUIFER.--Fractured rock.
WELL CHARACTERISTICS.--Abandoned production well, diameter 12 in (0.30 m), 0-20.0 ft (0-6.10 m), diameter 10 in (0.25 m), 20.0-97.0 ft (6.10-29.6 m), and diameter 8 in (0.20 m), 97.0-143 ft (29.6-43.6 m), open screened >20.0 ft (>6.10 m). Depth 132 ft (40.23 m).
INSTRUMENTATION.--Pressure transducer with integrated electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 82.0 ft (25.0 m), above mean sea level, from topographic map. Measuring point: Hole in steel plate over well, 2.24 ft (0.68 m), above land-surface datum.
REMARKS.--Recording observation well. Electronic Data Logger (EDL), installed on October 4, 1999.
PERIOD OF RECORD.--March 24, 1998 to September 18, 2002, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 16.68 ft (5.08 m), below land-surface datum, December 31, 1999; lowest water level measured, 38.67 ft (11.79 m), below land-surface datum, September 15, 2002.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30.40	31.70	31.76	32.36	32.86	---	---	---	35.58	35.41	37.44	38.44
2	30.43	31.68	31.81	32.37	32.90	---	---	---	35.77	35.47	37.47	38.40
3	30.48	31.49	31.85	32.39	32.94	---	---	---	35.92	35.53	37.49	38.40
4	30.53	31.41	31.86	32.40	32.96	---	---	35.40	35.90	35.64	37.53	38.34
5	30.59	31.46	31.86	32.41	33.00	---	---	35.41	34.71	35.67	37.58	38.31
6	30.64	31.52	31.88	32.42	---	---	---	35.45	33.72	35.66	37.63	38.35
7	30.70	31.58	31.93	32.42	---	---	---	35.52	33.14	35.65	37.66	38.36
8	30.78	31.61	31.96	32.44	---	---	---	35.58	32.79	35.61	37.71	38.38
9	30.85	31.14	31.99	32.45	---	---	---	35.62	32.79	35.73	37.75	38.45
10	30.92	30.82	32.03	32.46	---	---	---	35.67	32.59	35.86	37.80	38.46
11	30.06	30.74	32.07	32.50	---	---	---	35.72	32.73	36.02	37.84	38.52
12	30.17	30.60	32.11	32.53	---	---	---	35.76	33.00	36.17	37.88	38.57
13	30.41	30.47	32.14	32.54	---	---	---	35.81	33.23	36.27	37.92	38.60
14	30.58	30.48	32.18	32.56	---	---	---	35.86	33.43	36.37	37.96	38.64
15	30.73	30.59	32.21	32.58	---	---	---	35.89	33.61	36.46	38.00	38.66
16	30.84	30.72	32.25	32.60	---	---	---	35.92	33.79	36.53	38.04	37.86
17	30.92	30.83	32.27	32.63	---	---	---	35.97	33.97	36.61	38.08	37.77
18	31.01	30.96	32.30	32.64	---	---	---	36.03	34.09	36.69	38.12	37.89
19	31.09	31.05	32.32	32.64	---	---	---	36.06	34.21	36.77	38.17	---
20	31.18	31.14	32.33	32.62	---	---	---	36.11	34.38	36.85	38.21	---
21	31.25	31.20	32.34	32.67	---	---	---	36.15	34.48	36.92	38.26	---
22	31.32	31.26	32.35	32.61	---	---	---	36.22	34.59	36.99	38.27	---
23	31.39	31.31	32.29	32.61	---	---	---	36.25	34.66	37.06	38.30	---
24	31.45	31.37	32.21	32.66	---	---	---	36.29	34.78	37.11	38.34	---
25	31.51	31.43	32.18	32.67	---	---	---	36.34	34.86	37.17	38.37	---
26	31.54	31.48	32.21	32.70	---	---	---	36.39	34.94	37.23	38.41	---
27	31.58	31.53	32.24	32.72	---	---	---	36.43	35.08	37.26	38.43	---
28	31.60	31.60	32.28	32.75	---	---	---	36.46	35.19	37.29	38.50	---
29	31.62	31.65	32.32	32.78	---	---	---	36.53	35.27	37.31	38.51	---
30	31.64	31.73	32.34	32.81	---	---	---	36.53	35.34	37.35	38.49	---
31	31.66	---	32.36	32.84	---	---	---	35.78	---	37.40	38.47	---
MEAN	30.96	31.22	32.14	32.57	---	---	---	---	34.28	36.45	38.02	---

WTR YR 2002 MEAN 34.22 HIGHEST 30.01 OCT. 11, 2001 LOWEST 38.67 SEPT. 15, 2002



GROUND-WATER LEVELS

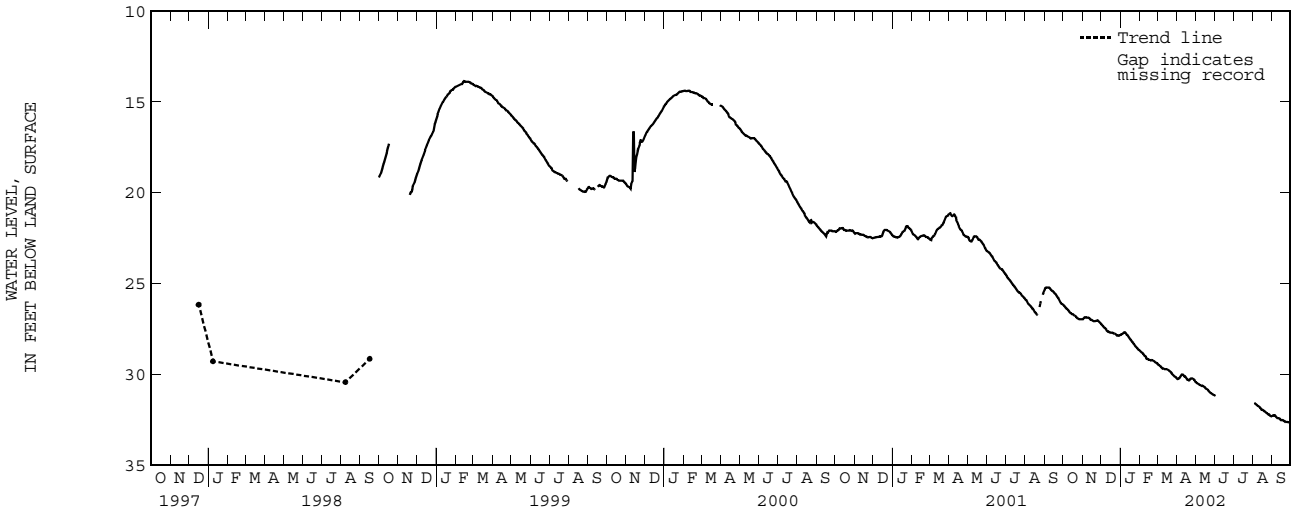
RIO HUMACAO TO QUEBRADA AGUAS VERDES BASINS--Continued

175814066102200. Local number, 1239.
LOCATION.--Lat 17°58'14", long 66°10'22", Hydrologic Unit 21010004, 1.00 mi northwest of Jobos community, 3.80 mi east of Colegio del Perpetuo Socorro, and 3.50 mi northeast of Central Aguirre. Name: Jobos Well, Guayama.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 11 in (0.24 m). Depth 63 ft (19.2 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 59.0 ft (18.0 m), above mean sea level, from topographic map. Measuring point: On shelter floor, 2.86 ft (0.87 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), installed on April 2, 1997, replaced by an Electronic Data Logger (EDL), installed on September 27, 1999, removed on September 30, 2002.
PERIOD OF RECORD.--April 2, 1997 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 6.14 ft (1.87 m), below land-surface datum, October 18, 1998; lowest water level measured, 32.63 ft (9.94 m), below land-surface datum, September 30, 2002.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.14	26.96	27.21	27.81	28.68	29.38	30.17	30.38	31.14	---	---	32.26
2	26.17	26.95	27.23	27.78	28.72	29.43	30.23	30.44	31.13	---	---	32.26
3	26.21	26.93	27.30	27.78	28.75	29.46	30.25	30.44	31.10	---	31.56	32.25
4	26.25	26.88	27.32	27.76	28.78	29.46	30.24	30.47	---	---	31.56	32.24
5	26.30	26.85	27.36	27.75	28.81	29.50	30.22	30.49	---	---	31.60	32.23
6	26.35	26.85	27.41	27.71	28.84	29.55	30.19	30.51	---	---	31.64	32.22
7	26.38	26.85	27.43	27.67	28.88	29.56	30.13	30.53	---	---	31.66	32.30
8	26.41	26.86	27.46	27.66	28.92	29.59	30.08	30.54	---	---	31.68	32.33
9	26.44	26.87	27.50	27.69	28.98	29.65	30.01	30.60	---	---	31.72	32.39
10	26.47	26.87	27.57	27.72	29.00	29.67	29.99	30.60	---	---	31.75	32.38
11	26.54	26.87	27.62	27.80	29.03	29.67	30.00	30.64	---	---	31.75	32.39
12	26.57	26.88	27.63	27.82	29.12	29.70	30.04	30.62	---	---	31.79	32.41
13	26.61	26.92	27.63	27.85	29.13	29.71	30.07	30.62	---	---	31.80	32.42
14	26.61	26.98	27.64	27.91	29.13	29.69	30.08	30.64	---	---	31.85	32.43
15	26.66	26.99	27.69	27.98	29.18	29.69	30.08	30.69	---	---	31.92	32.51
16	26.67	27.00	27.69	28.01	29.19	29.71	30.15	30.69	---	---	31.93	32.50
17	26.67	27.02	27.69	28.07	29.20	29.73	30.19	30.72	---	---	31.93	32.49
18	26.70	27.06	27.69	28.10	29.21	29.74	30.26	30.77	---	---	31.97	32.50
19	26.73	27.06	27.68	28.17	29.22	29.75	30.28	30.79	---	---	31.99	32.54
20	26.77	27.06	27.71	28.20	29.21	29.78	30.29	30.81	---	---	32.03	32.54
21	26.78	27.05	27.74	28.24	29.21	29.82	30.32	30.84	---	---	32.03	32.55
22	26.80	27.06	27.74	28.29	29.23	29.84	30.31	30.89	---	---	32.07	32.59
23	26.85	27.04	27.76	28.31	29.26	29.87	30.23	30.92	---	---	32.11	32.60
24	26.92	27.04	27.77	28.35	29.26	29.91	30.22	30.94	---	---	32.14	32.59
25	26.92	27.03	27.79	28.44	29.29	29.96	30.21	30.97	---	---	32.16	32.60
26	26.94	27.03	27.84	28.46	29.32	30.01	30.20	31.04	---	---	32.18	32.60
27	26.95	27.04	27.85	28.51	29.36	30.02	30.24	31.04	---	---	32.19	32.62
28	26.95	27.10	27.85	28.53	29.36	30.07	30.26	31.05	---	---	32.21	32.61
29	26.96	27.12	27.86	28.58	---	30.10	30.26	31.10	---	---	32.27	32.61
30	26.96	27.16	27.86	28.62	---	30.12	30.32	31.11	---	---	32.30	32.60
31	26.96	---	27.84	28.65	---	30.15	---	31.14	---	---	32.30	---
MEAN	26.63	26.98	27.62	28.07	29.08	29.75	30.18	30.74	---	---	---	32.45

WTR YR 2002 MEAN 29.34 HIGHEST 26.14 OCT. 1, 2001 LOWEST 32.63 SEPT. 30, 2002



GROUND-WATER LEVELS

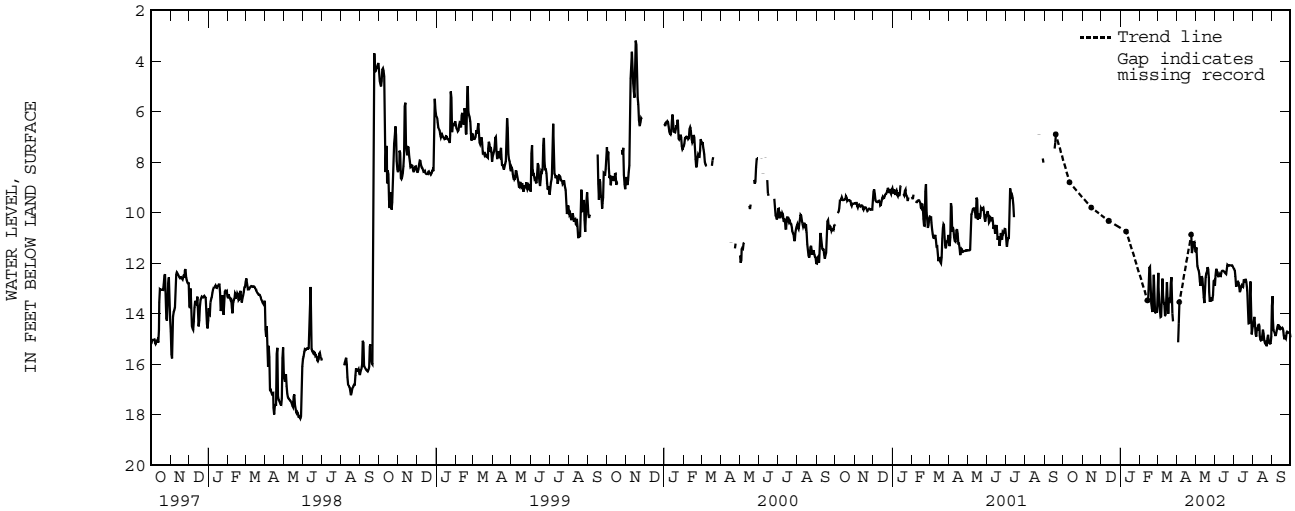
RIO SALINAS TO RIO JACAGUAS BASINS

175809066133100. Local number, 1251.
LOCATION.--Lat 17°58'09", long 66°13'31", Hydrologic Unit 21010004, 0.49 mi southwest of the intersection of Hwy 706 with Hwy 3, 0.30 mi south of Hwy 3, and 0.12 mi east of Hwy 705. Name: Coqui Battery 1 Well, Salinas.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 18 in (0.46 m). Depth 199 ft (60.7 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is 16.4 ft (5.00 m), above mean sea level, from topographic map. Measuring point: Hole in the side of the 18 in (0.46 m) casing, 1.33 ft (0.41 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), installed on March 6, 1997. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on September 27, 1999. Well is affected by nearby pumping. From October 1 2001 to February 12, 2002, tapedowns measurements only.
PERIOD OF RECORD.--March 6, 1997 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 1.04 ft (0.32 m), below land-surface datum, November 10, 1999; lowest water level recorded, 18.64 ft (5.68 m), below land-surface datum, May 29, 1998.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	13.90	---	11.69	12.86	12.19	14.52	12.73
2	---	---	---	---	---	12.46	---	11.44	12.92	12.24	14.52	13.89
3	---	---	---	---	---	12.31	15.23	11.32	12.04	12.25	14.16	14.56
4	---	---	---	---	---	13.74	15.05	12.05	12.40	12.31	14.09	14.74
5	---	---	---	---	---	13.48	13.71	12.18	12.25	12.78	14.66	14.65
6	---	---	---	---	---	14.20	13.37	12.24	12.46	13.00	14.94	14.86
7	---	---	---	---	---	14.06	---	12.29	12.56	12.80	14.88	14.92
8	---	---	---	---	---	14.13	---	12.57	12.47	12.72	14.36	14.71
9	---	---	---	---	---	12.66	---	12.90	12.41	12.74	14.78	14.62
10	---	---	---	---	---	12.58	---	12.90	12.59	12.79	14.56	14.46
11	---	---	---	---	---	14.05	---	12.57	12.44	13.13	14.24	14.46
12	---	---	---	---	---	13.06	---	12.46	12.31	13.18	14.76	14.45
13	---	---	---	---	13.44	14.23	---	12.80	12.32	12.95	14.98	14.76
14	---	---	---	---	13.52	13.98	---	13.13	12.29	12.91	15.07	14.49
15	---	---	---	---	13.58	14.08	---	13.56	12.30	12.83	15.06	14.63
16	---	---	---	---	12.33	12.63	---	13.60	12.33	12.98	15.04	14.57
17	---	---	---	---	12.07	12.89	---	12.65	12.35	12.88	14.68	14.59
18	---	---	---	---	12.25	13.92	---	12.46	12.37	12.48	14.59	14.53
19	---	---	---	---	13.50	14.09	---	12.35	12.43	12.89	14.97	14.70
20	---	---	---	---	13.68	12.94	---	12.35	12.43	12.62	15.12	15.00
21	---	---	---	---	13.90	13.93	---	11.96	12.05	12.61	15.17	15.03
22	---	---	---	---	13.98	13.03	---	12.55	12.07	12.88	15.09	14.70
23	---	---	---	---	12.57	12.59	---	12.60	12.10	13.02	15.33	15.12
24	---	---	---	---	12.36	12.53	---	13.71	12.09	13.19	15.25	14.81
25	---	---	---	---	13.91	13.72	11.36	13.35	12.07	14.31	14.70	14.70
26	---	---	---	---	14.07	14.25	11.84	13.35	12.09	14.48	14.97	14.74
27	---	---	---	---	13.80	14.36	11.04	13.62	12.08	14.28	15.16	14.76
28	---	---	---	---	14.01	---	11.22	13.33	12.08	12.30	15.18	14.75
29	---	---	---	---	---	---	11.18	13.60	12.09	13.16	15.19	14.78
30	---	---	---	---	---	---	11.16	12.90	12.11	15.01	15.17	14.71
31	---	---	---	---	---	---	---	12.51	---	14.63	14.66	---
MEAN	---	---	---	---	---	---	---	12.68	12.31	13.05	14.83	14.61

WTR YR 2002 MEAN 13.43 HIGHEST 9.76 APR. 27, 2002 LOWEST 16.01 APR. 3, 2002



GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS--Continued

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 11	8.80	DEC 13	10.33	FEB 13	11.89	APR 24	10.87	SEP 18	14.68	SEP 18	14.67
NOV 15	9.80	JAN 10	10.75	MAR 13	14.85	AUG 06	15.28				

WATER YEAR 2002 HIGHEST 8.80 OCT. 11, 2001 LOWEST 15.28 AUG. 06, 2002

GROUND-WATER LEVELS

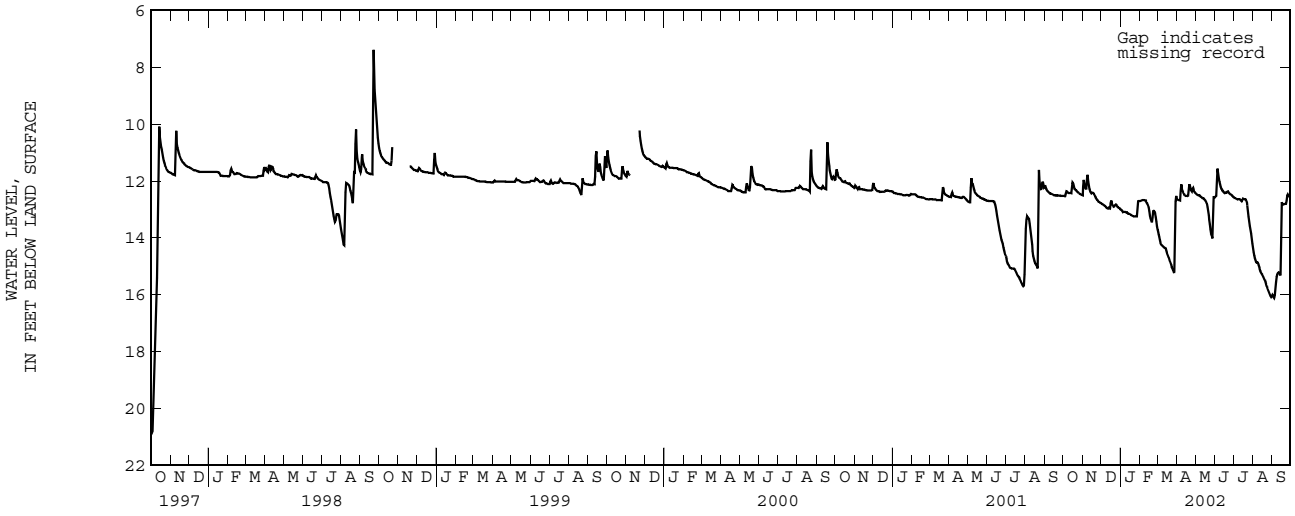
RIO SALINAS TO RIO JACAGUAS BASINS--Continued

180206066135500. Local number, 1252.
LOCATION.--Lat 18°02'06", long 66°13'55", Hydrologic Unit 21010004, 6.98 mi southwest of Cayey plaza, 0.63 mi east of Hwy 1 km 82.3 on Rabo del Buey, and 1.75 mi southeast of Capilla de Santa Marta. Name: Piezometer RM 5, Salinas.
AQUIFER.--Quaternary alluvium.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m), 0-34.0 ft (0-10.4 m), screened 24.0-34.0 ft (7.32-10.7 m). Depth 34.0 ft (10.4 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 276 ft (84.2 m), above mean sea level. Measuring point: Top of shelter floor, 3.28 ft (1.00 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on June 3, 1998.
PERIOD OF RECORD.--March 9, 1989 to September 30, 2002, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 5.56 ft (1.69 m), below land-surface datum, September 10, 1996; lowest water level recorded, 24.24 ft (7.39 m), below land-surface datum, September 20, 1994.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.52	12.51	12.79	12.99	12.70	13.68	12.63	12.42	12.57	12.57	14.29	16.00
2	12.52	12.52	12.80	13.01	12.70	13.76	12.65	12.44	12.58	12.58	14.43	16.00
3	12.53	11.88	12.81	13.02	12.70	13.84	12.66	12.46	12.51	12.59	14.58	16.05
4	12.53	12.04	12.83	13.03	12.68	13.91	12.67	12.48	12.53	12.61	14.68	16.11
5	12.53	12.18	12.84	13.09	12.67	14.01	12.67	12.49	11.48	12.62	14.77	16.12
6	12.36	12.26	12.86	13.09	12.67	14.14	12.69	12.50	11.64	12.63	14.83	15.93
7	12.37	12.27	12.87	13.08	12.67	14.22	12.69	12.50	11.81	12.64	14.89	15.65
8	12.38	12.25	12.89	13.08	12.67	14.24	11.99	12.51	11.98	12.65	14.87	15.44
9	12.43	11.61	12.91	13.09	12.68	14.26	12.25	12.52	12.06	12.63	14.86	15.30
10	12.42	11.95	12.94	13.09	12.68	14.29	12.30	12.57	12.17	12.63	14.94	15.26
11	12.42	12.08	12.97	13.10	12.68	14.31	12.37	12.56	12.25	12.64	15.01	15.22
12	12.42	12.23	12.98	13.10	12.76	14.34	12.43	12.59	12.29	12.65	15.07	15.21
13	12.42	12.33	12.93	13.15	12.77	14.36	12.46	12.60	12.31	12.66	15.15	15.24
14	12.43	12.37	12.94	13.15	12.82	14.35	12.50	12.60	12.35	12.72	15.20	15.29
15	12.43	12.42	12.97	13.16	12.88	14.39	12.51	12.63	12.37	12.71	15.23	15.37
16	12.05	12.45	12.97	13.17	12.97	14.50	12.53	12.66	12.39	12.62	15.28	12.69
17	12.05	12.36	12.62	13.18	13.16	14.56	12.52	12.68	12.43	12.63	15.31	12.80
18	12.11	12.45	12.75	13.20	13.31	14.61	12.53	12.71	12.43	12.63	15.36	12.82
19	12.25	12.42	12.80	13.21	13.34	14.66	12.53	12.76	12.40	12.64	15.41	12.82
20	12.29	12.47	12.84	13.23	13.43	14.74	12.52	12.83	12.40	12.64	15.46	12.82
21	12.31	12.51	12.89	13.24	13.49	14.80	12.09	12.99	12.42	12.66	15.50	12.81
22	12.32	12.56	12.92	13.24	13.09	14.87	12.14	13.14	12.34	12.69	15.60	12.80
23	12.35	12.60	12.87	13.24	13.04	14.93	12.23	13.28	12.38	12.77	15.67	12.80
24	12.38	12.62	12.82	13.24	13.05	15.00	12.31	13.43	12.42	12.95	15.73	12.80
25	12.39	12.66	12.82	13.24	13.09	15.06	12.36	13.60	12.45	13.16	15.79	12.57
26	12.42	12.68	12.85	13.24	13.20	15.08	12.37	13.81	12.46	13.34	15.85	12.45
27	12.43	12.73	12.90	13.24	13.32	15.16	12.19	13.88	12.49	13.50	15.90	12.49
28	12.45	12.74	12.92	13.25	13.53	15.21	12.31	13.94	12.49	13.65	15.96	12.53
29	12.47	12.75	12.94	12.72	---	15.25	12.36	14.09	12.51	13.76	16.02	12.55
30	12.48	12.77	12.95	12.71	---	13.01	12.40	12.57	12.54	13.92	16.07	12.55
31	12.49	---	12.96	12.70	---	12.41	---	12.56	---	14.10	16.10	---
MEAN	12.39	12.39	12.88	13.11	12.96	14.39	12.43	12.86	12.31	12.88	15.28	14.15

WTR YR 2002 MEAN 13.17 HIGHEST 11.40 NOV. 9, 2001 LOWEST 16.12 SEPT. 4, 2002



GROUND-WATER LEVELS

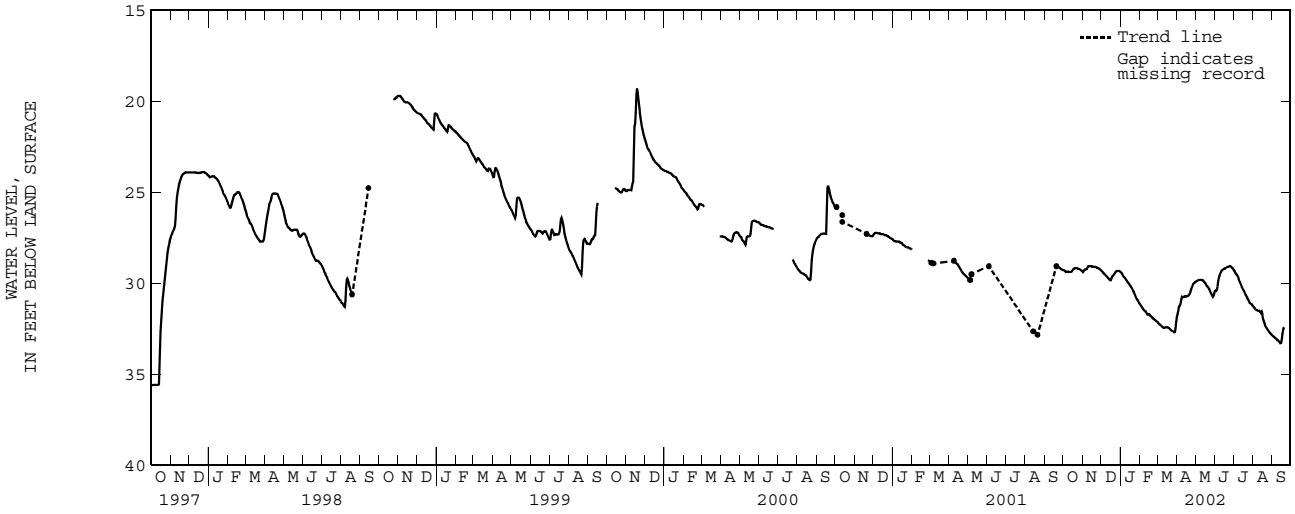
RIO SALINAS TO RIO JACAGUAS BASINS--Continued

180104066152300. Local number, 1253.
LOCATION.--Lat 18°01'04", long 66°15'23", Hydrologic Unit 21010004, 8.00 mi southeast of Coamo plaza, 1.07 mi northeast of Coco School, and 0.70 mi southwest of Sabana Llana School. Name: Piezometer RM 10, Salinas.
AQUIFER.--Quaternary alluvium.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m), 0-37.0 ft (0-11.3 m), screened 27.0-37.0 ft (8.23-11.3 m). Depth 37.0 ft (11.3 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 164 ft (50.0 m), above mean sea level, from leveling survey. Measuring point: Top of shelter floor, 3.62 ft (1.10 m), above land-surface datum.
REMARKS.--Recording observation well. Pumping test performed on February 8, 1990. Well dry at 35.77 ft (10.9 m). Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on February 11, 1998, removed on September 20, 2002, .
PERIOD OF RECORD.--March 13, 1989 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 18.00 ft (5.49 m), below land-surface datum, November 9, 1990; lowest water level recorded, well dry from September 14 to October 5, 1994

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29.28	29.38	29.29	29.39	31.14	32.14	31.98	29.94	30.47	29.25	31.25	32.87
2	29.29	29.40	29.34	29.41	31.20	32.17	31.76	29.92	30.42	29.30	31.29	32.90
3	29.30	29.41	29.38	29.44	31.24	32.20	31.68	29.89	30.44	29.35	31.33	32.92
4	29.32	29.31	29.41	29.49	31.29	32.24	31.47	29.88	30.45	29.41	31.37	32.96
5	29.39	29.25	29.45	29.55	31.34	32.27	31.26	29.87	30.35	29.47	31.42	32.98
6	29.39	29.25	29.49	29.63	31.40	32.30	31.24	29.85	30.05	29.52	31.47	33.01
7	29.38	29.25	29.54	29.68	31.45	32.33	31.20	29.83	29.80	29.57	31.50	33.04
8	29.37	29.25	29.57	29.71	31.50	32.37	31.03	29.82	29.67	29.57	31.51	33.08
9	29.38	29.20	29.59	29.75	31.54	32.40	30.74	29.82	29.55	29.71	31.52	33.10
10	29.38	29.11	29.63	29.80	31.55	32.43	30.77	29.82	29.48	29.79	31.52	33.15
11	29.38	29.08	29.66	29.84	31.57	32.46	30.78	29.82	29.39	29.89	31.52	33.18
12	29.38	29.08	29.70	29.91	31.61	32.46	30.77	29.83	29.34	29.97	31.54	33.21
13	29.38	29.08	29.75	29.96	31.71	32.46	30.75	29.84	29.31	30.04	31.56	33.24
14	29.38	29.08	29.77	30.02	31.74	32.44	30.74	29.89	29.27	30.15	31.63	33.29
15	29.38	29.08	29.82	30.04	31.71	32.43	30.73	29.92	29.26	30.24	31.64	33.32
16	29.37	29.09	29.86	30.10	31.71	32.43	30.73	29.98	29.23	30.30	31.54	33.27
17	29.28	29.10	29.88	30.15	31.76	32.44	30.74	30.01	29.21	30.38	31.90	32.91
18	29.22	29.10	29.72	30.20	31.78	32.44	30.74	30.04	29.20	30.43	32.03	32.65
19	29.19	29.10	29.64	30.26	31.84	32.47	30.72	30.14	29.17	30.49	32.11	32.48
20	29.19	29.10	29.59	30.32	31.86	32.50	30.70	30.19	29.15	30.61	32.22	32.45
21	29.19	29.10	29.56	30.39	31.88	32.52	30.65	30.22	29.12	30.67	32.32	---
22	29.17	29.11	29.52	30.47	31.93	32.56	30.64	30.26	29.12	30.70	32.40	---
23	29.18	29.13	29.49	30.51	31.97	32.60	30.52	30.31	29.11	30.81	32.46	---
24	29.20	29.14	29.44	30.57	32.00	32.62	30.37	30.36	29.09	30.85	32.52	---
25	29.21	29.16	29.37	30.68	32.03	32.63	30.29	30.41	29.08	30.91	32.56	---
26	29.23	29.18	29.33	30.75	32.05	32.65	30.22	30.54	29.08	30.96	32.61	---
27	29.24	29.18	29.33	30.83	32.07	32.67	30.12	30.59	29.09	31.07	32.68	---
28	29.26	29.22	29.33	30.93	32.11	32.70	30.03	30.65	29.11	31.11	32.71	---
29	29.28	29.24	29.34	30.92	---	32.74	30.00	30.74	29.16	31.14	32.77	---
30	29.30	29.27	29.34	31.01	---	32.65	29.97	30.77	29.20	31.15	32.81	---
31	29.34	---	29.36	31.08	---	32.30	---	30.63	---	31.17	32.84	---
MEAN	29.30	29.18	29.53	30.15	31.68	32.45	30.78	30.12	29.48	30.26	31.95	---

WTR YR 2002 MEAN 30.58 HIGHEST 29.07 NOV. 12, 2001 LOWEST 33.34 SEPT. 15, 16, 2002



GROUND-WATER LEVELS

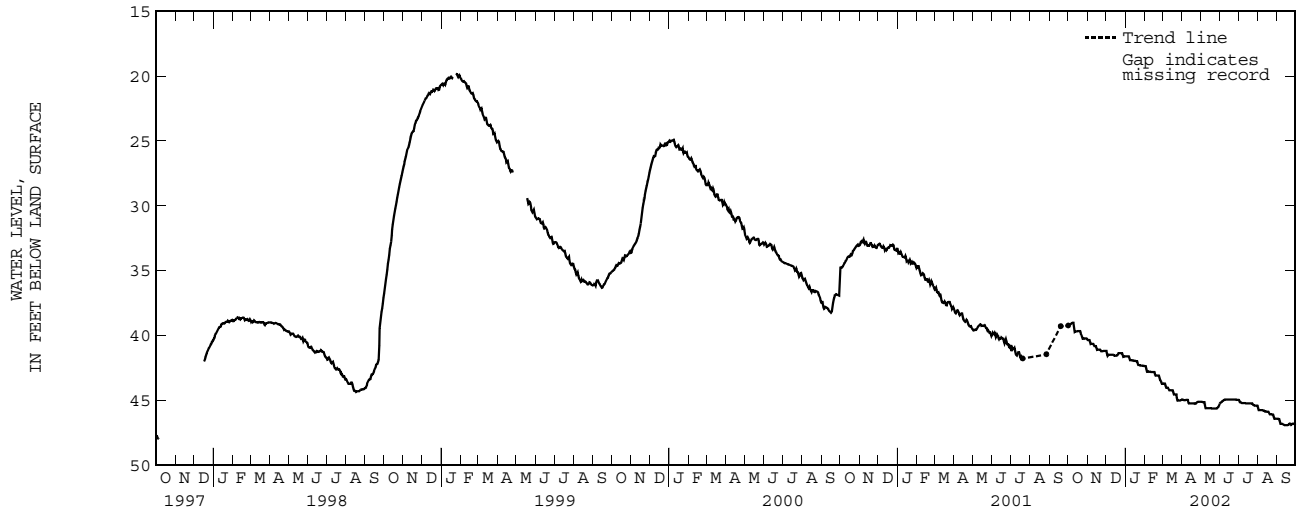
RIO SALINAS TO RIO JACAGUAS BASINS--Continued

175910066155500. Local number, 1254.
LOCATION.--Lat 17°59'10", long 66°15'55", Hydrologic Unit 21010004, 0.55 mi south of Hwy 52, 0.92 mi north of the Salinas Speedway, and 2.27 mi northeast of the intersection of Hwy 1 with Hwy 3. Name: Piezometer USGS D, Salinas.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), 0-86.0 ft (0-26.2 m). Depth 86.0 ft (26.2 m).
INSTRUMENTATION.--Pressure transducer with integrated electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 73.0 ft (22.3 m), above mean sea level, from topographic map. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 3.40 ft (1.04 m), above land-surface datum.
REMARKS.--recording observation well. Automated Digital Recorder (ADR), installed on February 19, 1997. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on August 17, 1999.
PERIOD OF RECORD.--February 19, 1997 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 19.70 ft (6.00 m), below land-surface datum, January 24, 25, 1999; lowest water level recorded, 47.98 ft (14.6 m) below land-surface datum, October 7, 1997.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39.22	40.34	41.17	41.60	42.34	43.70	44.91	45.09	45.31	44.93	45.38	46.40
2	39.22	40.34	41.16	41.60	42.35	43.70	44.92	45.09	45.17	44.93	45.72	46.40
3	39.22	40.33	41.64	41.59	42.36	43.70	44.92	45.09	45.14	45.12	45.72	46.41
4	39.14	40.33	41.48	41.60	42.80	43.69	44.96	45.10	45.15	45.12	45.73	46.41
5	39.14	40.32	41.48	41.60	42.75	43.69	44.96	45.10	45.05	45.12	45.74	46.41
6	39.08	40.65	41.47	41.60	42.76	43.68	44.96	45.10	45.05	45.19	45.74	46.79
7	39.04	40.64	41.47	41.60	42.77	44.01	44.96	45.10	44.99	45.19	45.74	46.79
8	39.00	40.64	41.47	41.88	42.76	44.00	44.95	45.10	44.94	45.19	45.74	46.79
9	39.00	40.63	41.47	41.88	42.77	44.00	44.95	45.57	44.92	45.19	45.75	46.78
10	39.00	40.63	41.47	41.89	42.78	44.00	44.95	45.58	44.91	45.19	45.76	46.77
11	39.69	40.62	41.46	41.90	42.79	43.99	44.95	45.58	44.91	45.19	45.77	46.87
12	39.68	40.81	41.46	41.91	42.79	44.21	45.21	45.59	44.91	45.20	45.83	46.87
13	39.68	40.81	41.46	41.91	42.80	44.20	45.22	45.59	44.91	45.20	45.83	46.88
14	39.67	40.80	41.54	41.92	42.80	44.20	45.22	45.59	44.91	45.20	45.84	46.88
15	39.67	40.80	41.54	41.93	42.79	44.19	45.22	45.59	44.91	45.20	45.84	46.88
16	39.66	41.09	41.54	41.94	42.79	44.19	45.22	45.59	44.91	45.20	45.85	46.89
17	39.66	41.09	41.54	41.95	42.78	44.19	45.22	45.59	44.91	45.20	45.85	46.89
18	39.65	41.07	41.53	41.95	43.09	44.20	45.22	45.59	44.91	45.20	45.85	46.90
19	39.65	41.08	41.53	41.96	43.07	44.51	45.22	45.60	44.92	45.20	45.86	46.88
20	39.64	41.08	41.48	41.97	43.08	44.51	45.22	45.60	44.92	45.21	46.04	46.82
21	39.63	41.08	41.36	42.27	43.08	44.51	45.22	45.60	44.92	45.21	46.04	46.76
22	39.93	41.07	41.34	42.26	43.07	44.51	45.23	45.60	44.92	45.21	46.05	46.75
23	39.92	41.19	41.35	42.27	43.07	44.51	45.23	45.60	44.92	45.21	46.06	46.86
24	40.24	41.19	41.34	42.28	43.06	44.52	45.23	45.60	44.92	45.21	46.07	46.84
25	40.23	41.19	41.34	42.30	43.41	45.00	45.14	45.60	44.92	45.37	46.07	46.80
26	40.23	41.19	41.34	42.29	43.41	45.00	45.11	45.59	44.92	45.37	46.07	46.76
27	40.22	41.18	41.34	42.30	43.50	45.00	45.10	45.60	44.93	45.38	46.40	46.85
28	40.22	41.17	41.64	42.31	43.71	45.00	45.09	45.60	44.93	45.38	46.39	46.74
29	40.21	41.17	41.64	42.32	---	45.00	45.09	45.52	44.93	45.38	46.39	46.77
30	40.21	41.17	41.60	42.32	---	45.00	45.09	45.51	44.93	45.38	46.39	46.87
31	40.20	---	41.60	42.33	---	45.00	---	45.39	---	45.38	46.39	---
MEAN	39.64	40.86	41.46	41.98	42.91	44.31	45.10	45.45	44.97	45.21	45.93	46.76

WTR YR 2002 MEAN 43.71 HIGHEST 39.00 OCT. 8, 2001 LOWEST 46.90 SEPT. 18, 2002



GROUND-WATER LEVELS

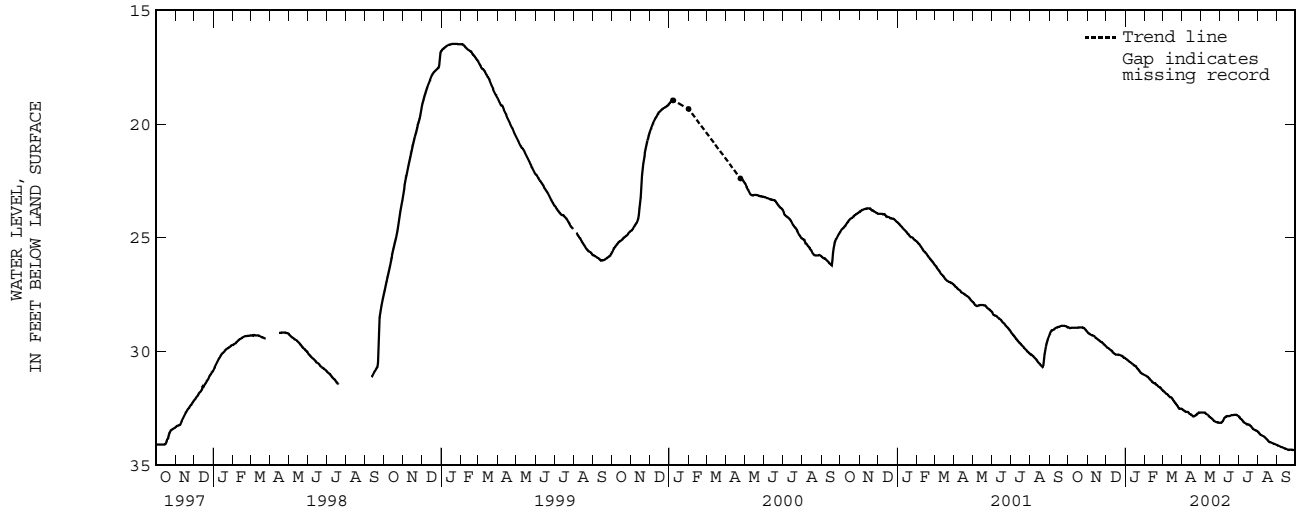
RIO SALINAS TO RIO JACAGUAS BASINS--Continued

175903066165000. Local number, 1256.
LOCATION.--Lat 17°59'03", long. 66°16'50", Hydrologic Unit 21010004, 0.42 mi north of Hwy 3, 0.60 mi southeast of the intersection of Hwy 1 with Hwy 52, and 1.56 mi northeast of Punta Salinas. Name: Godreau 7 Well.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 20 in (0.51 m), cased 20 in (0.51 m) 0-120 ft (0-36.6 m), perforated 30.0-120 ft (9.10-36.6 m). Depth 120 ft (36.6 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 54.0 ft (16.5 m), above mean sea level, from topographic map. Measuring point: Shelter floor on top of 20 in (0.50 m) casing, 3.63 ft (1.11 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on June 3, 1998.
PERIOD OF RECORD.--September 25, 1991 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 16.46 ft (5.02 m), below land-surface datum, January 27, 28, 1999; lowest water level recorded, 34.87 ft (10.6 m), below land-surface datum, September 3, 1996.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28.94	29.14	29.76	30.31	31.04	31.69	32.52	32.68	33.13	32.84	33.51	34.12
2	28.94	29.16	29.79	30.32	31.06	31.72	32.54	32.68	33.13	32.86	33.54	34.13
3	28.96	29.19	29.82	30.34	31.07	31.74	32.56	32.68	33.13	32.90	33.58	34.14
4	28.96	29.21	29.85	30.36	31.07	31.76	32.59	32.68	33.12	32.93	33.61	34.16
5	28.96	29.24	29.85	30.39	31.11	31.78	32.59	32.68	33.10	32.97	33.65	34.17
6	28.96	29.25	29.88	30.42	31.12	31.80	32.63	32.68	33.05	32.98	33.67	34.18
7	28.95	29.28	29.91	30.42	31.15	31.84	32.66	32.68	33.03	33.00	33.68	34.19
8	28.95	29.28	29.93	30.47	31.17	31.86	32.65	32.68	32.94	33.04	33.71	34.20
9	28.95	29.29	29.95	30.48	31.20	31.89	32.65	32.69	32.90	33.07	33.72	34.21
10	28.95	29.30	29.97	30.50	31.25	31.89	32.65	32.74	32.88	33.12	33.73	34.23
11	28.95	29.30	29.99	30.51	31.27	31.93	32.65	32.75	32.86	33.14	33.75	34.24
12	28.95	29.32	30.05	30.54	31.29	31.96	32.68	32.77	32.86	33.15	33.76	34.25
13	28.95	29.34	30.06	30.56	31.32	31.99	32.71	32.78	32.83	33.17	33.78	34.26
14	28.95	29.38	30.06	30.58	31.35	32.01	32.74	32.80	32.83	33.19	33.81	34.27
15	28.95	29.41	30.11	30.62	31.38	32.01	32.76	32.84	32.84	33.20	33.84	34.28
16	28.96	29.43	30.12	30.62	31.38	32.03	32.76	32.88	32.84	33.21	33.86	34.30
17	28.95	29.45	30.14	30.63	31.38	32.07	32.78	32.90	32.84	33.21	33.89	34.31
18	28.94	29.47	30.14	30.65	31.39	32.10	32.81	32.92	32.84	33.21	33.93	34.32
19	28.94	29.51	30.14	30.70	31.43	32.14	32.84	32.94	32.81	33.21	33.97	34.33
20	28.94	29.53	30.14	30.75	31.47	32.21	32.85	32.96	32.80	33.27	33.98	34.32
21	28.94	29.53	30.14	30.77	31.49	32.22	32.85	32.99	32.80	33.29	33.99	34.32
22	28.94	29.56	30.15	30.79	31.51	32.27	32.84	33.01	32.80	33.32	34.00	34.32
23	28.94	29.58	30.15	30.82	31.53	32.30	32.82	33.05	32.80	33.35	34.02	34.32
24	28.94	29.58	30.18	30.86	31.57	32.34	32.81	33.07	32.78	33.37	34.03	34.32
25	28.95	29.60	30.18	30.90	31.57	32.36	32.75	33.09	32.78	33.41	34.04	34.32
26	28.96	29.63	30.19	30.93	31.58	32.40	32.75	33.10	32.78	33.43	34.05	34.33
27	28.99	29.65	30.19	30.96	31.62	32.44	32.75	33.10	32.78	33.44	34.06	34.33
28	29.01	29.70	30.23	30.98	31.66	32.51	32.68	33.11	32.79	33.46	34.07	34.33
29	29.04	29.71	30.26	31.01	---	32.51	32.68	33.12	32.82	33.47	34.09	34.33
30	29.07	29.74	30.28	31.01	---	32.51	32.68	33.12	32.83	33.48	34.10	34.33
31	29.10	---	30.28	31.03	---	32.51	---	33.13	---	33.50	34.11	---
MEAN	28.96	29.43	30.06	30.65	31.34	32.09	32.71	32.88	32.89	33.20	33.86	34.26

WTR YR 2002 MEAN 31.86 HIGHEST 28.92 OCT. 1, 2001 LOWEST 34.33 SEPT. 19, 2002



GROUND-WATER LEVELS

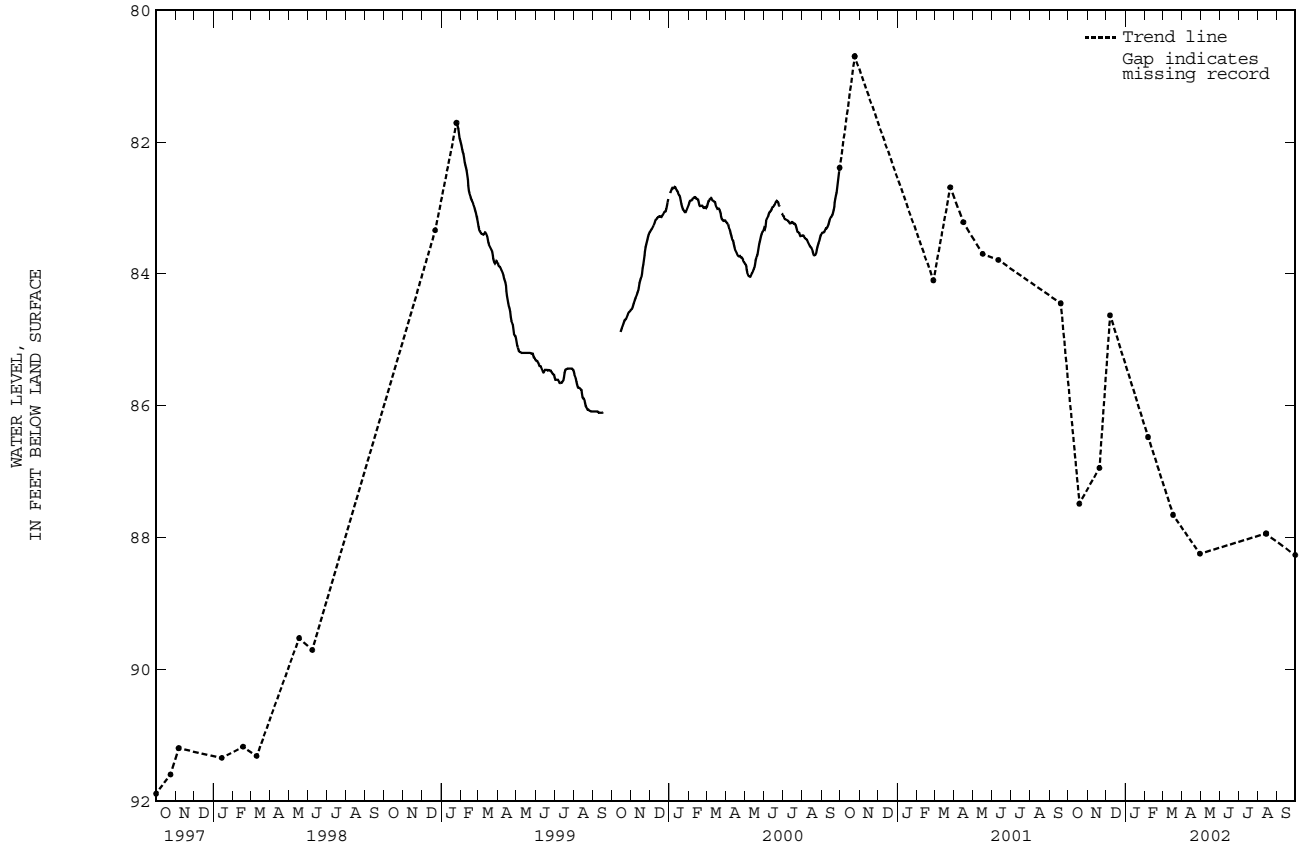
RIO SALINAS TO RIO JACAGUAS BASINS--Continued

175943066224800. Local number 1257.
LOCATION.--Lat 17°59'43", long 66°22'48", Hydrologic Unit 2101004, 0.74 mi east of Hwy 153, 1.45 mi northeast of Estación Santa Isabel, and 1.98 mi north of Hwy 1. Name: Paso Seco 7 Well.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 15 inches (0.38 m). Depth 235 ft (71.6 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 89.0 ft (27.1 m) above mean sea level, from topographic map. Measuring point: Side of the casing, 0.80 ft (0.24 m) above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on September 17, 1997. Water levels affected by nearby pumping wells. For water years 2001 and 2002, tapedowns measurements only.
PERIOD OF RECORD.--March 27, 1992 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 81.11 ft (24.72 m) below land-surface datum, December 3, 4, 6, 7, 1992; lowest water level recorded, 101.28 ft (30.87 m) below land-surface datum, September 13, 1994.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	87.49	DEC 07	84.63	MAR 18	87.66	AUG 14	87.94	SEP 30	88.27	SEP 30	88.33
NOV 20	85.95	FEB 06	86.48	APR 30	88.25	14	87.95				

WATER YEAR 2002 HIGHEST 84.63 DEC. 07, 2001 LOWEST 88.33 SEP. 30, 2002



GROUND-WATER LEVELS

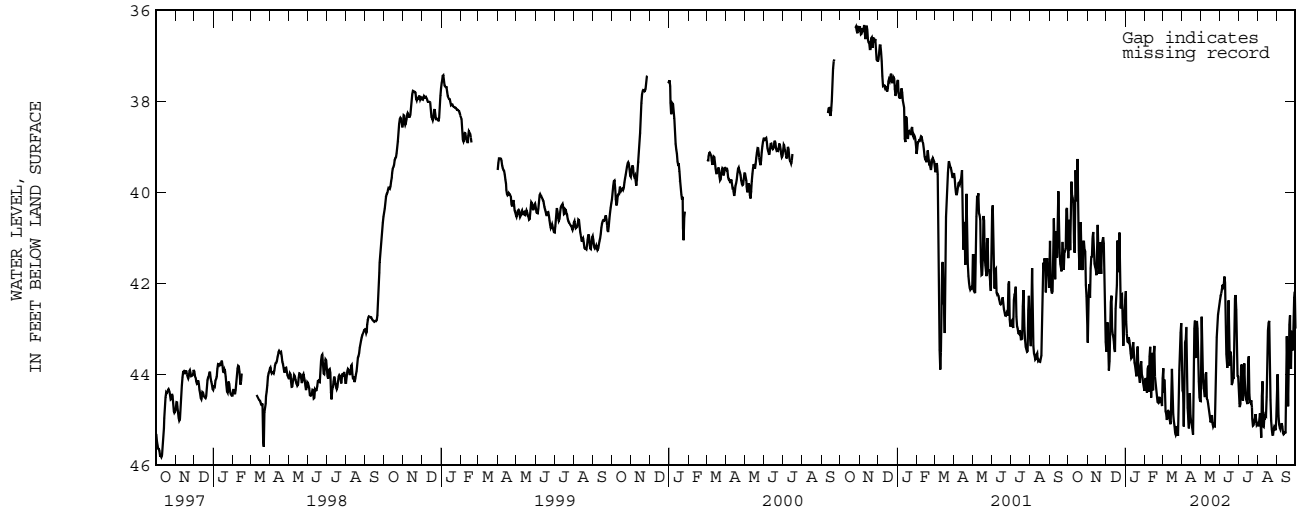
RIO SALINAS TO RIO JACAGUAS BASINS--Continued

175829066232200. Local number, 87.
LOCATION.--Lat 17°58'29", long 66°23'22", Hydrologic Unit 21010004, 1.10 mi northeast of Santa Isabel plaza, 3.69 mi southeast of Playita Cortada School, and 1.07 mi southeast of Estación Experimental Santa Isabel. Name: Alomar 1 Well.
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).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 35.3 ft (10.8 m), above mean sea level. Measuring point: Bottom of clean-out shelter door, 2.50 ft (0.76 m), above land-surface datum. Prior August 1981, top of recorder shelter floor, 4.00 ft (1.22 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on December 16, 1997.
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, December 10, 1970; lowest water level recorded, 49.18 ft (14.99 m) below land-surface datum, July 27, 1974.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41.33	43.37	43.45	41.68	44.42	44.80	42.78	44.51	42.43	44.13	45.12	44.51
2	41.56	43.24	43.56	42.67	43.91	43.37	44.84	44.68	42.33	44.55	45.09	43.50
3	39.97	42.93	42.85	43.02	44.25	44.37	43.87	42.80	42.24	44.72	45.20	44.76
4	41.24	41.49	42.87	43.20	44.27	44.44	44.94	42.67	42.20	44.72	44.82	45.05
5	41.30	42.54	43.75	43.36	44.54	43.79	45.36	43.97	42.07	44.58	44.91	45.16
6	40.19	42.10	44.09	43.23	43.23	44.83	43.25	44.23	42.00	43.14	45.22	45.18
7	39.34	41.23	43.34	43.14	44.39	44.79	43.35	44.37	42.15	44.43	45.57	45.23
8	40.80	41.61	43.11	43.37	44.39	44.95	43.17	44.38	41.90	44.44	43.40	45.05
9	39.46	41.20	41.72	43.40	42.83	45.05	42.77	44.62	41.80	44.72	44.91	45.10
10	40.98	40.78	42.83	43.68	43.97	44.84	44.60	43.40	42.16	43.60	45.37	45.20
11	41.22	40.96	43.13	43.62	44.06	44.73	44.89	44.52	43.55	43.93	44.94	45.37
12	41.43	41.43	43.13	43.62	44.98	44.91	45.04	44.53	43.56	44.46	44.93	45.27
13	39.69	41.70	43.17	43.20	42.74	45.03	45.35	44.57	43.92	44.46	45.06	45.34
14	39.34	41.58	43.33	43.38	44.32	45.05	44.04	44.72	43.81	44.66	44.70	45.21
15	40.99	41.79	43.54	43.68	44.39	45.15	44.80	44.78	42.28	44.54	45.11	45.34
16	39.32	41.85	43.48	43.81	42.74	43.87	45.01	44.93	42.48	44.78	43.90	43.31
17	39.21	40.51	41.64	43.83	44.01	43.90	45.09	44.99	43.70	42.87	43.16	43.02
18	40.97	40.92	42.90	44.04	44.09	44.73	45.13	45.13	43.93	44.35	42.92	44.66
19	41.59	41.61	41.18	44.05	44.29	45.02	45.29	44.87	43.08	44.53	42.83	44.76
20	41.83	41.98	40.94	43.10	44.38	45.04	45.36	44.93	44.15	44.69	42.83	43.04
21	40.13	40.95	42.50	43.68	44.58	45.23	43.12	45.25	44.32	44.57	44.25	42.79
22	41.17	41.24	41.00	44.08	44.64	45.34	42.87	45.06	44.08	44.58	44.88	42.63
23	41.52	41.85	40.77	43.95	44.60	45.33	42.77	45.19	44.08	44.87	45.15	44.29
24	41.57	41.74	42.46	44.19	44.48	45.25	44.45	45.09	44.08	45.08	45.26	43.48
25	41.85	40.54	42.65	44.18	44.51	45.03	42.82	45.21	42.43	45.18	45.39	42.65
26	40.32	41.60	41.87	43.42	44.72	45.36	42.84	44.08	42.23	45.05	45.26	43.50
27	41.85	40.37	42.61	44.01	44.49	45.35	43.16	43.25	42.28	45.06	45.17	43.45
28	40.69	41.86	42.93	44.01	44.60	43.90	43.99	43.13	42.88	44.91	45.13	42.39
29	41.89	42.10	43.82	44.13	---	43.94	44.34	42.74	44.09	44.84	45.22	42.24
30	42.19	43.14	42.14	44.25	---	43.19	44.66	42.63	43.98	45.17	45.25	42.14
31	42.40	---	43.10	44.30	---	42.98	---	42.54	---	45.06	44.73	---
MEAN	40.88	41.67	42.71	43.59	44.17	44.63	44.13	44.25	43.01	44.54	44.70	44.12

WTR YR 2002 MEAN 43.53 HIGHEST 39.15 OCT. 17, 2001 LOWEST 45.73 AUG. 7, 2002



GROUND-WATER LEVELS

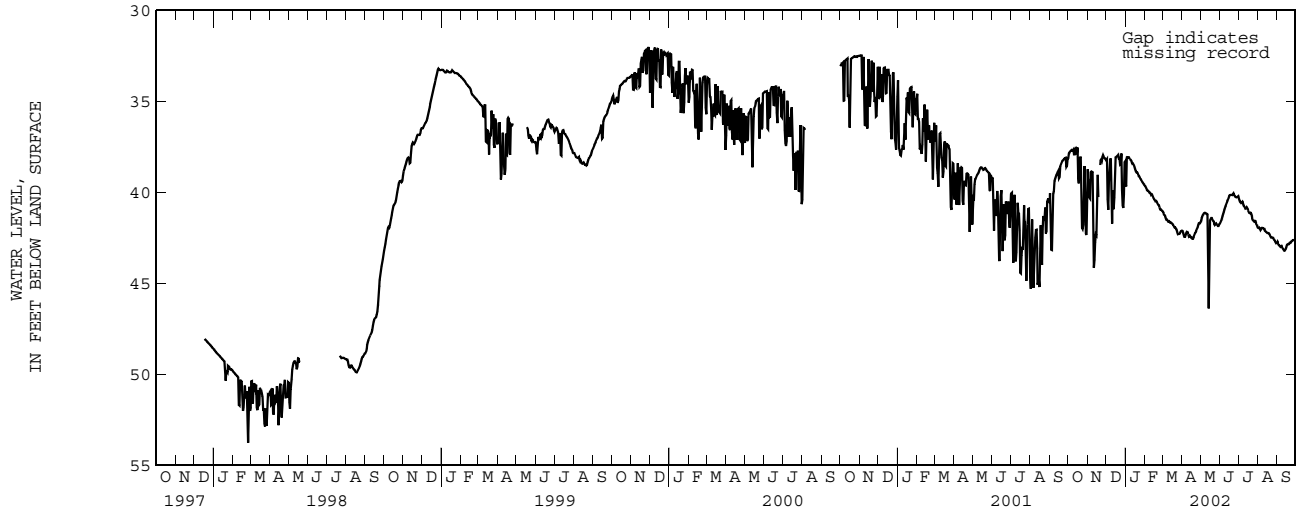
RIO SALINAS TO RIO JACAGUAS BASINS--Continued

180020066261500. Local number, 1258.
LOCATION.--Lat 18°00'20", long 66°26'15", Hydrologic Unit 21010004, 1.04 mi north of the intersection of Hwy 536 with Hwy 1, 0.60 mi northwest of Central Cortada, and 0.10 mi west of Hwy 536. Name: Cabrera 1 Well.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 18 in (0.46 m). Depth 71.0 ft (21.6 m).
INSTRUMENTATION.--Pressure transducer with integrated electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 65.6 ft (20.0 m), above mean sea level, from topographic map. Measuring point: Shelter floor on the top of 4 in (0.10 m) casing, 3.14 ft (0.95 m), above land-surface datum. Prior October 4, 1999, 3.12 ft (0.95 m), above land-surface datum.
REMARKS.--Recording observation well. Well level affected by nearby pumping well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on July 22, 1998, removed on September 30, 2002.
PERIOD OF RECORD.--March 18, 1997 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 31.93 ft (9.73 m), below land-surface datum, December 1, 1999; lowest water level recorded, 55.0 ft (16.8 m), below land-surface datum, April 14, 1998.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38.35	38.76	38.24	37.97	39.61	41.01	42.12	41.69	41.76	40.25	41.96	42.73
2	37.87	38.71	38.25	41.26	39.68	41.06	42.08	41.59	41.69	40.41	41.95	42.70
3	37.83	39.82	38.11	38.10	39.67	41.10	42.18	41.48	41.60	40.46	41.99	42.86
4	37.79	38.80	42.65	38.05	39.84	41.19	42.29	41.36	41.51	40.51	41.88	42.88
5	37.74	41.75	39.29	38.08	39.90	41.27	42.40	41.26	41.39	40.57	42.11	42.93
6	37.69	38.92	39.54	38.05	39.91	41.26	42.47	41.21	41.25	40.57	42.02	42.96
7	37.66	38.85	37.98	38.06	39.92	41.50	42.40	41.17	41.15	40.52	41.97	43.00
8	37.74	38.84	38.45	38.14	39.99	41.50	42.26	41.12	41.01	40.50	41.94	42.92
9	37.68	38.90	37.82	38.19	40.03	41.47	42.20	41.14	40.88	40.71	41.97	42.95
10	37.64	38.86	41.94	38.20	40.01	41.54	42.16	41.17	40.79	40.75	42.01	43.08
11	38.18	44.04	41.49	38.30	40.14	41.67	42.24	41.17	40.69	40.75	41.98	43.11
12	37.61	44.24	38.28	38.46	40.12	41.53	42.40	41.18	40.60	40.88	42.04	43.18
13	37.60	43.18	41.63	38.40	40.10	41.62	42.45	41.23	40.53	40.91	42.14	43.20
14	37.53	42.29	40.23	38.42	40.19	41.67	42.36	45.32	40.42	40.84	42.15	43.19
15	38.16	42.32	40.37	38.54	40.26	41.62	42.39	47.45	40.40	40.82	42.16	43.10
16	37.57	42.40	38.12	38.67	40.38	41.73	42.47	41.59	40.25	40.94	42.24	42.97
17	37.50	39.83	38.08	38.79	40.39	41.70	42.48	41.49	40.16	41.01	42.23	42.88
18	40.82	38.25	38.02	38.87	40.48	41.79	42.46	41.45	40.15	41.11	42.22	42.85
19	38.20	42.27	37.98	38.91	40.48	41.77	42.62	41.35	40.13	41.16	42.25	42.85
20	38.09	---	37.96	38.88	40.45	41.91	42.48	41.46	40.13	41.16	42.33	42.83
21	38.06	38.51	37.93	38.95	40.56	41.92	42.42	41.54	40.15	41.10	42.31	42.78
22	38.10	38.48	38.32	39.07	40.62	41.91	42.30	41.57	40.15	41.24	42.50	42.74
23	42.15	38.04	37.91	39.11	40.70	42.01	42.24	41.63	40.04	41.39	42.47	42.75
24	41.72	38.36	39.01	39.09	40.71	42.03	42.17	41.80	40.06	41.49	42.49	42.75
25	42.29	38.17	37.85	39.23	40.92	42.14	42.05	41.78	40.22	41.57	42.48	42.67
26	41.26	37.92	37.90	39.29	40.93	42.29	42.00	41.69	40.20	41.57	42.50	42.62
27	38.56	37.97	41.89	39.30	40.91	42.31	41.88	41.71	40.33	41.61	42.61	42.62
28	38.53	38.08	39.53	39.42	41.00	42.25	41.75	41.80	40.21	41.52	42.61	42.63
29	42.49	38.12	42.17	39.43	---	42.31	41.64	41.78	40.32	41.63	42.70	42.61
30	42.00	38.13	38.07	39.53	---	42.22	41.73	41.90	40.18	41.77	42.79	42.59
31	42.67	---	38.64	39.54	---	42.14	---	41.80	---	41.79	42.81	---
MEAN	38.94	---	39.15	38.78	40.28	41.72	42.24	41.80	40.61	41.02	42.25	42.86

WTR YR 2002 MEAN 40.79 HIGHEST 37.44 OCT. 18, 2001 LOWEST 50.30 MAY 15, 2002



GROUND-WATER LEVELS

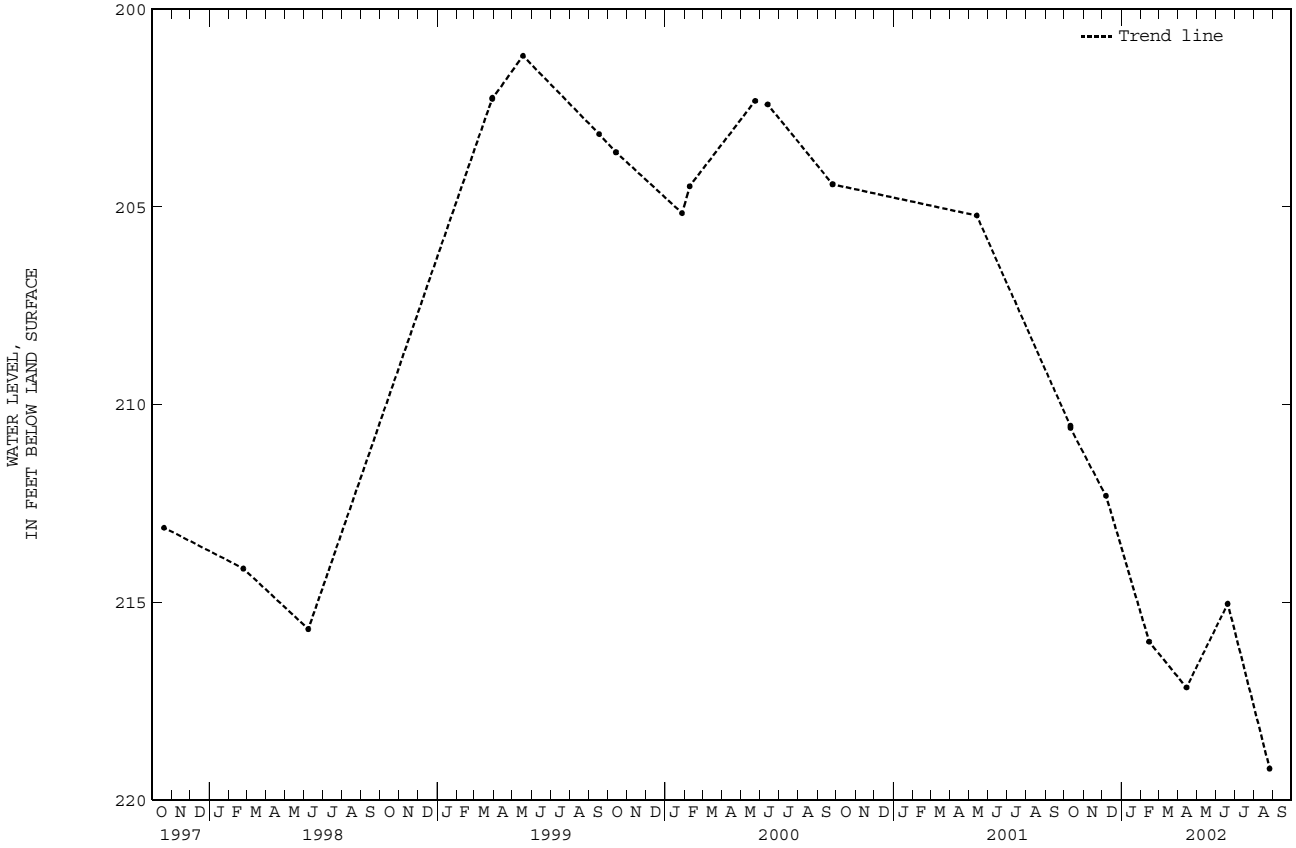
RIO SALINAS TO RIO JACAGUAS BASINS--Continued

180602066133100. Local number, 1260.
LOCATION.--Lat 18°06'02", long 66°13'31", Hydrologic Unit 21010004, 130 ft (39.62 m) north of Hwy 1 km. 68.9, 0.10 mi east of Hwy 162, and 4.00 mi west southwest of Cayey plaza. Name: Bauzá 1 Well.
AQUIFER.--Fractured rock Limestone.
WELL CHARACTERISTICS.--Unused production well, diameter 10 in (0.25 m), open screen 220-320 ft (67.1-97.5 m). Depth 320 ft (97.5 m).
DATUM.--Elevation of land-surface datum is about 2,178 ft (664 m), above mean sea level, from topographic map. Measuring point: Top of access hole, 0.49 ft (0.15 m), above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--October 20, 1997 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 201.2 ft (61.32 m), below land-surface datum, May 18, 1999; lowest water level measured, 219.2 ft (66.82 m), below land-surface datum, August 26, 2002.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 11	210.54	DEC 07	212.31	FEB 14	216.00	APR 15	217.16	JUN 20	215.04	AUG 26	219.21
11	210.59										

WATER YEAR 2002 HIGHEST 210.54 OCT. 11, 2001 LOWEST 219.21 AUG. 26, 2002



GROUND-WATER LEVELS

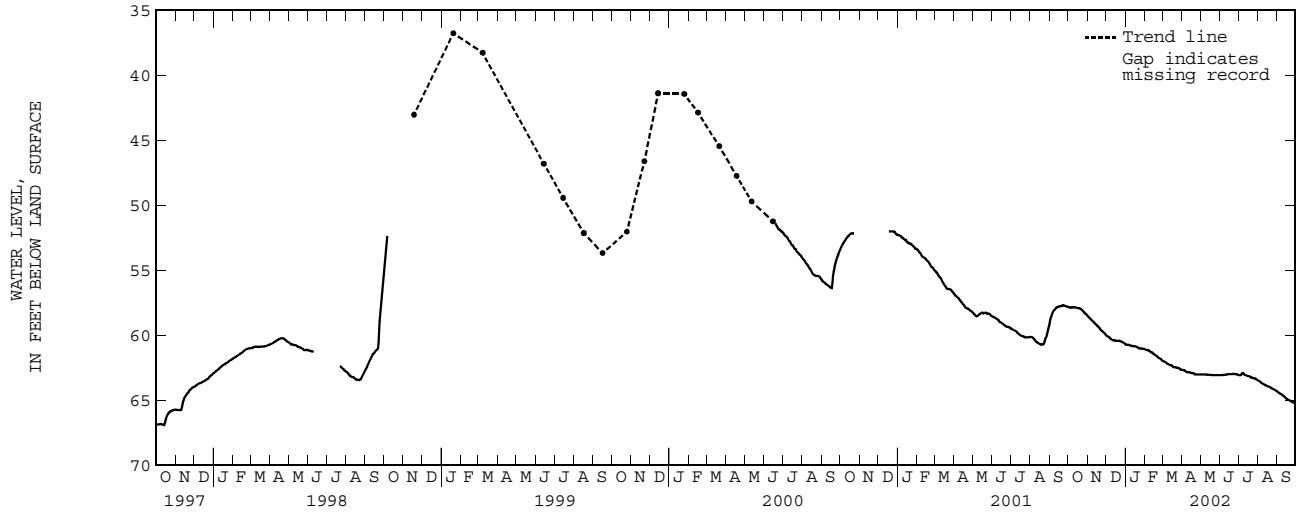
RIO SALINAS TO RIO JACAGUAS BASINS--Continued

175833066145800. Local number, 1261.
LOCATION.--Lat 17°58'33", long 66°14'58", Hydrologic Unit 21010004, 0.30 mi north of Hwy 3, 1.30 mi west of Colegio del Perpetuo Socorro, and 2.20 mi northwest of Central Aguirre. Name: Piezometer A RASA.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 0-154 ft (0-46.94 m). Depth 154 ft (46.94 m).
INTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 56.0 ft (17.07 m), above mean sea level, from topographic map. Measuring point: Top of shelter floor 3.83 ft (1.17 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on June 2, 1998.
PERIOD OF RECORD.--September 17, 1992 to May 17, 1994, discontinued, January 15, 1996 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 36.75 ft (11.20 m), below land-surface datum, January 20, 1999; lowest water level recorded, 70.28 ft (21.42 m), below land-surface datum, October 1-7, 1995.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57.81	58.47	59.97	60.71	61.07	61.95	62.64	63.00	63.06	63.05	63.47	64.32
2	57.83	58.53	60.02	60.71	61.12	61.98	62.66	63.00	63.06	63.06	63.50	64.34
3	57.84	58.58	60.08	60.72	61.12	62.00	62.67	63.01	63.06	63.06	63.53	64.39
4	57.86	58.62	60.09	60.71	61.14	62.01	62.69	63.02	63.06	63.06	63.54	64.42
5	57.88	58.68	60.14	60.72	61.14	62.05	62.71	63.02	63.05	63.06	63.56	64.45
6	57.87	58.72	60.16	60.74	61.15	62.07	62.72	63.02	63.05	63.06	63.64	64.49
7	57.85	58.78	60.18	60.76	61.16	62.08	62.73	63.02	63.05	62.92	63.68	64.53
8	57.83	58.83	60.27	60.79	61.17	62.11	62.80	63.02	63.04	62.91	63.70	64.55
9	57.86	58.87	60.31	60.80	61.22	62.19	62.83	63.02	63.03	62.92	63.73	64.57
10	57.86	58.93	60.33	60.80	61.28	62.21	62.83	63.02	63.03	62.96	63.77	64.61
11	57.85	58.98	60.36	60.81	61.30	62.24	62.83	63.02	63.03	63.05	63.78	64.66
12	57.84	59.01	60.38	60.81	61.30	62.27	62.84	63.03	63.02	63.06	63.80	64.70
13	57.84	59.08	60.38	60.83	61.33	62.28	62.84	63.03	63.01	63.08	63.83	64.73
14	57.87	59.13	60.39	60.85	61.36	62.30	62.85	63.03	63.01	63.11	63.84	64.77
15	57.88	59.16	60.40	60.85	61.43	62.31	62.88	63.04	62.98	63.12	63.87	64.85
16	57.89	59.20	60.41	60.85	61.47	62.31	62.89	63.04	62.98	63.13	63.90	64.88
17	57.90	59.29	60.42	60.85	61.50	62.33	62.90	63.04	62.98	63.13	63.92	64.92
18	57.90	59.33	60.43	60.87	61.53	62.43	62.90	63.05	62.99	63.14	63.94	64.95
19	57.90	59.37	60.43	60.89	61.56	62.44	62.91	63.06	62.99	63.16	63.96	64.97
20	57.93	59.40	60.43	60.91	61.60	62.45	62.92	63.06	62.99	63.22	63.99	64.98
21	57.96	59.49	60.44	60.95	61.62	62.46	62.94	63.06	62.98	63.23	64.01	65.01
22	57.99	59.55	60.44	60.97	61.69	62.47	63.00	63.06	62.97	63.24	64.04	65.04
23	58.02	59.58	60.43	60.99	61.73	62.48	63.00	63.06	62.97	63.26	64.07	65.07
24	58.08	59.63	60.46	61.00	61.76	62.49	63.00	63.06	62.98	63.28	64.11	65.09
25	58.13	59.69	60.47	61.01	61.80	62.49	63.00	63.06	62.98	63.29	64.13	65.13
26	58.18	59.72	60.49	61.00	61.82	62.51	63.00	63.06	62.98	63.30	64.16	65.14
27	58.24	59.76	60.51	61.01	61.83	62.52	63.00	63.06	62.98	63.33	64.18	65.16
28	58.31	59.80	60.57	61.03	61.88	62.52	63.00	63.06	62.98	63.34	64.20	65.18
29	58.35	59.85	60.59	61.03	---	62.57	63.00	63.06	63.00	63.34	64.22	65.21
30	58.38	59.91	60.60	61.03	---	62.62	63.00	63.06	63.05	63.39	64.25	65.24
31	58.42	---	60.62	61.05	---	62.64	---	63.06	---	63.45	64.29	---
MEAN	57.98	59.20	60.36	60.87	61.43	62.32	62.87	63.04	63.01	63.15	63.89	64.81

WTR YR 2002 MEAN 61.91 HIGHEST 57.81 OCT. 1, 2001 LOWEST 65.24 SEPT. 30, 2002



GROUND-WATER LEVELS

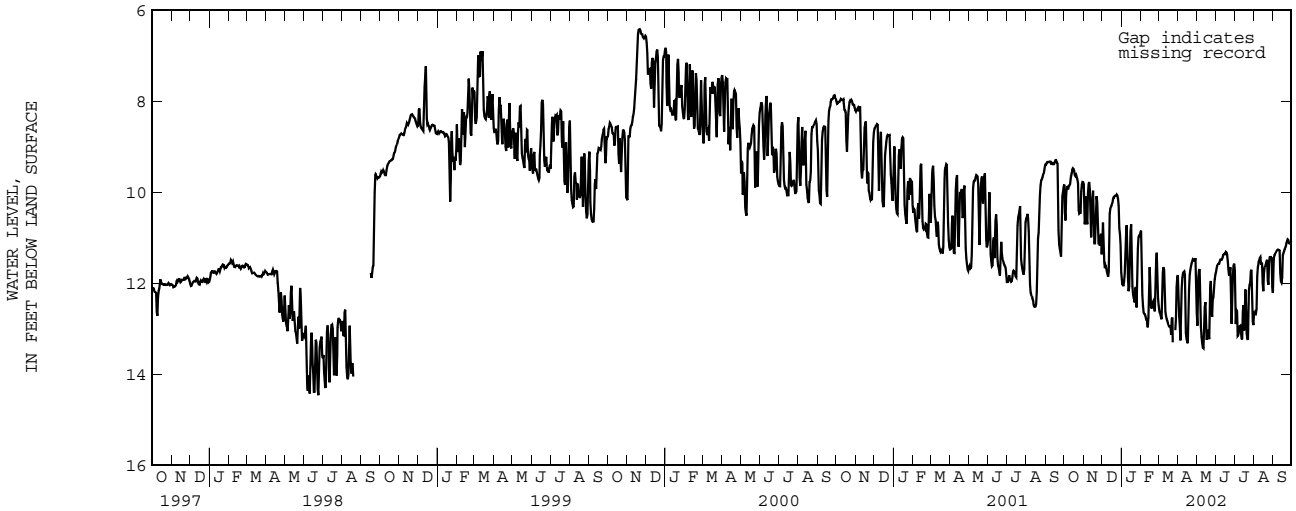
RIO SALINAS TO RIO JACAGUAS BASINS--Continued

175735066151800. Local number, 1262.
LOCATION.--Lat 17°57'35", long 66°15'18", Hydrologic Unit 21010004, 1.00 mi southeast of Salinas Speedway, 1.30 mi northeast of dock at Las Mareas, and 3.10 mi southeast of Salinas plaza. Name: Piezometer C RASA.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), screen cased 22.0-82.0 ft (6.70-24.99 m). Depth 82.0 ft (24.99 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 20.0 ft (6.10 m), above mean sea level, from topographic map. Measuring point: Top of shelter floor, 4.15 in (0.10 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), installed on September 24, 1991, replaced by an Electronic Data Logger (EDL), installed on June 2, 1998. Well is affected by nearby pumping.
PERIOD OF RECORD.--September 24, 1991 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.36 ft (1.94 m), below land-surface datum, November 22, 1999; lowest water level recorded, 14.58 ft (4.44 m), below land-surface datum, June 25, 1998.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.86	9.80	11.52	11.82	10.85	12.41	11.80	12.47	11.81	11.57	13.02	11.73
2	9.80	9.84	10.70	12.00	10.83	12.55	11.84	12.81	11.71	11.85	12.30	11.50
3	11.09	10.44	10.63	12.03	12.13	12.64	12.86	13.06	11.63	12.76	13.05	11.39
4	10.15	10.96	11.40	12.02	12.40	12.63	12.58	11.97	11.61	13.03	12.21	11.35
5	9.94	10.20	11.66	12.10	12.58	12.70	13.26	11.75	11.56	12.15	13.10	11.36
6	9.83	9.98	11.67	11.80	12.69	12.77	13.26	11.68	11.58	13.07	12.02	11.30
7	9.93	11.20	11.55	11.76	12.66	12.81	12.27	11.69	11.56	13.24	11.68	11.30
8	9.94	10.20	11.75	11.14	12.70	11.88	11.95	12.81	11.48	13.04	11.60	11.25
9	9.79	9.86	11.73	10.79	12.76	11.65	11.80	13.11	11.47	12.97	11.53	11.27
10	9.91	9.78	11.85	10.66	12.82	11.64	11.76	13.23	11.48	12.92	11.48	11.25
11	9.75	9.76	11.86	11.60	12.76	11.72	11.74	13.39	11.48	12.94	11.41	11.29
12	9.66	10.13	11.63	12.10	12.96	12.57	11.74	13.44	11.43	13.18	11.44	11.27
13	9.65	10.97	10.55	12.24	12.97	12.67	11.87	13.41	11.37	13.22	11.59	12.27
14	9.53	11.01	10.37	11.89	12.53	12.76	13.09	12.49	11.37	13.25	11.59	11.63
15	9.47	10.27	10.34	10.98	11.58	12.81	13.09	12.56	11.34	12.00	11.50	12.32
16	9.47	9.96	10.31	10.74	11.71	12.85	13.35	12.27	11.36	12.97	12.47	11.43
17	9.50	9.96	10.25	10.67	12.41	12.90	13.21	13.20	11.35	13.11	11.87	11.34
18	9.57	11.11	10.24	11.94	12.60	12.92	13.43	13.29	11.27	12.34	11.67	11.33
19	9.66	11.13	10.10	12.20	12.51	12.97	12.36	13.08	11.37	11.93	11.63	11.26
20	9.62	11.10	10.12	12.29	12.45	12.93	11.89	12.96	11.39	13.01	11.63	11.23
21	9.61	10.34	10.10	12.35	12.38	12.97	11.74	13.29	11.63	13.19	11.53	11.20
22	9.72	10.14	10.05	12.36	12.39	13.29	11.67	13.17	11.76	13.23	11.49	11.14
23	9.71	10.02	10.10	12.48	12.66	12.26	11.58	12.27	11.89	13.25	11.47	11.11
24	9.88	10.40	10.05	11.76	12.57	13.24	11.54	11.97	11.65	12.42	12.41	11.06
25	10.91	11.03	10.04	12.40	11.69	13.36	11.49	11.93	11.64	11.91	11.66	11.01
26	10.01	11.15	10.10	12.66	11.39	---	11.45	13.13	12.77	12.15	11.44	11.08
27	10.87	11.00	10.18	11.44	11.27	---	11.52	12.36	13.01	11.84	11.42	11.14
28	10.07	11.34	10.39	11.04	12.24	12.75	11.48	12.36	11.94	11.63	11.42	11.11
29	9.88	10.61	11.19	10.94	---	13.31	11.51	12.25	11.67	11.77	11.42	11.13
30	9.78	11.21	10.63	10.95	---	12.24	11.39	12.01	11.57	12.85	11.46	11.07
31	9.76	---	11.69	10.94	---	11.95	---	11.83	---	12.82	12.68	---
MEAN	9.88	10.50	10.80	11.68	12.27	---	12.15	12.62	11.64	12.63	11.84	11.34

WTR YR 2002 MEAN 11.66 HIGHEST 9.42 OCT. 16, 2001 LOWEST 13.53 APR. 18, 2002



GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS--Continued

175734066233300. Local number, 146.
LOCATION.--Lat 17°58'43", long 66°24'43", Hydrologic Unit 21010004, 1.0 mi southeast of Santa Isabel plaza, 0.5 mi south of airport, 1.1 mi northeast of dock at Santa Isabel. Name: Pozo PRASA Alomar Oeste Well.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled unused water table well, diameter 8 in (0.20 m). Constructed depth 70.0 ft (21.3 m). Measured depth 61.0 ft (18.6 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land surface is about 19.0 ft (5.79 m) above mean sea level from topographic map. Measuring point: hole in side of steel casing, 2.19 ft (0.67 m) above land-surface datum.
REMARKS.--Abandoned production well being used as recording observation well. Automated Digital Recorder (ADR), installed on September 27, 1991, replaced by an Electronic Data Logger on January 14, 1998.
PERIOD OF RECORD.--June 1981 to March 1985, discontinued, September 27, 1991 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 7.43 ft (2.26 m), below land-surface datum, October 18, 1984; lowest water level recorded, 19.75 ft (6.02 m) below land-surface datum, December 17, 1997.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11.07	12.18	10.95	9.58	11.54	12.99	13.82	14.33	14.27	14.25	14.81	15.13
2	12.37	10.83	10.89	9.59	11.58	13.08	13.82	14.50	14.16	14.34	14.80	15.12
3	11.79	10.45	10.88	10.72	11.63	13.08	13.90	14.51	14.15	14.33	14.82	15.13
4	11.40	10.50	11.67	11.27	11.72	13.09	13.86	14.45	14.16	14.31	14.82	15.23
5	11.43	10.47	12.32	11.40	11.83	13.10	13.87	14.57	14.07	14.34	14.85	15.23
6	11.07	11.63	12.54	8.98	11.81	13.11	13.96	14.56	13.96	14.39	14.82	15.27
7	11.10	10.94	11.48	9.03	11.86	13.23	14.00	14.50	13.94	14.46	14.83	15.18
8	11.15	10.48	11.28	9.20	11.91	13.18	13.99	14.59	14.07	14.50	14.82	15.19
9	11.31	10.49	11.28	9.32	11.97	13.24	14.02	14.60	14.05	14.51	14.89	15.18
10	11.27	10.59	11.36	9.47	11.98	13.25	14.04	14.56	14.05	14.55	14.84	15.19
11	11.24	10.64	12.20	9.59	12.09	13.25	14.00	14.63	14.04	14.57	14.85	15.15
12	11.10	10.77	12.76	9.74	12.13	13.39	14.05	14.60	14.10	14.57	14.81	15.16
13	10.97	10.65	11.70	9.85	12.19	13.33	14.11	14.69	14.06	14.58	14.81	15.18
14	10.85	10.63	11.55	9.99	12.24	13.40	14.15	14.66	14.05	14.61	14.88	15.15
15	11.81	10.47	11.41	10.09	12.29	13.51	14.10	14.73	14.12	14.67	14.93	15.18
16	12.27	10.52	12.69	10.20	12.35	13.48	14.18	14.70	14.05	14.68	14.91	15.21
17	11.28	10.60	12.91	10.36	12.39	13.53	14.16	14.68	14.16	14.68	14.96	15.21
18	11.07	10.57	12.86	10.42	12.49	13.59	14.16	14.76	14.08	14.66	14.97	15.24
19	11.12	11.37	12.85	10.51	12.53	13.63	14.19	14.77	14.11	14.69	14.97	15.34
20	11.30	11.42	12.75	10.65	12.52	13.65	14.26	14.81	14.05	14.71	15.01	15.33
21	11.37	11.81	12.58	10.75	12.60	13.61	14.20	14.80	14.05	14.72	15.02	15.20
22	11.33	10.52	12.57	10.91	12.60	13.60	14.21	14.84	14.05	14.72	15.08	15.20
23	11.24	10.52	12.50	10.89	12.63	13.58	14.28	14.72	14.13	14.72	15.06	15.17
24	11.30	12.01	12.41	10.92	12.70	13.62	14.34	14.62	14.16	14.77	15.04	15.15
25	11.17	12.18	11.01	11.01	12.72	13.70	14.32	14.50	14.18	14.85	15.11	15.19
26	10.96	12.29	10.74	11.11	12.81	13.71	14.26	14.44	14.21	14.83	15.07	15.19
27	10.95	11.35	10.65	11.28	12.86	13.69	14.32	14.41	14.25	14.86	15.03	15.15
28	11.10	10.85	9.60	11.29	12.90	13.73	14.40	14.36	14.20	14.91	15.07	15.18
29	11.97	10.80	9.44	11.32	12.95	13.75	14.40	14.30	14.29	14.90	15.02	15.24
30	12.38	10.84	9.46	11.38	---	13.82	14.39	14.29	14.31	14.86	15.07	15.25
31	12.30	---	10.62	11.46	---	13.84	---	14.25	---	14.83	15.06	---
MEAN	11.39	10.98	11.61	10.40	12.27	13.44	14.13	14.57	14.12	14.62	14.94	15.20

WTR YR 1992 MEAN 13.14 HIGHEST 8.85 JAN. 6, 1992 LOWEST 15.34 SEPT. 19, 1992

GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS--Continued

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.25	15.29	15.35	15.67	16.07	16.35	16.42	16.49	16.66	16.61	16.51	16.17
2	15.25	15.26	15.38	15.68	16.15	16.32	16.49	16.51	16.71	16.58	16.50	16.18
3	15.26	15.28	15.42	15.66	16.12	16.25	16.53	16.56	16.73	16.51	16.49	16.26
4	15.21	15.27	15.42	15.71	16.14	16.30	16.50	16.61	16.73	16.45	16.54	16.19
5	15.21	15.27	15.38	15.78	16.13	16.38	16.48	16.68	16.72	16.48	16.55	16.16
6	15.24	15.28	15.49	15.73	16.16	16.39	16.55	16.68	16.68	16.46	16.54	16.24
7	15.23	15.25	15.46	15.76	16.18	16.44	16.51	16.60	16.65	16.42	16.51	16.30
8	15.24	15.36	15.47	15.85	16.18	16.38	16.58	16.62	16.66	16.46	16.51	16.35
9	15.26	15.32	15.47	15.88	16.25	16.39	16.53	16.56	16.71	16.46	16.55	16.30
10	15.33	15.32	15.51	15.82	16.25	16.39	16.54	16.49	16.75	16.46	16.63	16.33
11	15.23	15.33	15.50	15.82	16.29	16.42	16.46	16.52	16.66	16.43	16.63	16.37
12	15.22	15.42	15.51	15.90	16.23	16.37	16.48	16.47	16.72	16.42	16.65	16.35
13	15.19	15.32	15.48	15.86	16.28	16.38	16.52	16.54	16.73	16.41	16.65	16.18
14	15.23	15.36	15.49	15.91	16.21	16.37	16.48	16.49	16.75	16.49	16.64	16.13
15	15.33	15.28	15.54	15.90	16.21	16.41	16.49	16.48	16.72	16.52	16.54	16.13
16	15.28	15.29	15.54	15.87	16.29	16.45	16.54	16.52	16.74	16.52	16.40	16.13
17	15.24	15.29	15.55	15.87	16.33	16.45	16.57	16.54	16.78	16.51	16.44	16.20
18	15.23	15.27	15.60	15.91	16.32	16.40	16.60	16.53	16.76	16.46	16.41	16.21
19	15.23	15.32	15.52	15.95	16.30	16.51	16.56	16.58	16.69	16.44	16.32	16.27
20	15.25	15.26	15.54	16.01	16.30	16.49	16.56	16.49	16.60	16.47	16.35	16.27
21	15.26	15.29	15.62	16.01	16.28	16.51	16.62	16.51	16.56	16.51	16.31	16.27
22	15.27	15.25	15.67	16.02	16.28	16.51	16.64	16.54	16.56	16.43	16.32	16.36
23	15.20	15.30	15.66	16.03	16.30	16.51	16.66	16.52	16.60	16.46	16.28	16.31
24	15.18	15.40	15.68	16.01	16.32	16.54	16.60	16.48	16.50	16.45	16.25	16.24
25	15.18	15.43	15.66	16.01	16.36	16.51	16.56	16.45	16.53	16.49	16.31	16.21
26	15.24	15.45	15.65	16.06	16.32	16.51	16.60	16.46	16.53	16.49	16.34	16.18
27	15.28	15.47	15.63	16.08	16.33	16.51	16.57	16.46	16.56	16.53	16.30	16.20
28	15.33	15.39	15.65	16.07	16.33	16.49	16.53	16.50	16.54	16.57	16.25	16.14
29	15.25	15.39	15.67	16.06	---	16.46	16.52	16.56	16.59	16.54	16.19	16.12
30	15.28	15.37	15.68	16.06	---	16.43	16.50	16.55	16.57	16.55	16.19	16.13
31	15.29	---	15.66	16.06	---	16.43	---	16.62	---	16.56	16.17	---
MEAN	15.25	15.33	15.54	15.90	16.25	16.43	16.54	16.54	16.66	16.49	16.43	16.23

WTR YR 1993 MEAN 16.13 HIGHEST 15.15 OCT. 25, 1992 LOWEST 16.86 JUNE 17, 1993

GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS--Continued

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.08	16.35	16.45	16.65	16.78	16.73	16.85	16.81	16.94	17.03	16.97	17.01
2	16.22	16.35	16.47	16.56	16.57	16.67	16.82	16.84	17.02	17.04	17.04	17.11
3	16.24	16.39	16.47	16.61	16.61	16.64	16.84	16.89	17.02	17.05	17.05	17.01
4	16.15	16.46	16.46	16.60	16.61	16.68	16.88	16.89	17.06	17.06	17.05	17.01
5	16.16	16.42	16.37	16.57	16.64	16.69	16.85	16.88	16.99	17.11	17.01	16.89
6	16.22	16.33	16.38	16.57	16.55	16.67	16.82	16.91	16.99	17.15	16.94	16.90
7	16.23	16.39	16.47	16.58	16.58	16.68	16.85	16.95	17.02	17.13	16.94	16.88
8	16.22	16.25	16.44	16.62	16.67	16.75	16.90	16.90	16.99	17.19	16.91	16.88
9	16.29	16.26	16.43	16.56	16.68	16.74	16.86	16.82	17.05	17.14	16.88	16.94
10	16.17	16.27	16.50	16.63	16.72	16.69	16.84	16.81	17.00	17.12	16.95	16.99
11	16.17	16.27	16.43	16.77	16.73	16.79	16.82	16.81	16.94	17.13	16.96	16.90
12	16.15	16.24	16.52	16.70	16.82	16.88	16.82	16.88	16.95	17.15	17.03	17.07
13	16.16	16.32	16.53	16.73	16.74	16.77	16.79	16.89	16.98	17.14	17.12	17.02
14	16.15	16.27	16.59	16.66	16.71	16.77	16.83	16.87	16.94	17.17	17.18	17.09
15	16.12	16.33	16.61	16.76	16.68	16.76	16.89	16.85	16.99	17.22	17.16	16.98
16	16.22	16.44	16.55	16.66	16.67	16.81	16.84	16.84	17.04	17.24	17.16	16.92
17	16.16	16.43	16.63	16.64	16.65	16.75	16.87	16.81	16.93	17.21	17.12	16.99
18	16.22	16.48	16.69	16.72	16.70	16.82	16.84	16.77	16.90	17.15	17.05	17.06
19	16.31	16.44	16.57	16.70	16.71	16.80	16.83	16.78	17.03	17.06	17.02	16.97
20	16.26	16.36	16.56	16.63	16.64	16.75	16.82	16.78	17.00	17.05	17.06	16.90
21	16.32	16.31	16.65	16.67	16.51	16.76	16.88	16.82	17.01	16.97	17.12	16.91
22	16.42	16.27	16.61	16.69	16.53	16.83	16.84	16.83	17.03	16.84	17.07	16.88
23	16.30	16.28	16.55	16.62	16.55	16.81	16.94	16.87	17.01	16.92	17.09	16.86
24	16.27	16.42	16.62	16.64	16.61	16.76	16.87	16.89	17.00	16.88	17.04	16.80
25	16.35	16.39	16.61	16.69	16.67	16.82	16.87	16.85	16.94	16.92	17.03	16.85
26	16.30	16.31	16.61	16.72	16.68	16.82	16.87	16.86	16.94	16.85	17.15	16.82
27	16.39	16.33	16.68	16.70	16.67	16.83	16.82	16.84	16.99	16.90	17.13	16.82
28	16.33	16.36	16.79	16.75	16.70	16.80	16.79	16.78	16.99	16.91	17.10	16.84
29	16.34	16.35	16.68	16.84	---	16.87	16.88	16.78	16.97	16.94	17.10	16.82
30	16.32	16.46	16.65	16.71	---	16.89	16.85	16.81	16.98	16.99	17.15	16.72
31	16.42	---	16.71	16.69	---	16.87	---	16.84	---	17.00	17.13	---
MEAN	16.25	16.35	16.56	16.67	16.66	16.77	16.85	16.84	16.99	17.05	17.06	16.93

WTR YR 1994 MEAN 16.75 HIGHEST 16.08 OCT. 1, 17, 1993 LOWEST 17.32 JULY 8, 1994

GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS--Continued

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1994 TO SEPTEMBER 1995
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.79	16.22	16.30	16.67	17.11	16.90	---	---	---	---	---	17.15
2	16.81	16.34	16.42	16.73	17.08	16.93	---	---	---	---	17.24	17.37
3	16.77	16.44	16.48	16.76	17.05	16.98	---	---	---	---	17.25	17.21
4	16.74	16.43	16.55	16.81	17.01	16.93	---	---	---	---	17.45	17.15
5	16.77	16.39	16.51	16.80	17.00	16.99	---	---	---	---	17.44	17.02
6	16.84	16.38	16.58	16.82	16.97	16.93	---	---	---	---	17.62	16.87
7	16.83	16.37	16.55	16.72	17.16	17.01	---	---	---	---	17.38	16.91
8	16.80	16.38	16.65	16.73	17.02	17.00	---	---	---	---	17.34	17.01
9	16.83	16.32	16.53	16.73	17.02	17.06	---	---	---	---	17.35	17.01
10	16.84	16.36	16.47	16.77	17.12	17.05	---	---	---	---	17.28	17.00
11	16.93	16.28	16.44	16.77	17.08	17.09	---	---	---	---	17.28	16.99
12	16.91	16.28	16.43	16.79	17.04	17.12	---	---	---	---	17.23	17.00
13	16.86	16.26	16.50	16.85	17.06	17.00	---	---	---	---	17.25	17.05
14	16.87	16.25	16.45	16.90	17.12	17.00	---	---	---	---	17.41	17.25
15	16.83	16.33	16.61	16.81	17.03	17.02	---	---	---	---	17.45	17.19
16	16.81	16.36	16.54	16.90	17.02	17.09	---	---	---	---	17.45	17.01
17	16.75	16.33	16.56	16.94	17.02	17.10	---	---	---	---	17.46	17.05
18	16.70	16.42	16.68	16.99	17.09	17.13	---	---	---	---	17.26	17.29
19	16.60	16.51	16.55	16.96	17.06	17.10	---	---	---	---	17.22	17.34
20	16.60	16.46	16.63	16.94	17.00	17.14	---	---	---	---	17.21	17.14
21	16.59	16.39	16.65	16.92	16.92	---	---	---	---	---	17.22	17.05
22	16.53	16.40	16.70	16.92	16.87	---	---	---	---	---	17.20	17.25
23	16.45	16.42	16.64	16.92	16.89	---	---	---	---	---	17.17	17.09
24	16.45	16.34	16.59	16.92	16.83	---	---	---	---	---	17.09	16.99
25	16.45	16.33	16.57	16.98	16.83	---	---	---	---	---	17.19	16.94
26	16.41	16.37	16.55	16.93	16.84	---	---	---	---	---	17.43	16.98
27	16.44	16.31	16.58	16.84	16.88	---	---	---	---	---	17.43	16.95
28	16.39	16.31	16.51	16.90	16.91	---	---	---	---	---	17.13	16.94
29	16.35	16.38	16.54	16.98	---	---	---	---	---	---	17.28	16.90
30	16.40	16.37	16.56	16.98	---	---	---	---	---	---	17.39	16.99
31	16.32	---	16.71	17.05	---	---	---	---	---	---	17.19	---
MEAN	16.67	16.36	16.55	16.86	17.00	---	---	---	---	---	---	17.07

WTR YR 1995 MEAN 16.84 HIGHEST 16.21 NOV. 8, 9, 24, 1994 LOWEST 17.62 AUG. 8, 1995

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1994 TO SEPTEMBER 1995

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 07	16.85	DEC 22	16.71	FEB 02	17.12	APR 07	17.06	JUN 16	17.09	AUG 02	17.23
NOV 17	16.31	JAN 10	16.87	MAR 24	17.05	MAY 19	17.18	JUL 19	18.59	SEP 12	16.98

WATER YEAR 1995 HIGHEST 16.31 NOV. 17, 1994 LOWEST 18.59 JULY 19, 1995

GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS--Continued

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.01	17.46	17.52	17.39	18.15	17.72	17.33	17.93	17.82	17.21	17.01	16.97
2	16.99	17.46	18.08	17.44	17.63	18.08	17.47	17.96	17.41	17.65	16.98	16.96
3	16.99	17.48	18.03	18.06	18.14	18.16	17.96	17.96	17.30	17.57	17.01	17.56
4	16.94	17.35	17.59	17.76	18.26	18.18	18.00	18.00	17.79	17.16	17.03	17.16
5	16.93	17.15	18.05	18.18	17.73	18.27	17.85	17.45	17.41	17.06	17.04	17.49
6	16.90	17.12	18.02	18.14	18.19	17.63	17.41	17.39	17.98	17.68	17.03	17.10
7	16.82	17.24	18.00	18.00	18.29	17.83	17.34	17.96	17.94	17.14	17.11	17.00
8	16.86	17.88	18.20	17.42	18.37	17.52	17.44	17.41	17.39	17.01	17.17	16.87
9	16.94	17.28	18.24	17.95	18.11	18.11	17.97	18.01	17.32	17.00	17.31	16.80
10	17.02	17.51	18.12	17.66	17.68	18.18	17.39	17.91	17.26	17.07	17.15	16.26
11	16.94	17.48	17.69	18.07	18.22	17.55	17.44	18.08	17.27	17.20	17.06	16.25
12	16.97	17.28	18.14	18.01	17.60	17.48	17.56	17.49	17.75	17.16	17.04	16.23
13	17.07	17.24	18.16	18.05	18.16	17.38	17.40	17.35	17.23	17.09	17.67	16.23
14	17.11	17.21	17.66	18.02	18.28	17.98	17.33	17.34	17.20	17.11	17.19	16.21
15	17.17	17.17	17.54	17.33	17.54	17.53	17.24	17.31	17.09	16.94	17.16	16.20
16	17.08	17.27	17.82	17.26	17.56	17.30	17.42	17.36	16.98	16.95	17.05	16.23
17	17.19	17.27	17.37	17.80	17.43	17.24	17.37	17.27	17.00	16.86	17.00	16.35
18	17.10	17.41	17.37	18.02	17.30	17.26	17.34	17.40	17.01	16.94	16.99	16.31
19	17.18	17.26	17.30	17.98	17.32	17.21	17.87	17.42	16.98	17.06	16.99	16.36
20	16.97	17.35	17.25	17.96	17.32	17.33	17.36	17.31	17.00	17.21	17.39	16.28
21	17.19	17.87	17.23	17.31	17.35	17.87	17.30	17.70	17.57	17.07	17.61	16.35
22	17.46	17.81	17.28	17.36	17.41	17.42	17.46	17.37	17.14	17.04	17.16	16.17
23	16.94	17.74	17.23	18.03	17.97	17.48	17.86	17.31	17.07	17.19	17.07	16.18
24	16.90	17.29	17.17	18.00	17.46	18.03	17.91	17.33	17.12	17.39	17.45	16.13
25	16.99	17.79	17.13	17.99	17.44	17.49	17.43	17.74	17.58	17.07	17.63	16.21
26	17.02	17.94	17.15	17.95	17.52	17.33	17.39	17.32	17.12	17.11	17.60	16.12
27	17.07	17.93	17.44	18.05	18.14	17.87	17.42	17.29	17.66	17.08	17.15	16.34
28	17.13	17.96	18.04	18.04	18.28	17.49	17.30	18.00	17.16	17.05	17.04	16.69
29	17.23	17.90	18.00	17.56	18.27	17.44	17.29	17.42	17.19	17.02	16.97	16.32
30	17.31	17.97	18.15	18.13	---	17.38	17.77	17.79	17.58	17.08	17.37	16.18
31	18.09	---	18.16	18.36	---	17.33	---	17.38	---	17.11	16.98	---
MEAN	17.08	17.50	17.71	17.85	17.83	17.65	17.52	17.58	17.34	17.14	17.17	16.52

WTR YR 1996 MEAN 17.41 HIGHEST 16.08 SEPT. 23, 24, 1996 LOWEST 18.55 OCT. 31, 1995

GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS--Continued

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.24	16.75	16.19	16.38	17.10	16.66	16.78	16.96	17.32	17.31	16.79	16.67
2	16.42	16.26	16.08	16.34	16.69	16.54	16.72	16.94	16.82	17.39	16.71	16.69
3	16.24	16.35	16.69	16.66	16.53	16.54	17.22	17.12	16.92	17.43	16.63	16.70
4	16.14	16.30	16.67	16.47	17.08	16.64	16.84	16.73	17.15	17.46	16.58	16.70
5	16.11	16.36	16.61	16.41	16.69	16.96	17.08	16.79	16.97	17.41	16.63	16.69
6	16.52	16.36	16.29	16.33	16.78	16.67	16.75	17.22	17.21	16.93	16.59	16.67
7	16.26	16.31	16.56	16.28	16.75	16.64	16.69	16.87	17.37	16.85	16.60	16.66
8	16.09	16.58	16.16	16.79	17.11	16.71	16.88	16.74	16.95	17.02	16.64	16.59
9	16.13	16.61	16.04	16.98	17.21	16.70	16.78	16.82	16.90	17.34	16.69	16.78
10	16.03	16.26	16.56	16.96	17.11	16.61	17.15	16.90	16.95	17.34	16.69	16.76
11	16.05	16.24	16.77	16.91	16.69	16.73	16.74	16.72	17.26	17.38	16.69	16.77
12	16.15	16.18	16.70	16.88	16.60	17.12	16.77	16.97	16.97	17.44	16.68	16.79
13	16.13	16.15	16.21	16.56	16.55	17.10	16.74	16.69	17.37	17.39	16.68	16.80
14	16.10	16.26	16.21	16.87	16.70	16.71	16.70	16.79	17.42	17.36	16.68	16.82
15	16.23	16.68	16.20	16.75	17.15	17.00	16.77	17.07	17.00	17.46	16.68	16.78
16	16.49	16.72	16.15	16.87	16.76	16.68	17.19	16.77	16.92	17.10	16.68	16.78
17	16.37	16.89	16.09	16.98	16.75	16.69	16.95	16.70	17.02	17.41	16.68	16.78
18	16.20	16.39	16.07	17.00	17.21	17.16	16.87	16.70	17.32	17.10	16.65	16.79
19	16.22	16.73	16.05	16.98	16.88	16.71	16.86	16.74	17.40	17.34	16.68	16.81
20	16.10	16.24	16.49	16.73	16.84	17.16	16.79	16.88	17.46	16.85	16.69	16.82
21	16.09	16.11	16.69	17.07	17.30	16.81	16.74	16.81	17.47	---	16.70	16.83
22	16.32	16.07	16.33	17.03	16.95	17.19	16.80	16.66	16.96	---	16.71	16.86
23	16.30	16.13	16.30	16.74	16.85	17.27	17.07	16.73	16.89	---	16.70	16.87
24	16.24	16.08	16.21	17.08	16.79	16.77	16.95	17.04	17.29	---	16.70	16.88
25	16.37	16.05	16.35	17.22	16.78	16.77	16.98	16.68	17.37	---	16.70	16.88
26	16.29	16.12	16.37	16.80	17.14	16.88	16.82	16.64	17.40	---	16.70	16.90
27	16.17	16.13	16.65	16.75	16.76	17.25	16.71	16.65	17.44	---	16.72	16.88
28	16.17	16.23	16.73	17.10	16.69	16.85	16.68	16.71	17.37	---	16.70	16.86
29	16.35	16.15	16.39	16.76	---	17.22	16.89	16.75	16.99	---	16.69	16.86
30	16.33	16.59	16.23	16.71	---	16.80	17.01	17.18	16.91	17.15	16.69	16.87
31	16.70	---	16.69	17.10	---	16.76	---	17.27	---	17.13	16.68	---
MEAN	16.24	16.34	16.38	16.79	16.87	16.85	16.86	16.85	17.16	---	16.68	16.78

WTR YR 1997 MEAN 16.74 HIGHEST 16.00 NOV. 25, 1996 LOWEST 17.62 JUNE 20, 1997

GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS--Continued

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.88	17.05	18.38	17.81	15.80	15.43	15.91	16.70	16.63	16.60	16.40	16.25
2	16.88	17.11	18.50	17.54	15.64	15.38	15.94	16.71	16.68	16.57	16.48	16.28
3	16.89	16.72	18.58	17.52	15.94	15.37	16.03	16.64	16.71	16.57	16.47	16.18
4	16.89	16.73	19.02	17.20	15.97	15.33	16.12	16.69	16.66	16.52	16.49	16.11
5	16.90	16.71	19.19	16.96	15.56	15.42	16.54	16.81	16.98	16.53	16.46	16.06
6	16.91	16.69	19.14	17.38	15.54	15.46	16.33	16.84	16.98	16.53	16.45	16.00
7	16.91	16.75	19.23	16.84	15.38	15.65	16.30	16.83	16.74	16.54	16.44	15.99
8	16.92	16.82	19.02	16.70	15.33	15.34	16.30	16.70	16.73	16.58	16.43	15.97
9	16.92	16.77	19.38	16.56	15.33	15.38	16.27	16.64	16.76	16.58	16.37	16.00
10	16.93	16.62	19.52	16.49	15.42	15.85	16.67	16.65	16.77	16.54	16.42	15.97
11	16.93	16.66	19.16	16.90	15.40	15.89	16.39	16.65	16.76	16.50	16.42	16.03
12	16.86	16.72	19.21	16.45	15.38	15.74	16.22	16.69	16.69	16.47	16.42	16.09
13	16.83	16.74	19.25	16.29	15.63	15.95	16.27	16.68	16.64	16.46	16.45	16.06
14	16.74	16.83	19.36	16.16	15.69	16.07	16.37	16.63	16.60	16.49	16.52	16.06
15	16.58	16.96	19.39	16.10	15.27	16.10	16.39	16.69	16.61	16.49	16.57	16.08
16	16.50	17.18	19.53	16.14	15.23	15.82	16.70	16.65	16.69	16.48	16.55	16.01
17	16.51	17.11	19.73	16.58	15.18	16.13	16.44	16.54	16.64	16.51	16.49	16.04
18	16.52	17.14	19.56	16.14	15.57	16.38	16.43	16.58	16.61	16.51	16.56	16.06
19	16.52	17.24	19.55	16.08	15.34	16.30	16.47	16.57	16.94	16.49	16.43	15.96
20	16.49	17.31	19.48	16.44	15.40	15.95	16.52	16.67	16.81	16.47	16.37	15.95
21	16.49	17.44	19.25	16.56	15.81	15.87	16.95	16.69	16.67	16.47	16.37	15.87
22	16.50	17.51	18.80	16.54	15.75	15.92	17.01	17.00	16.59	16.47	16.32	15.36
23	16.50	17.55	18.66	16.31	15.69	15.87	16.90	16.92	16.58	16.46	16.35	15.17
24	16.51	17.60	18.57	15.91	15.71	16.25	16.63	16.64	16.56	16.44	16.28	---
25	16.53	17.70	18.33	15.86	15.89	16.00	16.99	16.66	16.87	16.43	16.11	---
26	16.51	18.13	18.19	15.86	15.60	15.98	16.64	16.65	16.63	16.44	16.18	---
27	16.47	18.30	18.57	16.40	15.45	15.92	16.61	16.64	16.55	16.44	16.19	---
28	16.48	18.00	18.54	16.38	15.45	15.88	16.96	16.66	16.52	16.51	16.16	---
29	16.57	18.53	17.94	16.32	---	15.85	16.71	16.68	16.55	16.49	16.19	---
30	16.68	18.59	18.36	16.35	---	15.93	16.65	16.68	16.55	16.53	16.20	---
31	16.91	---	18.40	16.06	---	15.89	---	16.60	---	16.51	16.19	---
MEAN	16.70	17.24	18.96	16.54	15.55	15.82	16.49	16.69	16.69	16.50	16.38	---

WTR YR 1998 MEAN 16.65 HIGHEST 15.14 SEPT. 23, 24, 1998 LOWEST 19.75 DEC. 17, 1997

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 17	15.51	FEB 19	15.45	APR 07	15.91	JUN 02	16.09	AUG 09	16.31	SEP 28	16.18
JAN 25	15.28	MAR 30	15.88	MAY 11	16.11	JUL 13	16.10				

WATER YEAR 1999 HIGHEST 15.28 JAN. 25, 1999 LOWEST 16.31 AUG. 09, 1999

GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS--Continued

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	16.17	15.23	15.24	15.53	15.83	15.96	16.02	15.38	---	---	15.47
2	---	16.02	15.27	15.24	15.56	15.91	15.95	16.11	15.39	---	---	15.53
3	---	16.01	15.35	15.29	15.60	15.94	15.98	16.04	15.35	---	---	15.57
4	---	16.04	15.34	15.35	15.63	15.84	15.94	16.10	15.36	---	---	15.54
5	---	16.10	15.37	15.33	15.59	15.91	15.94	16.08	15.34	---	---	15.59
6	---	16.14	15.31	15.32	15.63	15.86	16.01	16.12	15.36	---	---	15.60
7	---	16.07	15.43	15.28	15.60	15.85	16.01	16.06	15.36	---	---	15.60
8	---	16.06	15.44	15.36	15.56	15.86	15.99	16.03	15.39	---	---	15.58
9	---	16.16	15.49	15.38	15.53	15.90	15.97	16.05	15.43	---	---	15.61
10	---	16.12	15.57	15.38	15.55	15.89	15.98	16.04	15.44	---	---	15.55
11	---	15.99	15.62	15.38	15.56	15.84	15.99	16.03	15.43	---	---	15.53
12	---	15.97	15.52	15.38	15.61	15.85	16.01	15.74	15.41	---	---	15.54
13	---	15.76	15.49	15.32	15.55	15.84	16.01	15.69	15.44	---	---	15.56
14	---	15.72	15.55	15.34	15.48	15.90	16.11	15.65	---	---	---	15.49
15	---	15.71	15.50	15.34	15.56	15.90	16.10	15.65	---	---	---	15.49
16	---	15.48	15.59	15.43	15.59	15.98	16.11	15.66	---	---	---	15.50
17	---	15.20	15.49	15.31	15.62	16.03	16.11	15.66	---	---	---	15.48
18	---	14.98	15.43	15.37	15.62	16.00	16.10	15.67	---	---	---	15.16
19	---	14.90	15.38	15.50	15.64	16.01	16.06	15.59	---	---	---	15.05
20	---	14.94	15.40	15.48	15.64	15.97	16.06	15.55	---	---	---	15.05
21	---	14.99	15.42	15.48	15.66	15.98	16.03	15.55	---	---	---	15.02
22	15.96	14.95	15.50	15.49	15.66	15.99	16.04	15.55	---	---	---	15.07
23	16.04	15.08	15.54	15.46	15.66	15.97	16.04	15.54	---	---	15.70	15.03
24	16.08	15.13	15.64	15.44	15.72	15.97	16.07	15.52	---	---	15.64	14.92
25	16.04	15.12	15.50	15.39	15.74	15.96	16.08	15.53	---	---	15.59	14.95
26	16.07	15.21	15.48	15.42	15.71	15.98	16.11	15.51	---	---	15.59	14.94
27	16.11	15.28	15.50	15.44	15.75	15.98	16.11	15.50	---	---	15.54	14.90
28	16.11	15.27	15.44	15.51	15.79	15.98	16.08	15.47	---	---	15.48	14.86
29	16.13	15.25	15.33	15.48	15.79	16.01	16.07	15.43	---	---	15.43	14.87
30	16.16	15.23	15.33	15.49	---	15.96	16.08	15.39	---	---	15.44	14.89
31	16.19	---	15.30	15.55	---	15.97	---	15.37	---	---	15.47	---
MEAN	---	15.57	15.44	15.39	15.63	15.93	16.04	15.74	---	---	---	15.30

WTR YR 2000 MEAN 15.63 HIGHEST 14.85 SEPT. 28, 29, 2000 LOWEST 16.27 MAY 6, 2000

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	15.96	DEC 30	15.33	FEB 25	15.74	APR 20	16.06	AUG 07	15.81	AUG 07	15.79
NOV 23	15.05	JAN 28	15.51	MAR 31	15.98	JUN 13	15.44				

WATER YEAR 2000 HIGHEST 15.05 NOV. 23, 1999 LOWEST 16.06 APR. 20, 2000

GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS--Continued

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.92	15.04	15.40	15.58	15.97	---	---	---	---	---	16.25	15.57
2	14.95	15.05	15.39	15.56	15.94	---	---	---	---	---	16.24	15.58
3	14.99	15.06	15.34	15.66	15.97	---	---	---	---	---	16.27	15.56
4	15.00	15.10	15.37	15.55	15.92	---	---	---	---	---	16.23	15.54
5	14.99	15.01	15.36	15.59	15.94	---	---	---	---	---	16.23	15.56
6	14.97	15.02	15.39	15.56	15.96	---	---	---	---	---	16.25	15.60
7	15.00	15.04	15.39	15.56	15.96	---	---	---	---	---	16.25	15.63
8	14.91	15.03	15.49	15.53	15.96	---	---	---	---	---	16.31	15.65
9	14.90	15.01	15.40	15.65	15.98	---	---	---	---	---	16.30	15.68
10	14.87	15.06	15.37	15.70	15.99	---	---	---	---	---	16.30	15.69
11	14.86	15.05	15.44	15.73	15.97	---	---	---	---	---	16.33	15.69
12	14.85	15.01	15.50	15.76	15.89	---	---	---	---	---	16.33	15.59
13	14.86	15.19	15.47	15.66	15.91	---	---	---	---	---	16.36	15.51
14	14.90	15.24	15.53	15.57	16.03	---	---	---	---	---	16.44	15.53
15	14.98	15.28	15.51	15.61	16.01	---	---	---	---	---	16.42	15.50
16	14.95	15.28	15.50	15.64	16.11	---	---	---	---	---	16.33	15.43
17	14.93	15.29	15.46	15.70	16.01	---	---	---	---	---	16.34	15.39
18	15.03	15.34	15.50	15.69	15.99	---	---	---	---	---	16.26	15.43
19	15.01	15.26	15.48	15.69	16.01	---	---	---	---	16.19	16.27	15.40
20	15.01	15.23	15.51	15.78	16.12	---	---	---	---	16.22	16.32	15.47
21	14.99	15.20	15.44	15.85	16.11	---	---	---	---	16.18	16.28	15.46
22	14.90	15.22	15.48	15.85	16.04	---	---	---	---	16.11	16.28	15.47
23	14.80	15.18	15.51	15.92	16.13	---	---	---	---	16.03	15.92	15.47
24	14.85	15.20	15.53	15.90	16.08	---	---	---	---	16.12	15.74	15.55
25	14.81	15.22	15.50	15.90	16.06	---	---	---	---	16.20	15.72	15.53
26	14.83	15.21	15.51	15.89	16.00	---	---	---	---	16.25	15.70	15.59
27	14.88	15.26	15.60	15.90	16.07	---	---	---	---	16.30	15.72	15.54
28	14.96	15.43	15.61	15.82	---	---	---	---	---	16.29	15.68	15.52
29	14.94	15.42	15.58	15.86	---	---	---	---	---	16.27	15.71	15.53
30	14.94	15.37	15.68	15.87	---	---	---	---	---	16.19	15.66	15.53
31	15.01	---	15.70	15.91	---	---	---	---	---	16.22	15.60	---
MEAN	14.93	15.18	15.48	15.72	---	---	---	---	---	---	16.13	15.54

WTR YR 2001 MEAN 15.60 HIGHEST 14.76 OCT. 22, 23, 2000 LOWEST 16.47 AUG. 15, 2001

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	14.85	FEB 26	16.01	MAR 26	16.01	APR 26	16.11	JUN 11	16.01	SEP 21	15.46
NOV 20	15.22										

WATER YEAR 2001 HIGHEST 14.85 OCT. 24, 2000 LOWEST 16.11 APR. 26, 2001

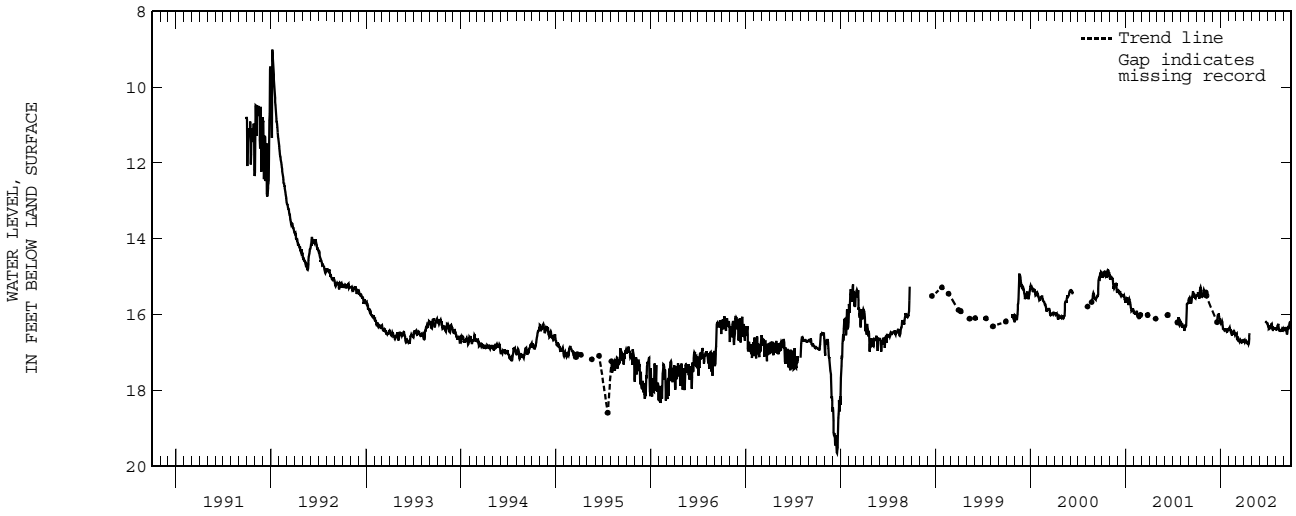
GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS--Continued

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.49	15.40	---	16.22	16.40	16.51	16.65	---	---	16.25	16.33	16.39
2	15.51	15.42	---	16.24	16.38	16.51	16.73	---	---	16.29	16.35	16.43
3	15.48	15.39	---	16.25	16.36	16.50	16.68	---	---	16.31	16.40	16.38
4	15.48	15.44	---	16.21	16.34	16.50	16.71	---	---	16.30	16.40	16.37
5	15.45	15.41	---	16.25	16.34	16.62	16.75	---	---	16.36	16.40	16.40
6	15.37	15.42	---	16.16	16.43	16.68	16.72	---	---	16.38	16.43	16.36
7	15.47	---	---	16.19	16.37	16.63	16.71	---	---	16.34	16.31	16.33
8	15.50	---	---	16.23	16.43	16.60	16.72	---	---	16.40	16.30	16.33
9	15.39	---	---	16.36	16.47	16.61	16.67	---	---	16.33	16.27	16.40
10	15.58	---	---	16.35	16.46	16.65	16.69	---	---	16.34	16.27	16.40
11	15.57	---	---	16.38	16.47	16.69	16.71	---	---	16.32	16.21	16.44
12	15.54	---	---	16.38	16.51	16.69	16.73	---	---	16.29	16.31	16.44
13	15.39	---	---	16.38	16.53	16.69	16.77	---	---	16.31	16.36	16.50
14	15.33	---	---	16.40	16.53	16.71	16.75	---	---	16.27	16.41	16.54
15	15.28	---	---	16.38	16.53	16.72	16.77	---	---	16.23	16.38	16.44
16	15.29	---	---	16.41	16.50	16.71	16.75	---	---	16.26	16.46	16.36
17	15.34	---	---	16.41	16.46	16.67	16.73	---	---	16.25	16.45	16.35
18	15.40	---	16.20	16.40	16.44	16.68	16.76	---	---	16.32	16.42	16.39
19	15.49	---	16.08	16.41	16.45	16.72	16.80	---	---	16.40	16.44	16.38
20	15.49	---	16.08	16.39	16.47	16.69	16.71	---	---	16.38	16.42	16.35
21	15.46	---	16.03	16.37	16.42	16.71	16.57	---	---	16.38	16.40	16.30
22	15.51	---	15.99	16.37	16.53	16.71	16.49	---	---	16.39	16.40	16.27
23	15.53	---	16.01	16.41	16.49	16.69	---	---	16.23	16.40	16.43	16.24
24	15.53	---	16.01	16.45	16.49	16.69	---	---	16.21	16.36	16.39	16.22
25	15.49	---	16.00	16.44	16.55	16.71	---	---	16.19	16.35	16.36	16.19
26	15.46	---	15.99	16.44	16.54	16.72	---	---	16.20	16.37	16.37	16.20
27	15.43	---	16.11	16.43	16.52	16.71	---	---	16.21	16.35	16.38	16.24
28	15.34	---	16.14	16.44	16.53	16.70	---	---	16.23	16.35	16.39	16.24
29	15.36	---	16.10	16.39	---	16.70	---	---	16.23	16.35	16.37	16.25
30	15.39	---	16.14	16.42	---	16.68	---	---	16.19	16.35	16.44	16.24
31	15.37	---	16.21	16.37	---	16.64	---	---	---	16.36	16.39	---
MEAN	15.44	---	---	16.35	16.46	16.66	---	---	---	16.33	16.38	16.35

WTR YR 2002 MEAN 16.28 HIGHEST 15.28 OCT. 14, 2001 LOWEST 16.95 APR. 18, 2002



WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	15.49	DEC 18	16.20	MAR 18	16.71	AUG 26	16.36	SEP 30	16.24	SEP 30	16.25
NOV 07	15.50	FEB 05	16.34	APR 22	16.49	26	16.37				

WATER YEAR 2002 HIGHEST 15.49 OCT. 19, 2001 LOWEST 16.49 APR. 22, 2002

GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS--Continued

175843066244100. Local number, 1263.
LOCATION.--Lat 17°58'43", long 66°24'43", Hydrologic Unit 21010004, 0.4 mi east of new Hwy 1 bridge over RÌo Coamo, 0.9 mi northwest of Santa Isabel plaza, and 1.6 miles north-northwest of dock at Santa Isabel. Name: Jobitos Battery Well.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled unused water table well, diameter 6 in (0.15 m). Depth 159 ft (48.4 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land surface is about 39.0 ft (11.9 m) above mean sea level from topographic map. Measuring point: XXXX, 2.70 ft (0.82 m) above land-surface datum. Prior to February 1997 XXXX, 1.41 ft (0.43 m) above land-surface datum.
REMARKS.--Abandoned production well being used as recording observation well. Automated Digital Recorder (ADR), installed on September 26, 1991, replaced by an Electronic Data Logger on September 9, 1997.
PERIOD OF RECORD.--September 26, 1991 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 34.86 ft (10.62 m), below land-surface datum, October 16, 2000; lowest water level recorded, 45.73 ft (13.94 m) below land-surface datum, September 16, 17, 1994.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36.41	37.45	38.10	---	---	---	38.40	38.14	36.24	36.39	36.93	37.05
2	36.37	37.20	38.07	---	---	---	38.36	38.11	36.24	36.22	36.85	36.84
3	36.67	37.01	37.98	---	---	---	38.31	38.08	36.30	36.35	36.67	36.81
4	36.32	37.12	37.46	---	---	---	38.14	38.05	36.32	36.48	36.79	37.02
5	36.59	37.10	37.60	---	---	---	38.16	38.05	36.29	36.25	36.81	37.05
6	36.16	37.25	37.82	---	---	---	38.08	38.21	36.67	36.10	36.57	36.95
7	36.27	36.73	38.21	---	---	---	38.28	38.11	36.47	36.34	36.41	36.71
8	36.52	36.44	38.44	---	---	---	38.44	38.16	36.36	36.51	36.41	36.64
9	36.47	36.26	38.08	---	---	---	38.46	38.22	36.34	36.42	36.27	36.73
10	36.25	36.15	37.93	---	---	---	38.53	38.16	36.53	36.87	36.19	36.87
11	36.24	36.32	38.25	---	---	---	38.48	38.12	36.47	36.58	36.51	36.88
12	36.01	36.46	38.50	---	---	---	38.39	38.11	36.45	36.44	36.54	37.09
13	36.05	36.58	38.00	---	---	---	38.19	38.14	36.35	36.27	36.53	36.80
14	36.36	36.73	37.85	---	---	---	38.62	38.24	36.16	36.61	36.53	36.76
15	36.52	36.79	38.19	---	---	---	38.44	38.14	36.02	36.75	36.53	36.84
16	36.73	36.46	38.21	---	---	---	38.42	38.13	36.12	36.59	36.49	36.99
17	36.69	36.36	38.18	---	---	---	38.28	38.06	36.07	36.44	36.33	36.76
18	36.46	36.82	38.36	---	---	---	38.11	38.05	36.33	36.55	36.63	36.71
19	36.62	---	38.65	---	---	---	38.05	38.05	36.39	36.55	36.79	36.92
20	36.79	36.78	38.07	---	---	---	38.08	38.05	36.48	36.32	36.65	36.99
21	37.09	37.24	38.15	---	---	---	38.03	38.05	36.47	36.48	36.61	36.77
22	36.90	37.20	38.83	---	---	---	38.03	38.05	35.97	36.71	36.76	36.46
23	36.91	37.38	38.95	---	---	---	38.03	38.01	35.90	36.66	36.68	36.46
24	36.96	37.50	38.52	---	---	---	38.03	37.23	36.00	36.63	36.51	36.41
25	36.84	37.56	37.36	---	---	---	38.06	37.14	36.33	36.62	37.08	36.36
26	36.63	37.46	36.94	---	---	---	38.06	36.86	36.17	36.32	37.14	36.62
27	36.71	37.26	36.77	---	---	---	38.06	36.63	36.11	36.23	37.06	36.46
28	36.73	37.74	36.67	---	---	---	38.09	36.55	36.24	36.71	36.95	36.45
29	36.71	38.04	36.63	---	---	---	38.18	36.45	36.05	36.89	37.25	36.36
30	37.17	38.06	---	---	---	---	38.16	36.46	36.11	37.19	36.80	36.38
31	37.12	---	---	---	---	38.25	---	36.39	---	37.14	36.57	---
MEAN	36.59	---	---	---	---	---	38.23	37.75	36.27	36.54	36.67	36.74

WTR YR 1992 MEAN 37.08 HIGHEST 35.90 JUNE 22, 23, 1992 LOWEST 38.98 DEC. 22, 1991

GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS--Continued

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36.30	35.73	35.64	37.41	38.03	38.68	39.54	39.50	38.94	39.26	39.10	38.42
2	36.29	35.67	35.74	37.17	38.44	38.84	39.62	39.43	39.05	39.37	38.86	38.50
3	36.42	35.86	35.83	37.16	38.80	38.76	39.51	39.17	39.16	39.36	38.92	38.54
4	36.22	35.89	35.87	37.25	38.88	38.73	39.39	39.26	39.29	39.25	39.17	38.56
5	36.08	35.87	35.94	37.75	38.98	39.03	39.24	39.41	39.17	39.01	39.26	38.49
6	36.31	35.85	36.09	37.96	39.28	38.92	39.42	39.52	39.06	39.19	39.29	38.55
7	36.27	35.85	36.03	37.83	38.78	38.72	39.52	39.52	38.95	39.45	39.33	38.63
8	36.14	35.93	36.14	38.00	38.62	38.57	39.62	39.51	39.20	39.49	39.27	38.72
9	36.32	36.29	36.50	38.08	38.91	39.01	39.36	39.30	39.41	39.60	39.06	38.93
10	36.40	36.47	37.09	38.24	39.16	39.07	39.18	39.16	39.51	39.51	39.37	38.82
11	36.18	36.45	36.83	37.96	39.42	39.12	39.14	39.06	39.56	39.17	39.50	38.90
12	36.02	36.46	36.75	38.08	39.35	39.24	39.13	39.10	39.54	38.89	39.36	38.73
13	36.02	36.10	36.72	38.08	39.08	39.45	39.34	39.26	39.53	38.86	39.36	38.55
14	36.10	36.08	36.72	38.53	38.92	38.96	39.45	39.20	39.42	38.93	39.65	38.85
15	36.20	35.88	36.88	38.29	38.76	38.77	39.42	39.02	39.63	39.07	39.68	38.72
16	36.19	36.04	36.99	38.11	39.25	39.16	39.59	38.89	39.47	38.99	39.06	38.83
17	36.14	35.94	37.15	38.02	39.38	39.27	39.43	38.86	39.46	38.90	38.95	38.88
18	35.98	35.79	37.19	37.91	39.34	39.22	39.30	38.84	39.62	38.76	38.73	38.87
19	36.06	35.84	37.04	38.18	39.55	39.34	39.21	38.83	39.41	38.73	38.65	38.90
20	36.38	35.77	36.76	38.43	39.39	39.13	39.33	38.94	39.06	39.22	38.83	38.57
21	36.52	35.64	37.01	38.36	39.05	38.95	39.57	38.81	38.96	39.52	38.86	38.83
22	36.20	35.59	37.34	38.69	38.60	39.04	39.73	38.69	38.83	39.65	38.86	38.90
23	36.16	35.56	37.67	38.55	38.88	39.30	39.81	38.63	38.90	39.34	38.47	38.95
24	36.00	35.77	37.91	38.82	38.87	39.33	39.72	38.62	39.10	38.98	38.38	38.56
25	35.87	36.06	37.87	38.30	38.96	39.45	39.72	38.76	39.20	38.79	38.30	38.39
26	35.88	36.60	37.86	38.46	39.03	39.80	39.56	38.67	39.10	38.62	38.22	38.25
27	36.22	36.04	37.44	38.55	39.06	39.51	39.75	38.89	39.28	38.70	38.29	38.24
28	36.25	35.83	37.25	38.86	38.85	39.29	39.87	38.94	38.98	39.09	38.49	38.53
29	36.32	35.55	37.82	38.41	---	39.15	39.92	38.83	39.21	39.23	38.37	38.67
30	36.22	35.42	38.17	38.13	---	39.04	39.74	38.65	39.40	39.21	38.15	38.72
31	35.95	---	37.69	38.12	---	39.34	---	38.58	---	39.12	38.27	---
MEAN	36.18	35.93	36.90	38.12	38.99	39.10	39.50	39.03	39.25	39.14	38.91	38.67

WTR YR 1993 MEAN 38.30 HIGHEST 35.40 NOV. 30, 1992 LOWEST 40.01 MAR. 26, 1993

GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS--Continued

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38.54	39.61	40.27	41.26	42.75	43.63	44.00	43.61	43.56	44.24	44.57	45.16
2	38.51	39.78	40.30	41.12	43.01	43.62	43.98	43.59	43.70	44.27	44.58	45.18
3	38.42	39.98	40.34	41.29	42.92	43.61	43.98	43.57	43.76	44.27	44.59	45.28
4	38.47	40.10	40.29	41.64	43.00	43.61	43.96	43.54	43.82	44.28	44.60	45.29
5	38.40	40.17	40.43	41.88	43.17	43.60	43.96	43.51	43.82	44.27	44.61	45.30
6	38.47	40.00	40.28	41.72	42.91	43.59	43.96	43.49	43.82	44.28	44.62	45.31
7	38.51	40.04	40.60	41.56	42.72	43.59	43.96	43.49	43.82	44.28	44.63	45.31
8	38.48	39.91	40.76	41.89	43.15	43.58	43.95	43.49	43.82	44.37	44.64	45.32
9	38.53	39.87	40.85	41.70	43.19	43.57	43.95	43.49	43.82	44.43	44.65	45.33
10	38.65	40.03	41.01	41.58	43.43	43.59	43.95	43.49	43.84	44.51	44.66	45.41
11	38.50	40.21	40.88	41.94	43.46	43.56	43.94	43.49	44.06	44.50	44.67	45.42
12	38.65	40.14	40.70	41.98	43.46	43.56	43.94	43.49	44.03	44.49	44.68	45.43
13	38.69	40.22	40.60	42.16	43.45	43.55	43.91	43.49	44.01	44.51	44.68	45.44
14	38.68	40.08	40.91	42.10	43.44	43.53	43.89	43.59	44.01	44.50	44.77	45.61
15	38.90	40.11	41.18	42.12	43.44	43.53	43.87	43.60	44.14	44.49	44.82	45.71
16	39.06	40.39	40.99	42.10	43.43	43.54	43.85	43.58	44.15	44.48	44.83	45.68
17	38.78	40.31	41.10	41.83	43.49	43.65	43.83	43.58	44.15	44.47	44.84	45.73
18	38.70	40.32	41.25	42.24	43.55	43.74	43.80	43.58	44.14	44.46	44.85	45.69
19	38.91	40.06	40.82	42.29	43.54	43.74	43.78	43.58	44.09	44.45	44.86	45.56
20	39.15	39.90	40.72	42.30	43.53	43.75	43.75	43.58	44.08	44.44	44.87	45.60
21	39.47	39.84	41.17	42.55	43.50	43.74	43.73	43.58	44.07	44.43	44.88	45.42
22	39.56	39.75	41.32	42.51	43.42	43.73	43.71	43.60	44.05	44.43	44.89	45.36
23	39.45	39.96	41.45	42.49	43.41	43.73	43.73	43.58	44.04	44.46	44.93	45.33
24	39.10	40.20	41.25	42.29	43.41	43.86	43.67	43.56	44.03	44.47	44.99	45.26
25	39.07	40.17	41.14	42.49	43.40	43.86	43.74	43.56	44.02	44.48	45.09	45.09
26	39.56	39.89	41.06	42.46	43.55	43.87	43.72	43.53	44.02	44.49	45.09	45.09
27	39.67	40.00	41.08	42.60	43.56	43.87	43.70	43.52	44.00	44.50	45.10	45.09
28	40.09	39.74	41.50	42.54	43.63	43.88	43.68	43.52	44.05	44.54	45.11	45.09
29	39.95	39.70	41.54	42.85	---	43.88	43.66	43.57	44.06	44.55	45.12	45.12
30	39.89	40.06	41.54	42.73	---	43.89	43.64	43.56	44.14	44.56	45.13	45.18
31	39.79	---	41.58	42.68	---	43.89	---	43.56	---	44.56	45.14	---
MEAN	38.99	40.02	40.93	42.09	43.32	43.69	43.84	43.55	43.97	44.43	44.82	45.36

WTR YR 1994 MEAN 42.91 HIGHEST 38.38 OCT. 4, 1993 LOWEST 45.73 SEPT. 16, 17, 1994

GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS--Continued

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1994 TO SEPTEMBER 1995
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45.18	43.85	44.24	44.36	45.52	44.56	45.27	---	44.68	44.95	44.19	42.62
2	45.31	43.91	44.26	44.06	45.54	44.49	45.33	---	44.40	44.72	44.04	42.59
3	45.31	43.94	44.22	44.11	45.65	44.49	45.10	---	44.78	44.74	43.95	42.73
4	45.26	44.01	44.15	44.41	45.58	44.58	45.18	---	44.94	44.86	43.90	42.69
5	45.19	43.89	43.98	44.39	45.57	44.78	45.16	---	45.05	44.94	43.81	42.70
6	45.23	43.85	44.16	44.40	45.47	44.68	---	---	44.67	44.96	43.80	42.87
7	45.42	43.69	44.31	44.37	45.63	44.81	---	---	44.46	44.89	43.86	42.83
8	45.42	43.69	44.21	44.35	45.70	44.78	---	---	44.61	44.76	43.76	42.85
9	45.42	43.66	44.51	44.19	45.59	44.96	---	---	44.57	44.61	43.66	42.86
10	45.43	43.64	44.49	44.28	45.58	44.94	---	---	44.43	44.84	43.55	42.74
11	45.44	43.58	44.49	44.24	45.48	44.93	---	---	44.52	44.84	43.41	42.64
12	45.45	43.58	44.23	44.29	45.51	44.82	---	---	44.74	44.55	43.34	42.51
13	45.50	43.47	44.42	44.33	45.33	44.75	---	---	44.53	44.31	43.35	42.55
14	45.51	43.39	44.55	44.28	45.40	44.75	---	---	44.28	43.88	43.41	42.36
15	45.67	43.55	44.49	44.25	45.59	44.75	---	---	44.46	43.94	43.07	42.20
16	45.50	43.37	44.50	44.16	45.52	44.75	---	---	44.51	44.06	42.84	42.28
17	45.30	43.63	44.65	44.58	45.47	44.80	---	---	44.32	44.18	42.91	42.36
18	45.06	43.85	44.48	44.74	45.47	44.88	---	---	44.59	44.24	42.88	42.57
19	44.87	44.04	44.36	44.80	45.59	44.82	---	---	44.77	44.26	43.23	42.46
20	44.68	44.07	44.73	44.78	45.41	44.75	---	---	44.68	44.03	43.39	42.36
21	44.61	43.94	44.91	44.88	45.40	44.83	---	---	44.51	43.97	43.53	42.41
22	44.45	44.07	45.02	44.87	45.11	45.04	---	---	44.62	43.60	43.59	42.31
23	44.33	44.05	45.05	44.72	44.97	45.08	---	---	44.66	43.52	43.58	42.22
24	44.06	43.94	44.93	44.90	44.95	45.08	---	---	44.65	43.65	43.49	42.49
25	43.88	43.87	44.56	45.08	44.95	45.12	---	---	44.63	43.62	43.45	42.55
26	43.82	43.95	44.27	45.16	45.08	45.29	---	44.31	44.79	43.52	43.38	42.47
27	43.73	43.87	44.24	45.06	44.87	45.08	---	44.53	44.86	43.40	43.39	42.42
28	43.73	43.73	44.32	45.19	44.65	45.07	---	44.65	44.99	43.51	43.32	42.40
29	43.73	44.18	44.51	45.23	---	45.09	---	44.87	45.02	43.72	43.20	42.34
30	43.73	44.22	44.48	45.16	---	45.09	---	44.70	44.98	43.94	43.00	42.52
31	43.67	---	44.71	45.28	---	45.20	---	44.69	---	44.13	42.88	---
MEAN	44.84	43.82	44.47	44.61	45.38	44.87	---	---	44.66	44.23	43.46	42.53

WTR YR 1995 MEAN 44.30 HIGHEST 42.10 SEPT. 14, 15, 1995 LOWEST 45.70 FEB 7, 8, 1995

GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS--Continued

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42.50	42.18	42.76	43.63	43.77	43.91	43.78	43.77	44.28	43.45	44.05	---
2	42.45	42.24	42.72	43.69	43.68	43.92	43.59	43.83	44.44	43.51	43.92	---
3	42.17	42.23	42.83	43.41	43.89	43.75	43.50	43.78	44.28	43.42	43.74	---
4	42.16	42.12	43.00	43.38	43.99	43.76	43.49	43.66	44.64	43.38	44.00	---
5	42.17	42.36	42.84	43.22	43.87	43.68	43.69	43.84	44.74	43.41	44.17	---
6	42.15	42.55	42.92	43.33	43.67	43.59	43.89	43.95	45.07	43.37	43.89	---
7	42.06	42.43	43.10	43.55	43.65	43.39	43.85	43.71	45.30	43.41	43.89	---
8	42.27	42.31	43.20	43.48	43.78	43.26	43.86	43.73	45.35	43.71	43.92	---
9	42.27	42.36	43.07	43.36	43.77	43.26	43.74	43.73	45.34	43.86	43.73	---
10	42.05	42.57	43.15	43.44	43.78	43.43	43.69	43.73	45.25	44.07	43.80	---
11	42.07	41.92	43.12	43.39	43.80	43.43	43.56	43.80	45.08	44.28	43.97	---
12	42.13	42.14	43.14	43.54	43.88	43.33	43.68	43.83	45.33	44.33	44.07	---
13	42.03	42.25	42.87	43.69	43.70	43.43	43.86	43.91	45.42	44.35	44.00	---
14	41.92	42.14	42.92	43.70	43.52	43.12	44.01	44.14	45.18	44.33	43.79	---
15	42.00	42.23	42.85	43.79	43.77	43.05	44.13	44.23	45.07	44.53	43.84	---
16	42.11	42.23	42.78	43.75	43.75	43.39	44.04	44.22	---	44.74	43.94	---
17	41.93	42.23	42.94	43.66	43.85	43.59	43.80	44.18	---	44.85	44.26	---
18	41.92	42.27	43.11	43.36	44.23	43.67	43.78	44.09	---	44.93	44.31	---
19	42.03	42.35	43.17	43.47	44.35	43.76	43.85	44.11	---	44.86	44.26	---
20	42.12	42.49	43.41	43.47	44.38	43.78	43.97	44.31	---	44.63	43.99	---
21	42.05	42.41	43.53	43.72	44.33	43.60	44.21	44.35	---	44.46	43.93	---
22	42.16	42.33	43.63	43.84	44.20	43.53	44.21	44.32	---	44.47	43.83	---
23	42.25	42.43	43.70	43.63	44.11	43.52	43.98	44.45	---	44.19	43.77	---
24	42.29	42.60	43.68	43.49	44.15	43.74	44.02	44.67	---	44.09	43.74	---
25	42.30	42.27	43.81	43.53	44.50	43.86	43.92	44.77	---	44.16	44.01	---
26	42.35	42.53	43.84	43.56	44.51	43.50	43.93	44.77	43.46	44.24	43.95	41.06
27	42.38	42.74	43.52	43.65	44.38	43.35	43.87	44.74	43.51	44.22	43.56	40.57
28	42.43	42.54	43.35	43.87	44.14	43.54	43.96	44.46	43.50	44.23	---	40.43
29	42.59	42.78	43.27	43.95	43.95	43.52	43.78	44.48	43.47	44.21	---	40.78
30	42.59	42.81	43.23	43.95	---	43.68	43.82	44.47	43.48	44.05	---	40.80
31	42.45	---	43.34	43.78	---	43.74	---	44.53	---	44.01	---	---
MEAN	42.20	42.37	43.19	43.59	43.98	43.55	43.85	44.15	---	44.12	---	---

WTR YR 1996 MEAN 43.51 HIGHEST 40.38 SEPT. 28, 29, 1996 LOWEST 45.45 JUNE 8, 9, 1996

GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS--Continued

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40.46	41.41	40.16	41.29	---	---	43.69	44.08	44.18	45.05	45.22	44.40
2	40.69	41.31	40.12	41.22	---	---	43.46	43.95	44.48	45.16	45.24	44.36
3	40.73	41.27	40.31	41.26	---	---	43.29	43.95	44.18	45.23	45.27	44.36
4	40.43	41.24	40.28	41.26	---	---	43.72	43.94	44.46	45.13	45.29	44.46
5	40.52	41.25	40.26	41.38	---	---	43.56	43.92	44.34	45.11	45.36	44.40
6	40.52	41.31	40.24	41.34	---	---	43.71	44.05	44.52	45.05	45.38	44.33
7	40.52	41.38	40.56	41.21	---	---	43.67	44.03	44.33	44.94	45.35	44.27
8	40.52	41.33	40.36	41.25	---	---	43.62	44.35	44.24	45.23	45.35	44.21
9	40.52	41.31	40.12	41.35	---	---	43.66	44.46	44.51	45.18	45.39	44.17
10	40.47	41.26	40.23	41.38	---	---	43.63	43.89	44.46	45.14	45.42	44.11
11	40.47	41.19	40.57	41.53	---	---	---	43.68	44.64	45.25	45.36	44.40
12	40.35	41.07	40.77	41.45	---	---	---	43.71	44.72	45.29	45.30	44.32
13	40.25	40.99	40.76	41.43	---	---	---	43.68	44.81	45.13	45.23	44.21
14	---	40.81	40.73	41.41	---	---	---	43.73	44.56	45.22	45.17	44.09
15	---	40.79	40.65	41.40	---	---	---	43.92	44.46	45.35	45.10	43.89
16	41.47	40.78	40.60	41.46	---	---	---	44.08	44.79	45.56	45.05	43.70
17	41.54	40.76	40.95	41.45	---	---	43.37	44.04	44.55	45.54	44.98	43.69
18	41.71	40.74	40.84	41.45	---	---	43.43	43.83	44.56	45.56	44.91	43.95
19	41.72	40.71	41.10	41.45	---	---	43.57	43.89	44.62	45.50	44.86	44.01
20	41.66	40.68	41.35	41.46	---	---	43.50	44.07	44.69	45.33	44.81	44.10
21	41.63	40.63	41.34	41.56	42.83	---	43.51	44.01	44.67	44.40	44.88	43.98
22	41.60	40.61	41.33	41.57	42.90	---	43.67	43.95	44.55	44.95	44.87	43.88
23	41.61	40.55	41.28	41.46	42.73	---	43.71	43.96	44.52	44.89	44.60	44.08
24	41.64	40.52	41.26	41.46	42.70	---	43.66	44.28	44.75	44.89	44.53	44.17
25	41.58	40.28	41.30	41.56	42.88	---	43.71	44.31	44.77	44.92	44.47	44.31
26	41.54	40.25	41.26	41.58	42.86	---	43.70	44.33	44.82	44.90	44.54	44.32
27	41.52	40.30	41.25	41.58	---	43.77	43.70	44.45	44.99	44.84	44.47	---
28	41.46	40.36	41.33	41.58	---	43.42	43.67	44.51	44.91	44.88	44.61	---
29	41.48	40.18	41.31	41.58	---	43.31	43.81	44.46	44.74	45.01	44.55	---
30	41.45	40.29	41.26	---	---	43.66	43.81	44.40	44.78	45.22	44.53	---
31	41.40	---	41.25	---	---	43.85	---	44.29	---	45.20	44.47	---
MEAN	---	40.85	40.81	---	---	---	---	44.07	44.59	45.13	44.99	---

WTR YR 1997 MEAN 43.07 HIGHEST 40.12 DEC. 2, 1996 LOWEST 45.71 JULY 17, 18, 1997

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 16	41.47	DEC 16	40.60	FEB 20	42.84	APR 17	43.37	JUL 25	44.97	AUG 06	45.38
NOV 26	40.25	JAN 17	41.45	MAR 27	43.75	JUN 17	44.47	JUL 30	45.22	SEP 09	44.15

WATER YEAR 1997 HIGHEST 40.25 NOV. 26, 1996 LOWEST 45.38 AUG. 06, 1997

GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS--Continued

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	44.74	43.39	43.56	44.05	43.56	43.90	44.26	43.49	43.47	44.02	43.34
2	---	44.34	43.59	43.32	43.96	43.49	43.93	44.28	43.67	43.56	43.76	43.29
3	---	44.19	43.48	43.62	44.34	43.71	44.01	44.02	43.72	43.67	43.83	43.19
4	---	44.37	43.58	43.39	44.53	43.51	44.05	43.91	43.79	43.57	43.83	42.85
5	---	44.50	43.79	43.38	44.24	43.78	43.96	44.32	43.71	43.36	44.12	42.68
6	---	44.48	43.89	43.69	43.84	44.02	44.00	44.15	43.66	43.35	44.33	42.61
7	---	44.65	43.86	43.38	43.67	44.08	44.37	44.02	43.58	43.49	44.34	42.52
8	---	44.77	43.62	43.22	43.43	44.08	44.46	43.92	43.44	43.58	44.36	42.70
9	---	44.37	43.86	43.27	43.37	43.78	43.97	43.77	43.48	43.62	44.30	42.64
10	---	43.88	44.03	43.33	43.61	43.95	44.05	43.70	43.50	43.76	44.08	42.67
11	---	43.88	44.04	43.36	43.86	44.10	43.90	43.51	43.71	43.81	44.17	42.68
12	---	43.56	44.01	43.35	43.87	44.36	43.75	43.68	43.75	43.66	44.22	42.91
13	---	43.59	43.92	43.38	44.07	44.41	43.56	43.80	43.84	43.54	44.19	42.90
14	---	43.55	44.07	43.17	44.10	44.41	43.56	43.87	43.57	43.83	44.38	42.84
15	---	43.60	43.66	43.26	43.99	44.52	43.57	43.84	43.49	43.88	44.57	42.76
16	---	43.65	44.04	43.33	43.28	44.07	43.59	43.79	43.54	43.86	44.48	42.53
17	---	43.53	44.09	43.42	43.70	44.40	43.59	43.59	43.48	43.97	44.50	42.60
18	---	43.66	43.92	43.42	43.85	44.47	43.72	43.32	43.46	44.00	44.49	42.85
19	---	43.68	44.04	43.38	43.91	44.52	43.78	43.54	43.58	43.86	44.17	42.86
20	---	43.80	44.05	43.58	44.08	44.39	43.61	43.60	43.67	43.72	44.11	42.80
21	---	43.73	43.79	43.91	43.92	44.59	43.79	43.63	43.47	43.70	44.03	42.42
22	---	43.61	43.57	43.95	43.63	44.34	43.76	43.72	43.09	43.67	44.05	41.44
23	---	43.59	43.54	44.07	43.53	44.36	43.95	43.74	42.94	43.93	43.87	40.96
24	44.75	43.47	43.58	44.12	43.65	44.73	44.18	43.52	42.99	44.06	43.76	40.52
25	44.72	43.51	43.34	43.82	43.68	44.62	44.28	43.60	43.06	44.14	43.46	40.15
26	44.64	43.66	43.35	43.57	43.91	44.37	44.06	43.64	43.37	43.94	43.45	39.84
27	44.21	43.64	43.47	43.88	43.97	44.34	43.85	43.67	43.43	43.85	43.23	39.56
28	44.55	43.46	43.56	44.32	43.98	43.98	44.02	43.63	43.29	44.27	43.05	39.31
29	44.81	43.68	43.44	44.25	---	43.94	44.15	43.81	43.27	43.90	43.07	39.37
30	44.80	43.57	43.82	44.24	---	43.93	44.26	43.84	43.47	43.88	43.04	39.12
31	44.76	---	43.63	44.30	---	44.21	---	43.62	---	44.10	43.12	---
MEAN	---	43.89	43.74	43.62	43.86	44.16	43.92	43.78	43.48	43.77	43.95	41.96

WTR YR 1998 MEAN 43.68 HIGHEST 38.87 SEPT. 22, 1998 LOWEST 44.83 OCT. 29, 30, 1997

GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS--Continued

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39.05	37.14	37.05	36.93	38.15	---	39.39	39.69	39.76	40.61	40.59	41.30
2	39.09	37.21	37.23	36.85	38.17	---	39.24	39.51	40.12	40.32	40.71	41.02
3	39.01	37.27	37.50	36.89	38.16	---	39.09	39.59	40.10	40.05	40.94	40.86
4	38.91	37.35	37.34	36.96	38.32	---	39.14	39.66	40.02	39.88	40.96	40.96
5	38.77	37.33	37.08	37.07	38.25	---	39.10	39.65	39.78	39.85	40.84	41.27
6	38.76	37.41	36.89	37.04	38.29	---	39.28	39.93	39.56	40.06	40.99	41.08
7	38.61	37.48	36.90	37.02	38.12	---	39.37	39.87	39.69	40.62	40.74	40.89
8	38.60	37.40	37.13	37.43	38.02	---	39.54	39.73	39.75	40.57	41.17	41.46
9	38.65	37.44	37.22	37.51	38.19	---	39.39	39.51	39.61	40.48	40.83	41.19
10	38.69	37.41	37.18	37.34	38.27	---	39.36	39.46	39.61	40.31	40.88	40.87
11	38.58	37.55	37.39	37.24	38.40	---	39.06	39.82	39.70	40.35	41.02	40.88
12	38.48	37.25	37.55	37.46	38.47	---	39.15	39.75	39.71	40.66	41.03	40.66
13	38.50	37.35	37.49	37.35	38.37	---	39.28	39.57	39.60	40.69	41.20	40.42
14	38.47	37.06	37.28	37.39	37.94	---	39.63	39.53	39.74	40.23	41.40	40.17
15	38.19	36.94	37.39	37.60	38.14	---	39.68	39.90	39.64	40.25	41.06	39.98
16	38.31	36.92	37.41	37.67	38.35	---	39.87	39.72	39.80	40.57	40.95	40.20
17	38.36	37.09	37.53	37.55	38.36	---	39.55	39.53	40.27	40.54	41.15	40.10
18	38.29	37.17	37.75	37.52	38.45	---	39.35	39.80	39.98	40.29	41.38	40.15
19	38.21	37.27	37.96	37.76	---	---	39.37	39.73	39.88	40.32	41.34	40.07
20	38.11	37.37	37.69	37.69	---	---	39.44	39.85	39.79	40.48	41.51	40.06
21	38.06	37.38	37.50	37.50	---	---	39.53	39.91	39.85	40.36	41.62	40.08
22	37.89	37.38	37.73	37.58	---	---	39.59	39.81	39.77	40.32	41.34	40.02
23	37.67	37.41	37.91	37.76	---	---	39.61	40.02	39.96	40.41	41.19	40.06
24	37.39	37.72	37.94	37.69	---	---	39.78	39.64	40.44	40.38	40.99	40.23
25	37.31	37.72	37.81	37.67	---	---	39.48	39.55	40.20	40.69	41.05	40.24
26	37.28	37.57	37.75	37.82	---	---	39.36	39.66	40.18	40.61	41.23	40.22
27	37.35	37.50	37.79	38.10	---	---	39.63	39.93	40.42	40.70	41.40	39.89
28	37.29	37.61	37.54	38.09	---	---	39.75	40.03	40.48	40.72	41.42	39.65
29	37.40	37.36	37.36	38.02	---	---	39.65	39.84	40.38	40.72	41.15	39.53
30	37.54	37.08	37.08	38.09	---	---	39.59	39.62	40.24	40.67	40.87	39.41
31	37.39	---	36.97	38.63	---	---	---	39.56	---	41.01	40.83	---
MEAN	38.20	37.34	37.43	37.52	---	---	39.44	39.72	39.93	40.44	41.09	40.43

WTR YR 1999 MEAN 39.10 HIGHEST 36.71 DEC. 7, 1998 LOWEST 41.66 AUG. 20, 1999

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 17	37.50	FEB 19	38.39	APR 09	39.37	MAY 11	39.79	JUL 11	40.35	AUG 09	40.80
JAN 15	37.60	MAR 30	39.30	19	39.30	JUN 02	40.12				

WATER YEAR 1999 HIGHEST 37.50 DEC. 17, 1998 LOWEST 40.80 AUG. 09, 1999

GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS--Continued

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39.34	38.51	36.48	37.08	38.53	39.41	39.46	39.85	38.50	39.31	39.67	38.37
2	39.18	38.27	36.64	36.94	38.44	39.22	39.41	40.08	38.47	38.95	39.75	38.46
3	39.05	38.16	36.65	37.00	38.51	39.37	39.41	40.08	38.63	39.03	39.87	38.29
4	39.00	38.10	36.57	37.41	38.58	39.15	39.49	40.07	38.63	39.73	39.78	38.24
5	39.13	38.30	36.44	37.46	38.68	38.87	39.74	40.17	38.62	39.49	39.59	38.35
6	39.27	38.45	36.29	37.18	38.52	38.97	39.60	39.84	38.71	39.49	39.53	38.40
7	39.35	38.41	36.65	37.13	38.52	39.34	39.72	39.62	38.71	39.41	39.46	38.36
8	39.55	38.37	36.62	37.58	38.61	39.29	39.79	39.59	38.85	39.40	39.64	38.52
9	39.35	38.82	36.52	37.64	38.80	39.34	39.63	39.74	38.99	39.22	39.48	38.46
10	39.08	38.68	36.67	37.57	38.81	39.52	39.62	39.95	38.91	39.29	39.48	38.60
11	39.25	38.18	36.75	37.78	38.89	39.41	39.82	39.83	38.81	39.47	39.75	38.35
12	39.30	38.03	36.64	37.89	38.92	39.04	40.03	39.41	38.80	39.56	39.89	38.02
13	39.25	37.94	36.61	37.96	38.67	39.02	39.87	39.29	38.84	39.43	39.68	38.04
14	38.98	37.69	36.83	37.95	38.64	39.43	39.94	39.18	38.77	39.58	39.72	38.15
15	39.01	37.57	36.89	38.10	38.79	39.57	40.07	39.07	38.92	39.32	39.85	38.38
16	39.14	37.32	37.10	37.94	38.88	39.76	39.87	39.27	38.94	39.12	39.96	38.32
17	38.92	36.81	37.08	37.71	39.15	39.68	39.84	39.49	38.84	39.25	39.97	38.32
18	38.84	36.55	36.88	38.21	39.19	39.12	39.82	39.59	38.78	39.43	40.48	37.40
19	38.92	36.34	36.44	38.14	38.89	39.26	39.66	39.25	38.83	39.63	40.36	36.94
20	38.96	36.18	37.23	38.35	38.64	39.39	39.57	38.92	38.98	39.47	39.68	36.69
21	38.63	36.09	37.16	38.27	38.71	39.63	39.44	38.67	38.92	39.57	39.43	36.67
22	38.79	36.10	37.17	38.42	38.93	39.79	39.36	38.76	38.92	39.39	39.23	36.49
23	38.80	36.20	37.32	38.27	38.94	39.84	39.42	38.73	39.01	39.29	38.62	36.40
24	38.59	36.17	37.39	38.18	39.21	39.71	39.46	38.94	39.18	39.38	38.33	36.45
25	38.42	36.24	37.73	38.32	39.10	39.52	39.77	39.09	38.88	39.62	38.08	36.36
26	38.39	36.20	37.14	38.22	39.00	39.40	39.74	39.20	38.93	40.00	37.99	36.40
27	38.34	36.24	37.04	38.09	38.92	39.43	39.79	39.32	39.19	40.00	38.01	36.39
28	38.18	36.10	37.34	38.16	39.00	39.79	39.89	39.06	39.12	40.20	38.14	35.90
29	38.44	36.27	37.13	38.34	39.08	39.71	39.87	38.90	39.32	39.90	38.42	35.78
30	38.55	36.39	37.03	38.11	---	39.47	39.76	38.62	39.38	39.57	38.42	35.69
31	38.54	---	37.14	38.20	---	39.47	---	38.41	---	39.47	38.32	---
MEAN	38.92	37.29	36.89	37.86	38.81	39.42	39.70	39.35	38.88	39.48	39.31	37.51

WTR YR 2000 MEAN 38.62 HIGHEST 35.66 SEPT. 30, 2000 LOWEST 40.57 AUG. 18, 2000

GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS--Continued

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35.63	35.90	36.30	37.05	38.60	39.88	39.79	40.55	39.91	40.40	41.61	39.50
2	35.70	35.95	36.39	37.06	38.44	39.72	39.91	40.61	39.88	40.43	41.73	39.46
3	35.46	35.76	36.02	37.31	38.53	39.87	40.18	40.52	39.78	40.71	41.67	39.35
4	35.45	35.43	35.87	37.58	38.36	39.56	40.31	40.86	39.62	40.76	41.76	39.38
5	35.52	35.35	36.46	37.71	38.41	39.40	40.25	40.46	39.91	40.69	41.41	39.41
6	35.46	35.68	36.48	37.52	38.69	39.59	40.13	40.24	39.85	40.79	41.46	39.57
7	35.42	36.11	36.60	37.15	38.70	39.93	39.86	39.93	39.63	40.65	41.71	39.65
8	35.22	35.85	36.89	37.40	38.87	39.79	39.70	39.81	39.91	40.82	42.11	39.68
9	35.20	35.73	36.85	37.74	38.87	39.97	39.94	39.58	40.27	40.51	42.16	39.52
10	35.28	36.08	36.61	37.84	38.89	39.94	40.09	39.41	40.07	41.04	41.91	39.32
11	35.12	36.27	36.55	37.71	38.87	39.86	40.23	39.28	40.19	41.32	42.15	39.43
12	35.41	36.41	36.69	37.85	38.96	39.85	39.92	39.22	40.22	41.55	42.02	39.14
13	35.30	35.94	36.88	38.02	39.11	40.25	40.26	39.14	40.75	41.11	42.10	39.20
14	35.24	35.94	36.84	37.78	39.24	40.15	39.83	39.05	40.76	40.94	41.97	39.23
15	34.99	36.17	37.07	37.77	39.18	40.24	39.64	39.13	40.83	40.87	41.85	39.08
16	35.10	36.36	37.06	38.04	39.36	40.29	39.79	39.30	40.80	40.91	42.20	38.89
17	35.35	36.72	36.88	38.43	39.34	40.30	40.19	39.34	40.83	41.54	42.26	38.99
18	35.58	36.58	36.67	38.37	39.06	40.32	40.06	39.37	40.46	41.39	42.21	39.18
19	35.59	36.55	36.83	38.18	38.98	40.18	40.40	39.29	40.77	41.45	42.09	39.56
20	35.68	36.15	37.07	38.57	39.28	40.65	40.60	38.98	40.56	41.80	41.80	39.39
21	35.56	36.68	36.95	37.98	39.27	40.61	40.34	39.59	40.47	41.75	41.85	39.39
22	35.35	36.67	36.95	38.02	39.37	40.17	39.91	39.34	40.44	41.67	41.45	39.31
23	35.16	36.32	36.95	38.54	39.48	39.82	39.91	39.45	40.88	41.83	40.52	39.13
24	35.26	36.10	36.81	38.30	39.43	39.63	40.42	39.57	40.94	41.69	40.14	39.26
25	35.60	36.20	36.63	38.40	39.30	39.52	40.46	39.68	41.11	41.97	39.93	39.55
26	35.74	36.15	36.62	38.36	39.33	39.60	40.28	39.63	40.62	41.97	39.85	39.56
27	35.59	36.19	37.16	38.11	39.62	39.89	40.55	39.51	40.64	41.82	39.85	39.51
28	35.66	36.32	37.28	38.11	39.84	39.80	40.43	39.67	41.11	42.08	39.67	39.42
29	35.46	36.34	37.39	38.11	---	39.99	40.09	39.71	40.84	42.01	39.51	39.47
30	35.30	36.22	37.33	38.22	---	39.96	40.57	39.96	40.64	41.56	39.60	39.23
31	35.62	---	37.18	38.89	---	40.07	---	39.83	---	41.49	39.56	---
MEAN	35.42	36.14	36.78	37.94	39.05	39.96	40.13	39.68	40.42	41.27	41.29	39.36

WTR YR 2001 MEAN 38.95 HIGHEST 34.86 OCT. 16, 2000 LOWEST 42.38 AUG. 17, 2001

GROUND-WATER LEVELS

RIO SALINAS TO RIO JACAGUAS BASINS--Continued

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39.16	40.10	40.71	40.94	42.07	43.05	43.13	42.53	42.01	41.70	42.64	42.97
2	39.29	40.01	40.54	40.88	42.07	43.09	43.14	42.47	41.91	41.93	42.60	42.86
3	39.30	39.95	40.43	41.11	42.03	42.93	43.32	42.22	41.84	41.87	42.71	42.98
4	38.99	39.75	40.34	40.92	42.02	43.03	43.35	42.23	41.78	42.07	42.63	43.01
5	38.90	39.72	40.40	41.26	42.25	43.15	43.61	42.12	41.70	42.20	42.52	42.92
6	38.76	40.07	40.51	41.03	42.25	43.34	43.57	42.13	41.58	42.15	42.67	43.01
7	38.61	39.73	40.59	40.95	42.31	43.32	43.41	42.16	41.53	42.03	42.73	43.05
8	38.71	39.63	40.57	41.15	42.48	43.28	43.18	42.22	41.49	42.05	42.58	42.98
9	38.96	39.73	40.43	41.21	42.39	43.38	43.10	42.23	41.43	42.19	42.40	42.86
10	38.98	39.56	40.48	41.27	42.31	43.18	43.31	42.26	41.43	42.13	42.34	42.96
11	39.07	39.28	40.80	41.23	42.25	43.20	43.47	42.51	41.39	42.20	42.32	43.16
12	39.05	39.37	41.12	41.24	42.55	43.25	43.31	42.30	41.49	42.23	42.40	43.13
13	38.98	39.76	40.73	41.14	42.71	43.29	43.23	42.24	41.45	42.31	42.63	43.25
14	38.76	39.74	40.94	41.23	42.61	43.31	43.02	42.25	41.47	42.22	42.68	43.30
15	38.87	39.77	41.18	41.51	42.60	43.45	43.04	42.21	41.47	42.09	42.80	43.07
16	38.96	40.07	41.08	41.63	42.64	43.49	43.22	42.36	41.39	41.98	42.86	42.82
17	39.09	40.05	40.80	41.62	42.50	43.30	43.20	42.60	41.48	42.02	42.82	42.60
18	39.12	39.87	40.75	41.62	42.40	43.27	43.37	42.48	41.53	42.12	42.72	42.51
19	39.15	39.85	40.60	41.55	42.67	43.34	43.31	42.21	41.51	42.30	42.66	42.40
20	39.19	39.88	40.55	41.47	42.91	43.39	43.25	42.20	41.42	42.31	42.82	42.45
21	39.12	39.96	40.55	41.49	42.88	43.48	43.15	42.24	41.53	42.29	42.91	42.33
22	39.33	40.05	40.59	41.71	42.90	43.61	43.09	42.22	41.51	42.39	43.06	42.28
23	39.61	40.08	40.50	41.77	42.78	43.67	42.67	42.32	41.46	42.40	43.15	42.32
24	39.62	40.16	40.44	41.93	42.69	43.69	42.50	42.33	41.57	42.60	43.01	42.32
25	39.86	40.12	40.49	41.87	42.69	43.52	42.38	42.36	41.67	42.63	42.87	42.17
26	39.81	40.08	40.47	42.07	42.87	43.81	42.33	42.25	41.73	42.50	42.92	42.12
27	39.80	40.25	40.81	41.82	42.95	43.78	42.34	42.24	41.67	42.57	42.92	42.09
28	39.56	40.31	40.83	41.84	43.09	43.95	42.28	42.31	41.91	42.38	42.99	42.08
29	39.55	40.41	40.89	42.12	---	43.82	42.14	42.30	41.94	42.32	43.25	42.01
30	39.92	40.45	40.77	42.05	---	43.45	42.25	42.19	41.81	42.47	43.33	41.96
31	39.92	---	40.95	42.10	---	43.20	---	42.06	---	42.52	43.14	---
MEAN	39.23	39.93	40.67	41.48	42.53	43.39	43.02	42.28	41.60	42.23	42.78	42.67

WTR YR 2002 MEAN 41.81 HIGHEST 38.46 OCT. 7, 8, 2001 LOWEST 44.02 MAR. 27, 2002

GROUND-WATER LEVELS

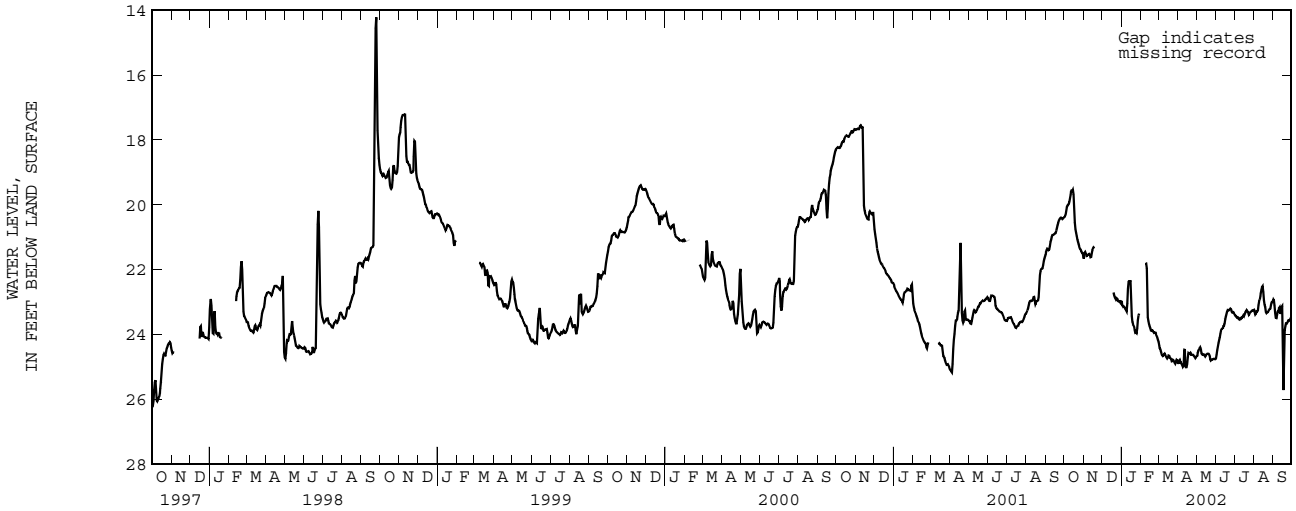
RIO INABON TO RIO LOCO BASINS

175950066354200. Local number, 141.
LOCATION.--Lat 17°59'50", long 66°35'42", Hydrologic Unit 21010004, 1.71 mi southeast of Plaza Degetau at Ponce, 1.31 mi southeast of the intersection between Hwy 10 and Hwy 2, and 2.60 mi notheast of Muellle de Ponce. Name: Restaurada 8A Well.
AQUIFER.--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) 2.00-20.0 ft (0.60-6.10 m), perforated 20.0-130 ft (6.10-39.6 m), 10 in (0.25 m) 128-165 ft (39.0-50.3 m), perforated. Depth 165 ft (50.3 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 24.0 ft (7.30 m), above mean sea level, from topographic map. Measuring point: Bottom edge of hole on side of casing 3.54 ft (1.08 m), above land-surface datum, 26.2 ft (7.67 m), above mean sea level.
REMARKS.--Recording observation well. Discontinued on Novenber 8, 1994 due to apparent collapsed casing, repair on August 7, 1996. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on February 12, 1998.
PERIOD OF RECORD.--October 1981 to March 1, 1986, discontinued, November 18, 1991 to November 8, 1994, discontinued, August 7, 1996 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 11.2 ft (3.41 m), below land-surface datum, October 9, 1985; lowest water level recorded, 28.60 ft (8.71 m), below land-surface datum, July 9, 1982.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.40	21.63	---	22.91	---	24.17	24.80	24.65	24.74	23.38	23.24	22.94
2	20.36	21.69	---	23.08	---	24.29	24.89	24.69	24.72	23.39	23.23	22.88
3	20.37	21.48	---	23.09	---	24.39	24.91	24.61	24.51	23.44	23.38	22.98
4	20.27	21.48	---	23.14	---	24.42	24.67	24.52	24.44	23.43	23.39	23.21
5	20.14	21.43	---	23.15	---	24.46	24.87	24.47	24.30	23.46	23.32	23.44
6	20.02	21.57	---	23.13	---	24.57	24.83	24.47	24.22	23.49	23.25	23.52
7	20.02	21.59	---	23.19	---	24.61	24.88	24.39	24.12	23.43	23.34	23.46
8	20.01	21.56	---	23.23	21.77	24.66	24.93	24.41	24.05	23.54	23.19	23.32
9	19.96	21.53	---	23.24	21.82	24.65	24.96	24.51	23.89	23.53	22.99	23.28
10	19.85	21.52	---	23.32	21.79	24.63	25.02	24.64	23.85	23.56	22.96	23.30
11	19.74	21.50	---	22.75	22.13	24.57	24.89	24.58	23.80	23.42	22.88	23.09
12	19.63	21.58	---	22.42	23.38	24.59	24.05	24.63	23.82	23.54	22.75	23.24
13	19.57	21.66	---	22.34	23.54	24.64	24.91	24.63	23.77	23.46	22.69	23.46
14	19.58	21.56	---	22.35	23.63	24.69	25.00	24.61	23.70	23.49	22.57	23.15
15	19.58	21.43	---	22.35	23.74	24.72	25.01	24.68	23.75	23.39	22.52	23.17
16	19.50	21.35	---	22.34	23.76	24.74	25.00	24.68	23.57	23.42	22.51	23.08
17	19.85	21.33	---	23.30	23.85	24.67	24.83	24.60	23.49	23.45	22.85	25.85
18	20.43	21.30	---	23.55	23.90	24.62	24.58	24.61	23.40	23.31	23.03	25.56
19	20.67	21.37	22.67	23.68	23.87	24.70	24.56	24.57	23.33	23.33	23.12	23.91
20	20.83	---	22.73	23.67	23.86	24.73	24.62	24.60	23.24	23.25	23.20	23.81
21	20.90	---	22.85	23.76	23.89	24.71	24.54	24.57	23.26	23.24	23.40	23.66
22	21.03	---	22.85	23.80	23.94	24.79	24.58	24.66	23.25	23.32	23.28	23.64
23	21.11	---	22.92	23.92	23.95	24.85	24.65	24.70	23.22	23.27	23.33	23.66
24	21.19	---	22.92	23.98	23.92	24.78	24.59	24.80	23.21	23.38	23.29	23.66
25	21.25	---	22.85	23.90	23.96	24.77	24.64	24.79	23.18	23.40	23.29	23.59
26	21.35	---	22.95	24.01	24.03	24.80	24.60	24.76	23.26	23.33	23.20	23.54
27	21.34	---	22.98	23.61	24.04	24.83	24.67	24.76	23.30	23.31	23.24	23.58
28	21.41	---	22.98	23.50	24.17	24.90	24.67	24.77	23.34	23.28	23.16	23.56
29	21.45	---	22.97	23.33	---	24.89	24.71	24.73	23.30	23.27	23.02	23.51
30	21.47	---	22.99	23.38	---	24.77	24.74	24.75	23.31	23.25	23.01	23.49
31	21.50	---	23.05	---	---	24.78	---	24.76	---	23.26	23.00	---
MEAN	20.48	---	---	---	---	24.66	24.75	24.63	23.71	23.39	23.08	23.55

WTR YR 2002 MEAN 23.36 HIGHEST 19.35 OCT. 17, 2001 LOWEST 26.01 SEPT. 17, 2002



GROUND-WATER LEVELS

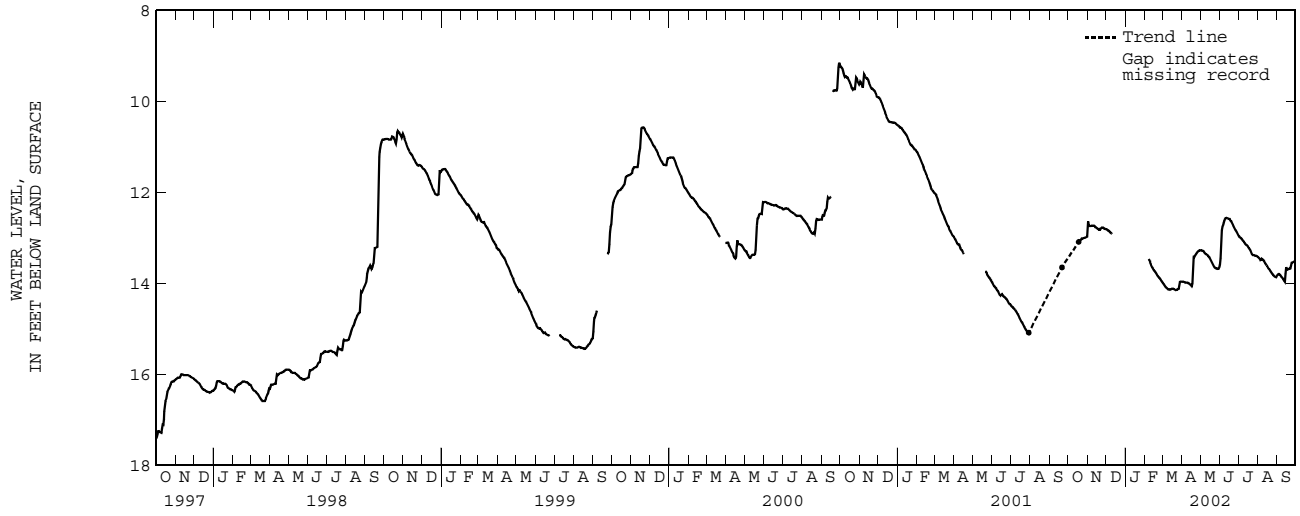
RIO INABON TO RIO LOCO BASINS--Continued

175934066364800. Local number, 1276.
LOCATION.--Lat 17°59'34", long 66°36'48", Hydrologic Unit 21010004, 0.35 mi southeast of the intersection of Hwy 10 with Hwy 2, 0.32 mi south of Hwy 2, 0.10 mi southwest of Plaza del Caribe Mall, and 1.90 mi north of Punta Carenero. Name: Constancia 3 Well.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 13 in (0.33 m). Depth 84.0 ft (25.6 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is 16.0 ft (4.90 m), above mean sea level, from topographic map. Measuring point: Shelter floor on the top of 4 in (0.10 m) casing, 1.59 ft (0.48 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL,) installed on March 19 to April 9, 1997. Automated Digital Recorder (ADR), re-installed on April 9, 1997, replaced by an Electronic Data Logger (EDL), installed on June 4, 1998.
PERIOD OF RECORD.--May 30, 1996 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 9.13 ft (2.78 m), below land-surface datum, September 28, 29, 2000; lowest water level recorded, 17.96 ft (5.47 m), below land-surface datum, July 19, 20, 21, 1997.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	12.98	12.81	---	---	13.97	13.96	13.27	13.62	12.94	13.41	13.82
2	---	12.57	12.81	---	---	13.99	13.96	13.28	13.56	12.97	13.43	13.81
3	---	12.71	12.82	---	---	14.00	13.96	13.28	13.33	12.99	13.44	13.80
4	---	12.73	12.84	---	---	14.02	13.97	13.28	12.90	12.99	13.45	13.79
5	---	12.74	12.84	---	---	14.04	13.97	13.28	12.76	13.00	13.47	13.80
6	---	12.74	12.85	---	---	14.06	13.98	13.29	12.74	13.01	13.51	13.81
7	---	12.74	12.87	---	13.45	14.09	13.98	13.30	12.70	13.03	13.46	13.83
8	---	12.73	12.88	---	13.47	14.10	13.98	13.33	12.63	13.05	13.47	13.85
9	---	12.73	12.89	---	13.51	14.11	13.98	13.34	12.60	13.07	13.48	13.87
10	---	12.73	12.91	---	13.55	14.13	13.98	13.36	12.58	13.08	13.49	13.88
11	---	12.73	12.91	---	13.58	14.13	13.99	13.37	12.56	13.10	13.51	13.91
12	---	12.73	---	---	13.61	14.13	14.00	13.37	12.56	13.13	13.52	13.93
13	---	12.74	---	---	13.64	14.14	14.00	13.38	12.57	13.15	13.55	13.95
14	---	12.76	---	---	13.66	14.14	14.01	13.41	12.57	13.16	13.57	13.97
15	---	12.78	---	---	13.69	14.14	14.02	13.42	12.58	13.17	13.60	13.60
16	---	12.78	---	---	13.71	14.12	14.04	13.44	12.59	13.18	13.61	13.69
17	---	12.80	---	---	13.73	14.12	14.05	13.46	12.57	13.20	13.63	13.70
18	13.10	12.80	12.82	---	13.75	14.11	14.07	13.49	12.60	13.23	13.66	13.70
19	13.08	12.82	---	---	13.77	14.12	13.94	13.52	12.63	13.25	13.68	13.69
20	13.06	12.83	---	---	13.79	14.14	13.39	13.55	12.64	13.27	13.69	13.68
21	13.05	12.82	---	---	13.81	14.14	13.45	13.57	12.67	13.29	13.72	13.67
22	13.04	12.82	---	---	13.84	14.15	13.41	13.61	12.69	13.34	13.74	13.67
23	13.02	12.80	---	---	13.86	14.15	13.39	13.62	12.73	13.36	13.76	13.68
24	13.01	12.78	---	---	13.87	14.14	13.36	13.64	12.76	13.37	13.78	13.55
25	13.01	12.77	---	---	13.89	14.14	13.35	13.66	12.78	13.38	13.80	13.55
26	13.01	12.77	---	---	13.91	14.13	13.32	13.67	12.82	13.38	13.82	13.54
27	13.00	12.78	---	---	13.92	14.13	13.30	13.67	12.84	13.39	13.84	13.54
28	13.00	12.80	---	---	13.96	14.12	13.29	13.68	12.86	13.39	13.85	13.53
29	12.99	12.80	---	---	---	13.97	13.28	13.68	12.88	13.39	13.86	13.51
30	12.99	12.80	---	---	---	13.97	13.27	13.68	12.92	13.40	13.87	13.51
31	12.98	---	---	---	---	13.96	---	13.68	---	13.41	13.87	---
MEAN	---	12.77	---	---	---	14.09	13.76	13.47	12.77	13.20	13.63	13.73

WTR YR 2002 MEAN 13.41 HIGHEST 12.56 JUNE 11, 12, 2002 LOWEST 14.15 MAR. 10, 21-24, 2002



GROUND-WATER LEVELS

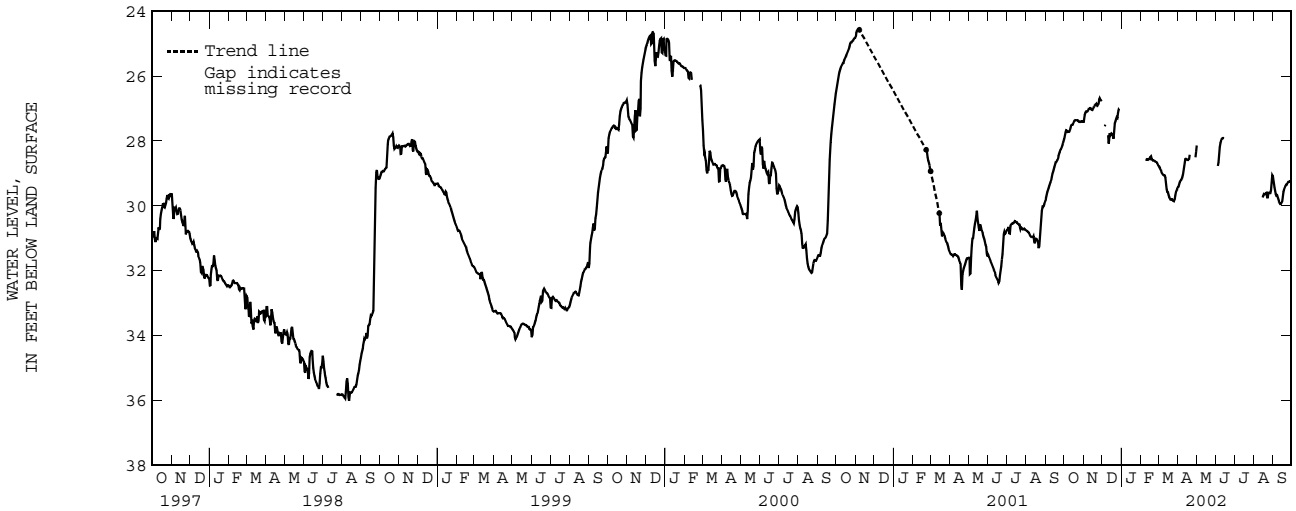
RIO INABON TO RIO LOCO BASIN--Continued

180045066381600. Local number 1277.
LOCATION.--Lat 18°00'45", long 66°38'16", Hydrologic Unit 21010004, 0.27 mi east of the intersection of Hwy 10 with Hwy 132, 0.60 mi northwest of Parque Paquito Montaner, and 0.04 mi south of Hwy 132. Name: Albergue de Niños Well.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 10 in (0.25 m). Depth is 124 ft (37.79 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 49.0 ft (14.90 m), above mean sea level, from topographic map. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 5.42 ft (1.65 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on February 12, 1998.
PERIOD OF RECORD.--March 30, 1992 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 24.42 ft (7.44 m), below land-surface datum, November 8, 9, 2000; lowest water level recorded, 51.88 ft (15.81 m), below land-surface datum, August 30, 1994.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27.98	27.42	26.82	---	---	28.77	29.45	28.21	---	---	---	29.23
2	27.90	27.41	---	---	---	28.77	29.42	28.08	---	---	---	29.24
3	27.77	27.25	---	---	---	28.82	29.40	---	---	---	---	29.36
4	27.70	27.17	---	---	---	28.84	29.29	---	28.84	---	---	29.50
5	27.65	27.10	27.64	---	---	28.86	29.27	---	28.71	---	---	29.59
6	27.73	27.10	27.46	---	---	28.94	29.23	---	28.61	---	---	29.70
7	27.73	27.10	27.54	---	---	28.98	29.21	---	28.26	---	---	29.67
8	27.72	27.09	---	---	28.57	29.01	29.15	---	28.12	---	---	29.69
9	27.72	27.06	---	---	28.59	29.05	29.09	---	28.03	---	---	29.78
10	27.71	27.02	27.78	---	28.59	29.06	28.99	---	27.97	---	---	29.81
11	27.62	26.99	27.87	---	28.57	29.07	28.83	---	27.94	---	---	29.90
12	27.57	26.99	28.29	---	28.60	29.07	28.72	---	27.92	---	---	29.91
13	27.54	26.99	27.69	---	28.58	29.21	28.58	---	27.92	---	---	29.98
14	27.48	27.04	27.84	---	28.56	29.40	28.56	---	27.94	---	---	29.91
15	27.52	27.06	27.84	---	28.56	29.58	28.56	---	27.94	---	29.75	29.93
16	27.48	27.05	27.77	---	28.57	29.58	28.57	---	---	---	29.74	29.83
17	27.42	26.99	27.78	---	28.42	29.60	28.61	---	---	---	29.64	29.61
18	27.38	26.97	27.81	---	28.54	29.73	28.59	---	---	---	29.65	29.53
19	27.36	26.94	27.93	---	28.57	29.74	28.57	---	---	---	29.66	29.48
20	27.36	26.89	27.94	---	28.61	29.80	28.56	---	---	---	29.61	29.43
21	27.37	26.87	27.48	---	28.61	29.81	28.30	---	---	---	29.61	29.38
22	27.36	26.86	27.45	---	28.61	29.80	---	---	---	---	29.60	29.36
23	27.36	26.94	27.36	---	28.62	29.80	---	---	---	---	29.88	29.33
24	27.39	26.90	27.31	---	28.64	29.81	---	---	---	---	29.60	29.35
25	27.42	26.91	27.25	---	28.65	29.86	---	---	---	---	29.61	29.27
26	27.42	26.84	27.34	---	28.66	29.86	---	---	---	---	29.60	29.27
27	27.41	26.65	26.93	---	28.67	29.87	---	---	---	---	29.63	29.26
28	27.43	26.71	27.15	---	28.70	29.76	---	---	---	---	29.59	29.24
29	27.40	26.75	26.99	---	---	29.60	28.55	---	---	---	29.48	29.25
30	27.39	26.74	---	---	---	29.56	28.46	---	---	---	29.16	29.22
31	27.40	---	---	---	---	29.52	---	---	---	---	28.94	---
MEAN	27.54	26.99	---	---	---	29.39	---	---	---	---	---	29.53

WTR YR 2002 MEAN 28.43 HIGHEST 26.64 NOV. 27, 2001 LOWEST 30.43 SEPT. 12, 2002



GROUND-WATER LEVELS

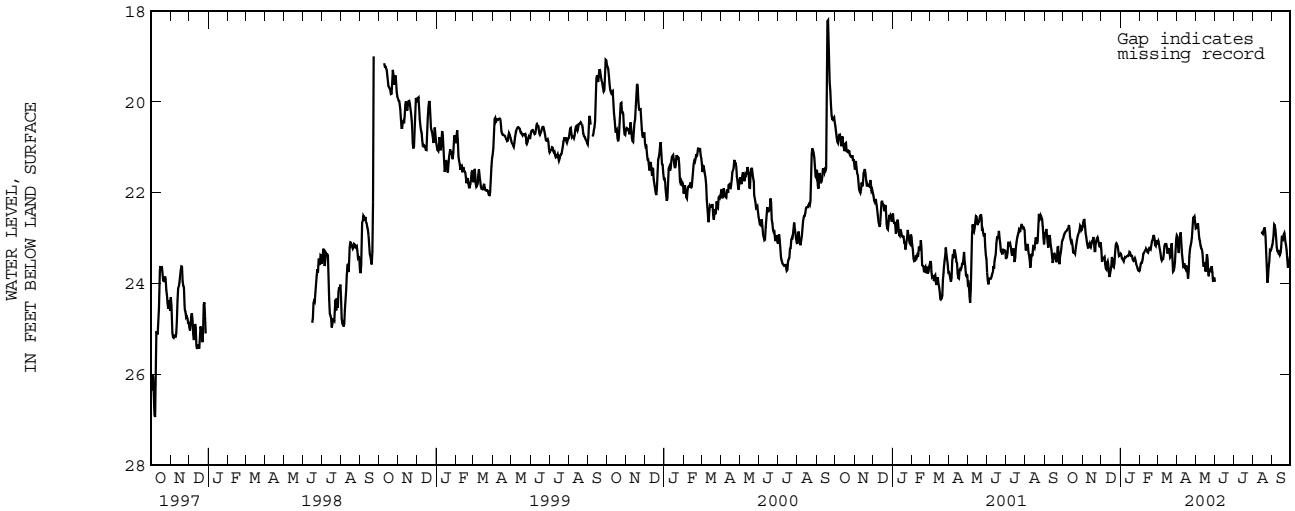
RIO INABON TO RIO LOCO BASINS--Continued

180156066434000. Local number, 1278.
LOCATION.--Lat 18°01'56", long 66°43'40", Hydrologic Unit 21010004, 1.23 mi north of Hwy 2, 0.10 mi west of Hwy 385, and 0.14 mi east of Río Tallaboa. Name: Luciano Ventura Well.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled unused water-table well. Depth 74.0 ft (22.6 m).
INSTRUMENTATION.--Pressure transducer with integrated electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 66.0 ft (20.1 m), above mean sea level, from topographic map.. Measuring point: Top of shelter floor, 3.02 ft (0.92 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on September 7, 1999, removed on September 30, 2002.
PERIOD OF RECORD.--September 5, 1997 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 16.65 ft (5.07 m), below land-surface datum, September 23, 1998; lowest water level recorded, 28.87 ft (8.80 m), below land-surface datum, September 28, 1997.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.04	22.75	23.06	23.37	23.70	23.15	22.93	22.76	23.98	---	---	23.27
2	22.97	22.72	23.45	23.31	23.62	23.05	22.93	22.81	23.94	---	---	23.00
3	22.92	22.62	23.58	23.40	23.54	23.07	22.99	22.73	---	---	---	23.12
4	22.89	22.59	23.31	23.47	23.53	23.12	23.42	22.80	---	---	---	22.78
5	22.87	22.61	23.56	23.44	23.54	23.22	23.23	22.65	---	---	---	22.61
6	22.85	22.86	23.32	23.52	23.40	23.28	23.05	22.70	---	---	---	22.83
7	22.83	22.93	23.53	23.49	23.31	23.38	22.89	22.98	---	---	---	22.79
8	22.82	23.03	23.61	23.40	23.35	23.52	22.86	23.03	---	---	---	23.16
9	22.78	23.15	23.71	23.43	23.26	23.47	23.39	23.10	---	---	---	23.22
10	22.75	23.19	23.66	23.41	23.28	23.44	23.30	23.22	---	---	---	23.33
11	22.67	23.26	23.43	23.41	23.22	23.48	23.64	23.22	---	---	---	23.27
12	23.00	23.02	23.58	23.39	23.23	23.24	23.61	23.26	---	---	---	23.25
13	22.90	23.20	23.52	23.39	23.27	23.13	23.62	23.38	---	---	---	23.42
14	23.17	23.15	23.80	23.40	23.33	23.14	23.48	23.67	---	---	---	23.32
15	23.03	23.25	23.90	23.33	23.31	23.11	23.78	23.58	---	---	22.92	23.35
16	23.12	23.01	23.69	23.28	23.21	23.14	23.56	23.49	---	---	22.88	23.03
17	23.20	23.15	23.73	23.35	23.23	23.27	23.63	23.70	---	---	22.88	22.92
18	23.44	22.96	23.52	23.43	23.24	23.40	23.70	23.76	---	---	22.92	23.04
19	23.21	22.98	23.31	23.34	23.25	23.16	23.79	23.35	---	---	22.77	22.98
20	23.41	23.19	23.59	23.44	23.08	23.28	23.99	23.36	---	---	22.80	22.85
21	23.27	23.38	23.63	23.49	23.07	23.30	23.46	23.55	---	---	22.77	22.92
22	23.16	23.18	23.63	23.49	23.01	23.56	23.33	23.98	---	---	23.13	23.07
23	23.08	23.08	23.46	23.51	22.94	23.25	23.15	23.69	---	---	23.53	23.07
24	22.98	23.03	23.18	23.44	22.92	23.07	23.17	23.71	---	---	23.87	23.23
25	22.93	23.00	23.11	23.45	23.09	23.16	23.01	23.73	---	---	24.08	23.29
26	22.90	22.97	23.12	23.53	23.21	23.73	22.96	23.72	---	---	23.61	23.60
27	22.86	23.12	23.15	23.60	23.13	23.75	22.55	23.60	---	---	23.63	23.70
28	22.75	23.11	23.17	23.60	23.01	23.68	22.56	23.64	---	---	23.37	23.51
29	22.69	23.26	23.39	23.73	---	23.63	22.54	23.86	---	---	23.16	23.45
30	22.81	23.12	23.39	23.68	---	23.42	22.52	24.05	---	---	23.40	23.40
31	22.84	---	23.36	23.73	---	23.10	---	23.74	---	---	23.09	---
MEAN	22.97	23.03	23.47	23.46	23.26	23.31	23.23	23.38	---	---	---	23.16

WTR YR 2002 MEAN 23.26 HIGHEST 22.51 APR. 29, 2002 LOWEST 24.29 JUNE 1, 2002



GROUND-WATER LEVELS

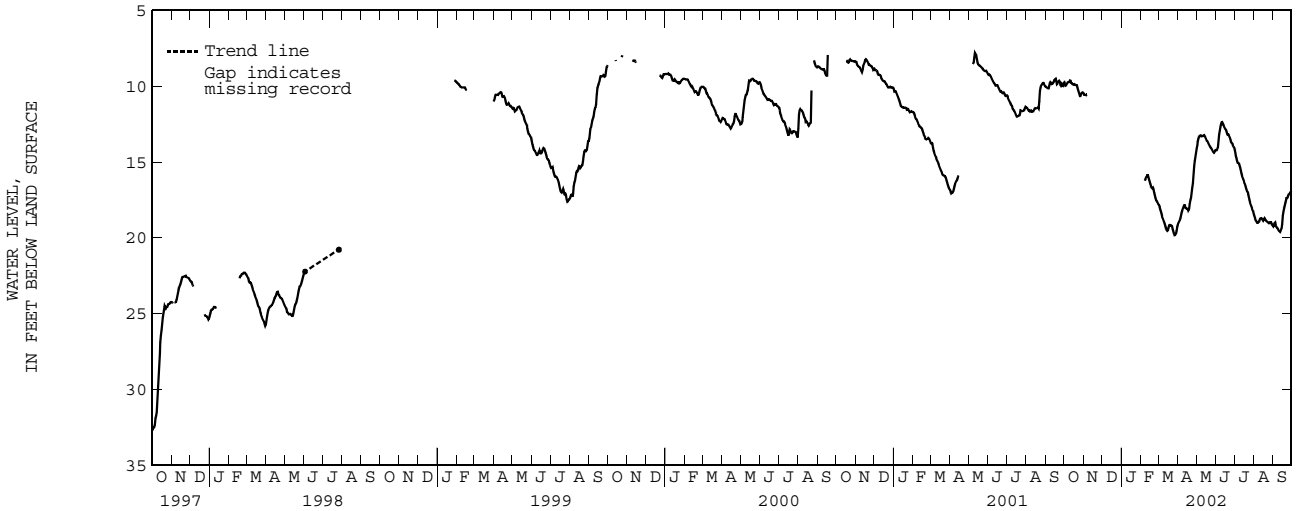
RIO INABON TO RIO LOCO BASINS--Continued

180133066503300. Local number, 132.
LOCATION.--Lat 18°01'33", long 66°50'33", Hydrologic Unit 21010004, 0.90 mi southeast of Yauco plaza, 3.46 mi west of Guayanilla plaza, and 1.32 mi north of Segunda Unidad Barinas School Name: Pittsburg Plate Glass 4 Well, Yauco.
AQUIFER.--Limestone of Tertiary Age.
WELL CHARACTERISTICS.--Drilled observation well, cased 20 in (0.51 m) 0-20.0 ft (0-6.10 m), 12 in (0.30 m) perforated pipe 20.0-84.0 ft (6.10-25.6 m), 10 in (0.25 m) perforated pipe 84.0-190 ft (25.6-57.9 m). Depth 190 ft (57.9 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 75.0 ft (22.9 m), above mean sea level, from topographic map. Measuring point: Top of shelter floor, 3.80 ft (1.16 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on February 17, 1998, removed on September 30, 2002. [+, above land-surface datum].
PERIOD OF RECORD.--July 1972 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, +0.12 ft (+0.04 m), above land-surface datum, July 19, 1979; lowest water level recorded, 36.91 ft (11.25 m), below land-surface datum, June 27, 1974.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.59	10.45	---	---	---	17.77	19.20	14.18	14.16	14.09	18.43	19.23
2	9.86	10.51	---	---	---	17.83	19.07	13.98	14.25	14.31	18.56	19.27
3	9.91	10.58	---	---	---	17.89	18.98	13.77	14.19	14.51	18.69	19.16
4	10.01	10.54	---	---	---	18.04	18.90	13.54	14.16	14.65	18.82	18.87
5	9.88	10.63	---	---	---	18.22	18.81	13.40	13.95	14.84	18.89	19.10
6	9.82	10.56	---	---	---	18.30	18.62	13.27	13.28	15.03	18.93	19.24
7	9.75	10.53	---	---	16.31	18.53	18.43	13.27	13.05	15.07	19.08	19.29
8	9.72	10.56	---	---	16.16	18.65	18.24	13.21	12.82	15.06	18.91	19.34
9	9.70	---	---	---	16.05	18.77	18.10	13.27	12.57	15.15	18.99	19.41
10	9.72	---	---	---	15.96	18.88	18.04	13.31	12.42	15.34	18.88	19.47
11	9.54	---	---	---	15.94	19.03	17.87	13.25	12.33	15.46	18.72	19.57
12	9.74	---	---	---	15.77	19.15	17.80	13.29	12.35	15.69	18.75	19.56
13	9.81	---	---	---	15.92	19.30	17.90	13.20	12.51	15.86	18.69	19.68
14	9.78	---	---	---	16.07	19.42	18.02	13.21	12.57	16.02	18.74	19.35
15	9.79	---	---	---	16.23	19.53	18.08	13.33	12.64	16.04	18.73	19.46
16	9.95	---	---	---	16.38	19.53	18.08	13.36	12.78	16.23	18.90	18.70
17	9.85	---	---	---	16.53	19.43	18.08	13.52	12.81	16.35	18.86	18.39
18	9.88	---	---	---	16.60	19.21	18.09	13.62	12.90	16.47	18.70	18.13
19	9.88	---	---	---	16.77	19.15	18.30	13.61	13.07	16.65	18.73	17.98
20	9.93	---	---	---	16.68	19.13	17.91	13.70	13.21	16.77	18.80	17.78
21	9.91	---	---	---	16.68	19.19	17.60	13.81	13.19	16.93	18.86	17.60
22	9.95	---	---	---	16.92	19.16	17.43	13.88	13.17	16.95	18.93	17.44
23	10.18	---	---	---	17.12	19.26	17.30	13.97	13.30	17.03	18.95	17.32
24	10.29	---	---	---	17.27	19.40	16.73	14.02	13.38	17.25	18.97	17.44
25	10.42	---	---	---	17.46	19.50	16.64	14.04	13.62	17.40	19.05	17.24
26	10.57	---	---	---	17.56	19.67	16.15	14.15	13.69	17.63	19.04	17.16
27	10.71	---	---	---	17.58	19.79	15.44	14.19	13.74	17.74	19.01	17.11
28	10.59	---	---	---	17.65	19.87	15.08	14.31	13.80	17.85	18.90	17.06
29	10.46	---	---	---	---	19.75	14.75	14.37	13.98	17.94	19.02	17.00
30	10.40	---	---	---	---	19.72	14.48	14.39	13.97	18.19	19.14	16.95
31	10.41	---	---	---	---	19.37	---	14.30	---	18.17	19.17	---
MEAN	10.00	---	---	---	---	19.05	17.60	13.70	13.26	16.22	18.87	18.44

WTR YR 2002 MEAN 15.79 HIGHEST 9.54 OCT. 1, 11, 2001 LOWEST 19.87 MAR. 28, 2002



GROUND-WATER LEVELS

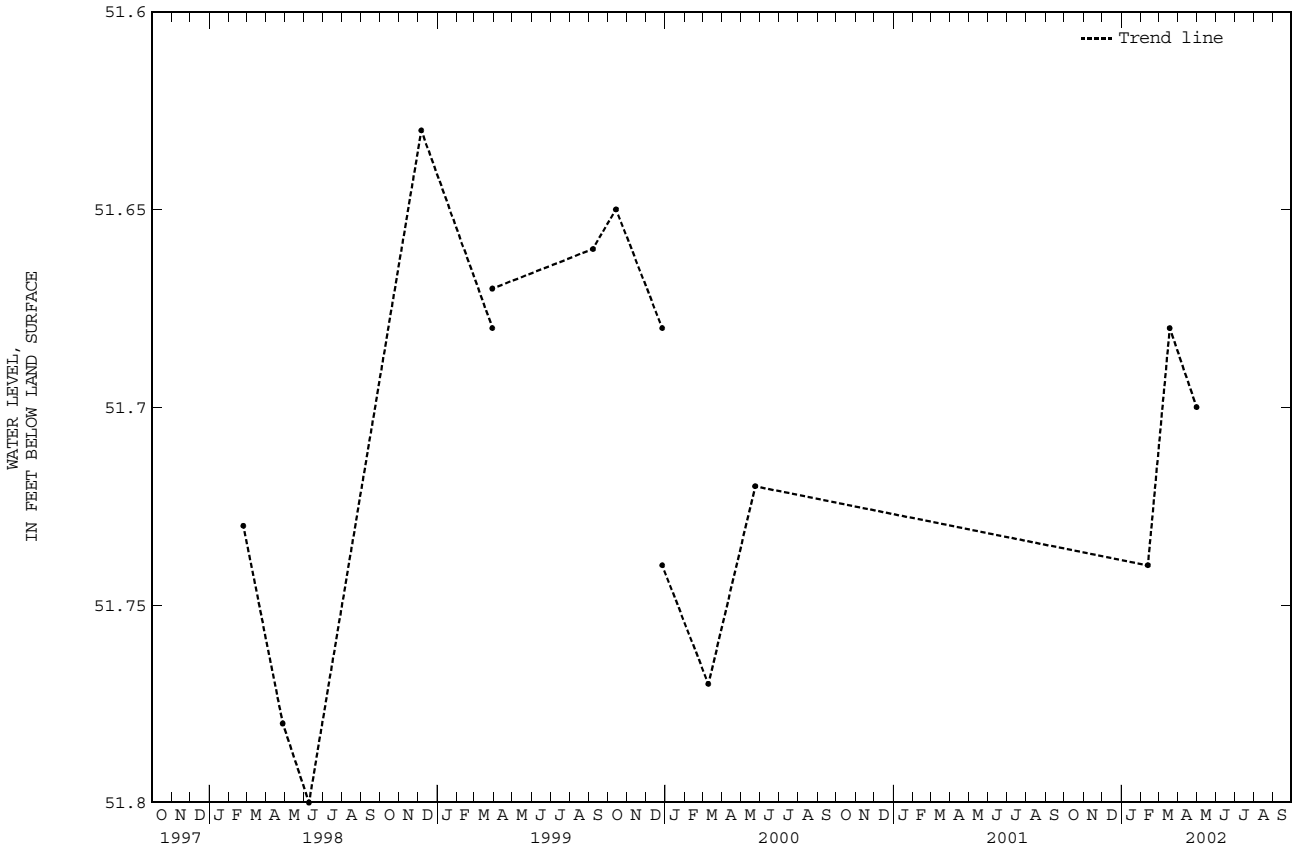
RIO INABON TO RIO LOCO BASINS--Continued

175840066494100. Local number, 1279.
LOCATION.--Lat 17°58'40", long 66°49'41", Hydrologic Unit 21010004, 0.60 mi southwest of Central San Francisco, 1.50 mi northwest of Punta Ventana, and 0.80 mi south southeast of Arturo Lluberas School. Name: Criollo 3 Well.
AQUIFER.--Limestone.
WELL CHARACTERISTICS.--Abandoned production well, diameter 12 in (0.30 m). Depth 93.0 ft (28.3 m).
DATUM.--Elevation of land-surface datum is about 80.0 ft (24.38 m), above mean sea level, from topographic map. Measuring point: Top of steel pipe, 2.00 ft (0.61 m), above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--February 24, 1998 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 51.63 ft (15.74 m), below land-surface datum, December 8, 1998; lowest water level measured, 51.80 ft (15.79 m), below land-surface datum, June 9, 1998.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 12	51.74	MAR 19	51.68	MAY 01	51.70

WATER YEAR 2002 HIGHEST 51.68 MAR. 19, 2002 LOWEST 51.74 FEB. 12, 2002



GROUND-WATER LEVELS

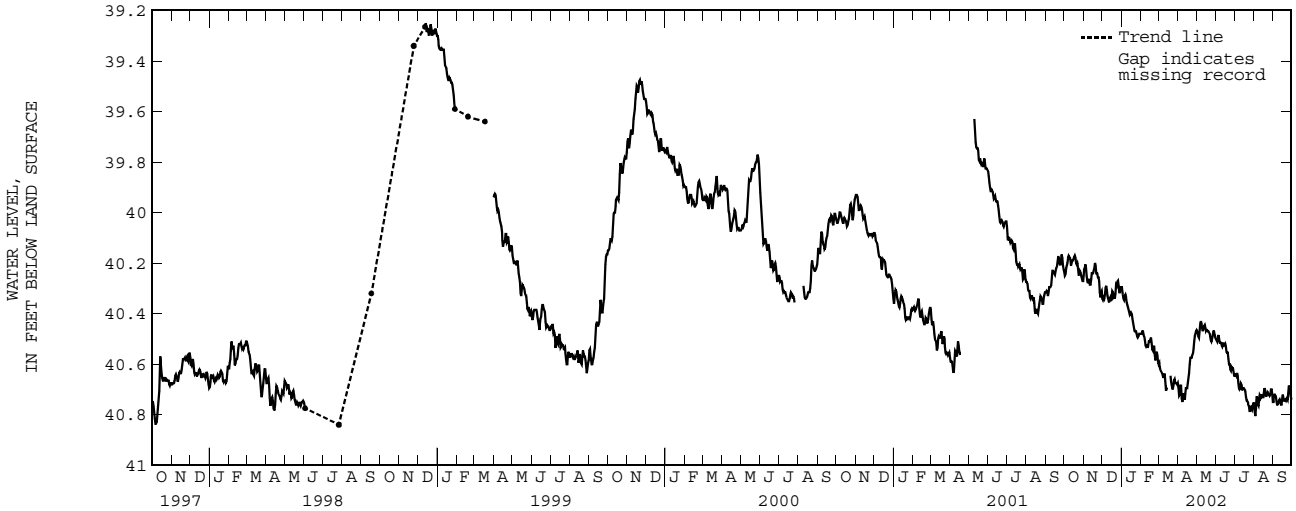
RIO GUANAJIBO BASIN

180132067033800. Local number, 143.
LOCATION.--Lat 18°01'33", long 67°03'25", Hydrologic Unit 21010003, 1.86 mi south of Lajas plaza, 1.27 mi southeast of the Estación Experimental Agrícola, and 1.30 mi northwest of the intersection of Hwy 116 with Hwy 305. Name: Vivoni-Col Amistad Well, Lajas.
AQUIFER.--Limestone of unknown age.
WELL CHARACTERISTICS.--Drilled unused irrigation well, diameter 12 in (0.30 m). Depth 200 ft (60.98 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
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. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on January 14, 1998. From July 27, 1998 to March 18, 1999, tapedown measurements only.
PERIOD OF RECORD.--December 1981 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 37.4 ft (11.4 m), below land-surface datum, November 20, 1985; lowest water level recorded, 40.85 ft (12.45 m) below land-surface datum, October 8, 9, 1997.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40.23	40.27	40.32	40.30	40.48	40.61	40.68	40.46	40.50	40.64	40.75	40.77
2	40.24	40.22	40.36	40.29	40.48	40.59	40.67	40.47	40.50	40.65	40.76	40.73
3	40.26	40.23	40.33	40.32	40.48	40.60	40.72	40.47	40.51	40.63	40.81	40.72
4	40.23	40.21	40.34	40.33	40.46	40.62	40.73	40.48	40.51	40.65	40.80	40.72
5	40.21	40.20	40.34	40.35	40.48	40.62	40.71	40.50	40.48	40.64	40.75	40.72
6	40.21	40.24	40.31	40.34	40.49	40.63	40.66	40.49	40.49	40.63	40.71	40.73
7	40.19	40.26	40.29	40.32	40.49	40.63	40.71	40.45	40.51	40.66	40.75	40.76
8	40.17	40.28	40.29	40.33	40.52	40.64	40.76	40.43	40.52	40.69	40.77	40.76
9	40.17	40.28	40.32	40.34	40.53	40.65	40.74	40.43	40.51	40.70	40.76	40.76
10	40.18	40.25	40.34	40.37	40.53	40.66	40.72	40.45	40.52	40.70	40.72	40.75
11	40.18	40.28	40.34	40.36	40.52	40.62	40.71	40.47	40.53	40.69	40.72	40.74
12	40.21	40.29	40.36	40.39	40.53	40.66	40.74	40.47	40.53	40.66	40.73	40.74
13	40.21	40.28	40.35	40.38	40.54	40.69	40.74	40.45	40.51	40.70	40.74	40.76
14	40.19	40.25	40.33	40.41	40.50	40.72	40.70	40.45	40.52	40.70	40.72	40.76
15	40.19	40.23	40.34	40.40	40.51	40.67	40.69	40.44	40.53	40.70	40.72	40.76
16	40.19	40.25	40.36	40.40	40.52	40.73	40.70	40.47	40.52	40.69	40.74	40.71
17	40.18	40.23	40.32	40.39	40.49	---	40.69	40.47	40.52	40.70	40.72	40.73
18	40.17	40.23	40.30	40.41	40.50	---	40.66	40.46	40.54	40.70	40.70	40.74
19	40.17	40.21	40.33	40.43	40.53	---	40.65	40.47	40.56	40.72	40.69	40.75
20	40.19	40.19	40.34	40.44	40.55	40.64	40.62	40.47	40.55	40.74	40.72	40.74
21	40.21	40.23	40.32	40.46	40.54	40.65	40.58	40.47	40.56	40.75	40.73	40.74
22	40.20	40.25	40.36	40.47	40.52	40.69	40.57	40.48	40.60	40.74	40.72	40.75
23	40.20	40.23	40.28	40.47	40.54	40.68	40.58	40.48	40.60	40.76	40.71	40.73
24	40.24	40.25	40.29	40.47	40.59	40.71	40.57	40.50	40.60	40.76	40.71	40.74
25	40.25	40.26	40.29	40.47	40.58	40.69	40.56	40.51	40.64	40.77	40.72	40.74
26	40.24	40.25	40.26	40.49	40.54	40.68	40.56	40.51	40.61	40.80	40.72	40.68
27	40.22	40.29	40.28	40.49	40.56	40.65	40.52	40.49	40.61	40.77	40.73	40.69
28	40.25	40.34	40.30	40.50	40.57	40.67	40.50	40.48	40.62	40.76	40.71	40.70
29	40.25	40.33	40.33	40.48	---	40.68	40.48	40.46	40.61	40.79	40.69	40.72
30	40.27	40.30	40.30	40.48	---	40.67	40.48	40.48	40.65	40.77	40.71	40.74
31	40.27	---	40.29	40.48	---	40.68	---	40.49	---	40.76	40.73	---
MEAN	40.21	40.25	40.32	40.41	40.52	---	40.65	40.47	40.55	40.71	40.73	40.74

WTR YR 2002 MEAN 40.52 HIGHEST 40.11 OCT. 15, 16, 17, 2001 LOWEST 40.84 SEPT. 2, 2002



GROUND-WATER LEVELS

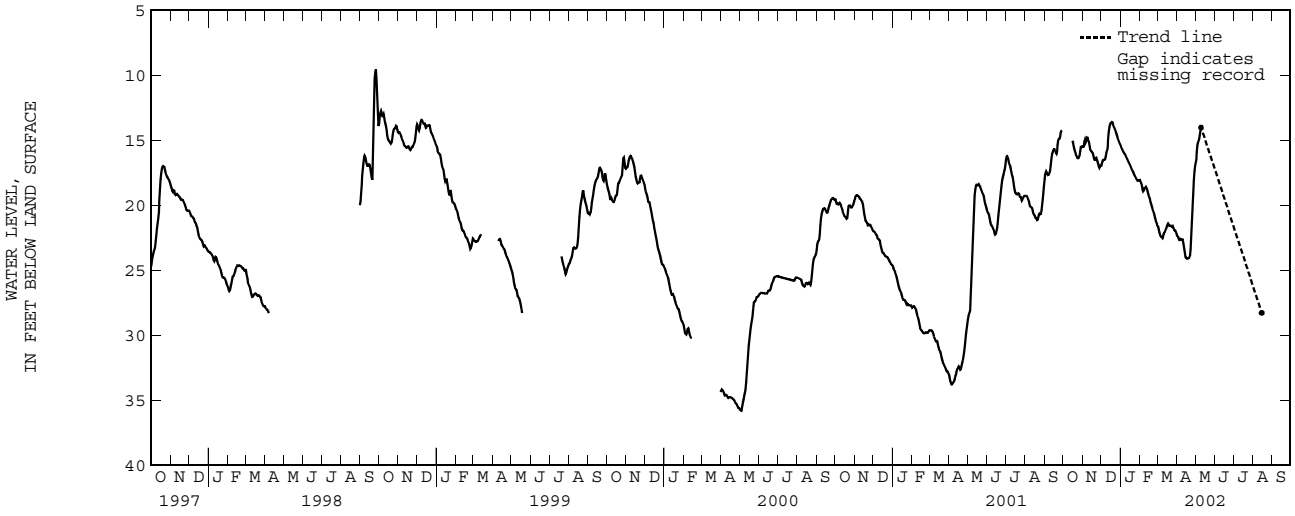
RIO GUANAJIBO BASIN--Continued

180542067084000. Local number, 1301.
LOCATION.--Lat 18°05'42", long 67°08'40", Hydrologic Unit 21010003, 0.35 mi east of Hwy 311, 0.30 mi north of Hwy 102 in Central Cabo Rojo, and 0.50 mi norhwest of the intersection of Hwy 102 with hwy 103. Name: PRASA 1, Cabo Rojo Well.
AQUIFER.--Coquí Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 12 in (0.30 m). Depth 112 ft (34.1 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 39.0 ft (11.9 m), above mean sea level, from topographic map. Measuring point: Hole in the side of the 12 in (0.30 m) casing, 1.30 ft (0.40 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), installed on May 25, 1996. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on April 9, 1999. From May 12 to September 30, 2002, tapedowns measurements only.
PERIOD OF RECORD.--May 25, 1996 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 9.37 ft (2.86 m), below land-surface datum, September 27, 1998; lowest water level recorded, 35.91 ft (10.94 m) below land-surface datum, May 3, 4, 2000.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	15.42	17.08	15.34	17.98	21.55	22.23	16.75	---	---	---	---
2	---	15.45	16.84	15.45	18.09	21.63	22.37	16.64	---	---	---	---
3	---	15.55	16.67	15.55	18.21	21.68	22.36	16.29	---	---	---	---
4	---	15.37	16.51	15.65	18.33	21.95	22.48	15.55	---	---	---	---
5	---	14.83	16.50	15.76	18.67	22.13	22.68	15.24	---	---	---	---
6	---	15.09	16.46	15.86	18.92	22.31	22.66	15.10	---	---	---	---
7	---	15.25	16.48	15.97	18.93	22.36	22.60	14.99	---	---	---	---
8	---	14.86	16.37	16.02	18.74	22.45	22.60	14.74	---	---	---	---
9	---	14.72	16.03	16.09	18.62	22.50	22.67	14.28	---	---	---	---
10	---	14.88	15.80	16.20	18.70	22.53	22.57	14.10	---	---	---	---
11	---	15.01	15.78	16.30	18.56	22.22	22.68	13.92	---	---	---	---
12	---	15.13	15.25	16.42	18.58	22.14	23.05	---	---	---	---	---
13	---	15.56	14.56	16.51	18.79	22.10	23.26	---	---	---	---	---
14	---	15.74	14.17	16.64	18.95	21.94	23.41	---	---	---	---	---
15	---	15.80	13.89	16.72	19.17	21.88	23.91	---	---	---	---	---
16	14.92	15.87	13.68	16.82	19.30	21.66	24.04	---	---	---	---	---
17	15.12	15.91	13.67	16.94	19.36	21.56	24.07	---	---	---	---	---
18	15.40	16.03	13.66	17.05	19.69	21.41	24.11	---	---	---	---	---
19	15.61	16.30	13.53	17.19	19.88	21.39	24.09	---	---	---	---	---
20	15.81	16.48	13.73	17.28	19.99	21.59	24.12	---	---	---	---	---
21	15.94	16.48	13.88	17.39	20.20	21.56	24.02	---	---	---	---	---
22	16.09	16.48	13.98	17.46	20.34	21.56	24.03	---	---	---	---	---
23	16.20	16.22	14.07	17.61	20.46	21.55	23.78	---	---	---	---	---
24	16.37	16.44	14.20	17.66	20.67	21.59	22.92	---	---	---	---	---
25	16.37	16.51	14.43	17.76	20.88	21.73	21.49	---	---	---	---	---
26	16.34	16.73	14.53	17.86	21.10	21.63	20.53	---	---	---	---	---
27	16.26	16.86	14.75	17.98	21.17	21.59	19.80	---	---	---	---	---
28	16.12	17.12	14.86	18.05	21.35	21.87	18.59	---	---	---	---	---
29	15.50	17.08	15.02	18.10	---	21.93	17.64	---	---	---	---	---
30	15.50	16.84	15.12	18.07	---	21.97	17.15	---	---	---	---	---
31	15.49	---	15.22	18.12	---	21.93	---	---	---	---	---	---
MEAN	---	15.87	15.06	16.83	19.42	21.87	22.40	---	---	---	---	---

WTR YR 2002 MEAN 18.17 HIGHEST 13.46 DEC. 19, 2001 LOWEST 24.18 APR. 17, 18, 2002



GROUND-WATER LEVELS

RIO GUANAJIBO BASIN--Continued

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 16	14.90	NOV 19	16.30	JAN 28	18.08	FEB 14	18.95	MAY 01	16.75	AUG 15	28.26
16	14.91	DEC 17	13.67	28	18.12	MAR 20	21.59	AUG 15	28.28		

WATER YEAR 2002 HIGHEST 13.67 DEC. 17, 2001 LOWEST 28.28 AUG. 15, 2002

GROUND-WATER LEVELS

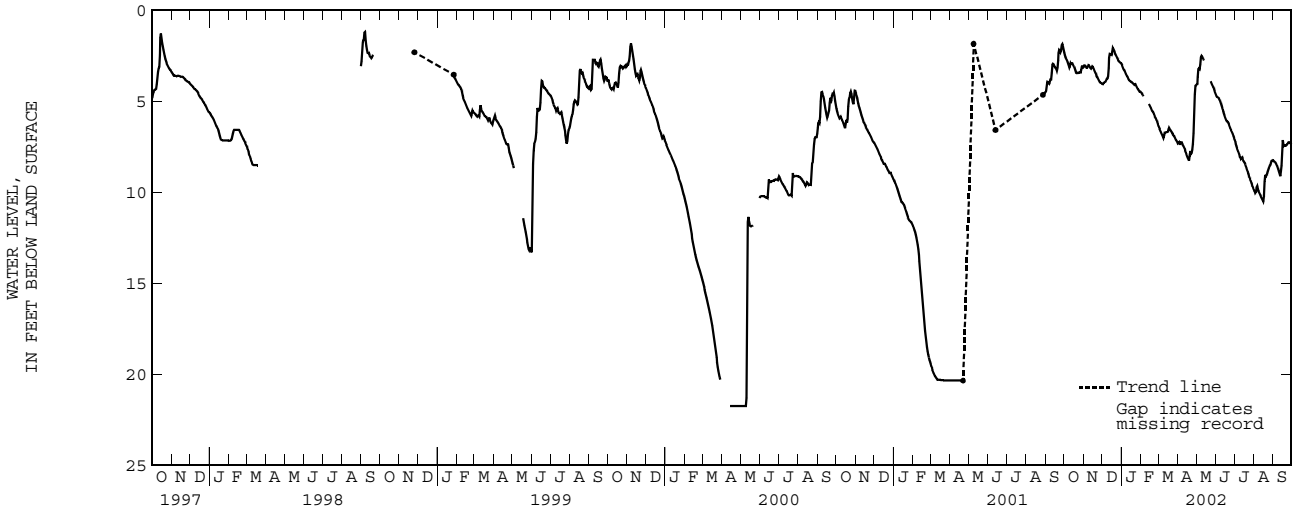
RIO GUANAJIBO BASIN--Continued

180628067084300. Local number, 1302.
LOCATION.--Lat 18°06'28", long 67°08'43", Hydrologic Unit 21010003, 1.29 mi north of Cabo Rojo plaza, 1.54 mi northwest of Escuela Segunda Unidad Antonio Acarón Correa, and 1.23 mi southeast of Escuela Sabana Alta. Name: Piezometer Cabo Rojo 9A Well.
AQUIFER.--Sandy and clay.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m), 0-24.0 ft (0-7.32 m), screened 19-24 ft (5.79-7.32 m). Depth 24.0 ft (7.32 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 33.2 ft (10.1 m), above mean sea level, from topographic map. Measuring point: Hole on shelter floor, 4.51 ft (1.37 m), above land-surface datum.
REMARKS.--Recording observation well. Drilled on March 25, 1992. Automatic Digital Recorder (ADR), re-installed on May 29, 1996. Automatic Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on January 27, 1999. Well dry below 21.76 ft (6.63 m).
PERIOD OF RECORD.--July 1992 to January 1994, discontinued, May 27, 1996 to September 30, 2002, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, +0.24 ft (+0.07 m), above land-surface datum, October 12, 1992; lowest water level recorded, 21.76 ft (6.63 m), below land-surface datum, May 9, 10, 2000.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.25	3.18	4.05	2.94	4.49	6.34	7.27	4.09	4.58	7.08	9.86	8.26
2	2.41	3.04	4.08	3.00	4.54	6.40	7.37	4.06	4.65	7.18	9.89	8.27
3	2.56	3.05	4.06	3.08	4.58	6.47	7.18	4.05	4.78	7.30	10.01	8.33
4	2.64	3.04	3.97	3.16	4.61	6.56	7.32	3.31	4.79	7.42	10.12	8.34
5	2.67	3.07	3.97	3.28	4.70	6.65	7.38	3.17	4.81	7.54	9.91	8.35
6	2.77	3.15	3.95	3.29	4.76	6.73	7.32	3.21	4.81	7.64	9.56	8.42
7	2.89	3.19	3.94	3.35	---	6.80	7.19	3.26	4.88	7.72	9.77	8.49
8	2.97	3.15	3.80	3.46	---	6.89	7.33	2.72	5.00	7.83	9.91	8.60
9	3.10	3.04	3.76	3.53	---	6.98	7.40	2.48	5.10	7.93	9.99	8.70
10	3.19	3.02	3.75	3.61	---	7.06	7.44	2.53	5.19	8.03	10.04	8.83
11	2.90	3.07	3.53	3.66	---	6.73	7.51	2.59	5.32	8.13	10.12	8.92
12	2.91	3.14	2.82	3.73	---	6.74	7.57	2.66	5.44	8.23	10.19	9.05
13	2.95	3.23	2.40	3.82	---	6.72	7.67	2.72	5.51	8.03	10.26	9.19
14	2.90	3.20	2.40	3.88	5.14	6.71	7.76	2.80	5.64	8.16	10.33	8.55
15	2.93	3.08	2.45	3.90	5.18	6.69	7.87	---	5.75	8.25	10.40	8.54
16	3.00	3.09	2.45	3.93	5.25	6.71	7.98	---	5.84	8.33	10.47	6.95
17	3.07	3.15	2.46	3.95	5.32	6.67	8.06	---	5.93	8.35	10.54	7.33
18	3.15	3.23	2.03	3.98	5.40	6.43	8.14	---	6.01	8.44	9.91	7.47
19	3.28	3.34	2.07	3.99	5.51	6.49	8.22	---	6.11	8.54	8.93	7.47
20	3.38	3.41	2.17	4.05	5.55	6.56	8.30	---	6.14	8.64	9.18	7.45
21	3.50	3.48	2.28	4.08	5.60	6.63	7.62	---	6.12	8.76	9.14	7.44
22	3.44	3.63	2.40	4.10	5.67	6.67	7.84	---	6.25	8.84	9.04	7.43
23	3.46	3.66	2.45	4.05	5.76	6.72	7.97	---	6.33	8.94	8.92	7.41
24	3.46	3.68	2.51	4.07	5.87	6.80	7.76	3.86	6.42	9.04	8.81	7.41
25	3.42	3.76	2.58	4.14	5.94	6.85	7.58	3.94	6.53	9.13	8.69	7.30
26	3.41	3.82	2.67	4.22	5.98	6.89	7.12	4.05	6.61	9.23	8.61	7.27
27	3.41	3.90	2.76	4.29	6.10	6.92	6.41	4.12	6.68	9.33	8.55	7.27
28	3.44	3.97	2.81	4.36	6.20	6.99	5.07	4.19	6.76	9.43	8.52	7.29
29	3.13	4.00	2.84	4.39	---	7.09	4.19	4.26	6.86	9.56	8.24	7.32
30	3.06	4.00	2.89	4.46	---	7.17	4.12	4.39	7.00	9.64	8.31	7.36
31	3.11	---	2.90	4.49	---	7.18	---	4.49	---	9.74	8.23	---
MEAN	3.06	3.36	3.01	3.81	---	6.75	7.27	---	5.73	8.40	9.50	7.97

WTR YR 2002 MEAN 5.70 HIGHEST 1.99 DEC. 18, 2001 LOWEST 10.54 APR. 17, 2002



GROUND-WATER LEVELS

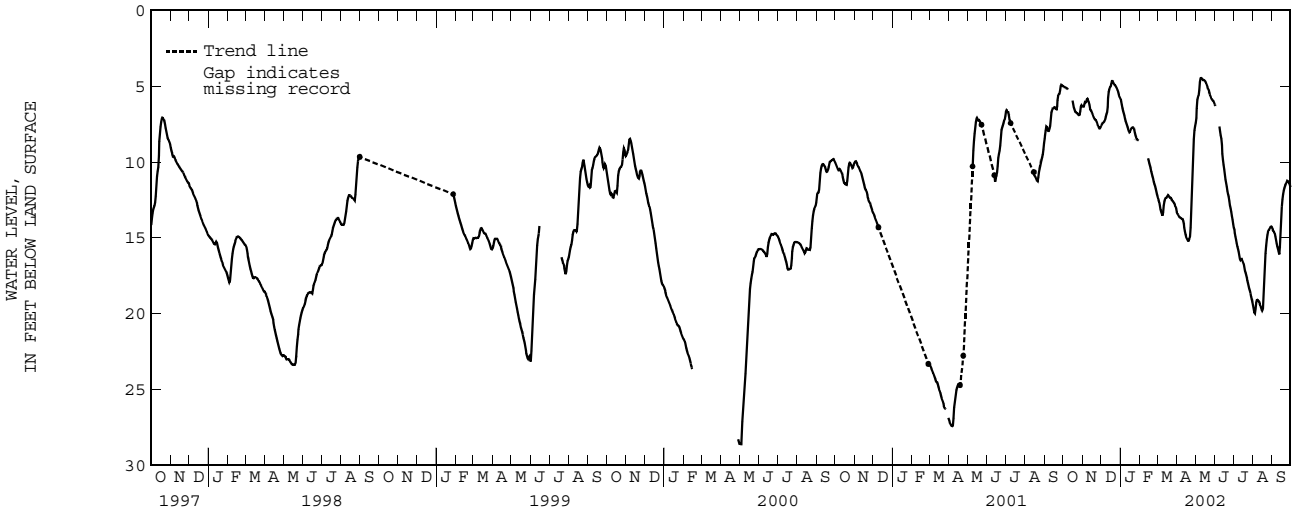
RIO GUANAJIBO BASIN--Continued

180628067084301. Local number, 1303.
LOCATION.--Lat 18°06'28", long 67°08'43", Hydrologic Unit 21010003, 1.29 mi north of Cabo Rojo plaza, 1.54 mi northwest of Escuela Segunda Unidad Antonio Acarón Correa, and 1.23 mi southeast of Escuela Sabana Alta. Name: Piezometer Cabo Rojo 9B Well.
AQUIFER.--Sandy and clay.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m), 0-109 ft (0-33.2 m), screened 104-109 ft (31.7-33.2 m). Depth 109 ft (33.2 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 33.2 ft (10.1 m), above mean sea level, from topographic map. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 4.73 ft (1.44 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), installed on May 29, 1996. Automatic Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on January 27, 1999, removed on September 30, 2002.
PERIOD OF RECORD.--May 29, 1996 to September 30, 2002, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 4.42 ft (1.35 m), below land-surface datum, May 10, 2002; lowest water level recorded, 28.61 ft (8.72 m), below land-surface datum, May 3, 4, 2000.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.99	6.37	7.66	5.81	---	12.25	13.20	7.52	6.21	14.27	19.35	14.31
2	5.01	6.32	7.56	5.91	---	12.33	13.41	7.30	6.19	14.40	19.54	14.41
3	5.03	6.37	7.47	6.08	---	12.47	13.42	6.91	6.38	14.55	19.81	14.56
4	5.05	6.30	7.42	6.32	---	12.57	13.49	6.01	---	14.81	20.02	14.58
5	5.08	6.06	7.36	6.56	---	12.70	13.60	5.78	---	15.00	19.93	14.61
6	5.11	6.03	7.32	6.70	---	13.07	13.66	5.68	---	15.26	19.41	14.79
7	5.13	6.11	7.28	6.84	---	13.22	13.66	5.57	---	15.45	19.15	15.03
8	5.16	5.93	7.11	7.02	---	13.35	13.72	4.93	7.44	15.66	19.07	15.25
9	5.18	5.78	6.90	7.24	---	13.48	13.74	4.51	7.84	15.81	19.11	15.49
10	5.21	5.83	6.80	7.39	---	13.60	13.75	4.44	8.09	16.01	19.16	15.66
11	---	6.00	6.65	7.49	---	13.04	13.79	4.46	8.38	16.27	19.20	15.82
12	---	6.10	6.06	7.63	---	12.70	13.98	4.48	8.52	16.49	19.29	16.00
13	---	6.38	5.49	7.75	---	12.52	14.21	4.56	9.22	16.45	19.40	16.20
14	---	6.58	5.27	7.90	9.70	12.40	14.42	4.59	9.68	16.37	19.51	14.98
15	---	6.60	5.13	7.99	9.81	12.35	14.66	4.58	10.01	16.41	19.70	14.09
16	5.85	6.64	5.07	8.05	10.02	12.34	14.86	4.61	10.36	16.57	19.76	13.21
17	6.01	6.78	5.00	7.93	10.18	12.30	14.99	4.67	10.60	16.61	19.87	12.66
18	6.32	6.91	4.70	7.83	10.32	12.21	15.05	4.71	11.03	16.78	19.55	12.27
19	6.47	6.98	4.61	7.73	10.52	12.16	15.13	4.86	11.27	17.12	18.18	11.98
20	6.59	7.11	4.69	7.71	10.71	12.29	15.23	5.00	11.50	17.24	17.07	11.78
21	6.71	7.18	4.72	7.71	10.89	12.35	15.12	5.10	11.75	17.40	16.32	11.64
22	6.72	7.23	4.86	7.71	11.01	12.34	15.00	5.19	12.05	17.58	15.73	11.54
23	6.76	7.23	4.89	7.79	11.22	12.38	14.92	5.30	12.21	17.71	15.31	11.47
24	6.79	7.24	4.97	7.98	11.40	12.47	13.77	5.46	12.35	17.91	14.95	11.41
25	6.82	7.44	5.02	8.19	11.52	12.52	12.30	5.56	12.80	18.03	14.67	11.25
26	6.91	7.52	5.09	8.33	11.66	12.56	11.21	5.68	12.97	18.27	14.53	11.22
27	6.90	7.66	5.18	8.42	11.87	12.60	10.22	5.81	13.13	18.45	14.45	11.28
28	6.88	7.76	5.31	8.50	12.05	12.68	8.88	5.85	13.44	18.51	14.43	11.32
29	6.43	7.79	5.51	8.56	---	12.76	8.09	5.93	13.69	18.77	14.29	11.44
30	6.26	7.74	5.64	8.56	---	12.90	7.72	5.99	13.91	18.97	14.25	11.56
31	6.25	---	5.71	8.57	---	12.94	---	5.96	---	19.13	14.24	---
MEAN	---	6.73	5.89	7.55	---	12.64	13.31	5.39	---	16.72	17.72	13.39

WTR YR 2002 MEAN 10.60 HIGHEST 4.42 MAY 10, 2002 LOWEST 20.03 AUG. 4, 2002



GROUND-WATER LEVELS

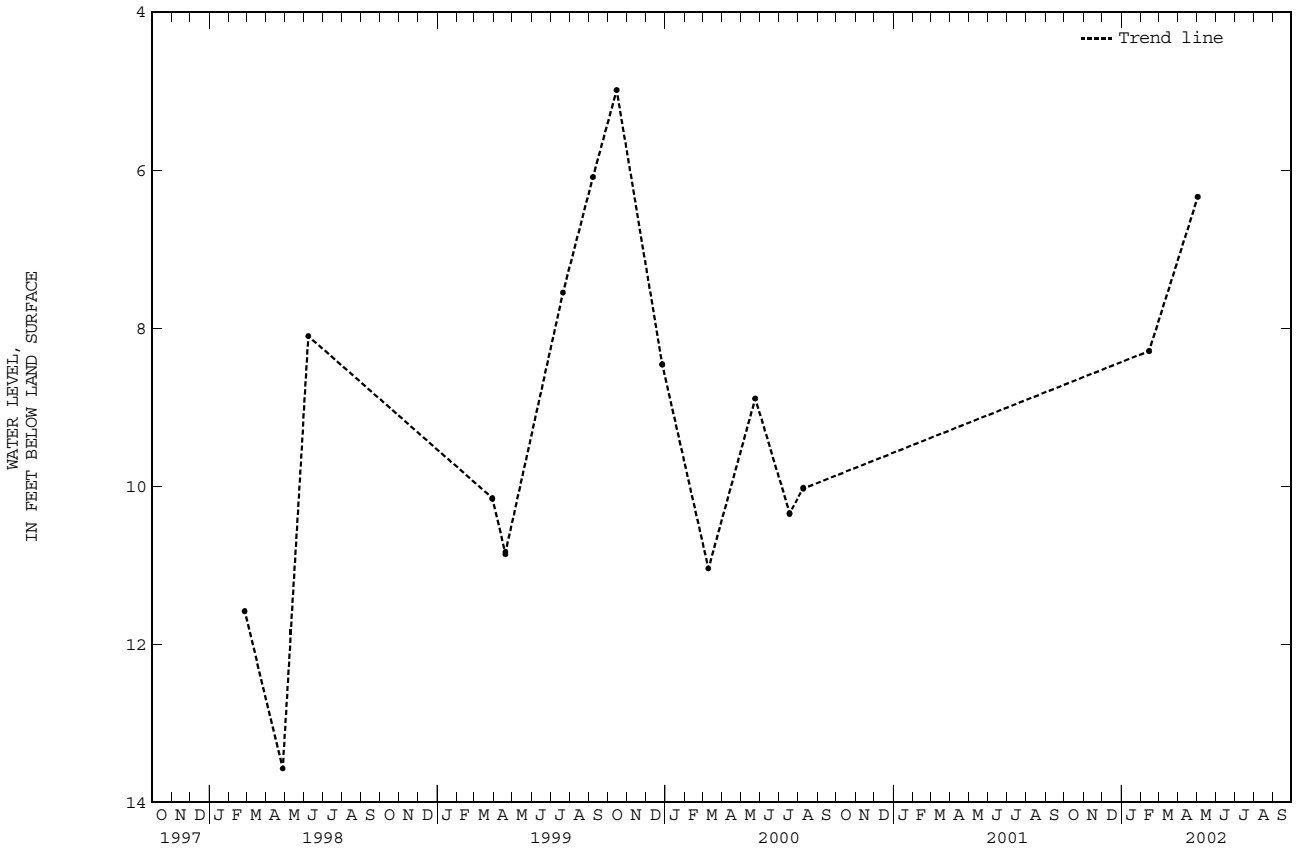
RIO GUANAJIBO BASIN--Continued

180802067073300. Local number, 1304.
LOCATION.--Lat 18°08'02", long 67°07'33", Hydrologic Unit 21010003, on west side of Hwy 319, 0.30 mi south of Hwy 3, and 0.60 mi south southeast of Hormigueros plaza. Name: Hormigueros Well.
AQUIFER.--Sandy and clay.
WELL CHARACTERISTICS.--Abandoned production well.
DATUM.--Elevation of land-surface datum is about 31.0 ft (9.45 m), above mean sea level, from topographic map. Measuring point: Access hole in steel covering, 0.50 ft (0.15 m), above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--February 26, 1998 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.99 ft (1.52 m), below land-surface datum, October 15, 1999; lowest water level measured, 13.57 ft (4.14 m), below land-surface datum, April 28, 1998.

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 14	8.29	MAY 03	6.34

WATER YEAR 2002 HIGHEST 6.34 MAY 03, 2002 LOWEST 8.29 FEB. 14, 2002



GROUND-WATER LEVELS

RIO YAGUEZ AND RIO GRANDE AÑASCO BASINS

181232067083700. Local number, 1326.
LOCATION.--Lat 18°12'32", long 67°08'37", Hydrologic Unit 21010003, 0.10 mi east of Hwy 2, 0.92 mi southeast of the intersection of Hwy 104 with Hwy 2, and 0.20 mi southwest of the University of Puerto Rico, Mayaguez Campus. Name: Cervecería India 4 Well.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled emergency use water-table well, diameter 20 in (0.51 m), cased 20 in (0.51 m), 0-100 ft (0-30.5 m), perforated 85-95.0 ft (25.9-28.9 m). Depth 100 ft (30.5 m).
INSTRUMENTATION.--Pressure transducer with integrated electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 10.0 ft (3.05 m), above mean sea level. Measuring point: Top of shelter floor, 1.68 ft (0.51 m), above land-surface datum. Prior to November 20, 1992, hole on side of casing, 2.00 ft (0.61 m), above land-surface datum.
REMARKS.--Recording observation well. Electronic Data Logger (EDL), installed on August 29, 1997. Water level affected by nearby pumping well.
PERIOD OF RECORD.--August 29, 1997 to September 30, 2002, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 4.65 ft (1.42 m), below land-surface datum, November 24, 1999; lowest water level recorded, 18.86 ft (5.75 m), below land-surface datum, April 24, 1999.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.25	5.25	5.91	5.71	6.19	6.48	6.43	5.80	---	---	---	5.57
2	5.29	5.12	5.95	5.74	6.21	6.48	6.43	5.84	---	---	---	5.55
3	5.34	5.13	5.79	5.76	6.21	6.48	6.39	---	---	---	---	5.58
4	5.36	5.16	5.76	5.79	6.18	6.48	6.38	---	---	---	---	5.59
5	5.38	5.20	5.77	5.83	6.21	6.51	6.34	---	---	---	---	5.61
6	5.43	5.27	5.78	5.85	6.23	6.52	6.23	---	---	---	---	5.65
7	5.45	5.60	5.80	5.86	6.25	6.53	6.10	---	---	---	---	5.70
8	5.43	5.72	5.73	5.88	6.26	6.53	6.07	---	---	---	---	5.73
9	5.45	5.47	5.71	5.91	6.29	6.54	6.10	---	---	---	---	5.74
10	5.48	5.43	5.71	5.94	6.31	6.55	6.13	---	---	---	---	5.76
11	5.52	5.28	5.72	5.95	6.30	6.51	6.14	---	---	---	---	5.76
12	5.53	5.30	5.46	5.98	6.32	6.48	6.17	---	---	---	---	6.52
13	5.55	5.56	5.35	6.00	6.34	6.48	6.20	---	---	---	---	5.98
14	5.44	5.40	5.33	6.01	6.35	6.48	6.23	---	---	---	---	5.92
15	5.43	5.43	5.39	6.02	6.36	6.47	6.25	---	---	---	---	5.91
16	5.45	5.46	5.43	6.04	6.37	6.48	6.27	---	---	---	6.48	5.79
17	5.46	5.51	5.33	6.06	6.36	6.44	6.19	---	---	---	6.47	5.76
18	5.48	5.56	5.10	6.08	6.35	6.41	6.18	---	---	---	6.40	5.76
19	5.48	5.59	5.09	6.09	6.37	6.41	6.12	---	---	---	6.49	5.52
20	5.53	5.63	5.14	6.11	6.40	6.41	6.06	---	---	---	6.47	5.48
21	5.58	5.66	5.20	6.12	6.40	6.43	5.90	---	---	---	6.49	5.50
22	5.56	5.70	5.27	6.12	6.40	6.44	5.86	---	---	---	6.36	5.55
23	5.55	5.71	5.32	6.15	6.41	6.46	5.87	---	---	---	5.88	5.57
24	5.56	5.74	5.37	6.16	6.47	6.48	5.72	---	---	---	5.81	5.59
25	5.58	5.76	5.43	6.18	6.45	6.48	5.70	---	---	---	5.80	5.60
26	5.59	5.77	5.44	6.21	6.44	6.48	5.72	---	---	---	5.61	5.62
27	5.59	6.17	5.49	6.22	6.43	6.48	5.77	---	---	---	5.55	5.65
28	5.61	5.87	5.55	6.21	6.47	6.40	5.79	---	---	---	5.56	5.71
29	5.42	5.89	5.62	6.21	---	6.39	5.80	---	---	---	5.51	5.77
30	5.29	5.89	5.65	6.22	---	6.40	5.78	---	---	---	5.54	5.79
31	5.23	---	5.68	6.20	---	6.42	---	---	---	---	5.54	---
MEAN	5.46	5.54	5.52	6.02	6.33	6.47	6.08	---	---	---	---	5.71

WTR YR 2002 MEAN 5.89 HIGHEST 5.08 DEC. 18, 19, 2001 LOWEST 9.17 SEPT. 12, 2002

GROUND-WATER LEVELS

RIO YAGUEZ AND RIO GRANDE AÑASCO BASINS--Continued

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 28	5.87	FEB 14	6.35	MAR 20	6.42	MAY 03	5.81	AUG 15	6.54	AUG 15	6.52
DEC 19	5.09										

WATER YEAR 2002 HIGHEST 5.09 DEC. 03, 2001 LOWEST 6.54 AUG. 15, 2002

GROUND-WATER LEVELS

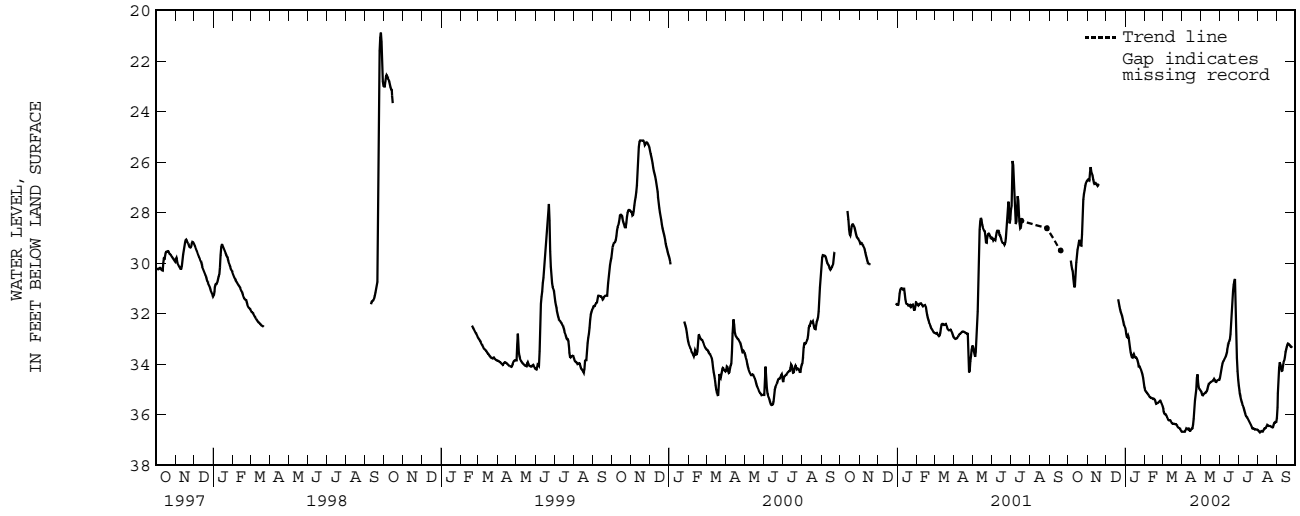
RIO CULEBRINAS BASIN

182017067143300. Local number, 1352.
LOCATION.--Lat 18°20'17", long 67°14'33", Hydrologic Unit 21010003, 0.63 mi southeast of the intersection of Hwy 412 with Hwy 115, 1.13 mi south of the intersection of Hwy 413 with Hwy 115, and 0.01 mi north of Hwy 411. Name: Rincón 4 Well.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 12 in (0.30 m), cased 0-69.0 ft (0-21.0 m). Depth 102 ft (31.1 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 39.0 ft (11.9 m), above mean sea level, from topographic map. Measuring point: Shelter floor on top of the 4 in (0.10 m) casing, 3.53 ft (1.08 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), installed on May 30, 1996. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on February 18, 1999, removed on September 27, 2002.
PERIOD OF RECORD.--May 30, 1996 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 20.80 ft (6.34 m), below land-surface datum, September 27, 1998; lowest water level recorded, 36.71 ft (11.19 m), below land-surface datum, August 5, 2002.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	26.70	---	32.61	34.97	35.60	36.67	35.03	34.62	34.75	36.60	35.98
2	---	26.70	---	32.75	35.05	35.71	36.68	35.07	34.48	34.95	36.62	35.43
3	---	26.74	---	32.85	35.08	35.81	36.67	35.12	34.31	35.12	36.65	34.87
4	---	26.64	---	32.98	35.12	35.94	36.67	35.19	34.19	35.21	36.69	34.33
5	29.88	26.78	---	32.88	35.13	35.97	36.67	35.27	34.00	35.35	36.71	33.96
6	29.90	26.04	---	32.87	35.20	35.97	36.67	35.22	33.94	35.47	36.64	33.89
7	30.28	26.36	---	33.06	35.21	35.97	36.67	35.18	33.89	35.52	36.65	34.09
8	30.19	26.39	---	33.25	35.25	36.05	36.54	35.15	33.85	35.61	36.68	34.22
9	30.46	26.49	---	33.45	35.31	36.06	36.55	35.13	33.78	35.66	36.67	34.31
10	30.78	26.59	---	33.60	35.32	36.17	36.59	35.11	33.75	35.78	36.62	34.19
11	30.93	26.78	---	33.70	35.33	36.22	36.58	35.11	33.66	35.87	36.60	33.97
12	31.00	26.82	---	33.77	35.34	36.22	36.52	35.05	33.59	35.96	36.54	33.88
13	30.72	26.91	---	33.73	35.34	36.22	36.58	34.92	33.48	36.04	36.53	33.85
14	30.11	26.80	---	33.55	35.38	36.22	36.64	34.82	33.34	36.07	36.53	33.59
15	29.87	26.86	---	33.66	35.37	36.25	36.64	34.78	33.21	36.10	36.51	33.46
16	29.55	26.89	---	33.71	35.37	36.32	36.64	34.75	33.13	36.14	36.41	33.38
17	29.39	26.93	---	33.77	35.39	36.35	36.56	34.72	33.06	36.19	36.41	33.25
18	29.28	26.95	30.96	33.73	35.44	36.35	36.55	34.70	33.00	36.24	36.45	33.20
19	29.08	26.87	---	33.73	35.58	36.35	36.53	34.70	32.63	36.30	36.45	33.19
20	29.10	26.99	31.36	33.84	35.56	36.36	36.26	34.67	32.06	36.34	36.44	33.21
21	29.28	---	31.49	33.93	35.56	36.37	36.04	34.66	31.65	36.40	36.45	33.24
22	29.32	---	31.64	34.05	35.54	36.37	35.55	34.62	31.26	36.45	36.46	33.27
23	29.30	---	31.77	34.12	35.51	36.37	35.31	34.60	30.94	36.52	36.48	33.30
24	28.43	---	31.90	34.04	35.48	36.39	35.12	34.57	30.76	36.56	36.50	33.34
25	27.65	---	31.98	34.15	35.45	36.42	34.88	34.68	30.68	36.55	36.52	33.28
26	27.32	---	32.04	34.19	35.43	36.47	34.19	34.71	30.59	36.54	36.44	33.43
27	27.20	---	32.14	34.29	35.49	36.52	34.63	34.71	32.30	36.57	36.35	---
28	27.03	---	32.25	34.38	35.56	36.53	34.88	34.66	33.46	36.59	36.29	---
29	26.87	---	32.39	34.46	---	36.53	34.97	34.64	34.07	36.58	36.29	---
30	26.82	---	32.49	34.62	---	36.56	34.99	34.62	34.47	36.58	36.31	---
31	26.76	---	32.47	34.85	---	36.61	---	34.62	---	36.59	36.28	---
MEAN	---	---	---	33.70	35.35	36.23	36.08	34.86	33.07	36.02	36.51	---

WTR YR 2002 MEAN 33.97 HIGHEST 25.95 NOV. 6, 2001 LOWEST 36.71 AUG. 5, 2002



GROUND-WATER LEVELS

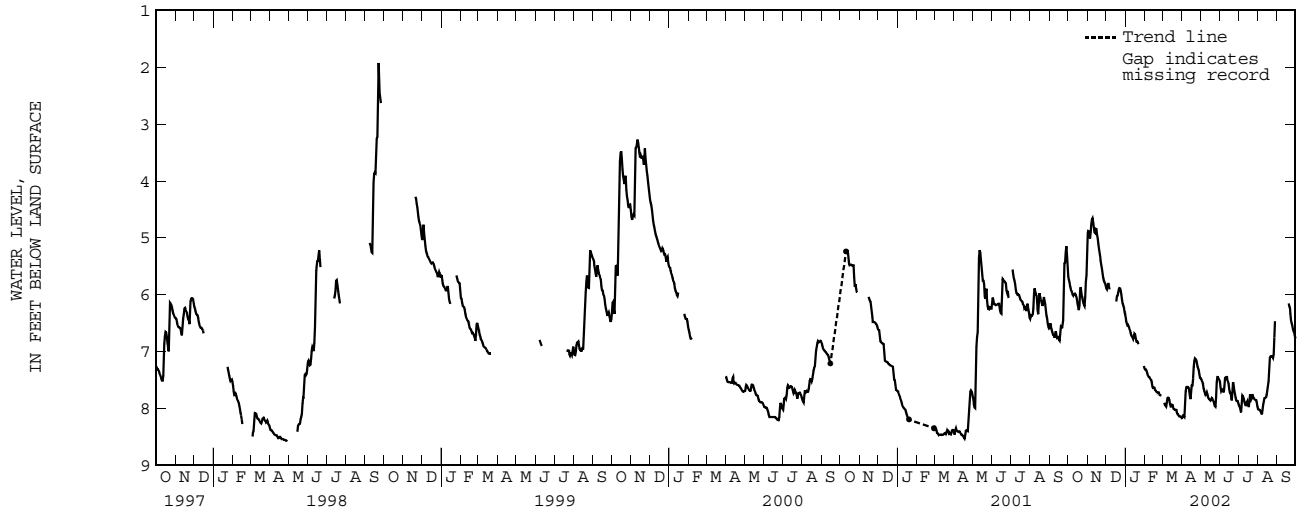
RIO CULEBRINAS BASIN--Continued

182442067091700. Local number, 200.
LOCATION.--Lat 18°24'42", long 67°09'17", Hydrologic Unit 21010002, 1.40 mi south of Aguadilla plaza, 3.04 mi northeast of Aguada plaza, and 0.20 mi north of Hwy 2 km 146.4. Name: Aguadilla Cement North Well.
AQUIFER.--Alluvial deposits.
WELL CHARACTERISTICS.--Abandoned water-table industrial well, diameter 4 in (0.10 m), cased 0-20.0 ft (0-6.10 m), perforated 11.0-20.0 ft (3.35-6.10 m). Depth 20.0 ft (6.10 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes interval.
DATUM.--Elevation of land-surface datum is about 10.0 ft (3.05 m), above mean sea level, from topographic map. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 3.25 ft (0.99 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on February 18, 1998. Water levels affected by nearby pumping well.
PERIOD OF RECORD.--October 1985 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 1.61 ft (0.49 m), below land-surface datum, September 22, 1998; lowest water level recorded, 9.60 ft (2.93 m), below land-surface datum, February 20, 1992.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.65	4.94	5.88	6.36	7.32	---	8.16	7.47	7.49	7.94	8.01	---
2	5.71	4.89	5.90	6.46	7.31	---	8.18	7.47	7.57	7.95	8.01	---
3	5.77	4.87	5.91	6.48	7.32	---	8.13	7.50	7.70	7.97	8.03	---
4	5.80	4.90	5.78	6.53	7.34	7.89	8.13	7.51	7.70	7.97	8.03	---
5	5.91	4.96	5.81	6.54	7.40	7.92	8.15	7.54	7.66	8.07	8.03	---
6	5.90	5.06	5.89	6.51	7.40	7.95	8.15	7.61	7.67	8.07	8.07	---
7	5.95	4.76	5.92	6.59	7.45	7.95	7.75	7.69	7.71	7.76	8.08	---
8	5.99	4.75	---	6.60	7.44	7.98	7.64	7.70	7.72	7.79	8.13	---
9	6.01	4.60	---	6.64	7.46	7.82	7.62	7.76	7.49	7.79	7.93	---
10	6.02	4.71	---	6.71	7.48	7.82	7.62	7.77	7.44	7.86	7.94	---
11	5.96	4.75	---	6.72	7.50	7.81	7.63	7.72	7.47	7.89	7.82	---
12	6.01	4.88	---	6.74	7.50	7.83	7.63	7.72	7.43	7.94	7.82	---
13	5.99	4.92	---	6.76	7.59	7.89	7.66	7.79	7.46	7.95	7.82	---
14	6.00	4.91	---	6.80	7.64	7.96	7.73	7.82	7.52	7.94	7.81	---
15	6.05	4.77	---	6.68	7.64	7.97	7.82	7.83	7.52	7.84	7.81	---
16	6.11	4.92	---	6.70	7.63	7.96	7.85	7.84	7.61	7.90	7.72	---
17	6.21	4.97	6.20	6.71	7.64	7.92	7.57	7.86	7.71	7.97	7.64	---
18	6.22	5.04	6.04	6.82	7.70	7.97	7.60	7.87	7.73	7.98	7.56	---
19	6.32	5.17	6.02	6.82	7.67	8.01	7.62	7.82	7.74	7.77	7.48	6.12
20	6.06	5.21	6.01	6.82	7.72	8.02	7.34	7.82	7.83	7.77	7.14	6.19
21	5.80	5.31	5.92	6.84	7.72	8.02	7.21	7.84	7.89	7.77	7.09	6.23
22	5.93	5.36	5.89	6.91	7.73	8.02	7.12	7.88	7.54	7.91	7.08	6.25
23	6.01	5.44	5.88	---	7.72	8.03	7.12	7.89	7.54	7.72	7.08	6.40
24	6.06	5.50	5.91	---	7.72	8.03	7.14	7.95	7.66	7.78	7.08	6.49
25	6.11	5.57	5.96	---	7.77	8.10	7.16	7.97	7.72	7.80	7.09	6.51
26	6.17	5.67	6.04	---	7.77	8.10	7.24	7.97	7.77	7.82	7.13	6.57
27	6.18	5.72	6.14	---	7.78	8.11	7.29	7.63	7.86	7.83	6.96	6.64
28	6.21	5.77	6.18	---	7.78	8.14	7.31	7.45	7.87	7.86	6.55	6.65
29	5.87	5.79	6.20	---	---	8.14	7.36	7.45	7.87	7.85	6.39	6.68
30	5.67	5.81	6.26	7.25	---	8.14	7.46	7.45	7.87	7.86	---	6.77
31	5.64	---	6.35	7.26	---	8.14	---	7.49	---	7.92	---	---
MEAN	5.98	5.13	---	---	7.58	---	7.61	7.71	7.66	7.88	---	---

WTR YR 2002 MEAN 7.08 HIGHEST 4.58 NOV. 9, 2001 LOWEST 8.18 APR. 2, 2002



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Surface-Water Records for U.S. Virgin Islands

Surface-water records for U.S. VI

ST. THOMAS, U.S. VIRGIN ISLANDS

50252000 BONNE RESOLUTION GUT AT BONNE RESOLUTION, ST. THOMAS, VI

LOCATION.--Lat 18°21'57", long 64°57'34", Hydrologic Unit 21020001, on right bank near Hull Bay Road, 0.5 mi (0.8 km) upstream from mouth, and 2.5 mi (4.0 km) northwest of Fort Christian, Charlotte Amalie.

DRAINAGE AREA.--0.49 mi^2 (1.27 km^2).

PERIOD OF RECORD.--December 1962 to February 1967, March 1979 to April 1981, May 1982 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 280 ft (85 m), from topographic map. December 1962 to February 1967 and March 1979 to April 1981 at site about 100 ft (30 m) upstream at different datum.

REMARKS.--Records poor.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.01	0.01	0.01	0.01	0.02	0.01	0.02	e0.01	0.01	0.01	0.01	e0.01
2	0.01	0.04	0.01	0.01	0.01	0.01	0.02	e0.01	0.01	0.01	0.01	e0.25
3	0.01	0.02	0.01	0.01	0.32	0.01	0.02	e0.01	0.01	0.01	0.11	e0.02
4	0.01	0.02	0.01	0.01	0.02	0.02	0.02	e0.01	0.01	0.01	0.02	e0.02
5	0.01	0.01	0.01	0.01	0.01	0.02	0.01	e0.01	0.01	0.01	0.01	e0.02
6	0.01	0.01	0.01	0.01	0.01	0.02	0.01	e0.01	0.01	0.01	0.01	e0.02
7	0.01	0.01	0.01	0.01	0.01	0.02	0.03	e0.01	0.01	0.01	0.01	e0.02
8	0.01	0.01	0.01	0.01	0.01	0.02	0.01	e0.01	0.01	0.01	0.01	e0.02
9	0.01	0.01	0.01	e0.03	0.01	0.02	0.01	e0.01	0.01	0.01	0.01	e0.02
10	0.01	0.01	0.01	e0.02	0.01	0.02	0.01	e0.01	0.01	0.01	0.01	e0.02
11	0.01	0.01	3.1	e0.01	0.01	0.02	0.01	e0.01	0.01	0.01	0.01	e0.02
12	0.01	0.01	0.53	e0.03	0.01	0.02	0.01	e0.01	0.01	0.01	0.01	e0.02
13	0.01	0.01	0.06	e0.01	0.01	0.02	0.01	e0.01	0.01	0.01	0.01	e0.03
14	0.01	0.01	0.02	e0.03	0.01	0.01	0.01	e0.01	0.01	0.01	0.01	e0.07
15	0.06	0.01	11	e0.03	0.01	0.01	0.01	e0.01	0.01	0.01	0.01	e0.07
16	0.24	0.01	6.3	e0.01	0.01	0.01	0.01	e0.01	0.01	0.01	0.01	e0.03
17	0.03	0.01	0.30	0.01	0.01	0.01	0.01	e0.01	0.01	0.01	0.01	e0.03
18	0.02	0.01	0.09	0.01	0.01	0.01	0.01	e0.01	0.03	0.01	0.01	e0.30
19	0.02	0.01	0.03	0.01	0.01	0.01	0.01	e0.01	0.01	0.01	0.01	e0.06
20	0.01	0.01	0.02	0.01	0.01	0.01	0.01	e0.01	0.01	0.01	0.01	e0.07
21	0.01	0.01	0.02	0.01	0.01	0.01	e0.01	e0.01	0.01	0.02	0.01	e0.07
22	0.01	0.01	0.01	0.01	0.01	0.01	e0.01	e0.01	0.01	0.01	0.01	e0.08
23	0.01	0.01	0.01	0.01	0.01	0.01	e0.01	0.01	0.01	0.01	0.01	e0.16
24	0.01	0.01	0.01	0.01	0.01	0.01	e0.01	0.01	0.01	0.01	0.01	0.02
25	0.01	0.01	0.01	0.01	0.01	0.01	e0.01	0.01	0.01	0.01	0.01	0.02
26	0.01	0.01	0.01	0.01	0.01	0.01	e0.01	0.01	0.01	0.01	0.01	0.01
27	0.01	0.01	0.01	0.01	0.01	0.02	e0.01	0.01	0.01	0.02	0.01	0.01
28	0.01	0.01	0.01	0.01	0.01	0.02	e0.01	0.01	0.01	0.01	e0.01	e6.2
29	0.01	0.01	0.01	0.01	---	0.07	e0.01	0.01	0.01	0.02	e0.01	e0.12
30	0.01	0.01	0.01	0.01	---	0.06	e0.01	0.01	0.01	0.02	e0.01	e0.03
31	0.01	---	0.01	0.01	---	0.02	---	0.01	---	0.01	e0.02	---
TOTAL	0.63	0.35	21.67	0.40	0.61	0.55	0.36	0.31	0.32	0.35	0.43	7.84
MEAN	0.020	0.012	0.70	0.013	0.022	0.018	0.012	0.010	0.011	0.011	0.014	0.26
MAX	0.24	0.04	11	0.03	0.32	0.07	0.03	0.01	0.03	0.02	0.11	6.2
MIN	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
AC-FT	1.2	0.7	43	0.8	1.2	1.1	0.7	0.6	0.6	0.7	0.9	16
CFSM	0.04	0.02	1.43	0.03	0.04	0.04	0.02	0.02	0.02	0.02	0.03	0.53
IN.	0.05	0.03	1.65	0.03	0.05	0.04	0.03	0.02	0.02	0.03	0.03	0.60

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2002, BY WATER YEAR (WY)

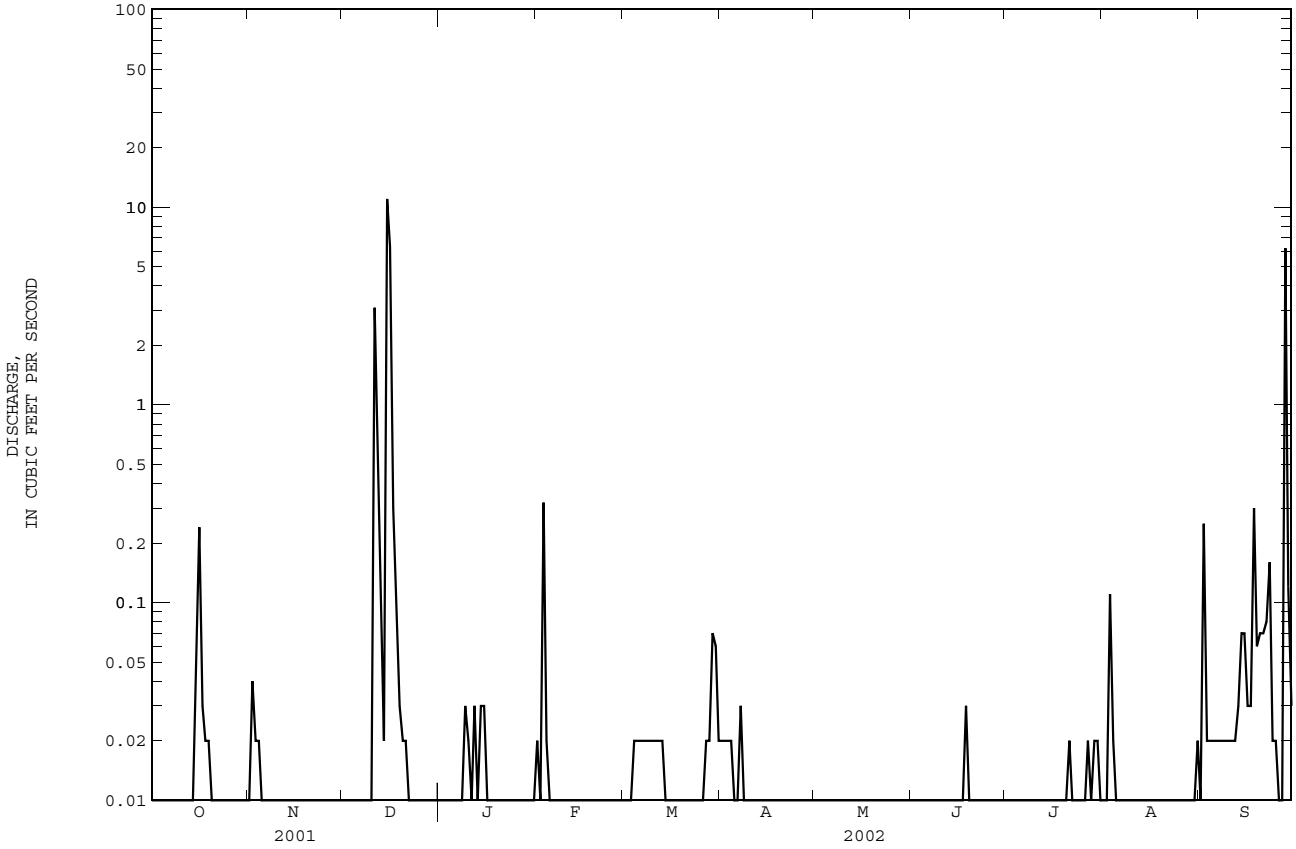
MEAN	0.43	0.59	0.16	0.063	0.056	0.047	0.057	0.25	0.099	0.040	0.055	0.74
MAX	3.09	4.22	0.70	0.35	0.38	0.31	0.34	2.06	0.89	0.18	0.23	8.91
(WY)	1986	1988	2002	1992	1992	1987	1986	1987	1987	1988	1988	1989
MIN	0.011	0.011	0.002	0.013	0.005	0.001	0.000	0.002	0.004	0.010	0.007	0.009
(WY)	1997	1995	1995	2002	1995	1995	1995	1995	1995	1994	2001	1994

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1986 - 2002	
ANNUAL TOTAL	32.17		33.82			
ANNUAL MEAN	0.088		0.093		0.22	
HIGHEST ANNUAL MEAN					0.77	1989
LOWEST ANNUAL MEAN					0.026	1964
HIGHEST DAILY MEAN	11	Dec 15	11	Dec 15	169	Apr 18 1983
LOWEST DAILY MEAN	0.00	Jul 23	0.01	Oct 1	0.00	Apr 11 1980
ANNUAL SEVEN-DAY MINIMUM	0.00	Sep 4	0.01	Oct 1	0.00	Jan 31 1986
MAXIMUM PEAK FLOW			123	Dec 15	1650	Apr 18 1983
MAXIMUM PEAK STAGE			3.01	Dec 15	7.00	Apr 18 1983
ANNUAL RUNOFF (AC-FT)	64		67		159	
ANNUAL RUNOFF (CFSM)	0.18		0.19		0.45	
ANNUAL RUNOFF (INCHES)	2.44		2.57		6.10	
10 PERCENT EXCEEDS	0.04		0.03		0.10	
50 PERCENT EXCEEDS	0.02		0.01		0.02	
90 PERCENT EXCEEDS	0.01		0.01		0.01	

e Estimated

ST. THOMAS, U.S. VIRGIN ISLANDS

50252000 BONNE RESOLUTION GUT AT BONNE RESOLUTION, ST. THOMAS, VI--Continued



ST. THOMAS, U.S. VIRGIN ISLANDS

50274000 TURPENTINE RUN AT MOUNT ZION, ST. THOMAS, VI

LOCATION.--Lat 18°19'55", long 64°53'20", Hydrologic Unit 21020001, on left bank at Mount Zion, 0.6 mi (1.0 km) east southeast from Donoe School, 0.5 mi (0.8 km) northwest from Mariendal, and 0.4 mi (0.6 km) southeast from conjunction of roads 38 and 32.

DRAINAGE AREA.--2.33 mi^2 (6.03 km^2).

PERIOD OF RECORD.--January 1963 to December 1969, October 1992 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 120 ft (36 m), from topographic map. Datum of gage for period of October 1992 to current year is 1.62 ft (0.49 m), higher than previous record.

REMARKS.--Records poor. Flow affected by three sewage treatment plants, Donoe, Old Tutu, and New Tutu that discharges to a retention pond located 0.80 mi (1.29 km) upstream from station. Gage-height and precipitation satellite telemtry at station. Prior to October 1992, maximum discharge 5,028 ft^3/s (142.39 m^3/s), May 23, 1969, gage-height 5.00 ft, (1.524 m); minimum discharge prior to October 1992 0.00 ft^3/s (0.00 m^3/s) November 6, 1963, gage height 0.005 ft.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e0.07	e0.16	e0.68	e0.36	e0.39	e0.22	e0.15	e0.89	e2.5	e0.16	0.14	1.1
2	e1.1	e0.13	e0.28	e0.33	e0.55	e0.21	e0.23	e1.7	e0.44	e0.16	e0.15	e0.22
3	e0.22	e1.2	e2.7	e0.34	e0.43	e0.21	e0.23	e0.93	e2.1	e0.15	e0.16	e0.19
4	e0.33	e0.27	e0.85	e0.52	e0.32	e0.20	e0.14	e0.47	e3.1	e0.16	e0.15	e0.16
5	e0.19	e0.20	e0.32	e1.6	e0.31	e0.20	e0.13	e0.43	e0.66	e0.17	e0.16	e0.15
6	e0.18	e6.4	e0.27	e0.61	e0.30	e0.20	e0.50	e0.54	e0.48	e0.50	e0.18	e0.16
7	e0.15	e5.5	e0.26	e0.38	e0.30	e0.25	e1.4	e0.33	e0.41	e0.15	e0.18	e0.15
8	e0.25	e8.6	e0.28	e0.33	e0.31	e0.19	e0.73	e0.26	e0.39	e0.15	e0.21	e0.15
9	e1.4	e1.6	e0.22	e0.33	e0.29	e0.18	e0.30	e0.26	e0.38	e0.15	e0.68	e0.25
10	e0.27	e0.74	e1.2	e0.33	e0.27	e0.19	e0.28	e0.38	e0.28	e0.15	e0.23	e0.22
11	e0.17	e0.51	e0.54	e0.33	e0.26	e0.17	e0.19	e0.29	e0.31	0.10	0.46	e0.30
12	e0.20	e0.38	e0.38	e0.31	e0.26	e0.20	e0.17	e0.21	e0.69	0.10	e0.26	e0.29
13	e0.18	e0.33	e0.50	e0.34	e0.28	e0.18	e0.15	e0.24	e0.33	0.14	e0.19	e0.18
14	e0.49	e0.31	e2.8	e0.33	e0.26	e0.17	e1.3	e0.21	e0.25	0.17	e0.22	e0.77
15	e0.29	e0.27	e1.1	e0.33	e0.26	e0.16	e3.7	e0.21	e0.23	0.17	e0.21	e6.8
16	e0.24	e0.20	e2.0	e0.31	e0.28	e0.16	e0.63	e0.28	e0.24	0.19	e0.22	e8.6
17	e0.19	e0.20	e1.9	e0.35	e0.27	e0.17	e0.36	e0.21	e0.30	0.19	e0.21	e1.2
18	e0.68	e0.19	e0.73	e0.31	e0.25	e0.20	e0.29	e0.21	e0.24	0.18	e0.27	e0.73
19	e0.22	e0.17	e0.47	e0.29	e0.26	e0.15	e1.2	e0.19	e0.23	0.16	e0.25	e0.29
20	e0.18	e0.16	e0.74	e0.29	e0.24	e0.14	e2.5	e0.20	e1.4	0.12	e0.21	e0.24
21	e0.16	e0.14	e4.5	e0.33	e0.25	e0.14	e0.77	e0.19	e0.27	0.11	e0.18	e0.15
22	e0.17	e0.36	e4.3	e0.36	e0.25	e0.14	e1.3	e0.19	e0.21	0.10	e0.17	e0.25
23	e0.24	e0.27	e1.5	e1.9	e0.20	e0.13	e1.0	e0.18	e0.19	0.34	0.74	e0.40
24	e0.21	e0.28	e0.76	e0.44	e0.21	e0.12	e0.79	e0.16	e0.19	0.10	e0.62	e1.4
25	e0.14	e0.17	e0.64	e0.33	e0.24	e0.12	e0.35	e0.16	e0.19	0.17	e0.27	0.39
26	e0.15	e0.16	e0.56	e0.35	e0.24	e0.14	e0.31	e0.35	e0.21	0.18	e0.22	0.18
27	e0.19	e0.15	e0.51	e2.4	e0.23	e0.15	e0.31	e0.51	e0.18	1.3	e0.20	0.42
28	e0.24	e0.16	e0.45	e0.56	e0.23	e0.95	e0.27	e0.15	e0.15	0.52	e0.19	3.1
29	e0.17	e0.15	e0.42	e0.45	---	e0.37	e0.23	e3.7	e0.15	0.23	e0.18	0.55
30	e0.16	e0.14	e0.39	e0.39	---	e0.16	e0.47	e0.73	e0.16	0.15	0.93	0.43
31	e0.47	---	e0.37	e0.48	---	e0.13	---	e2.3	---	0.12	1.8	---
TOTAL	9.30	29.50	32.62	16.31	7.94	6.30	20.38	17.06	16.86	6.74	10.24	29.42
MEAN	0.30	0.98	1.05	0.53	0.28	0.20	0.68	0.55	0.56	0.22	0.33	0.98
MAX	1.4	8.6	4.5	2.4	0.55	0.95	3.7	3.7	3.1	1.3	1.8	8.6
MIN	0.07	0.13	0.22	0.29	0.20	0.12	0.13	0.15	0.15	0.10	0.14	0.15
AC-FT	18	59	65	32	16	12	40	34	33	13	20	58
CFSM	0.13	0.42	0.45	0.23	0.12	0.09	0.29	0.24	0.24	0.09	0.14	0.42
IN.	0.15	0.47	0.52	0.26	0.13	0.10	0.33	0.27	0.27	0.11	0.16	0.47

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2002, BY WATER YEAR (WY)

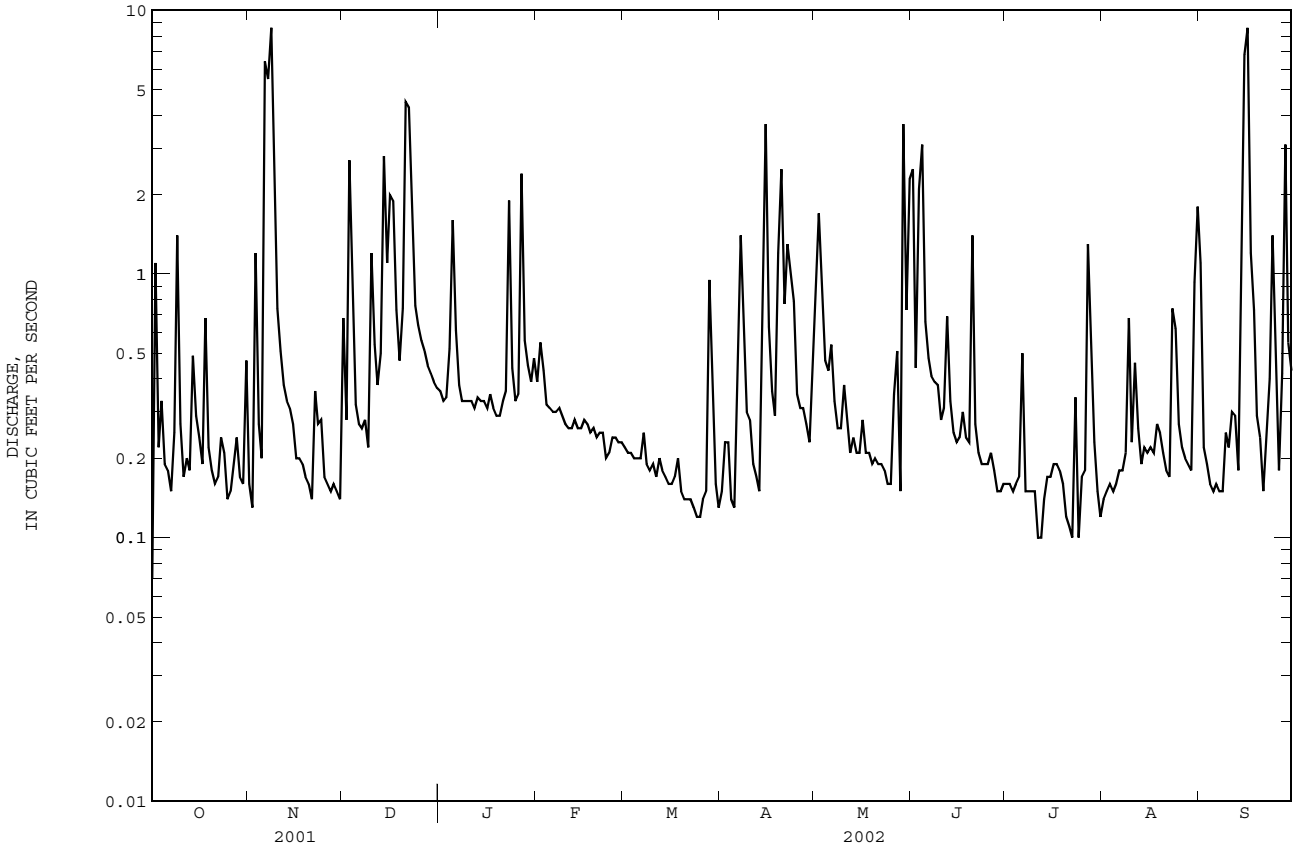
MEAN	1.49	2.47	1.72	0.67	0.53	0.35	0.45	0.50	0.60	0.37	0.56	5.64
MAX	3.58	6.49	4.79	1.12	1.86	0.76	0.92	1.08	3.16	0.74	1.63	38.0
(WY)	1999	1993	1993	2000	2000	2000	1993	2000	1993	1996	1999	1995
MIN	0.30	0.35	0.22	0.16	0.13	0.076	0.025	0.15	0.098	0.15	0.16	0.25
(WY)	2002	2001	2001	1994	1994	1995	1995	1995	2001	1994	1993	1994

e Estimated

ST. THOMAS, U.S. VIRGIN ISLANDS

50274000 TURPENTINE RUN AT MOUNT ZION, ST. THOMAS, VI--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1993 - 2002	
ANNUAL TOTAL	164.70		202.67			
ANNUAL MEAN	0.45		0.56		1.27	
HIGHEST ANNUAL MEAN					3.43	1995
LOWEST ANNUAL MEAN					0.44	2001
HIGHEST DAILY MEAN	10	May 7	8.6	Nov 8	802	Sep 16 1995
LOWEST DAILY MEAN	0.04	Jul 14	0.07	Oct 1	0.01	Apr 5 1995
ANNUAL SEVEN-DAY MINIMUM	0.06	Jul 14	0.13	Mar 20	0.01	Apr 3 1995
MAXIMUM PEAK FLOW			79	Dec 16	10500	Sep 16 1995
MAXIMUM PEAK STAGE			4.13	Dec 16	7.28	Sep 16 1995
ANNUAL RUNOFF (AC-FT)	327		402		924	
ANNUAL RUNOFF (CFSM)	0.19		0.24		0.55	
ANNUAL RUNOFF (INCHES)	2.63		3.24		7.43	
10 PERCENT EXCEEDS	0.71		1.2		1.3	
50 PERCENT EXCEEDS	0.22		0.26		0.34	
90 PERCENT EXCEEDS	0.07		0.15		0.11	



ST. JOHN, U.S. VIRGIN ISLANDS

50295000 GUINEA GUT AT BETHANY, ST. JOHN, VI

LOCATION.--Lat 18°19'55", long 64°46'50", Hydrologic Unit 21020001, 600 ft (183 m) southeast of Bethany Church, and 1.0 mi (1.6 km) east of Government House at Cruz Bay.

DRAINAGE AREA.--0.37 mi^2 (0.96 km^2).

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.--Records poor. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.01	0.02	0.03	0.08	e0.03	e0.02	0.04	0.08	0.04	0.02	0.02	0.02
2	0.03	0.05	0.03	0.07	e0.03	e0.02	0.05	0.08	0.04	0.02	0.02	0.02
3	0.49	0.02	0.03	0.06	e0.03	e0.02	0.04	0.07	0.06	0.01	0.04	0.12
4	e0.01	0.02	0.03	0.07	e0.03	e0.03	0.04	0.07	0.06	0.02	0.02	0.04
5	e0.01	0.02	0.03	0.07	e0.03	e0.02	0.04	0.05	0.04	0.02	0.02	0.03
6	e0.01	0.02	0.03	0.07	e0.03	e0.02	0.04	0.05	0.04	0.02	0.01	0.03
7	e0.01	0.99	e0.02	0.07	e0.03	e0.02	0.08	0.06	0.04	0.02	0.01	0.03
8	e0.01	0.20	e0.02	0.06	e0.03	e0.02	0.05	0.06	0.04	0.02	0.01	0.04
9	e0.01	0.01	e0.02	0.07	e0.03	e0.02	0.05	0.07	0.04	0.02	0.01	0.03
10	e0.01	0.01	e0.02	0.07	e0.03	e0.02	0.06	0.07	0.04	0.02	0.01	0.03
11	e0.01	0.01	e0.01	0.07	e0.03	e0.02	0.05	0.07	0.04	0.01	0.01	0.02
12	e0.01	0.01	e0.13	0.07	e0.03	e0.02	0.05	0.06	0.04	0.00	0.01	0.04
13	e0.01	0.01	e0.05	0.06	e0.03	e0.02	0.05	0.06	0.04	0.00	0.01	0.03
14	e0.01	0.01	e0.02	0.07	e0.03	e0.02	0.05	0.06	0.03	0.00	0.01	0.03
15	e0.06	0.01	e0.02	0.05	e0.03	e0.02	0.07	0.06	0.03	0.00	0.01	0.05
16	e0.21	0.01	e0.31	e0.02	e0.03	e0.02	0.06	0.06	0.03	0.00	0.01	0.10
17	e0.03	0.01	e0.12	e0.02	e0.02	e0.02	0.06	0.07	0.03	0.00	0.02	0.04
18	e0.02	0.01	e0.21	0.06	e0.03	e0.02	0.08	0.06	0.04	0.00	0.02	0.04
19	e0.01	0.01	e0.21	0.04	e0.02	e0.02	0.09	0.06	0.03	0.00	0.02	0.22
20	e0.01	0.02	e0.07	0.11	e0.02	e0.02	0.07	0.06	0.02	0.00	0.03	0.08
21	e0.01	0.02	0.15	0.15	e0.02	e0.02	0.07	0.07	0.02	0.00	0.03	0.09
22	e0.01	0.02	0.07	0.13	e0.02	0.02	0.05	0.07	0.02	0.00	0.01	0.08
23	e0.01	e0.03	0.05	0.13	e0.02	0.02	0.04	0.05	0.02	0.00	0.01	0.08
24	e0.01	e0.03	0.04	0.22	e0.02	0.02	0.04	0.04	0.02	0.00	0.01	0.17
25	e0.01	e0.02	0.05	e0.06	e0.02	0.03	0.05	0.04	0.02	0.00	0.03	0.02
26	0.01	e0.02	0.06	e0.04	e0.02	0.03	0.06	0.04	0.02	0.06	0.01	0.01
27	0.01	e0.01	0.08	e0.04	e0.02	0.03	0.06	0.05	0.02	0.01	0.01	0.01
28	0.01	e0.01	0.07	e0.05	e0.02	0.04	0.05	0.04	0.02	0.01	0.01	0.01
29	e0.01	e0.01	0.08	e0.04	---	0.04	0.06	0.04	0.02	0.02	0.01	0.01
30	e0.01	0.04	0.09	e0.05	---	0.04	0.06	0.04	0.02	0.03	0.01	0.03
31	0.02	---	0.09	e0.04	---	0.04	---	0.04	---	0.02	0.02	---
TOTAL	1.10	1.68	2.24	2.21	0.73	0.74	1.66	1.80	0.97	0.35	0.48	1.55
MEAN	0.035	0.056	0.072	0.071	0.026	0.024	0.055	0.058	0.032	0.011	0.015	0.052
MAX	0.49	0.99	0.31	0.22	0.03	0.04	0.09	0.08	0.06	0.06	0.04	0.22
MIN	0.01	0.01	0.01	0.02	0.02	0.02	0.04	0.04	0.02	0.00	0.01	0.01
AC-FT	2.2	3.3	4.4	4.4	1.4	1.5	3.3	3.6	1.9	0.7	1.0	3.1
CFSM	0.10	0.15	0.20	0.19	0.07	0.06	0.15	0.16	0.09	0.03	0.04	0.14
IN.	0.11	0.17	0.23	0.22	0.07	0.07	0.17	0.18	0.10	0.04	0.05	0.16

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2002, BY WATER YEAR (WY)

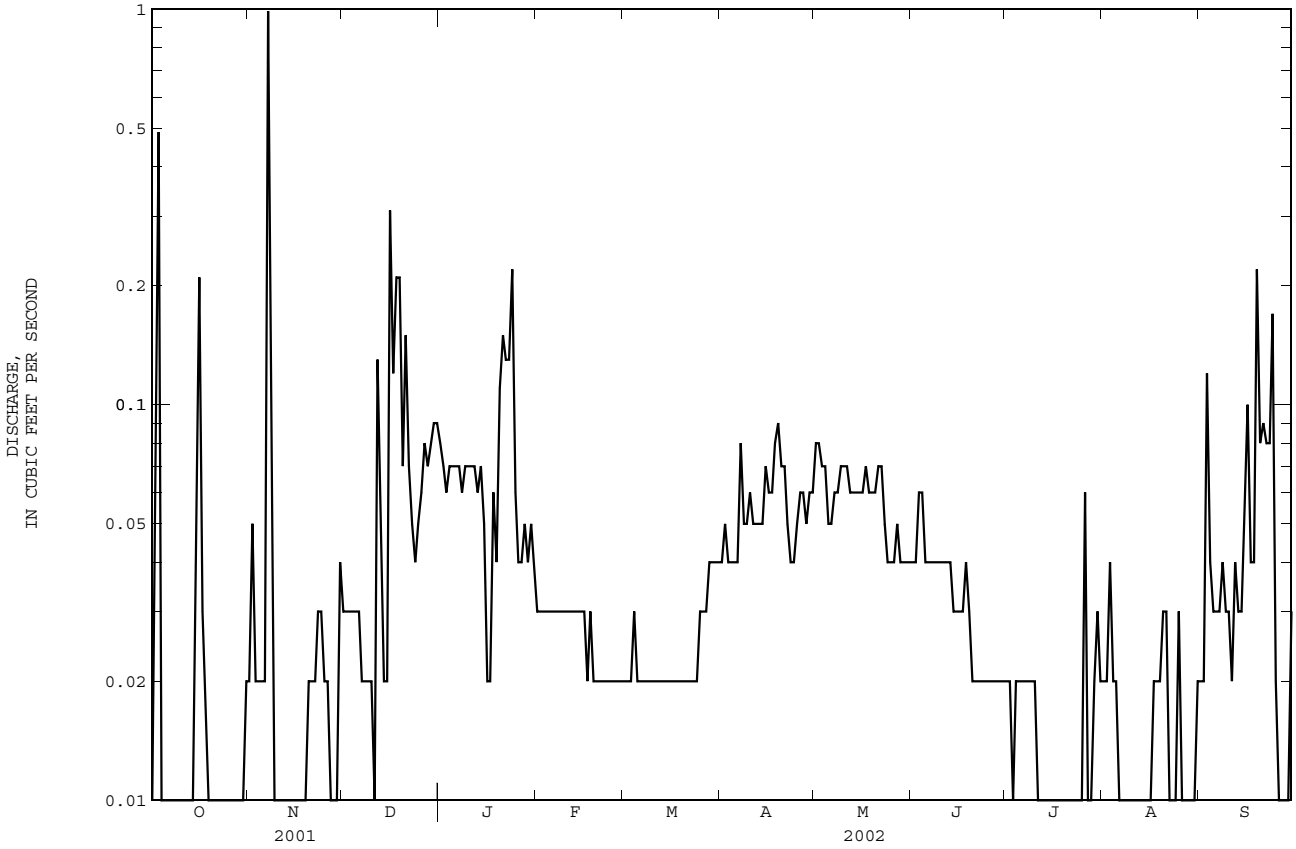
MEAN	0.076	0.36	0.080	0.027	0.017	0.011	0.22	0.074	0.013	0.012	0.014	0.26
MAX	0.42	2.52	0.57	0.12	0.12	0.051	4.03	0.89	0.036	0.041	0.082	2.35
(WY)	1998	1985	2000	2000	2000	2000	1983	1986	1999	1996	1983	1989
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1992	1992	1987	1992	1992	1986	1995	1994	1991	1987	1991	1991

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1983 - 2002	
ANNUAL TOTAL	7.81		15.51			
ANNUAL MEAN	0.021		0.042		0.096	
HIGHEST ANNUAL MEAN					0.35	1983
LOWEST ANNUAL MEAN					0.006	1993
HIGHEST DAILY MEAN	0.99	Nov 7	0.99	Nov 7	110	Apr 18 1983
LOWEST DAILY MEAN	0.00	May 27	0.00	Jul 12	0.00	Oct 3 1982
ANNUAL SEVEN-DAY MINIMUM	0.00	Sep 3	0.00	Jul 12	0.00	Jan 9 1983
MAXIMUM PEAK FLOW			14	Nov 7	946	Apr 18 1983
MAXIMUM PEAK STAGE			2.10	Nov 7	5.33	Apr 18 1983
ANNUAL RUNOFF (AC-FT)	15		31		69	
ANNUAL RUNOFF (CFSM)	0.058		0.11		0.26	
ANNUAL RUNOFF (INCHES)	0.79		1.56		3.52	
10 PERCENT EXCEEDS	0.03		0.07		0.06	
50 PERCENT EXCEEDS	0.01		0.03		0.01	
90 PERCENT EXCEEDS	0.01		0.01		0.00	

e Estimated

ST. JOHN, U.S. VIRGIN ISLANDS

50295000 GUINEA GUT AT BETHANY, ST. JOHN, VI--Continued



ST. CROIX, U.S. VIRGIN ISLANDS

50345000 JOLLY HILL GUT AT JOLLY HILL, ST. CROIX, VI

LOCATION.--Lat 17°44'00", long 64°51'47", Hydrologic Unit 21020002, on Mahogany Road at Jolly Hill, 1.8 mi (2.9 km) northeast of Frederiksted.

DRAINAGE AREA.--2.10 mi^2 (5.44 km^2).

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 (43 m), from topographic map.

REMARKS.--Records poor. Low-water diversions upstream from station. Gage-height and precipitation satellite telemetry at station.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.09	0.07	e0.20	e0.21	e0.19	0.07	0.03	0.06	e0.00	e0.00	e0.00
2	0.00	0.05	0.07	e0.20	e0.20	e0.19	0.07	0.02	0.03	e0.00	e0.00	e0.24
3	0.00	0.00	0.09	e0.19	e0.74	e0.20	0.06	0.02	0.01	e0.00	e0.10	e0.01
4	0.00	0.00	0.09	e0.20	e0.22	e0.20	0.05	0.03	0.02	e0.00	e0.01	e0.01
5	0.00	0.00	0.14	e0.20	e0.20	e0.20	0.04	0.03	0.00	e0.00	e0.00	e0.01
6	0.00	0.00	0.18	e0.20	e0.20	e0.20	0.06	0.04	0.00	e0.00	e0.00	e0.01
7	0.00	0.01	0.22	e0.20	e0.20	e0.21	0.10	0.04	0.00	e0.00	e0.00	e0.01
8	0.00	0.36	0.22	e0.19	e0.19	e0.20	0.06	0.02	0.00	e0.00	e0.00	e0.01
9	0.00	0.29	e0.22	e0.23	e0.19	e0.21	0.06	0.03	e0.00	e0.00	e0.00	e0.01
10	0.00	0.12	e0.26	e0.21	e0.19	e0.21	0.06	0.06	e0.00	e0.00	e0.00	e0.01
11	0.00	0.10	e0.22	e0.20	e0.19	e0.22	0.07	0.05	e0.00	e0.00	e0.00	e0.01
12	0.00	0.07	e0.61	e0.22	e0.20	e0.22	0.05	0.06	e0.00	e0.00	e0.00	e0.01
13	0.00	0.08	e0.59	e0.20	e0.20	e0.21	0.05	0.06	e0.00	e0.00	e0.00	e0.02
14	0.00	0.07	e0.32	e0.23	e0.19	e0.19	0.05	0.08	e0.00	e0.00	e0.00	e0.06
15	0.15	0.07	e0.27	e0.57	e0.19	e0.20	0.07	0.08	e0.00	e0.00	e0.00	e0.06
16	0.16	e0.09	e0.32	e0.19	e0.19	e0.20	0.07	0.06	e0.00	e0.00	e0.00	e0.02
17	0.05	e0.08	e1.2	e0.20	e0.19	e0.20	e0.04	0.04	e0.00	e0.00	e0.00	e0.01
18	0.00	0.08	e2.0	e0.20	e0.20	e0.20	0.02	0.04	e0.02	e0.00	e0.00	e0.27
19	0.00	0.09	e1.7	e0.19	e0.20	e0.20	0.03	0.04	e0.01	e0.00	e0.00	e0.04
20	0.00	0.08	e0.32	e0.19	e0.19	0.18	0.06	0.03	e0.00	e0.00	e0.00	e0.04
21	0.00	0.09	e0.27	e0.19	e0.19	0.20	0.07	0.03	e0.00	e0.01	e0.00	e0.04
22	0.00	0.13	e0.25	e0.19	e0.19	0.20	0.07	0.02	e0.00	e0.00	e0.00	e0.03
23	0.00	0.19	e0.24	e0.19	e0.19	0.18	0.04	0.03	e0.00	e0.00	e0.00	e0.14
24	0.00	0.21	e0.23	e0.20	e0.20	0.14	0.01	0.03	e0.00	e0.00	e0.00	e0.00
25	0.00	0.20	e0.22	e0.19	e0.20	0.12	0.02	0.03	e0.00	e0.00	e0.00	e0.01
26	0.00	0.08	e0.21	e0.20	e0.20	0.11	0.03	0.03	e0.00	e0.00	e0.00	e0.00
27	0.00	0.07	e0.20	e0.19	e0.20	0.11	0.03	0.04	e0.00	e0.01	e0.00	e0.00
28	0.00	0.05	e0.20	e0.20	e0.19	0.11	0.03	0.05	e0.00	e0.00	e0.00	e3.6
29	0.00	0.05	e0.20	e0.19	---	0.10	0.02	0.04	e0.00	e0.01	e0.01	e0.10
30	0.00	0.07	e0.20	e0.20	---	0.10	0.03	0.06	e0.00	e0.01	e0.00	e0.03
31	0.00	---	e0.24	e0.20	---	0.09	---	0.08	---	e0.00	e0.01	---
TOTAL	0.36	2.87	11.57	6.55	6.04	5.49	1.49	1.30	0.15	0.04	0.13	4.81
MEAN	0.012	0.096	0.37	0.21	0.22	0.18	0.050	0.042	0.005	0.001	0.004	0.16
MAX	0.16	0.36	2.0	0.57	0.74	0.22	0.10	0.08	0.06	0.01	0.10	3.6
MIN	0.00	0.00	0.07	0.19	0.19	0.09	0.01	0.02	0.00	0.00	0.00	0.00
AC-FT	0.7	5.7	23	13	12	11	3.0	2.6	0.3	0.08	0.3	9.5
CFSM	0.01	0.05	0.18	0.10	0.10	0.08	0.02	0.02	0.00	0.00	0.00	0.08
IN.	0.01	0.05	0.20	0.12	0.11	0.10	0.03	0.02	0.00	0.00	0.00	0.09

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2002, BY WATER YEAR (WY)

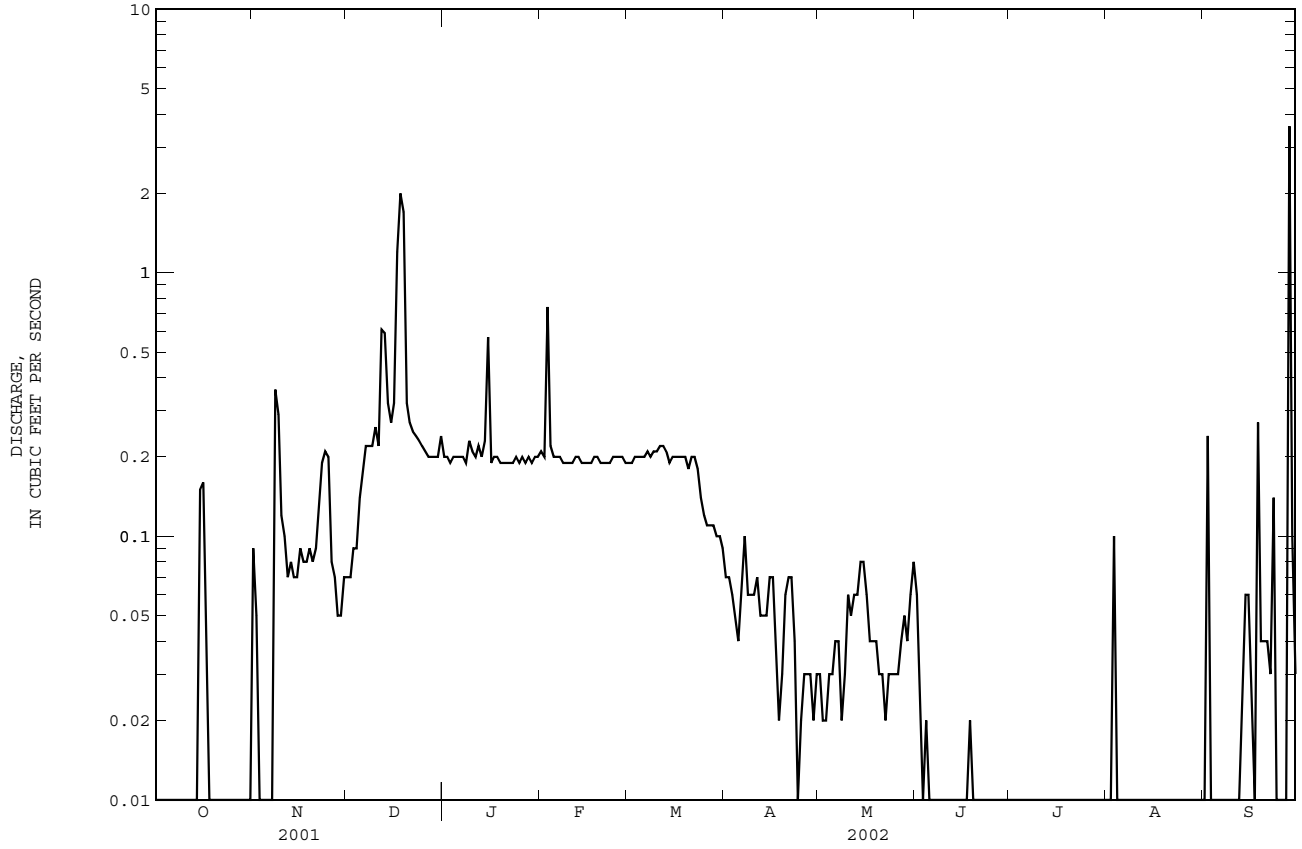
MEAN	0.84	1.11	1.08	0.40	0.23	0.10	0.063	0.10	0.13	0.063	0.022	0.56
MAX	5.92	7.34	6.56	2.04	0.82	0.34	0.23	0.47	1.43	0.52	0.18	3.80
(WY)	1996	2000	2000	2000	2000	1990	1990	2001	1987	1987	1987	1995
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1987	1992	1992	1992	1989	1989	1989	1989	1989	1989	1989	1991

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1964 - 2002	
ANNUAL TOTAL	34.02		40.80			
ANNUAL MEAN	0.093		0.11		0.29	
HIGHEST ANNUAL MEAN					1.47	2000
LOWEST ANNUAL MEAN					0.037	1965
HIGHEST DAILY MEAN	8.5	May 8	3.6	Sep 28	79	Nov 17 1999
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Oct 1	0.00	Jan 26 1964
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Oct 1	0.00	Jan 26 1964
MAXIMUM PEAK FLOW			9.4	Dec 15	937	Sep 15 1995
MAXIMUM PEAK STAGE			1.57	Dec 15	5.38	Sep 15 1995
ANNUAL RUNOFF (AC-FT)	67		81		210	
ANNUAL RUNOFF (CFSM)	0.044		0.053		0.14	
ANNUAL RUNOFF (INCHES)	0.60		0.72		1.88	
10 PERCENT EXCEEDS	0.23		0.21		0.74	
50 PERCENT EXCEEDS	0.00		0.05		0.04	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

e Estimated

ST. CROIX, U.S. VIRGIN ISLANDS

50345000 JOLLY HILL GUT AT JOLLY HILL, ST. CROIX, VI--Continued



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Ground-Water Records for U.S. Virgin Islands

Ground-water records for USVI

GROUND-WATER LEVELS

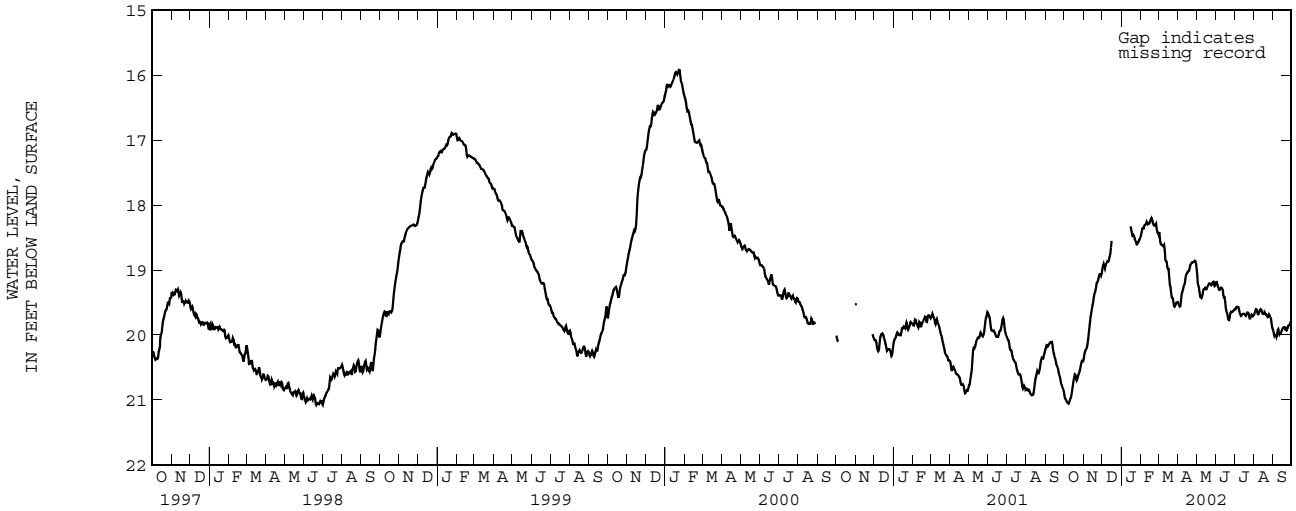
ST. CROIX, U.S. VIRGIN ISLANDS

174225064472000. Local number, 2.
LOCATION.--Lat 17°42'25", long 64°47'20", Hydrologic Unit 21020002, 0.90 mi southeast of the Experimental Station, 0.60 mi southwest of Christiansted Plaza, and 0.18 mi northeast of the Alexander Hamilton Airport entrance on Hwy 64. Name: USGS-10, Fairplains 2 Well.
AQUIFER.--Alluvium and marl.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes punch.
DATUM.--Elevation of land-surface datum is about 20.0 ft (6.10 m), above mean sea level, from topographic map. Measuring point: Top of shelter floor, 3.76 ft (1.15 m), above land-surface datum. Prior November 19, 1999, top of 0.50 in (0.01 m), hole at concrete base wall, 3.00 ft (0.91 m), above land-surface datum.
REMARKS.--Recording observation well. Water level affected by nearby pumping well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on October 27, 1999.
PERIOD OF RECORD.--June 1983 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 15.86 ft (4.83 m), below land-surface datum, January 24, 2000; lowest water level recorded, 26.46 ft (8.06 m), below land-surface datum, August 25, 1990.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.87	20.38	19.02	---	18.47	18.47	19.49	18.94	19.20	19.60	19.70	19.93
2	20.95	20.35	18.95	---	18.44	18.43	19.49	19.04	19.18	19.61	19.69	19.97
3	20.99	20.29	18.93	---	18.39	18.41	19.54	19.16	19.19	19.60	19.65	20.00
4	20.98	20.26	18.89	---	18.33	18.52	19.55	19.22	19.24	19.58	19.62	20.04
5	21.02	20.22	19.02	---	18.38	18.61	19.57	19.26	19.25	19.56	19.59	19.96
6	21.03	20.23	18.94	---	18.34	18.60	19.53	19.29	19.29	19.57	19.63	20.04
7	21.05	20.18	18.90	---	18.31	18.62	19.39	19.41	19.32	19.57	19.66	20.02
8	21.05	20.14	18.92	---	18.30	18.62	19.35	19.42	19.29	19.57	19.70	19.95
9	21.07	20.05	18.85	---	18.30	18.64	19.33	19.43	19.27	19.65	19.66	19.91
10	21.00	19.95	18.88	---	18.28	18.62	19.27	19.44	19.27	19.65	19.64	19.92
11	20.99	19.86	18.86	---	18.23	18.61	19.23	19.38	19.28	19.70	19.62	20.02
12	20.97	19.77	18.86	---	18.30	18.78	19.23	19.32	19.30	19.72	19.61	19.97
13	20.95	19.69	18.80	---	18.29	18.90	19.17	19.28	19.36	19.69	19.60	19.98
14	20.86	19.66	18.78	---	18.28	18.82	19.12	19.31	19.42	19.68	19.63	19.96
15	20.81	19.57	18.71	18.30	18.29	18.92	19.07	19.27	19.42	19.67	19.67	19.93
16	20.73	19.53	18.59	18.36	18.26	18.99	19.07	19.28	19.42	19.68	19.67	19.90
17	20.68	19.48	18.51	18.38	18.22	18.98	19.04	19.31	19.56	19.67	19.69	19.90
18	20.63	19.38	---	18.46	18.21	18.99	19.01	19.28	19.63	19.68	19.66	19.87
19	20.58	19.37	---	18.49	18.18	19.22	19.03	19.26	19.64	19.72	19.63	19.89
20	20.65	19.33	---	18.46	18.26	19.24	19.00	19.23	19.68	19.70	19.70	19.88
21	20.69	19.28	---	18.46	18.29	19.29	18.94	19.22	19.77	19.67	19.67	19.96
22	20.72	19.21	---	18.50	18.32	19.42	18.91	19.19	19.77	19.64	19.70	19.89
23	20.64	19.19	---	18.53	18.31	19.42	18.91	19.22	19.78	19.67	19.72	19.91
24	20.63	19.19	---	18.54	18.32	19.44	18.88	19.20	19.68	19.65	19.73	19.93
25	20.58	19.16	---	18.58	18.29	19.43	18.88	19.25	19.65	19.73	19.70	19.87
26	20.57	19.10	---	18.63	18.29	19.54	18.88	19.22	19.64	19.76	19.67	19.84
27	20.51	19.08	---	18.58	18.45	19.57	18.87	19.20	19.66	19.73	19.73	19.86
28	20.46	19.05	---	18.59	18.39	19.56	18.86	19.17	19.63	19.70	19.71	19.83
29	20.42	19.08	---	18.55	---	19.53	18.85	19.19	19.64	19.68	19.78	19.81
30	20.39	19.10	---	18.52	---	19.50	18.88	19.23	19.62	19.73	19.87	19.77
31	20.44	---	---	18.53	---	19.50	---	19.26	---	19.70	19.91	---
MEAN	20.77	19.64	---	---	18.31	19.01	19.14	19.25	19.47	19.66	19.68	19.92

WTR YR 2002 MEAN 19.41 HIGHEST 18.18 FEB. 19, 2002 LOWEST 21.07 OCT. 8, 2001



GROUND-WATER LEVELS

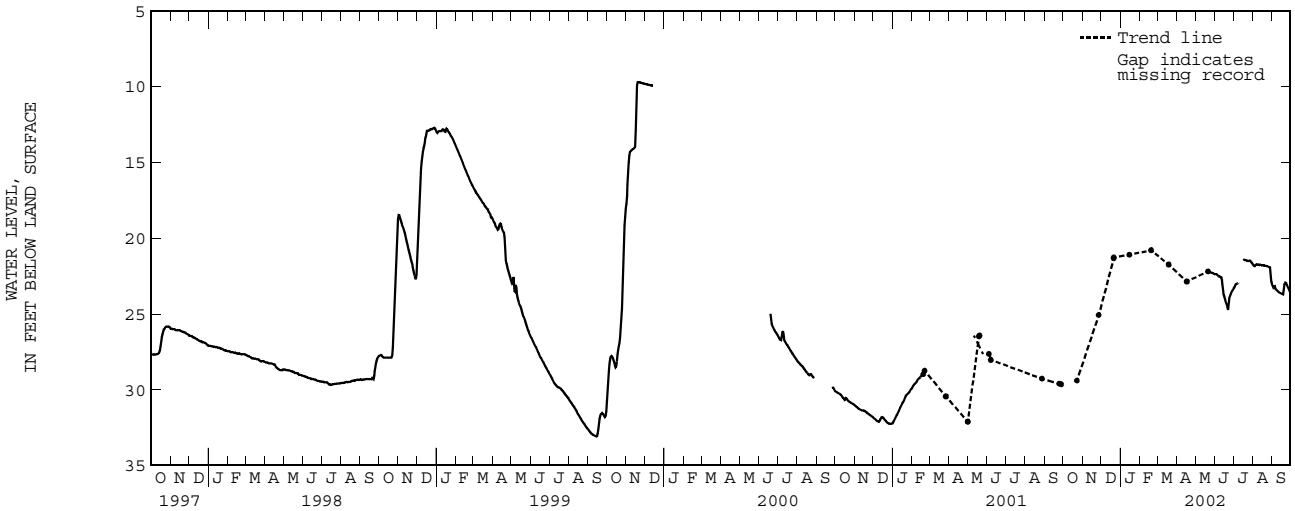
ST. CROIX, U.S. VIRGIN ISLANDS--Continued

174243064475100. Local number, 3.
LOCATION.--Lat 17°42'43", long 64°47'51", Hydrologic Unit 21020002, 0.75 mi northwest of the Alexander Hamilton Airport entrance on Hwy 64, 6.45 mi southwest of Christiansted plaza, and 0.57 mi southwest of the Experimental Station. Name: Golden Grove 6 Well.
AQUIFER.--Alluvium and marl.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in (0.20 m), cased 8 in (0.20 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes punch.
DATUM.--Elevation of land-surface datum is about 40.0 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.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on October 27, 1999. From Febraury 21, 2001 to May 21, 2002, tapedowns measurements only.
PERIOD OF RECORD.--March 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 9.68 ft (2.95 m), below land-surface datum, November 19, 20, 1999; lowest water level recorded, 41.05 ft (12.5 m), below land-surface datum, September 15, 1995.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	22.37	23.35	21.71	23.06
2	---	---	---	---	---	---	---	---	22.35	23.27	21.76	23.13
3	---	---	---	---	---	---	---	---	22.38	23.22	21.83	23.16
4	---	---	---	---	---	---	---	---	22.37	23.16	21.83	23.33
5	---	---	---	---	---	---	---	---	22.41	23.05	21.83	23.05
6	---	---	---	---	---	---	---	---	22.46	23.02	21.73	23.29
7	---	---	---	---	---	---	---	---	22.50	23.01	21.74	23.37
8	---	---	---	---	---	---	---	---	22.52	22.96	21.76	23.41
9	---	---	---	---	---	---	---	---	22.52	22.89	21.73	23.45
10	---	---	---	---	---	---	---	---	22.56	---	21.73	23.48
11	---	---	---	---	---	---	---	---	22.60	---	21.75	23.52
12	---	---	---	---	---	---	---	---	22.60	---	21.78	23.56
13	---	---	---	---	---	---	---	---	22.99	---	21.77	23.60
14	---	---	---	---	---	---	---	---	23.05	---	21.75	23.61
15	---	---	---	---	---	---	---	---	23.63	---	21.81	23.64
16	---	---	---	---	---	---	---	---	23.79	21.39	21.80	23.65
17	---	---	---	---	---	---	---	---	23.90	21.40	21.77	23.68
18	---	---	---	---	---	---	---	---	24.08	21.43	21.76	23.70
19	---	---	---	---	---	---	---	---	24.19	21.45	21.79	23.72
20	---	---	---	---	---	---	---	---	24.29	21.44	21.83	23.10
21	---	---	---	---	---	---	---	22.20	24.40	21.47	21.81	23.02
22	---	---	---	---	---	---	---	22.19	24.72	21.47	21.83	22.97
23	---	---	---	---	---	---	---	22.21	24.74	21.47	21.83	22.91
24	---	---	---	---	---	---	---	22.23	23.99	21.49	21.85	22.99
25	---	---	---	---	---	---	---	22.25	23.91	21.50	21.87	23.05
26	---	---	---	---	---	---	---	22.28	23.78	21.51	21.87	23.14
27	---	---	---	---	---	---	---	22.27	23.66	21.47	21.93	23.26
28	---	---	---	---	---	---	---	22.27	23.56	21.47	21.91	23.33
29	---	---	---	---	---	---	---	22.30	23.49	21.51	21.92	23.46
30	---	---	---	---	---	---	---	22.34	23.45	21.60	22.77	23.53
31	---	---	---	---	---	---	---	22.36	---	21.63	22.95	---
MEAN	---	---	---	---	---	---	---	---	23.31	---	21.87	23.34

WTR YR 2002 MEAN 22.63 HIGHEST 21.33 JULY 17, 2002 LOWEST 24.83 JUNE 23, 2002



GROUND-WATER LEVELS

ST. CROIX, U.S. VIRGIN ISLANDS--Continued

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	29.40	DEC 21	22.92	JAN 15	21.09	MAR 19	21.74	MAY 21	22.20	JUL 10	23.08
Nov 27	25.07	21	21.27	FEB 19	20.79	APR 17	22.86	JUN 25	23.91	SEP 23	22.93
DEC 21	21.32										

WATER YEAR 2002 HIGHEST 20.79 FEB. 19, 2002 LOWEST 29.40 OCT. 23, 2001

GROUND-WATER LEVELS

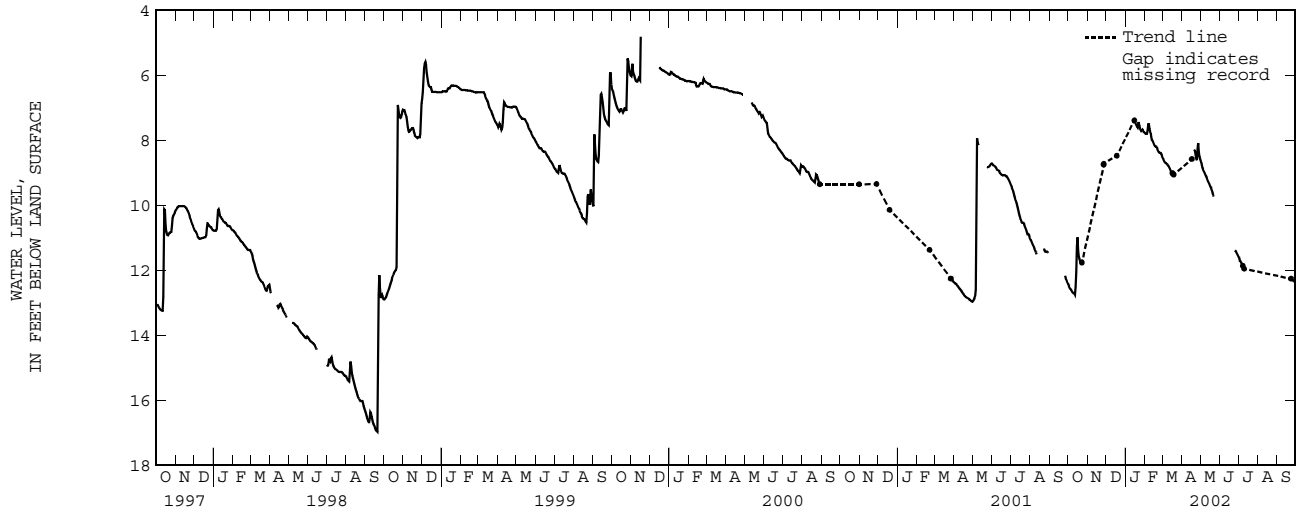
ST. CROIX, U.S. VIRGIN ISLANDS--Continued

174316064480800. Local number, 13.
LOCATION.--Lat 17°43'16", long 64°48'08", Hydrologic Unit 21020002, 5.25 mi east of Fort Frederick at Frederickstead, 0.95 mi southeast of Holy Cross Church, and 0.65 mi northeast of Adventure Ruins. Name: WAPA-17 Well.
AQUIFER.--Kingshill Limestone.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in (0.10 m), cased 0-95.0 ft (0-29.0 m), screened 10.0-40.0 ft (3.05-12.2 m). Depth 95.0 ft (29.0 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes punch.
DATUM.--Elevation of land-surface datum is about 75.0 ft (22.9 m), above mean sea level, from topographic map. Measuring point: Top of shelter floor, 2.33 ft (0.71 m), above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on October 27, 1999. From October 1, 2000 to March 26, 2001, tapedowns measurements only.
PERIOD OF RECORD.--February 28, 1990 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.27 ft (0.08 m), below land-surface datum, September 10, 1996; lowest water level recorded, 27.88 ft (8.50 m), below land-surface datum, September 6, 1995.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.39	---	---	---	7.76	8.50	---	8.60	---	11.57	---	---
2	12.45	---	---	---	7.79	8.55	---	8.66	---	11.60	---	---
3	12.49	---	---	---	7.80	8.58	---	8.68	---	11.69	---	---
4	12.55	---	---	---	7.79	8.60	---	8.79	---	11.70	---	---
5	12.58	---	---	---	7.80	8.67	---	8.86	---	11.73	---	---
6	12.59	---	---	---	7.58	8.68	---	8.91	---	11.77	---	---
7	12.62	---	---	---	7.41	8.70	---	8.95	---	11.80	---	---
8	12.68	---	---	---	7.59	8.72	---	8.98	---	11.83	---	---
9	12.69	---	---	---	7.71	8.72	---	9.04	---	11.89	---	---
10	12.71	---	---	---	7.76	8.76	---	9.07	---	---	---	---
11	12.71	---	---	---	7.79	8.78	---	9.13	---	---	---	---
12	12.74	---	---	---	7.96	8.80	---	9.18	---	---	---	---
13	12.74	---	---	---	7.99	8.86	---	9.23	---	---	---	---
14	12.26	---	---	---	8.02	8.88	---	9.27	---	---	---	---
15	11.84	---	---	7.37	8.05	8.95	---	9.32	---	---	---	---
16	10.68	---	---	7.40	8.11	8.98	---	9.35	---	---	---	---
17	11.29	---	---	7.47	8.14	8.99	8.57	9.41	---	---	---	---
18	11.52	---	---	7.48	8.19	9.03	8.58	9.44	---	---	---	---
19	11.64	---	---	7.55	8.19	---	8.60	9.51	---	---	---	---
20	11.67	---	---	7.59	8.19	---	---	9.55	---	---	---	---
21	11.76	---	---	7.61	8.25	---	8.29	9.68	---	---	---	---
22	11.76	---	---	7.37	8.30	---	8.26	9.70	---	---	---	---
23	11.76	---	---	7.48	8.34	---	8.38	9.76	---	---	---	---
24	---	---	---	7.60	8.37	---	8.50	---	---	---	---	12.28
25	---	---	---	7.65	8.39	---	8.58	---	11.37	---	---	12.29
26	---	---	---	7.69	8.39	---	8.64	---	11.39	---	---	12.31
27	---	8.72	---	7.72	8.39	---	7.90	---	11.42	---	---	12.32
28	---	---	---	7.64	8.45	---	8.27	---	11.45	---	---	12.34
29	---	---	---	7.67	---	---	8.44	---	11.48	---	---	12.36
30	---	---	---	7.72	---	---	8.55	---	11.53	---	---	12.35
31	---	---	---	7.75	---	---	---	---	---	---	---	---
MEAN	---	---	---	---	8.02	---	---	---	---	---	---	---

WTR YR 2002 MEAN 9.52 HIGHEST 3.36 SEPT. 20, 2002 LOWEST 12.75 OCT. 13, 2001



GROUND-WATER LEVELS

ST. CROIX, U.S. VIRGIN ISLANDS--Continued

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	11.76	DEC 18	8.47	MAR 19	9.05	MAY 21	10.65	JUN 25	11.35	JUL 10	11.95
NOV 27	8.75	JAN 15	7.37	APR 17	8.62	21	9.67	25	11.37	SEP 23	12.26
27	8.72	FEB 19	8.19	17	8.57						

WATER YEAR 2002 HIGHEST 7.37 JAN. 15, 2002 LOWEST 12.26 SEPT. 23, 2002

GROUND-WATER LEVELS

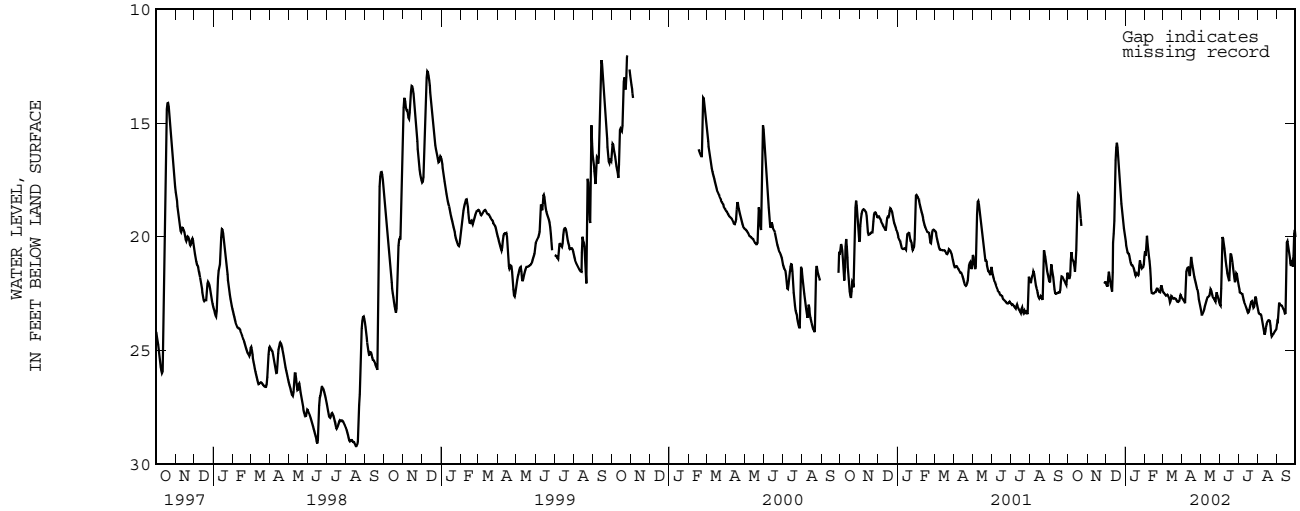
ST. THOMAS, U.S. VIRGIN ISLANDS

182038064550300. Local number, 6.
LOCATION.--Lat 18°20'38", long 64°55'03", Hydrologic Unit 21020001, 1.12 mi east of Charlotte Amalie, 0.75 mi southwest of Winterberg Peak, and 1.08 mi southeast of Canaan. Name: Grade School 3 Well.
AQUIFER.--Volcanic breccia.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Depth 70.0 ft (21.3 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes punch.
DATUM.--Elevation of land-surface datum is about 52.0 ft (15.8 m), above mean sea level, from topographic map. Prior to June 30, 1999, is about 60.0 ft (18.3 m), above mean sea level. Measuring point: Top of 0.50 in (0.01 m) hole at 6 in (0.15 m) casing, 3.30 ft (1.00 m), above land-surface datum. Prior to June 30, 1999, top of 0.50 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.--Recording observation well. Automated Digital Recording (ADR), replaced by an Electronic Data Logger (EDL), installed on Oct. 28, 1999. A datum correction was required after land-surface elevation in the area, changed from 60.0 ft (18.3 m) to 52.0 ft (15.8 m) on June 29, 1999.
PERIOD OF RECORDS.--March 1982 to current year.
EXTREMES FOR PERIOD OF RECORDS.--Highest water level recorded, 1.53 ft (0.47m), below land-surface datum, Oct. 1, 1989; lowest water level recorded, 35.38 ft (10.8 m), below land-surface datum, July 21, 1982.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.64	---	22.04	20.11	20.64	22.32	22.62	23.09	22.95	22.09	23.11	23.68
2	21.86	---	22.15	20.30	20.61	22.39	22.69	23.23	23.01	22.23	23.28	23.71
3	21.77	---	22.16	20.46	21.04	22.45	22.74	23.38	23.03	22.39	23.37	23.72
4	21.85	---	22.13	20.58	19.72	22.48	22.77	23.44	21.53	22.51	23.40	22.84
5	21.55	---	21.42	20.73	20.20	22.50	22.81	23.40	20.06	22.42	23.40	22.95
6	20.50	---	21.63	20.72	20.43	22.53	22.88	23.32	19.96	22.56	23.39	23.00
7	20.83	---	21.87	20.77	20.72	22.57	22.96	23.25	20.23	22.45	23.51	23.02
8	21.03	---	22.04	20.92	20.96	22.60	21.63	23.10	20.36	22.58	23.70	23.03
9	20.97	---	22.19	21.07	21.17	22.55	21.46	22.99	20.63	22.71	23.87	23.02
10	21.14	---	22.34	21.20	21.57	22.55	21.40	22.92	20.92	22.83	24.03	23.08
11	21.30	---	22.47	21.25	22.14	22.59	21.31	22.78	21.18	22.90	24.18	23.15
12	21.46	---	20.66	21.25	22.45	22.68	21.38	22.72	21.38	22.97	24.33	23.20
13	21.61	---	19.87	21.26	22.49	22.76	21.50	22.66	21.53	23.06	24.28	23.33
14	20.67	---	19.86	21.35	22.49	23.03	21.66	22.62	21.67	23.14	24.05	23.41
15	20.54	---	18.74	21.46	22.48	22.61	21.78	22.60	21.78	23.24	23.89	23.31
16	18.74	---	16.90	21.58	22.48	22.60	20.78	22.57	21.90	23.32	23.77	20.44
17	18.18	---	16.36	21.71	22.45	22.65	20.98	22.32	22.01	23.34	23.73	20.06
18	18.06	---	15.78	21.71	22.44	22.69	21.17	22.27	20.85	23.28	23.68	20.32
19	18.30	---	15.92	21.57	22.43	22.72	21.35	22.43	20.70	23.12	23.66	20.47
20	18.64	---	16.23	21.62	22.27	22.70	21.49	22.57	20.85	23.01	23.68	20.67
21	19.01	---	16.62	21.68	22.27	22.70	21.70	22.65	20.98	22.92	23.72	20.85
22	19.37	---	17.04	21.70	22.28	22.71	21.84	22.68	21.24	22.79	24.09	21.06
23	19.66	---	17.57	21.58	22.36	22.75	21.95	22.72	21.47	22.85	24.39	21.26
24	---	---	17.85	20.94	22.42	22.79	22.07	22.76	21.68	22.87	24.37	21.30
25	---	---	18.36	21.13	22.45	22.83	22.20	22.81	21.90	23.03	24.31	20.95
26	---	---	18.69	21.28	22.45	22.87	22.33	22.86	22.08	23.20	24.27	21.19
27	---	---	18.97	21.39	22.08	22.86	22.30	22.31	21.66	22.95	24.24	21.41
28	---	22.04	19.26	21.38	22.20	22.82	22.67	22.54	21.54	22.63	24.18	20.25
29	---	22.05	19.52	21.28	---	22.81	22.81	22.64	21.75	22.63	24.13	19.48
30	---	21.95	19.73	21.39	---	22.54	22.96	22.71	21.92	22.82	24.11	19.88
31	---	---	19.93	21.06	---	22.57	---	22.84	---	22.99	24.05	---
MEAN	---	---	19.56	21.18	21.77	22.65	22.01	22.81	21.43	22.83	23.88	21.93

WTR YR 2002 MEAN 21.90 HIGHEST 15.76 DEC. 18, 2001 LOWEST 24.40 AUG. 23, 2002



GROUND-WATER LEVELS

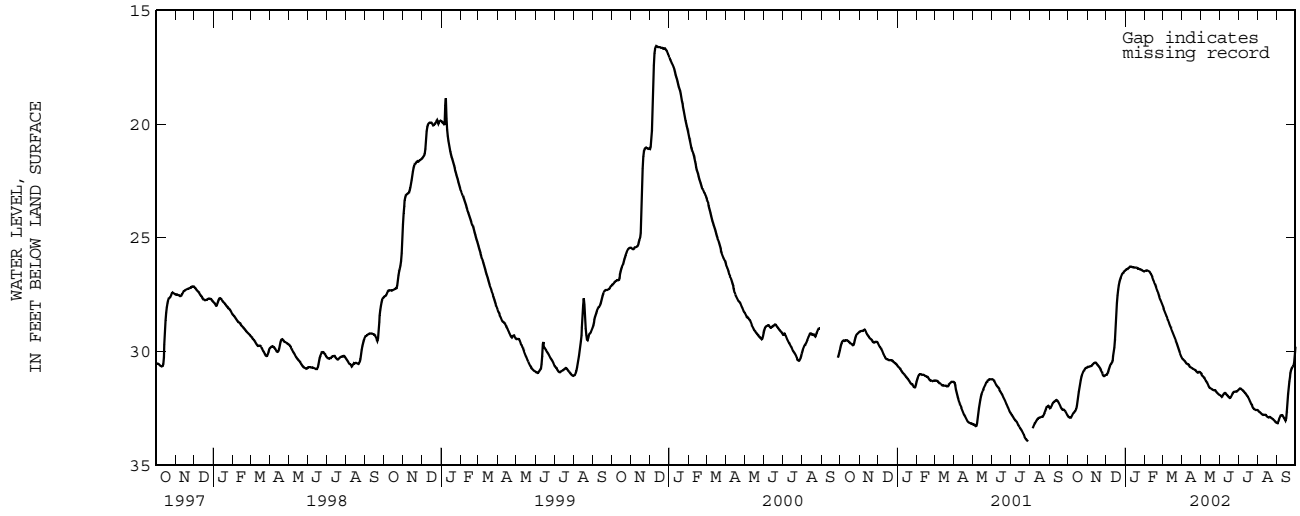
ST. THOMAS, U.S. VIRGIN ISLANDS--Continued

182038064580000. Local number, 8.
LOCATION.--Lat 18°20'38", long 64°58'00", Hydrologic Unit 21020001, 2.08 mi northwest of Charlotte Amalie, 0.50 mi northeast of Harry S. Truman Airport entrance on Hwy 302, and 1.15 mi southwest of Dorothea. Name: Kirwan Terrace, VIEO-6 Well.
AQUIFER.--Alluvial deposits, volcanic rock.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in (0.10 m), cased 0-56.0 ft (0-17.1 m), screened 56.0-76.0 ft (17.1-23.2 m). Depth 76.0 ft (23.2 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes punch.
DATUM.--Elevation of land-surface datum is about 35.0 ft (10.7 m), above mean sea level, from topographic map. Measuring point: Top of shelter floor, 3.00 ft (0.91 m), above land-surface datum.
REMARKS.--Recording observation well. Drilled on July 1, 1991. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on October 29, 1999.
PERIOD OF RECORD.--October 2, 1991 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 14.30 ft (4.37 m), below land-surface datum, December 6, 7, 1996; lowest water level recorded, 33.97 ft (10.35 m), below land-surface datum, July 29, 30, 2001.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32.83	30.70	31.02	26.42	26.47	27.91	30.23	30.92	31.91	31.67	32.56	33.15
2	32.88	30.68	31.03	26.39	26.46	27.98	30.28	30.94	31.92	31.66	32.60	33.16
3	32.90	30.67	31.01	26.39	26.44	28.06	30.34	30.98	31.94	31.63	32.64	33.13
4	32.91	30.67	30.93	26.37	26.43	28.14	30.36	31.04	31.98	31.63	32.67	33.03
5	32.91	30.66	30.83	26.37	26.44	28.21	30.38	31.08	31.99	31.63	32.68	32.93
6	32.91	30.64	30.73	26.34	26.45	28.29	30.42	31.11	31.95	31.65	32.71	32.87
7	32.85	30.64	30.65	26.30	26.46	28.35	30.45	31.14	31.90	31.68	32.74	32.83
8	32.79	30.63	30.57	26.27	26.50	28.42	30.50	31.16	31.86	31.70	32.77	32.79
9	32.73	30.61	30.55	26.26	26.48	28.51	30.53	31.21	31.82	31.72	32.79	32.79
10	32.70	30.56	30.50	26.27	26.56	28.57	30.55	31.28	31.82	31.76	32.79	32.81
11	32.67	30.53	30.46	26.28	26.59	28.65	30.55	31.32	31.86	31.80	32.78	32.86
12	32.64	30.50	30.31	26.28	26.58	28.75	30.57	31.37	31.89	31.82	32.78	32.91
13	32.61	30.49	30.11	26.29	26.70	28.82	30.61	31.41	31.92	31.86	32.77	32.95
14	32.57	30.48	29.92	26.30	26.78	28.87	30.65	31.48	31.94	31.90	32.79	33.01
15	32.48	30.50	29.72	26.31	26.84	28.95	30.68	31.55	31.97	31.94	32.81	33.06
16	32.29	30.54	29.23	26.31	26.92	29.03	30.70	31.59	32.00	31.98	32.85	32.85
17	32.08	30.57	28.63	26.29	27.00	29.10	30.72	31.62	32.04	32.01	32.89	32.44
18	31.87	30.61	28.07	26.31	27.05	29.17	30.73	31.64	32.06	32.08	32.90	32.03
19	31.67	30.63	27.67	26.31	27.15	29.23	30.75	31.64	32.02	32.14	32.90	31.70
20	31.52	30.67	27.40	26.34	27.22	29.31	30.78	31.67	31.97	32.20	32.89	31.44
21	31.33	30.71	27.15	26.34	27.30	29.38	30.78	31.69	31.91	32.27	32.88	31.20
22	31.19	30.76	27.00	26.34	27.37	29.46	30.81	31.69	31.86	32.32	32.90	31.04
23	31.06	30.82	26.88	26.37	27.47	29.53	30.81	31.69	31.81	32.38	32.93	30.89
24	31.00	30.85	26.79	26.38	27.57	29.61	30.84	31.69	31.76	32.43	32.95	30.78
25	30.93	30.94	26.72	26.39	27.65	29.68	30.89	31.70	31.76	32.47	32.97	30.73
26	30.85	31.02	26.65	26.40	27.72	29.76	30.91	31.73	31.76	32.51	32.98	30.70
27	30.82	31.08	26.59	26.40	27.77	29.85	30.92	31.77	31.76	32.56	33.02	30.64
28	30.79	31.08	26.54	26.44	27.84	29.94	30.91	31.81	31.75	32.56	33.04	30.59
29	30.73	31.06	26.52	26.45	---	30.03	30.89	31.84	31.74	32.57	33.07	30.35
30	30.72	31.04	26.48	26.46	---	30.10	30.91	31.87	31.71	32.57	33.12	29.95
31	30.71	---	26.43	26.48	---	30.17	---	31.89	---	32.57	33.14	---
MEAN	31.97	30.71	28.81	26.35	26.94	29.03	30.65	31.47	31.89	32.05	32.85	32.05

WTR YR 2002 MEAN 30.41 HIGHEST 26.24 JAN. 8, 2002 LOWEST 33.16 SEPT. 2, 2002



GROUND-WATER LEVELS

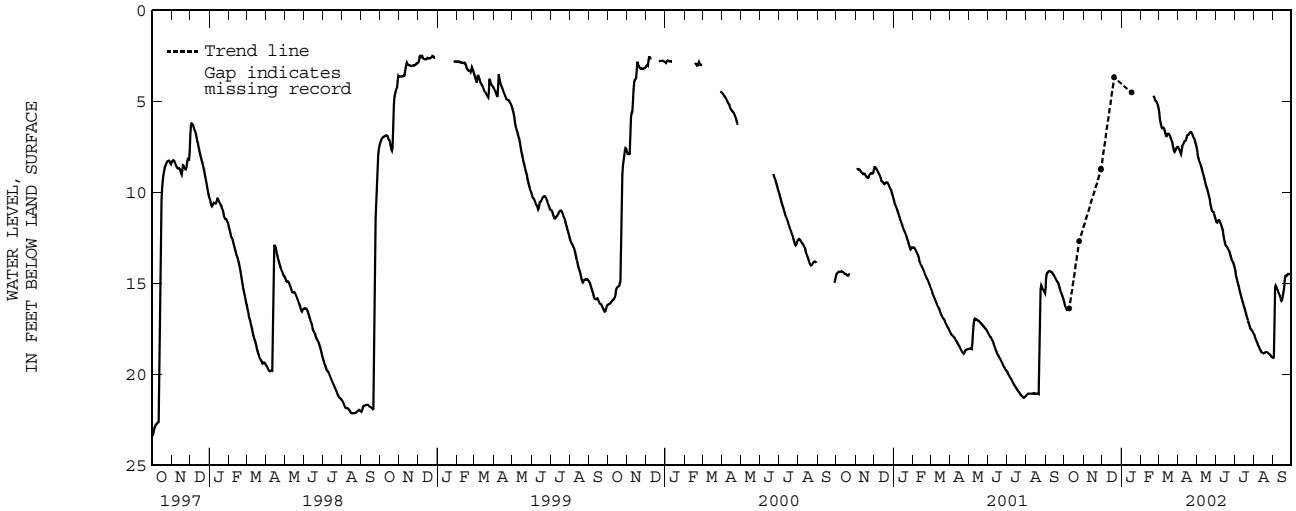
ST. JOHN, U.S. VIRGIN ISLANDS

181956064464500. Local number, 11.
LOCATION.--Lat 18°19'56", long 64°46'45", Hydrologic Unit 21020001, 1.05 mi southeast of Cruz Bay plaza, 0.25 mi southeast of Bethany Church, and 0.48 mi southeast of Margaret Hill. 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 85.0 ft (25.9 m).
INSTRUMENTATION.--Electronic water level logger--60-minutes punch.
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.--Recording observation well. Automated Digital Recorder (ADR), replaced by an Electronic Data Logger (EDL), installed on February 17, 2000.
PERIOD OF RECORD.--March 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 2.34 ft (0.71 m), below land-surface datum, December 7, 1998; lowest water level recorded, 34.18 ft (10.4 m), below land-surface datum, September 6, 1995.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.97	---	---	---	---	5.33	7.49	7.48	11.48	14.11	17.74	19.10
2	16.12	---	---	---	---	5.49	7.51	7.63	11.60	14.25	17.84	19.08
3	16.25	---	---	---	---	5.72	7.56	7.84	11.70	14.42	17.96	19.05
4	16.29	---	---	---	---	5.97	7.65	8.02	11.62	14.58	18.05	15.41
5	16.43	---	---	---	---	6.16	7.75	8.19	11.52	14.76	18.11	15.09
6	16.47	---	---	---	---	6.32	7.85	8.26	11.52	14.89	18.21	15.14
7	16.44	---	---	---	---	6.47	7.92	8.34	11.55	15.03	18.32	15.22
8	16.42	---	---	---	---	6.48	7.47	8.46	11.62	15.15	18.41	15.29
9	16.39	---	---	---	---	6.43	7.41	8.58	11.72	15.30	18.46	15.39
10	16.37	---	---	---	---	6.44	7.37	8.73	11.83	15.48	18.54	15.50
11	---	---	---	---	---	6.54	7.27	8.86	11.94	15.60	18.62	15.58
12	---	---	---	---	---	6.71	7.19	8.99	12.06	15.74	18.70	15.71
13	---	---	---	---	---	6.82	7.16	9.10	12.23	15.86	18.76	15.82
14	---	---	---	---	---	6.97	7.15	9.27	12.42	16.00	18.80	15.92
15	---	---	---	---	---	6.88	7.13	9.41	12.61	16.11	18.83	16.00
16	---	---	---	---	---	6.77	6.91	9.56	12.76	16.25	18.83	15.81
17	---	---	---	---	---	6.77	6.83	9.68	12.90	16.34	18.86	15.52
18	---	---	---	---	---	6.78	6.82	9.77	12.94	16.47	18.84	15.44
19	---	---	---	---	---	6.79	6.82	9.91	12.98	16.61	18.81	15.05
20	---	---	---	---	---	6.94	6.76	10.06	13.02	16.74	18.78	14.61
21	---	---	---	---	4.66	7.03	6.70	10.19	13.10	16.87	18.77	14.56
22	---	---	---	---	4.72	7.10	6.69	10.32	13.16	16.97	18.78	14.57
23	---	---	---	---	4.80	7.19	6.68	10.48	13.25	17.08	18.80	14.58
24	---	---	---	---	4.92	7.36	6.74	10.66	13.37	17.16	18.82	14.57
25	---	---	---	---	4.97	7.50	6.82	10.83	13.51	17.28	18.86	14.49
26	---	---	---	---	4.98	7.64	6.97	11.00	13.64	17.40	18.89	14.46
27	---	---	---	---	5.05	7.77	6.98	11.07	13.72	17.50	18.92	14.50
28	---	---	---	---	5.17	7.78	7.07	11.04	13.78	17.52	18.96	14.50
29	---	---	---	---	---	7.66	7.22	11.11	13.86	17.57	19.01	14.47
30	---	---	---	---	---	7.59	7.35	11.23	13.98	17.62	19.06	14.46
31	---	---	---	---	---	7.53	---	11.36	---	17.69	19.09	---
MEAN	---	---	---	---	---	6.80	7.17	9.53	12.58	16.14	18.63	15.50

WTR YR 2002 MEAN 12.26 HIGHEST 4.65 FEB. 22, 2002 LOWEST 19.11 AUG. 31, 2002



GROUND-WATER LEVELS

ST. JOHN, U.S. VIRGIN ISLANDS--Continued

WATER LEVELS IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	12.68	DEC 20	3.67	FEB 21	4.66	APR 16	6.92	MAY 23	10.45	JUL 11	15.60
NOV 29	8.74	JAN 17	4.50	MAR 21	7.05	16	6.90	JUN 27	13.70	SEP 24	14.58
29	8.70	FEB 21	5.05	21	7.01	MAY 23	10.90				

WATER YEAR 2002 HIGHEST 3.67 DEC. 20, 2001 LOWEST 15.60 JULY 11, 2002

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