COMPENDIUM OF WATER RESOURCES DATA FOR THE U.S. VIRGIN ISLANDS

by

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ABSTRACT

Meteorologic, surface water and groundwater records for each of the three major U.S Virgin Islands - St. Thomas, St. John, and St. Croix are inventoried. The location of each data collection point is given as well as other characteristics such as altitude, and length of available record for that station. For each island, summaries of the available data are made and information given to facilitate locating published data. Precipitation records, hitherto unpublished, collected by private individuals are included for each island as made available to us by the private collectors. No attempt has been made to revise any of the data. It is hoped that these data will assist the efforts of water resources planners, researchers and managers in the Virgin Islands.

AKNOWLEDGEMENTS

We are grateful to local and federal government agencies in the Virgin Islands and Puerto Rico that assisted us in this effort by answering our requests for assistance and opening their files and records to us and allowing us to use their facilities in copying data. The encouragement received by their enthusiasm, support and suggestions contributed significantly to our efforts.

We are especially thankful also to the several private citizens who through the years have on their own initiative maintained weather records and who have unselfishly provided these to us. The contribution of each observer is acknowledged appropriately in the text.

In the processing of the mass of data which formed the bulk of this report, we are especially grateful to our research assistants; Mr. Clement Browne and Mr. Philmore Andrew, both students at the College of the Virgin Islands. We are also grateful to Mr. Robert Waters of the College's Physical Plant Department for his assistance in reviewing this report prior to publication.

Efforts were made to contact all persons whom we feel may be in a position to supply us with previously unpublished data to be included in the compendium. However, it is possible that there are unpublished data somewhere out there. We hope to be able to include these in future annual updates or supplements to this compendium. The task of data collection for water resources assessment is a continuous process in any case.

We also hope that we have minimized errors in the data presented here, but will appreciate such being brought to our attention.

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INTRODUCTION

Location

The United States Virgin Islands is an unincorporated territory of the United States located in the Caribbean Sea, approximately 1,100 miles east-southeast of Miami, Florida and 500 miles northeast of Caracas, Venezuela, Figure 1.(1) The U.S Virgin Islands consists of three large islands and more than forty small islands and cays. The three largest inhabited islands; St. John, St. Thomas, and St. Croix, have respective land areas of approximately 19, 32, and 84 square miles. All islands are characterized by steep rocky mountains of volcanic origin. The islands also display diverse ecological systems ranging from beaches and dry thorn scrub of the lowlands to the deciduous forests of the higher elevations.(2)

Nature of water resources data

There is no amount of simulation which can substitute for historical data. The Office of Water Data Coordination of the United States Geological Survey (USGS) has published parts of a manual entitled "National Handbook of Recommended Methods for Water Data Acquisition" which in the final form will consist of an introduction, 12 technical chapters, and an appendix. The following chapters are to be included.(3)

1) Surface Water;
2) Ground Water;
3) Sediment;
4) Biologic and Microbiologic Quality of Surface and Groundwater;
5) Chemical and Physical Quality of Water and Sediment;
6) Soil Water;
7) Drainage Basin Characteristics;
8) Evaporation and Transpiration;
9) Snow and Ice;
10) Hydrometeorological Observations;
11) Water Use; and
12) Water data Handling and Exchange;

The above chapters represent a comprehensive list of areas for which data must be collected for a complete quantitative and qualitative assessment of the water resources of a region. The sampling requirements in each of this areas is conditioned by the nature of the investigations. However, for most parameters, a fairly continuous and extensive data base is necessary in order to fully characterize the phenomenom of interest.

It is obvious to nearly everyone that there is a need for long-term precipitation, temperature and other records in order to full characterize the climate of an area. The need for long-term water level records in order to characterize the groundwater regime of an area is not so obvious. Furthermore transient changes in water quality can only be determined as a result of systematic monitoring of the indices of water quality over time. These measurements, taken over a wide area, require standard equipment and methods of analysis and interpretation in order to be strictly comparable over the given area. Stringent controls also need to exercised on the quality of personnel collecting the data.

Need for Water Resources Data in the Virgin Islands

Water resources data provide a scientific basis for water planning and management. Rainfall, runoff, evaporation and groundwater level data are required to quantify the potential and actual freshwater resources of the Virgin Islands. Quality of water data are also required for a complete water resources assessment.

Proper planning and management is necessary for the best utilization of water resources. Intrinsic in all water resources planning and management efforts is the need for basic water resources data. The planner and manager must have some idea of the quantity and quality of water available from each source, uses to which the water will be put, as well as the expected demand for water. It is also required that the spatial as well as the temporal distribution of both the water available and the water needed be known since the goal of water resources management is how the availability of water can best be structured to meet demand.

The lack of basic water resources data has been one of the hindrances to proper water resources planning and management in the Virgin Islands. Very little has been done locally to systematically collect water resources data.(4) Water resources data here, for the most part have been kept in a very informal manner by individuals as a hobby, or by groups based primarily outside the islands such as the U.S Geological Survey, the National Weather Service and the Federal Aviation Administration. Occasional student groups from the mainland have also collected

data on an informal basis. Other crucial water resources data such as sediment transport, evaporation, soil water movement and storage in the unsaturated zone have essentially been neglected as far as long term record keeping is concerned.

There is also a need for the compilation of the water resources data that is available and scattered in disparate sources. Presently, researchers and planners in water resources in the Virgin Islands must look into several sources, not readily available, for pertinent data. Furthermore, there is no annual compilation of water resources data in one source for instant reference. There is a vital need for readily available climatological and water records of the Virgin Islands for researchers, planners and water managers in the Territory.

With the exception of data on snow and ice, collection of most of the water data referred to in the National Handbook will greatly aid the water management efforts of the Virgin Islands. Most states have agencies charged with water resources data collection. Water use data is also an important component of a general water resources assessment for an area. There is a vital need for an agency of the Virgin Islands government to collect and compile water data for the Virgin Islands on a permanent basis.

Organization of this report

A general evaluation is made of the water resources data which should be collected to aid water and land management efforts in the Virgin Islands. The history of water data collection in the Territory is presented, followed by a description of

the existing water data collection network. Comments are made on the reliability of water data collected in the Virgin Islands.

An assessment will be made of the water resources data that is available for each of the three major islands of St. John, St. Thomas and St. Croix. This assessment will include tables summarizing the location of each data collection site, the type of data collected there and the history of water data collection. As an aid for quick reference, maps have been included in the appendices of this report showing the location of most of the data collection sites. It is recommended though that users of this compendium use the latitudes and logitudes provided in the summary tables for determination of the approximate location of the sites. Where the data has been previously published and is readily available, appropriate references will be given. All previously unpublished data, or data not readily available will be reproduced as part of this report. In general, data collected for a duration of less than one year will not be included in this report.

II. WATER RESOURCES DATA COLLECTION IN THE U.S VIRGIN ISLANDS

History of Water Data Collection

There is no local government agency in the Virgin Islands which has collected or compiled water resources data on a sustained basis since the islands became a U.S. possession in 1917. The majority of the data which has been collected to date, with few exceptions, are scattered and for the most part not readily accessible.

> The history of weather observations in the Virgin Islands is rather interesting. Excellent data were compiled during the Danish regime, from about 1825 on... Some official Danish stations were still reporting in 1917, but thereafter the United States Government gave no special attention or encouragement to these or other weather observers, except at Charlotte Amalie and Christiansted, until the US Weather Bureau began to establish more 'cooperating stations' in 1920.[5] (emphasis added)

This lack of official blessing for water data collection efforts by the federal government is also reflected by the local government which apparently has not shown interest in water data collection, since no local agency is presently engaged in this task. Consequently, most records collected by private individuals are lost without ever being published or analyzed.

Stone[6] gives an excellent history of the meteorological records of the Virgin Islands collected prior to the U.S. purchase of the islands in 1917. Appendix Table 1 in Stone[6] gives a summary of recording stations and available records from the earliest records to the date of publication, 1942.

Over the years, rainfall is the only parameter which has been systematically collected, and records of rainfall are generally of long duration. Other climatological and hydrological parameters such as evaporation, groundwater levels and water quality data are collected for specific studies, for short periods of time only, and subsequently discontinued. The absence of sustained records for all parameters of the hydrologic cycle does not allow water balance to be calculated for various watersheds in the Virgin Islands.

Existing data collection network

There are very few sources of original water resources data for the U.S. Virgin Islands. The National Weather Service and the U.S. Geological Survey are the prime sources of water resources data collection on a systematic basis. The U.S. Geological Survey operates stream gaging and groundwater level monitoring network, none of which is permanent, but changes as the needs and available funds dictate. The most intensive data collection effort of the USGS was between 1962 - 1969.(7)

The National Weather Service does not maintain a network of observation stations as such. It relies on a system of volunteers as observers to report rainfall at so-called 'official' stations.

The population of the islands includes a substantial amount of weather conscious, semi-retirees from the U.S mainland, some of whom have been privately engaged in the collection of rainfall data on the islands for upwards of fifteen years. Some of these privately collected records are published for the first

time in this compendium. There is a need for official sanction and encouragement for these observers. Also, their records need to be compiled periodically and made available for water planners and researchers.

The local government of the Virgin Islands does not maintain any official network for collecting water resources data. However, at various times in the past, it has financed investigations by the Caribbean District of the USGS based in San Juan, Puerto Rico. This cooperative effort has been for short periods of time only. The last major systematic and continuous effort extending over a long period of time was carried out between 1962 and 1969 when surface water, quantity and quality of water, and groundwater data for all the islands were collected by the USGS in cooperation with the National Park Service, and the government of the Virgin Islands.

Currently, the Caribbean District of the USGS based in San Juan maintains a few observation stations on each of the three islands. The parameters being measured include surface water and groundwater levels. The present coverage is not adequate to provide the basis for a realistic assessment of the water resources of the Virgin Islands.

The National Weather Service maintains a system of reporting stations on the islands. The chief parameter being reported is 24-hourly rainfall totals. While the absolute density of observation stations appears to be satisfactory for small islands of this size, the areal distribution of reporting stations leave relatively large areas, including several important

watersheds on each island inadequately covered. Given the wide variations in rainfall distribution due to orographic effects on the islands, a better areal distribution of reporting gages is essential for a realistic determination of the areal distribution and the incidence of rainfall throughout the islands.

Reliability of Water Data Collected

The method by which water data is collected in the Virgin Islands does not contribute much to reliability of data. Most of the observers are volunteers who do not have prior training or certification for the job. These data are not strictly comparable with one another because of a lack of standardization in either the data collection methods and or equipment especially for the private hobbyists collecting water data. Some degree of standardization in equipment will help to overcome some of this problem among the hobbyists.

The quality of the data collected can be improved by having training sessions for observers as a group or individually in their homes. The data collected can be made comparable over a given area by supplying the observers with standard equipment at government expense. Most of these observers have been collecting data for upwards of fifteen years on their own initiative. They need to be better encouraged and supported as they provide a valuable service for users of water data.

III. NOTES ON ABBREVIATIONS AND SYMBOLS USED IN TABLES

General Remarks

Several tables are included in this report and a brief description of the outline of each table is presented here to aid the general reader. At the beginning of the chapter devoted to each island is a table summarizing the available water resources data in three parts; meteorological, surface water and groundwater. These tables are followed by monthly summaries of data for each station for the parameter of interest for all the record years. Daily measurements round up the tables for previously unpublished records.

The remarks after each table includes references to sources of data and in some instances contain comments on data collection methods or peculiarities of the collection site. The reader is also alerted to possible sources of errors in the data here. There has been no attempts made to revise the data or otherwise substitute for missing data. Monthly totals are omitted for months having missing daily data. Similarly, annual totals are omitted for years with missing monthly data. This compendium includes all data up to December, 1982.

Abbreviations and Symbols

The tables contain few abbreviations and symbols not explained in the remarks. The following are used widely throughout the tables.

A — The symbol, A, following a station name stands for an active station at the end of December, 1982, the terminal date of data included in this report. In general, stations having records up to 1982 can be presumed to be currently active as of January, 1983.

P — The symbol, P, following a year indicates partial records were collected during that year.

N — This symbol denotes that the record is not available.

Y — This symbol denotes the availability of the appropriate record.

\- — This symbol denotes missing data. In some rainfall totals, the missing values are included in the total for the next day. For example, rainfall during two days might be read cummulatively on the second day, while the rainfall value for the previous day might be indicated as 'missing.'

PART ONE: WATER RESOURCES DATA OF ST. JOHN

St. John is the smallest of the three major U.S. Virgin Islands with an area of 19 square miles. Mountains dominate the topography of this sparsely populated island, approximately seventy percent of which is controlled by the U.S. National Park Service. A ridge runs eastward through the island sloping steeply to the sea on the northern side, while on the southern side serveral prominent spur ridges extend from it. The highest point along this main ridge is Mamey Peak with an altitude of 1,197 feet. Forming on these spur ridges is Bordeaux Mountain with an altitude of 1,277 feet, the island's highest point. The eastern end of the island is principally a long irregular peninsular extending southeastward about 3 miles from the main ridge.

As would be expected there are no large drainage basins on St. John. The largest are the watersheds of the Reef Bay Gut and Fish Bay Gut with areas of 1.78 and 1.70 square miles respectively, followed by the watershed of Coral Bay Gut (1.69 square miles) and the Guinea Gut Basin (0.72 square miles).

All natural fresh water on St. John, as in all the other Virgin Islands, derives from the 40-44 inch annual rainfall. The resource potential of this amount of rainfall is greatly reduced by the high evapotranspration rates. Rainfall typically occurs in brief showers amounting to a few hundredths of an inch. The soil has been determined to be able to hold as much as two inches of rain. Evapotranspiration, active all year round, releases more than 90 percent of the rainfall back to the atmosphere resulting in less than 4 inches being available

anually for groundwater recharge and surface runoff. During severe tropical storms more than 1 inch of this amount can enter the surrounding ocean as flash flood flows. The remainder percolates downward into the fractured volcanic rock, composed of lava flows, water-laid tuff, and other volcanic rocks to recharge the groundwater. The geology favors a generally rapid groundwater flow towards the sea.

Sources of Data

A : Meteorological. The National Weather Service is the repository of almost all available meteorological data for St. John. A few individuals have kept rainfall records privately on St. John. Mr. Robert Eaton supplied us with rainfall records from his house at Chocolate Hole. He also provided us with records from Gift Hill collected over almost fifteen years by Mrs. Fiona St. Clair. These data are published here for the first time.

B : Surface Water. The Caribbean District of the United States Geological Survey (USGS) is the only agency collecting surface water records on St. John. These are summarized in the accompanying tables.

C : Groundwater. The USGS is also the only agency collecting groundwater level data in the Virgin Islands. There is no local agency of the Virgin Islands government engaged in colecting or analyzing groundwater level records in the islands, even though the Virgin Islands Code[8] makes adequate provisions for access to wells for the purpose of measuring water levels in wells.

SUMMARY OF AVAILABLE WATER RESOURCES DATA FOR ST. JOHN

A : METEOROLOGICAL

STATION	WATERSHED AREA(mi^2)	LATITUDE	LONGITUDE	ALTITUDE (feet)	TEMPERATURE		PRECIPITATION	
					RECORD YEARS	YEARS TOTAL	RECORD YEARS	YEARS TOTAL
Adrian's Estate	1.70	18°21'	64°46'				1935P	<1
American Hill	0.70	18°21'	64°45'				1921 1922P 1923-1932 1933P	13
Bordeaux Mountain	1.67	18°20'	64°24'	1160			1971-1972P 1973-1976P 1978-1982P	11
Caneel Bay	1.30	18°21'	64°47'	60			1976P 1978-1979P 1980-1982P 1982P	6

(...continued)

STATION	WATERSHED AREA(mi^2)	LATITUDE	LONGITUDE	ALTITUDE (feet)	TEMPERATURE		PRECIPITATION	
					RECORD YEARS	YEARS TOTAL	RECORD YEARS	YEARS TOTAL
Catherineburg	1.70	18°21'	64°46'	700	1970-1981	12	1957-1963P 1964-1967P 1980-1981 1982P	29
Chocolate Hole	0.76	18°19'	66°47'	30			1972P-1982	12
Coral Bay	0.67	18°20'	64°42'	30			1971P 1972-1973 1974P 1979 1980 1981 1982	9
Cruz Bay	1.30	18°20'	64°28'	10	1951-1952 1955-1981	29	1921-1928 1930-1936P 1938P-1952 1955-1981P 1982	58
East End	0.15	18°20'	64°41'	150			1970-1982	13

(...continued)

STATION	WATERSHED AREA(mi^2)	LATITUDE	LONGITUDE	ALTITUDE (feet)	TEMPERATURE		PRECIPITATION	
					RECORD YEARS	YEARS TOTAL	RECORD YEARS	YEARS TOTAL
Gift Hill	Ø.76	18°19'	66°47'	8ØØ			1968P-1981	14
Lameshur Bay[1]	Ø.43	18°19'	64°44'	17Ø			1958P 1959-1961P 1962-1964P 1965-1967P 1968-1974P 1975-1976P 1977-1981P	24
Lameshur Bay[2]	Ø.43	18°19'	64°44'	1Ø			1977P-1978P 1980P-1981P 1982P	5
Trunk Bay	Ø.37	18°21'	64°46'	15Ø			1957-1966P	1Ø

ADRIAN, ST. JOHN

MONTHLY PRECIPITATION : 1935

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTALS
1935	-	-	-	1.Ø1	5.36	5.Ø3	2.68	3.19	3.62	4.82	3.1Ø	Ø.23	-

REMARKS : The exact location of this station is not known. The only records existing in the files of the National Weather Service Office in San Juan are reproduced here.

AMERICAN HILL , ST. JOHN

MONTHLY PRECIPITATION AND ANNUAL TOTALS : 1921-1933

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTALS
1921	5.42	2.69	1.40	2.18	1.11	4.83	2.63	5.38	2.40	-	-	-	-
1922	4.13	3.50	4.27	1.19	3.59	0.99	5.41	2.50	4.19	4.20	4.37	1.96	40.30
1923	1.93	1.45	1.50	1.46	0.98	3.90	1.92	3.16	5.64	10.03	8.53	1.09	41.68
1924	3.12	5.15	0.91	4.61	3.00	3.83	5.27	17.22	4.35	5.16	8.84	5.72	67.18
1925	2.65	1.78	1.20	4.53	2.27	3.27	5.44	3.63	5.59	9.81	2.05	0.71	42.93
1926	2.24	2.10	1.11	1.18	4.78	3.17	4.52	4.48	10.37	4.83	2.27	1.93	42.98
1927	3.13	1.46	6.13	13.41	5.48	1.80	6.05	2.80	3.21	14.53	8.93	1.24	68.17
1928	1.90	1.20	1.55	0.46	2.95	2.12	2.45	3.44	15.79	6.48	4.88	2.86	46.08
1929	2.62	1.75	2.16	0.69	5.72	2.74	1.43	5.20	3.31	3.75	2.68	2.52	34.57
1930	4.12	1.70	0.60	0.50	2.78	5.83	1.43	3.20	3.81	1.04	11.86	3.64	40.51
1931	0.90	4.36	1.38	5.86	8.24	11.25	5.15	5.78	6.63	9.94	12.31	3.10	75.00
1932	1.28	1.82	1.99	6.95	6.90	3.97	5.98	31.24	6.40	7.69	2.90	3.09	80.21
1933	2.57	-	-	-	-	-	-	-	-	-	-	-	-

REMARKS : Records provided by the National Weather Service, San Juan, Puerto Rico.

BORDEAUX MOUNTAIN, ST. JOHN

MONTHLY PRECIPITATION AND ANNUAL TOTALS : 1971-1982

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTALS
1971	-	-	-	-	5.27	1.42	2.31	6.66	2.47	8.73	3.81	4.28	-
1972	2.63	3.94	3.62	3.00	1.51	1.68	1.42	3.00	-	-	-	-	-
1973	1.80	1.69	1.49	2.78	0.86	2.21	5.23	3.47	6.46	5.33	2.14	2.61	36.07
1974	4.03	0.85	1.64	1.00	0.89	2.22	2.46	6.51	8.81	16.91	14.19	2.09	61.60
1975	2.34	1.13	4.51	2.50	0.95	1.17	2.30	2.45	8.02	4.79	9.39	7.25	46.30
1976	2.32	4.74	1.68	3.27	2.32	2.15	1.28	-	-	-	-	-	-
1973	2.81	3.34	3.69	5.52	1.68	3.54	3.97	6.05	4.40	9.15	4.30	2.77	51.22
1979	1.38	1.40	2.58	2.22	14.00	4.73	4.64	6.10	13.76	2.50	11.43	2.04	66.78
1980	0.97	1.98	1.43	4.70	4.19	1.25	2.54	4.05	3.85	8.39	3.09	3.38	39.82
1981	3.79	1.40	0.32	6.40	10.03	3.63	4.50	-	-	-	-	-	-
1982	-	-	-	-	-	-	2.37	-	5.22	3.14	7.56	-	-

REMARKS : Records provided by the National Weather Service, San Juan, Puerto Rico.

CANEEL BAY, ST. JOHN

MONTHLY PRECIPITATION AND ANNUAL TOTALS : 1976-1982

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTALS
1976	1.76	2.76	2.03	4.33	2.07	2.48	1.49	4.65	5.24	6.61	1.64	4.03	39.09
1978	2.42	1.43	5.88	5.77	3.09	5.85	3.83	7.00	4.31	10.00	4.27	2.83	56.68
1979	-	-	-	2.61	14.36	-	-	7.11	-	3.88	-	-	
1980	0.97	1.98	1.43	4.70	4.19	1.25	2.54	4.05	3.85	8.39	3.09	3.38	39.82
1981	3.79	1.40	0.32	6.40	10.03	3.63	4.50	-	-	-	-	-	-
1982	-	-	-	1.70	9.98	2.96	3.85	1.83	5.86	3.86	7.10	4.04	-

REMARKS : Records provided by the National Weather Service, San Juan, Puerto Rico.

CATHERINEBERG, ST. JOHN

MONTHLY PRECIPITATION AND ANNUAL TOTALS : 1957-1982

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTALS
1957	–	–	1.93	1.11	1.40	3.39	1.93	3.51	2.83	5.48	3.82	8.43	—
1958	3.56	1.42	0.88	4.50	6.59	5.25	8.45	2.78	7.85	7.72	3.80	1.40	54.20
1959	3.59	1.72	1.22	2.49	3.15	1.39	3.11	2.14	3.32	3.81	7.72	4.03	39.69
1960	3.65	1.66	2.67	4.51	14.84	5.95	8.06	3.46	10.54	2.75	3.66	11.83	73.58
1961	3.54	3.25	2.16	2.05	2.28	2.05	2.90	7.85	1.35	9.02	11.66	5.78	53.89
1962	6.10	1.76	3.43	3.19	6.36	6.11	3.98	5.09	9.18	5.03	0.94	2.23	53.40
1963	3.23	3.40	3.32	6.32	3.87	1.16	4.10	11.41	5.42	3.13	2.74	1.10	49.20
1964	4.59	2.32	2.20	3.41	–	–	–	–	–	–	2.12	1.87	—
1965	1.05	0.72	0.61	1.78	9.99	2.52	3.35	4.56	3.57	–	–	–	—
1966	4.13	2.19	4.77	3.22	3.81	1.83	4.44	5.77	–	–	–	–	—
1967	–	–	–	–	3.29	2.26	4.04	2.31	2.63	5.28	4.23	2.02	—
1968	1.78	2.53	1.71	0.77	2.62	2.32	4.16	3.95	3.88	1.40	7.90	6.51	39.53
1969	5.03	1.22	7.05	1.48	14.55	6.47	3.41	5.99	7.65	5.25	9.11	2.46	69.67
1970	2.75	1.14	1.30	2.18	6.46	7.79	7.39	5.61	9.04	19.91	7.93	6.41	77.91
1971	3.04	2.48	2.06	2.76	5.88	1.35	2.49	8.12	2.37	5.99	4.07	3.13	43.74
1972	3.80	3.87	4.51	2.12	1.59	2.45	2.26	3.78	4.33	2.50	2.64	6.90	40.75
1973	2.19	2.32	1.54	1.79	1.40	2.96	4.96	4.24	6.99	5.70	1.73	3.23	39.05
1974	3.32	1.28	2.50	3.07	1.16	1.28	3.58	7.26	10.52	12.25	12.14	2.41	60.77
1975	2.32	1.09	6.47	2.16	1.11	1.52	2.82	2.26	7.76	3.94	8.03	8.49	47.97
1976	1.83	3.08	2.08	3.90	1.93	2.74	1.86	3.59	5.89	4.95	1.82	5.24	38.91

(continued...)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTALS
1977	1.90	1.80	2.29	3.02	3.13	1.93	2.88	3.45	8.71	10.15	12.87	4.20	56.33
1978	2.53	2.70	5.41	5.19	2.66	5.22	3.98	5.80	4.77	6.40	4.08	2.29	51.03
1979	1.78	1.48	3.55	2.38	14.22	4.57	3.56	7.40	17.83	2.01	11.30	5.21	75.29
1980	0.83	2.06	2.33	5.16	4.15	1.46	2.84	4.24	3.88	8.53	3.42	3.66	42.56
1981	3.17	2.23	0.40	7.80	10.87	4.17	4.05	2.91	7.25	5.86	3.34	17.23	69.28
1982	2.63	7.20	1.12	1.46	9.98	-	-	-	5.74	3.72	7.12	4.40	—

REMARKS : Records provided by the National Weather Service, San Juan, Puerto Rico.

CATHERINEBERG, ST. JOHN

MONTHLY AND ANNUAL TEMPERATURE DATA: 1970-1981

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE
1970	75.1	74.3	74.7	77.0	76.7	77.0	77.4	77.9	77.5	76.8	75.1	73.3	76.1
1971	72.8	72.6	74.4	74.9	75.9	77.9	78.4	78.5	78.4	77.0	-	73.0	-
1972	72.1	72.0	72.2	74.4	75.1	77.3	79.5	78.7	79.0	78.4	76.8	74.0	75.8
1973	73.8	73.5	74.9	76.5	78.4	79.0	79.0	78.5	78.0	77.4	75.9	72.8	76.5
1974	72.5	73.8	74.8	75.2	77.4	79.7	-	79.2	77.3	76.7	73.9	73.5	-
1975	71.7	73.7	74.5	75.7	77.8	79.9	80.3	81.0	-	77.4	75.4	71.5	-
1976	71.6	72.1	72.9	75.1	77.0	77.9	79.4	79.6	79.9	78.3	77.4	74.1	76.3
1977	74.4	75.4	75.8	75.8	78.4	79.5	80.2	80.7	79.4	78.3	76.0	75.1	77.4
1978	73.6	74.3	75.1	75.9	78.4	79.6	79.1	79.3	80.0	-	76.1	75.0	-
1979	73.0	75.2	74.1	75.7	76.7	78.6	79.2	80.0	78.7	79.5	76.0	73.8	76.7
1980	74.1	74.3	75.8	77.5	78.8	80.9	81.3	81.3	80.9	79.6	77.8	75.0	78.1
1981	75.8	74.9	77.8	76.2	77.9	80.0	80.2	80.6	80.1	79.0	78.0	79.7	77.9

REMARKS : Records provided by the National Weather Service, San Juan, Puerto Rico.

CHOCOLATE HOLE, ST. JOHN

MONTHLY PRECIPITATION AND ANNUAL TOTALS : 1972-1982

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTALS
1972	-	-	3.75	3.79	2.21	0.20	0.90	2.71	2.85	1.20	2.40	3.85	22.86
1973	0.77	1.80	0.85	0.65	1.80	2.22	3.10	2.32	5.60	3.37	1.90	2.25	26.63
1974	2.85	0.50	0.66	2.00	1.15	0.40	2.50	4.95	6.34	11.20	8.91	1.10	42.56
1975	2.05	1.00	4.55	1.30	1.60	1.25	1.27	2.05	7.80	5.65	6.85	5.65	41.02
1976	2.10	1.15	1.25	2.20	1.10	2.00	1.70	4.45	5.40	3.36	3.00	4.30	32.01
1977	3.00	0.95	1.25	2.40	2.05	0.85	2.05	2.95	5.20	5.75	11.85	12.15	42.10
1978	2.35	2.30	3.25	5.60	2.90	3.85	3.30	5.70	5.55	9.80	5.10	1.40	51.16
1979	1.25	1.40	12.45	2.60	2.75	5.74	3.05	5.75	19.44	2.90	13.50	2.85	73.68
1980	1.10	1.45	1.75	2.20	6.85	1.10	3.75	3.65	4.15	7.70	2.70	1.75	38.15
1981	2.85	1.30	-	4.05	13.20	5.70	3.05	2.75	9.90	6.25	5.70	10.35	65.10
1982	2.50	4.30	0.30	1.60	9.50	1.25	3.35	1.50	4.25	2.70	7.25	3.25	41.75

REMARKS : Records provided by Mr. Robert Eaton of Chocolate Hole, St. John. The raingage used is approximately three inches in diameter. As such it is not a National Weather Service standard gage.

CHOCOLATE HOLE, ST. JOHN

DAILY PRECIPITATION : 1972

DAY	JAN*	FEB*	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1						0.20						0.10
2									0.15			0.05
3									1.50		0.15	0.20
4					0.17							0.15
5					0.22			0.30			0.15	0.10
6								0.10				
7								0.25				
8			1.30					0.25				
9			1.30									1.00
10								0.44				0.75
11				1.75			0.10	0.17			1.32	
12			0.60	0.50								0.30
13					0.15							0.30
14					0.10				0.10			
15				0.30	1.12		0.15				0.15	
16							0.10	0.25			0.10	
17				0.10							0.05	
18			0.30									
19											0.10	
20									0.10		0.10	0.20
21			0.20					0.65	0.05		0.08	0.20
22												0.05
23			0.05	0.05			0.25					
24				0.45	0.20		0.30					0.10
25								0.20	0.25			
26				0.64					0.05	0.60		
27								0.10				0.20
28												
29					0.20						0.10	
30					0.05				0.65		0.10	
31										0.60		0.15
TOTALS			3.75	3.79	2.21	0.20	0.90	2.71	2.85	1.20	2.40	3.85

REMARKS : Records provided by Mr. Robert Eaton of Chocolate Hole, St. John. The raingage used is approximately three inches in diameter. As such it is not a National Weather Service standard gage.

*Data is missing for these months.

CHOCOLATE HOLE, ST. JOHN

DAILY PRECIPITATION : 1973

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0.05		0.15					0.47	1.00	0.52		
2		0.20	0.15						0.75			
3	0.15	0.20							0.35	0.15		0.80
4									0.35	0.15	0.25	0.40
5		0.30										
6								0.20				
7		0.20	0.15									0.30
8	0.12					0.15				0.25		
9												
10							0.10	0.10		0.10	0.25	
11			0.10					0.35		0.55		
12						0.10				1.65		
13					0.10		1.10				0.85	
14			0.20			0.85		0.10			0.55	
15							0.05	0.85	0.20			
16	0.20								0.40			
17				0.25	0.60		0.90					
18						0.12						
19									0.10			
20					0.15		0.15					
21		0.10					0.30					
22				0.20	0.20							0.15
23	0.05			0.20								
24	0.05	0.80						0.05	1.05			0.20
25	0.05							0.05	0.20			
26							0.50					
27								0.15	0.75			
28						1.00			0.40			
29	0.05											0.20
30	0.05								0.05			0.20
31			0.10		0.75							
TOTALS	0.77	1.80	0.85	0.65	1.80	2.22	3.10	2.32	5.60	3.37	1.90	2.25

REMARKS : Records provided by Mr. Robert Eaton of Chocolate Hole, St. John. The raingage used is approximately three inches in diameter. As such it is not a National Weather Service standard gage.

CHOCOLATE HOLE, ST. JOHN

DAILY PRECIPITATION : 1974

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1		Ø.15						Ø.50			1.ØØ	
2	Ø.6Ø							Ø.1Ø		Ø.3Ø	1.6Ø	Ø.1Ø
3				Ø.1Ø			Ø.6Ø	Ø.25				
4				Ø.5Ø			1.1Ø	Ø.35	Ø.15		Ø.15	
5	Ø.65							Ø.1Ø		Ø.Ø5	Ø.3Ø	
6		Ø.1Ø		Ø.1Ø						Ø.5Ø	1.ØØ	Ø.Ø5
7			Ø.1Ø					Ø.1Ø	Ø.33			
8	Ø.25						Ø.1Ø				Ø.15	
9									1.35			
1Ø								Ø.Ø5		Ø.Ø5	Ø.4Ø	Ø.35
11	Ø.2Ø	Ø.2Ø		Ø.2Ø					1.91			
12					Ø.15				Ø.15	Ø.1Ø	2.4Ø	
13				Ø.25			Ø.Ø5	Ø.2Ø			Ø.25	
14								Ø.Ø5				Ø.15
15					Ø.2Ø					Ø.Ø5	Ø.1Ø	
16	Ø.2Ø				Ø.25	Ø.3Ø				Ø.1Ø	Ø.1Ø	
17							Ø.15		Ø.9Ø		Ø.4Ø	
18										Ø.9Ø		
19									Ø.2Ø		Ø.1Ø	
2Ø							Ø.1Ø		Ø.1Ø			Ø.35
21			Ø.3Ø								Ø.26	
22	Ø.2Ø						Ø.1Ø		Ø.1Ø		Ø.6Ø	
23				Ø.35						3.7Ø		
24		Ø.Ø5			Ø.4Ø					3.6Ø		
25	Ø.2Ø		Ø.11				Ø.Ø5		Ø.3Ø	Ø.55		
26	Ø.1Ø								Ø.5Ø			
27						Ø.Ø5			Ø.1Ø	Ø.45		
28			Ø.15	Ø.5Ø					Ø.2Ø	Ø.5Ø		
29	Ø.45									Ø.1Ø	Ø.1Ø	
3Ø					Ø.15	Ø.Ø5			Ø.Ø5	Ø.25		
31							Ø.25	3.25				Ø.1Ø
TOTALS	2.85	Ø.5Ø	Ø.66	2.ØØ	1.15	Ø.4Ø	2.5Ø	4.95	6.34	11.2Ø	8.91	1.1Ø

REMARKS : Records provided by Mr. Robert Eaton of Chocolate Hole, St. John. The raingage used is approximately three inches in diameter. As such it is not a National Weather Service standard gage.

CHOCOLATE HOLE ST. JOHN

DAILY PRECIPITATION : 1975

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	Ø.1Ø											
2					Ø.25	Ø.1Ø				Ø.4Ø		Ø.15
3			3.ØØ							Ø.2Ø	Ø.1Ø	
4			1.35			Ø.2Ø		Ø.1Ø	Ø.2Ø			
5	Ø.1Ø								Ø.15		Ø.55	Ø.25
6					Ø.Ø5		Ø.25			Ø.2Ø	Ø.1Ø	
7	Ø.1Ø							Ø.25		Ø.85		
8	Ø.15							Ø.25				
9		Ø.4Ø		Ø.25	Ø.Ø5	Ø.3Ø						2.5Ø
1Ø			Ø.1Ø							Ø.1Ø		Ø.35
11		Ø.25						Ø.7Ø	Ø.25	Ø.3Ø	2.25	Ø.85
12					Ø.1Ø		Ø.2Ø				Ø.15	Ø.3Ø
13				Ø.2Ø						1.5Ø		
14		Ø.1Ø	Ø.1Ø					Ø.15	Ø.35			
15								Ø.1Ø	1.65	Ø.8Ø		Ø.2Ø
16						Ø.45	Ø.25		2.75	Ø.2Ø		
17								Ø.15				Ø.15
18		Ø.25										
19							Ø.25		Ø.45			
2Ø	Ø.4Ø			Ø.2Ø	Ø.6Ø			Ø.1Ø	Ø.25	Ø.45	1.ØØ	
21	Ø.15								Ø.15		Ø.25	
22				Ø.1Ø	Ø.1Ø		Ø.12		Ø.2Ø	Ø.15	Ø.5Ø	Ø.1Ø
23					Ø.1Ø			Ø.15	Ø.35		1.ØØ	Ø.1Ø
24	Ø.15			Ø.4Ø					Ø.2Ø			Ø.1Ø
25	Ø.35			Ø.15			Ø.1Ø				Ø.25	Ø.3Ø
26	Ø.15							Ø.1Ø				
27	Ø.2Ø								Ø.Ø5	Ø.2Ø		Ø.1Ø
28	Ø.1Ø					Ø.2Ø						
29	Ø.1Ø									Ø.3Ø	Ø.7Ø	Ø.2Ø
3Ø							Ø.1Ø		Ø.8Ø			
31					Ø.35							
TOTALS	2.Ø5	1.ØØ	4.55	1.3Ø	1.6Ø	1.25	1.27	2.Ø5	7.8Ø	5.65	6.85	5.65

REMARKS : Records provided by Mr. Robert Eaton of Chocolate Hole, St. John. The raingage used is approximately three inches in diameter. As such it is not a National Weather Service standard gage.

CHOCOLATE HOLE ST. JOHN

DAILY PRECIPITATION : 1976

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			0.10		0.10		0.25	1.25			1.25	0.90
2						0.15	0.25	0.50		0.10		0.60
3			0.20				0.20	0.10		0.10	0.15	0.50
4		0.10	0.25		0.20	0.20				0.10		0.45
5	0.10					0.20				0.30		0.40
6	0.15		0.15						0.15	0.10	0.55	
7	0.15		0.30					0.20	2.00	0.40	0.05	
8					0.25				0.10			0.60
9								0.15				0.15
10	0.20								0.15	0.60		0.15
11		0.10			0.10					0.60		0.10
12								0.85	0.20		0.40	
13	0.15				0.20				0.20			0.05
14	0.15	0.25				0.05					0.25	0.20
15	0.25			0.10		0.80			0.25	0.25		
16	0.10	0.15		0.55	0.25							
17	0.30			0.45								
18		0.10							0.10			0.10
19									0.25			
20		0.10				0.50	0.20	0.20		0.05		
21	0.10		0.15			0.10		0.65				
22			0.10									
23	0.25	0.15								0.20		
24	0.10						0.10	0.20	0.30		0.10	
25	0.10						0.70	0.10	0.60		0.10	
26										0.01	0.15	
27								0.25		0.50		
28									0.10			0.10
29		0.20		1.10					1.00			
30										0.05		
31												
TOTALS	2.10	1.15	1.25	2.20	1.10	2.00	1.70	4.45	5.40	3.36	3.00	4.30

REMARKS : Records provided by Mr. Robert Eaton of Chocolate Hole, St. John. The raingage used is approximately three inches in diameter. As such it is not a National Weather Service standard gage.

CHOCOLATE HOLE, ST. JOHN

DAILY PRECIPITATION : 1977

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0.65			0.15		0.15		0.25				0.05
2	0.20	0.10		0.20								0.05
3								0.50		0.30		
4	0.35	0.10						0.10		0.20	0.50	
5			0.25					0.35			0.85	0.10
6			0.10	0.15			0.40		1.65		0.10	0.30
7				0.15							0.25	
8	0.65		0.40							5.00	0.10	
9		0.20		0.10				0.30	0.30		0.25	0.10
10										0.10	2.55	0.10
11								0.10	0.50		0.25	
12				0.20			0.75					1.25
13		0.10										0.10
14	0.85				0.10	0.10	0.25					
15						0.50			1.60		0.60	0.10
16			0.25		0.15						0.30	
17											0.25	0.20
18							0.20		0.40			
19											0.75	
20		0.10									0.45	
21		0.10		1.00				0.30	0.75		0.20	
22	0.20										0.35	0.25
23		0.15		0.20	1.80						2.50	
24		0.10		0.10							0.25	0.55
25							0.25	0.40		0.15	0.30	0.10
26							0.10				0.55	
27			0.15				0.10				0.45	
28								0.25			0.15	
29				0.15							0.10	
30			0.10			0.10		0.40			0.10	
31	0.10											0.25
TOTALS	3.00	0.95	1.25	2.40	2.05	0.85	2.05	2.95	5.20	5.75	12.15	3.50

REMARKS : Records provided by Mr. Robert Eaton of Chocolate Hole, St. John. The raingage used is approximately three inches in diameter. As such it is not a National Weather Service standard gage.

CHOCOLATE HOLE, ST. JOHN

DAILY PRECIPITATION : 1978

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1												0.55
2		0.50		0.25					0.75	0.10		
3		0.50		0.25		0.10	0.50	1.10				
4				0.50								
5	0.15	0.10		2.50					0.10			
6							0.60					0.10
7	0.45		0.75					0.20				
8	0.50		0.65						1.75	0.10		
9	0.10		0.15		0.10			0.10				
10	0.20		0.10	0.30	0.15		0.15			0.75	0.20	
11		0.40	0.10	0.10		0.35	0.20		0.35	0.10		
12						0.55	0.25			0.10	0.60	
13				0.25				0.25		0.40		
14	0.20					0.10		0.65		1.35	0.35	
15	0.10					1.75		0.35				
16	0.15							2.65		0.50	1.60	0.10
17							0.15	0.10			1.45	
18						0.10	0.25				0.20	
19	0.10						0.70		0.20			
20		0.45	0.25			0.10	0.40	0.30			0.20	0.10
21				0.80			0.10				0.10	0.15
22					0.25	0.35			0.30	0.35		0.20
23			0.55									
24			0.25	0.25		0.10				0.10		
25	0.20		0.45	0.30	1.40				0.20			
26	0.10	0.35		0.10	0.25					0.75		
27						0.25			1.50	3.95		0.20
28					0.75				0.10	0.35	0.10	
29	0.10					0.10			0.30	0.15	0.10	
30										0.35		
31										0.40	0.20	
TOTALS	2.35	2.30	3.25	5.60	2.90	3.85	3.30	5.70	5.55	9.80	5.10	1.40

REMARKS : Records provided by Mr. Robert Eaton of Chocolate Hole, St. John. The raingage used is approximately three inches in diameter. As such it is not a National Weather Service standard gage.

CHOCOLATE HOLE, ST. JOHN

DAILY PRECIPITATION : 1979

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	Ø.35							Ø.30		Ø.20		
2						Ø.10				Ø.20		
3						Ø.20			1.74	Ø.20		Ø.20
4						Ø.15			3.85	Ø.85		Ø.10
5			Ø.55			Ø.10	Ø.55	Ø.10	9.20			
6								Ø.35	1.40	Ø.10		
7						Ø.10			1.75	Ø.25		
8	Ø.30					Ø.70					Ø.95	Ø.25
9	Ø.10	Ø.10			Ø.15	Ø.50					1.80	
10				Ø.60	Ø.50			Ø.20				Ø.20
11	Ø.10		Ø.50		1.50		Ø.10			Ø.05		Ø.20
12		Ø.10			Ø.10					Ø.15		
13				Ø.10	Ø.25					Ø.10	Ø.65	Ø.20
14					Ø.35	Ø.14						Ø.20
15			Ø.15		1.25					Ø.15		Ø.15
16	Ø.25	Ø.35			Ø.50	Ø.40	Ø.45		Ø.40		Ø.30	Ø.20
17											Ø.10	
18			Ø.95		4.35		Ø.15				Ø.10	
19			Ø.10		Ø.10		1.Ø					
20		Ø.15		Ø.10	Ø.75							
21		Ø.60		1.60	Ø.10	Ø.20	Ø.15				Ø.25	
22		Ø.10						Ø.15			Ø.45	
23	Ø.15		Ø.10		Ø.20			Ø.15			1.50	1.00
24					Ø.10		Ø.30	Ø.10			6.50	Ø.15
25				Ø.20		Ø.40			Ø.25		Ø.60	
26										Ø.05	Ø.15	
27						Ø.55					Ø.15	
28			Ø.10		Ø.20	1.50				Ø.05		
29			Ø.30		1.30	Ø.35		4.40	Ø.75			
30			Ø.45		Ø.75	Ø.35			Ø.10	Ø.55		
31							Ø.35					
TOTALS	1.25	1.40	2.75	2.60	12.45	5.74	3.05	5.75	19.44	2.90	13.50	2.85

REMARKS : Records provided by Mr. Robert Eaton of Chocolate Hole, St. John. The raingage used is approximately three inches in diameter. As such it is not a National Weather Service standard gage.

Hurricanes David and Frederick occured in August and September respectively.

CHOCOLATE HOLE, ST. JOHN

DAILY PRECIPITATION : 1980

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1					0.20		T					
2											0.85	
3						T	0.05	0.40	0.10		0.25	
4		0.10					0.20			0.35	0.10	
5			0.45				0.30	0.90	0.65	0.15	0.10	
6	0.10	0.50		T		T	0.10			0.45		
7		0.10	0.50				0.25	0.60		0.85		0.35
8			0.20				0.10	0.85		1.00		0.50
9	0.25	0.20	0.50			0.10	0.20					
10			0.10			0.15	0.25					
11						0.10	0.10	0.10	0.25	0.20		
12	0.25			0.85		0.20	T	0.15				
13	0.10				3.25	0.20	0.20	0.35	0.80			
14	0.10				0.20	0.20			0.10			
15										0.20	0.30	0.30
16			T				0.10		0.15			
17						0.10	0.15		0.10	0.30		
18					0.10		0.65					
19					0.15					1.10		
20					0.10	0.05	T		0.30	0.80		
21					0.10		T			0.15	0.20	0.10
22							0.10			0.65	0.55	
23		0.55		1.35	T				0.60	0.50	0.10	0.50
24			T		T		0.25	0.10	0.40	0.35	0.15	
25									0.05			
26					0.15					0.10		
27					1.15		0.25		0.15	0.10		
28					1.35		0.50	0.15	0.50			
29					0.10					0.20	0.10	
30								0.05		0.25		
31	0.30											
TOTALS	1.10	1.45	1.75	2.20	6.85	1.10	3.75	3.65	4.15	7.70	2.75	1.75

REMARKS : Records provided by Mr. Robert Eaton of Chocolate Hole, St. John. The raingage used is approximately three inches in diameter. As such it is not a National Weather Service standard gage.

CHOCOLATE HOLE, ST. JOHN

DAILY PRECIPITATION : 1981

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1		0.20		0.05	3.55	2.00	0.05	0.20		1.20	0.40	
2		0.10		0.10		0.85					1.50	
3						0.35	0.05	0.20			0.55	0.15
4				1.25		0.20	0.10		4.45	0.30		
5			T	0.10			0.20			0.20		
6				0.65						0.35		
7		0.10			2.20				0.20			0.60
8				0.05				0.15	0.10		2.20	1.45
9		0.15		0.15			0.10	0.15	0.05		0.20	0.50
10				0.25				0.10				1.80
11		0.10						0.25				0.15
12		0.05		0.15	0.10		0.15	1.10				0.15
13									2.90			1.70
14		T										0.55
15		T				0.15	0.25			0.10	0.10	
16												
17				0.10	1.25				0.05	0.70		0.65
18		0.15										0.15
19					0.10				1.70	0.55		
20					2.85		1.25	0.20		0.20		
21					0.70		0.55	0.10				0.10
22		0.45		0.05		1.80		0.25		0.20		
23						0.20	0.10			0.40		
24	2.75								0.25			
25			T				0.15				0.15	0.20
26				0.50						0.10		0.25
27			T		1.50					0.10	0.60	0.35
28					0.75	0.15		0.05		0.10		0.80
29				0.10						0.35		
30			T	0.55						1.40		0.80
31	0.10				0.20		0.10		0.20			
TOTALS	2.85	1.30	0.0	4.05	13.20	5.70	3.05	2.75	9.90	6.25	5.70	10.35

REMARKS : Records provided by Mr. Robert Eaton of Chocolate Hole, St. John. The raingage used is approximately three inches in diameter. As such it is not a National Weather Service standard gage.

CHOCOLATE HOLE, ST. JOHN

DAILY PRECIPITATION : 1982

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0.25					0.10			0.45	0.30	0.10	
2	1.50	0.50		0.50		0.15					0.75	0.10
3		0.25		0.10					0.35			0.25
4		0.75			0.15		0.50				0.30	
5		0.25			6.00	0.15		0.10			0.40	0.20
6	0.10	0.55	0.10		0.50						0.20	
7			0.10		1.35	0.20	0.10				0.20	
8				0.10		0.25						
9		0.25										
10	0.10				0.10		0.10		0.15			
11											0.85	
12					0.10			0.35	2.35			
13	0.10	0.15		0.25				0.30			0.10	
14					0.50							
15					0.10							0.30
16		0.25	0.10	0.10	0.10		0.20					
17	0.15	0.10									0.30	
18		0.10								0.60		
19							0.20			0.45		
20								0.20		1.05		0.25
21		0.25				0.40	0.10		0.15	0.05		
22					0.10					0.15		
23		0.65					0.40				3.20	
24							0.50	0.20	0.20		0.10	0.30
25										0.10		0.30
26							0.35					0.20
27				0.45	0.15				0.25		0.20	0.85
28		0.25		0.10								0.10
29					0.20		0.90	0.15	0.30		0.15	0.20
30									0.05		0.40	0.10
31	0.30				0.15			0.20				0.10
TOTALS	2.40	4.30	0.30	1.60	9.50	1.25	3.35	1.50	4.25	2.70	7.25	3.25

REMARKS : Records provided by Mr. Robert Eaton of Chocolate Hole, St. John. The raingage used is approximately three inches in diameter. As such it is not a National Weather Service standard gage.

CORAL BAY BAY ST. JOHN

MONTHLY PRECIPITATION DATA : 1971 - 1982

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTALS
1971	-	-	-	-	4.15	2.14	2.33	6.92	3.39	10.48	3.80	4.58	—
1972	3.04	4.03	3.43	2.67	1.69	2.18	2.01	3.23	3.48	2.30	2.92	5.60	36.58
1973	1.62	1.22	1.46	2.54	0.71	2.15	3.56	3.23	6.17	6.70	2.31	2.30	33.97
1974	2.94	0.91	1.35	2.23	0.89	1.06	3.43	6.55	-	-	-	-	—
1978	2.21	3.26	3.29	5.64	1.84	3.00	4.49	6.40	5.92	10.25	3.34	2.23	51.87
1979	1.61	1.98	2.50	-	-	-	-	-	14.71	-	-	-	—
1980	0.89	-	-	-	-	-	-	-	-	-	-	-	0.89
1981	-	-	0.52	8.08	10.22	3.59	5.42	1.86	5.81	5.79	4.57	10.84	—
1982	1.55	5.36	1.33	1.35	9.26	1.81	1.54	2.36	4.46	2.96	6.50	3.53	42.01

REMARKS: Records provided by the National Weather Service, San Juan, Puerto Rico.

CRUZ BAY, ST. JOHN

MONTHLY PRECIPITATION AND ANNUAL TOTALS : 1921-1982

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTALS
1921	3.78	3.52	3.75	Ø.78	2.93	Ø.44	4.19	1.45	3.73	3.42	3.Ø7	1.49	32.55
1922	3.86	2.8Ø	1.83	1.62	1.ØØ	4.48	3.36	3.41	2.71	6.81	1.27	4.36	37.51
1923	2.ØØ	1.14	1.62	2.Ø8	Ø.17	2.79	1.52	1.7Ø	4.85	8.94	4.79	1.38	32.98
1924	2.83	4.72	Ø.8Ø	1.48	2.41	2.59	4.17	6.44	7.28	2.65	8.15	4.82	48.34
1925	1.28	1.87	1.74	1.5Ø	3.31	3.76	4.11	2.96	4.Ø3	3.Ø2	4.Ø8	Ø.78	32.44
1926	1.71	1.57	1.73	1.Ø1	3.37	1.68	3.95	4.84	8.2Ø	7.35	1.9Ø	2.7Ø	4Ø.Ø4
1927	2.95	1.83	4.14	8.52	4.52	2.98	6.2Ø	3.73	4.56	1Ø.3Ø	9.26	1.1Ø	6Ø.Ø9
1928	2.5Ø	1.23	1.35	Ø.37	2.16	1.3Ø	2.62	4.54	18.62	3.33	4.96	3.48	46.46
1929	3.18	Ø.98	2.Ø1	1.17	4.82	1.92	2.22	5.47	3.72	5.36	4.64	2.81	38.3Ø
193Ø	3.52	1.47	Ø.94	1.12	1.49	3.Ø4	2.14	1.78	3.49	1.83	7.17	3.48	31.47
1931	1.12	2.99	2.52	2.43	8.64	7.83	5.47	4.88	6.94	6.73	13.27	3.26	66.Ø8
1932	2.55	1.Ø9	1.31	3.79	9.Ø8	4.8Ø	3.97	1Ø.33	9.68	7.48	3.64	3.23	6Ø.95
1933	1.83	Ø.36	2.64	3.72	2Ø.67	3.51	7.12	3.78	7.39	2.73	4.86	2.33	6Ø.94
1934	3.64	Ø.72	3.71	1.11	2.24	1.2Ø	3.78	4.11	Ø.94	5.16	2.ØØ	6.33	34.94
1935	1.59	1.81	1.13	Ø.73	3.74	3.1Ø	1.64	2.15	3.75	3.84	2.74	3.59	29.81
1936	1.72	Ø.86	Ø.92	Ø.28	6.53	1.81	7.3Ø	12.46	5.18	-	-	-	-
1937	-	-	-	-	-	-	-	-	-	-	-	-	-
1938	-	Ø.63	1.73	Ø.82	-	-	2.96	4.Ø2	4.63	3.46	6.73	4.74	-
1939	1.39	1.8Ø	2.55	1.15	1.71	1.43	2.21	2.92	5.Ø9	4.82	6.14	5.88	37.Ø7
194Ø	Ø.8Ø	2.96	Ø.58	3.38	8.19	1.84	3.78	1.96	4.66	4.61	4.1Ø	1.36	38.22

(Cruz Bay monthly precipitation continued ...)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTALS
1941	1.02	0.00	0.88	1.62	4.35	4.61	5.74	6.08	4.79	2.24	4.46	1.79	37.58
1942	2.54	0.53	0.52	9.41	1.49	6.78	4.51	6.38	4.75	3.74	8.98	2.17	51.80
1943	8.39	1.09	1.53	1.21	6.71	4.27	2.48	3.23	5.10	3.51	2.32	4.59	44.43
1944	1.87	2.03	0.52	0.94	3.99	2.89	6.27	6.33	4.62	8.23	3.92	4.68	46.29
1945	1.28	1.75	0.49	1.57	4.36	1.12	3.36	3.42	5.43	6.33	2.83	1.88	33.82
1946	1.87	2.39	0.45	1.11	3.06	1.57	2.22	2.97	4.86	9.76	4.39	1.24	35.89
1947	4.25	1.69	0.91	0.76	4.68	4.12	0.99	2.34	9.40	6.67	1.25	1.26	38.32
1948	2.45	2.22	0.87	0.62	2.59	1.87	4.72	1.99	7.30	4.22	7.22	1.95	38.02
1949	0.62	0.84	2.62	1.71	3.67	3.65	4.02	2.91	12.69	7.75	3.00	3.90	47.38
1950	2.00	4.60	1.70	2.95	1.45	1.50	3.85	2.30	1.90	3.55	4.00	1.55	30.95
1951	0.25	1.40	0.60	3.48	12.07	3.55	3.55	1.90	4.00	2.65	2.50	4.95	40.90
1952	4.65	1.10	1.50	5.10	0.45	2.85	8.20	4.00	9.50	1.80	5.50	0.85	45.50
1953	–	–	–	–	–	–	–	–	–	–	–	–	–
1954	–	–	–	–	–	–	–	–	–	–	–	–	–
1955	0.95	1.45	0.70	1.05	1.20	1.15	3.20	4.95	5.32	5.32	2.02	1.86	29.17
1956	2.60	4.05	0.86	3.55	3.62	4.06	1.19	5.20	2.60	6.41	2.74	3.08	39.96
1957	1.90	1.31	2.12	0.87	0.80	2.96	1.37	2.00	1.21	4.37	1.83	5.69	26.42
1958	3.89	0.76	1.34	3.41	7.19	4.31	8.29	3.50	3.67	5.90	2.67	1.58	46.51
1959	2.43	0.73	0.95	2.81	4.50	1.43	2.38	2.33	1.79	4.45	5.91	2.65	32.36
1960	1.59	1.26	2.38	3.94	14.79	5.37	7.04	3.50	9.04	0.90	4.00	6.59	60.40

(Cruz Bay monthly precipitation continued ...)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTALS
1961	1.79	2.47	2.40	3.91	4.15	1.48	3.53	5.10	2.08	6.63	.09	4.45	45.08
1962	5.30	1.74	1.68	1.09	6.13	3.92	3.40	5.31	7.25	3.71	0.71	1.92	42.16
1963	3.03	2.73	3.52	3.16	3.62	0.64	4.68	7.43	4.25	2.02	2.48	0.71	38.27
1964	3.59	1.48	1.53	2.83	1.98	3.62	5.80	2.55	3.69	1.55	2.33	2.52	33.47
1965	1.17	0.39	0.63	1.84	8.29	3.16	3.20	4.10	4.05	7.15	6.56	5.63	46.16
1966	3.49	1.69	7.09	3.50	3.36	2.09	4.05	5.19	5.87	4.42	1.34	4.68	46.77
1967	3.26	2.55	1.57	0.48	2.48	1.99	3.41	1.40	1.89	4.67	2.77	1.55	28.02
1968	2.27	1.58	1.55	1.19	2.02	2.64	3.23	4.78	2.58	1.04	6.16	3.98	33.02
1969	4.32	2.76	6.23	0.84	15.85	7.06	2.81	5.14	5.58	2.99	7.04	2.49	63.11
1970	1.74	0.89	0.90	0.74	2.85	7.13	6.13	5.13	6.64	19.06	6.91	6.04	64.16
1971	3.55	2.64	0.99	4.23	4.62	1.63	1.73	7.48	4.10	4.39	3.67	4.12	43.15
1972	3.60	2.81	5.27	3.61	1.33	2.65	2.08	3.37	4.27	2.71	2.93	4.55	39.18
1973	1.69	2.55	1.27	2.52	2.52	2.88	4.24	3.35	6.07	5.08	2.27	2.27	36.71
1974	4.49	0.97	1.60	3.82	1.56	0.87	3.38	6.99	7.34	11.99	9.57	2.41	54.99
1975	2.86	1.37	1.95	1.74	2.13	1.31	2.21	2.11	6.48	4.55	5.66	7.55	39.92
1976	1.73	3.02	1.59	2.99	2.19	2.62	2.17	4.50	5.36	4.70	1.55	4.65	37.07
1977	1.53	0.95	1.04	2.46	2.58	2.12	2.12	3.45	8.35	8.25	10.64	3.90	47.39
1978	2.46	2.05	4.22	5.23	3.64	4.69	4.60	5.93	8.69	8.37	4.30	2.56	56.74
1979	2.02	1.89	4.35	3.45	13.34	4.33	4.70	7.84	16.64	2.88	11.55	1.66	74.65
1980	0.75	1.77	2.16	3.65	5.65	1.25	3.90	3.85	4.72	7.53	2.62	2.85	40.70
1981	2.87	1.59	0.17	4.73	13.87	4.14	3.95	3.23	8.29	5.06	5.31	9.72	62.93
1982	2.14	4.84	0.85	1.89	9.46	2.55	3.17	2.86	5.60	4.34	7.12	4.07	48.89

REMARKS : Records provided by the National Weather Service, San Juan, Puerto Rico.

CRUZ BAY, ST. JOHN

MONTHLY TEMPERATURE DATA : 1938-1981

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE
1938	-	-	-	-	-	-	-	82.3	82.2	81.2	78.6	77.8	-
1939	76.6	75.6	76.3	77.8	82.7	81.6	82.4	82.9	82.6	82.2	80.3	78.2	80.0
1940	77.4	78.0	78.3	80.0	80.4	82.2	82.5	83.3	83.1	82.1	80.2	79.0	80.5
1941	77.6	79.3	80.0	80.8	81.5	82.5	82.2	83.5	82.6	82.0	81.2	79.9	81.0
1942	79.0	78.6	80.0	78.6	80.9	80.6	81.6	81.0	81.9	81.1	78.7	78.5	80.0
1943	77.6	77.0	77.2	78.8	79.3	80.5	82.4	83.7	-	-	81.0	80.4	-
1944	77.6	75.3	76.2	79.8	80.2	82.2	83.2	83.0	82.2	81.4	79.6	77.8	79.9
1945	76.5	77.6	77.6	78.4	79.6	82.7	83.1	83.9	81.9	80.8	79.4	78.8	-
1946	78.5	77.6	77.7	79.6	80.6	82.5	83.0	82.9	82.2	81.2	79.8	78.9	80.4
1947	77.2	77.4	79.4	82.2	-	-	-	-	-	-	-	-	-
1948	-	-	-	78.3	81.7	83.6	82.8	82.6	83.0	81.8	80.1	77.8	-
1949	-	-	-	-	-	-	-	-	-	-	-	-	-
1950	-	-	-	-	-	-	-	-	-	-	-	-	-
1951	76.5	74.1	74.7	79.8	81.0	80.4	79.6	79.3	78.8	79.0	77.6	77.2	78.2
1952	74.5	75.8	77.3	78.3	79.7	79.8	77.9	80.3	76.9	78.8	77.6	75.4	77.7
1955	71.1	-	-	-	80.1	81.1	81.4	82.5	80.3	78.1	79.2	78.3	-
1956	76.9	77.0	77.8	78.4	79.7	81.0	80.1	-	-	-	79.2	77.5	-
1957	77.4	77.4	77.2	78.8	79.5	81.2	82.6	82.5	82.7	81.4	80.0	77.2	79.9
1958	76.2	77.4	79.9	80.4	80.2	81.4	81.0	82.5	82.6	79.6	78.0	78.9	79.9
1959	77.4	78.0	77.8	79.3	78.8	81.8	83.9	83.0	83.3	80.7	79.2	78.3	80.1
1960	77.9	79.0	79.5	80.4	80.7	82.1	82.1	83.8	82.0	81.7	80.2	77.6	80.6

(Monthly temperature data continued...)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE
1961	78.2	78.3	78.8	79.2	81.1	82.0	82.0	82.1	82.3	80.6	78.2	77.4	80.0
1962	-	76.6	77.6	79.5	80.2	81.2	83.4	82.6	82.1	81.9	80.9	80.0	-
1963	77.4	78.2	79.0	79.4	-	82.7	82.0	82.1	82.0	82.9	80.5	81.0	-
1964	78.5	79.1	79.5	80.1	81.6	82.3	82.1	83.3	82.5	81.5	80.8	77.4	80.7
1965	77.2	77.8	79.1	78.0	79.4	80.2	82.1	81.8	82.0	81.7	80.4	78.2	79.8
1966	77.3	77.9	77.9	78.6	80.5	82.0	82.5	82.2	81.9	81.4	80.4	78.5	80.1
1967	77.4	77.4	76.3	77.3	79.7	81.7	82.5	82.1	82.5	81.8	80.5	78.8	79.8
1968	76.6	75.9	76.4	76.9	80.5	81.9	82.3	82.3	82.3	82.3	80.5	78.7	79.7
1969	77.0	76.6	78.6	80.9	81.0	82.7	83.1	82.6	82.0	81.8	80.4	78.0	80.4
1970	77.6	76.9	77.8	79.7	79.4	81.3	81.8	81.8	81.3	80.8	79.2	77.4	79.6
1971	76.2	76.3	77.1	77.8	79.0	81.0	82.0	81.8	81.7	81.0	78.7	77.3	79.2
1972	76.0	76.2	75.7	77.9	79.9	82.0	82.5	81.6	81.5	-	79.8	77.6	-
1973	78.0	76.3	78.1	79.6	80.8	81.7	82.0	82.2	81.9	81.0	78.9	76.6	79.8
1974	76.5	76.0	76.7	77.6	78.8	81.7	82.2	82.2	80.6	80.0	77.9	76.6	78.9
1975	75.6	75.7	-	77.5	78.9	81.2	82.0	-	81.2	80.7	78.6	76.3	-
1976	74.2	75.4	75.6	76.4	79.1	80.5	81.8	81.2	81.8	81.3	80.2	77.0	78.7
1977	76.2	76.3	77.5	77.8	80.6	81.6	81.4	82.2	80.5	80.2	78.9	77.3	79.2
1978	75.5	76.4	77.0	77.6	80.3	81.4	82.2	82.1	81.7	80.6	79.7	77.6	79.3
1979	76.6	77.3	76.0	78.2	-	-	-	-	81.3	81.8	80.3	78.4	-
1980	77.8	77.2	77.4	78.8	81.5	83.3	82.4	83.2	82.7	82.2	80.5	79.4	80.5
1981	78.6	78.0	78.7	79.3	80.9	81.5	83.2	83.0	82.7	81.8	81.1	79.2	80.7

REMARKS : Records provided by the National Weather Service, San Juan, Puerto Rico.

GIFT HILL, ST. JOHN[a]

MONTHLY PRECIPITATION AND ANNUAL TOTALS : 1968-1969

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTALS
1968	-	-	-	-	-	-	-	3.88	2.04	1.62	4.89	2.84	-
1969	2.90	7.33	0.72	1.08	13.10	7.42	2.10	4.57	7.32	1.64	6.66	3.63	58.47
1970	1.95	1.51	1.12	1.35	5.24	6.61	6.34	5.00	7.16	13.83	6.75	7.08	63.94
1971	3.36	2.16	1.97	3.60	4.80	1.14	1.70	6.38	3.21	5.25	1.97	2.71	38.25
1972	1.76	1.83	4.55	2.74	1.27	2.18	1.10	2.12	4.03	3.52	2.07	3.80	30.97
1973	1.26	2.07	1.24	1.50	1.70	1.89	3.24	2.83	5.54	4.44	1.36	1.87	28.94
1974	2.29	0.67	0.71	1.82	0.72	0.86	3.39	4.67	8.01	9.60	8.44	1.98	43.16
1975	1.15	0.98	5.39	2.42	1.73	1.21	2.85	2.22	7.51	3.37	4.65	4.73	38.21
1976	1.58	1.95	1.34	2.09	1.43	2.34	1.76	3.53	5.87	3.20	1.42	5.96	32.47
1977	1.67	1.07	2.30	2.72	2.02	1.36	2.74	1.79	6.72	9.13	12.01	4.00	47.53
1978	2.84	2.59	3.55	5.31	2.84	3.99	4.54	3.77	5.71	7.83	4.22	2.16	49.35
1979	0.97	1.41	2.83	3.23	12.18	4.25	3.61	4.57	13.17	3.10	12.92	2.99	65.23
1980	0.82	1.82	1.67	3.92	4.28	1.02	3.11	3.24	4.43	6.21	2.76	2.64	35.92
1981	3.91	1.41	0.28	4.87	12.95	2.29	4.10	2.09	7.60	6.10	3.30	17.80	66.70

REMARKS :[a] Records collected by Mrs. Fiona St. Clair and provided to us by Mr. Robert Eaton of Chocolate Hole, St. John. The rain gauge used for these observations is not a National Weather service standard instrument.

RANGER STATION, LAMESHUR BAY, ST. JOHN

MONTHLY PRECIPITATION DATA : 1958 - 1982

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTALS
1958	-	-	-	-	-	-	7.69	3.03	5.67	6.17	3.99	1.23	-
1959	4.69	1.57	0.38	3.73	4.59	0.79	2.40	2.05	1.90	3.37	6.34	2.32	34.13
1960	1.53	0.79	2.32	5.81	14.67	6.70	10.24	3.03	7.46	1.29	4.21	10.38	68.48
1961	3.42	3.19	2.09	-	-	-	-	-	-	7.71	9.32	5.86	-
1962	4.58	2.14	1.75	1.03	5.99	7.26	3.16	3.62	9.11	4.25	0.70	1.72	45.36
1963	4.06	1.83	3.85	4.84	3.65	1.17	3.67	9.46	5.67	1.64	2.19	1.03	43.11
1964	4.59	2.32	2.20	3.41	-	-	-	-	-	-	2.12	1.87	-
1965	0.96	0.70	0.41	1.52	9.33	3.22	3.00	3.60	3.81	8.81	6.17	7.38	48.91
1966	3.32	1.33	2.70	3.55	2.86	-	-	4.50	-	-	-	-	-
1967	-	-	-	-	-	-	-	-	-	-	-	1.55	-
1968	2.05	2.58	1.39	1.38	2.52	1.31	3.16	4.43	3.05	2.25	6.47	4.62	35.21
1969	3.69	1.22	5.28	1.49	10.93	5.44	2.54	4.56	7.12	3.25	10.88	2.09	58.49
1970	1.99	1.02	0.94	1.13	6.17	7.23	4.72	3.85	7.12	10.00	6.02	8.02	58.21
1971	4.15	2.19	1.55	3.07	4.38	1.26	1.82	6.83	2.14	5.98	3.32	4.24	40.93
1972	3.36	3.48	4.31	3.08	1.74	2.11	1.33	3.17	4.63	3.14	2.90	5.76	39.01
1973	1.60	1.53	1.46	0.74	-	2.61	3.96	2.46	6.46	4.00	1.84	1.93	-
1974	3.62	0.64	1.32	1.64	1.15	1.43	2.49	6.47	7.08	13.06	13.19	-	-
1975	2.32	1.06	3.05	2.08	1.50	1.44	1.99	2.40	6.80	4.14	5.99	5.75	38.52
1976	1.44	1.42	2.65	0.91	2.20	1.62	1.65	-	-	-	1.93	6.07	-
1977	1.60	1.40	1.77	3.24	2.15	1.37	2.48	3.04	7.57	9.98	13.78	4.93	53.31
1978	2.09	2.35	3.85	6.23	2.82	3.00	3.98	6.05	4.52	7.75	4.74	2.64	50.02
1979	1.29	1.58	2.78	1.34	12.68	4.19	3.79	7.11	17.06	1.25	13.66	1.98	68.71
1980	0.70	1.54	1.25	2.65	3.47	1.18	2.63	3.58	4.10	7.17	3.72	3.36	35.35

(Monthly precipitation data continued...)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTALS
1981	2.84	2.21	0.33	6.84	12.33	4.17	-	-	5.62	6.85	5.61	11.54	-
1982	1.43	5.18	1.10	1.30	9.89	1.55	2.40	2.04	4.97	2.99	5.98	2.87	41.70

REMARKS : Records provided by the National Weather Service, San Juan, Puerto Rico.

VIERS STATION,[A] LAMESHUR, ST. JOHN

DAILY PRECIPITATION : 1977P-1982

REMARKS : The records for this station can be found in Technical Reports No. 5 and 7 respectively published by the Caribbean Research Institute.

LAMESHUR BAY, ST. JOHN

MONTHLY TEMPERATURE DATA : 1959 -1969

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL AVERAGE
1959	77.6	77.7	79.3	81.2	79.6	85.1	84.4	85.2	86.1	84.4	82.4	82.3	82.1
1960	78.3	78.1	78.7	79.5	80.0	81.1	80.9	81.9	80.4	82.2	80.5	76.8	79.8
1961	76.7	76.6	76.4	-	-	-	-	-	-	79.9	76.5	76.9	-
1962	76.3	74.9	75.2	77.1	78.0	78.4	80.0	80.2	79.2	78.1	77.5	76.0	77.6
1963	74.5	75.1	75.0	74.9	75.9	78.6	-	77.9	77.6	-	76.2	80.7	-
1964	77.2	-	-	-	-	-	-	-	-	-	-	-	-
1965	-	77.0	78.2	76.5	78.5	79.8	80.8	81.2	-	-	78.1	75.7	-
1966	74.4	74.8	75.3	76.8	78.3	-	-	80.9	-	-	-	-	-
1967	-	-	-	-	-	-	-	-	-	-	-	77.3	-
1968	75.2	74.1	75.6	76.6	78.7	81.5	-	81.7	81.7	81.8	79.9	77.2	-
1969	75.8	76.3	77.8	80.1	80.8	82.8	82.6	82.4	81.8	82.0	80.1	78.1	80.1

REMARKS : Records provided by Mr. Robert Eaton of Chocolate Hole, St. John. The raingage used is approximately three inches in diameter. As such it is not a National Weather Service standard gage.

TRUNK BAY, ST. JOHN

MONTHLY PRECIPITATION DATA : 1957-1966

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTALS
1957	1.76	1.68	1.01	1.13	0.74	3.04	1.74	3.07	2.95	6.30	2.02	8.68	34.12
1958	3.24	0.98	0.33	4.22	6.76	4.79	8.42	2.72	5.22	6.57	3.41	1.75	48.41
1959	2.70	1.48	1.23	-	-	-	-	-	-	-	-	-	-
1960	2.40	1.73	2.32	4.91	18.43	5.14	6.35	4.25	11.29	1.05	2.77	13.10	73.74
1961	3.87	3.75	1.41	1.93	2.58	2.31	3.05	7.88	-	8.77	12.95	6.96	-
1962	6.71	1.44	1.30	2.72	5.96	6.88	3.78	4.94	8.22	5.26	1.18	1.77	50.16
1963	1.94	2.83	3.40	7.42	3.34	1.66	2.90	10.72	5.11	1.87	3.18	2.10	46.47
1964	-	1.94	-	-	-	-	5.36	4.51	4.63	2.38	1.44	1.75	-
1965	1.30	0.38	-	-	-	2.53	4.30	-	-	-	-	5.84	-
1966	3.08	-	-	3.81	4.36	1.57	-	3.93	-	-	-	-	-

REMARKS : Records provided by the National Weather Service, San Juan, Puerto Rico.

SUMMARY OF AVAILABLE WATER RESOURCES DATA FOR ST. JOHN

B : SURFACE WATER

USGS STATION NO.	LOCATION	WATERSHED AREA (mi^2)	LATITUDE	LONGITUDE	ALTITUDE (feet)	DISCHARGE RECORDS RECORD YEARS	DISCHARGE RECORDS YEARS TOTAL	WATER QUALITY RECORDS RECORD YEARS	WATER QUALITY RECORDS YEARS TOTAL
2950	Guinea Gut at Bethany[A]	0.37	$18^{o}19'55"$	$64^{o}46'50"$	230	1963-1967P 1982P	16	1962-1967	6
3910	Cinnamon Bay Spring	0.12	$18^{o}21'11"$	$64^{o}45'12"$		1962P-1966P	5	1962-1966	5

REMARKS : Records collected by USGS, Caribbean District, San Juan, Puerto Rico.
1962 - 1966 data is published in Reference (6).
The USGS has recently (1982) reactivated the gaging station at Guinea Gut.

SUMMARY OF AVAILABLE HYDROLOGICAL DATA FOR ST. JOHN

C : GROUNDWATER

STATION/ WELL NO.	AQUIFER	LATTITUDE	LONGITUDE	ALTITUDE (FEET)	TOTAL DEPTH	WATER LEVEL RECORDS		PUMPING RECORDS		WATER QUALITY RECORDS	
						RECORD YEARS	TOTAL YEARS	Y/N	YEARS	Y/N	YEARS
20-64.46-3-15	Volcanic Rocks	18°20'53"	64°46'36"	40	36	1964-69	6	N		Y	1964-65
21-64.46-1-79	Alluvium Rocks	18°21'15"	64°46'05"	6	7	1963-69	7	N		Y	1965-69
21-64.46-5-90	Volcanic Rocks	18°21'08"	64°46'24"	50	803	1966-69	4	N		Y	1966-69
21-64.46-4-90	Volcanic Rocks	18°21'09"	64°46'03"	60	60	1964-69	6	Y	1965-66	Y	1964-69
21-64.45-11-77	Alluvium Rocks	18°21'17"	64°45'23"	10	14	1964-69	6	N		Y	1963-69
21-64.45-1-67	Alluvium Rocks	18°21'18"	64°45'20"	7	9	1963-69	7	N		N	
21-64.45-10-78	Alluvium Rocks	18°21'17"	64°45'17"	27	27	1964-67	4	N		N	
21-64.45-14-78	Volcanic Rocks	18°21'14"	64°45'17"	50	60	1964-69	6	Y	1966,67,69	Y	1964-69
21-64.45-12-72	Volcanic Rocks	18°21'16"	64°45'10"	60	70	1964-69	6	N		Y	1964-69
21-64.44-7-8	Volcanic Rocks	18°21'57"	64°44'16"	25	20	1965-67	3	N		Y	1964
21-64.43-6-07	Alluvium Rocks	18°21'59"	64°43'23"	55	80	1964-67	6	N		Y	1963
20-64.42-1-01	Alluvium Rocks	18°20'55"	64°42'59"	7	11	1963-69	7	N		Y	1963
19-64.42-6-17	Volcanic Rocks	18°19'51"	64°42'21"	50	62	1964-67	4	N		Y	1964-69

(...continued)

STATION/ WELL NO.	AQUIFER	LATTITUDE	LONGITUDE	ALITTUDE (FEET)	TOTAL DEPTH	WATER LEVEL RECORDS		PUMPING RECORDS		WATER QUALITY RECORDS	
						RECORD YEARS	TOTAL YEARS	Y/N	YEARS	Y/N	YEARS
19-64.43-3-47	Volcanic Rocks	18°19'31"	64°43'23"	40	67	1964-69	6	N		Y	1964-69
20-64.45-2-21	Alluvium Rocks	18°20'43"	64°45'55"	620	23	1963-67	7	N		Y	1963
20-64.46-4-49	Volcanic Rocks	18°20'33"	64°46'11"	580	60	1964-69	6	N		Y	1964
20-64.47-2-49	Alluvium Rocks	18°19'34"	64°47'10"	12	13	1963-67	5	N		Y	1963
20-64.47-5-99	Volcanic Rocks	18°20'04"	64°47'07"	260	192	1964-69	6	N		Y	1964
20-64.47-6-86	Volcanic Rocks	18°20'10"	64°47'26"	60	99	1964-67	6	N		Y	1964
20-64.47-6-86	Volcanic Rocks	18°20'09"	64°47'28"	40	54	1964-69	6	N		Y	1964-67
DPW #1[A]		18°21'	64°46'	650		1982P		N		N	
DPW #2[A]		18°20'42"	64°45'45"	640		1982P		N		N	
DPW #3[A]		18°20'42"	64°45'45"	640		1982P		N		N	
DPW #4[A]		18°20'42"	64°45'45"	640		1982P		N		N	
DPW #5[A]		18°20'42"	64°45'45"	640		1982P		N		N	
DPW #6[A]		18°20'42"	64°45'45"	640		1982P		N		N	

(continued...)

STATION/ WELL NO.	AQUIFER	LATITUDE	LONGITUDE	ALTITUDE (FEET)	TOTAL DEPTH	WATER LEVEL RECORDS		PUMPING RECORDS		WATER QUALITY RECORDS	
						RECORD YEARS	TOTAL YEARS	Y/N	YEARS	Y/N	YEARS
NPS #2[A]		18°20'	64°47'	80		1982P		N		N	
NPS #6[A]		18°21'16"	64°45'10"	60		1982P		N		N	
USGS #15[A]		18°19'	64°42'	40		1982P		N		N	

REMARKS : Well No. 21-64.46-5-90 is a horizontal well drilled into the fractured volcanic rocks outcropping in the area.

All data is published in Reference (6).

All groundwater records are being collected by the USGS office in San Juan, Puerto Rico. The office initiated an active monitoring program of nine wells on St. John in 1982.

PART TWO: WATER RESOURCES DATA OF ST. THOMAS

St. Thomas with an area of 32 square miles is the second largest of the three major islands of the U.S. Virgin Islands. The island is approximately 19 miles long and 2 to 3 miles wide. Flat land is generally rare on St. Thomas for most of the land surface is sloping and extends seaward from a central ridge, 800 to 1,200 feet high that runs almost the entire length of the island. The flat areas are found for the most part in Charlotte Amalie, the seat of government of the Virgin Islands, and a few alluvial-filled embayments. These embayments are seldom less than a few acres with the thickness of the alluvial deposits at a maximum being generally less than 50 feet.

In addition to rain water harvesting, groundwater is the only other significant "natural" water source on St. Thomas. Surface water supplies are negligible. As a result of the topography none of the streams in St. Thomas are truly perennial. Bonne Resolution Gut and Turpentine Run in the north and eastern parts of the island, although often described as perenial, have been known to go dry during extreme drought periods. It has been estimated that in the perennial reaches of these streams about one-half to three-fourths of the flow is storm runoff and the remainder is base flow contributed by groundwater.(9)

Groundwater, though not abundant, is mined throughout the island in varying amounts. In St. Thomas groundwater movement is limited mostly to openings along joints and fault zones. The major portion of the island is underlain principally by fractured volcanic tuff and breccia of what is called the Louise-

nhoj Formation. Soil to a depth of 1 to 2 feet have developed in this formation. While the underlying bedrock, especially in the flat areas, has been tapped and can be a reliable source of water, extreme care must be exercised due to ever present danger of salt water intrusion if over pumping occurs.

Sources of Data

A : Meteorological. The National Weather Service is the repository of almost all available for St. Thomas. Of the several private collectors of rainfall data on St. Thomas, Mr. Patrick M. Rice of Estate Solberg has perhaps the longest record. These records extend from October 1970 to December 1982 and are reproduced in this compendium. The rainfall records collected at the College of the Virgin Islands from 1979 to the present in the form of charts have yet to be translated and have not been included here. The rainfall record from the non-recording gage during 1982 was far less than one year and is also not included.

B : Surface Water. The Caribbean District of the United States Geological Survey (USGS) is the only agency collecting surface water records on St. Thomas. These are summarized in the accompanying tables.

C : Groundwater. The USGS likewise is the sole source of groundwater level records on St. Thomas. A summary of available data is given in the tables. Addition information on wells in St. Thomas can be found in References 6 and 7.

SUMMARY OF AVAILABLE WATER RESOURCES DATA FOR ST. THOMAS

A : METEOROLOGICAL

STATION	WATERSHED AREA(mi^2)	LATITUDE	LONGITUDE	ALTITUDE (feet)	TEMPERATURE		PRECIPITATION	
					RECORD YEARS	YEARS TOTAL	RECORD YEARS	YEARS TOTAL
Anna's Retreat							1921-1937	17
Bonne Esperance		18°21'	64°59'	680			1922P 1923	< 2
Canaan							1921-1923 1924P 1925-1926 1927P	7
Charlotte Amalie		18°21'	64°56'	15	1922 1924-1952 1955-1970	26	1921-1952 1955-1982	58
Donce		18°20'	64°54'	310			1956P 1958P 1959-1960	4

(continued...)

STATION	WATERSHED AREA(mi^2)	LATITUDE	LONGITUDE	ALTITUDE (feet)	TEMPERATURE		PRECIPITATION	
					RECORD YEARS	YEARS TOTAL	RECORD YEARS	YEARS TOTAL
Dorothea		18°22'	64°58'	800			1939P 1940 1941P 1942 1943P 1944-1946 1947P 1948-1952 1956-1967 1968P 1969-1972 1973P 1974 1977P 1980-1982	36
Fort Mylner		18°20'	64°53'	200			1958-1982	25
Frenchman's Bay		18°19'	64°55'	120			1965-1977 1978P	4

(continued...)

STATION	WATERSHED AREA(mi^2)	LATITUDE	LONGITUDE	ALTITUDE (feet)	TEMPERATURE		PRECIPITATION	
					RECORD YEARS	YEARS TOTAL	RECORD YEARS	YEARS TOTAL
Red Hook		18°19'	64°51'	12			1963P 1964-1969 1980P 1981 1982P	10
Solberg							1970P 1971-1982	13
Truman Field		18°20'	64°58'	21	1948-1952	20	1948P 1949-1952 1955 1963-1969 1970-1972P 1973-1982	32
Water Island		18°19'	64°57'				1958P 1959-1982	25

(continued...)

STATION	WATERSHED AREA(mi^2)	LATITUDE	LONGITUDE	ALTITUDE (feet)	TEMPERATURE		PRECIPITATION	
					RECORD YEARS	YEARS TOTAL	RECORD YEARS	YEARS TOTAL
Wintberg		18°21'	64°55'		1939-1947 1958-1968	19	1939-1941 1942P 1943 1944P 1945 1946-1947P 1948-1951 1958 1959P 1960-1961 1963-1969 1970-1971P 1973-1974P 1975-1979 1980P 1981-1982	36

Remarks : All records in the files of NWS, San Juan, Puerto Rico, except Solberg, which was collected and made available courtesy of Mr. Patrick M. Rice.
Water Island records are those collected on Water Island which is an island off of the southern coast of St. Thomas.

SOLBERG, ST. THOMAS[a]

MONTHLY PRECIPITATION DATA : 1970-1983

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTALS
1970	-	-	-	-	-	-	-	-	-	17.46	7.34	4.30	-
1971	3.44	1.33	0.80	1.99	6.49	2.68	1.69	3.94	2.20	3.43	4.84	3.85	36.68
1972	2.79	2.46	5.03	2.01	1.11	1.02	1.82	0.94	3.12	4.86	2.29	6.11	33.56
1973	1.56	1.51	1.90	1.07	0.63	4.19	2.39	3.81	7.52	4.07	0.75	3.77	33.18
1974	2.59	0.99	2.05	2.14	1.86	1.27	3.23	6.65	6.25	13.64	17.82	2.06	60.55
1975	2.29	0.50	2.89	1.73	1.41	0.94	3.91	2.90	9.49	5.53	6.95	5.05	43.57
1976	1.32	1.86	0.98	1.92	1.25	2.56	0.76	3.48	4.10	3.70	1.72	1.58	25.32
1977	1.35	1.44	1.11	2.17	1.04	0.37	1.36	2.05	6.47	9.04	10.84	1.45	38.69
1978	1.47	1.84	3.34	6.55	2.18	5.60	2.86	3.84	5.29	10.79	3.57	1.71	49.04
1979	1.62	2.12	4.91	2.20	8.07	2.70	3.57	6.60	12.71	3.92	10.63	2.22	61.27
1980	0.51	3.18	2.08	2.53	6.63	1.10	2.23	2.87	5.89	6.12	1.82	4.98	39.44
1981	3.29	1.71	2.81	4.33	7.61	4.91	4.68	3.92	3.96	8.00	2.99	6.32	54.53
1982	3.07	3.12	1.49	1.40	6.56	0.72	3.80	2.68	3.68	3.66	5.17	6.86	42.21

REMARKS : - Denotes missing data.
[a] Records provided by Mr. Patrick M. Rice.

SUMMARY OF AVAILABLE WATER RESOURCES DATA FOR ST. THOMAS

B : SURFACE WATER

USGS STATION NO.	LOCATION	WATERSHED AREA (mi^2)	LATITUDE	LONGITUDE	ALTITUDE (feet)	DISCHARGE RECORDS RECORD YEARS	DISCHARGE RECORDS YEARS TOTAL	WATER QUALITY RECORD YEARS	WATER QUALITY YEARS TOTAL
2520	Bonne Resolution	0.49	18°21'57"	64°57'34"	280	1962-1967	6	1962-1967	6
2740	Mt. Zion	2.32	18°19'56"	64°53'20"	90	1963-1969	7	1962-1968	7
2760	Mariendal	2.97	18°19'48"	64°52'58"	40	1963-1969P	7	1962-1966	5
2720	Hoffman	0.13	18°20'18"	64°53'54"	200	1962P-1969	8	1962-1968	7
2580	Loveland Gut	0.55	18°21'39"	64°54'28"		1963	1		

REMARK : Records collected by the U.S.G.S., Caribbean District, San Juan, Puerto Rico.

SUMMARY OF AVAILABLE WATER RESOURCES DATA FOR ST. THOMAS

C : GROUNDWATER

STATION/ WELL NO.	AQUIFER	LATITUDE	LONGITUDE	ALTITUDE (FEET)	TOTAL DEPTH	WATER LEVEL RECORDS		PUMPING RECORDS		WATER QUALITY RECORDS	
						RECORD YEARS	TOTAL YEARS	Y/N	YEARS	Y/N	YEARS
21-64.58-1-43	Volcanic	18°21'29"	64°58'48"	920	300	1965-69	6	N		N	
21-64.57-3-33	Volcanic	18°21'41"	64°57'45"	720	142	1963-69	7	Y	1964	Y	1963-1968
22-64.57-2-74	Alluvium	18°22'13"	64°57'40"	10	10	1963-65	3	N		Y	1963
22-64.57-1-74	Beach sand	18°22'15"	64°57'40"	8	9	1963-65	3	N		Y	1962-65
21-64.54-4-72	Allu/Volc.	18°21'16"	64°54'48"	40	9	1962-64	3	N		Y	1963
20-64.54-6-08	Volcanic	18°20'59"	64°54'12"	680	250	1963-69	7	N		Y	1963
21-64.54-5-35	Limestone	18°21'38"	64°54'31"	90	80	1963-69	7	N		Y	1963,1969
21-64.54-2-35	Limestone	18°21'40"	64°54'32"	80	21	1962-68	7	N		Y	1963
20-64.52-4-24	Limestone	18°20'48"	64°52'40"	120	120	1963-69	7	N		Y	1963-69
20-64.5-1-07	Alluvium	18°20'56"	64°52'19"	15	14	1962-68	7	N		Y	1963
20-64.51-1-66	Alluvium	18°20'18"	64°51'28"	8	12	1962-64	2	Y	1963	Y	1963
20-64.51-13-99	Volcanic	18°20'01"	64°51'09"	40	56	1965-69	5	N		Y	1965
19-64.51-1-41	Alluvium	18°19'31"	64°51'55"	40	46	1962-68	7	N		Y	1963

(...continued)

STATION/ WELL NO.	AQUIFER	LATITUDE	LONGITUDE	ALTITUDE (FEET)	TOTAL DEPTH	WATER LEVEL RECORDS		PUMPING RECORDS		WATER QUALITY RECORDS	
						RECORD YEARS	TOTAL YEARS	Y/N	YEARS	Y/N	YEARS
20-64.53-22-33	Volcanic	18°20'40"	64°53'43"	175	200	1965-68	4	N		Y	1965
20-64.54-1-76	Alluvium	18°20'17"	64°54'24"	270	32	1962-64	3	N		Y	1963
20-64.53-3-71	Alluvium	18°20'17"	64°53'58"	180	9	1962-64	3	Y		Y	1962-63
20-64.53-5-64	Alluvium	18°20'22"	64°53'36"	150	12	1967-69	3	N		Y	1966-69
20-64.53-20-56	Volcanic	18°20'24"	64°53'27"	196	210	1965-69	5	Y	1962-1964	Y	1965-68
20-64.53-14-48	Volcanic	18°20'33"	64°53'15"	180	73	1964-69	6	N		Y	1964,1968
20-64.53-15-58	Volcanic	18°20'29"	64°53'16"	200	100	1964-68	5	Y	1969	Y	1963-68
20-64.53-19-60	Volcanic	18°20'25"	64°53'04"	240	222	1965-67	3	N		Y	1965
20-64.53-7-67	Alluvium	18°20'23"	64°53'19"	150	31	1962-63	2	N		N	
20-64.53-9b-67	Volcanic	18°20'20"	64°53'19"	137	107	1967-69	3	Y	1962	Y	1967-68
20-64.53-21-65	Volcanic	18°20'20"	64°53'32"	135	250	1965-69	5	N		Y	1965-69
20-64.53-1-86	Alluvium	18°20'11"	64°53'28"	120	18	1958-69	12	Y	1964,1966	Y	1962-1967
19-64.52-11-43	Alluvium	18°19'35"	64°52'44"	30	19	1958,1960	2	N		N	
19-64.53-13-43	Alluvium	18°19'35"	64°52'44"	30	19	1962-1964	3	Y	1963	Y	1962-63

(...continued)

STATION/ WELL NO.	AQUIFER	LATITUDE	LONGITUDE	ALTITUDE (FEET)	TOTAL DEPTH	WATER LEVEL RECORDS		PUMPING RECORDS		WATER QUALITY RECORDS	
						RECORD YEARS	TOTAL YEARS	Y/N	YEARS	Y/N	YEARS
19-64.52-18-43	Alluvium	18°19'35"	64°52'44"	30	60	1964-68	5	N		Y	1964,1969
19-64.52-14-64	Alluvium	18°19'21"	64°52'38"	20	15	1958 1960-69	11	N		Y	1963
19-64.52-15-63	Alluvium	18°19'19"	64°52'43"	15	14	1958 1960-63	5	Y	1962-63	Y	1962-63
18-64.53-4-02	Alluvium	18°18'59"	64°53'51"	15	18	1963-64	2	N		Y	1963
19-64.54-1-48	Alluvium	18°19'31"	64°54'16"	280	13.6	1962-64	3	N		Y	1963
19-64.54-2-54	Clay	18°19'29"	64°54'43"	190	10	1962-69	8	N		Y	1963
20-64.54-5-72	Volcanic	18°20'17"	64°54'43"	48	90	1963-67	5	N		Y	1963
20-64.54-9-42	Volcanic	18°20'31"	64°54'49"	83	144	1965-68	4	N		Y	1964
20-64.54-10-42	Volcanic	18°20'34"	64°54'51"	88	130	1965-68	4	N		Y	1964,1967
20-64.54-8-32	Volcanic	18°20'37"	64°54'52"	90	110	1965-68	4	N		Y	1964
20-64.55-39-29	Volcanic	18°20'43"	64°55'06"	60	70	1963-69	7	N		Y	1963
20-64.55-42-50	Volcanic	18°20'34"	64°55'02"	49	88	1965-69	5	N		Y	1964,1967
20-64.54-11-41	Volcanic	18°20'31"	64°54'56"	55	118	1965-69	5	N		Y	1964

(...continued)

STATION/ WELL NO.	AQUIFER	LATITUDE	LONGITUDE	ALTITUDE (FEET)	TOTAL DEPTH	WATER LEVEL RECORDS		PUMPING RECORDS		WATER QUALITY RECORDS	
						RECORD YEARS	TOTAL YEARS	Y/N	YEARS	Y/N	YEARS
20-64.55-38-02	Volcanic	18°20'59"	64°55'51"	320	122	1963-64	2	N		Y	1963
20-64.58-5-20	Volcanic	18°20'49"	64°58'05"	80	80	1963-69	7	N		Y	1963
20-64.58-4-49	Alluvium	18°20'32"	64°58'07"	15	15	1962-68	7	N		Y	1962-63 1966
21-65.00-1-71	Volcanic	18°21'13"	65°00'58"	370	220	1963-69	7	N		N	

REMARKS : All data published in Reference (6).

PART THREE: WATER RESOURCES DATA OF ST. CROIX

With an area of 89 square miles, St. Croix is the largest island of the U.S. Virgin islands. The topography on St. Croix is in general more subdued than the topography of St. Thomas and St. John. The highest point on the island is the peak at Blue Mountain, an elevation of 1,096 feet above sea level.

The northside range on St. Croix is the origin of the four most important streams on the island. These streams have intermittent reaches but are significant because all other streams on the island are ephemeral. Storm runoff throughout the island is surprisingly low and is attributed to the capability of the soil zone to accept large volumes of water. The water retained in the soil zone is depleted primarily by evaporation and transpiration by plants so that the water available for recharge is very small.

There are three major groundwater provinces in St. Croix. These correspond generally to the geological framework of the island. In the northwestern and eastern portions of the island is found the Mount Eagle Group of epiclastic and pyroclastic volcanic and associated intrusive rocks. The principal water-bearing zone in these rocks can be visualized as a mantle 200 to 300 feet thick following the general topographic relief. These rocks have low permeability, therefore the water table has a high relief and stands hundreds of feet above sea level in the mountains and slope steeply towards the valley and coastal

lowlands. Groundwater funnels through the valley to discharge to the sea, other water-bearing rocks or to streams.

In the central and southwestern portions of the island, groundwater is generally found in the Kingshill Marl which is composed of calcareous rocks - limestone, sandstone and marl. This marl is soft and plastic with tight joints. There are infrequent permeable zones which are generally localized in beds of limestone, sand or gravel. Where limestone beds are present permeability is greatest and well yields are relatively high.

Sources of Data

A : Meteorological. The National Weather Service is the repository of almost all available meteorological data for St. Croix. There are several individuals who maintain rainfall records privatey. Mr. John Yntema is one of these. He has kept rainfall records at his home at Sprat Hole, St. Croix since 1961. Mr. Yntema's records are published here.

B : Surface Water. The Caribbean District of the United States Geological Survey (USGS) is the only agency collecting surface water records on St. Croix. These are summarized in the accompanying tables.

C : Groundwater. The USGS is the only agency collecting groundwater level data in the Virgin Islands. There is no local agency of the Virgin Islands government engaged in collecting or analyzing groundwater level records in the islands, even though the Virgin Islands Code[8] makes adequate provisions for access to wells for the purpose of measuring water level records.

SUMMARY OF AVAILABLE HYDROLOGICAL DATA FOR ST. CROIX

A : METEOROLOGICAL

STATION	WATERSHED AREA(mi^2)	LATTITUDE	LONGITUDE	ALTITUDE (feet)	TEMPERATURE		PRECIPITATION	
					RECORD YEARS	YEARS TOTAL	RECORD YEARS	YEARS TOTAL
Adventure	10.46	17°43'	64°48'	140			1944-1946 1947-1948P 1956-1965 1966P	16
Alexander Hamilton Airport	3.92	17°42'	64°48'	18	1948 1951P 1952 1955P 1956-1961 1962P 1963-1968 1969P 1970-1973 1974-1975P 1977P 1978-1980 1981P	29	1947P 1948 1952p 1949-1952 1955-1961 1962P 1963-1982	34
Anguilla		17°42'	64°47'	75			1938-1939 1940	3

(continued...)

STATION	WATERSHED AREA(mi^2)	LATITUDE	LONGITUDE	ALTITUDE (feet)	TEMPERATURE		PRECIPITATION	
					RECORD YEARS	YEARS TOTAL	RECORD YEARS	YEARS TOTAL
Annaly	4.62	17°45'	64°51'	70			1927-1927 1928P 1929-1930 1932-1933 1934P 1938-1939 1940 1957P 1958-1982	41
Anna's Hope	2.08	17°44'	66°44'	180	1951-1952P 1951-1952P 1955-1956P 1957 1958P 1959-1965 1966P 1967-1968 1969-1970	17	1921-1938 1940P 1941 1942P 1943 1944-1945P 1946-1947 1948-1949p 1950 1952 1955-1982	58

(continued...)

STATION	WATERSHED AREA(mi^2)	LATITUDE	LONGITUDE	ALTITUDE (feet)	TEMPERATURE		PRECIPITATION	
					RECORD YEARS	YEARS TOTAL	RECORD YEARS	YEARS TOTAL
Bethlehem Old Works	10.46	17°44'	64°48'	100			1938-1943 1944 1945-1946 1947P 1956-1967	22
Bethlehem Upper New Works		17°43'	64°48'	110	1971-1973 1974P 1975 1976P 1977-1981	11	1939 1940P 1941 1942P 1943-1946 1947-1948P 1956P 1957-1982	37
Bonne Esperance	4.52						1922P 1923-1928 1929P 1930-1935 1936-1937P	16

(continued...)

STATION	WATERSHED AREA(mi^2)	LATITUDE	LONGITUDE	ALTITUDE (feet)	TEMPERATURE		PRECIPITATION	
					RECORD YEARS	YEARS TOTAL	RECORD YEARS	YEARS TOTAL
Colquhoun	10.46	17°44'	64°48'				1938-1942 1943P	6
Cane Bay	4.62						1938-1942 1943P	6
Castle Coakley	2.52	17°44'	64°45'	150			1935P 1940-1944 1945P	7
Castle Nugent	1.73						1956-1978 1979P 1980P	25
Christiansted		17°45'	64°42'				1922-1933 1934P	3

(continued...)

STATION	WATERSHED AREA(mi^2)	LATITUDE	LONGITUDE	ALTITUDE (feet)	TEMPERATURE		PRECIPITATION	
					RECORD YEARS	YEARS TOTAL	RECORD YEARS	YEARS TOTAL
Christiansted Fort		17°45'	64°42'	40	1922-1933 1935-1942 1943P 1944 1945-1947P 1970 1971P 1972 1973-1974P 1975 1976-1981P	47	1938-1939 1940P 1941 1942P 1943-1945 1946P 1947 1948-1949P 1957-1973 1974P 1975-1982	41
Cotton Grove	.51	17°42'	64°48'			1921	1922-1923P	3
Cotton Valley	1.07	17°45'	64°37'	100			1956 1957-1970 1971P	16
Dolby Hill							1938-1939 1940P 1941-1943 1944P	7

(continued...)

STATION	WATERSHED AREA(mi^2)	LATITUDE	LONGITUDE	ALTITUDE (feet)	TEMPERATURE		PRECIPITATION	
					RECORD YEARS	YEARS TOTAL	RECORD YEARS	YEARS TOTAL
East Hill		17°46'	64°37'	120			1956-1982	27
Estate-Rust-Op-Twist	3.14	17°47'	64°47'	50			1965P 1966-1967 1976P 1977-1979 1980-1981P	9
Estate The Sight		17°45'	64°45'	130			1980	1
Fountain	10.46	17°45'	64°50'	250			1956-1957P 1958-1982	27
Fredensborg							1956-1962 1963P 1964-1965 1966P	32

(continued...)

STATION	WATERSHED AREA(mi^2)	LATITUDE	LONGITUDE	ALTITUDE (feet)	TEMPERATURE		PRECIPITATION	
					RECORD YEARS	YEARS TOTAL	RECORD YEARS	YEARS TOTAL
Frederiksted		17°43'	64°53'	30			1921-1922 1923P 1924-1935 1936P 1937 1938P 1939-1944 1945P 1947P 1957P 1958-1962 1963-1964P 1965-1970 1971P 1972 1974-1967P 1977P 1978-1982	49
Good Hope	3.93	17°41'	64°51'				1970-1974 1975P	6
Granard		17°43'	64°43'	115			1959-1981	23

(continued...)

STATION	WATERSHED AREA(mi^2)	LATTITUDE	LONGITUDE	ALITTUDE (feet)	TEMPERATURE		PRECIPITATION	
					RECORD YEARS	YEARS TOTAL	RECORD YEARS	YEARS TOTAL
Great Pond		17°43'	64°39'					
Ham's Bluff		17°46'	64°52°	80			1957-1969 1970-1971P 1972-1982	 26
Kingshill		17°44'	64°47'	210			1922-1935 1936P 1938-1940 1941P 1942-1943 1944P 1945-1946 1947P 1957P 1958-1978	 47
Jolly Hill	5.06	17°44'	64°52'	500			1938-1940 1941-1943P 1944P 1948P	 8

(continued...)

STATION	WATERSHED AREA(mi^2)	LATITUDE	LONGITUDE	ALTITUDE (feet)	TEMPERATURE		PRECIPITATION	
					RECORD YEARS	YEARS TOTAL	RECORD YEARS	YEARS TOTAL
Montpellier		17°46'	64°45'	200			1980-1982	3
Sion Farm	0.40	17°44'	64°46'	150			1958-1964 1965P	8
Sprat Hole		17°44'	64°54'	25			1961P-1982	22
Tague Bay		17°45'	64°36'	30			1972P 1973-1982	11
Whim	3.93	17°42'	64°52'	90			1938-1940 1941-1942P	11

REMARKS : All records are on file at the National Weather Service in San Juan, Puerto Rico except:
1) Great Pond; collected and supplied by Mr. John Waite, #74 Estate Mt. Washington, Christiansted, St. Croix.
2) Sprat Hole; collected and supplied by Mr. John Yntema of Sprat Hole, Estate Sprat Hall, Frederiksted, St. Croix.

SPRAT HOLE, ST. CROIX

MONTHLY PRECIPITATION RECORDS : 1961-1982

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTALS
1961	-	-	-	-	-	-	2.17	6.95	2.72	6.30	12.12	2.71	-
1962	2.87	1.99	2.54	3.49	4.46	6.07	3.72	3.98	7.94	3.27	1.60	1.70	43.63
1963	8.23	1.92	1.26	4.04	6.74	3.55	4.71	6.25	4.19	3.42	5.16	1.11	50.08
1964	3.16	1.30	1.61	2.40	0.40	0.87	5.34	6.62	2.84	2.59	4.09	2.89	34.11
1965	0.83	0.58	1.72	3.91	7.08	2.04	3.99	4.07	6.22	2.98	6.78	8.67	48.87
1966	3.68	1.01	2.51	4.17	3.16	0.97	1.39	3.39	7.08	3.98	3.17	4.03	38.52
1967	1.22	2.63	1.46	0.92	1.31	2.46	2.90	4.69	3.35	4.96	8.34	2.35	36.09
1968	2.04	1.09	2.20	3.42	0.81	2.45	1.75	4.45	3.54	1.36	8.34	4.22	35.67
1969	3.93	2.95	0.73	2.28	18.73	3.85	4.12	5.76	3.84	7.26	10.13	1.69	65.27
1970	3.47	0.35	0.22	2.80	11.44	8.78	3.82	3.11	5.72	4.56	4.59	10.73	59.59
1971	1.61	3.79	0.87	3.37	4.43	0.52	1.66	4.38	5.38	5.03	5.46	4.78	41.20
1972	3.81	2.59	3.61	3.05	1.29	2.53	1.53	2.71	2.32	9.40	1.75	7.55	42.09
1973	2.69	0.55	1.97	1.19	0.40	3.86	3.68	4.24	9.27	5.09	1.63	2.85	37.42
1974	3.98	0.96	4.28	2.90	0.35	3.01	4.25	6.76	8.19	10.72	18.23	1.76	65.39
1975	2.45	1.23	1.03	1.98	1.15	0.34	3.18	1.98	10.57	4.93	4.88	12.01	45.68
1976	2.17	4.79	4.05	1.08	1.90	2.35	1.62	4.46	7.57	7.48	3.28	2.95	43.67
1977	1.29	1.39	1.06	2.13	1.02	0.94	2.25	3.67	4.21	20.56	9.71	2.62	50.85
1978	1.21	1.73	3.79	2.53	2.34	2.16	2.19	8.06	5.20	10.16	4.60	3.09	47.06
1979	1.00	3.46	4.28	1.16	11.01	6.75	6.93	14.01	18.24	5.16	12.97	5.83	90.80
1980	1.12	1.12	2.83	6.92	2.94	2.33	3.30	2.72	7.69	2.20	3.28	2.38	38.74
1981	3.87	2.24	0.79	4.80	14.98	3.00	4.04	5.64	2.37	7.57	3.52	5.54	58.36
1982	1.24	2.55	0.68	1.64	3.99	1.83	2.16	2.29	6.18	3.43	3.93	6.31	36.23

REMARKS : Records provided by Mr. John Yntema of Sprat Hole, Frederiksted, St. Croix.

SPRAT HOLE, ST. CROIX

DAILY PRECIPITATION : 1961

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1									T	1.00	0.03	0.10
2							0.33			0.70	-	T
3							0.01	T		0.25	0.01	
4							0.04	0.20		0.01	0.02	0.04
5							0.15	0.01	0.03		0.08	0.05
6							0.28	0.03		0.01		T
7							0.09			1.07		T
8								T				-
9										0.04	0.03	0.86
10							0.28	0.08		0.18	1.10	0.23
11							0.10	0.22		0.07	0.01	
12								0.02	0.07	0.08	1.60	
13							T		0.02		0.45	T
14										0.35	0.95	0.13
16								T		0.06	0.09	
17								T	0.06			
18								0.63		T	0.10	T
19									0.05	T	0.19	0.55
20							T	0.26	0.18	T	T	0.03
21							0.02	T	0.50	0.34		T
22							0.34	0.09		T	0.50	
23							0.47	0.19			0.01	0.17
24								0.32	0.31	0.03	0.05	
25								0.03	0.17		0.35	
26								4.65	0.43		0.18	0.03
27								0.03	0.07		0.30	0.06
28									0.07	0.36		
29										0.15	2.60	0.25
30							T		0.26	0.95	2.75	
31										0.65		0.21
TOTALS							2.17	6.95	2.72	6.39	12.12	2.71

REMARKS : Records provided by Mr. John Yntema of Sprat Hole, Frederiksted, St. Croix.

SPRAT HOLE, ST. CROIX

DAILY PRCIPITATION : 1962

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1		–		Ø.32	Ø.21	Ø.39	Ø.04	Ø.02		Ø.1Ø	Ø.02	
2	T	–			Ø.41	Ø.Ø1	–		Ø.85	Ø.1Ø	–	
3		Ø.22		T	Ø.Ø1	–	Ø.Ø5		Ø.4Ø	–	Ø.38	
4				Ø.Ø5		Ø.Ø8	–		Ø.Ø1	Ø.Ø6	–	
5		T				–	Ø.Ø1			T	Ø.Ø1	
6	Ø.Ø2	Ø.Ø2		Ø.Ø3		Ø.56	–		Ø.14			
7	T	Ø.7Ø	T	Ø.Ø1		–	Ø.26		Ø.73			T
8	Ø.Ø3		Ø.34	Ø.11		Ø.16	Ø.Ø1	Ø.Ø9	Ø.23	T	Ø.Ø3	Ø.Ø3
9	Ø.15					Ø.76	Ø.18		Ø.93	Ø.Ø5	Ø.12	Ø.Ø7
1Ø	Ø.2Ø	T		Ø.Ø1		Ø.65			Ø.Ø2	T	Ø.Ø2	Ø.Ø7
11	Ø.1Ø	Ø.Ø6			Ø.43	Ø.32				Ø.36		Ø.32
12	Ø.15	–		Ø.Ø2	1.77	Ø.86		Ø.12		Ø.Ø5	Ø.Ø2	Ø.44
13	Ø.52	Ø.56		Ø.14		–		Ø.Ø3	Ø.25	Ø.1Ø	–	Ø.Ø1
14	Ø.Ø4			Ø.53	Ø.Ø2	Ø.56		–	–	1.2Ø	Ø.Ø9	
15	Ø.6Ø				Ø.Ø1	–		–	Ø.Ø9	Ø.11	Ø.47	
16	Ø.22					Ø.Ø1	Ø.Ø1	Ø.87	Ø.Ø1	Ø.Ø5	Ø.17	
17	Ø.3Ø					Ø.Ø1	Ø.17	–		Ø.Ø5	Ø.Ø3	
18	T				Ø.Ø6	Ø.1Ø	Ø.Ø1	Ø.Ø1			Ø.Ø1	
19	Ø.18	T		Ø.21	Ø.22	–	–	Ø:.16				Ø.Ø4
2Ø	Ø.Ø5	Ø.Ø9			O.12	–	2.28	–			Ø.Ø3	
21	Ø.14	Ø.Ø1				–	Ø.3Ø	1.Ø5			Ø.Ø1	Ø.21
22		Ø.2Ø		Ø.31	T	Ø.82	Ø.19	Ø.5Ø	T		Ø.17	Ø.Ø1
23		Ø.Ø5				Ø.Ø3	–	–	Ø.23		Ø.Ø2	Ø.Ø4
24				Ø.Ø5		–	Ø.Ø1	Ø.Ø1	1.85			Ø.14
25	Ø.Ø3			Ø.16	Ø.13	Ø.23	Ø.Ø4	T	Ø.43	Ø.Ø3		Ø.Ø7
26	–	T		1.13	–	–	Ø.Ø1	Ø.Ø9	Ø.65	Ø.13		Ø.11
27	Ø.Ø8		T	Ø.14	Ø.56	Ø.16		Ø.39	Ø.Ø2	Ø.2Ø		Ø.Ø7
28	–		Ø.78			–		Ø.Ø5	Ø.1Ø	–		–
29	–		Ø.6Ø	Ø.17	Ø.27	Ø.Ø4		Ø.4Ø	1.ØØ	Ø.28		Ø.Ø6
3Ø	–		Ø.42	Ø.1Ø	Ø.24	Ø.32	Ø.14	Ø.16		Ø.Ø9		Ø.Ø1
31	Ø.1Ø		Ø.4Ø				Ø.Ø1	Ø.Ø3		Ø.31		
TOTALS	2.87	1.99	2.54	3.49	4.46	6.Ø7	3.72	3.98	7.94	3.27	1.6Ø	1.7Ø

REMARKS : Records provided by Mr. John Yntema of Sprat Hole, Frederiksted, St. Croix.

SPRAT HOLE, ST. CROIX

DAILY PRECIPITATION : 1963

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0.37	0.04		0.10	0.31	0.04		2.00	0.50	1.00		0.16
2							0.06	0.02			0.50	0.05
3	3.80							0.02				–
4	2.02	0.48		0.04	0.11	0.14			–		0.09	0.16
5	0.02	0.02	0.15	0.31	0.04		0.18		1.77			0.20
6		0.15		0.10			0.80			0.03		
7		0.01		1.25			0.63					
8		0.03		0.65	0.20			1.35			2.17	
9												
10					0.76							
11	0.11		0.14		0.22							
12	0.20	0.02			–		0.18	0.03			0.16	0.04
13	0.09	T	0.16	0.05	0.19		1.42	0.20	0.20	0.60		
14	0.05				0.04			0.04		0.33	0.22	0.02
15	0.11	0.09			1.60	T	0.13			0.04		
16	0.12		0.08			0.06		0.04	0.50		0.01	
17	0.05	T		0.50	2.05		0.15			0.48	–	
18	0.03	0.02	0.01		0.63						0.62	
19	0.22							0.09			0.04	0.29
20	–	0.19				2.45					0.28	T
21	–	0.04		0.07		0.05						
22	0.08	0.03			0.02		0.11		0.32	0.12	0.01	
23	0.37										1.00	
24	0.01	0.02					0.02					0.04
25	0.02		0.38	0.11	0.42				–			
26			0.08	0.01	0.01	0.10			0.09	0.73	0.06	
27	0.18					0.15	0.28	2.10				0.03
28	0.05	0.28	0.25			–	0.01	0.32				
29	0.03				0.17	0.54	0.02					0.03
30	0.05		0.01	0.85		0.02	–	0.04		0.90		0.03
31	0.25						0.72					0.06
TOTALS	8.23	1.42	1.26	4.04	6.74	3.55	4.71	6.25	4.19	3.42	5.16	1.11

REMARKS : Records provided by Mr. John Yntema of Sprat Hole, Frederiksted, St. Croix.

SPRAT HOLE, ST.CROIX

DAILY PRECIPITATION : 1964

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0.50	0.37	–				0.24		0.10	0.06		1.10
2		0.04	0.07	0.21			0.42	0.30				–
3	0.50			–		0.02	0.24	0.03				0.13
4	–			0.14		0.06	0.26	0.08		0.18		
5	0.01		0.12	–				0.62				0.06
6	0.52			0.26				0.04				0.06
7	0.01	0.07	0.07					–	0.13			0.77
8	–			–			0.03	0.17		0.12		
9	0.26	0.03	0.37	–				0.15				–
10	0.12	0.25	0.01	–				0.14			0.19	0.08
11	0.03	0.05		–	0.10			–				–
12	0.11	0.41		0.49	0.03		2.32	0.09				0.10
13	0.41		0.05	–	0.10		0.14	T	0.02		0.36	0.01
14	0.02		0.32	0.25		0.0:4	0.24		0.11	0.15		–
15	–	0.01	0.12				T	0.12	0.03		0.50	0.26
16		0.04				0.20	0.02	0.11				
17		0.01			–	0.17		0.02			0.55	
18				–	0.08	–	0.14	0.03	0.07	0.74	1.00	0.16
19	0.27			0.30		0.17	0.09	0.04		0.20		
20		0.02		–			0.01	0.12	0.60	0.39		0.10
21	0.19			–				0.98	0.19	–		
22				–			0.02	0.12	1.05	0.60		
23	0.05			0.53			0.05			0.02	0.32	
24						0.09	0.27	–	0.15			
25	0.14					0.04	0.07	0.10			0.80	
26			0.22	–		0.08	0.74	–	0.04			
27			0.06	0.22	0.01	T	0.01	1.05	0.08			
28							0.03	0.50	–	0.13	0.37	
29					0.05			0.18	0.26		–	0.06
30								0.46	0.10			
31	0.02		0.20		0.03			1.17				
TOTALS	3.16	1.30	1.61	2.40	0.40	0.87	5.34	6.62	2.84	2.59	4.09	2.89

REMARKS : Records provided by Mr. John Yntema of Sprat Hole, Frederiksted, St. Croix.

SPRAT HOLE, ST. CROIX

DAILY PRECIPITAION : 1965

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			0.05				0.07	–	–			
2		0.01		0.15		0.17		0.40	0.02			
3			0.04	0.85					0.03			–
4					1.62	–			–			0.09
5	0.18	0.18	0.18	0.46	0.38	1.00	T	2.10	–			
6		0.18		0.07			–	0.31		0.02		
7		0.01		1.70	–	0.25		–				
8					0.04	0.09	–		1.23		1.21	
9	0.03				0.28	0.07	0.63		–		0.90	
10								–	0.20			–
11		0.05			T	0.06	–	1.40		–		4.25
12							0.02		0.12	0.32		
13	–						0.12					
14	0.13					0.15	–		0.06		0.96	
15		0.01	0.13		1.00		1.44				–	
16									0.20	1.00	–	
17						0.09			–	0.11	–	
18	–		0.04		1.05				0.45	0.31	0.50	–
19	0.10	0.04		0.34					–			0.12
20					0.74				0.88		0.01	
21	–				0.06			0.86				
22	0.35		0.78	0.81					–			
23			0.02		0.03				0.34			
24		0.10		0.23		0.12			–			–
25			0.01						0.22			0.30
26				–					–			–
27	0.01		0.25	0.92	–		–	–	0.25		–	0.62
28	0.03		0.22	0.03	0.18		0.81	1.01	0.12		2.20	
29				0.05		0.29	–					
30							–	–		–		–
31							0.65	0.09		1.53		1.20
TOTALS	0.83	0.58	1.72	3.91	7.08	2.04	3.99	4.07	6.22	2.98	6.78	8.67

REMARKS : Records provided by Mr. John Yntema of Sprat Hole, Frederiksted, St. Croix.

SPRAT HOLE, ST. CROIX

DAILY PRECIPITATION DATA : 1966

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1					0.04			0.01	–			
2	–				–				0.15			–
3	0.17		–		–	–	0.12	0.22		0.03		0.81
4			0.42		0.18	0.02		0.02	0.95			
5					–	0.12			–	0.02		
6			–		0.18	–		0.04	0.25	–		0.15
7			0.12		0.60	0.01	0.04	0.15	1.05	–		–
8			0.24		0.13				0.05	0.25	0.40	0.14
9			0.01		–			0.24	0.01			0.42
10	–				0.26	0.16		0.12	1.75	0.11	–	
11	0.36			–							0.03	0.07
12	1.90			0.10		0.22	0.07	0.01				
13	0.70	–	0.22	–		0.03			–	2.30		0.06
14	0.10	0.06	–	0.70		–		0.37	0.07			0.16
15		0.15	0.11			0.15					T	
16					–		0.07	0.20	–	0.03		
17		–			0.10	0.07	0.14		0.07	0.20	0.06	0.40
18		0.50	–	0.09	0.28		–	0.35				0.35
19			1.27	2.11	–		0.22	0.08	–	–		0.15
20			0.08	–	0.14	–	0.10		0.34	0.40	0.16	
21				–	0.82	0.02	0.20	0.21				
22				0.54					0.10		0.90	
23		–		–			0.03		0.17		0.04	0.27
24		0.03		–	0.11	0.02		–		–		0.05
25		0.20		–	–			–	0.07	0.20	0.29	
26		–		0.05	–		T	0.40	–	0.18		0.04
27		0.07	0.04	–	0.25		0.04	–	0.56	0.04		0.65
28	–			0.38		0.15	T	0.96	0.60	–		0.10
29	0.45			–					0.65	0.22	1.25	0.06
30				0.20			0.05		0.24		0.04	0.12
31					0.07		0.31					0.03
TOTALS	3.68	1.01	2.51	4.17	3.16	0.97	1.39	3.37	7.03	3.98	3.17	4.03

REMARKS : Records provided by Mr. John Yntema of Sprat Hole, Frederiksted, St. Croix.

SPRAT HOLE, ST. CROIX

DAILY PRECIPITATION DATA : 1967

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1					–			–				–
2				0.66	0.68			0.15		0.10		0.58
3	0.15				0.06		0.15	0.55	0.05		1.05	
4	0.01											
5	0.05	–	0.07		–		0.13	1.45	0.12		0.21	
6		0.03	0.11		0.11				0.11	–	–	
7		–			0.07	0.02	0.03		0.70	0.11	0.75	
8	0.25	0.35			0.04						0.42	
9	–	–					0.57		0.28		0.52	
10	0.02	0.04		–	–		–		–		0.42	0.38
11			–	0.09	0.15	1.12	0.07	0.04	0.47	1.50	0.20	
12			0.10				0.02	0.48			0.30	
13		–			0.03		–					0.57
14	–	0.08					0.05				0.15	0.05
15	0.13	0.20						0.10	0.15	0.70	T	0.45
16	0.25	–			–		0.37				0.32	0.02
17	0.16	0.09			0.08	0.08	–	0.75		0.04		0.05
18	0.02						0.05			0.02		
19			–						0.30	0.68		
20			0.53		–	0.58					3.30	
21	–				0.06				–			
22	0.11	–						0.95	0.14			
23		0.10	0.12					0.02		1.20		
24	0.07		0.10								–	
25			0.19	0.10		0.18	0.53				0.22	
26		1.66				0.46	0.35		0.08		0.24	0.25
27		0.06				0.02					0.14	
28		0.02						0.20				
29											0.03	
30			–				–		0.15		0.07	
31			0.24	0.07	0.03		0.08			0.61		
TOTALS	1.22	2.63	1.46	0.92	1.31	2.46	2.40	4.69	3.35	4.96	8.34	2.35

REMARKS : Records provided by Mr. John Yntema of Sprat Hole, Frederiksted, St. Croix.

SPRAT HOLE, ST. CROIX

DAILY PRECIPITATION : 1968

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0.04								–			0.46
2	0.35		0.14	–		–		0.74	0.40			0.02
3	0.72			1.30		0.15		0.71			1.40	0.16
4											0.92	
5						–	–				–	0.01
6			T	0.06		0.15	0.20	–			0.01	
7						0.15	T	2.10		0.60	0.20	
8				–		–		–	1.18			
9				0.10		0.55		0.15			0.02	0.10
10	–					0.16					0.02	
11		0.72			0.26						0.26	
12				T	0.05		–		0.22			
13				0.76			0.45					0.41
14							0.10					0.40
15			–								3.07	
16			0.14	–							0.13	
17				–			–	0.42				
18				0.60	–		0.42	0.10		0.01	0.05	
19			–		0.10	–			0.12	0.65		
20		T	0.88		0.43			0.09		0.09	0.10	
21			0.04			0.11		–				
22							0.07	0.16				
23					–					0.09		
24					0.15	0.15	–	0.07	0.05		0.04	0.15
25							0.15		0.10	0.01	0.48	
26		0.55							0.34		0.43	–
27											0.27	1.85
28						0.60						0.20
29			0.05	0.60	–				1.02		0.90	–
30			0.95		0.25				0.02		0.05	0.16
31							0.36					0.20
TOTALS	–	1.09	2.20	3.42	0.81	2.45	1.75	4.45	3.54	1.36	8.34	4.22

REMARKS : Records provided by Mr. John Yntema of Sprat Hole, Frederiksted, St. Croix. Raingage overflowed on 9-26 and 9-29. No monthly totals provided for January because of missing daily data.

SPRAT HOLE, ST. CROIX

DAILY PRECIPITATION : 1969

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0.21	–			0.30		2.75	0.23	0.22			
2	0.45	0.45										0.30
3	0.21			–			0.08			–		
4	0.15			0.15	0.09				–	0.05		
5		0.05					0.11		0.50			
6			–		3.50					1.40	–	0.05
7			0.40		0.90				0.07	0.38	0.27	
8						–						
9	0.04	0.20			0.27	0.30		1.30		0.01	1.65	
10								0.35		0.60	0.89	
11	0.10				0.32				–	0.2		0.12
12	T		0.20			0.70			0.70			
13					0.25				0.10		0.15	
14		0.67		0.11		1.55	–			0.38		
15	0.30						0.13	2.30				
16	–				1.90							
17	0.02				0.95							
18	0.17				1.:5					0.32	–	
19	0.05				1.88		T			0.02	0.20	
20	0.20	0.08			1.90					0.35	–	0.20
21	0.15			0.42	0.28	0.30				0.44	3.75	0.35
22				1.50	0.19					–	2.40	0.56
23					3.50					0.01	0.08	
24	0.55				1.45					1.05		
25	1.25						–				0.28	0.08
26							0.45		2.25			0.03
27											0.46	
28		1.50	0.03	0.10			0.60					
29			0.10					0.38		1.60		
30						1.00				0.03		
31								1.20				
TOTALS	3.93	2.95	0.73	2.28	18.73	3.85	4.12	5.76	3.84	7.26	10.13	1.69

REMARKS : Records provided by Mr. John Yntema of Sprat Hole, Frederiksted, St. Croix.
Gage damaged on May 6 by "B-B" shot.

SPRAT HOLE, ST. CROIX

PRECIPITATION DATA : 1970

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1					0.10	–	0.46	0.45	0.14	–		
2					2.60	0.05	0.07			0.10		0.40
3		–					0.56			0.10		–
4		0.13					0.08			0.90		0.95
5					0.06	0.08	0.17		0.18	0.20		0.08
6						0.22	–	–	0.24	0.26	0.39	–
7	0.90				0.60		0.02	0.10		0.54	0.37	0.22
8					2.00			0.10		0.70		5.15
9				0.04	0.60		0.05		0.15	0.83	–	1.85
10	0.75				0.06	0.99		0.02			1.15	0.22
11				1.25	0.46	0.33	0.02		1.50		0.02	0.78
12					4.37			0.24			0.05	0.62
13			T	0.05		0.40		0.06		0.15		
14						0.01			0.05		0.22	
15						3.10	–	0.16			0.01	
16	0.15					1.15	1.20		0.76			
17			T			0.15	0.02		0.05		–	
18	0.80					0.04					0.26	
19						1.21	0.28	–		0.04	0.02	0.08
20		–	0.20	0.60		0.13	–	0.12	0.20			0.09
21		0.13		0.17		–	0.20	0.29	0.84		0.03	
22		–		0.05		0.54		0.77	0.60	0.22		
23		0.03							0.18			0.14
24				0.01		0.01	0.14		0.20	0.02		
25							0.05		–		0.93	
26			0.02			0.26	0.05	0.44	0.33		0.40	
27	0.80				0.03		0.45	0.15	0.10			
28						0.04		0.06	0.20			
29	0.02			0.63	0.16	0.07		0.02				
30					0.18	–		–		0.59		
31	0.05	0.06			0.22			0.13				0.15
TOTALS	3.47	0.35	0.22	2.80	11.44	8.78	3.82	3.11	5.72	4.56	4.59	10.73

REMARKS : Records provided by Mr. John Yntema of Sprat Hole, Frederiksted, St. Croix.
Raingage overflowed on 5/7, 5/11, 6/14.
Hurricane Dorothy on 8/20.

SPRAT HOLE, ST. CROIX

PRECIPITATION DATA : 1971

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1		0.06	0.21						0.35	0.08	1.35	0.06
2	0.09			1.33	0.02		0.01		1.74	0.02	0.45	
3	0.13	0.54		0.62				0.04	0.04		0.25	
4				0.72	T	0.03	0.16			0.03	0.53	
5	0.03	0.10	0.02	0.32	0.19	0.02		0.13		0.06		0.40
6			0.01	0.07	0.26	0.05	0.01		0.06	0.08	0.13	0.09
7				0.01			0.08	0.03				0.80
8							0.15				0.47	
9	0.08	0.42	0.02	0.05	0.40		0.02					
10		0.40	0.05		0.90				0.06	0.03		0.04
11	0.11				0.19			0.10				
12			0.04	0.04	0.37		-	-				0.18
13	0.06						0.15	0.11	0.08			0.60
14	0.02				-					1.30	0.04	0.24
15	0.01	T			0.08			0.25	0.10	0.38	0.02	
16					0.11		0.15	1.05	1.20	0.18	0.06	0.15
17		0.08			-	0.04	0.02	0.34				0.12
18		0.02			0.04			0.15		0.03		
19		0.30				0.23		0.05			T	
20	0.12	0.18				0.01	0.24	0.03				0.13
21	0.42	0.26	0.35			0.05				0.26		0.05
22	0.50	0.83		0.17	0.33					0.90		
23		0.08			0.36			1.68		0.30		1.40
24					0.04		0.28	-	0.86	0.69	0.04	0.05
25					0.38	0.09	0.10	0.18	0.33	0.50		0.07
26		0.50		0.03	0.05		0.01		0.26	0.05		0.08
27	0.02	0.02	T									0.08
28			0.17				-			0.14		0.04
29				0.01	0.38		0.28	0.18	0.30		2.12	0.10
30	0.02				0.21			0.06				
31					0.12							0.10
TOTALS	1.61	3.79	0.87	3.37	4.43	0.52	1.66	4.38	5.38	5.03	5.46	4.78

REMARKS : Records provided by Mr. John Yntema of Sprat Hole, Frederiksted, St. Croix.

SPRAT HOLE, ST. CROIX

DAILY PRECIPITATION : 1972

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1		0.05	0.64						0.20			0.18
2	0.01	0.28	0.01		0.10		0.05		1.45	0.15		0.22
3	0.05	0.02					0.14			3.05	0.05	0.14
4	0.14		0.01		0.13	0.06				0.40		0.45
5	0.04	0.16			0.14					0.03	0.18	0.18
6	0.01	0.03					0.17	0.03		0.15		1.50
7	0.20	0.01	0.12					0.13	0.03			
8	0.08							0.14	0.04			0.08
9	0.01	0.09				0.02		0.34		0.22	0.30	0.64
10	0.04	0.02		2.03	0.08		0.15	0.78	0.11	0.40	T	1.82
11	0.03		0.41	0.44			0.05	0.20			0.18	0.26
12	0.30	0.16	0.02	0.10		0.13			T			0.65
13	0.46	0.01		0.01			0.19				0.12	0.28
14	0.43		0.01			0.24						0.12
15	0.93			0.06	0.02	0.32			0.15			0.22
16				0.01	0.50	0.02				0.14	0.10	
17				0.03	0.22					0.82	0.01	
18				0.03				0.05		0.06	0.05	
19										1.55	0.22	0.08
20	0.60	T		0.02				0.18		1.07	T	0.31
21		0.05	0.26	0.05			T	T		0.11		0.26
22	0.05	0.05	1.16	0.06	T		0.50		0.05	0.11		T
23			0.16	0.20			0.09	0.05				
24		0.06	0.74					0.25		0.13		0.04
25	0.05	0.21	0.04			0.32		0.13	0.04			
26	0.09	1.18				0.12		0.07	0.18			
27	0.18				0.08					0.05		
28	0.04						0.13			0.24	0.12	
29	0.06	0.16		0.01		1.30	0.06				0.32	
30			0.03					0.24	0.07	0.72	0.10	
31	0.01				0.02			0.12				0.12
TOTALS	3.81	2.54	3.61	3.05	1.29	2.53	1.53	2.71	2.32	9.40	1.75	7.55

REMARKS : Records provided by Mr. John Yntema of Sprat Hole, Frederiksted, St. Croix. Raingage overflowed on 2/5, 4/10, 10/3 and 12/5.

SPRAT HOLE, ST. CROIX

DAILY PRECIPITATION : 1973

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0.02	0.12	0.16			T		0.05	0.30	0.01	0.19	0.04
2	0.46	0.15	0.12		0.10	T		0.01	0.05		0.30	0.12
3	0.01	0.02					T	0.23	0.51	T	0.27	1.10
4	0.03				0.02	T	T	0.13	0.44		0.07	T
5			0.07		T	T	T	0.05	0.02	0.03	0.03	0.08
6	0.60		0.30			0.03				0.30	0.01	
7	0.61	0.03				0.30		0.02	0.01			0.04
8	0.06		0.04			0.11	T	0.01				
9			0.10		T	0.22	0.02	0.03	0.53		T	
10	0.01					1.40	0.43	0.04	0.05	0.27	0.05	T
11			0.03			0.57	0.02	0.47	0.06	2.05	0.01	
12					0.01	0.14	0.05	0.01		0.45	T	0.04
13		0.03	0.35		0.04	0.33	0.07	T		0.06	0.22	
14			0.05		0.01	0.02	0.07	0.90			0.04	
15			0.03	0.02	T		0.34	0.68	1.87	0.78		
16	0.38				0.02		0.23	0.02	0.02	0.01	0.12	T
17	0.07			0.51		0.14	0.18	0.04	0.02			
18					0.02	0.01	0.20	0.01	0.35	0.54	0.07	0.40
19	0.03		0.08		0.18		0.18		0.07	0.14	0.01	0.50
20	0.21			0.43			0.01	T	0.02			0.04
21	0.01								0.07		0.13	T
22				0.23	T	0.05			0.17	0.01	0.02	0.02
23	0.03		T	T	T	T	0.54		0.43	T		
24			0.47			0.04	0.02	0.10	0.02		T	
25			0.09			T	0.30	0.03	1.21		0.02	
26	0.11	0.20	0.08		T	0.48	0.22	0.02	0.66		T	0.03
27						0.02	0.06		0.01	0.03	0.01	
28	T								1.30	0.04	T	0.14
29					T		0.03	0.01	0.36	T	T	0.05
30	0.02					T	0.02	0.03	0.72	T	0.06	0.11
31	0.03					0.60	0.69	1.35	0.01	0.36		0.14
TOTALS	2.69	0.55	1.97	1.19	0.40	3.86	3.68	4.24	9.27	5.09	1.63	2.85

REMARKS : Records provided by Mr. John Yntema of Sprat Hole, Frederiksted, St. Croix. Raingage overflowed on 4/20, 8/31, 9/15, 9/22, 9/24, 10/10, 10/31, 11/3 and 12/3.

SPRAT HOLE, ST. CROIX

DAILY PRECIPITATION : 1974

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0.03	0.05	0.17	0.23				0.47	1.20	1.97	0.48	0.08
2	0.20		0.26	0.16		0.02	0.08	0.02	0.01	0.15	1.42	0.01
3	0.03			0.02			0.80	0.01	0.01	0.29	0.18	
4	0.22		0.03	0.07				0.11		0.01	0.92	
5	0.03	0.02	2.08	0.20			0.02	0.11	0.01	0.02	0.31	T
6		0.01	0.08	0.05			0.15	0.01	0.40	0.68	1.92	
7	0.17	0.18	0.21				0.04	0.30	0.01	0.09	4.20	
8	0.15	0.04	0.25			0.50		0.01	0.01	0.01	0.11	0.09
9	0.06	0.15	0.01						2.10	0.18	0.09	0.16
10	0.21			0.47						0.01	T	0.37
11	0.06		0.35	0.54			T		0.95		2.80	0.30
12	0.04				0.01				0.04	0.03	2.80	0.12
13	0.23		0.04	0.11				0.25	0.47	0.10	0.01	0.04
14	0.06			0.02		2.00	0.05		0.15	0.07	0.02	T
15	0.11					0.30	0.18		0.26	0.04	0.02	0.15
16		0.05	0.06		0.05	0.17	0.49	T	0.02	0.34	0.50	0.03
17			0.20		0.21		0.08		0.87	0.46	0.05	T
18		T					0.02		0.06	0.04	0.01	T
19		0.01		0.48		0.02			0.14	0.02	0.18	0.01
20			0.16	0.02					0.10	0.08	0.01	0.01
21	0.42	0.15		0.16			0.57		0.04	0.01	0.05	
22	0.01	0.09	0.01	0.09					0.01	0.18	1.70	0.02
23	0.52	0.01	0.17							1.14	0.01	0.05
24	0.10	0.16	0.05						0.30	1.32		T
25	0.01	0.03	0.10						0.56	0.09		0.08
26	0.14		0.02				0.26	0.15	0.29	0.49		
27	0.13			0.28				0.15	0.02	0.69		
28	0.34	0.01					1.02	2.53	0.01	0.48		
29	0.24						0.01	2.38		0.01	0.25	0.01
30	0.34				0.08			0.20	0.15		0.19	0.05
31	0.13		0.03			T	0.47	0.06		1.72		0.18
TOTALS	3.98	0.96	4.28	2.90	0.35	3.01	4.25	6.76	8.19	10.72	18.23	1.76

REMARKS : Records provided by Mr. John Yntema of Sprat Hole, Frederiksted, St. Croix.
Flood on 11/7.

SPRAT HOLE, ST. CROIX

DAILY PRECIPITATION : 1975

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0.12	0.02	0.13						0.04	0.02	0.32	0.06
2	0.14		0.10				0.05		0.56	0.12	0.09	2.50
3	0.05	0.01	0.01				0.04			0.04	0.03	0.01
4		T	0.20					0.17	0.03		1.18	0.31
5	0.01						0.05	0.08				0.03
6	0.14									0.72		0.47
7							0.12	T	0.04	1.02		0.16
8							0.13	0.14		0.20		3.50
9	0.40	0.04		0.01			0.01	0.27	0.07	0.18		2.92
10	0.01	0.07	T	0.52				0.01				0.42
11			T	0.02			0.12				0.24	0.62
12	0.02	0.04	0.01		T	0.11	0.07	0.12	0.86		0.22	
13	0.02		0.02		0.05		0.21	0.06		0.15	0.01	0.01
14			T	0.02	0.03	0.05		0.42	0.96			
15			T		0.30				4.00	1.02	1.23	0.54
16	T				0.01			0.19	0.72	0.37	0.04	
17	0.32	0.22	0.02		T	T		0.01	0.22	0.01		0.09
18		0.07		0.14	0.14	0.10	0.02		0.01			0.02
19	0.32	0.06		0.01	0.06	0.02	0.29	0.38	0.23	0.04		0.01
20	0.03		T	0.08	0.06	0.01	0.70	0.03	0.01	T		0.01
21	0.05			T			0.47		0.03	0.23	0.83	T
22	0.07			0.28	0.15				0.09	0.68		0.03
23	0.18	0.55			0.01	0.04	0.05					0.01
24	0.22		0.05	0.18			0.47		1.50		0.09	0.04
25	0.33	0.13		0.09			0.24	0.03	0.01		0.16	
26	0.03		0.24			0.01	0.05		0.29	0.01	0.20	
27	0.10	0.02		T			0.01	0.02	0.90	0.03	0.09	0.07
28	0.11			0.30	0.01					0.09	0.09	T
29	0.07		0.25	0.33	0.13		0.08			0.01	0.01	
30					0.01		0.01				0.05	0.17
31					0.19			T .				0.01
TOTALS	2.45	1.23	1.03	1.98	1.15	0.34	3.18	1.93	10.57	4.93	4.88	12.01

REMARKS : Records provided by Mr. John Yntema of Sprat Hole, Frederiksted, St. Croix. Raingage overflowed on 9/14-15 and 12/8.

SPRAT HOLE, ST. CROIX

DAILY PRECIPITATION : 1976

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1		Ø.24	Ø.19		T		Ø.10	Ø.05		Ø.13		Ø.04
2		Ø.06	Ø.08		Ø.02	Ø.02		Ø.82		Ø.04		Ø.70
3	Ø.02	Ø.03	Ø.45				Ø.04		Ø.14	T	Ø.36	Ø.02
4		Ø.10	Ø.03		Ø.07	Ø.13			Ø.09	Ø.03	Ø.27	Ø.02
5	Ø.22	Ø.28	Ø.01		Ø.38	Ø.33				Ø.18	Ø.32	Ø.22
6	Ø.01	Ø.05	T		Ø.05	Ø.18			Ø.02	Ø.17	Ø.01	
7	Ø.14	Ø.08	Ø.31		T				Ø.13	Ø.18		Ø.10
8	Ø.06							Ø.04	Ø.80	Ø.42	Ø.05	Ø.18
9	Ø.15		Ø.03		Ø.44	Ø.20	Ø.15	Ø.38	Ø.01	Ø.26	Ø.45	Ø.40
10	Ø.01	T	Ø.08			Ø.02			Ø.76	Ø.01		Ø.62
11			Ø.02				Ø.21		Ø.05	Ø.44	Ø.05	Ø.01
12		Ø.04	Ø.05					1.15	Ø.01	Ø.01	Ø.42	T
13	Ø.02	Ø.10			Ø.18	Ø.04	T	Ø.08	Ø.78			
14		Ø.01	Ø.18		Ø.13	Ø.85			Ø.01	Ø.50	Ø.06	Ø.01
15	Ø.36	Ø.22			Ø.45	Ø.04			Ø.12	Ø.42	Ø.17	
16	Ø.04	1.12		Ø.18	Ø.03		Ø.02		T		Ø.16	
17		1.40		Ø.16		Ø.01		Ø.14	Ø.08	Ø.04	Ø.05	Ø.01
18	Ø.15	Ø.47						Ø.15	Ø.66	Ø.79	Ø.02	Ø.01
19	Ø.15	Ø.03	Ø.05			Ø.10	Ø.27		Ø.33	Ø.16		
20	Ø.03		Ø.15	Ø.03				Ø.08		Ø.13		Ø.05
21	Ø.05	Ø.03	Ø.01						Ø.05	Ø.02		
22	Ø.06		Ø.02	T						Ø.04		
23		Ø.02		Ø.01			Ø.15		Ø.56	Ø.05	Ø.05	Ø.02
24	Ø.39	Ø.11		Ø.04	Ø.05		Ø.03		Ø.01	Ø.01	Ø.24	T
25	Ø.02	Ø.03		T	Ø.02			Ø.24	Ø.70		Ø.08	
26	Ø.08	Ø.10	1.97	Ø.17		Ø.04	Ø.27	1.13	Ø.98	Ø.19	Ø.04	
27	Ø.03	Ø.01	Ø.23	Ø.27	Ø.06	Ø.08		Ø.04	Ø.24	Ø.01	Ø.16	Ø.01
28		Ø.12	Ø.19	Ø.22		Ø.12		Ø.03		Ø.05	Ø.20	Ø.52
29		Ø.14				Ø.07		Ø.13	Ø.72	2.37	Ø.10	Ø.01
30						Ø.12	Ø.06		Ø.32	Ø.82	Ø.02	
31	Ø.18				Ø.02		Ø.32			Ø.01		
TOTALS	2.17	4.79	4.05	1.08	1.90	2.35	1.62	4.46	7.57	7.48	3.28	2.95

REMARKS : Records provided by Mr. John Yntema of Sprat Hole, Frederiksted, St. Croix.

SPRAT HOLE, ST. CROIX

DAILY PRECIPITATION : 1977

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1		0.10	T		T	0.04	0.07	0.02	T	T	0.03	0.03
2		0.02					0.05	0.19		0.02	0.01	0.09
3		0.08	0.01	0.02		0.34		0.26				0.05
4		0.01	0.24			T		0.04		0.11	2.12	
5			0.01	0.14			0.34	0.12	0.05	0.49	0.02	0.27
6		0.31	0.06		0.06		0.01	0.01	0.66	1.70	0.91	0.02
7	0.10	0.01							0.01	15.00	0.35	
8	0.13		0.22	0.01				0.05		0.79	0.02	
9						0.01	T	0.06	0.11	0.02	0.02	0.50
10	0.21			0.34				0.06	0.01	T	0.05	
11	0.01						0.03	0.15		0.04	0.04	0.10
12		0.38		T		0.26	0.01		0.25		0.04	0.67
13		0.13	0.40	0.15		T	0.04	0.32	0.46			T
14	0.15			0.22		T	1.00	0.28	0.34	0.13		
15	0.08	0.01		0.03	0.20	0.16	T	T	0.03			
16	0.01				0.01		0.28	0.08		0.14		
17	0.05	0.02					0.01	0.03			0.16	
18			0.04		0.01						0.20	
19				1.05					T	0.02	0.20	
20	0.07		T	T	0.03	T		0.20	0.03		0.02	0.03
21		0.03	T	0.10	0.10			0.62			0.21	0.09
22				0.06	T			0.12	1.92	0.04	0.42	0.33
23		0.23			0.02	T		0.22	0.02		1.43	0.15
24		0.05		0.01	0.13	T	0.15	0.04			2.25	
25		T					0.05	0.02		0.22	0.45	0.01
26		T			0.37	0.06	0.01	0.13	0.02		0.19	
27		0.01	0.06		0.08		0.10	0.01	0.25	0.02	0.02	0.20
28	0.05				0.01		0.10		0.02		0.40	
29	0.04							0.26		0.66	0.12	
30	0.04		T		T	0.07		0.42	0.03	0.50	0.03	0.08
31	0.35		0.02					0.02		0.66		T
TOTALS	1.29	1.39	1.06	2.13	1.02	0.94	2.25	3.67	4.21	20.56	9.71	2.62

REMARKS : Records provided by Mr. John Yntema of Sprat Hole, Frederiksted, St. Croix.

SPRAT HOLE, ST. CROIX

DAILY PRECIPITATION : 1978

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1		0.13		0.08	0.02	T					0.12	0.05
2	0.09	0.17	1.05	0.10	0.02		0.36	1.70	0.80			
3		0.05	0.05	0.03	0.68			0.55	T	0.05	0.06	0.15
4	T				0.07		0.08	0.14			0.04	0.01
5	0.02						0.01	T	0.19			0.17
6	0.03		0.42	0.04	0.11	0.13	0.10	T	T		0.40	0.02
7	0.05		0.25	0.12	0.01		0.05	0.08	0.02		0.01	0.70
8	0.08	0.11	0.69	0.28	0.01		0.01	0.20	0.30	T	0.12	0.72
9		0.01	0.13	0.25	0.10		0.01	T		0.12	0.24	
10		0.32	0.34	0.10	0.03		T		0.10	0.02	0.01	
11	0.01		0.13	0.07		0.19			T		0.02	0.03
12				0.03			0.02	0.04	1.18	0.05		
13	0.22		0.05	0.09		T	0.02	0.05	T	0.74	0.15	
14	0.03		0.05				0.40	0.03		0.04	0.06	
15	0.01		0.01		0.15		T	0.64		0.03		
16	0.14		0.05		0.01	0.20	T	3.83		0.03	0.82	
17	0.04	0.01				T	0.02	T	0.13		1.70	
18	0.04	T	0.12	0.02			0.03	T	0.20		0.18	
19	0.13		0.06				0.75		0.02		T	0.12
20	0.01	0.01		0.40			0.24	0.53	0.19		0.16	0.44
21		0.01			0.02		0.01		0.13	0.03	0.05	0.02
22	0.05			0.06		0.05	0.02		0.01	0.19	T	
23		0.67	T	0.08		T	T		0.20	4.50	0.10	0.02
24	0.01	0.14		0.49	0.21	T			0.11	0.01	0.02	0.15
25	0.05	0.05		0.05	0.57	T		0.19	T	1.32		0.03
26	0.09	0.05		0.24	0.32	0.05		0.05	0.42	1.91		0.04
27	0.11					0.01			0.08	0.42		
28	T		0.06							0.01		
29									1.12	0.04		0.22
30			0.01		0.01	1.53		0.03		0.38	0.34	0.10
31			0.32				0.06			0.27		0.10
TOTALS	1.21	1.73	3.79	2.53	2.34	2.16	2.19	8.06	5.20	10.16	4.60	3.09

REMARKS : Records provided by Mr. John Yntema of Sprat Hole, Frederiksted, St. Croix.

SPRAT HOLE, ST. CROIX

DAILY PRECIPITATION : 1979

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0.01		0.04	0.01		0.02	0.01	0.02	T	0.21	0.01	1.89
2			0.06	0.04				0.01	0.17	0.18		0.27
3						0.06	T	0.02	1.07	0.34		
4							0.01	0.01	13.56	0.22		0.86
5	0.05				0.08	0.02	2.66	0.34	2.25	T		0.08
6					0.02	0.71	0.01	0.20	0.01			0.15
7	0.05			0.30		0.01	0.13		0.44	0.01	0.04	0.01
8	0.04			0.01		0.04	0.03		0.05	0.06	2.26	0.14
9			0.01		0.56	0.16		T	0.03	0.04	0.55	0.06
10	0.01		0.01		0.80	0.01		0.02			0.06	0.31
11	0.24					0.07		0.01		T	0.32	0.01
12				0.03		0.01	0.02	T		0.10		0.05
13	0.05		0.03		0.11	T		0.22	T	0.07		T
14	0.05		0.02		0.03	0.07		0.02		2.85		0.01
15	0.19	3.18			0.85	0.01	0.53	0.01		0.04	0.62	T
16	0.01			0.09		0.10				T	2.58	0.02
17		0.07	1.06		0.02		0.55	T			0.12	
18		0.11	0.30		2.50		1.52	0.38			0.01	
19	0.10	0.01		T	0.02		0.01				0.05	0.21
20				0.02	0.30		0.20				0.32	T
21	0.04	0.01		0.40	0.04	0.10	0.02		0.04	0.07		
22		0.03	0.10	0.04	0.34	0.03		0.39		0.02	0.18	
23			0.04	0.06	0.18		T	0.11	0.13	0.15	4.18	1.62
24	0.14		0.01	0.14	0.11	T	0.01	0.21	0.06	0.08	0.05	0.14
25	0.02	0.01		0.01	0.16	0.29		0.18			1.04	T
26					0.01	0.14				0.22	0.30	
27						1.25	0.09	0.01	0.03		0.27	
28		0.04	0.17		0.44	2.07	T	0.20	0.18		0.01	
29			2.07		1.34	0.77		1.18	0.04			
30			0.35	1.01	2.74	0.81	0.27	10.44	0.18	0.04		
31			0.01		0.36		0.86	0.03		0.46		
TOTALS	1.00	3.46	4.28	1.16	11.01	6.75	6.93	14.01	18.24	5.16	12.97	5.83

REMARKS : Records provided by Mr. John Yntema of Sprat Hole, Frederiksted, St. Croix.
Hurricane David : 8/29-30.
Hurricane Frederick : 9/3-4.

SPRAT HOLE, ST. CROIX

DAILY PRECIPITATION : 1980

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1					T		Ø.07		Ø.13			
2		Ø.05					Ø.31		Ø.46		Ø.04	Ø.18
3		Ø.5Ø				Ø.01	Ø.63	Ø.18		Ø.45	1.39	Ø.1Ø
4	Ø.07	Ø.01			T		Ø.1Ø	Ø.09	1.48	Ø.05	Ø.05	Ø.07
5	Ø.04	Ø.07	1.49				Ø.01	Ø.01	Ø.16			
6			Ø.1Ø							Ø.14		Ø.05
7	Ø.14	Ø.01	Ø.1Ø			Ø.13	Ø.14	Ø.36				Ø.26
8		Ø.03	Ø.1Ø			Ø.32	Ø.04	Ø.03	1.86			
9		Ø.09	Ø.3Ø	Ø.1Ø		Ø.17	Ø.02	Ø.84	Ø.08	Ø.08	Ø.01	
1Ø				Ø.15		1.09	Ø.15	Ø.01				
11	Ø.77		Ø.01	Ø.64		Ø.11			Ø.13		Ø.04	Ø.17
12	Ø.1Ø			Ø.6Ø		Ø.28	Ø.06	Ø.01	Ø.03			Ø.12
13					Ø.06		Ø.05	Ø.55	Ø.01			Ø.36
14			Ø.04		Ø.88	Ø.09		Ø.02	Ø.09			Ø.05
15			Ø.16	Ø.54	Ø.1Ø	Ø.1Ø				Ø.15	Ø.26	Ø.34
16			Ø.11									Ø.01
17			Ø.42		Ø.04		Ø.94					Ø.13
18					Ø.1Ø		Ø.04		Ø.47	Ø.41		
19		Ø.2Ø		Ø.05			Ø.27	Ø.01		Ø.04		
2Ø	T	Ø.06							Ø.15		Ø.27	Ø.05
21	T		T		Ø.06					Ø.08	Ø.04	Ø.01
22				2.9Ø						Ø.05	Ø.43	Ø.07
23		Ø.06	T	1.75			Ø.03	Ø.05	Ø.3Ø	Ø.23	Ø.05	Ø.23
24		Ø.04	T		Ø.15				1.62			Ø.18
25				Ø.19	Ø.15			Ø.49	Ø.04		Ø.68	
26							Ø.4Ø			Ø.1Ø	Ø.02	
27			T		Ø.9Ø		Ø.02		Ø.45			
28					Ø.3Ø			Ø.05	Ø.09			
29					Ø.11	Ø.01	Ø.02	Ø.02		Ø.21		
3Ø					Ø.09	Ø.02			Ø.05	Ø.21		
31												
TOTALS	1.12	1.12	2.83	6.92	2.94	2.33	3.3Ø	2.72	7.6Ø	2.2Ø	3.28	2.38

REMARKS : Records provided by Mr. John Yntema of Sprat Hole, Frederiksted, St. Croix.

SPRAT HOLE, ST. CROIX

DAILY PRECIPITATION : 1981

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1				0.20	1.64	0.92	0.02		0.04	0.17	0.68	0.02
2		0.10				0.08	0.11	0.30		0.14	1.00	0.64
3		0.11			0.28	0.02				0.66	0.01	
4				1.78	0.20	0.33	0.62	0.03		0.01		
5		0.09		0.17	0.86		0.23	0.01		0.26		
6	0.40	0.02			0.12							
7	0.04	0.08		0.03	0.02				0.02	0.61		0.20
8		0.19		0.24	0.28		0.10	0.07	0.03		0.41	
9				0.60			0.57	0.30			0.40	
10		0.38		0.05				0.24	0.03			0.05
11									0.04			0.19
12	0.32				0.03	0.01	0.19	1.30			0.18	0.02
13					0.08		0.28		0.35			1.04
14	0.06	0.12		0.03	0.12		0.07	0.04	0.28	0.29	0.01	0.32
15	0.06	0.52	0.12					0.01	0.02	1.15		0.03
16		0.21		0.13	0.48			0.20	0.10	0.75		0.03
17		0.32		0.56	0.48			0.13		0.72		0.43
18	0.32				2.21		0.19	0.09	0.14			
19	0.16				2.97		0.22	0.25		0.48	0.02	
20					0.54		0.35	0.67				
21	0.10	0.10	0.27	0.03	0.12	0.04	0.04	0.15			0.05	
22	0.15		0.29	0.04				1.67				0.04
23	0.02			0.15	0.06	0.02	0.28	0.07	1.10			0.06
24	0.06			0.31	0.07		0.06	0.01				0.14
25							0.04			0.01		
26	0.12				0.58		0.01			0.69	0.76	0.36
27	2.00		0.01	0.05	2.71		0.05	0.01				0.85
28			0.01			1.28	0.01	0.09		0.49		0.10
29				0.27	0.04		0.52		0.13	0.81		0.35
30				0.16	0.58	0.30	0.05		0.09	0.01		0.48
31	0.06		0.09		0.51		0.03			0.32		0.19
TOTALS	3.87	8.24	0.79	4.80	14.98	3.00	4.04	5.64	2.37	7.57	3.52	5.54

REMARKS : Records provided by Mr. John Yntema of Sprat Hole, Frederiksted, St. Croix.

SPRAT HOLE, ST. CROIX

DAILY PRECIPITATION : 1982

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0.03			0.02		0.92			0.01		0.04	0.08
2	0.06					0.01					0.03	0.03
3	0.05	0.22									0.01	0.01
4		0.02		0.08	0.01	0.13	0.04				0.10	0.09
5			0.15	0.02	0.90				0.26		0.15	0.04
6	0.41	0.14			1.68	0.08			0.10		0.01	0.01
7		0.13			0.08				0.01			0.01
8	0.08	0.13		0.15	0.24			0.30	0.08			
9					0.01		0.44	0.03				
10				0.10			0.01	0.58	0.48	1.85	0.76	
11		0.18	0.28		0.15			0.01	0.02	0.01	0.02	
12	0.02	0.02	0.05	0.20	0.01				3.60		0.01	
13	0.01	0.31		0.15	0.60				0.02			0.36
14		0.05	0.04		0.01	0.01				0.60		0.14
15		0.14	0.01	0.26						0.01	0.04	0.29
16	0.08	0.18		0.15		0.08	0.04	0.01		0.04		
17	0.21			0.03				0.09		0.38	0.02	
18	0.10	0.05	0.01				0.03	0.01			0.38	
19				0.16		0.50	0.26				0.01	
20		0.17		0.01	0.11	0.02	0.01	0.10		0.02		
21	0.06	0.41			0.02		0.12		0.68	0.26		1.45
22	0.02	0.03	0.01			0.03	0.02	0.22	0.02		0.81	0.10
23		0.31				0.03		0.42	0.05		0.02	
24							0.56	0.01	0.08		0.73	0.61
25			0.07				0.02	0.01	0.26		0.02	1.12
26		0.05		0.01	0.02		0.30		0.18	0.05		0.60
27				0.30			0.01	0.08	0.28	0.01	0.07	0.96
28	0.04	0.01			0.14				0.01		0.27	0.16
29					0.01	0.02	0.28	0.15	0.03		0.13	0.02
30							0.01	0.26	0.01		0.30	0.20
31	0.07		0.06				0.01	0.01		0.20		
TOTALS	1.24	2.55	0.68	1.64	3.99	1.83	2.16	2.29	6.18	3.43	3.93	6.31

REMARKS : Records provided by Mr. John Yntema of Sprat Hole, Frederiksted, St. Croix.

GREAT POND, ST. CROIX

MONTHLY PRECIPITATION AND ANNUAL TOTALS : 1973-1982

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTALS
1973	3.03	0.79	1.42	0.59	0.83	1.29	1.90	2.10	2.95	2.80	1.30	1.25	20.25
1974	1.76	0.21	2.07	1.08	0.15	0.25	2.17	4.31	4.41	8.98	19.84	2.14	47.37
1975	1.70	1.06	0.50	1.70	1.27	1.67	1.58	2.14	9.95	5.50	8.52	7.60	43.19
1976	0.90	1.32	1.44	1.71	0.63	2.96	0.63	3.32	5.57	4.78	3.59	5.93	32.78
1977	0.50	0.37	0.66	1.34	1.11	1.57	1.89	3.60	4.80	13.66	11.28	2.38	43.16
1978	1.51	1.28	2.43	2.73	2.26	3.51	0.82	14.62	3.34	6.13	2.98	3.07	44.68
1979	1.59	2.06	3.54	2.24	11.84	6.98	9.48	10.27	19.77	2.17	8.13	2.91	80.98
1980	1.04	1.39	2.02	3.82	1.67	1.30	3.13	1.55	5.00	3.86	1.28	3.48	44.66
1981	1.19	2.12	0.95	5.09	14.62	2.51	3.13	2.30	2.25	7.58	1.71	6.21	29.54
1982	1.10	1.91	0.66	2.73	3.79	0.38	2.31	3.13	4.46	2.04	2.46	3.78	49.66

REMARKS : The data reported here was supplied by Mr. John Waite of Estate Mt. Washington, Christiansted, St. Croix.

SUMMARY OF AVAILABLE WATER RESOURCES DATA FOR ST. CROIX

B : SURFACE WATER

USGS STATION NO.	LOCATION	WATERSHED AREA (mi^2)	LATITUDE	LONGITUDE	ALTITUDE (feet)	DISCHARGE RECORDS RECORD YEARS	DISCHARGE RECORDS YEARS TOTAL	WATER QUALITY RECORD YEARS	WATER QUALITY YEARS TOTAL
3320	River Gut	1.42	17°44'32"	64°48'50"	155	1963-1967	5	1962-1967	6
3323	Holy Cross	1.95	17°44'05"	64°48'50"		1962-1969	8	1963-1966	4
3330	Golden Grove	5.14	17°42'59"	64°48'16"	50	1963-1969	7	1962-1964	3
3339	Colquhoun	0.98	17°44'28"	64°48'55"		1963-1969	7	1962-1965	5
3345	Bethlehem	4.11	17°42'34"	64°47'16"		1963-1969	7	1963-1965	3
3350	Airport	6.90	17°42'31"	64°47'15"		1962-1969	8	1962-1966	5

(continued...)

USGS STATION NO.	LOCATION	WATERSHED AREA (mi^2)	LATITUDE	LONGITUDE	ALTITUDE (feet)	DISCHARGE RECORDS RECORD YEARS	DISCHARGE RECORDS YEARS TOTAL	WATER QUALITY RECORD YEARS	WATER QUALITY YEARS TOTAL
3360	Envy Spring	-	17°41'47"	64°48'04"		1963-1966	4	1962-1965	4
3450	Jolly Hill	2.10	17°44'00"	64°51'47"		1963-1968	6	1962-1967	6
3470	Mt. Washington	0.50	17°44'58"	64°52'07"		1964P-1968	5	1963-1968	6

SUMMARY OF AVAILABLE WATER RESOURCES DATA FOR ST. CROIX

C : GROUNDWATER

STATION/ WELL NO.	AQUIFER	LATITUDE	LONGITUDE	ALTITUDE (FEET)	TOTAL DEPTH	WATER LEVEL RECORDS		PUMPING RECORDS		WATER QUALITY RECORDS	
						RECORD YEARS	TOTAL YEARS	Y/N	YEARS	Y/N	YEARS
45-64.46-2-5Ø	Limestone	17°45'32"	64°46'Ø3"	29	81	1962-1968	7	Y	1962-1968	Y	1964-1967
44-64.44-6-27	Marl/Limestone	17°44'48"	64°44'2Ø"	3ØØ	39Ø	1966-1969	4	Y	1967	Y	1966-1967
44-64.44-4-86	Marl	17°44'Ø7"	64°44'26"	24Ø	248	1965-1969	5	Y	1967-1968	Y	1963-1968
43-64.44-14-32	Marl/Limestone	17°43'39"	64°44'51"	97	154	1969	1	N		N	
43-64.45-16-15	Marl	17°43'52"	64°45'31"	117	2ØØ	1968	1	N		Y	1967
43-64.45-15-15	Limey Sediments	17°43'5Ø"	64°45'32"	115	34Ø	1966-1969	4	N		Y	1968

(continued...)

STATION/ WELL NO.	AQUIFER	LATITUDE	LONGITUDE	ALTITUDE (FEET)	TOTAL DEPTH	WATER LEVEL RECORDS		PUMPING RECORDS		WATER QUALITY RECORDS	
						RECORD YEARS	TOTAL YEARS	Y/N	YEARS	Y/N	YEARS
43-64.46-10-40	Marl	17°43'38"	64°46'05"	90	240	1966-1969	4	N		N	
43-64.45-4-74	Limey Sediments	17°43'16"	64°45'38"	60	140	1962-1968	7	N		Y	1965-1967
43-64.45-7-94	Limey Sediments	17°43'00"	64°45'36"	38	136	1965	1	N		N	
43-64.48-8-68	Limey Sediments	17°43'20"	64°48'14"	75	22	1966-1967	2	N		N	
43-64.48-1-83	Marl	17°43'06"	64°48'45"	80	106	1962-1969	7	Y	1967	Y	1967
43-64.48-9-83	Limey Sediments	17°43'08"	64°48'40"	80	97	1966-1969	4	N		N	
41-64.48-2-07	Marl/Limestone	17°41'59"	64°48'19"	35	110	1962-1969	8	N		N	

(continued...)

STATION/ WELL NO.	AQUIFER	LATITUDE	LONGITUDE	ALTITUDE (FEET)	TOTAL DEPTH	WATER LEVEL RECORDS		PUMPING RECORDS		WATER QUALITY RECORDS	
						RECORD YEARS	TOTAL YEARS	Y/N	YEARS	Y/N	YEARS
42-64.48-7-100	Marl/Limestone	17°42'01"	64°48'02"	16	80	1962-1964	3	Y	1964	N	
42-64.17-17-96	Limey Sediments	17°42'05"	64°47'25"	16	157	1966-1968	3	N		Y	1966
42-64.47-16-97	Alluvium	17°42'06"	64°47'20"	17	137	1966-1969	4	N		Y	1966
43-64.52-3-45	Alluv./Volcanic	17°43'36"	64°52'32"	70	104	1964-1969	6	N		N	

CONCLUSIONS AND RECOMMENDATIONS

Water resource planners, researchers and managers in the Virgin Islands have been constrained in the past by lack of data. In those instances where there are data, it is difficult to locate the data. The present effort has been aimed at directing users of water data to the appropriate sources. Summaries of pertinent data have also been included. In addition, previously unpublished data have been assembled in this report for the first time.

The user of these data is hereby warned against uncritical use because there is no standardization of equipment or methods between the official cooperating stations and the private observers. In fact, there is no strict comparability of rainfall data among the private observers for their instruments vary. The data has been assembled on the premise that some data is better than no data at all in the task of water resources assessment. It is possible to "standardize" non-standard data by statistical techniques and procedures. Such a task is beyond the scope of the present exercise.

In spite the mass of data assembled in this report and refered to in the bibliography, we feel that there is a critical deficiency in the water resources data base available for the Virgin Islands. There is not enough water level measurements or quality of water investigations being conducted. Soil moisture, evaporation and other parameters which will aid in assessing the potential needs for irrigated agriculture are largely neglected. It is

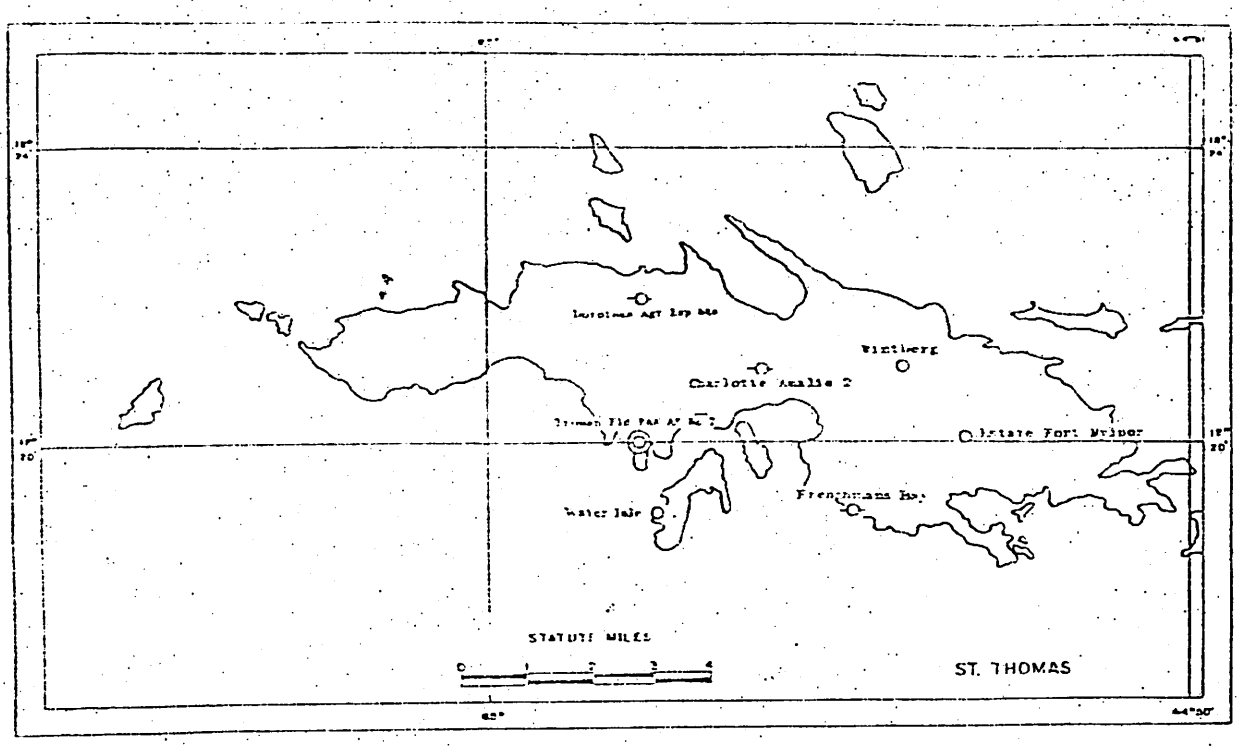
impossible to devise decision rules for agricultural water needs or domestic water supply from rainfall and groundwater sources in the absence of essential water data.

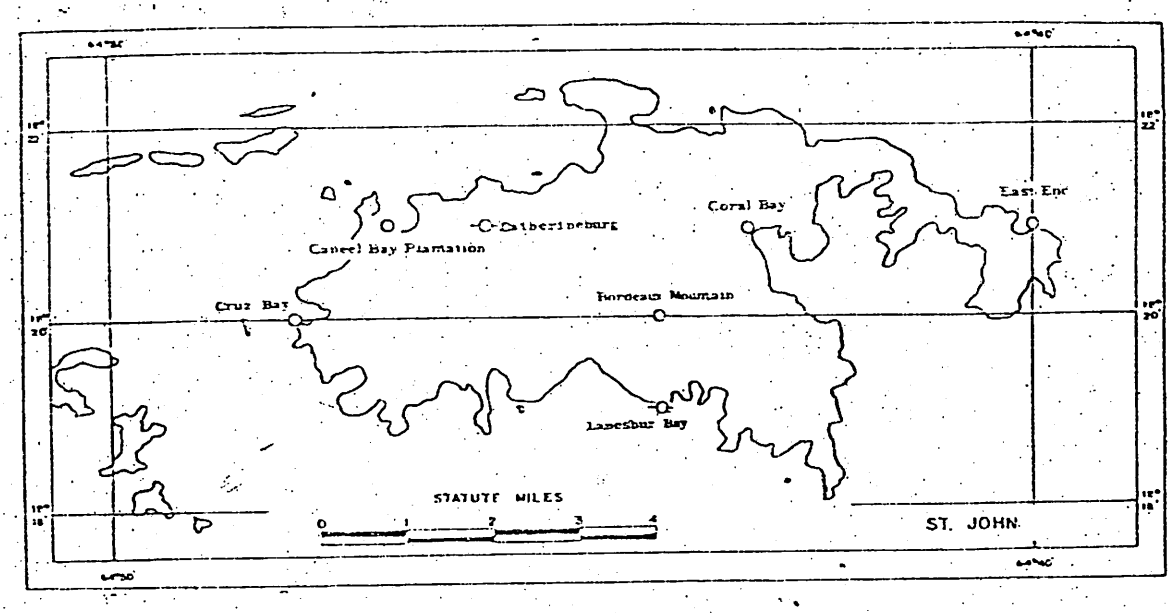
In view of the foregoing, it is highly recommended that an agency of the Virgin Islands government be charged with the responsibility for collecting, analyzing and timely publication of water resources data to aid water management efforts. The government should also encourage and assist the private individuals who have been collecting rainfall data, some for upwards of fifteen years. One way to ensure strict comparability of data would be to provide all volunteers with standard equipment.

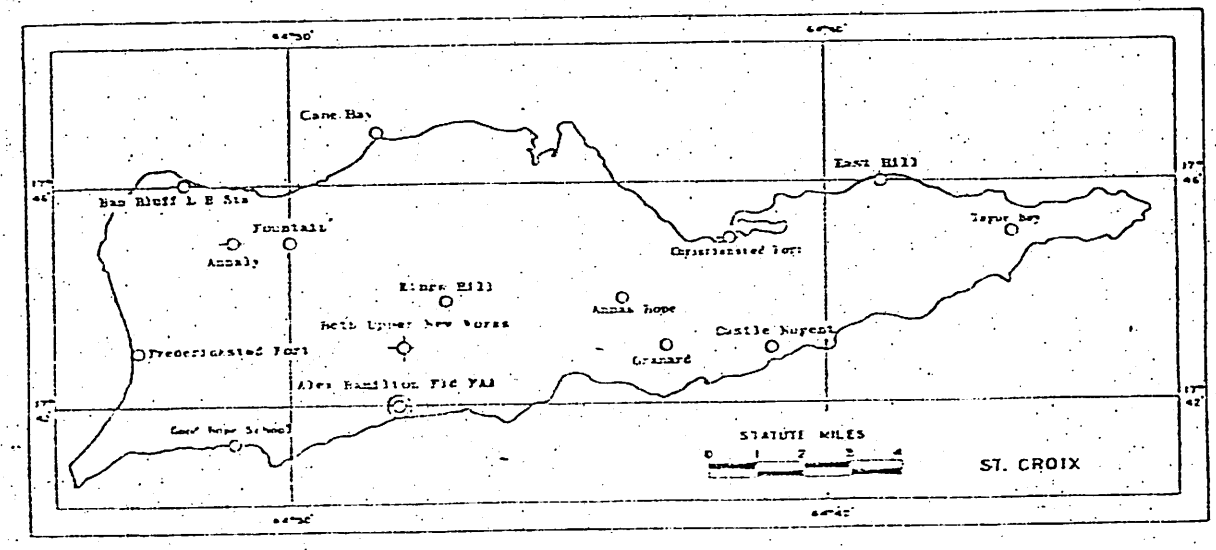
Further research into the various water needs of the territory is necessary in order to devise an appropriate water data collection effort. In the absence of actual data on water resources of the territories, systematically collected over a long period of time, the worth of any water resources assesment or management plan for the islands water resources is questionable. Consequently it is recommended that greater efforts be directed towards the collection and dissemination of basic water resources data such as rainfall, evaporation, water level measurements and quality of water determinations for use by the islands' water planners, researchers and managers. Towards this end, it is recommended that supplements and annual updates to this compendium be regularly published by a government agency of the Virgin Islands. The supplements will fill the gap in existing knowledge while annual updates will summarize water resources data since the previous year of publication.

APPENDIX A

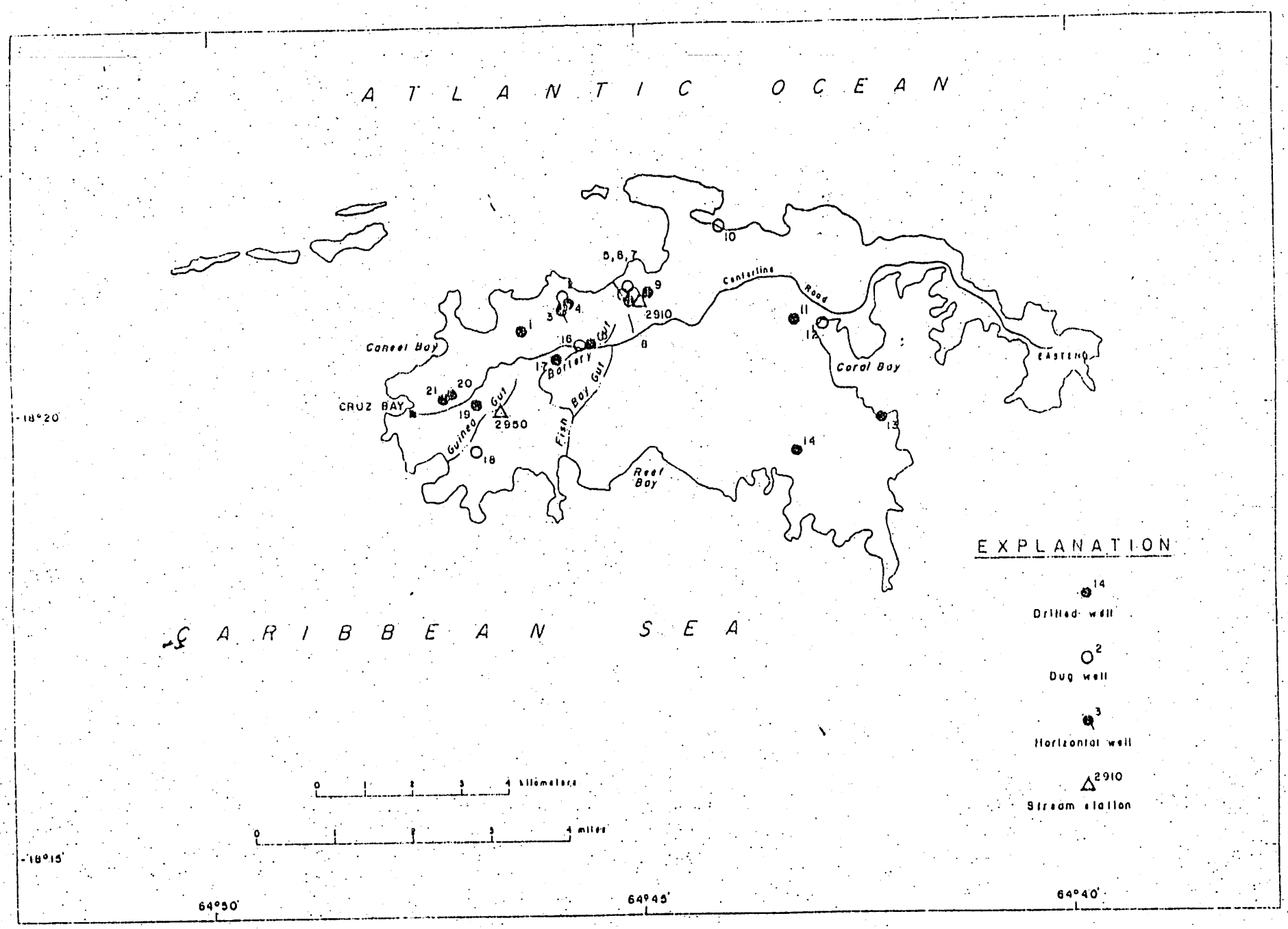
MAPS SHOWING METEOROLOGICAL DATA COLLECTION STATIONS





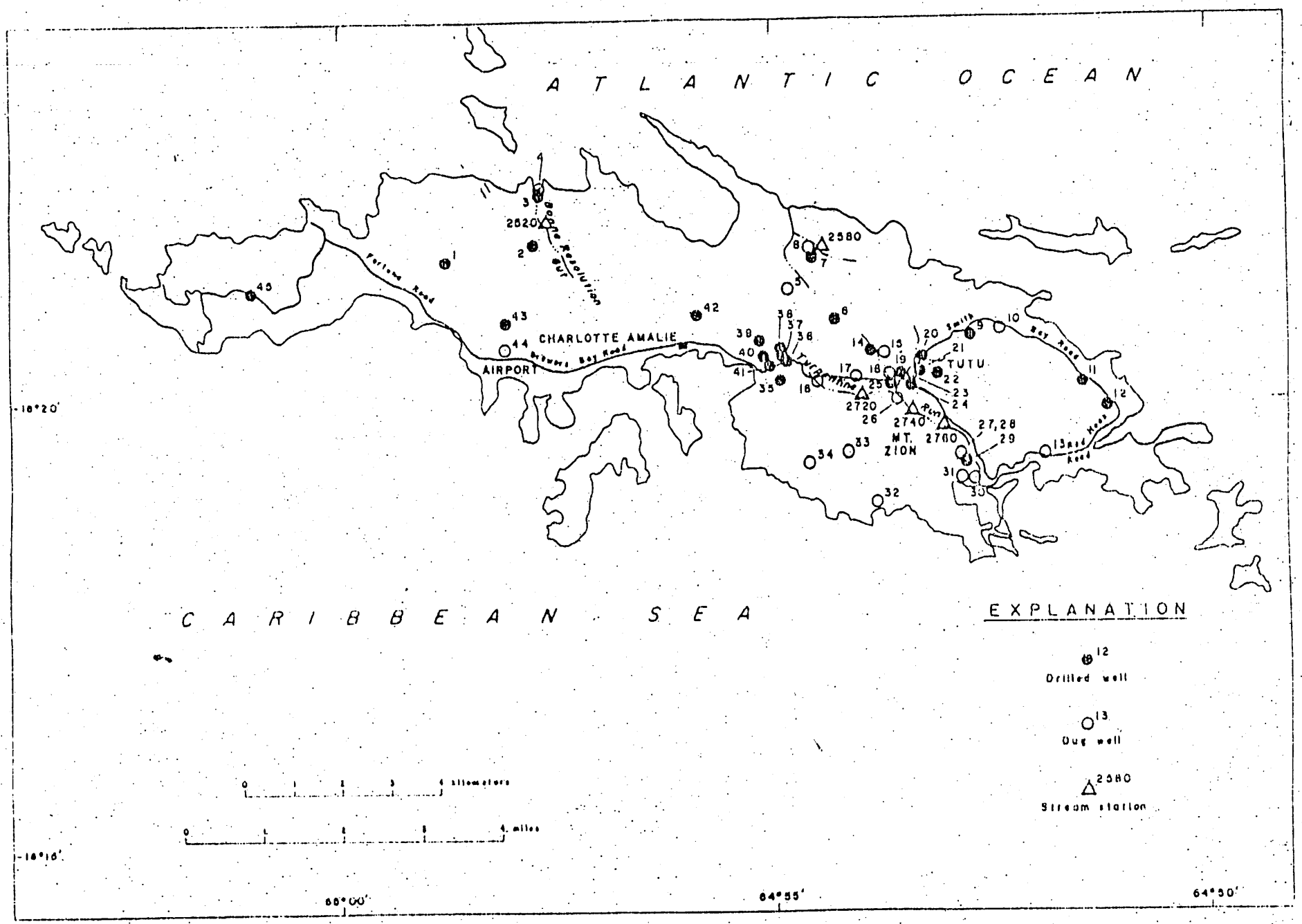


VIRGIN ISLANDS



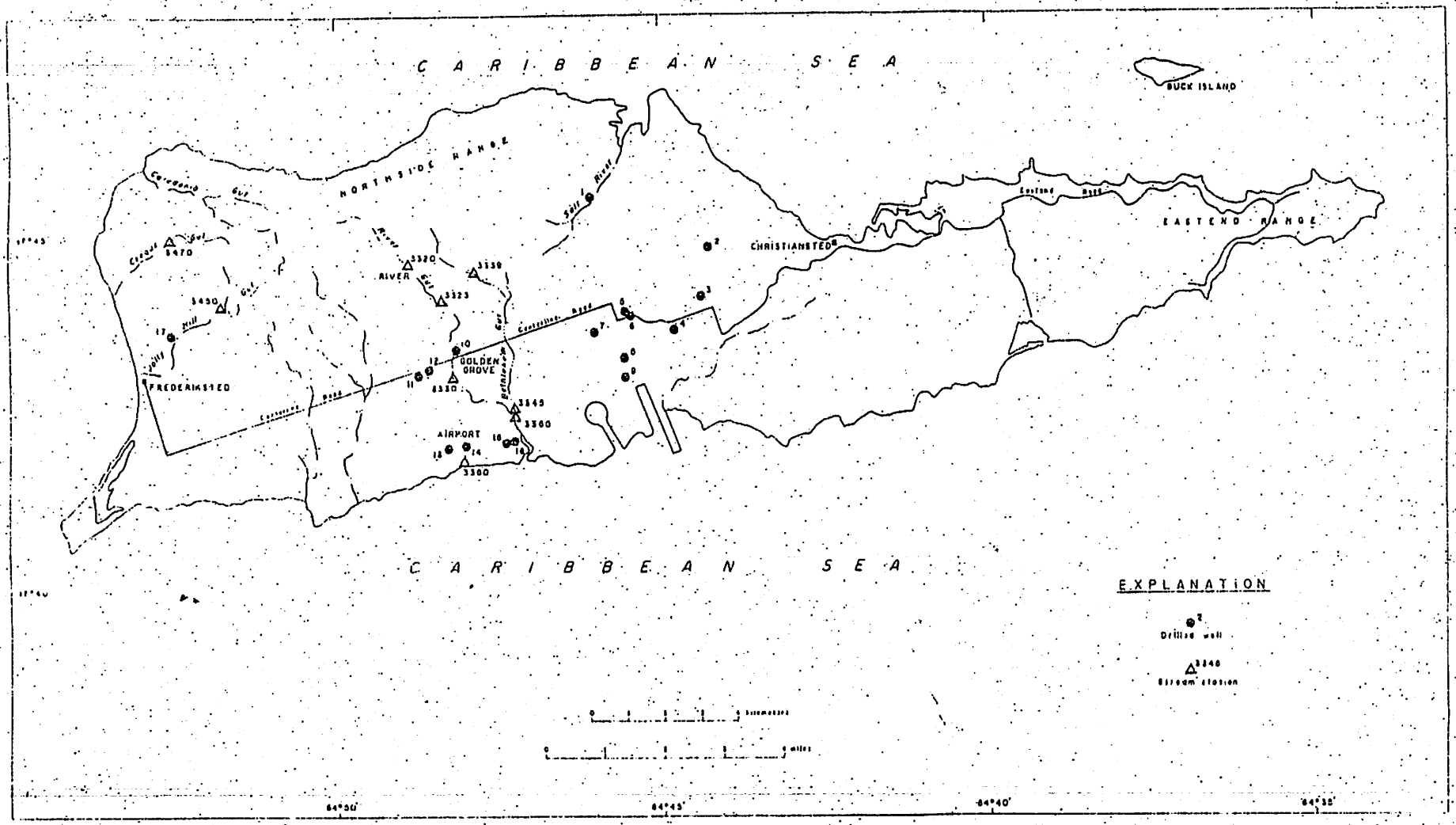
APPENDIX B

MAPS SHOWING GROUND AND SURFACE WATER DATA COLLECTION STATIONS IN ST. JOHN



APPENDIX C

MAPS SHOWING GROUND SURFACE WATER DATA COLLECTION STATIONS IN ST. THOMAS



APPENDIX D

MAP SHOWING GROUND AND SURFACE WATER DATA COLLECTION STATIONS IN ST. CROIX

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