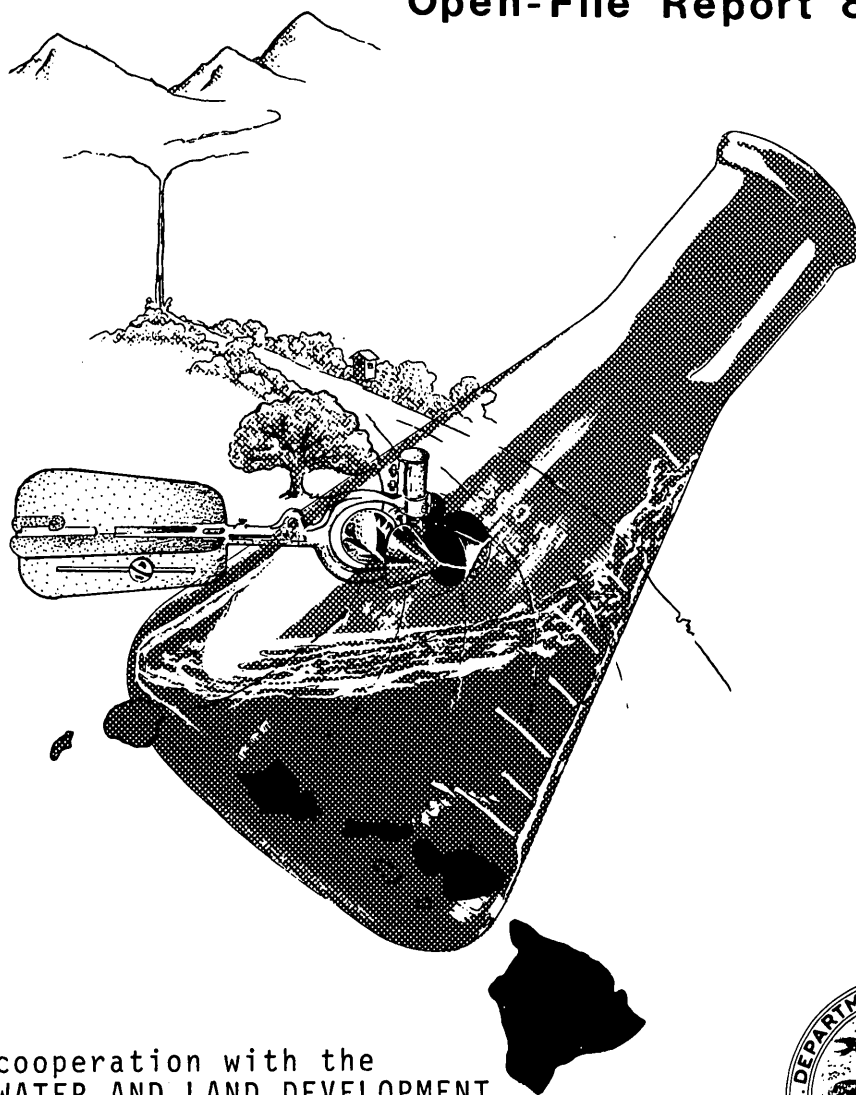


UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUMMARY OF AVAILABLE DATA ON SURFACE WATER, STATE OF HAWAII Volume 2-General Information and Station List for the Islands of Oahu, Molokai, Maui, and Hawaii

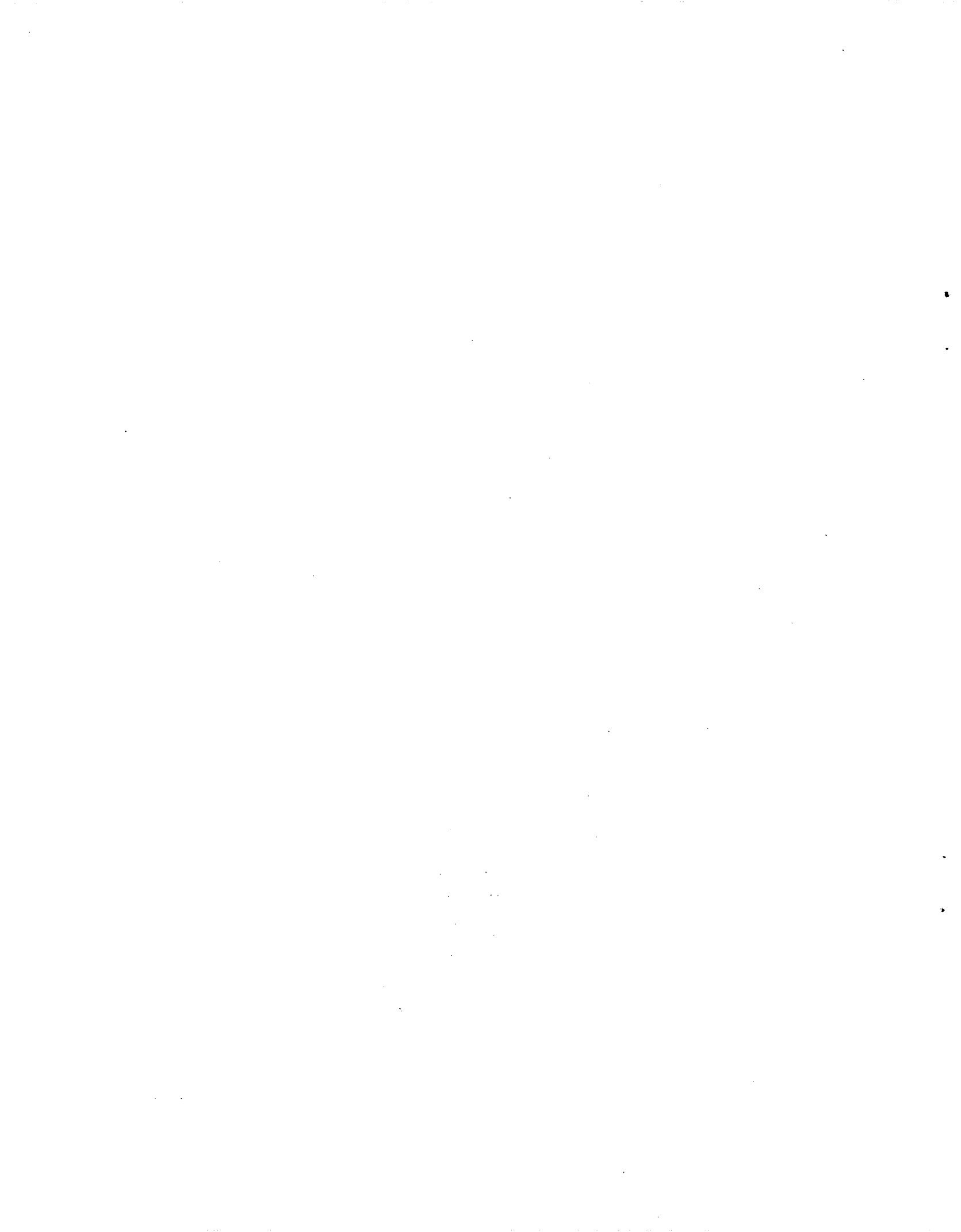
Open-File Report 81-1056-A



Prepared in cooperation with the
DIVISION OF WATER AND LAND DEVELOPMENT
DEPARTMENT OF LAND AND NATURAL RESOURCES



Honolulu, Hawaii
December, 1983



SUMMARY OF AVAILABLE DATA ON
SURFACE WATER, STATE OF HAWAII

VOLUME 2: GENERAL INFORMATION AND STATION LIST FOR THE
ISLANDS OF OAHU, MOLOKAI, MAUI, AND HAWAII

By Iwao Matsuoka

U.S. GEOLOGICAL SURVEY
Open-File Report 81-1056

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UNITED STATES DEPARTMENT OF THE INTERIOR

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CONVERSION TABLE

The following table may be used to convert measurements in the inch-pound system to the International System of Units (SI).

<u>Multiply inch-pound units</u>	<u>By</u>	<u>To obtain SI units</u>
<u>Length</u>		
foot (ft) -----	0.3048	---- meter (m)
mile (mi) -----	1.609	---- kilometer (km)
<u>Area</u>		
acre -----	4,047	---- square meter (m ²)
square foot (ft ²) -----	0.0929	---- square meter (m ²)
square mile (mi ²) -----	2.590	---- square kilometer (km ²)
<u>Volume</u>		
acre-foot (acre-ft) -----	1,233	---- cubic meter (m ³)
cubic foot (ft ³) -----	0.02832	---- cubic meter (m ³)
gallon (gal) -----	3.785	---- liter (L)
million gallons (10 ⁶ gal or Mgal)	3,785	---- cubic meters (m ³)
<u>Volume Per Unit Time (includes Flow)</u>		
cubic foot per second (ft ³ /s) --	0.02832	---- cubic meter per second (m ³ /s)
cubic foot per second-day (ft ³ /s)-d -----	2,447	---- cubic meter (m ³)
gallon per minute (gal/min) ----	0.06309	---- liter per second (L/s)
gallons per day (gal/d) -----	90.85	---- liter per second (L/s)
million gallons per day (10 ⁶ gal/d or Mgal/d) -----	0.04381	---- cubic meter per second (m ³ /s)
<u>Miscellaneous</u>		
cubic foot per second per square mile (ft ³ /s)/mi ² -----	0.01093	---- cubic meter per second per square kilometer (m ³ /s)/km ²



SUMMARY OF AVAILABLE DATA ON SURFACE WATER, STATE OF HAWAII
VOLUME 2: GENERAL INFORMATION AND STATION LIST FOR THE
ISLANDS OF OAHU, MOLOKAI, MAUI, AND HAWAII

By Iwao Matsuoka

ABSTRACT

This report presents explanations of the statistical summaries of available surface-water discharge records and tabulations of surface-water-quality parameters at data-collection sites on the islands of Oahu, Molokai, Maui and Hawaii.

The report includes a brief history of the stream-gaging program of the Water Resources Division of the U.S. Geological Survey in Hawaii. It also includes concise site description and information, explanations and sample tables, various monthly and annual discharges, lowest and highest mean discharges for each year for specified numbers of consecutive days, statistics for monthly and annual mean discharges, and tabulation and summary of surface-water-quality data. Water-quality parameters include sediment and phytoplankton data.

INTRODUCTION

Background

Water data are the basic information used in determining the quantity, quality, and sufficiency of the water resource. Rational evaluation, development, management and control of the surface-water resource require a knowledge of the flow characteristics and quality of the water.

The State of Hawaii recently reevaluated its existing water-quality standards and identified the need for instream use criteria. Hawaii laws do not now specifically provide for the protection or preservation of instream uses. Standards are needed on which to base regulation to protect water quality and quantity and to insure multiple beneficial utilization of stream waters for a variety of uses such as recreation, habitat for fish and wildlife, irrigation, aesthetic appreciation, and industrial applications. A major problem in the development of the instream use criteria is the lack of a consolidated environmental data base.

Purpose and scope

Reports for the major islands are being prepared to provide a statewide surface-water data base. This data base will be a major part of the consolidated environmental data base needed by the State of Hawaii, Department of Land and Natural Resources, Division of Water and Land Development to develop instream use criteria and accompanying regulations.

Since the beginning of its stream-gaging program in 1909, the U.S. Geological Survey has collected surface-water data at approximately 660 data-collection sites on the five major islands (Kauai, Oahu, Maui, Molokai, and Hawaii) of the State of Hawaii. This report, for Oahu, Molokai, Maui, and Hawaii, provides a listing of the sites as of September 30, 1979. Some sites from which the Geological Survey obtained data collected by others are also included. These data were collected mainly before and shortly after 1909. The listing includes location, site type, drainage area, altitude, diversion or inflow, period of operation, type of surface-water discharge and quality data available.

Surface-water discharge data collected at the continuous record sites on Oahu, Molokai, Maui, and Hawaii are summarized. Where sufficient data are available for a station, streamflow characteristics, such as frequency statistics and duration tables, are determined. Any significant diversions out of or inflows into a drainage basin of a streamflow station during the period of operation are noted.

Most of the surface-water-quality data collected by the Geological Survey has been gathered in the last 12 years. These data are tabulated by sites and statistical summary of the data presented.

This report updates and extensively augments G. T. Hirashima's report, "Flow Characteristics of Selected Streams in Hawaii," (1965) for the Islands of Oahu, Molokai, Maui, and Hawaii. References to publications which provide tables of daily discharges, detailed station descriptions, or discharges at partial-record or miscellaneous measurement sites are listed elsewhere in this report for the interested user.

Criteria for data presentation

In order to condense the voluminous data and to present meaningful summaries, the following criteria were established for including certain data in this report:

1. Statistical analyses using the log-Pearson type III frequency distribution will be made and summarized for springs or streamflow stations with daily values for 10 or more complete years of record. This type of analysis is not appropriate for stations with short records or for those ditch, drain, or canal stations for which flows are highly regulated.
2. Of the stations selected to determine the statistical summaries in "1" above, low-flow frequency summaries will not be included for ephemeral streams because the log-Pearson type III frequency analysis method for records with zero-values tends to distort the very low-flow portion of the frequency curve.
3. If daily values for a month are incomplete, that particular month and the corresponding water year will not be used in the statistical analyses.

4. Partial-record water-quality analysis results will not be included if only the water temperature and instantaneous discharge data are available for a sample. This eliminates many of the water-temperature observations that were made at the time when stream-discharge measurements were made.
5. For stations where continuous records of water-quality data are obtained, monthly and annual summaries will be made.

Acknowledgment

This report was prepared by the Hawaii District of the U.S. Geological Survey, Water Resources Division, in cooperation with the State of Hawaii, Department of Land and Natural Resources, Division of Water and Land Development.

PRESENTATION OF DATA

The report is divided into the following six volumes:

Volume 1: General information and station list, station location maps, and data and statistical tables for the Island of Kauai.

Volume 2: General information and station list for the islands of Oahu, Molokai, Maui, and Hawaii.

Volume 3: Station location maps for the islands of Oahu, Molokai, Maui, and Hawaii.

Volume 4: Data and statistical tables for Oahu.

Volume 5: Data and statistical tables for Molokai and Maui.

Volume 6: Data and statistical tables for the island of Hawaii.

There are three types of data for each island: (1) general information and station list; (2) station location maps; and (3) data and statistical tables. Because of the criteria used for including data in this report, many stations will not have any data and statistical tables, while others will have only a few tables. Stations in the data and statistical table volumes are arranged in ascending order of the station numbers.

Volume 1, the data report for the Island of Kauai, Open-File Report 81-1056, contains the three types of data for Kauai in one volume. Because of the excessive costs in continuing the same format for the other four islands, the voluminous data for Oahu, Molokai, Maui, and Hawaii were prepared in the format designated above as Volumes 2 through 6.

Volumes 2 and 3 will be available from the Open-File Services Section in Denver. Volumes 4 through 6 will be unpublished statistical data sheets, which will be on file at the Hawaii District Office, available upon request for reference or as reproduced copies.

General information and station list

The first type of data, is a tabulation of all the stations on Oahu, Molokai, Maui, and Hawaii that had been or were being operated by the Geological Survey on September 30, 1979. Information in this table includes:

1. Station number and name: Based on the standard U.S. Geological Survey method using downstream order and referencing to the nearest town. The station numbers generally increase as you proceed counterclockwise around the island.

2. Station location: Indicated by latitude and longitude in degrees, minutes, and seconds.
3. Type of site: Classification of the waterway from which the data are collected.
4. Drainage area (stream stations only): Basin area which contributes to surface runoff.
5. Diversion: Any known inflow or outflow from the drainage area.
6. Altitude of the station: Given for stream stations only.
7. Period of operation: The calendar years in which the Geological Survey started and ended the operation of the station. If the station was still active on September 30, 1979, the type of discharge data now being collected is noted.
8. Continuous records of flow available: Types of data and statistical tables available in this report.
9. Type of quality-of-water data available: Parameters tabulated into ten major groupings and a statistical summary.
10. Data table volume No. and page Nos.: Volume number and page numbers where the data tables for the station are located.
11. Map plate number and hydrographic area: To simplify locating the station on the map plate contained in volume 3. The hydrographic areas are those delineated in the Hawaii Water Resources Regional Study (1979).

Station location map

Station-location maps (plates 01, 02, M1, M2, MA1, MA2, MA3, MA4, H1, H2, H3, H4) show the location of each station and its relation to the environmental features. All the stations listed in the general station list are plotted on the map with the exception of any combined station (dummy station) which was established to accept the combined daily discharges from two or more stations.

Data and statistical tables

Data and statistical tables consist of two groups: Surface-water-discharge data and surface-water-quality data.

Surface-water-discharge data.--The surface-water-discharge data and statistics presented in the report are based only on daily values. The daily values are daily mean discharges, in cubic feet per second, computed from records that are obtained by installing various types of recorders which continuously record the water levels at a gaging station. These daily mean discharges are published by the U.S. Geological Survey in its annual series of "Water Resources Data" reports or in the Water-Supply Paper series. All annual computations are based on the water year which starts in October of one calendar year and ends in September of the following calendar year. Only months or years with complete records are used for their respective statistics. Unless otherwise noted, all the data and computations are based on normal data (arithmetic values) without log transformation.

The information in this group is tabulated under a station as follows:

Table A. Summaries of zero-value and no-value days, months, and years.

Table B. Monthly means in chronological order.

Table C. Monthly means ranked in ascending order with identification of median and first and third quartile values.

Table D. Statistics on monthly means.

- a. Mean: The mean is a measure of the central tendency of a group of discharges. It is computed by adding the individual discharges in the group and dividing this sum by the number of discharges in the group. The mean is designated by

$$\bar{x} = \frac{1}{N} \sum_{i=1}^N x_i$$

where x_i = discharges and N = total number of discharges.

- b. Variance: The variance is a measure of the variability of the discharges about their mean. It is the square of the standard deviation and is designated by

$$s^2 = \frac{\left[\sum_{i=1}^N x_i^2 - \frac{1}{N} \left(\sum_{i=1}^N x_i \right)^2 \right]}{N - 1}$$

- c. Standard deviation: The standard deviation is a measure of the dispersion of the discharges about their mean. It is the square root of the variance and is designated by

$$s = \sqrt{s^2} = \sqrt{\frac{\left[\sum_{i=1}^N x_i^2 - \frac{1}{N} \left(\sum_{i=1}^N x_i \right)^2 \right]}{N-1}}$$

- d. Coefficient of skewness: The coefficient of skewness, or simply skewness, is an index of distortion from a symmetrical frequency distribution. If the discharges are normally distributed, the skewness is zero. It is designated by

$$g = \frac{N^2 \sum_{i=1}^N x_i^3 - 3N \sum_{i=1}^N x_i \sum_{i=1}^N x_i^2 + 2 \left(\sum_{i=1}^N x_i \right)^3}{N(N-1)(N-2) s^3} \quad \text{or}$$

$$g = \frac{\sum_{i=1}^N (x_i - \bar{x})^3}{s^3}$$

- e. Coefficient of variation: The standard deviation divided by the mean is the coefficient of variation. It is a dimensionless index; thus, it provides a suitable basis for comparisons of variability. It is designated by

$$C_v = \frac{s}{\bar{x}}$$

f. Percentage of average flow: The percentage of average flow is the ratio, in percent, of the period-of-record average monthly discharge for a month to the average discharge for the total period of record. It is designated by

$$PA_k = \frac{\bar{x}_k (100)}{\frac{12}{\sum_{k=1} \bar{x}_k}}$$

where k = month index.

Table E. Correlation coefficient: The correlation coefficient is a measure of the strength of the linear relationship between two variables; in the case of monthly mean discharges, the values from 2 months in the same water year, x_i , y_i , for the period of record. It is computed by the product-moment formula and is designated by

$$r = \frac{N \sum_{i=1}^N x_i y_i - \sum_{i=1}^N x_i \sum_{i=1}^N y_i}{\left[N \sum_{i=1}^N x_i^2 - \left(\sum_{i=1}^N x_i \right)^2 \right] \left[N \sum_{i=1}^N y_i^2 - \left(\sum_{i=1}^N y_i \right)^2 \right]^{.}}$$

Table F. Serial correlation coefficient for 1-year lag: The serial correlation coefficient is analogous to the correlation coefficient computed by the product-moment formula, except that the same series is divided into two sets of data, x_i and x_{i+k} , the second lagging the first by k time units. In the case of a 1-year lag, it is designated by

$$r_1 = \frac{(N-1) \sum_{i=1}^{N-1} x_i x_{i+1} - \sum_{i=1}^{N-1} x_i \sum_{i=1}^{N-1} x_{i+1}}{\left[(N-1) \sum_{i=1}^{N-1} x_i^2 - \left(\sum_{i=1}^{N-1} x_i \right)^2 \right] \left[(N-1) \sum_{i=1}^{N-1} x_{i+1}^2 - \left(\sum_{i=1}^{N-1} x_{i+1} \right)^2 \right]^{.}}$$

Table G. Statistics on annual means.

Table H. Annual means ranked in ascending and descending orders and annual sums of daily discharges.

Table I. Lowest mean values and rankings for indicated number of consecutive days.

Table J. Highest mean values and rankings for indicated number of consecutive days.

Table K. Duration table of daily values with class summary and percent exceedance table.

Table L. Summary of statistics using log-Pearson distribution for lowest and highest mean values for selected numbers of consecutive days.

Values of mean discharge, standard deviation and skewness are given based on both normal (arithmetic) and transformed (common logarithm) computations. The logarithm values are based on first converting the arithmetic values of the discharges to their common logarithm values.

Surface-water-quality data.--There are two types of records based on the frequency of collection. They are continuous (daily) or partial records. Continuous specific conductance or temperature records are obtained by installing a probe in the stream and recording the data on a continuous recorder. Continuous sediment records are obtained by installing an intake in the stream for collecting suspended sediment samples by a time-and-stage controlled pump. Partial-record samples are individually collected by using standard Geological Survey sampling techniques.

The surface-water-quality data are grouped and tabulated for a station as follows:

Table M. Statistical summary of partial-record analyses.

Table N. Physical parameters.

Table O. Physical (including instantaneous sediment) parameters.

Table P. Common ions, metals and general organic parameters.

Table Q. Biological parameters.

Table R. Phytoplankton taxonomy tables.

Table S. Pesticide parameters.

Table T. Continuous records of specific conductance.

Table U. Continuous records of suspended sediment discharge.

Table V. Continuous records of water temperature.

Remark symbols are used in the above tables to clarify the data. The symbols used and their respective meanings are:

E Estimated value.

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

> Actual value is known to be greater than the value shown.

ND Material specifically analyzed for but not detected.

K Results based on colony count outside the acceptable range (nonideal colony count).

Sample tables with explanations.--In order to clarify the arrangement of data presented in the tabular material, various tables with explanations are included as sample Tables A through M.

SAMPLE TABLE A.--Summaries of zero-value and no-value days, months, and years.

TABLE A. SUMMARIES OF ZERO-VALUE AND NO-VALUE DAYS, MONTHS, AND YEARS.

YEAR	TOTAL NO. OF DAYS	NO. OF 0-VALUE DAYS	PRCT. OF 0-VALUE DAYS	NO. OF NO-VALUE DAYS	PRCT. OF NO-VALUE DAYS
1910	365	0	0.0	304	83.3
1911	365	8	2.1	0	0.0
1912	366	8	2.1	0	0.0
1913	365	1	0.3	0	0.0
1914	365	0	0.0	0	0.0
1915	365	0	0.0	0	0.0
1916	366	0	0.0	0	0.0
1917	366	0	0.0	0	0.0
1918	366	0	0.0	92	25.1
1919	366	0	0.0	273	74.6
1920	366	0	0.0	335	91.5
1944	366	0	0.0	61	16.6
Water year ending Sept. 30.	365	0	0.0	0	0.0
1948	366	0	0.0	0	0.0
1949	365	0	0.0	0	0.0
1950	365	0	0.0	0	0.0
1951	365	0	0.0	0	0.0
1952	366	0	0.0	0	0.0
1953	365	0	0.0	0	0.0
1954	365	0	0.0	0	0.0
1955	365	0	0.0	0	0.0
1956	366	0	0.0	0	0.0
1957	365	0	0.0	0	0.0
1958	365	0	0.0	0	0.0
1959	365	0	0.0	0	0.0
1960	366	0	0.0	0	0.0
1961	365	0	0.0	0	0.0
1962	365	0	0.0	0	0.0
1963	365	0	0.0	0	0.0
1964	366	0	0.0	0	0.0
1965	365	0	0.0	0	0.0
1966	365	0	0.0	0	0.0
1967	365	0	0.0	0	0.0
1968	366	0	0.0	0	0.0
1970	365	0	0.0	0	0.0
1971	365	0	0.0	0	0.0
1972	366	0	0.0	0	0.0
1973	365	0	0.0	338	92.6
1975	365	0	0.0	212	58.1
1976	366	0	0.0	0	0.0
1977	365	0	0.0	0	0.0
1978	365	0	0.0	0	0.0
1979	365	0	0.0	0	0.0

MONTH	TOTAL NO. OF DAYS	NO. OF 0-VALUE DAYS	PRCT. OF 0-VALUE DAYS	NO. OF NO-VALUE DAYS	PRCT. OF NO-VALUE DAYS
OCT	1350	0	0.0	128	9.1
NOV	1350	2	0.1	0	0.0
DEC	130	0	0.0	0	0.0
JAN	130	0	0.0	0	0.0
FEB	127	0	0.0	0	0.0
MARCH	139	0	0.0	0	0.0
APRIL	1350	0	0.0	155	11.1
SEPT	1350	11	0.8	124	9.2
TOTAL	16437	87	0.6	1615	9.8

MONTH	TOTAL NO. OF MONTHS	NO. OF 0-VALUE MONTHS	PRCT. OF 0-VALUE MONTHS	NO. OF NO-VALUE MONTHS	PRCT. OF NO-VALUE MONTHS
OCT	45	0	0.0	6	13.3
NOV	45	0	0.0	0	0.0
DEC	45	0	0.0	0	0.0
JAN	45	0	0.0	0	0.0
FEB	45	0	0.0	0	0.0
MARCH	45	0	0.0	0	0.0
APRIL	45	0	0.0	0	0.0
MAY	45	0	0.0	0	0.0
JUNE	45	0	0.0	0	0.0
JULY	45	0	0.0	0	0.0
AUG	45	0	0.0	0	0.0
SEPT	45	0	0.0	3	6.6
TOTAL	540	1	0.2	54	10.0

NO. OF YEARS	NO. OF 0-VALUE YEARS	PRCT. OF 0-VALUE YEARS	NO. OF NO-VALUE YEARS	PRCT. OF NO-VALUE YEARS
45	0	0.0	7	15.5

Total no. of water years in which each water year had at least one daily discharge record.

No. of water years where the daily discharge for the whole water year was zero value.

No. of zero-value water years as a percentage of the total no. of water years.

No. of no-value water years as a percentage of the total no. of water years.

No. of days in all the months of Oct. when daily discharge was zero.

No. of zero-value days in all the months of Oct. as a percentage of the total no. of days in all the month of Oct.

No. of days in all the months of Oct. when there was no daily discharge record.

No. of no-value days in all the months of Oct. as a percentage of the total no. of days in all the month of Oct.

No. of months of Oct. out of all the months of Oct. when daily discharge was zero for the whole month.

No. of zero-value months of Oct. as a percentage of the total no. of months of Oct.

No. of months of Oct. out of all the months of Oct. when a month had one or more no-value days.

No. of no-value months of Oct. as a percentage of the total no. of month of Oct.

No. of water years where one or more days in a water year had no-value daily discharge.

SAMPLE TABLE B.--Monthly means in chronological order.

TABLE B. MONTHLY MEANS IN CHRONOLOGICAL ORDER.
DISCHARGE IN CUBIC FEET PER SECOND.

YEAR	OCT	NOV	DEC	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT
1909	*	*	*	*	*	*	*	16.6	13.0	32.2	13.6	8.61
1910	16.2	7.12	90.0	*	26.4	22.5	53.5	25.7	61.7	16.7	14.1	26.5
1911	36.7	43.0	*	*	17.7	65.0	28.6	40.5	24.2	18.8	6.46	48.5
1912	10.1	31.0	34.8	10.3	56.4	80.4	43.9	19.5	9.31	15.8	73.9	14.3
1913	*	*	*	*	*	*	*	*	15.8	22.1	18.9	10.5
1914	12.3	61.7	*	*	29.0	52.7	46.2	26.1	28.9	29.6	54.3	26.6
1915	43.5	27.3	*	*	10.5	73.1	12.5	*	*	*	*	*
1916	41.8	*	*	*	37.6	*	*	*	*	*	*	*
1917	60.3	34.6	*	*	*	*	*	*	*	*	*	*
1919	*	*	*	*	*	*	*	*	*	16.0	12.7	10.4
1920	8.15	8.77	34.7	68.8	11.5	86.8	16.5	8.09	12.4	19.0	31.9	37.0
1921	26.0	56.2	84.0	343.00	20.0	52.6	26.2	5.87	9.27	13.6	10.2	6.09
1922	15.5	32.6	84.3	76.9	75.0	46.7	32.1	32.4	7.45	5.18	10.6	41.7
1923	*	*	*	5.00	30.2	71.9	28.8	19.5	10.7	14.4	14.3	12.1
1924	*	*	*	4.1	38.5	19.5	67.6	22.4	14.2	33.0	15.7	5.31
1925	*	*	*	5.7	21.4	88.1	65.2	16.0	8.94	17.8	16.6	7.08
1926	*	*	*	3.1	22.4	6.15	11.3	7.13	16.7	16.3	11.1	14.2
1927	8.18	22.0	28.6	45.4	17.6	67.5	56.6	86.2	26.4	57.9	27.3	16.2
1928	11.4	34.0	47.4	40.2	41.6	28.8	43.1	39.3	12.5	54.1	13.2	13.6
1929	4.71	170.00	30.8	32.5	41.9	41.5	25.9	12.7	13.4	17.6	17.7	4.33
1930	6.21	42.8	148.00	49.0	54.1	54.9	55.3	27.9	27.2	24.4	22.5	10.8
1931	14.1	58.2	36.4	19.7	18.4	19.7	27.7	18.9	10.7	20.4	50.6	29.5
1932	19.6	24.4	105.00	24.7	93.7	33.6	57.4	19.2	7.23	22.1	10.3	7.40
1933	4.59	40.5	28.0	42.1	26.0	58.9	16.6	15.6	13.1	28.0	9.87	9.20
1934	4.51	17.1	32.1	9.35	12.2	6.57	73.0	33.1	45.8	18.5	7.86	12.9
1935	24.3	34.8	38.6	49.3	53.6	36.4	32.7	14.5	13.8	12.2	11.6	16.9
1936	11.2	25.7	39.5	34.0	56.8	73.5	23.1	64.7	13.0	43.8	37.0	22.8
1937	58.6	54.2	91.1	34.8	95.5	101.00	12.8	36.2	14.8	67.0	60.9	16.8
1938	29.0	31.1	43.2	42.5	34.7	89.6	64.6	35.6	46.0	22.3	26.8	4.53
1939	11.8	20.8	35.8	30.6	17.3	22.7	55.8	37.1	13.1	21.4	10.0	10.2
1940	14.8	52.6	32.9	45.3	14.0	14.8	48.1	59.1	11.0	29.2	34.1	12.6
1941	48.5	18.1	22.2	16.7	11.5	28.2	10.5	51.7	7.12	15.6	14.6	12.8
1942	54.3	19.8	37.8	11.7	57.3	94.2	84.3	14.0	21.6	17.7	8.23	6.77
1943	16.5	20.6	72.8	79.9	32.0	72.0	32.9	23.6	12.5	23.8	24.6	7.89
1944	6.08	11.9	39.0	12.7	30.9	78.1	23.4	15.6	9.35	12.4	6.01	2.57
1945	12.0	5.80	30.0	3.23	4.26	16.6	65.5	10.6	3.79	6.57	16.7	7.77
1946	12.8	13.5	45.2	46.4	37.2	41.2	69.0	11.7	21.1	30.4	5.80	4.07
1947	3.85	36.9	176.00	29.0	10.5	38.3	26.8	49.0	20.4	27.3	15.6	18.6
1948	26.2	38.4	107.00	173.00	27.7	61.5	47.1	16.8	14.6	24.2	15.4	15.6
1949	34.9	46.3	99.2	100.00	62.5	37.2	29.4	19.1	9.48	18.7	13.9	8.53
1950	4.87	54.4	20.1	89.9	32.2	37.5	59.8	24.6	13.6	13.1	195.00	13.4
1951	8.04	25.3	42.8	94.3	31.3	152.00	44.5	5.54	3.58	6.07	30.5	24.2
1952	34.7	31.2	75.5	38.6	14.7	51.9	39.5	35.4	16.7	14.8	6.21	5.24
1953	43.9	29.1	27.3	10.9	42.4	61.5	18.5	15.4	6.46	5.62	3.29	1.86
1954	5.42	31.8	34.8	21.3	48.8	54.5	41.6	43.4	26.1	66.4	17.5	9.64
1955	19.3	35.7	129.00	75.1	106.00	53.8	35.2	19.4	13.6	21.3	27.9	16.2
1956	14.5	61.9	37.8	54.3	165.00	34.8	29.0	18.5	21.8	13.6	11.2	4.11
1957	29.7	23.7	39.2	60.8	66.1	12.6	51.8	12.3	6.88	18.3	40.9	13.8
1958	6.63	57.2	158.00	43.6	33.7	27.8	18.0	26.1	20.9	64.8	70.9	37.3
1959	53.9	28.2	39.4	47.5	51.3	11.0	58.3	31.4	5.76	23.0	77.6	19.3
1960	5.91	61.6	50.7	19.1	53.1	58.3	48.9	18.0	15.1	12.8	9.29	15.6
1961	16.4	22.1	24.9	28.0	37.6	46.6	46.4	28.7	37.7	16.7	16.0	9.73
1962	38.8	90.6	31.4	62.5	38.5	58.3	92.1	14.4	18.0	7.17	16.4	5.18
1963	13.0	29.1	23.1	62.2	17.5	61.6	60.7	48.3	23.9	23.7	6.25	22.2
1964	5.92	4.16	18.7	99.7	38.0	69.4	23.9	17.0	10.7	50.1	15.6	27.1
1965	48.7	141.00	114.00	48.5	67.3	27.5	51.7	51.3	17.9	25.8	19.1	8.00
1966	51.5	45.1	70.1	19.6	77.1	8.90	10.2	3.38	5.26	16.7	19.9	6.34
1967	23.2	41.4	65.4	94.7	31.1	64.7	62.9	62.7	7.42	12.5	12.2	9.13
1968	12.8	101.00	176.00	37.1	39.2	78.4	52.1	14.0	7.84	15.2	6.75	6.60
1969	30.2	139.00	93.0	72.6	88.3	56.2	45.4	45.2	21.6	42.3	22.9	24.3
1970	34.2	32.0	62.6	92.8	17.5	8.04	75.4	15.6	10.6	21.5	12.9	15.2
1971	21.0	45.1	59.7	85.3	33.9	61.1	72.0	14.4	6.68	14.5	6.63	7.49
1972	8.59	17.1	29.5	25.3	53.0	33.5	30.4	8.34	9.86	13.3	9.95	16.5
1973	12.7	34.1	27.0	23.2	46.2	50.5	18.5	47.3	14.5	21.7	9.14	9.11
1974	8.82	49.0	47.3	80.3	33.6	33.2	112.00	28.8	10.6	17.4	5.94	16.9
1975	6.67	75.2	22.4	60.0	30.8	51.7	23.5	10.5	4.37	12.4	6.62	2.30
1976	3.36	32.1	13.9	29.6	48.1	74.2	103.00	20.1	13.6	27.4	10.8	14.1
1977	15.8	19.8	13.7	12.1	24.8	44.8	23.5	29.0	15.6	11.8	15.8	8.51
1978	17.0	19.7	30.1	13.9	4.55	28.9	37.0	31.8	68.7	20.5	24.2	10.3
1979	20.6	23.4	44.1	80.8	108.00	13.1	16.8	23.6	18.6	14.0	5.22	2.77

Sum of the daily values for month of Nov. for water year 1911 divided by 30.

Water year 1918 not listed because daily values for one or more days in every month of the year were missing.

* INDICATES A NO-VALUE MONTH

Missing value for one or more days in the month.

SAMPLE TABLE C.--Monthly means ranked in ascending order with identification of median and first and third quartile values.

TABLE C. MONTHLY MEANS RANKED IN ASCENDING ORDER WITH IDENTIFICATION OF MEDIAN AND FIRST AND THIRD QUARTILE VALUES. DISCHARGE IN CUBIC FEET PER SECOND.

OCT	NOV	DEC	JAN	FEB	MARCH
1909	1909	1909	1909	1909	1909
1913	1913	1911	1910	1913	1913
1919	1916	1913	1911	1917	1917
3.36 1916	1919	1916	1913	1919	1919
3.85 1947	4.16 1964	1917	1917	4.26 1945	6.15 1926
4.51 1934	5.80 1945	1919	1919	4.55 1978	6.57 1934
4.59 1933		11.90 1923	3.23 1945	10.50 1947	8.04 1970
4.71 1929	No value indicates incomplete data for the month.	13.70 1977	9.35 1934	11.50 1941	8.90 1966
4.87 1950		13.90 1976	10.30 1912	11.50 1920	10.50 1915
5.42 1954	13.50 1944	18.69 1964	10.90 1953	12.20 1934	11.00 1959
5.91 1960	17.10 1934	20.10 1950	11.70 1942	14.00 1940	12.60 1957
5.92 1964	17.10 1972	22.19 1941	12.10 1977	14.70 1952	13.10 1979
6.03 1944	18.10 1941	22.30 1953	12.70 1944	17.30 1939	14.80 1940
6.21 1930	18.80 1926	22.40 1975	13.90 1978	17.50 1970	16.60 1945
6.63 1958	19.69 1978	23.10 1963	15.30 1915	17.50 1963	19.50 1924
6.67 1975	19.80 1977	24.90 1961	16.69 1941	17.60 1927	19.69 1931
8.04 1951	19.80 1942	26.08 1914	19.10 1960	17.69 1911	22.50 1910
8.15 1920	20.60 1943	27.00 1973	19.60 1966	18.35 1931	22.69 1939
8.18 1927	20.80 1939	28.00 1933	19.69 1931	19.10 1914	27.50 1965
8.59 1972	22.00 1927	28.60 1927	21.30 1954	19.19 1916	27.80 1958
8.82 1974	22.10 1961	29.50 1972	23.10 1926	20.00 1921	28.20 1941
10.10 1912	23.40 1979	30.00 1945	23.19 1973	21.40 1925	28.80 1928
11.20 1936	23.69 1957	30.10 1978	24.10 1924	22.40 1926	28.90 1978
11.40 1928	24.40 1932	30.80 1929	24.69 1932	24.80 1977	29.00 1914
11.80 1939	25.30 1951	31.40 1962	25.30 1972	26.00 1933	33.20 1974
12.00 1945	25.70 1936	32.10 1934	28.00 1961	26.40 1910	33.50 1972
12.30 1914	27.30 1915	32.60 1926	29.00 1947	27.70 1948	33.60 1932
12.70 1973	28.20 1924	32.90 1940	29.60 1976	30.20 1923	34.80 1956
12.80 1968	28.20 1959	34.70 1920	30.60 1939	30.80 1975	36.40 1935
12.80 1946	29.10 1963	34.80 1912	32.50 1929	30.90 1944	37.20 1949
13.00 1963	29.10 1953	34.80 1954	34.00 1936	31.10 1967	37.50 1950
14.10 1931	31.00 1912	35.80 1939	34.80 1937	31.30 1951	37.60 1916
14.50 1956	31.10 1933	36.40 1931	37.10 1968	32.00 1943	38.30 1947
14.80 1940	31.20 1952	37.80 1942	38.60 1952	32.20 1950	41.20 1946
15.50 1922	31.80 1954	37.80 1956	40.20 1928	33.60 1974	41.50 1929
15.80 1977	32.00 1970	38.60 1935	42.10 1933	33.70 1958	44.80 1977
16.19 1910	32.10 1976	39.00 1944	42.50 1938	33.90 1971	46.60 1961
16.39 1961	32.60 1922	39.20 1957	43.60 1958	34.70 1938	46.70 1922
16.50 1943	34.00 1928	39.40 1959	45.30 1940	37.20 1946	50.50 1973
16.89 1926	34.10 1973	39.50 1936	45.40 1927	37.60 1961	51.70 1975
17.00 1978	34.80 1935	42.80 1951	46.40 1946	38.00 1964	51.90 1952
19.30 1955	35.00 1925	43.20 1938	47.50 1959	38.50 1962	52.60 1921
19.60 1932	35.70 1955	44.10 1979	48.50 1965	38.50 1924	53.80 1955
20.60 1979	36.60 1917	45.20 1946	49.00 1930	39.20 1968	54.50 1954
21.00 1971	36.90 1947	47.30 1974	49.30 1935	41.60 1928	54.90 1930
21.10 1925	38.40 1948	47.40 1928	54.30 1956	41.90 1929	56.20 1969
22.40 1923	40.50 1933	50.70 1960	55.70 1925	42.40 1953	58.30 1962
23.19 1967	41.40 1967	59.70 1971	56.60 1914	45.80 1915	58.30 1960
24.30 1935	42.80 1930	62.60 1970	60.00 1975	46.20 1973	58.90 1933
26.00 1921	43.00 1911	65.40 1967	60.80 1957	48.10 1976	61.10 1971
26.80 1948	45.10 1966	70.10 1966	62.20 1963	48.80 1954	61.50 1953
29.00 1938	45.10 1971	71.10 1925	62.50 1962	51.30 1959	61.50 1948
29.70 1957	46.30 1949	72.80 1943	68.80 1920	53.00 1972	61.60 1963
30.20 1969	49.00 1974	75.50 1952	72.60 1969	53.10 1960	64.70 1967
34.20 1970	52.60 1940	79.90 1915	75.10 1955	53.60 1935	65.00 1911
34.70 1952	54.20 1937	84.00 1921	76.90 1922	54.10 1930	67.50 1927
34.90 1949	54.40 1950	84.30 1922	79.90 1943	56.40 1912	69.40 1964
36.70 1911	56.20 1921	90.00 1910	80.30 1974	56.80 1936	71.90 1923
38.80 1962	57.20 1958	91.10 1937	80.80 1979	57.30 1942	72.00 1943
41.80 1916	58.20 1931	93.00 1969	85.30 1971	62.50 1949	73.50 1936
43.50 1915	61.60 1960	99.20 1949	89.90 1950	66.10 1957	74.20 1976
43.90 1953	61.70 1914	105.00 1932	92.80 1970	67.30 1965	78.10 1944
48.00 1924	61.90 1956	107.00 1948	94.30 1951	75.00 1922	78.40 1968
48.50 1941	64.30 1923	114.00 1965	94.70 1967	77.10 1966	80.40 1912
48.70 1965	75.20 1975	116.00 1924	99.70 1964	88.30 1969	86.80 1920
51.50 1966	90.60 1962	129.00 1955	100.00 1949	93.70 1932	88.10 1925
53.90 1959	101.00 1968	148.00 1930	134.00 1916	95.50 1937	89.60 1938
54.30 1942	139.00 1969	158.00 1958	173.00 1948	106.00 1955	94.20 1942
58.60 1937	141.00 1965	176.00 1968	195.00 1923	108.00 1979	101.00 1937
60.30 1917	170.00 1929	176.00 1947	343.00 1921	165.00 1956	152.00 1951
TWENTY FIFTH PERCENTILE					
8.59	22.10	30.00	23.40	19.80	28.10
FIFTIETH PERCENTILE					
16.19	32.30	39.30	44.40	34.30	46.60
SEVENTY FIFTH PERCENTILE					
30.20	49.90	78.80	74.50	53.20	64.80
Median discharge of the monthly means for Nov.					
Median discharge of the means for Jan.					

SAMPLE TABLE D.--Statistics on monthly means.

TABLE D. STATISTICS ON MONTHLY MEANS.
DISCHARGE IN CUBIC FEET PER SECOND.

	OCT	NOV	DEC	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT
	21.4	40.8	(57.0)	55.6	41.8	47.7	44.4	26.5	16.8	22.8	22.0	14.4
	247.00	940.00	(1605.00)	2719.00	810.00	757.00	523.00	275.00	151.00	198.00	716.00	115.00
	15.7	30.7	(40.1)	52.1	28.5	27.5	22.9	16.6	12.3	14.1	26.8	10.7
	0.96	2.31	(1.41)	3.20	1.78	0.84	0.68	1.22	2.32	1.78	4.55	1.75
	0.74	0.75	(0.70)	0.44	0.69	0.57	0.51	0.63	0.73	0.62	1.22	0.75
	5.21	9.92	(13.9)	13.5	10.1	11.6	10.8	6.45	4.08	5.55	5.35	3.50

SAMPLE TABLE E.--Correlation coefficient.

TABLE E. CORRELATION COEFFICIENT.

	OCT	NOV	DEC	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT
Oct	1.000	0.076	0.144	0.054	0.190	-0.106	0.026	-0.023	-0.074	-0.048	-0.028	-0.118
Nov	*	1.000	0.237	0.142	0.222	0.009	-0.007	0.047	-0.123	0.030	0.065	-0.059
Dec	*	*	1.000	0.117	0.192	-0.022	-0.013	0.005	0.011	0.185	-0.032	0.072
Jan	*	*	*	1.000	-0.056	0.155	-0.039	-0.154	-0.210	-0.095	0.007	0.035
Feb	*	*	*	*	1.000	0.005	-0.135	-0.124	-0.137	0.073	0.018	-0.147
Mar	*	*	*	*	*	1.000	-0.014	-0.021	-0.142	0.049	-0.017	0.010
Apr	*	*	*	*	*	*	1.000	0.024	0.156	-0.096	-0.013	-0.090
May	*	*	*	*	*	*	*	1.000	0.235	0.445	0.063	0.201
June	*	*	*	*	*	*	*	*	1.000	0.149	-0.047	0.124
July	*	*	*	*	*	*	*	*	*	1.000	0.161	0.219
Aug	*	*	*	*	*	*	*	*	*	*	1.000	0.193
Sept	*	*	*	*	*	*	*	*	*	*	*	1.000

CORRELATION BETWEEN (OCT, NOV) AND (SEPT, AUG) OF SAME CAL YEAR

AUG-OCT 0.064
SEPT-OCT 0.349
SEPT-NOV 0.087

Correlation coefficient for relationship between mean values of May and July of same water year for each year of record.

SAMPLE TABLE F.--Serial correlation coefficient for 1-year lag.

TABLE F. SERIAL CORRELATION COEFFICIENT FOR 1-YEAR LAG.

OCT	NOV	DEC	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT
0.161	0.031	0.067	0.128	0.199	0.043	-0.275	-0.170	0.038	0.119	0.100	0.084

Correlation coefficient for relationship between pairs of monthly discharges one year apart. The first pair is the mean discharge for October of the first year and the mean discharge for October of the second year. The second pair is the mean discharge for October of the second year and the mean discharge for October of the third year, etc. for the entire period of record.

SAMPLE TABLE G.--Statistics on annual means.

TABLE G. STATISTICS ON ANNUAL MEANS.
DISCHARGE IN CUBIC FEET PER SECOND.

MEAN	VARIANCE	STANDARD DEVIATION	SKFVNESS	COEFF. OF VARIATION	SERIAL CORR
34.1	85.7	9.25	0.31	0.27	0.219

SAMPLE TABLE H.--Annual means ranked in ascending and descending orders and annual sums of daily discharges.

TABLE H. ANNUAL MEANS RANKED IN ASCENDING AND DESCENDING ORDERS AND ANNUAL SUMS OF DAILY DISCHARGES.
DISCHARGE IN CUBIC FEET PER SECOND.

ANNUAL MEAN VALUE AND RANKING IN YEAR ENDING SEPTEMBER 30	ANNUAL MEAN VALUE AND RANKING IN YEAR ENDING SEPTEMBER 30	SUM OF DAILY VALUES FOR YEAR ENDING SEPTEMBER 30
1912 (33.00) (31)	1912 (33.0) (35)	1912 (12182.20)
1914 37.00 41	1914 37.0 24	1914 13471.00
1920 29.00 19	1920 29.0 44	1920 10613.30
1921 55.00 61	1921 55.0 2	Sum of the 365 daily discharges for the water year 1912.
1922 38.00 45	1922 38.0 20	1924 13221.80
1923 42.00 52	1923 42.0 11	1925 12984.70
1924 36.00 36	1924 36.0 25	1926 5966.60
1925 36.00 37	1925 36.0 26	1927 14083.70
1926 16.00 62	1926 16.0 62	1928 11569.90
1927 39.00 42	1927 39.0 35	1929 12461.50
1928 32.00 50	1928 32.0 43	1930 15920.70
1929 34.00 47	1929 34.0 37	1931 9870.10
1930 44.00 53	1930 44.0 10	1932 12904.80
1931 27.00 14	1931 27.0 48	1933 8908.40
1932 Annual mean discharge for water year 1912.	1932 Annual mean discharge for water year 1912.	1934 8276.80
1933 33.00 40	1933 33.0 36	1935 10240.20
1934 23.00 3	1934 23.0 55	1936 13594.60
1935 26.00 17	1935 26.0 45	1937 19568.70
1936 37.00 42	1936 37.0 21	1938 14315.80
1937 54.00 60	1937 54.0 3	1939 8737.40
1938 39.00 47	1938 39.0 17	1940 11270.20
1939 24.00 9	1939 24.0 54	1941 7894.50
1940 31.00 21	1940 31.0 39	1942 12958.20
1941 22.00 6	1941 22.0 56	1943 12821.70
1942 36.00 38	1942 36.0 27	1944 7576.80
1943 35.00 34	1943 35.0 30	1945 5572.20
1944 21.00 4	1944 21.0 59	1946 10278.20
1945 15.00 1	1945 15.0 62	1947 13900.20
1946 28.00 18	1946 28.0 46	
1947 38.00 43	1947 38.0 18	

SAMPLE TABLE I.--Lowest mean values and rankings for indicated number of consecutive days.

TABLE I. LOWEST MEAN VALUES AND RANKINGS FOR INDICATED NUMBER OF CONSECUTIVE DAYS. DISCHARGE IN CUBIC FEET PER SECOND.

YEAR	1	3	7	14	30	60	90	120	183
1911	0.00 1	0.00 1	0.00 1	0.00 1	0.00 1	9.40 17	9.20 6	28.00 27	61.00 26
1912	0.00 2	0.00 2	0.40 3	0.45 2	0.98 4	12.00 22	21.00 27	30.00 28	60.00 25
1913	0.00 3	0.13 3	0.40 4	0.76 5	3.30 19	18.00 32	37.00 36	59.00 38	74.00 32
1914	0.62 16	0.62 11	0.77 8	0.77 8	0.90 3	19.00 36	23.00 29	32.00 30	70.00 29
1915	0.77 20	0.77 1			1.80 8	12.00 23	13.00 17	21.00 20	46.00 20
1916	1.60 30	1.60 2			5.60 27	15.00 28	28.00 32	35.00 31	72.00 30
1917	2.30 35	2.60 35	2.90 36	3.00 33	5.90 29	20.00 38	37.00 37	48.00 36	87.00 34
1945	0.62 17	0.62 12	0.73 8	1.30 13	1.50 6	4.70 5	15.00 20	13.00 10	18.00 4
1946	0.46 10	1.10 23	1.50 23	1.60 19	2.10 10	2.70 3	12.00 11	15.00 11	32.00 10
1947	0.15 4	0.31 6	0.31 2	0.95 9	2.40 13	19.00 37	19.00 23	25.00 23	27.00 7
1948	0.31 6	0.31 6	0.53 5	0.75 4	9.60 37	16.00 29	20.00 25	19.00 18	46.00 21
1949	0.31 7	0.67 13	0.93 15	1.00 10	1.10 5	7.40 12	12.00 12	11.00 5	29.00 9
1950	0.54 12	0.59 10	0.72 7	0.92 7	2.80 15	9.00 16	14.00 18	48.00 37	64.00 27
1951	1.30 27	1.30 2			7.80 21	5.30 7	7.20 3	17.00 16	59.00 24
1952	2.30 36	2.40 3			6.60 25	4.90 6	12.00 13	15.00 12	24.00 6
1953	0.68 18	0.68 1			0.00 9	2.20 2	2.50 2	3.40 2	6.20 1
1954	0.94 24	1.80 2			7.70 20	14.00 25	47.00 38	46.00 35	66.00 28
1955	0.60 15	0.71 17	0.92 16	1.10 11	8.80 36	15.00 26	21.00 26	28.00 24	39.00 11
1956	1.90 32			1.00 36	5.40 26	8.30 15	9.80 7	16.00 13	21.00 5
1957	1.30 28			0.00 34	4.40 24	7.50 13	12.00 14	28.00 25	39.00 12
1958	0.53 11	0.58 9	1.10 18	1.80 20	2.30 11	16.00 30	16.00 21	23.00 22	42.00 16
1959	1.10 25	1.19 24	1.30 22	1.30 14	2.70 14	18.00 33	24.00 31	30.00 29	42.00 17
1960	0.59 13	0.69 16	0.91 12	1.00 18	4.30 22	7.00 9	10.00 8	12.00 6	28.00 8
1961	0.59 14	0.67 14	0.90 10	2.00 23	4.30 23	9.90 18	14.00 19	18.00 17	37.00 13
1962	0.80 21	0.82 19	0.93 13	0.93 8	1.60 7	7.10 10	13.00 15	16.00 14	113.00 36
1963	0.37 8	0.44 7	1.10 19	1.90 21	6.40 32	18.00 34	29.00 33	38.00 32	125.00 38
1964	0.70 19	0.92 20	1.19 20	2.40 27	5.70 28	19.00 35	36.00 35	38.00 33	43.00 19
1965	1.10 26	1.19 25	1.60 24	2.90 32	7.50 34	11.00 19	32.00 34	38.00 34	120.00 37
1966	0.43 9	0.51 8	0.53 6	0.74 3	0.88 2	1.00 1	1.50 1	3.00 1	15.00 3
1967	0.86 23	0.94 21	1.00 17	1.30 15	6.60 33	17.00 31	23.00 30	20.00 19	103.00 35
1968	0.25 5	0.28 4	0.93 14	1.10 12	3.10 18	3.90 4	11.00 9	12.00 7	42.00 18
1970	8.30 38	8.40 38	9.40 38	11.00 38	12.00 38	15.00 27	22.00 28	22.00 21	38.00 14
1971	4.00 37	4.30 37	4.60 37	4.80 37	6.00 30	6.70 8	12.00 10	12.00 8	72.00 31
1972	2.00 33	2.20 32	2.30 31	2.50 28	2.90 16	7.60 14	8.20 5	9.70 3	55.00 23
1976	2.20 34	2.30 33	2.50 35	3.50 35	8.10 35	13.00 24	19.00 24	17.00 15	80.00 33
1977	1.80 31	2.10 31	2.20 30	2.20 25	6.40 31	11.00 20	13.00 16	13.00 9	52.00 22
1978	1.40 29	1.80 30	2.10 29	2.40 26	3.00 17	11.00 21	18.00 22	28.00 26	39.00 15
1979	0.81 22	0.99 22	1.80 28	2.00 24	2.30 12	7.40 11	7.60 4	11.00 4	13.00 2

No. of consecutive days for which lowest mean discharge is computed.

Fifth lowest mean discharge (0.31 cfs) among all lowest mean discharges for 3 consecutive days each year.

Lowest mean discharge for 3 consecutive days in water year 1947.

SAMPLE TABLE J.--Highest mean values and rankings for indicated number of consecutive days.

TABLE J. HIGHEST MEAN VALUES AND RANKINGS FOR INDICATED NUMBER OF CONSECUTIVE DAYS. DISCHARGE IN CUBIC FEET PER SECOND.

YEAR	1	3	7	15	30	60	90	120	183
1911	2200.0 31	1170.0 31	761.0 30	511.0 28	402.0 23	344.0 19	295.0 20	256.0 19	222.0 18
1912	1230.0 37	972.0 33	612.0 34	400.0 33	254.0 35	209.0 31	149.0 34	121.0 34	95.0 30
1913	3380.0 27			2.0 31	278.0 33	218.0 30	170.0 32	159.0 29	117.0 31
1914	9990.0 1			0.0 1	1710.0 1	947.0 3	646.0 3	535.0 3	402.0 4
1915	3960.0 1			5.0 25	393.0 26	224.0 29	171.0 31	134.0 32	119.0 30
1916	10900.0 2	6090.0 3	3020.0 3	2070.0 3	1710.0 2	1090.0 1	838.0 1	690.0 1	522.0 1
1917	4640.0 15	2460.0 14	1440.0 14	863.0 14	553.0 18	465.0 11	413.0 9	338.0 8	357.0 7
1945	1980.0 34	896.0 35	691.0 33	349.0 35	318.0 30	181.0 35	132.0 35	100.0 35	74.0 36
1946	3530.0 21	1630.0 26	902.0 27	483.0 30	295.0 32	197.0 33	189.0 28	164.0 27	136.0 25
1947	4840.0 12	2900.0 12	1550.0 12	858.0 15	599.0 17	329.0 21	231.0 24	179.0 24	133.0 27
1948	4810.0 13	3220.0 9	2310.0 7	1310.0 8	713.0 11	512.0 9	403.0 10	355.0 12	278.0 12
1949	9450.0 4	4940.0 5	2690.0 4	1500.0 6	1350.0 5	816.0 4	637.0 4	508.0 5	359.0 6
1950	17300.0 1	12500.0 1	6170.0 2	2980.0 2	1550.0 4	786.0 5	529.0 8	401.0 10	302.0 9
1951	7290.0 6	3360.0 8	1770.0 9	1290.0 9	1140.0 6	728.0 7	563.0 7	440.0 7	302.0 10
1952	5410.0 10	3150.0 10	1680.0 10	891.0 13	616.0 15	429.0 15	351.0 15	282.0 17	227.0 17
1953	1760.0 36	1000.0 32	542.0 36	270.0 36	189.0 36	103.0 37	74.0 38	72.0 37	66.0 37
1954	2610.0 27	1570.0 28	990.0 28	701.0 20	396.0 25	236.0 27	194.0 27	164.0 28	137.0 24
1955	5580.0 9	2270.0 17	1210.0 18	1020.0 11	599.0 16	453.0 13	386.0 13	335.0 14	235.0 16
1956	5740.0 8	3690.0 7	2080.0 8	1680.0 5	986.0 7	730.0 6	604.0 5	581.0 3	403.0 3
1957	3170.0 24	1630.0 27	1340.0 15	978.0 12	783.0 9	450.0 14	403.0 11	338.0 13	239.0 15
1958	8990.0 5	5500.0 4	2650.0 5	1390.0 7	749.0 10	413.0 16	296.0 19	252.0 20	174.0 21
1959	3730.0 18	2280.0 16	1130.0 21	552.0 24	300.0 31	200.0 32	152.0 33	134.0 33	112.0 32
1960	1950.0 35	964.0 34	717.0 30	517.0 27	379.0 28	224.0 28	186.0 30	155.0 30	132.0 28
1961	2230.0 30	880.0 36	400.0 37	202.0 37	177.0 37	107.0 36	101.0 36	93.0 36	89.0 35
1962	5310.0 11	3000.0 11	1670.0 11	854.0 16	661.0 12	463.0 12	375.0 14	407.0 9	353.0 8
1963	4440.0 16	2520.0 13	1290.0 16	851.0 17	644.0 13	512.0 10	401.0 12	387.0 11	281.0 11
1964	3360.0 22	2450.0 15	1180.0 19	616.0 23	391.0 27	240.0 26	256.0 22	213.0 23	156.0 22
1965	3560.0 20	1870.0 22	1480.0 13	1190.0 10	843.0 8	693.0 8	594.0 6	491.0 6	367.0 5
1966	2000.0 33	844.0 37	564.0 35	375.0 34	353.0 29	258.0 25	200.0 26	158.0 26	134.0 26
1967	4640.0 14	2220.0 18	1050.0 23	515.0 24	538.0 19	334.0 20	308.0 18	315.0 16	265.0 14
1968	6350.0 7	4090.0 6	2540.0 6	1790.0 6	1630.0 3	1000.0 2	792.0 2	667.0 2	485.0 2
1970	2330.0 29	1660.0 24	1150.0 20	674.0 22	475.0 21	275.0 24	206.0 25	169.0 25	132.0 29
1971	2780.0 26	1900.0 21	1220.0 17	682.0 21	633.0 14	402.0 17	321.0 17	332.0 15	266.0 13
1972	2920.0 25	1770.0 23	1060.0 22	770.0 18	511.0 20	394.0 18	348.0 16	276.0 18	217.0 19
1976	3720.0 19	1630.0 25	812.0 28	712.0 19	443.0 22	276.0 23	265.0 21	215.0 21	176.0 20
1977	2190.0 32	1270.0 30	734.0 31	403.0 32	255.0 34	196.0 34	188.0 29	148.0 31	103.0 30
1978	849.0 38	454.0 38	251.0 38	164.0 38	132.0 38	91.0 38	83.0 37	70.0 38	53.0 38
1979	2480.0 28	1380.0 29	803.0 29	507.0 29	399.0 24	314.0 22	246.0 23	215.0 22	147.0 23

Same explanations as for the table above except change 'lowest' to 'highest'.

SAMPLE TABLE K.--Duration table of daily values with class summary and percent exceedance table.

TABLE K. DURATION TABLE OF DAILY VALUES WITH CLASS SUMMARY AND PERCENT EXCEEDANCE TABLE.
DISCHARGE IN CUBIC FEET PER SECOND.

CLASS YEAR	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34				
	NUMBER OF DAYS IN CLASS																																						
1911	78							13		17	19	19	18	12	19	16	33	20	15	25	13	16	12	7	7	5	2												
1912	8	12		3	14	52	10	69	10	41	23	9	14	13	5	4	7	13	13	10	9	16	4	1	4	2													
1913	1	4	20	1	6	53	30	73	21	19	25	4	7	11	11	6	11	7	4	15	8	8	7	4	3	3	2	1											
1914					83	13	23	8	7	4	6	7	15	15	29	30	20	25	24	28	11	6						1	2	2			1	5					
1915					3	42	63	22	40	18	26	12	8	23	11	9	12	24	15	13	12	6	2																
1916						6	8	23	19																														
1917										5	40	17	13	13	22	28	22	33	24	18	24	17	8					6	5	7	3	3	1	1					
1945										2	17	29	21	17	17	23	47	33	33	33	20	13	15	7	6	2													
1946										28	21	24	19	27	25	15	16	25	8	10	9	5	5	3															
1947										17	12	14	16	21	27	16	9	7	13	14	8	4	3	2															
1948										15	7	15	9	24	30	23	18	23	22	14	12	10	11	1	4	3	2	1											
1949										1	7	26	31	22	10	12	10	4	32	21	17	12	18	27	29	23	20	15	9	5	3	3	3	2					
1950										2	9	25	26	31	17	10	9	10	14	12	23	19	19	39	24	19	19	9	10	5	4	5	1	1	1				
1951																																							
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Class designation--corresponding discharge value is tabulated below.

No. of days in water year 1968 when discharge was equal to or greater than that for class 5 (0.6 ft³/s) but less than that for class 6 (0.9 ft³/s).

CLASS	VALUE	TOTAL	ACCUM	PERCT	CLASS	VALUE	TOTAL	ACCUM	PERCT	CLASS	VALUE	TOTAL	ACCUM	PERCT
0	0.0				7	7.7	677	8314	59.9	24	590.0	190	609	4.3
1	0.1				11.0	812	7637	55.0	25	850.0	140	419	3.0	
2	0.2				16.0	660	6825	49.2	26	1200.0	119	279	2.0	
3	0.3				23.0	794	6165	44.4	27	1800.0	73	160	1.1	
4	0.4				33.0	709	5371	38.7	28	2500.0	42	87	.6	
5	0.6	258	13673	98.5	17	47.0	748	4662	33.6	29	3600.0	25	45	.3
6	0.9	475	13419	94.7	18	68.0	744	3914	28.2	30	5200.0	10	20	.1
7										31	7500.0	8	10	
8										32	11000.0	1	2	
9										33	16000.0	1	1	
10										34				
11					23	410.0	274	883	6.4					

Accumulated no. of days in complete years of record that discharge was equal to or greater than that for class 5.

No. of days in complete years of record that discharge was equal to or greater than that for class 5 (0.6 ft³/s) but less than that for class 6 (0.9 ft³/s).

Percent of time in complete years of record that discharge was equal to or greater than that for class 5.

VALUE EXCEEDED *P* PERCENT OF TIME

- V95 = 1.1
- V90 = 1.7
- V75 = 3.6
- V70 = 4.6
- V50 = 15.0
- V25 = 85.0
- V10 = 270.0

Median discharge for the complete years of record.

Value exceeded 50 percent of time; median.

SAMPLE TABLE L.--Summary of statistics using log-Pearson distribution for lowest and highest mean values for a selected number of consecutive days.

TABLE L. SUMMARY OF STATISTICS USING LOG-PEARSON DISTRIBUTION FOR LOWEST AND HIGHEST MEAN VALUES FOR A SELECTED NUMBER OF CONSECUTIVE DAYS.

Statistical summary of the lowest mean values for the indicated number of consecutive days in each year

	1	3	7	14	30	60	90	120	183	365
Statistical Parameters										
Parameter values										
No. of water years	62	62	62	62	62	62	62	62	62	62
Mean in ft ³ /s	2.86	2.94	3.26	3.80	5.88	10.3	13.6	15.7	22.2	34.2
Mean of logs of discharges	.435	.446					1.099	1.160	1.322	1.517
Variance	.781	.818					29.9	37.9	50.8	86.2
Standard deviation	.884	.904					5.46	6.16	7.13	9.28
Standard deviation of logs	.140						.182	.179	.153	.124
Skewness	.560						.749	.524	.022	.311
Skewness of logs	-.442						-.436	-.371	-.577	-.478
Standard error of skewness	.304						.304	.304	.304	.304
Serial correlation coefficient	.308						.169	.051	.132	-.065
Coefficient of variation	.309	.308	.317	.323	.432	.444	.401	.393	.321	.272
Recurrence intervals										
Values for recurrence intervals (ft ³ /s)										
100-yr interval	1.17	1.19	1.21	1.46	1.85	2.46	4.15	4.95	8.01	15.4
50-yr interval						2.98	4.83	5.72	9.19	17.1
20-yr interval						3.90	6.00	7.04	11.2	19.9
10-yr interval						4.88	7.22	8.40	13.2	22.6
5-yr interval	2.09	2.15	2.35	2.72	3.74	6.29	8.92	10.3	15.8	26.1
2-yr interval	2.78	2.86	3.18	3.69	5.44	9.70	12.9	14.8	21.7	33.6
1.25-yr interval	3.58	2.68	4.13	4.82	7.78	14.0	18.0	20.6	28.4	42.0
1.01-yr interval	5.20	5.32	5.90	7.12	14.1	23.0	29.0	33.7	40.9	57.7

Statistical summary of the highest mean values for the indicated number of consecutive days in each year

	1	3	7	15	30	60	90	120	183	365
Statistical Parameters										
Parameter values										
No. of water years	62	62	62	62	62	62	62	62	62	62
Mean in ft ³ /s	743	474	270	169	114	80.2	68.0	60.5	51.0	34.2
Mean of logs of discharges	2.801						1.870	1.804	1.755	1.685
Variance	242,000						1,170	666	458	261
Standard deviation	492						34.1	25.8	21.4	16.2
Standard deviation of logs	.239						.170	.159	.154	.144
Skewness	2.03	2.66	2.17	2.13	2.01	1.51	1.15	.805	.516	.311
Skewness of logs	.523	.694	.665	.576	.422	.288	.058	-.148	-.441	-.478
Standard error of skewness	.304	.304	.304	.304	.304	.304	.304	.304	.304	.304
Serial correlation coefficient	.135	.082	.144	.199	.196	.211	.238	.211	.178	.208
Coefficient of variation	.662	.783	.683	.603	.501	.426	.379	.354	.317	.272
Recurrence intervals										
Values for recurrence intervals (ft ³ /s)										
1.01-yr interval	218	133	83.8	56.6	43.0	32.4	27.6	24.0	20.1	15.4
1.25-yr interval	394	235	143	95.8	71.3	53.1	46.8	42.3	37.0	26.1
2-yr interval	602	364	216	141	100	72.8	63.4	57.4	49.6	33.6
5-yr interval	984	622	354	221	148	102	86.5	76.9	64.3	42.0
10-yr interval	1,310	857	476	288	184	124	102	89.2	72.7	46.5
25-yr interval	1,810	1,240	671	392	236	153	122	104	82.0	51.5
50-yr interval	2,270	1,610	852	483	279	176	136	115	88.2	54.7
100-yr interval	2,790	2,060	1,070	588	326	200	151	125	93.9	57.7

SAMPLE TABLE M.--Statistical summary of partial-record analyses.

TABLE M. STATISTICAL SUMMARY OF PARTIAL-RECORD ANALYSES.

VARIABLE	LABEL	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
P00410	ALKALINITY (MG/L AS CaCO ₃)	4	3.000	2.708	1.000	7.000
P00915	CALCIUM DISSOLVED (MG/L AS Ca)	4	1.300	0.837	0.600	2.500
P00980	CHLORIDE, DISSOLVED (MG/L AS CL)	4	5.475	0.435	5.100	5.900
P00080	COLOR (PLATINUM COBALT UNITS)	4	78.250	48.155	18.000	130.000
P00950	FLUORIDE, DISSOLVED (MG/L AS F)	4	0.000	0.000	0.000	0.000
P00900	HARDNESS (MG/L AS CaCO ₃)	4		.582	3.000	9.000
P00902	PHOSPHATE (MG/L AS P)	4		.366	1.000	8.000
P01046	SILICA (MG/L AS SiO ₂)	4		.203	120.000	450.000
P00925	SULFIDE (MG/L AS S)	4		.380	0.200	1.000
P01056	MANGANESE, DISSOLVED (UG/L AS MN)	4	5.000	10.000	0.000	20.000
P00631	NITROGEN, NO ₂ +NO ₃ DISSOLVED (MG/L AS N)	3	0.040	0.061	0.000	0.110

PUBLICATIONS

The data collected by the Geological Survey are disseminated by means of various reports. The principal means of reporting surface-water discharges is by a series of annual reports. Water-Supply Papers were used from 1909 until 1960. The reporting year was changed from calendar year to fiscal year (July-June) in 1913. Since 1960, publication has been in an annual series of open-file reports titled "Surface Water Records of Hawaii and other Pacific Areas." The reporting year was changed from fiscal to water year in 1967. Units of discharge were also changed in 1967 from million gallons per day to cubic feet per second. Five-year summary reports were published for the periods 1960-65 and 1966-70 as Water-Supply Papers. Progress reports entitled "An Investigation of Floods in Hawaii" were published to summarize the flood data and flood frequency characteristics. In addition to these types of basic-data reports, compilation reports were published as Water-Supply Papers. The data presented in the compilation reports consist of records of discharges summarized on a monthly and yearly basis. These compilation reports were also used to report any revisions that were needed to be made to the data published in the earlier annual reports.

The following tables summarize the three types of data reports.

Annual and 5-year Water-Supply Papers

Year	WSP No.	Year	WSP No.	Year	WSP No.
1909-11+ ---	318	1928-29 ---	695	1944-45 ---	1045
1912+ -----	336	1929-30 ---	710	1945-46 ---	1065
1913+ -----	373	1930-31 ---	725	1946-47 ---	1095
1913-15 -----	430	1931-32 ---	740	1947-48 ---	1125
1915-16 -----	445	1932-33 ---	755	1948-49 ---	1155
1916-17 -----	465	1933-34 ---	770	1949-50 ---	1185
1917-18 -----	485	1934-35 ---	795	1950-51 ---	1219
1918-19 -----	515	1935-36 ---	815	1951-52 ---	1249
1919-20 -----	516	1936-37 ---	835	1952-53 ---	1289
1920-21 -----	535	1937-38 ---	865	1953-54 ---	1349
1921-22 -----	555	1938-39 ---	885	1954-55 ---	1399
1922-23 -----	575	1939-40 ---	905	1955-58 ---	1569
1923-24 -----	595	1940-41 ---	935	1958-59 ---	1639
1924-25 -----	615	1941-42 ---	965	1959-60 ---	1719
1925-26 -----	635	1942-43 ---	985	1961-65 ---	1937
1926-27 -----	655	1943-44 ---	1015	1966-70 ---	2137
1927-28 -----	675				

+ Calendar years. Data for the last half of the calendar year 1913 appears not only in WSP 373 but also in WSP 430, the first of the reports covering a year ending on June 30.

Annual open-file basic data reports published

Year	Year
1960-61	1970-71
1961-62	1971-72
1963-64	1972-73
1964-65	1973-74
1965-66	1974-75
1966-67 fiscal year	1975-76
1966-67 water year*	1976-77**
1967-68	1977-78
1968-69	1978-79
1969-70	

* Water year. Data for the last 9 months of fiscal year 1967 appear not only in the 1966-67 fiscal-year report but also in the 1966-67 water-year report, the first year of the reports covering a year ending on September 30.

**The first year of the reports published in two volumes.

Compilation of Annual Water-Supply Papers

Years	WSP No.
Through 1950 -----	1319
1951-60 -----	1739

REFERENCES

- Hawaii Water Resources Regional Study, 1979, Hawaii water resources plan: Hawaii Water Resources Regional Study, 207 p.
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- Nakahara, R. H., 1973, An investigation of floods in Hawaii through September 30, 1972: U.S. Geological Survey Progress Report No. 15, 207 p.
- Riggs, H. C., 1968a, Frequency curves: U.S. Geological Survey Techniques of Water-Resources Investigations, Book 4, Chapter A2, 15 p.
- 1968b, Some statistical tools in hydrology: U.S. Geological Survey Techniques of Water-Resources Investigations, Book 4, Chapter A1, 39 p.

GENERAL INFORMATION SUMMARY AND STATION LIST FOR THE ISLANDS OF
OAHU, MOLOKAI, MAUI, AND HAWAII

General information summary and station list for the islands of Oahu, Molokai, Maui, and Hawaii (September 1979)

Station No. 16-	Station name	Location		Site type (1)	Drainage area, sq mi	Known diver-sions? N=No Y=Yes I=In-flow	Alti-tude, ft	Period of operation		Continuous records of flow available in Vol. 4 (3)	Surface water quality data tables in Vol. 4 (4)	Data table Nos. in Vol. 4	Map plate No. in Vol. 3, and hydro-graphic area
		Lat 21°	Long					Be-gin yr	End yr				
Island of Oahu													
200000	North Fork Kaukonahua Str. above right branch nr Wahiawa -----	31'09"	157°56'53"	SW	1.38	N	1,150	1913	C	A-L	M,O,P	1-12	01, VI
201000	Right branch of North Fork Kaukonahua Str. nr Wahiawa -----	31'11"	157°56'53"	SW	1.17	N	1,200	1913	L	A-L	N,P	13-20	01, VI
203000	Mauka Ditch nr Wahiawa -----	30'48"	157°59'17"	CN	--	--	--	1947	1968	A-K	--	21-25	01, VI
204000	North Fork Kaukonahua Str. nr Wahiawa -----	30'54"	157°59'19"	SW	4.86	Y	930	1946	1968	A-K	M,N,P	26-31	01, VI
206000	South Fork Kaukonahua Str. nr Wahiawa -----	30'06"	157°56'50"	SW	1.93	N	1,070	1913	1957	A-L	--	32-36	01, VI
206500	Koolau Ditch at reservoir nr Wahiawa -----	29'45"	157°58'20"	CN	--	--	--	1914	1915	--	--	--	01, VI
207000	South Fork Kaukonahua Str. below US Army reservoir nr Wahiawa ---	29'30"	157°59'50"	SW	4.00	Y	850	1914	1917	--	--	--	01, VI
208000	South Fork Kaukonahua Str. at east pump reservoir nr Wahiawa -----	29'32"	157°59'54"	SW	4.04	Y	860	1957	C	A-K	M,O,P	37-43	01, VI
208500	Right branch of South Fork Kaukonahua Str. nr Wahiawa -----	29'57"	157°59'03"	SW	.86	Y	980	1957	1972	A-K	M,O,P	44-49	01, VI
209000	South Fork Kaukonahua Str. above Wahiaua reservoir nr Wahiawa ---	29'35"	157°59'55"	SW	5.26	Y	845	1946	1958	A-K	--	50-53	01, VI
210500	Kaukonahua Str. at Waialua -----	33'56"	158°07'26"	SW	38.70	Y	15	1967	P	--	M,N,P	54	01, VI
210900	Poamoho tunnel nr Wahiawa -----	31'12"	157°58'51"	CN	--	--	--	1958	C	A-K	--	55-59	01, VI
211000	Poamoho Str. nr Wahiawa -----	31'24"	157°58'55"	SW	1.79	Y	1,150	1947	1974	A-K	0	60-64	01, VI
211003	Combined records of stations 16210900, 16211000 -----	--	--	SW	1.79	N	--	1958	1974	A-L	--	65-69	--
211200	Poamoho Str. at Waialua -----	34'00"	158°06'40"	SW	10.90	Y	22	1967	P	--	--	--	01, VI
211300	Makaleha Str. nr Waialua -----	33'45"	158°09'21"	SW	4.15	N	190	1957	P	A,B	--	70	01, VI
211400	Manini Gulch at Kaena -----	34'50"	158°15'12"	SW	1.08	N	80	1973	P	--	--	--	01, VI
211500	Makua Str. at Makua -----	31'59"	158°13'49"	SW	4.28	N	68	1957	P	--	--	--	01, V
211600	Makaha Str. nr Makaha -----	30'16"	158°10'59"	SW	2.31	N	939	1959	C	A-L	M,O,P	71-77	01, V
211700	Makaha Str. at Makaha -----	28'47"	158°12'31"	SW	5.25	Y	120	1966	P	--	--	--	01, V
211800	Kaupuni Str. at alt. 374 ft nr Waianae -----	28'20"	158°09'26"	SW	3.58	Y	374	1960	P	A-L	M,O,P	78-83	01, V
211850	Puea Mauka Ditch nr Waianae -----	28'12"	158°09'43"	CN	--	--	--	1960	1967	A-C,H-K	--	84-86	01, V
211900	Kaupuni Str. nr Waianae -----	27'46"	158°09'55"	SW	4.39	Y	220	1957	1960	--	--	--	01, V
212000	Puhawai Str. at Lualualei nr Waianae -----	28'10"	158°08'00"	SW	.60	Y	600	1930	1944	A-L	--	87-91	01, V
212200	Maililili Str. nr Waianae -----	27'34"	158°08'05"	SW	1.51	N	210	1957	P	--	--	--	01, V
212250	Ulehawa Str. at Nanakuli -----	23'44"	158°09'37"	SW	4.51	N	0	1967	1969	--	--	--	01, V
212300	Nanakuli Str. at Nanakuli -----	23'08"	158°08'10"	SW	3.98	N	30	1967	P	--	--	--	01, V
212400	Awanui Gulch nr Barbers Point Naval Air Station -----	20'36"	158°06'04"	SW	1.16	N	140	1957	1958	--	--	--	02, IV
212401	Awanui Str. at Gilbert nr Barbers Point -----	19'54"	158°06'05"	SW	2.50	N	70	1958	1964	--	--	--	02, IV
212450	Kaloi Gulch tributary nr Honouliuli -----	22'41"	158°03'45"	SW	1.70	Y	260	1967	P	--	--	--	02, IV
212500	Honouliuli Str. nr Waipahu -----	22'40"	158°02'10"	SW	11.00	Y	65	1955	P	--	N	92	02, IV
212600	Waikele Str. at Schofield Barracks	28'58"	158°03'41"	SW	5.05	--	780	1957	1958	--	--	--	02, IV
212601	Waikele Str. at Wheeler Field -----	28'44"	158°03'07"	SW	6.35	--	710	1959	P	--	--	--	02, IV
212700	Waikakalaua Str. nr Wahiaua -----	27'50"	158°01'37"	SW	7.49	Y	540	1957	P	--	--	--	02, IV
212750	Huliwai Gulch nr Kunia Camp -----	26'43"	158°03'47"	SW	.84	N	820	1973	P	--	--	--	02, IV
212800	Kipapa Str. nr Wahiaua -----	28'13"	157°57'40"	SW	4.29	N	690	1957	C	A-L	M,O,P,U	93-100	02, IV
212900	Kipapa Str. nr Waipahu -----	24'33"	158°01'14"	SW	13.80	Y	90	1966	1968	A,B	0	101	02, IV
213000	Waikele Str. at Waipahu -----	23'11"	158°00'49"	SW	45.70	Y	1	1951	C	A-L	M,O-V	102-133	02, IV
214000	Pearl Harbor springs at Waiaua ---	23'36"	157°59'11"	SP	--	--	--	1931	L	A-K	--	134-138	02, IV
215000	Morikone pond outlet at Pearl City	23'30"	157°59'10"	SP	--	--	--	1951	1960	--	--	--	02, IV
216000	Waiaua Str. nr Pearl City -----	23'57"	157°58'51"	SW	26.40	Y	2	1952	C	A-L	M,O,P	139-147	02, IV
216500	Waimano flood channel at Pearl City -----	23'49"	157°58'17"	SW	2.63	N	50	1955	1969	--	N	148	02, IV
217000	Pearl Harbor springs at Puukapu nr Pearl City -----	23'20"	157°58'10"	SP	--	--	0	1931	1948	A-K	--	149-152	02, IV
218000	Pearl Harbor springs at Loko Kukona -----	23'30"	157°58'00"	SP	--	--	0	1931	1945	A-K	0	153-156	02, IV
218500	Pearl Harbor springs at Kaluaooopu nr Pearl City -----	23'30"	157°57'55"	SP	--	--	0	1931	1937	A-C,H-K	--	157-159	02, IV
219000	Hawaiian Elec. Co. tunnel at Waiau nr Pearl City -----	23'33"	157°57'55"	CN	--	--	4	1939	1967	A-K	--	160-164	02, IV
220000	Hawaiian Elec. Co. wasteway at Waiau nr Pearl City -----	23'32"	157°57'54"	CN	--	--	--	1953	1959	--	--	--	02, IV
222000	Pearl Harbor springs at Waiau ---	23'25"	157°57'40"	SP	--	--	--	1931	1947	A-C,H-K	--	165-168	02, IV
223000	Waimalu Str. nr Aiea -----	23'35"	157°57'03"	SW	5.97	--	10	1952	P	A-K	0	169-173	02, IV
224000	Pearl Harbor springs at Kaluaoo ---	23'05"	157°56'46"	SP	--	--	--	1931	L	A-K	--	174-178	02, IV
224500	Kaluaoo Str. at Moanalua Road at Aiea -----	23'07"	157°56'22"	SW	2.59	Y	12	1957	C	A-L	M,O,P	179-185	02, IV

See footnotes at end of table, p. 35.

General information summary and station list for the islands of Oahu, Molokai, Maui, and Hawaii (September 1979)--Continued

Station No. 16-	Station name	Location		Site type (1)	Drainage area, sq mi	Known diversions? N=No Y=Yes I=In-Flow	Altitude, ft	Period of operation		Continuous records of flow available in Vol. 4 Type of tables (3)	Surface water quality data tables in Vol. 4 (4)	Data table page Nos. in Vol. 4	Map plate No. in Vol. 3, and hydrographic area
		Lat 21° 0'	Long					Begin yr	End year (2)				
Island of Oahu													
225000	Kalauao Str. at Aiea -----	23°03"	157°56'29"	SW	2.61	Y	4	1953	1957	A-C,H-K	--	186,187	02, IV
226000	North Halawa Str. nr Aiea -----	23°46"	157°53'37"	SW	3.45	N	320	1929	C	A-L	M,N,P	188-194	02, IV
227000	Halawa Str. at Aiea -----	22°26"	157°55'42"	SW	8.78	Y	17	1953	P	A-C,H-K	--	195-197	02, IV
227500	Moanalua Str. nr Kaneohe -----	23°29"	157°51'05"	SW	.94	--	660	1968	1978	A-C,H-K	M,0-Q,U	198-203	02, III
227700	Moanalua Str. tributary nr Kaneohe	23°27"	157°50'53"	SW	.62	--	700	1968	1978	A-C	M,0-Q	204-208	02, III
227900	Moanalua Str. tributary nr Aiea --	23°07"	157°51'42"	SW	.03	--	540	1972	1978	--	M,0,P	209,210	02, III
228000	Moanalua Str. nr Honolulu -----	22°53"	157°52'22"	SW	2.73	N	338	1926	P	A-L	M,0-Q	211-220	02, III
228200	Moanalua Str. nr Aiea -----	22°37"	157°52'58"	SW	3.34	N	230	1968	P	--	M,0-Q	221-225	02, III
228500	Moanalua Str. at alt. 100 ft nr Honolulu -----	22°00"	157°53'57"	SW	4.16	N	100	1957	1968	--	--	--	02, III
228600	Moanalua Str. nr Tripler Hospital	21°48"	157°54'05"	SW	4.44	N	70	1970	P	--	M,0-Q	226	02, III
228900	Kalihi Str. nr Kaneohe -----	22°35"	157°49'32"	SW	.60	N	820	1966	P	A-C,H-K	0	227-228	02, III
229000	Kalihi Str. nr Honolulu -----	22°00"	157°50'49"	SW	2.61	N	464	1913	C	A-L	M,0,P	229-243	02, III
229300	Kalihi Str. at Kalihi -----	20°29"	157°52'36"	SW	5.18	N	70	1962	C	A-L	M,0-S	244-271	02, III
230000	Lulumahu Ditch at upper Nuuanu reservoir nr Honolulu -----	21°20"	157°48'30"	CN	--	--	--	1911	1913	--	--	--	02, III
231000	Luakaha weir in upper Nuuanu valley nr Honolulu -----	21°10"	157°49'05"	CN	--	--	--	1910	1913	--	--	--	02, III
231500	Mooie Ditch mauka station nr Honolulu -----	21°35"	157°49'15"	CN	--	--	--	1917	1920	--	--	--	02, III
231700	Mooie Ditch makai station nr Honolulu -----	21°35"	157°48'40"	CN	--	--	--	1918	1923	A-C,H-K	--	272,273	02, III
232000	Nuuanu Str. below reservoir 2 wasteway nr Honolulu -----	20°57"	157°49'40"	SW	3.35	Y	632	1913	C	A-L	M,N,P	274-285	02, III
235000	Nuuanu Str. at Kuakini Street nr Honolulu -----	19°25"	157°51'25"	SW	4.39	Y	60	1911	1912	--	--	--	02, III
235100	Nuuanu Str. above Waolani Street at Honolulu -----	19°20"	157°51'33"	SW	4.48	Y	10	1960	1962	--	--	--	02, III
235400	Waolani Str. at Honolulu -----	20°00"	157°51'04"	SW	1.29	Y	210	1957	P	--	--	--	02, III
235600	Waolani Str. at mouth at Honolulu	19°20"	157°51'34"	SW	1.70	Y	10	1960	1962	--	--	--	02, III
236000	Kahuawai spring nr Honolulu -----	20°05"	157°49'50"	SP	--	--	--	1912	1914	--	--	--	02, III
237000	Pauoa Str. at upper Pauoa valley nr Honolulu -----	20°05"	157°49'55"	SW	.79	Y	570	1911	1913	--	--	--	02, III
237500	Pauoa Str. at Honolulu -----	19°18"	157°51'03"	SW	1.43	N	70	1957	P	--	--	--	02, III
238500	Waihi Str. at Honolulu -----	19°55"	157°48'12"	SW	1.14	Y	290	1913	C	A-L	M,0,P	286-297	02, III
239500	East Manoa Ditch nr Honolulu -----	19°50"	157°48'05"	CN	--	--	--	1915	1939	A-K	--	298-301	02, III
240500	Waiakeakua Str. at Honolulu -----	19°53"	157°48'08"	SW	1.06	Y	295	1913	C	A-K	M,0,P	302-313	02, III
241000	Manoa Str. at upper Manoa valley nr Honolulu -----	19°30"	157°48'25"	SW	2.62	Y	220	1910	1913	--	--	--	02, III
242000	Manoa Str. at College of Hawaii nr Honolulu -----	18°10"	157°49'00"	SW	4.99	Y	100	1909	1918	A-C,H-K	--	314-316	02, III
243000	Manoa Str. at Waiatae Road nr Honolulu -----	17°38"	157°49'03"	SW	5.38	Y	20	1910	1912	--	--	--	02, III
244000	Pukele Str. nr Honolulu -----	18°36"	157°47'27"	SW	1.18	N	345	1926	C	A-L	M,N,P	317-327	02, III
245000	Waiomao Str. at upper Palolo valley nr Honolulu -----	19°30"	157°46'30"	SW	.35	N	950	1911	1913	--	--	--	02, III
246000	Waiomao Str. nr Honolulu -----	18°34"	157°47'11"	SW	1.04	Y	374	1911	1971	A-L	N	328-336	02, III
247000	Palolo Str. nr Honolulu -----	17°35"	157°48'25"	SW	3.63	Y	95	1952	C	A-L	M,N,P	337-344	02, III
247100	Manoa-Palolo drainage canal at Moiliili -----	17°24"	157°49'17"	SW	9.35	N	0	1967	P	--	M,N,P	345,346	02, III
247200	Waiataenui Gulch at Honolulu -----	16°52"	157°47'06"	SW	1.75	N	30	1957	1968	--	--	--	02, III
247500	Wailupe Gulch at Aina Haina -----	17°46"	157°45'29"	SW	2.35	N	110	1957	P	--	--	--	02, III
247900	Kuliouou valley at Kuliouou -----	17°50"	157°43'35"	SW	1.18	N	0	1957	P	--	--	--	02, III
248800	Inoaole Str. at Waimanalo -----	20°31"	157°42'40"	SW	1.21	N	10	1957	P	--	--	--	02, III
248900	Waimanalo Ditch below main reservoir nr Waimanalo -----	20°18"	157°44'48"	CN	--	--	--	1912	1913	--	--	--	02, III
249000	Waimanalo Str. at Waimanalo -----	21°12"	157°43'52"	SW	2.16	Y	19	1967	P	A-C,H-K	M,0,P	347-350	02, III
249100	Kaelepulu Str. tributary at Kailua	21°44"	157°44'22"	SW	.16	N	180	1963	P	--	--	--	02, III
249200	Maunawili Str. nr Waimanalo -----	21°55"	157°46'05"	SW	1.28	Y	80	1912	1916	--	--	--	02, III
249400	Main spring nr Kailua -----	20°50"	157°46'35"	SP	--	--	--	1914	1916	--	--	--	02, III
249600	Makawao spring nr Kailua -----	20°47"	157°45'55"	SP	--	--	--	1914	1916	--	--	--	02, III
249800	Makawao Ditch nr Kailua -----	20°50"	157°45'20"	CN	--	--	--	1912	1915	--	--	--	02, III
250000	Maunawili Ditch nr Waimanalo -----	20°45"	157°45'11"	CN	--	--	--	1954	1968	A-K	--	351-354	02, III
254000	Makawao Str. nr Kailua -----	21°49"	157°46'02"	SW	2.04	Y	80	1912	C	A-L	M,0,P	355-362	02, III
256000	Kamakalepo Str. nr Kailua -----	21°55"	157°46'08"	SW	.82	Y	80	1912	1916	--	--	--	02, III
257000	Pohakea Str. nr Kailua -----	22°05"	157°46'20"	SW	.21	N	80	1912	1914	--	--	--	02, III
258000	Maunawili Str. above Wong Leongs Ditch nr Kailua -----	22°14"	157°46'00"	SW	4.60	Y	55	1922	1923	--	--	--	02, III
260000	Maunawili Str. nr Kailua -----	22°17"	157°46'00"	SW	4.60	Y	50	1912	1916	--	--	--	02, III
260500	Maunawili Str. at Hwy 61 nr Kailua	22°51"	157°45'48"	SW	5.34	Y	10	1922	P	A-C,H-K	M,0,P	363-370	02, III

See footnotes at end of table, p. 35.

General information summary and station list for the islands of Oahu, Molokai, Maui, and Hawaii (September 1979)--Continued

Station No. 16-	Station name	Location		Site type (1)	Drainage area, sq mi	Known diversions? Y=No I=In-flow	Altitude, ft	Period of operation		Continuous records of flow available in Vol. 4 Type of tables (3)	Surface water quality data tables in Vol. 4 (4)	Data table page Nos. in Vol. 4	Map plate No. in Vol. 3, and hydro-graphic area
		Lat 21°-	Long					Be-	End year (2)				
Island of Oahu													
261000	North branch Kahanaiki Str. nr Kailua -----	22°23"	157°46'30"	SW	.34	Y	100	1913	1914	--	--	--	02, 11
262000	South branch Kahanaiki Str. nr Kailua -----	22°21"	157°46'26"	SW	.21	N	120	1913	1914	--	--	--	02, 11
263000	Kahanaiki Str. nr Kailua -----	22°23"	157°46'23"	SW	.58	Y	70	1912	1916	--	--	--	02, 11
264100	Kahanaiki Str. at Hwy 61 nr Kailua	22°49"	157°46'06"	SW	1.45	Y	25	1956	L	--	--	--	02, 11
264400	Kawainui swamp drainage canal at Kailua Road at Kailua -----	23°47"	157°44'54"	DR	--	--	--	1962	1965	--	--	--	02, 11
264500	Kawainui swamp canal at Wanaao Road at Kailua -----	23°30"	157°44'00"	DR	--	--	--	1962	1964	--	--	--	02, 11
264800	Kawainui canal at Kailua -----	24°15"	157°45'28"	DR	--	--	--	1956	P	--	--	--	02, 11
265000	Kawa Str. at Kaneohe -----	24°33"	157°47'36"	SW	1.19	--	30	1914	P	--	--	--	02, 11
266000	Kamooalii Str. nr Kaneohe -----	23°20"	157°48'05"	SW	1.48	N	180	1914	1916	--	--	--	02, 11
267000	Hooleinaiva Str. nr Kaneohe -----	23°10"	157°48'15"	SW	.61	N	195	1914	1916	--	--	--	02, 11
268000	Piho Str. nr Kaneohe -----	23°38"	157°48'22"	SW	.43	N	140	1914	1916	--	--	--	02, 11
269000	Kuou Ditch nr Kaneohe -----	23°43"	157°48'23"	CN	--	--	--	1914	1916	--	--	--	02, 11
270000	Kuou Str. nr Kaneohe -----	23°40"	157°48'30"	SW	.37	N	150	1914	1916	--	--	--	02, 11
270500	Kamooalii Str. below Kuou Str. nr Kaneohe -----	23°42"	157°48'26"	SW	3.21	N	118	1967	1976	A-C,H-K	M,O,P,U	371-377	02, 11
270900	Luluku Str. at alt. 220 ft nr Kaneohe -----	23°42"	157°48'46"	SW	.44	Y	220	1960	P	A-C,H-K	M,O,P	378-381	02, 11
271000	North Luluku Ditch nr Kaneohe -----	23°50"	157°48'30"	CN	--	--	--	1914	1916	--	--	--	02, 11
272000	Luluku Str. nr Kaneohe -----	23°50"	157°48'35"	SW	.46	Y	145	1914	1916	--	--	--	02, 11
272200	Kamooalii Str. below Luluku Str. nr Kaneohe -----	23°47"	157°48'23"	SW	3.81	Y	116	1976	C	A-C,H-K	M,O,P,U	382-385	02, 11
273000	Young Mau Ditch nr Kaneohe -----	24°30"	157°48'15"	CN	--	--	--	1914	1916	--	--	--	02, 11
273900	Kamooalii Str. at Kaneohe -----	24°51"	157°48'13"	SW	4.38	Y	39	1959	C	A-K	M,O,P	386-396	02, 11
274000	Ahlo Ditch nr Kaneohe -----	24°55"	157°48'05"	CN	--	--	--	1914	1916	A-C,H-K	--	397-398	02, 11
274499	Keaahala Str. at Kamehameha Hwy at Kaneohe -----	25°13"	157°48'15"	SW	.62	N	80	1958	L, P	--	--	--	02, 11
274500	Keaahala Str. at Kaneohe -----	25°14"	157°48'16"	SW	.79	--	10	1958	1959	--	--	--	02, 11
275000	Haiku Str. nr Heeia -----	24°46"	157°49'33"	SW	.97	Y	272	1914	C	A-L	M,O,P	399-409	02, 11
276000	Reservoir Ditch nr Heeia -----	24°50"	157°49'25"	CN	--	--	--	1914	1916	--	--	--	02, 11
277000	Waipio Ditch nr Heeia -----	25°10"	157°49'10"	CN	--	--	--	1914	1916	--	--	--	02, 11
278000	Iolekaa Str. mauka nr Heeia -----	25°15"	157°49'52"	SW	.29	Y	320	1940	1970	A-L	--	410-415	02, 11
279000	Iolekaa Str. nr Heeia -----	25°15"	157°49'15"	SW	.52	N	160	1914	1916	--	--	--	02, 11
279500	Heeia Str. at Kaneohe -----	25°17"	157°49'01"	SW	1.80	--	95	1965	P	--	--	--	02, 11
280000	Wing Wo Tai Ditch nr Heeia -----	25°45"	157°48'50"	CN	--	--	--	1914	1916	--	--	--	02, 11
281000	Hop Tuck Ditch nr Heeia -----	25°55"	157°48'55"	CN	--	--	--	1914	1916	--	--	--	02, 11
282000	Lee Ditch nr Heeia -----	25°55"	157°49'05"	CN	--	--	--	1914	1916	--	--	--	02, 11
283000	Kahaluu Str. nr Heeia -----	26°20"	157°51'21"	SW	.28	Y	358	1935	1971	A-K	N	416-420	02, 11
283100	Kahaluu Str. tributary nr Kahaluu	26°21"	157°51'10"	SW	.12	Y	250	1948	1962	--	--	--	02, 11
283400	Kahaluu Str. nr Kahaluu -----	27°14"	157°50'17"	SW	1.29	--	19	1962	L, P	--	--	--	02, 11
283480	Ahuimanu Str. nr Kahaluu -----	27°04"	157°50'13"	SW	2.31	N	25	1962	L, P	--	--	--	02, 11
283500	Kahaluu Str. at Kahaluu -----	27°25"	157°50'15"	SW	3.73	Y	0	1959	1970	A-C,H-K	M,O,P	421-425	02, 11
283600	South Fork Waihee Str. nr Heeia --	26°47"	157°52'12"	SW	.03	Y	616	1962	C	A-L	M,N,P	426-432	02, 11
283700	North Fork Waihee Str. nr Heeia --	26°48"	157°52'18"	SW	.03	Y	639	1962	C	A-L	M,N,P	433-439	02, 11
283800	Waihee Str. at alt. 260 ft nr Heeia -----	27°01"	157°51'51"	SW	.31	Y	259	1961	1966	A-C,H-K	--	440-441	02, 11
284000	Waihee Str. nr Heeia -----	27°01"	157°51'38"	SW	.93	Y	193	1935	C	A-L	M,N,P	442-450	02, 11
284200	Waihee Str. nr Kahaluu -----	27°04"	157°51'36"	SW	.97	Y	170	1974	C	A-C,H-K	M,N,P	451-454	02, 11
284500	Waihee Str. at Kahaluu -----	27°32"	157°50'26"	SW	2.26	Y	1	1959	1975	A-C,H-K	M,O,P	455-464	02, 11
285000	Waiahole tunnel at Waianu nr Waiahole -----	29°04"	157°53'13"	CN	--	--	--	1950	1969	A-K	--	465-469	02, 11
286000	Waiahole tunnel wasteway at intake 31 nr Waiahole -----	28°36"	157°53'14"	CN	--	--	--	1951	1969	A-K	--	470-474	02, 11
287000	Waiahole tunnel at north portal nr Waiahole -----	28°18"	157°53'28"	CN	--	--	--	1951	1969	A-K	--	475-478	02, 11
287200	Waiahole tunnel at adit 8 nr Waipahu -----	27°00"	157°57'30"	CN	--	--	--	1956	1969	A-K	--	479-482	02, 11
288000	Halona Str. nr Waikane -----	28°35"	157°53'14"	SW	.08	N	750	1911	1911	--	--	--	02, 11
289000	Waihi Str. nr Waikane -----	28°16"	157°53'08"	SW	.11	N	750	1911	1911	--	--	--	02, 11
290000	Waiahole Str. below powerhouse nr Waiahole -----	28°25"	157°53'00"	SW	.46	--	420	1915	1915	--	--	--	02, 11
291000	Waiahole Str. at alt. 250 ft nr Waiahole -----	28°35"	157°52'28"	SW	.99	Y	250	1955	1972	A-L	--	483-487	02, 11
292000	Waiahole Str. nr Waiahole -----	28°50"	157°52'10"	SW	1.22	N	160	1911	1916	A-C,H-K	--	488-489	02, 11
293000	Waianu Str. nr Waikane -----	29°13"	157°52'22"	SW	1.28	--	198	1911	1911	--	--	--	02, 11
293100	Waianu Str. at Waiahole -----	29°01"	157°51'47"	SW	1.65	I	75	1959	1966	--	--	--	02, 11
294000	Waiahole Str. at Waiahole nr Waikane -----	29°05"	157°51'25"	SW	3.60	Y	20	1911	1912	--	--	--	02, 11

See footnotes at end of table, p. 35.

General information summary and station list for the islands of Oahu, Molokai, Maui, and Hawaii (September 1979)--Continued

Station No. 16-	Station name	Location		Site type (1)	Drainage area, sq mi	Known diversions? N=No Y=Yes I=In-flow	Altitude, ft	Period of operation		Continuous records of flow available in Vol. 4 Type of tables (3)	Surface water quality data tables in Vol. 4 (4)	Data table page Nos. in Vol. 4	Map plate No. in Vol. 3, and hydrographic area
		Lat 21°-	Long					Be- gin yr	End year (2)				
Island of Oahu													
294900	Waikane Str. at alt. 75 ft at Waikane -----	30'00"	157°51'54"	SW	2.22	Y	75	1959	C	A-L	M,N,P	490-496	02, 11
295000	Waikane Str. nr Waikane -----	29'20"	157°51'35"	SW	2.35	Y	30	1912	1912	--	--	--	02, 11
295200	Waikane Str. at Waikane -----	29'38"	157°51'10"	SW	2.60	N	2	1957	1960	--	--	--	02, 11
295900	Makaua Str. at Kaaawa -----	33'36"	157°51'28"	SW	.53	N	2	1957	1962	--	--	--	01, 1
295995	Kahana Str. at mauka trail crossing nr Kahana -----	32'17"	157°53'29"	SW	3.18	Y	80	1960	L	--	--	--	01, 1
296000	Kahana Str. nr Kahana -----	32'40"	157°53'20"	SW	3.20	N	40	1914	1917	--	--	--	01, 1
296500	Kahana Str. at alt. 30 ft nr Kahana -----	32'37"	157°53'07"	SW	3.74	Y	30	1958	C	A-L	M,N,P	497-504	01, 1
297000	Kawa Str. nr Kahana -----	32'33"	157°53'00"	SW	2.09	N	30	1914	L	--	--	--	01, 1
299000	Punaluu Str. at alt. 539 ft nr Punaluu -----	32'30"	157°54'20"	SW	.98	N	540	1915	1918	--	--	--	01, 1
300000	Waihoi Str. nr Punaluu -----	33'12"	157°54'17"	SW	.50	N	500	1915	1917	--	--	--	01, 1
301000	Punaluu Str. at alt. 250 ft nr Punaluu -----	33'33"	157°54'07"	SW	2.78	N	220	1914	1918	--	--	--	01, 1
302000	Punaluu Ditch nr Punaluu -----	33'41"	157°54'10"	CN	--	--	--	1953	C	A-K	M,N,P	505-510	01, 1
303000	Punaluu Str. nr Punaluu -----	33'33"	157°54'06"	SW	2.78	Y	212	1953	C	A-K	M,N,P	511-517	01, 1
303003	Combined records of stations 16302000, 16303000 -----	--	--	SW	2.78	--	--	1953	C	A-L	--	518-522	--
304000	Kaluani Str. nr Hauula -----	34'20"	157°55'20"	SW	.50	N	1,900	1915	1917	--	--	--	01, 1
304200	Kaluani Str. nr Punaluu -----	35'22"	157°54'38"	SW	1.11	N	110	1967	C	A-L	M,N,P	523-529	01, 1
304500	Kaluani Str. at Hauula -----	35'57"	157°54'24"	SW	2.12	N	19	1957	P	--	--	--	01, 1
305000	Kaipapau Str. nr Hauula -----	34'44"	157°56'01"	SW	.21	N	1,900	1906	1907	--	--	--	01, 1
306000	Koloa Gulch nr Laie -----	37'30"	157°56'10"	SW	.90	N	500	1914	1918	A-C,H-K	--	530,531	01, 1
307000	Waialele Gulch nr Laie -----	37'05"	157°56'40"	SW	.50	N	525	1914	1916	--	--	--	01, 1
308000	East branch Kahawaiui Str. nr Laie -----	37'35"	157°57'20"	SW	.53	N	500	1914	1918	A,B	--	532	01, 1
308990	Malaekahana Str. nr Laie -----	38'10"	157°57'53"	SW	.64	N	450	1963	1971	A-C,H-K	M,N,P	533-536	01, 1
309000	Malaekahana Str. nr Kahuku -----	38'15"	157°57'50"	SW	1.66	N	380	1914	1918	--	--	--	01, 1
310000	Middle branch Malaekahana Str. nr Kahuku -----	38'20"	157°58'05"	SW	.69	N	440	1914	1918	A-C,H-K	--	537-539	01, 1
310500	Malaekahana Str. at alt. 70 ft nr Kahuku -----	39'21"	157°57'38"	SW	3.10	N	70	1957	1958	--	--	--	01, 1
310501	Malaekahana Str. at alt. 30 ft nr Kahuku -----	39'47"	157°57'11"	SW	4.05	N	30	1958	P	--	--	--	01, 1
311000	Oio Str. nr Kahuku -----	41'32"	157°59'48"	SW	2.13	N	50	1957	P	--	--	--	01, 1
317800	Kaunala Gulch nr Sunset Beach -----	40'59"	158°02'12"	SW	1.98	N	10	1973	P	--	--	--	01, 1
318000	Paumalu Gulch at Sunset Beach -----	40'19"	158°02'28"	SW	2.59	N	85	1967	P	--	--	--	01, 1
325000	Kamananui Str. at Pupukea military Road nr Maunawai -----	37'25"	158°01'04"	SW	3.13	N	590	1960	C	A-L	M,O,P	540-545	01, VI
329000	Kaiwikoele Str. tributary nr Maunawai -----	36'49"	158°01'23"	SW	.97	N	700	1967	1971	A-C,H-K	O	546-547	01, VI
330000	Kamananui Str. at Maunawai -----	38'20"	158°03'27"	SW	9.79	N	20	1958	C	A-L	M,O,P	548-554	01, VI
331000	Waimea Gulch nr Kawailoa Camp -----	37'29"	158°04'58"	SW	2.23	N	30	1967	P	--	--	--	01, VI
335000	Kawaiui Str. above Kamananui Ditch nr Wahiawa -----	35'00"	158°00'22"	SW	4.75	N	750	1960	1961	--	--	--	01, VI
340000	Anahulu R. nr Haleiwa -----	35'28"	158°04'45"	SW	13.50	Y	70	1957	P	--	--	--	01, VI
340500	Anahulu R. tributary nr Haleiwa -----	35'23"	158°05'06"	SW	.83	Y	205	1967	1971	--	--	--	01, VI
343000	Helemano Str. at Haleiwa -----	34'40"	158°06'12"	SW	14.20	Y	2	1967	C	A-L	M,O,P	555-561	01, VI
345000	Opaeula Str. nr Wahiawa -----	33'55"	158°00'10"	SW	2.98	N	1,120	1959	C	A-L	M,O,P	562-569	01, VI
350000	Opaeula Str. nr Haleiwa -----	35'09"	158°06'01"	SW	5.96	Y	18	1955	P	--	M,N,P	570	01, VI

See footnotes at end of table, p. 35.

General information summary and station list for the islands of Oahu, Molokai, Maui, and Hawaii (September 1979)--Continued

Station No. 16-	Station name	Location		Site type (1)	Drainage area, sq mi	Known diversions? N=No Y=Yes I=In-flow	Altitude, ft	Period of operation		Continuous records of flow available in Vol. 5 Type of tables (3)	Surface water quality data tables in Vol. 5 (4)	Data table page Nos. in Vol. 5	Map plate No. in Vol. 3, and hydrographic area
		Lat 21°-	Long					Be-	End year (2)				
<u>Island of Molokai</u>													
400000	Halawa Str. nr Halawa -----	09'31"	156°45'53"	SW	4.62	N	210	1917	C	A-L	M,0-R	1-27	M1, I
401000	Papalaua Str. nr Pukoo -----	10'10"	156°48'05"	SW	2.00	N	100	1919	1929	A-C,H-K	--	28-30	M1, I
402000	Pulena Str. nr Wailau -----	07'34"	156°49'50"	SW	4.38	N	591	1919	1957	A-L	--	31-36	M1, I
403000	Waiakeakua Str. nr Wailau -----	07'25"	156°49'44"	SW	1.41	N	698	1919	1957	A-L	--	37-42	M1, I
403400	Kapuhi Str. at alt. 1,000 ft nr Pelekunu -----	07'50"	156°53'02"	SW	.51	N	1,000	1968	L	--	--	--	M1, I
403500	Kawailena Str. nr Pelekunu -----	07'52"	156°53'05"	SW	.65	N	1,000	1968	L	--	--	--	M1, I
403600	Kapuhi Str. nr Pelekunu -----	07'58"	156°52'56"	SW	1.20	N	870	1968	L	A-B,H-K	--	43-44	M1, I
403700	Kawainui Str. at alt. 1,000 ft nr Pelekunu -----	07'46"	156°52'31"	SW	.79	N	1,000	1968	L	--	--	--	M1, I
403800	Kawaipoka Str. nr Pelekunu -----	07'48"	156°52'30"	SW	.26	N	1,000	1968	L	--	--	--	M1, I
403900	Kawainui Str. nr Pelekunu -----	07'59"	156°52'38"	SW	1.18	N	770	1968	C	A-L	M,N,P	45-50	M1, I
404000	Pelekunu Str. nr Pelekunu -----	08'11"	156°52'43"	SW	2.59	N	552	1919	C	A-L	M,N,P	51-59	M1, I
404200	Pilipililau Str. nr Pelekunu ---	08'08"	156°53'09"	SW	.49	N	1,000	1968	C	A-L	M,N,P	60-65	M1, I
405000	Lanipuni Str. nr Pelekunu -----	08'38"	156°52'26"	SW	1.09	N	418	1919	1957	A-L	--	66-71	M1, I
405100	Molokai tunnel at east Portal --	08'38"	156°55'16"	CN	--	--	--	1966	C	A-C,H-K	--	72-74	M1, I
405300	Molokai tunnel at west Portal --	07'27"	156°59'42"	CN	--	--	--	1965	C	A-C,H-K	M,N,P	75-78	M2, III
405500	Waikolu Str. at alt. 900 ft nr Kalaupapa -----	08'43"	156°55'18"	SW	1.99	Y	900	1956	C	A-C,H-K	M,N,P	79-84	M1, I
406000	Waikolu Str. at elevation 650 ft nr Kalaupapa -----	09'05"	156°55'35"	SW	2.99	N	650	1920	1923	A-C,H-K	--	85-87	M1, I
408000	Waikolu Str. below pipeline crossing nr Kalaupapa -----	09'45"	156°55'54"	SW	3.68	Y	252	1919	C	A-L	M,N,P	88-97	M1, I
409000	Waihanau Str. nr Kalaupapa -----	09'35"	156°57'40"	SW	1.18	N	2,250	1930	1932	--	--	--	M1, I
410000	Keolewa Str. nr Kalae -----	10'30"	156°58'45"	SW	.18	N	1,950	1940	1944	A-C,H-K	--	98-100	M2, III
411000	Waiatala Spring nr Kalae -----	10'20"	157°00'03"	SP	--	--	--	1940	1960	A-C,H-K	--	101-105	M2, III
411300	Kakaako Gulch at Hwy 46 nr Mauna Loa -----	08'49"	157°11'36"	SW	.55	N	1,020	1963	P	--	--	--	M2, IV
411320	Kakaako Gulch above Kamakahi Gulch nr Mauna Loa -----	10'11"	157°11'56"	SW	1.40	N	530	1963	P	--	--	--	M2, IV
411400	Kakaako Gulch nr Mauna Loa -----	10'39"	157°12'31"	SW	5.34	N	380	1963	P	A-C,H-K	--	106-108	M2, IV
411600	Kaunalu Gulch nr Mauna Loa -----	07'01"	157°15'43"	SW	.28	N	370	1963	P	--	--	--	M2, IV
411640	Halena Gulch nr Mauna Loa -----	05'53"	157°13'47"	SW	2.07	N	60	1965	P	--	--	--	M2, IV
411800	Kaluapeelua Gulch at Hoolehua --	09'55"	157°04'22"	SW	1.46	N	580	1963	P	--	--	--	M2, III
411900	Kaluapeelua Gulch tributary nr Molokai Airport -----	08'57"	157°07'12"	SW	1.56	N	360	1963	P	--	--	--	M2, III
412000	Mokomoko Gulch nr Kalae Molokai	09'05"	156°57'50"	SW	.23	Y	2,200	1940	1945	A-C,H-K	--	109-111	M2, III
413000	Kapuna Str. nr Kalae -----	09'05"	156°59'06"	SW	.18	N	1,900	1940	1949	A-C,H-K	--	112-114	M2, III
413500	Manawainui Gulch nr Kualapuu ---	07'42"	157°03'25"	SW	10.40	N	250	1965	P	--	--	--	M2, III
414000	Kaunakakai Gulch at Kaunakakai -	06'21"	157°00'34"	SW	6.57	I	240	1949	C	A-C,H-K	M,N,P	115-119	M2, III
414100	Kamiloloa Gulch at Kaunakakai --	05'15"	157°00'45"	SW	1.19	N	10	1965	1977	--	--	--	M2, III
415000	East Fork Kawela Gulch nr Kamalo	06'47"	156°54'23"	SW	.45	Y	3,625	1946	1971	A-C,H-K	M,N,P	120-124	M1, II
415400	Wawaia Gulch at Kamalo -----	03'25"	156°52'20"	SW	2.12	N	40	1963	P	--	--	--	M1, II
416000	Punaula Gulch nr Pukoo -----	05'51"	156°48'48"	SW	.24	N	1,200	1947	1972	A-L	M,N,P	125-131	M1, II
419000	Pohakupili Gulch nr Halawa -----	07'59"	156°44'15"	SW	.48	N	310	1963	P	--	--	--	M1, II
419500	Papio Gulch at Halawa -----	08'55"	156°44'16"	SW	.94	Y	640	1963	C	A-C,H-K	M,N,P	132-136	M1, II

See footnotes at end of table, p. 35

General information summary and station list for the islands of Oahu, Molokai, Maui, and Hawaii (September 1979)--Continued.

Station No. 16-	Station name	Location		Site type (1)	Drainage area, sq mi	Known diversions? N=No Y=Yes I=In-flow	Altitude, ft	Period of operation		Continuous records of flow available in Vol. 5 (3)	Surface water quality data tables in Vol. 5 (4)	Data table page Nos. in Vol. 5	Map plate No. in Vol. 3, and hydrographic area
		Lat 20°-	Long					Begin yr	End year				
<u>Island of Maui</u>													
500100	Kepuni Gulch nr Kahikinui house	37'21"	156°15'16"	SW	1.19	N	740	1963	P	A-C,H-K	--	137-139	MA1, V
500300	Hawelewele Gulch nr Kaupo -----	38'01"	156°11'08"	SW	11.30	N	70	1966	P	--	--	--	MA1, V
500800	Kukuilua Gulch nr Kipahulu -----	39'18"	156°04'44"	SW	.76	N	90	1963	P	A-C,H-K	--	140-142	MA1, V
501000	Palikea Str. below diversion dam nr Kipahulu -----	41'03"	156°04'10"	SW	6.29	N	1,546	1927	C	A-L	M,N,P	143-153	MA1, V
502000	Hahalawe Gulch nr Kipahulu -----	40'55"	156°02'50"	SW	.43	N	885	1927	1977	A-L	--	154-162	MA1, V
502400	Pukuilua Gulch nr Hana -----	42'00"	156°00'14"	SW	.48	N	60	1963	P	--	--	--	MA1, V
502800	Moomoonui Gulch at Hana -----	44'37"	155°59'18"	SW	.90	N	70	1963	P	--	--	--	MA1, V
502900	Kawaipapa Gulch at Hana -----	46'08"	156°00'04"	SW	5.83	N	160	1965	P	--	--	--	MA2, IV
503000	Kaeleku Gulch nr Kaeleku -----	46'00"	156°03'28"	CN	--	--	--	1940	1945	A-C	--	163-164	MA2, IV
504000	Hana flume nr Hana -----	45'10"	156°01'52"	CN	--	--	--	1940	1945	A-C	--	165-166	MA2, IV
506000	Makapipi Ditch nr Nahiku -----	48'18"	156°06'24"	CN	--	--	--	1948	1966	A-K	--	167-171	MA2, IV
506500	West Makapipi spring nr Nahiku -----	48'20"	156°06'20"	SP	--	--	--	1932	1945	A-K	--	172-175	MA2, IV
507000	Makapipi Str. nr Nahiku -----	48'36"	156°05'57"	SW	1.93	Y	920	1932	1945	A-K	--	176-179	MA2, IV
508000	Hanawi Str. nr Nahiku -----	48'37"	156°07'00"	SW	3.49	N	1,318	1914	C	A-L	M,N,P	180-190	MA2, IV
509000	Hanawi Str. below government Road nr Nahiku -----	49'15"	156°06'23"	SW	5.03	Y	500	1932	1947	A-K	--	191-194	MA2, IV
510000	Kapaula Gulch nr Nahiku -----	48'46"	156°07'05"	SW	.69	N	1,346	1921	1963	A-L	--	195-203	MA2, IV
511000	Kapaula Gulch below government Road nr Nahiku -----	49'23"	156°06'54"	SW	.93	Y	540	1932	1947	A-K	--	204-207	MA2, IV
512000	Koolau Ditch at Nahiku weir nr Nahiku -----	48'56"	156°07'15"	CN	--	--	--	1919	C	A-K	M,N,P	208-217	MA2, IV
513000	Walaaka Str. nr Nahiku -----	49'20"	156°07'03"	SW	.10	Y	650	1932	1947	A-K	--	218-221	MA2, IV
514000	Paakea Gulch nr Nahiku -----	49'20"	156°07'10"	SW	.34	Y	650	1932	1947	A-K	--	222-225	MA2, IV
515000	Waiohue Gulch nr Nahiku -----	49'05"	156°07'45"	SW	.32	N	1,316	1921	1963	A-L	--	226-233	MA2, IV
516000	Kopiliula Str. nr Keanae -----	49'05"	156°08'12"	SW	4.31	N	1,292	1914	1958	A-L	--	234-241	MA2, IV
517000	East Mailuaiki Str. nr Keanae -	49'03"	156°08'26"	SW	3.11	N	1,329	1913	1958	A-L	--	242-248	MA2, IV
518000	West Mailuaiki Str. nr Keanae -	49'16"	156°08'37"	SW	3.66	N	1,343	1914	C	A-L	M,N,P	249-261	MA2, IV
519000	West Mailuanui Str. nr Keanae -	49'40"	156°08'53"	SW	1.93	N	1,268	1913	1958	A-L	--	262-269	MA2, IV
520000	East Mailuanui Str. nr Keanae -	49'24"	156°08'37"	SW	.51	N	1,287	1914	1958	A-L	--	270-277	MA2, IV
521000	Mailuanui Str. nr Keanae -----	50'10"	156°08'28"	SW	2.51	Y	620	1932	1947	A-K	--	278-281	MA2, IV
522000	Taro patch feeder ditch at Keanae -----	51'40"	156°09'00"	CN	--	--	--	1934	1968	A-K	--	282-286	MA2, IV
523000	Koolau Ditch nr Keanae -----	49'53"	156°10'30"	CN	--	--	--	1910	C	A-K	M,N,P	287-296	MA4, IV
524000	Honomanu Str. at Haiku-uka boundary nr Kailili -----	49'17"	156°12'14"	SW	2.54	N	2,900	1919	1968	A-L	--	297-301	MA4, IV
525000	Seventh branch Honomanu Str. at Haiku-uka nr Kailili -----	49'11"	156°11'53"	SW	.30	N	2,900	1931	1933	--	--	--	MA4, IV
526000	Fourth branch Honomanu Str. at Haiku-uka nr Kailili -----	49'10"	156°12'00"	SW	.10	N	2,900	1932	1933	--	--	--	MA4, IV
527000	Honomanu Str. nr Keanae -----	50'07"	156°11'18"	SW	3.17	N	1,733	1913	1964	A-L	--	302-311	MA4, IV
528000	Spreckels Ditch at station 1 nr Huelo -----	50'33"	156°11'14"	CN	--	--	--	1910	1913	--	--	--	MA4, IV
529000	Spreckels Ditch at station 2 nr Huelo -----	50'49"	156°11'20"	CN	--	--	--	1911	1913	--	--	--	MA4, IV
530000	Spreckels Ditch at station 3 nr Huelo -----	51'04"	156°11'28"	CN	--	--	--	1910	1913	--	--	--	MA4, IV
531000	Kula diversion from Haipuaena Str. nr Olinda -----	48'24"	156°13'27"	CN	--	--	--	1945	C	A-K	M,N,P	312-318	MA4, IV
531100	Haipuaena Str. at Kula pipeline intake nr Olinda -----	48'24"	156°13'27"	SW	.27	Y	4,320	1946	1968	A-K	--	319-323	MA4, IV
532000	Haipuaena Str. at Haiku-uka boundary nr Kailili -----	49'25"	156°12'32"	SW	.63	Y	2,860	1919	1968	A-K	--	324-327	MA4, IV
533000	Third branch Haipuaena Str. at Haiku-uka nr Kailili -----	49'32"	156°12'33"	SW	.06	N	2,950	1932	1933	--	--	--	MA4, IV
534000	First branch Haipuaena Str. at Haiku-uka nr Kailili -----	49'24"	156°12'26"	SW	.05	N	3,000	1932	1933	--	--	--	MA4, IV
535000	Haipuaena diversion Ditch at Kolea Gulch nr Keanae -----	50'37"	156°11'46"	CN	--	--	--	1938	1960	A-K	--	328-332	MA4, IV
536000	Haipuaena Str. above Spreckels Ditch nr Huelo -----	51'05"	156°11'29"	SW	1.16	Y	1,512	1913	1967	A-K	--	333-341	MA4, IV
537000	Haipuaena Str. nr Huelo -----	51'08"	156°11'27"	SW	1.10	Y	1,470	1910	1913	--	--	--	MA4, IV
538000	Spreckels Ditch at Haipuaena weir nr Huelo -----	51'15"	156°11'25"	CN	--	--	--	1922	C	A-K	M,N,P	342-351	MA4, IV
539000	Spreckels Ditch at station 4 nr Huelo -----	51'19"	156°11'26"	CN	--	--	--	1910	1913	--	--	--	MA4, IV
541000	Koolau Ditch at Haipuaena nr Huelo -----	51'17"	156°11'19"	CN	--	--	--	1932	C	A-K	M,N,P	352-360	MA4, IV
541500	Manuel Luis Ditch at Puohokamoa	51'48"	156°10'59"	CN	--	--	--	1917	C	A-K	M,N,P	361-370	MA4, IV
542000	East branch Puohokamoa Str. at Haiku-uka boundary nr Kailili -----	49'35"	156°12'40"	SW	.14	N	2,800	1919	1968	A-C,H-K	--	371-373	MA4, IV
543000	Middle branch Puohokamoa Str. at Haiku-uka boundary nr Kailili -----	49'40"	156°12'51"	SW	.48	Y	2,900	1919	1969	A-K	--	374-377	MA4, IV

See footnotes at end of table, p. 35.

General information summary and station list for the islands of Oahu, Molokai, Maui, and Hawaii (September 1979)--Continued

Station No. 16-	Station name	Location		Site type (1)	Drainage area, sq mi	Known diversions? N=No Y=Yes I=In- ⁴ flow	Altitude, ft	Period of operation		Continuous records of flow available in Vol. 5	Surface water quality data tables in Vol. 5	Data table page Nos. in Vol. 5	Map plate No. in Vol. 3, and hydro-graphic area
		Lat 20°-	Long					Be-	End				
Island of Maui													
544000	West branch Puohokamoa Str. at Haiku-uka boundary nr Kailiili	49°55"	156°13'00"	SW	.45	Y	2,800	1919	1934	A-K	--	378-381	MA4, IV
545000	Puohokamoa Str. above Spreckels Ditch nr Huelo	51°21"	156°11'29"	SW	2.35	Y	1,322	1913	1971	A-K	--	382-390	MA4, IV
546000	Puohokamoa Str. nr Huelo	51°20"	156°11'23"	SW	2.60	Y	1,280	1910	1913	--	--	--	MA4, IV
547000	Puohokamoa intake of Koolau Ditch nr Huelo	51°22"	156°11'22"	CN	--	--	--	1922	1930	--	--	--	MA4, IV
551000	Koolau Ditch at Wahinepee nr Huelo	51°35"	156°11'30"	CN	--	--	--	1922	1929	A-C,H-K	--	391-393	MA4, IV
552000	Spreckels Ditch at Wahinepee nr Huelo	51°29"	156°11'26"	CN	--	--	--	1928	1938	A-C,H-K	--	394-396	MA4, IV
552200	Spreckels Ditch at station 5 nr Huelo	51°50"	156°11'47"	CN	--	--	--	1911	1913	--	--	--	MA4, IV
552500	Manuel Luis Ditch west of Puohokamoa Str. nr Huelo	51°56"	156°11'06"	CN	--	--	--	1930	1935	A-C,H-K	--	397-399	MA4, IV
552600	Waikamoi Str. at Puu Luau nr Olinda	47°13"	156°14'16"	SW	2.10	N	5,750	1949	1966	A-C,H-K	--	400-402	MA4, IV
552800	Waikamoi Str. above reservoir at Kula Pipeline intake nr Olinda	48°28"	156°14'02"	SW	2.50	N	4,487	1953	1968	A-L	--	403-407	MA4, IV
553000	Waikamoi Str. below reservoir at Kula pipeline intake nr Olinda	48°58"	156°14'02"	SW	2.52	Y	4,250	1945	1949	--	--	--	MA4, IV
554000	Waikamoi Str. at Haiku-uka boundary nr Kailiili	49°55"	156°13'22"	SW	3.46	Y	3,000	1918	1934	A-L	--	408-412	MA4, IV
554500	East branch Waikamoi Str. at Haiku-uka boundary nr Kailiili	49°52"	156°13'22"	SW	.07	Y	3,020	1918	1933	A-C,H-K	--	413-415	MA4, IV
555000	Waikamoi Str. above Wailoa Ditch nr Huelo	51°42"	156°11'59"	SW	3.93	Y	1,294	1922	1957	A-L	--	416-423	MA4, IV
556000	Waikamoi Str. nr Huelo	51°52"	156°11'54"	SW	3.98	Y	1,150	1910	1922	A-L	--	424-428	MA4, IV
557000	Alo Str. nr Huelo	51°46"	156°11'49"	SW	.47	N	1,248	1910	1957	A-L	--	429-437	MA4, IV
558000	Koolau Ditch at Alo diversion weir nr Huelo	51°50"	156°11'48"	CN	--	--	--	1908	1911	--	--	--	MA4, IV
560000	Spreckels Ditch at station 6 nr Huelo	52°07"	156°11'52"	CN	--	--	--	1911	1913	--	--	--	MA4, IV
561000	Center Ditch below Kolea reservoir nr Huelo	52°35"	156°11'35"	CN	--	--	--	1918	1930	A-K	--	438-441	MA4, IV
562000	Center Ditch nr Huelo	52°47"	156°11'34"	CN	--	--	--	1910	1912	--	--	--	MA4, IV
565000	Kaalea Gulch nr Huelo	52°02"	156°12'17"	SW	.58	N	1,310	1921	1962	A-L	--	442-449	MA4, IV
565500	Spreckels Ditch below Kaalea Gulch nr Huelo	52°38"	156°12'05"	CN	--	--	--	1917	1930	A-K	--	450-453	MA4, IV
566000	Oopuola Str. nr Huelo	52°17"	156°12'29"	SW	.20	N	1,205	1930	1957	A-L	--	454-459	MA4, III
567000	Oopuola Str. above Spreckels Ditch crossing nr Huelo	52°40"	156°12'15"	SW	.58	Y	960	1910	1915	A-C,H-K	--	460-461	MA4, III
567500	Spreckels Ditch at station 7 nr Huelo	52°49"	156°12'21"	CN	--	--	--	1911	1912	--	--	--	MA4, III
568000	Spreckels Ditch at station 8 nr Huelo	53°05"	156°12'31"	CN	--	--	--	1911	1913	--	--	--	MA4, III
569000	Second branch Nailiilihaele Str. at Haiku-uka	50°05"	156°13'55"	SW	.20	N	3,140	1932	1933	--	--	--	MA4, III
569100	Nailiilihaele Str. nr Kailiili	50°27"	156°13'38"	SW	.11	N	2,820	1963	1968	--	--	--	MA4, III
569700	West branch Nailiilihaele Str. nr Kailiili	50°27"	156°14'00"	SW	.04	N	2,860	1966	1968	--	--	--	MA4, III
570000	Nailiilihaele Str. nr Huelo	52°28"	156°13'06"	SW	3.49	Y	1,205	1910	1975	A-K	M,N,P	462-471	MA4, III
571000	Nailiilihaele Str. below new Hamakua Ditch nr Huelo	52°43"	156°13'04"	SW	3.60	Y	--	1912	1912	--	--	--	MA4, III
572000	New Hamakua Ditch at Nailiilihaele weir nr Huelo	52°31"	156°13'05"	CN	--	--	--	1910	1912	--	--	--	MA4, III
573000	New Hamakua Ditch at station 1 nr Kailiili	52°42"	156°13'06"	CN	--	--	--	1912	1913	--	--	--	MA4, III
574000	Kailua Str. at Haiku-uka boundary nr Kailiili	50°10"	156°14'25"	SW	.80	N	3,080	1918	1934	A-L	--	472-476	MA4, III
574500	Kailua Str. nr Kailiili	50°28"	156°14'24"	SW	1.10	N	2,840	1963	1971	A-C,H-K	--	477-479	MA4, III
575000	Tenth branch Kailua Str. at Haiku-uka nr Kailiili	50°07"	156°14'13"	SW	.10	N	3,100	1931	1933	--	--	--	MA4, III
576000	Ninth branch Kailua Str. at Haiku-uka nr Kailiili	50°06"	156°14'07"	SW	.20	N	3,080	1932	1933	--	--	--	MA4, III
576200	East branch Kailua Str. nr Kailiili	50°25"	156°14'07"	SW	.35	N	2,880	1963	1968	--	--	--	MA4, III
577000	Kailua Str. nr Huelo	52°35"	156°13'25"	SW	2.41	N	1,253	1910	1958	A-K	--	480-488	MA4, III
578000	New Hamakua Ditch at station 2 nr Huelo	52°42"	156°13'24"	CN	--	--	--	1912	1913	--	--	--	MA4, III
579000	New Hamakua Ditch at station 3 nr Huelo	52°41"	156°13'26"	CN	--	--	--	1912	1913	--	--	--	MA4, III
579500	New Hamakua Ditch at station 4 nr Huelo	52°44"	156°13'28"	CN	--	--	--	1912	1913	--	--	--	MA4, III
580000	Oanui Str. nr Huelo	52°45"	156°13'28"	SW	.90	N	1,200	1910	1916	--	--	--	MA4, III

See footnotes at end of table, p. 35.

General information summary and station list for the islands of Oahu, Molokai, Maui, and Hawaii (September 1979)--Continued

Station No. 16-	Station name	Location		Site type (1)	Drainage area, sq mi	Known diversions? Y=Yes N=No I=In-Flow	Altitude, ft	Period of operation		Continuous records of flow available in Vol. 5 (3)	Surface water quality data tables in Vol. 5 (4)	Data table page Nos. in Vol. 5	Map plate No. in Vol. 3, and hydro-graphic area
		Lat	Long 156°					Be- gin	End year (2)				
<u>Island of Maui</u>													
582000	New Hamakua Ditch at station 5 nr Huelo -----	20°52'45"	13'28"	CN	--	--	--	1912	1913	--	--	--	MA4, 111
583000	Old Hamakua Ditch at Kailua nr Huelo -----	20°52'25"	13'30"	CN	--	--	--	1919	1922	--	--	--	MA4, 111
584000	Kailua Str. nr Huelo -----	20°53'29"	12'58"	SW	3.69	Y	720	1912	1913	--	--	--	MA4, 111
585000	Hoolawani Str. nr Huelo -----	20°53'14"	14'52"	SW	1.34	N	1,219	1910	1971	A-K	--	489-497	MA4, 111
586000	Hoolawaliili Str. nr Huelo ----	20°53'17"	14'35"	SW	.55	N	1,245	1911	1957	A-K	--	498-505	MA4, 111
587000	Honopou Str. nr Huelo -----	20°53'20"	15'20"	SW	.64	N	1,208	1910	C	A-K	M,N,P	506-515	MA4, 111
588000	Wailoa Ditch at Honopou nr Huelo	20°53'20"	15'19"	CN	--	--	--	1922	C	A-K	M,N,P	516-526	MA4, 111
589000	New Hamakua Ditch at Honopou nr Huelo -----	20°53'28"	15'22"	CN	--	--	--	1918	C	A-K	M,N,P	527-536	MA4, 111
590000	Old Hamakua Ditch at Honopou nr Huelo -----	20°53'32"	15'17"	CN	--	--	--	1918	1965	A-K	--	537-541	MA4, 111
591000	Honopou Str. at Lowrie Ditch siphon nr Huelo -----	20°54'50"	15'10"	SW	2.00	Y	557	1932	1947	A-K	--	542-545	MA4, 111
592000	Lowrie Ditch at Honopou Gulch nr Huelo -----	20°54'57"	15'08"	CN	--	--	--	1910	C	A-K	M,N,P	546-555	MA4, 111
593000	Honopou Str. above Haiku Ditch nr Huelo -----	20°54'58"	15'01"	SW	2.20	Y	441	1932	1947	A-K	--	556-559	MA4, 111
594000	Haiku Ditch at Honopou Gulch nr Kailua -----	20°55'07"	14'58"	CN	--	--	--	1910	C	A-K	M,N,P	560-569	MA4, 111
595000	Honopou Str. below Haiku Ditch nr Huelo -----	20°55'08"	14'54"	SW	2.30	Y	383	1932	1947	A-K	--	570-573	MA4, 111
596000	New Hamakua Ditch at Halehaku weir nr Huelo -----	20°53'12"	16'00"	CN	--	--	--	1910	1923	A-K	--	574-577	MA4, 111
596200	Halehaku Gulch nr Kailiili -----	20°50'53"	15'13"	SW	.13	N	2,610	1965	1971	A-C,H-K	--	578-579	MA4, 111
597000	Halehaku Gulch weir at new Hamakua Ditch nr Huelo -----	20°53'12"	16'00"	CN	--	--	--	1910	1912	--	--	--	MA4, 111
598000	Halehaku Gulch nr Huelo -----	20°53'12"	16'00"	SW	1.40	--	1,190	1910	1912	--	--	--	MA4, 111
599000	East branch Opana Gulch at Haiku-uka boundary nr Kailiili	20°50'08"	15'25"	SW	.60	N	3,000	1932	1933	--	--	--	MA4, 111
599500	Opana Tunnel nr Kailiili -----	20°51'04"	16'17"	CN	--	--	--	1965	C	A-K	M,N,P	580-585	MA4, 111
600000	Opana Ditch nr Huelo -----	20°53'20"	16'32"	CN	--	--	--	1910	1912	--	--	--	MA4, 111
601000	Opana Str. nr Huelo -----	20°53'22"	16'34"	SW	3.30	N	--	1910	1916	--	--	--	MA4, 111
602000	Kauhikoa Ditch at Opana weir nr Huelo -----	20°53'26"	16'33"	CN	--	--	--	1910	1928	A-K	--	586-589	MA4, 111
602400	Awalau Gulch at Kailiili -----	20°51'11"	16'25"	SW	.23	--	2,260	1965	1971	A-C,H-K	--	590-591	MA4, 111
603000	Kaluanui Ditch at Puuomalei nr Hamakuapoko -----	20°52'24"	18'55"	CN	--	--	--	1910	1912	--	--	--	MA2, 111
603300	Unnamed Gulch at Maliko Bay ----	20°56'26"	21'04"	SW	.43	N	20	1962	P	--	--	--	MA2, 111
603700	Kailiini Gulch tributary nr Pukalani -----	20°49'02"	19'44"	SW	1.17	N	1,900	1966	P	--	--	--	MA2, 111
603800	Kaluapulani Gulch tributary nr Pukalani -----	20°48'52"	18'32"	SW	.45	N	2,540	1963	P	--	--	--	MA2, 111
603850	Kailiini Gulch nr Kahului ----	20°52'47"	26'06"	SW	17.90	N	82	1966	P	--	--	--	MA2, 111
604000	Iao Str. nr Wailuku -----	20°53'12"	32'20"	SW	6.00	N	860	1910	1915	--	--	--	MA3, 11
605000	Maniania Ditch nr Wailuku ----	20°53'12"	32'20"	CN	--	--	--	1910	1913	--	--	--	MA3, 11
607000	Iao Str. at Wailuku -----	20°53'38"	30'27"	SW	8.24	Y	250	1950	P	--	M,N,P	592-593	MA3, 11
608000	North Waiehu Str. nr Wailuku ---	20°54'48"	32'03"	SW	.90	N	880	1912	1915	--	--	--	MA3, 11
609000	North Waiehu Ditch nr Wailuku --	20°54'49"	31'49"	CN	--	--	--	1910	1917	--	--	--	MA3, 11
609500	North Waiehu Str. below North Waiehu Ditch nr Wailuku -----	20°54'47"	31'49"	SW	.90	Y	730	1910	1911	--	--	--	MA3, 11
610000	South Waiehu Str. nr Wailuku ---	20°54'33"	32'15"	SW	.70	Y	870	1910	1917	A-C	--	594-595	MA3, 11
611000	South Waiehu Ditch nr Wailuku --	20°54'33"	32'15"	CN	--	--	--	1913	1916	--	--	--	MA3, 11
612000	Waiehe R. nr Waiehe -----	20°56'20"	32'58"	SW	3.90	--	620	1913	1917	A-B	--	596	MA3, 11
613000	Waiehe Canal nr Waiehe -----	20°56'36"	32'14"	CN	--	--	--	1910	1912	--	--	--	MA3, 11
613500	Waiehe Canal at Waiale weir nr Wailuku -----	20°53'00"	30'48"	CN	--	--	--	1911	1912	--	--	--	MA3, 11
614000	Waiehe R. at dam nr Waiehe ----	20°56'20"	32'58"	SW	3.90	Y	605	1910	1912	--	--	--	MA3, 11
615000	Spreckels Ditch nr Waiehe -----	20°56'46"	32'25"	CN	--	--	--	1910	1913	--	--	--	MA3, 11
616000	Spreckels Ditch at Waiale weir nr Wailuku -----	20°52'28"	29'57"	CN	--	--	--	1910	1911	--	--	--	MA3, 11
616500	Unnamed Gulch at Maluhia Camp --	20°57'26"	31'41"	SW	.12	N	580	1963	P	--	--	--	MA3, 11
617000	Left branch Makamakaole Str. nr Waiehe -----	20°57'35"	32'59"	SW	.40	Y	1,500	1939	1952	A-L	--	597-601	MA3, 11
617700	Kahakuloa Str. at alt. 1,380 ft nr Honokohau -----	20°57'08"	34'24"	SW	1.50	N	1,380	1913	1914	--	--	--	MA3, 11
618000	Kahakuloa Str. nr Honokohau ----	20°58'54"	33'26"	SW	3.47	N	330	1939	C	A-L	M,O-R	602-624	MA3, 11
619000	Kahakuloa Str. at Kahakuloa nr Waiehe -----	20°59'55"	33'05"	SW	4.00	Y	40	1912	1913	--	--	--	MA3, 11
619600	Owaluhi Gulch nr Kahakuloa ----	21°01'04"	34'49"	SW	.20	--	260	1964	1970	--	--	--	MA3, 11
619700	Poelua Gulch nr Kahakuloa ----	21°00'58"	34'58"	SW	1.18	N	180	1964	P	--	--	--	MA3, 11
620000	Honokohau Str. nr Honokohau ----	20°57'48"	35'22"	SW	4.11	N	870	1911	C	A-L	M,N,P	625-636	MA3, 11

See footnotes at end of table, p. 35.

General information summary and station list for the islands of Oahu, Molokai, Maui, and Hawaii (September 1979)--Continued

Station No. 16-	Station name	Location		Site type (1)	Drainage area, sq mi	Known diver- sions? N=No Y=Yes I=In- flow	Alti- tude, ft	Period of operation		Continuous records of flow available in Vol. 5 Type of tables (3)	Surface water quality data tables in Vol. 5 (4)	Data table page Nos. in Vol. 5	Map plate No. in Vol. 3, and hydro- graphic area
		Lat	Long 156°					Be- gin yr	End year (2)				
<u>Island of Maui</u>													
621000	Honokohau Ditch intake nr Honokohau -----	20°57'50"	35'25"	CN	--	--	--	1907	1913	A-C,H-K	--	637-639	MA3, I
622000	Honokohau Ditch above Honolulu Str. nr Honokohau -----	20°59'10"	37'18"	CN	--	--	--	1910	1911	--	--	--	MA3, I
623000	Honolua Str. nr Honokohau -----	20°59'02"	37'15"	SW	2.90	--	840	1913	1917	A-C,H-K	--	640-641	MA3, I
623400	Honokeana Gulch nr Honokohau ---	20°59'39"	40'13"	SW	.59	N	30	1963	P	--	--	--	MA3, I
624000	Honokohau Ditch at Honokowai weir nr Lahaina -----	20°56'46"	39'33"	CN	--	--	--	1910	1912	--	--	--	MA3, I
625000	Honolua Ditch nr Honokohau -----	20°59'08"	37'17"	CN	--	--	--	1911	1912	--	--	--	MA3, I
626000	Honolua Str. at Honolulu Ranch nr Honokohau -----	21°01'02"	38'17"	SW	3.96	--	20	1911	1911	--	--	--	MA3, I
627000	Kapalooa Str. at weir 1 nr Lahaina -----	20°55'57"	37'25"	SW	1.00	N	1,600	1901	1901	--	--	--	MA3, I
628000	Kapalooa Str. nr Lahaina -----	20°55'58"	37'27"	SW	1.00	N	1,550	1911	1912	--	--	--	MA3, I
629000	Honokowai Ditch nr Lahaina -----	20°55'59"	37'27"	CN	--	--	--	1912	1967	A-K	--	642-651	MA3, I
630000	Honokowai Str. nr Lahaina -----	20°56'10"	37'34"	SW	1.10	Y	1,440	1913	1917	A-C,H-K	--	652-654	MA3, I
630200	Honokowai Str. at Honokowai ---	20°56'58"	41'07"	SW	5.59	Y	60	1961	P	--	--	--	MA3, I
633000	Kahoma development tunnel nr Lahaina -----	20°54'16"	37'33"	OT	--	--	--	1911	1917	A-C,H-K	--	655-656	MA3, I
634000	Kahoma Str. nr Lahaina -----	20°54'16"	37'34"	SW	1.19	Y	1,940	1911	1917	A-C,H-K	--	657-659	MA3, I
635000	Lahainaluna Str. at weir 1 nr Lahaina -----	20°53'30"	36'38"	SW	.54	--	2,600	1901	1901	--	--	--	MA3, I
635500	Lahainaluna Str. at weir 2 nr Lahaina -----	20°53'42"	38'53"	SW	--	--	960	1901	1901	--	--	--	MA3, I
636000	Kanaha Str. above pipeline intake nr Lahaina -----	20°53'45"	38'40"	SW	1.51	N	1,057	1916	1932	A-L	--	660-665	MA3, I
637000	Lahainaluna Ditch nr Lahaina ---	20°53'41"	39'46"	CN	--	--	--	1913	1914	--	--	--	MA3, I
638000	Kanaha Str. nr Lahaina -----	20°53'44"	39'35"	SW	1.83	Y	540	1911	1916	A-C,H-K	--	666-667	MA3, I
638500	Kahoma Str. at Lahaina -----	20°53'10"	40'36"	SW	5.22	Y	90	1962	C	A-L	M,N,P	668-674	MA3, I
639000	North Fork Kauaula Str. nr Lahaina -----	20°52'41"	36'25"	SW	.52	--	2,360	1901	1901	--	--	--	MA3, I
640000	South Fork Kauaula Str. nr Lahaina -----	20°52'34"	36'11"	SW	.18	--	2,720	1901	1901	--	--	--	MA3, I
641000	Kauaula Str. nr Lahaina -----	20°52'51"	37'30"	SW	1.84	N	1,550	1914	1917	A-C	--	675	MA3, I
643000	Kauaula Ditch nr Lahaina -----	20°52'53"	37'32"	CN	--	--	--	1911	1917	A-C,H-K	--	676-677	MA3, I
643300	Kauaula Str. nr mouth nr Lahaina -----	20°52'09"	39'43"	SW	4.12	Y	210	1963	P	--	--	--	MA3, I
644000	Launiupoko Str. nr Lahaina -----	20°51'28"	37'07"	SW	1.13	Y	1,280	1911	1918	A-C,H-K	--	678-680	MA3, I
645000	Olowalu Ditch nr Olowalu -----	20°49'33"	36'50"	CN	--	--	--	1911	1967	A-K	M,N,P	681-691	MA3, I
646000	Olowalu Str. nr Olowalu -----	20°49'30"	36'50"	SW	4.00	--	230	1911	1916	--	--	--	MA3, I
646200	Olowalu Str. at Olowalu -----	20°49'23"	37'15"	SW	4.08	Y	130	1963	P	A-L	M,N,P	692-697	MA3, I
647000	Ukumehame Gulch nr Olowalu -----	20°49'22"	35'11"	SW	3.75	N	410	1911	1919	A-C,H-K	--	698-700	MA3, I
647100	Ukumehame Gulch at mouth nr Olowalu -----	20°48'17"	35'40"	SW	4.03	--	25	1964	1971	--	--	--	MA3, I
647500	Malalowaiaole Gulch nr Maalaea -	20°46'56"	31'32"	SW	.64	N	20	1963	P	--	--	--	MA3, II
648000	South side Waikapu Ditch nr Waikapu -----	20°51'30"	31'40"	CN	--	--	--	1910	1917	A-C,H-K	--	701-703	MA3, III
649000	Palolo Ditch nr Waikapu -----	20°51'35"	31'48"	CN	--	--	--	1910	1917	A-C,H-K	--	704-706	MA3, III
650000	Waikapu Str. nr Waikapu -----	20°51'35"	31'48"	SW	2.76	Y	880	1910	1917	--	--	--	MA3, III
650500	Waikapu Str. nr Kihei -----	20°49'02"	29'00"	SW	6.97	Y	35	1963	P	--	--	--	MA3, III
658500	Waiakoa Gulch tributary nr Waiakoa -----	20°44'56"	19'22"	SW	.98	N	3,420	1963	P	--	--	--	MA2, IIII
659000	Waiakoa Gulch at Kihei -----	20°47'14"	27'41"	SW	10.10	N	20	1963	P	--	--	--	MA2, IIII
660000	Kulanihakoi Gulch nr Kihei -----	20°46'06"	27'03"	SW	14.40	N	35	1962	P	A-C,H-K	--	707-709	MA2, IIII
663500	Kamaole Gulch at Kamaole -----	20°43'36"	27'02"	SW	4.28	N	20	1972	P	--	--	--	MA2, IIII
664000	Lillioholo Gulch at Kamaole ----	20°43'04"	26'55"	SW	4.12	N	20	1971	P	--	--	--	MA2, IIII

See footnotes at end of table, p. 35.

General information summary and station list for the islands of Oahu, Molokai, Maui, and Hawaii (September 1979)--Continued

Station No. 16-	Station name	Location		Site type (1)	Drainage area, sq mi	Known diversions? N=No Y=Yes I=In-Flow	Altitude, ft	Period of operation		Continuous records of flow available in Vol. 6 Type of tables (3)	Surface water quality data tables in Vol. 6 (4)	Data table page Nos. in Vol. 6	Map plate No. in Vol. 3 and hydrographic area	
		Lat	Long 155°					Begin yr	End year (2)					
<u>Island of Hawaii</u>														
700000	Waiakea Str. nr Mountain View	--	19°38'30"	10'28"	SW	17.40	N	1,934	1930	C	A-L	M,O,P	1-12	H1, II
700900	Olaa Flume Spring nr Kaumana	---	19°41'59"	11'13"	SP	--	--	1,970	1974	C	A-C,H-K	M,N,P	13-17	H1, II
701000	Olaa Flume at Kaumana nr Hilo	---	19°41'20"	11'00"	CN	--	--	--	1917	1920	H-K	--	18	H1, II
701200	Waiakea Str. nr Hilo	---	19°41'42"	05'51"	SW	33.60	Y	369	1957	1967	A-C,H-K	--	19-21	H1, II
701300	Waiakea Str. at Hilo	-----	19°42'38"	05'02"	SW	35.80	Y	80	1967	P	--	--	--	H1, II
701400	Palai Str. at Hilo	-----	19°40'56"	04'04"	SW	5.08	N	160	1964	P	--	--	--	H1, II
701700	Wailuku R. nr Pua Akala	-----	19°46'24"	22'01"	SW	10.20	N	6,840	1964	1965	A-B	--	22	H1, II
701750	Wailuku R. nr Humuula	-----	19°42'55"	18'36"	SW	34.80	N	4,250	1965	C	A-L	M,N,P,Q	23-30	H1, II
701800	Wailuku R. nr Kaumana	-----	19°43'15"	16'08"	SW	43.40	N	3,520	1966	C	A-L	M,O,Q	31-37	H1, II
703000	Wailuku R. at Pukamaui nr Hilo	-	19°42'45"	09'35"	SW	97.20	Y	1,280	1923	1940	A-K	--	38-41	H1, II
704000	Wailuku R. at Piihonua	-----	19°42'56"	09'12"	SW	230.00	Y	1,070	1928	C	A-K	M,O-R,T,V	42-66	H1, II
705000	Hilo Boarding School Ditch at Intake nr Hilo	-----	19°43'08"	08'44"	CN	--	--	--	1931	1940	A-C,H-K	--	67-70	H1, II
706000	Hilo Boarding School Ditch nr Hilo	-----	19°43'05"	08'27"	CN	--	--	--	1918	1919	--	--	--	H1, II
707000	Kapehu Ditch diversion nr Hilo	-	19°43'58"	11'05"	CN	--	--	--	1954	1962	A-C,H-K	--	71-73	H1, II
708000	Kapehu Ditch nr Hilo	-----	19°43'53"	11'01"	CN	--	--	--	1938	1962	A-K	--	74-78	H1, II
709000	Kapehu Str. at Piihonua nr Hilo	-----	19°43'15"	08'30"	SW	4.84	Y	950	1928	1937	A-C,H-K	--	79-81	H1, II
710000	Wailuku R. nr Hilo	-----	19°43'22"	06'52"	SW	150.00	Y	400	1911	1919	--	--	--	H1, II
713000	Wailuku R. at Hilo	-----	19°43'43"	05'40"	SW	256.00	Y	80	1977	C	A-B,H-K	M,O-Q,U	82-90	H1, II
716000	Honolii Str. nr Hilo	-----	19°46'10"	11'18"	SW	8.00	N	2,350	1924	1932	A-C,H-K	--	91-93	H1, II
717000	Honolii Str. nr Papaikou	-----	19°46'00"	09'16"	SW	11.60	N	1,540	1911	C	A-L	M,O-Q,S	94-113	H1, II
717400	Kalaoa Mauka Str. nr Hilo	-----	19°48'07"	06'03"	SW	.24	N	290	1962	P	--	--	--	H1, II
717500	Kawainui Str. nr Pepeekeo	-----	19°49'25"	05'51"	SW	9.20	Y	200	1912	1912	--	--	--	H1, II
717600	Alia Str. nr Hilo	-----	19°50'38"	06'21"	SW	.58	N	489	1962	P	A-C,H-K	--	114-116	H1, II
717650	Kapehu Str. nr Pepeekeo	-----	19°51'52"	06'11"	SW	1.09	N	190	1962	P	--	--	--	H1, II
717800	Pohakupuka Str. nr Papaaloo	----	19°57'20"	11'20"	SW	2.76	N	250	1962	C	A-L	M,O,P	117-124	H1, II
717820	Manowalopae Str. nr Laupahoehoe	-----	19°58'35"	14'45"	SW	1.04	Y	900	1965	1971	A-C,H-K	--	125-127	H1, II
717850	Keehila Gulch nr Ookala	-----	20°01'08"	18'45"	SW	.62	N	850	1962	P	--	--	--	H2, I
717920	Ahualoa Gulch at Honokaa	-----	20°05'12"	29'17"	SW	2.27	N	1,130	1962	P	--	--	--	H2, I
717950	Honokaia Gulch tributary nr Honokaa	-----	20°02'58"	32'19"	SW	2.42	N	2,690	1962	P	--	--	--	H2, I
718000	Upper Hamakua Ditch at Puualala nr Kukuihaele	-----	20°03'16"	37'06"	CN	--	--	--	1913	1920	--	--	--	H2, I
720000	Kawainui Str. nr Kamuela	-----	20°05'18"	40'58"	SW	1.58	N	4,060	1964	C	A-L	M,N,P	128-134	H4, I
720300	Kawaiki Str. nr Kamuela	-----	20°05'13"	40'59"	SW	.45	N	4,090	1968	C	A-L	M,N,P	135-140	H4, I
720500	Upper Hamakua Ditch below Kawaiki Str. nr Kamuela	-----	20°05'15"	40'42"	CN	--	--	--	1964	C	A-K	M,N,P	141-146	H4, I
721000	Kawainui Str. at alt. 2,120 ft nr Waipio	-----	20°05'47"	40'07"	SW	3.48	Y	2,120	1901	1902	--	--	--	H4, I
721500	Branch 3 Kawainui Str. at alt. 1,700 ft nr Waipio	-----	20°05'35"	39'48"	SW	3.90	Y	1,700	1901	1902	--	--	--	H4, I
722000	Kawainui Str. at alt. 1,435 ft nr Waipio	-----	20°05'25"	39'26"	SW	4.43	Y	1,435	1901	1902	--	--	--	H4, I
722300	Branch 2 Kawainui Str. at alt. 1,405 ft nr Waipio	-----	20°05'19"	39'19"	SW	.47	N	1,405	1901	1902	--	--	--	H4, I
722600	Branch 1 Kawainui Str. at alt. 1,380 ft nr Waipio	-----	20°05'21"	39'16"	SW	5.19	Y	1,380	1901	1902	--	--	--	H4, I
723000	Kawainui Str. nr Waipio	-----	20°05'15"	38'46"	SW	5.55	Y	1,037	1911	1912	--	--	--	H4, I
724000	Kawainui Str. at alt. 775 ft nr Waipio	-----	20°04'45"	38'32"	SW	6.00	Y	775	1901	1902	--	--	--	H4, I
724800	Upper Hamakua Ditch above Alakahi Str. nr Kamuela	-----	20°04'31"	40'26"	CN	--	--	--	1968	C	A-K	M,N,P	147-151	H4, I
725000	Alakahi Str. nr Kamuela	-----	20°04'27"	40'25"	SW	.87	Y	3,900	1964	C	A-K	M,N,P	152-158	H4, I
726000	Upper Hamakua Ditch above Waimea Reservoir diversion nr Kamuela	-----	20°03'31"	37'40"	CN	--	--	--	1974	C	A-C,H-K	M,N,P	159-162	H4, I
727000	Upper Hamakua Ditch above Puukapu Reservoir nr Kamuela	-	20°02'53"	37'17"	CN	--	--	--	1977	C	A-B,H-K	N	163-165	H4, I
728000	Alakahi Str. at alt. 1,200 ft nr Waipio	-----	20°04'17"	39'47"	SW	1.49	Y	1,200	1901	1902	--	--	--	H4, I
729000	Alakahi Str. at alt. 730 ft nr Waipio	-----	20°04'38"	38'33"	SW	3.14	Y	730	1901	1902	--	--	--	H4, I
730000	Kolawe Str. at alt. 1,120 ft nr Waipio	-----	20°03'52"	38'25"	SW	1.65	Y	1,120	1901	1902	--	--	--	H4, I
731000	Kolawe Str. at alt. 610 ft nr Waipio	-----	20°04'38"	38'08"	SW	2.23	Y	610	1901	1902	--	--	--	H4, I
732000	Waipio Str. below Kolawe Str. nr Waipio	-----	20°04'40"	38'07"	SW	11.70	Y	580	1911	1912	--	--	--	H4, I
732100	Waimea Str. at alt. 790 ft nr Waipio	-----	20°04'15"	37'30"	SW	.51	Y	790	1901	1902	--	--	--	H4, I

See footnotes at end of table, p. 35.

General information summary and station list for the islands of Oahu, Molokai, Maui, and Hawaii (September 1979)--Continued

Station No. 16-	Station name	Location		Site type (1)	Drainage area, sq mi	Known diversions? N=No Y=Yes I=In-flow	Altitude, ft	Period of operation		Continuous records of flow available in Vol. 6 Type of tables (3)	Surface water quality data tables in Vol. 6 (4)	Data table page Nos. in Vol. 6	Map plate No. in Vol. 3 and hydrographic area
		Lat	Long 155°-					Begin yr	End year (2)				
Island of Hawaii													
732150	Waima Str. at alt. 385 ft nr Waipio -----	20°04'42"	37°22"	SW	.77	Y	385	1901	1902	--	--	--	H4, I
732200	Wailoa Str. nr Waipio -----	20°05'28"	37°01"	SW	14.30	Y	150	1901	1969	A-C,H-K	--	166-168	H4, I
732300	Upper Hamakua Ditch at Puualala and Reservoir No. 3 -----	20°02'33"	36°31"	CN	--	--	--	1913	1920	--	--	--	H4, I
732600	Lower Hamakua Ditch at Waima Flume nr Kukuihaele -----	20°04'05"	37°36"	CN	--	--	--	1910	1913	--	--	--	H4, I
732900	Lower Hamakua Ditch at main weir nr Kukuihaele -----	20°07'06"	35°09"	CN	--	--	--	1910	1920	--	--	--	H4, I
733000	Lower Hamakua Ditch wasteway nr Kukuihaele -----	20°07'07"	35°09"	CN	--	--	--	1964	1973	A-C,H-K	--	169-171	H4, I
733100	Lower Hamakua Ditch below main weir nr Kukuihaele -----	20°07'06"	35°09"	CN	--	--	--	1964	1973	A-C,H-K	--	172-174	H4, I
733101	Combined records of stations 16733000, 16733100 -----	--	--	CN	--	--	--	1965	1972	A-C,H-K	--	175-177	--
733200	Honokaa diversion at Honokaa ---	20°05'12"	28°36"	CN	--	--	--	1964	1973	A-C,H-K	--	178-180	H2, I
733300	Lower Hamakua Ditch below Honokaa diversion at Honokaa -	20°05'12"	28°34"	CN	--	--	--	1964	1973	A-C,H-K	--	181-183	H2, I
737000	Waiilikahi Str. nr Waimanu ----	20°07'46"	39°51"	SW	.76	N	2,740	1939	1960	A-L	--	184-189	H4, I
738000	Kaimu Str. nr Waimanu -----	20°08'30"	39°48"	SW	.90	N	1,980	1939	1952	A-C,H-K	--	190-192	H4, I
739000	Punalulu Str. nr Waimanu -----	20°08'50"	39°46"	SW	.66	N	1,870	1939	1952	A-L	--	193-197	H4, I
740000	Waialala Str. nr Waimanu -----	20°09'05"	39°58"	SW	.12	N	1,880	1939	1952	A-L	--	198-202	H4, I
741000	Paopao Str. nr Waimanu -----	20°09'05"	40°09"	SW	.32	N	1,910	1939	1952	A-L	--	203-207	H4, I
742000	Kukui Str. nr Waimanu -----	20°09'15"	40°15"	SW	.22	N	1,940	1939	1966	A-L	--	208-213	H4, I
743000	Awini Ditch at East Honokane iki Gulch nr Niulii -----	20°10'01"	43°14"	CN	--	--	--	1927	1972	A-K	--	214-221	H4, I
744000	East Honokane iki intake to Awini Ditch nr Niulii -----	20°10'01"	43°15"	CN	--	--	--	1927	1972	A-K	--	222-228	H4, I
745000	Awini Ditch above Honokane Gulch nr Kohala -----	20°08'30"	43°51"	CN	--	--	--	1918	1918	--	--	--	H4, I
745500	Awini Ditch at Awini weir nr Kohala -----	20°08'20"	43°55"	CN	--	--	--	1907	1972	A-K	--	229-233	H4, I
747000	East branch Honokane nui Str. at alt. 1,300 ft nr Honokane -	20°07'46"	43°57"	SW	4.53	Y	1,300	1901	1901	--	--	--	H4, I
747500	East branch Honokane nui Str. nr Niulii -----	20°08'18"	44°00"	SW	4.96	Y	1,080	1963	1969	A-C,H-K	--	234-236	H4, I
748000	East branch Honokane nui Str. at alt. 770 ft nr Honokane ---	20°08'58"	43°59"	SW	5.41	Y	770	1901	1901	--	--	--	H4, I
749000	West branch Honokane nui Str. at alt. 1,370 ft nr Honokane -	20°08'16"	44°30"	SW	1.81	--	1,370	1901	1901	--	--	--	H4, I
749500	West branch Honokane nui Str. at alt. 775 ft nr Honokane ---	20°09'04"	44°06"	SW	2.40	Y	775	1901	1901	--	--	--	H4, I
750000	Kohala Ditch at Honokane weir nr Kohala -----	--	--	CN	--	--	--	1907	1912	--	--	--	--
750900	Kohala Ditch at Honokane nr Niulii -----	20°09'50"	43°50"	CN	--	--	--	1963	1972	A-C,H-K	--	237-239	H4, I
751000	Kohala Ditch at Pololu nr Niulii -----	20°10'19"	44°20"	CN	--	--	--	1927	1972	A-K	--	240-247	H4, I
752000	Kohala Ditch at Niulii weir nr Kohala -----	20°11'50"	45°10"	CN	--	--	--	1907	1917	A-C,H-K	--	248-250	H2, I
752600	Hapahapai Gulch at Kapaau ----	20°14'00"	48°00"	SW	1.52	N	450	1962	P	--	--	--	H2, I
755000	Kehena Ditch nr Kohala -----	20°07'25"	45°05"	CN	--	--	--	1917	1966	A-K	N,P	251-258	H4, I
755800	Luahine Gulch nr Waimea -----	20°03'11"	44°35"	SW	.32	N	3,160	1962	P	--	--	--	H2, V
756000	Kohakohau Str. nr Kamuela ----	20°02'38"	41°10"	SW	2.51	Y	3,273	1956	C	A-C,H-K	M,N,P	259-265	H2, V
756500	Keanuimano Str. nr Kamuela ---	20°01'48"	42°05"	SW	4.30	Y	2,410	1963	P	A-C,H-K	--	266-268	H2, V
757000	Waikoloa Str. nr Kamuela ----	20°03'17"	40°01"	SW	.78	N	3,570	1947	1971	A-L	--	269-274	H4, V
758000	Waikoloa Str. at marine dam nr Kamuela -----	20°02'48"	39°58"	SW	1.18	Y	3,460	1947	C	A-C,H-K	M,N,P	275-281	H4, V
759000	Hauani Gulch nr Kamuela -----	20°02'28"	39°05"	SW	.47	Y	3,117	1956	C	A-K	M,N,P	282-288	H4, V
759040	Paiakuli Reservoir tributary nr Waimea -----	20°02'16"	38°08"	SW	.27	N	2,910	1962	P	--	--	--	H4, V
759060	Kamako Gulch nr Waimea -----	19°57'32"	41°02"	SW	50.60	N	2,500	1962	P	--	--	--	H2, V
759080	Popoo Gulch nr Waikii -----	19°52'11"	43°51"	SW	33.10	N	2,510	1962	P	--	--	--	H2, V
759180	Keopu Str. nr Kailua -----	19°38'54"	58°15"	SW	2.61	N	750	1964	P	--	--	--	H3, IV
759200	Right branch Waiala Str. nr Holualoa -----	19°38'41"	54°55"	SW	1.89	N	3,280	1960	C	A-L	M,N,P	289-296	H3, IV
759300	Waiala Str. at Luawai nr Holualoa -----	19°38'12"	55°45"	SW	8.74	Y	2,580	1960	P	A-K	--	297-300	H3, IV
759500	Waiala Str. nr Holualoa -----	19°38'12"	56°40"	SW	9.35	Y	1,910	1957	1968	A-K	--	301-304	H3, IV
759800	Kiilae Str. nr Honaunau -----	19°24'52"	50°56"	SW	.67	N	2,898	1958	C	A-L	M,N,P	305-312	H3, IV
760000	Waiohinu Springs, mauka station nr Naalehu -----	19°05'26"	37°25"	SP	--	--	--	1917	1918	--	--	--	H3, III

See footnotes at end of table, p. 35.

General information summary and station list for the islands of Oahu, Molokai, Maui, and Hawaii (September 1979)--Continued

Station No. 16-	Station name	Location		Site type (1)	Drainage area, sq mi	Known diversions? N=No Y=Yes	Altitude, ft	Period of operation		Continuous records of flow available in Vol. 6 Type of tables (3)	Surface water quality data tables in Vol. 6 (4)	Data table Nos. in Vol. 6	Map plate No. in Vol. 3 and hydrographic area
		Lat	Long 155°-					Be-	End year (2)				
<u>Island of Hawaii</u>													
761000	Waiohinu Springs, makai station nr Naalehu -----	19°05'25"	37°25"	SP	--	--	--	1917	1918	--	--	--	H3, 111
761200	Kahilipali nui Gulch at Waiohinu -----	19°04'11"	36°46"	SW	.47	N	--	1962	1965	--	--	--	H3, 111
762000	Alapai Gulch at Naalehu -----	19°04'00"	35°19"	SW	2.87	N	720	1962	P	--	--	--	H3, 111
764000	Hilea Gulch tributary nr Honuapo	19°10'27"	35°58"	SW	9.17	N	2,940	1966	C	A-K	M,N,P	313-318	H3, 111
765000	Hilea Gulch tributary no. 2 nr Honuapo -----	19°10'17"	36°05"	SW	1.86	N	2,880	1966	C	A-L	M,N,P	319-324	H3, 111
767000	Ninole Gulch nr Punaluu -----	19°10'44"	33°46"	SW	15.50	N	2,080	1966	C	A-L	M,N,P	325-330	H3, 111
770000	Hionamoa Gulch at Pahala -----	19°11'45"	29°11"	SW	9.41	N	710	1962	P	--	--	--	H3, 111
770200	Hionamoa Gulch tributary at Pahala -----	19°11'28"	28°53"	SW	1.01	N	540	1962	1968	--	--	--	H3, 111
770500	Paauau Gulch at Pahala -----	19°12'39"	28°48"	SW	1.74	N	972	1962	C	A-L	M,N,P	331-337	H3, 111

1/ CN = Ditch.
OT = Tunnel.
SP = Spring.
SW = Stream.

2/ C = Continuous record active station as of September 1979.
L = Low-flow partial-record active station as of September 1979.
P = Peak-flow partial-record active station as of September 1979.
1920 = Ending year of operation.

3/ A. Summaries of zero-value and no-value days, months, and years.
B. Monthly means in chronological order.
C. Monthly means ranked in ascending order of their magnitudes with identification of median and first and third quartile values.
D. Statistics on monthly means.
E. Correlation coefficient.
F. Serial correlation coefficient for 1-year lag.
G. Statistics on annual means.
H. Annual means ranked in ascending and descending orders and annual sums of daily discharges.
I. Lowest mean values and rankings for indicated number of consecutive days.
J. Highest mean values and rankings for indicated number of consecutive days.
K. Duration table of daily values with class summary and percent exceedance table.
L. Summary of statistics using log-Pearson distribution for lowest and highest mean values for a selected number of consecutive days.

4/ M. Statistical summary of partial-record analyses.
N. Physical parameters.
O. Physical (including instantaneous sediment) parameters.
P. Common ions, metals and general organic parameters.
Q. Biological parameters.
R. Phytoplankton taxonomy tables.
S. Pesticide parameters.
T. Continuous records of specific conductance.
U. Continuous records of suspended sediment discharge.
V. Continuous records of water temperature.

Abbreviations used in station names:

alt. = altitude
ft = feet
Hwy = Highway
nr = near
R. = River
Str. = Stream

DATA AND STATISTICAL TABLES

The data and statistical tables will be found in Volumes 4, 5, and 6, available for inspection at the Hawaii District Office. There may be a nominal reproducing charge for copies of tables.

ALPHABETICAL STATION LIST AND CORRESPONDING STATION NUMBER

ALPHABETICAL STATION LIST AND CORRESPONDING STATION NUMBER

Refer to section titled "General Information Summary and Station List for the Islands of Oahu, Molokai, Maui, and Hawaii" beginning on page 23 for numerical station list and data tables.

Island of Oahu

Ahlo Ditch nr Kaneohe (16274000)
Ahuimanu Str. nr Kahaluu (16283480)
Anahulu R. nr Haleiwa (16340000)
Anahulu R. tributary nr Haleiwa (16340500)
Awanui Gulch nr Barbers Point Naval Air Station (16212400)
Awanui Str. at Gilbert nr Barbers Point (16212401)
Combined records of stations 16210900, 16211000 (16211003)
Combined records of stations 16302000, 16303000 (16303003)
East branch Kahawainui Str. nr Laie (16308000)
East Manoa Ditch nr Honolulu (16239500)
Haiku Str. nr Heeia (16275000)
Halawa Str. at Aiea (16227000)
Halona Str. nr Waikane (16288000)
Hawaiian Elec. Co. wasteway at Waiiau nr Pearl City (16220000)
Hawaiian Elec. Co. tunnel at Waiiau nr Pearl City (16219000)
Heeia Str. at Kaneohe (16279500)
Helemano Str. at Haleiwa (16343000)
Honouliuli Str. nr Waipahu (16212500)
Hooleinaiwa Str. nr Kaneohe (16267000)
Hop Tuck Ditch nr Heeia (16281000)
Huliwai Gulch nr Kunia Camp (16212750)
Inoaole Str. at Waimanalo (16248800)
Iolekaa Str. mauka nr Heeia (16278000)
Iolekaa Str. nr Heeia (16279000)
Kaelepulu Str. tributary at Kailua (16249100)
Kahaluu Str. at Kahaluu (16283500)
Kahaluu Str. nr Heeia (16283000)
Kahaluu Str. nr Kahaluu (16283400)
Kahaluu Str. tributary nr Kahaluu (16283100)
Kahana Str. at alt. 30 ft nr Kahana (16296500)
Kahana Str. at mauka trail crossing nr Kahana (16295995)
Kahana Str. nr Kahana (16296000)
Kahanaiki Str. at Hwy 61 nr Kailua (16264100)
Kahanaiki Str. nr Kailua (16263000)
Kahuawai spring nr Honolulu (16236000)
Kaipapau Str. nr Hauula (16305000)
Kaiwikoele Str. tributary nr Maunawai (16329000)
Kalauao Str. at Aiea (16225000)
Kalauao Str. at Moanalua Road at Aiea (16224500)
Kalihi Str. at Kalihi (16229300)
Kalihi Str. nr Honolulu (16229000)
Kalihi Str. nr Kaneohe (16228900)

ALPHABETICAL STATION LIST AND CORRESPONDING STATION NUMBER--Continued
Island of Oahu--Continued

Kaloi Gulch tributary nr Honouliuli (16212450)
Kaluanui Str. at Hauula (16304500)
Kaluanui Str. nr Hauula (16304000)
Kaluanui Str. nr Punaluu (16304200)
Kamakalepo Str. nr Kailua (16256000)
Kamananui Str. at Maunawai (16330000)
Kamananui Str. at Pupukea military Road nr Maunawai (16325000)
Kamooalii Str. at Kaneohe (16273900)
Kamooalii Str. below Kuou Str. nr Kaneohe (16270500)
Kamooalii Str. below Luluku Str. nr Kaneohe (16272200)
Kamooalii Str. nr Kaneohe (16266000)
Kaukonahua Str. at Waialua (16210500)
Kaunala Gulch nr Sunset Beach (16317800)
Kaupuni Str. at alt. 374 ft nr Waianae (16211800)
Kaupuni Str. nr Waianae (16211900)
Kawa Str. at Kaneohe (16265000)
Kawa Str. nr Kahana (16297000)
Kawainui canal at Kailua (16264800)
Kawainui Str. above Kamananui Ditch nr Wahiawa (16335000)
Kawainui swamp canal at Wanaao Road at Kailua (16264500)
Kawainui swamp drain canal at Kailua Road at Kailua (16264400)
Keaahala Str. at Kamehameha Hwy at Kaneohe (16274499)
Keaahala Str. at Kaneohe (16274500)
Kipapa Str. nr Wahiawa (16212800)
Kipapa Str. nr Waipahu (16212900)
Koloa Gulch nr Laie (16306000)
Koolau Ditch at reservoir nr Wahiawa (16206500)
Kuliouou Valley at Kuliouou (16247900)
Kuou Ditch nr Kaneohe (16269000)
Kuou Str. nr Kaneohe (16270000)
Lee Ditch nr Heeia (16282000)
Luakaha weir in upper Nuuanu Valley nr Honolulu (16231000)
Luluku Str. at alt. 220 ft nr Kaneohe (16270900)
Luluku Str. nr Kaneohe (16272000)
Lulumahu Ditch at upper Nuuanu Reservoir nr Honolulu (16230000)
Mailiilii Str. nr Waianae (16212200)
Main spring nr Kailua (16249400)
Makaha Str. at Makaha (16211700)
Makaha Str. nr Makaha (16211600)
Makaleha Str. nr Waialua (16211300)
Makaua Str. at Kaaawa (16295900)
Makua Str. at Makua (16211500)
Makawao Ditch nr Kailua (16249800)
Makawao spring nr Kalauao (16249600)
Makawao Str. nr Kailua (16254000)
Malaekahana Str. at alt. 30 ft nr Kahuku (16310501)
Malaekahana Str. at alt. 70 ft nr Kahuku (16310500)

ALPHABETICAL STATION LIST AND CORRESPONDING STATION NUMBER--Continued
island of Oahu--Continued

Malaekahana Str. nr Kahuku (16309000)
Malaekahana Str. nr Laie (16308990)
Manini Gulch at Kaena (16211400)
Manoa Str. at College of Hawaii nr Honolulu (16242000)
Manoa Str. at upper Manoa Valley nr Honolulu (16241000)
Manoa Str. at Waiialae Road nr Honolulu (16243000)
Manoa-Palolo drainage canal at Moiliili (16247100)
Mauka Ditch nr Wahiawa (16203000)
Maunawili Ditch nr Waimanalo (16250000)
Maunawili Str. above Wong Leongs Ditch nr Kailua (16258000)
Maunawili Str. at Hwy 61 nr Kailua (16260500)
Maunawili Str. nr Kailua (16260000)
Maunawili Str. nr Waimanalo (16249200)
Middle branch Malaekahana Str. nr Kahuku (16310000)
Moanalua Str. at alt. 100 ft nr Honolulu (16228500)
Moanalua Str. nr Aiea (16228200)
Moanalua Str. nr Honolulu (16228000)
Moanalua Str. nr Kaneohe (16227500)
Moanalua Str. nr Tripler Hospital (16228600)
Moanalua Str. tributary nr Aiea (16227900)
Moanalua Str. tributary nr Kaneohe (16227700)
Moole Ditch makai station nr Honolulu (16231700)
Moole Ditch mauka station nr Honolulu (16231500)
Morikone Pond outlet at Pearl City (16215000)
Nanakuli Str. at Nanakuli (16212300)
North Fork Kaukonahua Str. above right branch nr Wahiawa (16200000)
North Fork Kaukonahua Str. nr Wahiawa (16204000)
North branch Kahanaiki Str. nr Kailua (16261000)
North Fork Waihee Str. nr Heeia (16283700)
North Halawa Str. nr Aiea (16226000)
North Luluku Ditch nr Kaneohe (16271000)
Nuuanu Str. above Waolani Street at Honolulu (16235100)
Nuuanu Str. at Kuakini Street nr Honolulu (16235000)
Nuuanu Str. below Reservoir 2 wasteway nr Honolulu (16232000)
Oio Str. nr Kahuku (16311000)
Opaepa Str. nr Haleiwa (16350000)
Opaepa Str. nr Wahiawa (16345000)
Palolo Str. nr Honolulu (16247000)
Paumalu Gulch at Sunset Beach (16318000)
Pauoa Str. at Honolulu (16237500)
Pauoa Str. at upper Pauoa Valley nr Honolulu (16237000)
Pearl Harbor Springs at Kaluaao (16224000)
Pearl Harbor Springs at Kaluaoopu nr Pearl City (16218500)
Pearl Harbor Springs at Loko Kukona (16218000)
Pearl Harbor Springs at Puukapu nr Pearl City (16217000)
Pearl Harbor Springs at Waiiau (16222000)
Pearl Harbor Springs at Waiawa (16214000)

ALPHABETICAL STATION LIST AND CORRESPONDING STATION NUMBER--Continued
Island of Oahu--Continued

Piho Str. nr Kaneohe (16268000)
Poamoho Str. at Waialua (16211200)
Poamoho Str. nr Wahiawa (16211000)
Poamoho tunnel nr Wahiawa (16210900)
Pohakea Str. nr Kailua (16257000)
Puea mauka Ditch nr Waianae (16211850)
Puhawai Str. at Lualualei nr Waianae (16212000)
Pukele Str. nr Honolulu (16244000)
Punaluu Ditch nr Punaluu (16302000)
Punaluu Str. at alt. 250 ft nr Punaluu (16301000)
Punaluu Str. at alt. 539 ft nr Punaluu (16299000)
Punaluu Str. nr Punaluu (16303000)
Reservoir Ditch nr Heeia (16276000)
Right branch of North Fork Kaukonahua Str. nr Wahiawa (16201000)
Right branch of South Fork Kaukonahua Str. nr Wahiawa (16208500)
South branch Kahanaiki Str. nr Kailua (16262000)
South Fork Kaukonahua Str. above Wahiawa reservoir nr Wahiawa (16209000)
South Fork Kaukonahua Str. at east pump reservoir nr Wahiawa (16208000)
South Fork Kaukonahua Str. below US Army reservoir nr Wahiawa (16207000)
South Fork Kaukonahua Str. nr Wahiawa (16206000)
South Fork Waihee Str. nr Heeia (16283600)
Ulehawa Str. at Nanakuli (16212250)
Waiahole Str. at alt. 250 ft nr Waiahole (16291000)
Waiahole Str. at Waiahole nr Waikane (16294000)
Waiahole Str. below powerhouse nr Waiahole (16290000)
Waiahole Str. nr Waiahole (16292000)
Waiahole tunnel at adit 8 nr Waipahu (16287200)
Waiahole tunnel at north portal nr Waiahole (16287000)
Waiahole tunnel at Waianu nr Waiahole (16285000)
Waiahole tunnel wasteway at intake 31 nr Waiahole (16286000)
Waiakeakua Str. at Honolulu (16240500)
Waialaenui Gulch at Honolulu (16247200)
Waianu Str. at Waiahole (16293100)
Waianu Str. nr Waikane (16293000)
Waiawa Str. nr Pearl City (16216000)
Waihee Str. at alt. 260 ft nr Heeia (16283800)
Waihee Str. at Kahaluu (16284500)
Waihee Str. nr Heeia (16284000)
Waihee Str. nr Kahaluu (16284200)
Waihi Str. at Honolulu (16238500)
Waihi Str. nr Waikane (16289000)
Waihoi Str. nr Punaluu (16300000)
Waikakalaua Str. nr Wahiawa (16212700)
Waikane Str. at alt. 75 ft at Waikane (16294900)
Waikane Str. at Waikane (16295200)
Waikane Str. nr Waikane (16295000)

ALPHABETICAL STATION LIST AND CORRESPONDING STATION NUMBER--Continued
Island of Oahu--Continued.

Waikele Str. at Schofield Barracks (162126000)
Waikele Str. at Waipahu (16213000)
Waikele Str. at Wheeler Field (16212601)
Wailele Gulch nr Laie (16307000)
Wailupe Gulch at Aina Haina (16247500)
Waimalu Str. nr Aiea (16223000)
Waimanalo Ditch below main reservoir nr Waimanalo (16248900)
Waimanalo Str. at Waimanalo (16249000)
Waimano flood channel at Pearl City (16216500)
Waimea Gulch nr Kawailoa Camp (16331000)
Waiomao Str. at upper Palolo Valley nr Honolulu (16245000)
Waiomao Str. nr Honolulu (16246000)
Waipio Ditch nr Heeia (16277000)
Waolani Str. at Honolulu (16235400)
Waolani Str. at mouth at Honolulu (16235600)
Wing Wo Tai Ditch nr Heeia (16280000)
Young Mau Ditch nr Kaneohe (16273000)

ALPHABETICAL STATION LIST AND CORRESPONDING STATION NUMBER--Continued

Island of Molokai

East Fork Kawela Gulch nr Kamalo (16415000)
 Halawa Str. nr Halawa (16400000)
 Halena Gulch nr Mauna Loa (16411640)
 Kakaako Gulch above Kamakahi Gulch nr Mauna Loa (16411320)
 Kakaako Gulch at Hwy 46 nr Mauna Loa (16411300)
 Kakaako Gulch nr Mauna Loa (16411400)
 Kaluapeelua Gulch at Hoolehua (16411800)
 Kaluapeelua Gulch tributary nr Molokai Airport (16411900)
 Kamiloloa Gulch at Kaunakakai (16414100)
 Kapuhi Str. at alt. 1,000 ft nr Pelekunu (16403400)
 Kapuhi Str. nr Pelekunu (16403600)
 Kapuna Str. nr Kalae (16413000)
 Kaunakakai Gulch at Kaunakakai (16414000)
 Kaunalu Gulch nr Mauna Loa (16411600)
 Kawailena Str. nr Pelekunu (16403500)
 Kawainui Str. at alt. 1,000 ft nr Pelekunu (16403700)
 Kawainui Str. nr Pelekunu (16403900)
 Kawaipoka Str. nr Pelekunu (16403800)
 Keolewa Str. nr Kalae (16410000)
 Lanipuni Str. nr Pelekunu (16405000)
 Manawainui Gulch nr Kualapuu (16413500)
 Mokomoko Gulch nr Kalae (16412000)
 Molokai tunnel at east Portal (16405100)
 Molokai tunnel at west Portal (16405300)
 Papalaua Str. nr Pukoo (16401000)
 Papio Gulch at Halawa (16419500)
 Pelekunu Str. nr Pelekunu (16404000)
 Pilipililau Str. nr Pelekunu (16404200)
 Pohakupili Gulch nr Halawa (16419000)
 Pulena Str. nr Wailau (16402000)
 Punaula Gulch nr Pukoo (16416000)
 Waiakeakua Str. nr Wailau (16403000)
 Waialala Spring nr Kalae (16411000)
 Waihanau Str. nr Kalaupapa (16409000)
 Waikolu Str. at alt. 900 ft nr Kalaupapa (16405500)
 Waikolu Str. at elevation 650 ft nr Kalaupapa (16406000)
 Waikolu Str. below pipeline crossing nr Kalaupapa (16408000)
 Wawaia Gulch at Kamalo (16415400)

ALPHABETICAL STATION LIST AND CORRESPONDING STATION NUMBER--Continued

Island of Maui

Alo Str. nr Huelo (16557000)
Awalau Gulch at Kailiili (16602400)
Center Ditch below Kolea Reservoir nr Huelo (16561000)
Center Ditch nr Huelo (16562000)
East Wailuaiki Str. nr Keanae (16517000)
East Wailuanui Str. nr Keanae (16520000)
East branch Kailua Str. nr Kailiili (16576200)
East branch Opana Gulch at Haiku-uka boundary nr Kailiili (16599000)
East branch Puohokamoa Str. at Haiku-uka boundary nr Kailiili (16542000)
East branch Waikamoi Str. at Haiku-uka boundary nr Kailiili (16554500)
First branch Haipuaena Str. at Haiku-uka nr Kailiili (16534000)
Four branch Honomanu Str. at Haiku-uka nr Kailiili (16526000)
Hahalawe Gulch nr Kipahulu (16502000)
Haiku Ditch at Honopou Gulch nr Kailua (16594000)
Haipuaena diversion Ditch at Kolea Gulch nr Keanae (16535000)
Haipuaena Str. at Haiku-uka boundary nr Kailiili (16532000)
Haipuaena Str. at Kula intake nr Olinda (16531100)
Haipuaena Str. nr Huelo (16537000)
Haipuaena Str. above Spreckels Ditch nr Huelo (16536000)
Halehaku Gulch nr Huelo (16598000)
Halehaku Gulch nr Kailiili (16596200)
Halehaku Gulch weir at New Hamakua Ditch nr Huelo (16597000)
Hana flume nr Hana (16504000)
Hanawi Str. below Government Road nr Nahiku (16509000)
Hanawi Str. nr Nahiku (16508000)
Hawelewele Gulch nr Kaupo (16500300)
Honokeana Gulch nr Honokahua (16623400)
Honokohau Ditch above Honolulu Str. nr Honokohau (16622000)
Honokohau Ditch at Honokowai weir nr Lahaina (16624000)
Honokohau Ditch intake nr Honokohau (16621000)
Honokohau Str. nr Honokohau (16620000)
Honokowai Ditch nr Lahaina (16629000)
Honokowai Str. at Honokowai (16630200)
Honokowai Str. nr Lahaina (16630000)
Honolua Ditch nr Honokohau (16625000)
Honolua Str. at Honolulu Ranch nr Honokohau (16626000)
Honolua Str. nr Honokohau (16623000)
Honomanu Str. at Haiku-uka boundary nr Kaili (16524000)
Honomanu Str. nr Keanae (16527000)
Honopou Str. above Haiku Ditch nr Huelo (16593000)
Honopou Str. at Lowrie Ditch siphon nr Huelo (16591000)
Honopou Str. below Haiku Ditch nr Huelo (16595000)
Honopou Str. nr Huelo (16587000)
Hoolawaliilii Str. nr Huelo (16586000)
Hoolawanui Str. nr Huelo (16585000)
lao Str. at Wailuku (16607000)

ALPHABETICAL STATION LIST AND CORRESPONDING STATION NUMBER--Continued
Island of Maui--Continued

Iao Str. nr Wailuku (16604000)
Kaaiea Gulch nr Huelo (16565000)
Kaeleku flume nr Kaeleku (16503000)
Kahakuloa Str. at alt. 1,380 ft nr Honokohau (16617700)
Kahakuloa Str. at Kahakuloa nr Waihee (16619000)
Kahakuloa Str. nr Honokohau (16618000)
Kahoma development tunnel nr Lahaina (16633000)
Kahoma Str. at Lahaina (16638500)
Kahoma Str. nr Lahaina (16634000)
Kailua Str. at Haiku-uka boundary nr Kailiili (16574100)
Kailua Str. nr Huelo (16577000)
Kailua Str. nr Huelo (16584000)
Kailua Str. nr Kailiili (16574500)
Kalialinui Gulch nr Kahului (16603850)
Kalialinui Gulch tributary nr Pukalani (16603700)
Kaluanui Ditch at Puuomalei nr Hamakuapoko (16603000)
Kaluapulani Gulch tributary nr Pukalani (16603800)
Kamaole Gulch at Kamaole (16663500)
Kanaha Str. above pipeline intake nr Lahaina (16636000)
Kanaha Str. nr Lahaina (16638000)
Kapaloa Str. at weir 1 nr Lahaina (16627000)
Kapaloa Str. nr Lahaina (16628000)
Kapaula Gulch below Government Road nr Nahiku (16511000)
Kapaula Gulch nr Nahiku (16510000)
Kauaula Ditch nr Lahaina (16643000)
Kauaula Str. nr Lahaina (16641000)
Kauaula Str. nr mouth nr Lahaina (16643300)
Kauhikoa Ditch at Opana weir nr Huelo (16602000)
Kawaipapa Gulch at Hana (16502900)
Kepuni Gulch nr Kahikinui House (16500100)
Koolau Ditch at Alo diversion weir nr Huelo (16558000)
Koolau Ditch at Haipuaena nr Huelo (16541000)
Koolau Ditch at Nahiku weir nr Nahiku (16512000)
Koolau Ditch at Wahinepee nr Huelo (16551000)
Koolau Ditch nr Keanae (16523000)
Kopiliula Str. nr Keanae (16516000)
Kukuiula Gulch nr Kipahulu (16500800)
Kula diversion from Haipuaena Str. nr Olinda (16531000)
Kulanihakoi Gulch nr Kihei (16660000)
Lahainaluna Ditch nr Lahaina (16637000)
Lahainaluna Str. at Weir 1 nr Lahaina (16635000)
Lahainaluna Str. at Weir 2 nr Lahaina (16635500)
Launiupoko Str. nr Lahaina (16644000)
Left branch Makamakaole Str. nr Waihee (16617000)
Liilioholo Gulch at Kamaole (16664000)
Lowrie Ditch at Honopou Gulch nr Huelo (16592000)
Makapipi Ditch nr Nahiku (16506000)

ALPHABETICAL STATION LIST AND CORRESPONDING STATION NUMBER--Continued
Island of Maui--Continued

Makapipi Str. nr Nahiku (16507000)
Malalowaiaole Gulch nr Maalaea (16647500)
Maniania Ditch nr Wailuku (16605000)
Manuel Luis Ditch at Puohokamoa Gulch nr Huelo (16541500)
Manuel Luis Ditch west of Puohokamoa Str. nr Huelo (16552500)
Main branch Puohokamoa Str. at Haiku-uka boundary nr Kailiili (16543000)
Moomoonui Gulch at Hana (16502800)
North Waiehu Ditch nr Wailuku (16609000)
North Waiehu Str. below North Waiehu Ditch nr Wailuku (16609500)
North Waiehu Str. nr Wailuku (16608000)
Nailiilihaele Str. nr Huelo (16570000)
Nailiilihaele Str. nr Kailiili (16569100)
Nailiilihaele Str. below New Hamakua Ditch nr Huelo (16571000)
New Hamakua Ditch at Halehaku weir nr Huelo (16596000)
New Hamakua Ditch at Honopou nr Huelo (16589000)
New Hamakua Ditch at Nailiilihaele weir nr Huelo (16572000)
New Hamakua Ditch at Station 1 nr Kailiili (16573000)
New Hamakua Ditch at Station 2 nr Huelo (16578000)
New Hamakua Ditch at Station 3 nr Huelo (16579000)
New Hamakua Ditch at Station 4 nr Huelo (16579500)
New Hamakua Ditch at Station 5 nr Huelo (16582000)
North Fork Kauaula Str. nr Lahaina (16639000)
Ninth branch Kailua Str. at Haiku-uka nr Kailiili (16576000)
Oanui Str. nr Huelo (16580000)
Old Hamakua Ditch at Honopou nr Huelo (16590000)
Old Hamakua Ditch at Kailua nr Huelo (16583000)
Olowalu Ditch nr Olowalu (16645000)
Olowalu Str. at Olowalu (16646200)
Olowalu Str. nr Olowalu (16646000)
Opuola Str. nr Huelo (16566000)
Opuola Str. above Spreckels Ditch crossing nr Huelo (16567000)
Opana Ditch nr Huelo (16600000)
Opana Str. nr Huelo (16601000)
Opana tunnel nr Kailiili (16599500)
Owaluhi Gulch nr Kahakalooa (16619600)
Paakea Gulch nr Nahiku (16514000)
Palikea Str. below diversion dam nr Kipahulu (16501000)
Palolo Ditch nr Waikapu (16649000)
Poelua Gulch nr Kahakulooa (16619700)
Pukuilua Gulch nr Hana (16502400)
Puohokamoa Str. nr Huelo (16546000)
Puohokamoa intake of Koolau Ditch nr Huelo (16547000)
Puohokamoa Str. above Spreckels Ditch nr Huelo (16545000)
South side Waikapu Ditch nr Waikapu (16648000)
South Waiehu Ditch nr Wailuku (16611000)
South Waiehu Str. nr Wailuku (16610000)

ALPHABETICAL STATION LIST AND CORRESPONDING STATION NUMBER--Continued
Island of Maui--Continued

Second branch Nailiilihaele Str. at Haiku-uka (16569000)
Seven branch Hanomanu Str. at Haiku-uka nr Kailiili (16525000)
South Fork Kauaula Str. nr Lahaina (16640000)
Spreckels Ditch at Haipuaena weir nr Huelo (16538000)
Spreckels Ditch at Station 1 nr Huelo (16528000)
Spreckels Ditch at Station 2 nr Huelo (16529000)
Spreckels Ditch at Station 3 nr Huelo (16530000)
Spreckels Ditch at Station 4 nr Huelo (16539000)
Spreckels Ditch at Station 5 nr Huelo (16552200)
Spreckels Ditch at Station 6 nr Huelo (16560000)
Spreckels Ditch at Station 7 nr Huelo (16567500)
Spreckels Ditch at Station 8 nr Huelo (16568000)
Spreckels Ditch at Wahinepee nr Huelo (16552000)
Spreckels Ditch at Waiale weir nr Wailuku (16616000)
Spreckels Ditch below Kaaiea Gulch nr Huelo (16565500)
Spreckels Ditch nr Waihee (16615000)
Taro Patch Feeder Ditch at Keanae (16522000)
Tenth branch Kailua Str. at Haiku-uka nr Kailiili (16575000)
Third branch Haipuaena Str. at Haiku-uka nr Kailiili (16533000)
Ukumehame Gulch at mouth nr Olowalu (16647100)
Ukumehame Gulch nr Olowalu (16647000)
Unnamed Gulch at Maliko Bay (16603300)
Unnamed Gulch at Maluhia Camp (16616500)
Waiaka Str. nr Nahiku (16513000)
Waiakoa Gulch at Kihei (16659000)
Waiakoa Gulch tributary nr Waiakoa (16658500)
Waihee Canal at Waiale weir nr Wailuku (16613500)
Waihee Canal nr Waihee (16613000)
Waihee R. at dam nr Waihee (16614000)
Waihee R. nr Waihee (16612000)
Waikamoi Str. above reservoir at Kula Place intake nr Olinda (16552800)
Waikamoi Str. above Wailoa Ditch nr Huelo (16555000)
Waikamoi Str. at Puu Luau nr Olinda (16552600)
Waikamoi Str. below reservoir at Kula intake nr Olinda (16553000)
Waikamoi Str. nr Huelo (16556000)
Waikamoi Str. at Haiku-uka boundary nr Kailiili (16554000)
Waikapu Str. nr Kihei (16650500)
Waikapu Str. nr Waikapu (16650000)
Wailoa Ditch at Honopou nr Huelo (16528000)
Wailuanui Str. nr Keanae (16521000)
Waiohue Gulch nr Nahiku (16515000)
West branch Nailiilihaele Str. nr Kailiili (16569700)
West branch Puohokamoa Str. at Haiku-uka boundary nr Kailiili (16544000)
West Wailuaiki Str. nr Keanae (16518000)
West Wailuaiki Str. nr Keanae (16519000)

ALPHABETICAL STATION LIST AND CORRESPONDING STATION NUMBER--Continued

Island of Hawaii

Ahualoa Gulch at Honokaa (16717920)
 Alakahi Str. at alt. 1,200 ft nr Waipio (16728000)
 Alakahi Str. at alt. 730 ft nr Waipio (16729000)
 Alakahi Str. nr Kamuela (16725000)
 Alapai Gulch at Naalehu (16762000)
 Alia Str. nr Hilo (16717600)
 Awini Ditch above Honokane Gulch nr Kohala (16745000)
 Awini Ditch at Awini weir nr Kohala (16745500)
 Awini Ditch at East Honokane iki Gulch nr Nuilii (16743000)
 Branch 1 Kawainui Str. at alt. 1,380 ft nr Waipio (16722600)
 Branch 2 Kawainui Str. at alt. 1,405 ft nr Waipio (16722300)
 Branch 3 Kawainui Str. at alt. 1,700 ft nr Waipio (16721500)
 Combined records of stations 16733000, 16733100 (16733101)
 East Honokane iki intake to Awini Ditch nr Niulii (16744000)
 East branch Honokane nui Str. at alt. 1,300 nr Honokane (16747000)
 East branch Honokane nui Str. at alt. 770 ft nr Honokane (16748000)
 East branch Honokane nui Str. nr Niulii (16747500)
 Hapahapai Gulch at Kapaau (16752600)
 Hauani Gulch nr Kamuela (16759000)
 Hilea Gulch tributary No. 2 nr Honuapo (16765000)
 Hilea Gulch tributary nr Honuapo (16764000)
 Hilo Boarding School Ditch at intake nr Hilo (16705000)
 Hilo Boarding School Ditch nr Hilo (16706000)
 Hionamoa Gulch at Pahala (16770000)
 Hionamoa Gulch tributary at Pahala (16770200)
 Honokaa diversion at Honokaa (16733200)
 Honokaia Gulch tributary nr Honokaa (16717950)
 Honolii Str. nr Hilo (16716000)
 Honolii Str. nr Papaikou (16717000)
 Kahilipali nui Gulch at Waiohinu (16761200)
 Kaimu Str. nr Waimanu (16738000)
 Kalaoa Mauka Str. nr Hilo (16717400)
 Kamakoa Gulch nr Waimea (16759060)
 Kapehu Ditch diversion nr Hilo (16707000)
 Kapehu Ditch nr Hilo (16708000)
 Kapehu Str. at Piihonua nr Hilo (16709000)
 Kapehu Str. nr Pepeekeo (16717650)
 Kawaiki Str. nr Kamuela (16720300)
 Kawainui Str. at alt. 1,435 ft nr Waipio (16722000)
 Kawainui Str. at alt. 2,120 ft nr Waipio (16721000)
 Kawainui Str. at alt. 775 ft nr Waipio (16724000)
 Kawainui Str. nr Kamuela (16720000)
 Kawainui Str. nr Pepeekeo (16717500)
 Kawainui Str. nr Waipio (16723000)
 Keanuimano Str. nr Kamuela (16756500)
 Keehia Gulch nr Ookala (16717850)

ALPHABETICAL STATION LIST AND CORRESPONDING STATION NUMBER--Continued
Island of Hawaii--Continued

Kehena Ditch nr Kohala (16755000)
Keōpu Str. nr Kailua (16759180)
Kiilae Str. nr Honaunau (16759800)
Kohakohau Str. nr Kamuela (16756000)
Kohala Ditch at Honokane nr Niulii (16750900)
Kohala Ditch at Honokane weir nr Kohala (16750000)
Kohala Ditch at Niulii weir nr Kohala (16752000)
Kohala Ditch at Pololu nr Niulii (16751000)
Koiawe Str. at alt. 1,120 ft nr Waipio (16730000)
Koiawe Str. at alt. 610 ft nr Waipio (16731000)
Kukui Str. nr Waimanu (16742000)
Lower Hamakua Ditch at main weir nr Kukuihaele (16732900)
Lower Hamakua Ditch at Waima flume nr Kukuihaele (16732600)
Lower Hamakua Ditch below Honokaa diversion at Honokaa (16733300)
Lower Hamakua Ditch below main weir nr Kukuihaele (16733100)
Lower Hamakua Ditch wasteway nr Kukuihaele (16733000)
Luahine Gulch nr Waimea (16755800)
Manowaiopae Str. nr Laupahoehoe (16717820)
Ninole Gulch nr Punaluu (16767000)
Olaa flume at Kaumana nr Hilo (16701000)
Paaau Gulch at Pahala (16770500)
Paiakuli Reservoir tributary nr Waimea (16759040)
Palai Str. at Hilo (16701400)
Paopao Str. nr Waimanu (16741000)
Pohakupuka Str. nr Papaaloa (16717800)
Popoo Gulch nr Waikii (16759080)
Punalulu Str. nr Waimanu (16739000)
Right branch Waiaha Str. nr Holualoa (16759200)
Upper Hamakua Ditch above Alakahi Str. nr Kamuela (16724800)
Upper Hamakua Ditch above Puukapu Reservoir nr Kamuela (16727000)
Upper Hamakua Ditch at Puualala and Reservoir No. 3 (16732300)
Upper Hamakua Ditch at Puualala nr Kukuihaele (16718000)
Upper Hamakua Ditch below Kawaiki Str. nr Kamuela (16720500)
Upper Hamakua Ditch above Waimea reservoir diversion nr Kamuela (16726000)
Waiaalala Str. nr Waimanu (16740000)
Waiaha Str. at Luawai nr Holualoa (16759300)
Waiaha Str. nr Holualoa (16759500)
Waiakea Str. at Hilo (16701300)
Waiakea Str. nr Hilo (16701200)
Waiakea Str. nr Mountain View (16700000)
Waiilikahi Str. nr Waimanu (16737000)
Waikoloa Str. at marine dam nr Kamuela (16758000)
Waikoloa Str. nr Kamuela (16757000)
Wailoa Str. nr Waipio (16732200)

ALPHABETICAL STATION LIST AND CORRESPONDING STATION NUMBER--Continued
Island of Hawaii--Continued

Wailuku R. at Hilo (16713000)
Wailuku R. at Piihonua (16704000)
Wailuku R. at Pukamaui nr Hilo (16703000)
Wailuku R. nr Pua Akala (16701700)
Wailuku R. nr Hilo (16710000)
Wailuku R. nr Humuula (16701750)
Wailuku R. nr Kaumana (16701800)
Waima Str. at alt. 385 ft nr Waipio (16732150)
Waima Str. at alt. 790 ft nr Waipio (16732100)
Waiohinu Springs, makai station nr Naalehu (16761000)
Waiohinu Springs, mauka station nr Naalehu (16760000)
Waipio Str. below Koiawe Str. nr Waipio (16732000)
West branch Honokane nui Str. at alt. 1,370 ft nr Honokane (16749000)
West branch Honokane nui Str. at alt. 775 ft nr Honokane (16749500)