Surface Water Supply of Hawaii 1956–58

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1569

Prepared in cooperation with the Territory of Hawaii

Surface Water Supply of Hawaii 1956–58

Prepared under the direction of J. V. B. WELLS, *Chief, Surface Water Branch*

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1569

Prepared in cooperation with the Territory of Hawaii

UNITED STATES GOVERNMENT PRINTING OFFICE, WASHINGTON : 1960

UNITED STATES DEPARTMENT OF THE INTERIOR

FRED A. SEATON, *Secretary*

GEOLOGICAL SURVEY

Thomas B. Nolan, *Director*

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington 25, D.C.

PREFACE

This report was prepared by the Geological Survey in cooperation with the Territory of Hawaii by personnel of the Water Resources Division, L. B. Leopold, chief, under the general direction of J. V. B. Wells, chief, Surface Water Branch, and F. J. Flynn, chief, Basic Records Section.

The data were collected and computed under the supervision of H. S. Leak, district engineer, Honolulu.

CONTENTS

	Page
Scope of work	1
Cooperation	1
Division of work	1
Definition of terms and abbreviations	1
Downstream order and station numbers	2
Explanation of data	3
Accuracy of field data and computed results	5
Publications	5
Records of discharge collected by agencies other than the Geological Survey	6
Gaging-station records	8
Island of Kauai	
Kawaikoi Stream (head of Waimea River) near Waimea	8
Mohihi Stream at altitude 3,500 ft, near Waimea	10
Kokee ditch near Waimea	12
Waimea River at altitude 890 ft, near Waimea	14
Kekaha ditch at camp 1, near Waimea	16
Waimea River near Waimea	18
Makaweli River near Waimea	20
Hanapepe River below Manuahi Stream, near Eleele	22
South Fork Wailua River near Lihue	24
North Fork Wailua River:	
North Wailua ditch near Lihue	26
Stable storm ditch near Lihue	28
North Fork Wailua River at altitude 650 ft, near Lihue	30
East Branch of North Fork Wailua River near Lihue	32
Wailua ditch near Kapaa	34
North Fork Wailua River near Kapaa	36
Kapaa River:	
Makaleha Stream:	
Makaleha ditch near Kealia	38
Kapahi ditch near Kealia	40
Kapaa River at Kapahi ditch intake, near Kapaa	42
Anahola River:	
Anahola ditch:	
Anahola ditch wasteway near Kealia	44
Anahola ditch above Kanena Reservoir, near Kealia	46
Anahola River near Kealia	48
Lower Anahola ditch near Kealia	50
Puu Ka Ele Stream (head of Kilauea River):	
Ka Loko ditch near Kilauea	52
Puu Ka Ele ditch near Kilauea	54
Ross ditch near Kilauea	56
Pohakuhonu Stream (head of Kahiliholo Stream):	
Kalihiwai ditch near Kilauea	58
Pohakuhonu Stream near Kilauea	60
Halaulani Stream at altitude 400 ft, near Kilauea	61
Kalihiwai River:	
Hanalei ditch near Kilauea	62
Hanalei River:	
Hanalei tunnel outlet near Lihue	64
Wainiha River near Hanalei	66
Island of Oahu	
North Fork Kaukonahua Stream:	
Kaukonahua ditch near Wahiawa	69
North Fork Kaukonahua Stream near Wahiawa	71
South Fork Kaukonahua Stream near Wahiawa	73
South Fork Kaukonahua Stream above Wahiawa Reservoir, near Waniawa	74
Poamoho Stream near Waniawa	76
Waikele Stream:	
Kipapa Stream near Waniawa	78
Waikele Stream at Waipahu	80
Pearl Harbor Springs at Waiawa, near Pearl City	82
Moanikone pond outlet at Pearl City	84
Waiawa Stream near Pearl City	86
Hawaiian Electric Co. tunnel at Waiau, near Pearl City	88
Waimalu Stream near Aiea	90
Pearl Harbor Springs at Kalauao, near Aiea	92
Kalauao Stream at Moanalua Road at Aiea	94
Kalauao Stream at Aiea	95
North Halawa Stream near Aiea	96
Halawa Stream near Aiea	98
Moanalua Stream near Honolulu	100
Kalihi Stream near Honolulu	102
Nuuanu Stream below reservoir & wasteway, near Honolulu	104
East Branch Manoa Stream near Honolulu	106
West Branch Manoa Stream near Honolulu	108
Manoa Stream:	
Pukele Stream (head of Palolo Stream) near Honolulu	110
Waiomao Stream above Pukele Stream, near Honolulu	112
Palolo Stream near Honolulu	114
Maunawili Stream:	
Maunawili ditch near Waimanalo	116

Gaging-station records--Continued
Island of Oahu--Continued Page
Haiku Stream (head of Heeia Stream) near Heeia.... 118
Iolekaa Stream mauka near Heeia.... 120
Kahaluu Stream near Heeia.... 122
Waihee Stream near Heeia.... 124
Waiahole tunnel at Waianu, near Waiahole.... 126
Waiahole tunnel wasteway at intake 31, near Waiahole.... 128
Waiahole tunnel at north portal, near Waiahole.... 130
Waiahole tunnel at adit 8, near Waipahu.... 132
Waiahole Stream at altitude 250 ft, near Waiahole.... 134
Punaluu Stream:
Punaluu ditch near Punaluu.... 136
Punaluu Stream near Punaluu.... 138
Island of Molokai
Halawa Stream near Halawa.... 140
Pulena Stream (head of Wailau Stream) near Wailau.... 142
Waiakeakua Stream near Wailau.... 144
Pelekunu Stream near Pelekunu.... 145
Lanipuni Stream near Pelekunu.... 146
Waikolu Stream at altitude 900 ft, near Kalaupapa.... 147
Waikolu Stream below pipeline crossing, near Kalaupapa.... 149
Waialala Springs near Kalae.... 151
Kaunakakai Stream at Kaunakakai.... 153
Kawela Stream:
Right Branch of East Fork Kawela Stream near Kamalo.... 155
Punaula Stream near Pukoo.... 157
Island of Maui
Palikea Stream below diversion dam, near Kipahulu.... 159
Right Branch Hahalawe Stream near Kipahulu.... 161
Makapipi Stream:
Makapipi ditch near Nahiku.... 163
Hanawi Stream near Nahiku.... 165
Kapaula Stream near Nahiku.... 167
Koolau ditch at Nahiku weir, near Nahiku.... 169
Waiohue Stream near Nahiku.... 171
Kopiliula Stream near Keanae.... 173
East Wailuaiki Stream near Keanae.... 175
West Wailuaiki Stream near Keanae.... 177
West Wailuanui Stream near Keanae.... 179
East Wailuanui Stream near Keanae.... 181
Palauhulu Stream:
Taro patch feeder ditch at Keanae.... 183
Koolau ditch near Keanae.... 185
Honomanu Stream near Keanae.... 187
Haipuaena Stream:
Kula diversion from Haipuaena Stream near Olinda.... 189
Haipuaena Stream at Kula pipeline intake, near Olinda.... 191
Haipuaena diversion ditch at Kolea Gulch, near Keanae.... 193
Haipuaena Stream above Spreckels ditch, near Huelo.... 195
Spreckels ditch at Haipuaena weir, near Huelo.... 197
Koolau ditch at Haipuaena, near Huelo.... 199
Puohokamoa Stream above Spreckels ditch, near Huelo.... 201
Manuel Luis ditch at Puohokamoa Gulch, near Huelo.... 203
Waikamoi Stream above reservoir at Kula pipeline intake, near Olinda.... 205
Waikamoi Stream above Wailoa ditch, near Huelo.... 207
Alo Stream near Huelo.... 209
Kaaiea Stream near Huelo.... 211
Oopuola Stream near Huelo.... 213
Nailiilihaele Stream near Huelo.... 215
Kailua Stream near Huelo.... 233
Hoolawanui Stream near Huelo.... 235
Hoolawaliilii Stream near Huelo.... 237
Honopou Stream near Huelo.... 239
Wailoa ditch at Honopou, near Huelo.... 241
New Hamakua ditch at Honopou, near Huelo.... 243
Old Hamakua ditch at Honopou, near Huelo.... 245
Lowrie ditch at Honopou Gulch, near Huelo.... 247
Haiku ditch at Honopou Gulch, near Kailua.... 249
Kahakuloa Stream near Honokohau.... 251
Honokohau Stream near Honokohau.... 253
Honokowai Stream:
Honokowai ditch near Lahaina.... 255
Olowalu Stream:
Olowalu ditch near Olowalu.... 257
Island of Hawaii
Waiakea Stream at middle flume house, near Mountain View.... 259
Wailuku River above Hilo Boarding School ditch intake, near Hilo.... 261
Kapehu Stream:
Kapehu ditch:
Kapehu ditch diversion near Hilo.... 263
Kapehu ditch near Hilo.... 265
Waiillikahi Stream near Waimanu.... 267
Awini ditch at East Honokaneiki Gulch, near Niulii.... 269
East Honokaneiki intake to Awini ditch at East Honokaneiki Gulch, near Niulii.. 271
Kohala ditch at Pololu, near Niulii.... 273
Kehena ditch near Kohala.... 275
Konakohau Stream near Kamuela.... 277
Waikoloa Stream near Kamuela.... 280

Gaging-station records--Continued
Island of Hawaii--Continued Page
Waikoloa Stream at Marine Dam, near Kamuela..... 282
Hauani Stream near Kamuela..... 284
Discharge at partial-record stations and miscellaneous sites:
Crest-stage partial-record stations..... 286
Measurements at miscellaneous sites..... 288
Index..... 293

SURFACE WATER SUPPLY OF HAWAII, JULY 1, 1956 TO JUNE 30, 1958

SCOPE OF WORK

This volume contains records of daily flow of streams and ditches at 134 gaging stations in the Territory of Hawaii during the period July 1, 1956, to June 30, 1958. Since the beginning of stream-gaging work in Hawaii in 1910, records of flow of streams and ditches have been obtained at about 610 stations for periods ranging from a few months to 47 years. In addition, partial-record stations have been operated at many other points, and discharge measurements have been made at miscellaneous sites. The records for the fiscal years 1957 and 1958 at gaging stations, partial-record stations, and miscellaneous sites are given in this report. Rather extensive studies of ground water have also been made on all the inhabited islands; most of the results of these studies have been published in bulletins of the Territorial Division of Hydrography.

COOPERATION

The work during the fiscal years 1957 and 1958 was done under cooperative agreement with the Territory of Hawaii through the commissioner of public lands. Assistance in collecting records was rendered also on the island of Kauai by the Kekaha Sugar Co. Ltd., the McBryde Sugar Co. Ltd., the East Kauai Water Co. Ltd., the Kilauea Sugar Co. Ltd., and the Lihue Plantation Co. Ltd.; on the island of Oahu by the Waialua Agricultural Co. Ltd. and Waiahole Water Co. Ltd.; on the island of Maui by the Pioneer Mill Co. Ltd., the East Maui Irrigation Co. Ltd., the Maui County Engineer, Maui County Board of Water Works, and Territory of Hawaii Board of Agriculture and Forestry; and on the island of Hawaii by the City of Hilo Water Works, the Kohala Ditch Co. Ltd., and the Olaa Sugar Co. Ltd.

Acknowledgment of records collected by individuals or corporations is made in connection with the description of each station for which such records were furnished.

DIVISION OF WORK

The stream-gaging work was done by the Water Resources Division of the Geological Survey under the direction of personnel shown in the preface.

Information of a more detailed nature than that published for most of the gaging stations given in this report is on file in the district office, Room 225, Federal Building, Honolulu. Provisional records of discharge prior to publication, and other unpublished data concerning the gaging-station records may usually be obtained from the district office.

DEFINITION OF TERMS AND ABBREVIATIONS

The terms of streamflow and other hydrologic data, as used in this report, are defined as follows:

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of gage height or discharge are obtained. When used in connection with a discharge record, the term is applied herein only to those gaging stations where a continuous record of discharge is obtained.

Partial-record station is a particular site where limited streamflow data are collected systematically over a period of years for use in hydrologic analyses.

Stage-discharge relation is the relation between gage height and the amount of water flowing in a channel, expressed as volume per unit of time.

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

The drainage area of a stream at a specified location is that area, measured in a horizontal plane, which is so enclosed by a topographic divide that direct surface runoff from precipitation normally would drain by gravity into the river above the specified point. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise noted.

Cubic foot per second (cfs) is the rate of discharge of a stream whose channel is 1 square foot in cross-sectional area and whose average velocity is 1 foot per second.

Acre-foot is the quantity of water required to cover an acre to the depth of 1 foot and is equivalent to 43,560 cubic feet.

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

In the Territory of Hawaii the unit most commonly used in measuring water is "million gallons." This is used with two meanings-- (1) to indicate a rate of flow and (2) to express an actual quantity of water. In the former sense "million gallons a day" is inferred, 1,000,000 gallons being taken as the unit of quantity and 24 hours as the unit of time. With this meaning the term is generally used in connection with pumping and irrigation. In the latter sense "million gallons" as an absolute quantity is used in the measurement of storage capacities of reservoirs.

The following convenient approximate relations exist between cubic feet per second, million gallons a day, and acre-feet: 1 cubic foot per second flowing 24 hours equals about 2 acre-feet; 1,000,000 gallons equals about 3 acre-feet; and 1,000,000 gallons a day equals about 1.55 cubic feet per second.

DOWNSTREAM ORDER AND STATION NUMBERS

Beginning with the report for the year ending June 30, 1950, the order of listing gaging-station records was changed. Proceeding in a downstream direction along the main stem, all stations on a tributary entering above a main-stem station are listed before that station. If a tributary enters between two main-stem stations, it is listed between them. Tributary streams are indicated by indention. This downstream order and the system of indention show which gaging stations are on tributaries between any two stations on a main stem.

The order of listing used in previous reports listed first all stations on the main stem from headwaters toward mouth, then all stations on the uppermost tributary to the main stem from the tributary's source to mouth.

As an added means of identification, each gaging station and partial-record station has been assigned a station number. The numbers have been assigned in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record stations and regular gaging stations, so that the station number for a

partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the numbers to allow for new stations that may be established; hence the numbers are not consecutive. In this report the station number is shown just to the left of the station name.

EXPLANATION OF DATA

The base data collected at gaging stations consist of records of stage and measurements of discharge. In addition, observations of factors affecting the stage-discharge relation, weather records, and other information are used to supplement base data in determining the daily flow. All records of stage are obtained from water-stage recorders that give continuous records of fluctuations. Measurements of discharge are made with a current meter by the general methods adopted by the Geological Survey on the basis of experience in stream gaging since 1888. These methods are described in Water-Supply Paper 888 and are also outlined in standard textbooks on the measurement of stream discharge. Occasionally discharge is determined from a weir or rating flume, using standard formulas.

Rating tables giving the discharge for any stage are prepared from stage-discharge relation curves defined by discharge measurements. If extensions to the rating curves are necessary to define the extremes of discharge, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs, and by other methods), velocity-area studies, and logarithmic plotting. For several stations the high-water ratings have been developed by the use of models. The application of the daily mean gage height to those rating tables gives the daily mean discharge, from which the monthly and the yearly mean discharge are computed. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the shifting-control method, in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is essentially the shifting-control method.

The data herein presented generally comprise a description of the station, a skeleton rating table, and a table showing the daily discharge and monthly and yearly discharge of the stream.

The description of the station gives the location, drainage area, records available, type and history of gages, average discharge, extremes of discharge, general remarks, and notations of revisions of the previously published record. The location of the gaging station and the drainage area are obtained from the most accurate maps available. Under "Gage" are given the type of gage currently in use and the datum of the present gage above mean sea level, and a condensed history of the types, locations, and datums of previous gages used during the period of records available. Under "Average discharge" is given the average discharge for the number of years indicated. It is not given for stations having fewer than five complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. Under "Extremes" are given the maximum discharge and gage height and the minimum discharge. In the first paragraph, the data given are for the complete current water year unless otherwise specified. In the second paragraph, the data given are for the periods of record within the calendar year dates in the heading (not necessarily those for the complete years indicated by the heading dates). Reliable information concerning major floods that

have occurred outside the period of record are given in the third or last paragraph under "Extremes." Unless otherwise qualified, the maximum discharge corresponds to the crest stage obtained by use of a water-stage recorder. If the maximum gage height did not occur at the same time as the maximum discharge, it is given separately. Information pertaining to the accuracy of the records and conditions which affect the natural flow at the gaging station is given under "Remarks."

Previously published records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual reports. In order to make it easier to find such revised records, a paragraph headed "Revisions (fiscal years)" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the fiscal years for which figures are revised in that report. In listing the fiscal years only one number is given; for instance, 1933 stands for the fiscal year July 1, 1932, to June 30, 1933. If no daily, monthly, or annual figures of discharge are concerned in the revision, that fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given.

Skeleton rating tables are published for all stations except for ditch or spring stations.

The daily table gives, in general, the discharge corresponding to the daily mean gage height. For stations subject to sudden or rapid diurnal fluctuation, the daily mean gage height may not indicate the true daily mean discharge, which must be obtained by averaging the discharge for parts of the day.

Records of daily discharge are published on the basis of Hawaiian standard time.

In the table of daily discharge, the figures for the maximum and the minimum day are underlined. If the figure is repeated, it is underlined only on the first day of its occurrence.

In the monthly summary below the daily table, the line headed "Total" gives the sum of the daily figures in million gallons. The mean for the month is given both in terms of million gallons a day (line headed "mgd") and in cubic feet per second (line headed "cfs"). The line headed "Ac-ft" gives the discharge for the month in acre-feet.

In the yearly summary below the monthly summary, the figures of maximum are the maximum daily discharges, not the momentary discharges when the water was at crest stage. Likewise, the minimums in this summary are the minimum daily discharges.

Peak discharges and the times of their occurrence and corresponding gage heights of most stations are listed below the table of daily and monthly discharge. All independent peaks above the selected base are given. The base discharge, which is given in parentheses, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for canals, ditches, springs, or for any stream for which the peaks are subject to substantial control by man.

Footnotes to the table of daily discharge indicate periods when discharge was computed or estimated by unusual or special methods during periods of no gage-height record or by other effects that reduce the degree of accuracy of the records.

Data collected at partial-record stations and at miscellaneous sites are given at the end of each report. Partial-record stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. Discharge measurements at miscellaneous sites are given in a third table.

ACCURACY OF FIELD DATA AND COMPUTED RESULTS

The accuracy of streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretation of records.

The station description states the degree of accuracy of the records. "Excellent" indicates that, in general, the error in the daily records is believed to be less than 5 percent; "good," less than 10 percent; "fair," less than 15 percent; and "poor," probably more than 15 percent. The records of monthly and yearly mean discharge and runoff are, in general, more nearly accurate than the daily records.

Computations are carried to not more than three significant figures, except that monthly and yearly total discharge (million gallons and acre-feet) above 10,000 are carried to four significant figures.

PUBLICATIONS

The following table lists, by years and numbers, the papers on the surface-water supply of Hawaii published during the period 1903-58 and, used in conjunction with the list of stations maintained, which is given in Water-Supply Paper 795, provides a convenient index for finding the data for any station. Except as indicated, the year or years covered by each report begin July 1 and end on June 30. The data for any particular station will be found in the reports covering the years during which that station was maintained, unless, owing to undeveloped rating curves, publication was postponed. Occasionally data are revised and republished in later papers. Discharge measurements made during any year at points other than regular gaging stations are included in the data published for that year.

Numbers of water-supply papers containing data on the surface water supply of Hawaii, 1903-58

Year	WSP	Year	WSP	Year	WSP	Year	WSP	Year	WSP
1903	*77	1920-21	535	1930-31	725	1940-41	935	1950-51	1219
1909-11†	318	1921-22	555	1931-32	740	1941-42	965	1951-52	1249
1912†	336	1922-23	575	1932-33	755	1942-43	985	1952-53	1289
1913†	373	1923-24	595	1933-34	770	1943-44	1015	1953-54	1349
1913-15	430	1924-25	615	1934-35	795	1944-45	1045	1954-55	1399
1915-16	445	1925-26	635	1935-36	815	1945-46	1065	1955-56	1449
1916-17	465	1926-27	655	1936-37	835	1946-47	1095	1956-58	1569
1917-18	485	1927-28	675	1937-38	865	1947-48	1125		
1918-19	515	1928-29	695	1938-39	885	1948-49	1155		
1919-20	516	1929-30	710	1939-40	905	1949-50	1185		

* This paper, entitled "Water resources of Molokai," by Waldemar Lindgren, contains data on both the surface and ground-water supplies of the island named.
† Calendar years. Data for the last half of the calendar year 1913 appears not only in Water-Supply Paper 373 but also in Water-Supply Paper 430, the first of the reports covering a year ending June 30.

A summary of records of flow in streams and ditches in the Territory of Hawaii was published in 1939 by the Territorial Planning Board. This report, entitled "Surface-water resources of the Territory of Hawaii, 1901-38," gives, by gaging stations for the periods of record, (1) monthly-discharge tables, which show for each month the maximum, minimum, and mean daily discharge and the total discharge, and (2) duration-discharge tables. Nearly all available records of flow in the Territory up to December 1938 were considered in making the summary. Some of these records are not contained in publications of the

Geological Survey; some are revisions of records published in the Survey's water-supply papers.

RECORDS OF DISCHARGE COLLECTED BY AGENCIES OTHER THAN THE GEOLOGICAL SURVEY

The following table lists the gaging stations in the Territory of Hawaii at which records of discharge were collected during the fiscal year July 1955 to June 1956 by agencies other than the Geological Survey. The records for these stations are not contained in the publications of the Geological Survey, and, except as indicated, have not been published elsewhere.

Records of discharge collected by agencies other than the Geological Survey

ISLAND OF KAUAI

Stream	Location	Period	Operated by
East Lawai storm ditch..	Near Government Road, near Kalaheo.	1924-58	McBryde Sugar Co.
Eleele ditch.....	....do.....	1924-58	Do.
Hanalei ditch.....	Above Kalihiwai Reservoir, near Kilauea.	1923-58	Kilauea Sugar Plantation Co.
Hanamaulu ditch.....	Below intake, near Hanamaulu.....	1925-58	Lihue Plantation Co.
Hanapepe field ditch....	Below Hanapepe River intake, near Eleele.	1924-58	McBryde Sugar Co.
Hanapepe Stream.....	At tidewater, near Eleele.....	1924-58	Do.
Kamooloa ditch.....	Below Kauai Belt Road crossing, near Koloa.	1924-58	Do.
Kealia River.....	1 mile west of Kaneha Reservoir and 5½ miles northwest of Kealia.	1936-58	Lihue Plantation Co.
Koloa ditch.....	4½ miles north of Koloa and 6½ miles west of Lihue.	1927-58	Do.
Koula ditch.....	In Hanonui Valley, near Makaweli...	1949-58	Gay & Robinson.
Lawai Stream.....	½ mile above cannery, near Kalaheo.	1924-58	McBryde Sugar Co.
Lihue lower ditch.....	Below intake, near Lihue.....	1925-58	Lihue Plantation Co.
Lihue upper ditch.....	....do.....	1925-58	Do.
Olokele ditch.....	At powerhouse, near Makaweli.....	1926-58	Gay & Robinson.
Wahiawa main stream.....	Above Alexander Reservoir, near Kalaheo.	1924-58	McBryde Sugar Co.
Wahiawa Stream, East Branch.	....do.....	1929-58	Do.
West Lawai ditch.....	Near camp 12, near Kalaheo.....	1924-58	Do.

ISLAND OF OAHU

Stream	Location	Period	Operated by
Alewa Heights Spring....	Below reservoir 3.....	1932-58*	Board of Water Supply, City and County of Honolulu.
Booth Springs.....	In Pauoa Valley, at altitude 685 feet	1929-58*	Do.
Helemano ditch.....	About 3 miles below upper Helemano Reservoir.	1933-58	Waialua Agricultural Co.
Hering Springs.....	In Makiki Valley, at altitude 970 feet.	1925-58*	Board of Water Supply, City and County of Honolulu.
Kahuawai Springs.....	In Pauoa Valley, at altitude 618 feet.	1925-58*	Do.
Kalihi tunnels.....	At diversion, at altitude 650 feet.	1926-58*	Do.
Kamananui ditch.....	In Kawailoa Gulch about 500 yards above third siphon from Government Road.	1934-58	Waialua Agricultural Co.
Kipapa Stream.....	At altitude 300 feet.....	1917-58	Waiahole Water Co.
Makiki Springs.....	In Makiki Valley, at altitude 350 feet.	1926-58*	Board of Water Supply, City and County of Honolulu.
Manoa tunnels.....	Upper Manoa Valley.....	1925-58*	Do.
Nuuanu tunnels.....	At Lower Luakaha.....	1926-58*	Do.
Nuuanu tunnel 3.....	At overflow, in upper Nuuanu Valley	1931-58*	Do.
Palolo tunnel.....	Upper Palolo Valley.....	1926-58*	Do.
Wahiawa Reservoir Outlet	About 1,200 feet below dam.....	1912-58*	Wahiawa Water Co.
Waiahole tunnel.....	At adit 8.....	1916-58	Waiahole Water Co.
Waiawa Stream.....	At altitude 750 feet.....	1917-58	Do.
Waikakalaua Stream.....	....do.....	1917-58	Do.
Waimalu Stream.....	At altitude 535 feet, near Aiea....	1947-58	Do.

* Published in biennial reports of Honolulu Sewer & Water Commission and of Honolulu Board of Water Supply.

ISLAND OF MAUI (WEST MAUI)

Everett ditch.....	Below intake, near Wailuku.....	1935-58	Wailuku Sugar Co.
Honokohau tunnel.....	At outlet of tunnel, at Mahinahina weir.	1917-58	Pioneer Mill Co.
Iao-Waikapu ditch.....	At lower end of tunnels, near Wailuku.	1923-58	Wailuku Sugar Co.
Kahoma tunnel.....	2,000 feet upstream from outlet, above Lahaina.	1920-58	Pioneer Mill Co.
Kama ditch.....	Below intake, near Wailuku.....	1933-58	Wailuku Sugar Co.
Kanaha ditch.....	At intake in Kanaha Gulch, above Lahainaluna.	1921-58	Pioneer Mill Co.
Kauaula tunnel.....	At outlet, above Lahaina.....	1920-58	Do.
K-3 flume.....	Above Lahainaluna.....	1931-58	Do.
Launiupoko ditch.....	At outlet, above Lahaina.....	1921-58	Do.
Maniania ditch.....	Below intake, near Wailuku.....	1923-58	Wailuku Sugar Co.
North Waiehu Stream.....	Near end of Waiehu Camp road, near Wailuku.	1922-58	Do.
South Waikapu ditch.....	Above second lateral, near reservoir 1, near Waikapu.	1933-58	Do.
Spreckels ditch.....	Below intake, near Waihee.....	1931-58	Do.
Ukumehame ditch.....	At outlet in Ukumehame Gulch, near Olowalu.	1931-58	Pioneer Mill Co.
Waihee ditch.....	Below intake, near Waihee.....	1931-58	Wailuku Sugar Co.

Records of discharge collected by agencies other than the Geological Survey--Continued

ISLAND OF MAUI (EAST MAUI)

Hanawi Stream.....	Below Government Road, near Nahiku.	1927-32, 1947-58	East Maui Irrigation Co.

ISLAND OF HAWAII

Hionamoa Gulch.....	Below all development tunnels, near Pahala.	1926-58	Hawaiian Agricultural Co.
Honokaape ditch.....	At Kukuihaele Village.....	1923-58	Hawaiian Irrigation Co.
Keaiwa Gulch.....	Below all development tunnels, near Pahala.	1926-58	Hawaiian Agricultural Co.
Kohala ditch.....	At Awini weir in Honokane, near Niulii.	1917-58†	Kohala Ditch Co.
Do.....	At Niulii weir, near Niulii.....	1917-58†	Do.
Lalakea ditch.....	At altitude 1,900 ft, near Waipio..	1905-58	Hawaiian Irrigation Co.
Lower Hamakua ditch.....	At main weir, near Kukuihaele.....	1921-58†	Do.
Moaula Gulch.....	Below all development tunnels, near Pahala.	1929-58	Hawaiian Agricultural Co.
Noguchi tunnel 19.....	5.3 miles from Pahala, at altitude 3,500 feet.	1928-58	Do.
Pololu Inlet 1.....	At Pololu, near Niulii.....	1929-58	Kohala Ditch Co.
Pololu Inlet 2.....	In Waiakalae Gulch at Pololu, near Niulii.	1929-58	Do.
Pololu Inlet 3.....	In Opaepilau Gulch, above Kohala ditch, near Niulii.	1937-58	Do.
Pololu Inlet 5.....	In Niulii Gulch, above Kohala ditch, near Niulii.	1937-58	Do.
Pololu Inlet 6.....	In Waikane Gulch, above Kohala ditch, near Niulii.	1937-58	Do.
Puwaiole Stream.....	Above Kohala ditch, near Halawa....	1937-58	Do.
Waiapuka Stream.....	Above Kohala ditch, near Niulii....	1929-58	Do.
Waipuhi Stream.....	Above Kohala ditch, near Halawa....	1933-58	Do.
Waipunalau Stream.....	....do.....	1929-58	Do.

† Records for some earlier years published in water-supply papers of Geological Survey.

ISLAND OF KAUAI

100. Kawaikoi Stream near Waimea

Location.--Lat 22°08'00", long 159°37'15", on left bank at old trail crossing, 12.5 miles northeast of Waimea.

Drainage area.--4.1 sq mi.

Records available.--April 1909 to December 1916, July 1919 to June 1958.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 3,420 ft (by barometer). Prior to May 26, 1910, staff gage at site 300 ft downstream at different datum.

Average discharge.--39 years (1919-58), 21.7 mgd (33.6 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 1,330 mgd (2,060 cfs) Jan. 29 (gage height, 7.88 ft), from rating curve extended above 300 mgd as explained below; minimum, 1.28 mgd (1.98 cfs) Sept. 29.

1957-58: Maximum discharge during fiscal year, 2,750 mgd (4,250 cfs) Dec. 1 (gage height, 10.42 ft), from rating curve extended above 300 mgd as explained below; minimum, 1.40 mgd (2.17 cfs) Nov. 19, 20.

1909-16, 1919-58: Maximum discharge, 6,900 mgd (10,700 cfs) Dec. 18, 1916 (gage height, 15.2 ft), from rating curve extended above 300 mgd on basis of slope-area measurements at gage heights 12.12 and 13.43 ft; minimum, 0.74 mgd (1.15 cfs) Sept. 21, 22, 1953.

Remarks.--Records good except those for periods of no gage-height record, which are fair.

Revisions (fiscal years).--WSP 555: 1920-21. WSP 1185: 1914-17(M), 1920-38(M), 1940-43(M), 1947(M).

Rating table, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

1.9	1.40	3.8	115
2.0	2.25	4.2	195
2.2	4.8	4.6	275
2.4	8.6	5.0	355
2.7	17.8	6.0	620
3.0	32	8.0	1,370
3.4	60	10.0	2,470

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	6.4	3.7	2.35	1.40	7.7	211	4.4	15.0	8.6	3.55	36.5	3.05
2	*5.3	3.15	2.95	1.57	5.4	83	4.3	*15.8	8.0	3.55	18.0	2.95
3	12.7	3.05	6.7	1.82	4.6	58	4.1	90	7.6	43	16.8	2.95
4	12.6	7.7	3.3	12.4	29.5	25	4.0	200	7.2	96	12.8	2.8
5	5.9	5.7	3.8	9.6	28.5	16.4	3.85	124	17.1	11.1	12.5	2.7
6	4.6	*3.85	11.6	3.5	14.4	90	3.85	77	9.9	7.9	*18.8	2.6
7	4.1	3.15	4.6	12.3	*8.7	28.5	4.7	82	7.2	78	11.2	2.5
8	6.2	69	3.05	12.0	7.0	16.0	60	65	6.4	45	8.6	2.5
9	7.0	15.5	2.5	34.5	5.7	13.4	36	35	6.0	13.5	7.6	2.5
10	7.3	7.2	2.1	5.8	5.4	*33.5	9.9	33	5.9	8.2	7.2	*2.35
11	8.1	5.3	2.0	3.4	4.8	17.3	14.1	64	5.9	6.8	6.6	2.25
12	4.8	3.85	1.82	2.6	4.6	11.5	9.4	25.5	5.7	5.7	7.0	2.15
13	31.5	3.4	1.82	a2.5	4.3	9.6	5.9	50	5.4	5.4	7.4	2.1
14	10.1	3.4	1.82	a75	4.1	16.4	5.7	29.5	14.7	5.0	6.4	2.1
15	19.8	4.4	2.1	a27	25.5	26	53	16.9	12.4	55	6.4	2.1
16	32	3.85	2.5	a13	17.0	22	10.2	14.3	10.4	139	5.7	3.6
17	16.5	9.1	2.5	a70	21	17.1	50	51	28.5	88	5.2	4.4
18	8.2	25.5	2.5	19.5	13.7	10.7	201	49	16.2	22.5	4.8	4.6
19	8.7	8.2	2.1	9.7	10.4	8.0	31.5	16.0	9.1	13.7	4.4	23.5
20	6.0	4.4	1.91	7.3	7.2	*7.2	24.5	14.3	6.2	20	4.4	15.1
21	5.2	3.4	1.82	28	13.3	6.6	189	13.7	6.0	10.2	4.3	6.4
22	5.2	3.05	1.66	19.0	7.4	6.2	47	15.9	5.9	7.8	4.3	4.1
23	4.8	2.8	1.66	82	5.4	6.0	24	30.5	5.7	14.9	4.0	3.15
24	4.1	3.05	1.66	54	7.6	5.7	65	16.6	5.4	18.9	3.85	2.7
25	3.7	3.7	1.66	11.4	11.2	5.4	30.5	17.1	*5.0	20.5	3.7	4.8
26	3.4	3.05	*1.57	8.9	6.0	5.2	17.1	15.0	5.5	30.5	3.55	8.8
27	6.1	2.6	1.40	8.0	6.3	5.2	13.7	11.2	5.2	63	3.4	5.9
28	5.2	2.5	1.40	6.0	9.2	7.5	12.4	9.4	4.4	50	3.3	3.55
29	4.4	2.25	1.40	5.2	6.8	7.0	160	-	4.0	64	3.15	2.7
30	6.7	2.25	1.40	24	157	5.5	98	-------	3.85	53	3.05	2.6
31	4.7	2.35	-------	24.5	-------	4.8	20.5	-------	3.7	-------	3.05	-------
Total	271.3	224.40	79.65	595.89	459.7	785.7	1,217.60	1,196.7	253.05	1,003.70	247.95	133.50
Mean:												
mgd	8.75	7.24	2.66	19.2	15.3	25.3	39.3	42.7	8.16	33.5	8.00	4.45
cfs	13.5	11.2	4.12	29.7	23.7	39.1	60.8	66.1	12.6	51.8	12.4	6.89
Ac-ft	833	689	244	1,830	1,410	2,410	3,740	3,670	777	3,080	761	410

Calendar year 1956 : Max 513 Min 1.40 Mean(mgd) 23.6 Mean(cfs) 36.5 Ac-ft 26,530
Fiscal year 1956-57 : Max 211 Min 1.40 Mean(mgd) 17.7 Mean(cfs) 27.4 Ac-ft 19,850

Peak discharge (base, 1,300 mgd).--Jan. 29 (10:30 p.m.) 1,330 mgd (2,060 cfs), 7.88 ft.

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for Waimea River at altitude 890 ft, and Mohihi Stream near Waimea.

100. Kawaikoi Stream near Waimea--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	13.0	8.2	18.8	3.3	2.35	1,530	33	29	72	7.6	11	6.0
2	42	5.0	8.8	2.95	2.35	375	15.4	18.2	67	6.2	15	5.9
3	9.7	48	18.6	2.7	2.1	73	12.4	14.0	26.5	6.2	18	5.2
4	4.8	105	*8.8	2.6	1.82	38.5	12.8	14.6	18.6	10.5	10	*4.4
5	3.55	15.6	5.4	2.6	1.82	25	11.5	15.7	16.0	7.8	7.3	4.1
6	3.15	187	4.4	2.7	1.82	42	9.4	10.9	14.3	5.9	6.5	4.1
7	3.7	150	4.0	4.5	2.2	86	8.4	8.9	11.5	5.2	9.5	4.0
8	3.3	53	3.7	3.4	5.6	29	8.9	7.8	10.2	4.8	12	7.3
9	6.6	19.0	3.55	2.7	3.1	53	10.2	7.4	9.9	4.6	50	11.3
10	66	11.7	3.3	2.5	2.25	68	8.4	6.8	9.1	4.4	40	5.5
11	74	8.9	3.15	2.25	2.0	89	7.4	6.2	9.1	5.9	15	5.0
12	11.1	7.4	3.4	2.1	2.1	81	7.2	6.0	35.5	14.0	20	5.2
13	5.9	11.2	3.15	2.0	2.0	60	*7.4	5.7	29.5	48	34	4.8
14	5.0	9.7	2.95	2.0	1.82	58	6.4	15.5	10.9	37.5	10	4.3
15	5.6	7.0	2.8	*3.85	1.74	95	5.9	13.5	10.6	22.5	36	3.85
16	4.0	6.0	2.7	4.6	1.66	32	5.7	7.0	13.7	11.8	80	3.55
17	3.7	5.4	3.15	32.5	1.57	42	5.4	51	9.6	8.6	34	3.4
18	3.4	7.2	12.0	8.1	1.48	45	5.0	*11.2	12.3	6.6	20	3.4
19	3.15	7.6	5.0	4.6	1.40	23.5	4.8	8.0	9.9	5.7	13	3.3
20	3.3	6.8	3.7	9.3	111	21.5	4.8	36	7.6	51	10	3.15
21	3.7	5.2	3.05	7.3	46	23	5.0	14.6	7.4	23	8.5	3.05
22	3.05	4.4	2.7	3.85	19.8	16.4	9.3	10.7	15.7	*9.3	8.0	3.05
23	5.0	4.0	2.5	3.05	7.1	13.4	27	43	8.6	7.0	7.5	14.5
24	*11.9	8.4	18.6	2.7	15.1	12.1	8.4	39.5	6.8	6.2	7.0	8.5
25	5.0	38.5	79	2.6	*27	10.4	5.9	14.4	18.9	5.4	6.5	11.8
26	4.0	13.6	17.9	2.25	37	31	5.0	9.6	31.5	5.0	6.5	25
27	6.2	6.9	7.2	2.1	43	15.0	4.7	12.4	9.4	4.8	7.0	22.5
28	16.2	9.3	5.4	2.0	27.5	38	134	172	8.6	4.7	6.0	139
29	7.6	26.5	4.6	1.82	170	52	148	-	19.4	4.6	5.7	69
30	13.7	12.2	3.85	1.91	563	35.5	279	-------	17.6	4.6	5.2	10.8
31	16.3	10.4	-------	2.1	-------	52	57	-------	10.2	-------	4.8	-------
Total	367.60	819.1	266.15	132.93	1,107.68	3,165.3	873.7	609.6	557.9	349.4	524.0	404.95
Mean:												
mgd	11.9	26.4	8.87	4.29	36.9	102	28.2	21.8	18.0	11.6	16.9	13.5
cfs	18.4	40.8	13.7	6.64	57.1	158	43.6	33.7	27.9	17.9	26.1	20.9
Ac-ft	1,130	2,510	817	408	3,400	9,710	2,680	1,870	1,710	1,070	1,610	1,240

Calendar year 1957: Max 1,530 Min 1,40 Mean(mgd) 27.2 Mean(cfs) 42.1 Ac-ft 30,410
Fiscal year 1957-58: Max 1,530 Min 1,40 Mean(mgd) 25.1 Mean(cfs) 38.8 Ac-ft 28,160

Peak discharge (base, 1,300 mgd).--Nov. 20 (9 p.m.) 1,470 mgd (2,270 cfs), 8.22 ft; Dec. 1 (12:30 p.m.) 2,750 mgd (4,250 cfs), 10.42 ft.

* Discharge measurement made on this day.
Note.-- No gage-height record Apr. 25 to May 28; discharge estimated on basis of recorded range in stage, records for Mohihi Stream, and other nearby stations.

130. Mohihi Stream at altitude 3,500 ft, near Waimea.

Location.--Lat 22°07'05", long 159°36'15", on left bank at upper trail crossing, 3.8 miles northeast of confluence of Waiahulu and Poomau Streams and 12 miles northeast of Waimea.

Drainage area.--1.6 sq mi.

Records available.--June 1920 to October 1926, October 1936 to June 1958. April 1909 to December 1911 (fragmentary), July 1947 to June 1952, published as Mohihi Stream near Waimea; records 1909-11 at site 2 miles downstream not equivalent, owing to inflow.

Gage.--Water-stage recorder. Altitude of gage is 3,500 ft (from topographic map).

Average discharge.--27 years (1920-26, 1937-58), 5.19 mgd (8.03 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 510 mgd (789 cfs) Oct. 23 (gage height, 5.30 ft), from rating curve extended above 50 mgd; minimum, 0.26 mgd (0.40 cfs) Sept. 29.

1957-58: Maximum discharge during fiscal year, 1,120 mgd (1,730 cfs) Dec. 1 (gage height, 6.87 ft), from rating curve extended above 50 mgd; minimum, 0.29 mgd (0.45 cfs) July 9.

1920-26, 1936-58: Maximum discharge, 1,250 mgd (1,930 cfs) Aug. 15, 1950 (gage height, 7.23 ft), from rating curve extended above 50 mgd; minimum, 0.02 mgd (0.03 cfs) Sept. 22, 23, 1953.

Remarks.--Records fair except those above 21 mgd and those for period of doubtful gage-height record, which are poor.

Rating tables, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)
(Shifting-control method used July 23 to Nov. 20, Nov. 28 to Dec. 1, 1957, May 16 to June 28, 1958)

July 1, 1956, to Dec. 1, 1957				Dec. 2, 1957, to June 30, 1958			
0.9	0.20	3.0	53	0.9	0.34	2.1	15.8
1.1	.64	3.5	96	1.1	.90	2.5	31.5
1.3	1.51	4.0	166	1.3	1.94	3.0	62
1.5	3.2	4.5	268	1.5	3.75	3.5	112
1.8	7.2	5.0	408	1.7	6.4	4.0	183
2.1	13.9	5.5	580	1.9	10.3		
2.5	27						

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.12	0.61	0.44	0.37	3.2	35	1.27	5.6	2.4	0.95	8.2	0.61
2	1.07	.58	.35	.42	2.25	21	1.22	5.6	2.25	.99	5.0	.78
3	*1.32	.56	.35	.50	1.78	13.4	1.12	34	2.1	1.07	3.85	.88
4	1.51	.85	.39	5.3	10.8	8.6	1.07	54	1.93	5.5	2.9	.67
5	1.07	1.07	.44	4.8	9.6	5.3	1.03	35.5	2.15	2.8	2.5	.58
6	.95	*.83	1.17	1.51	3.95	10.7	.99	23	2.4	1.86	*3.1	.56
7	.91	.53	1.03	2.25	2.6	12.8	4.4	22.5	2.0	8.5	2.4	.53
8	1.12	5.2	.67	2.7	2.0	7.0	9.2	22.5	1.78	12.3	1.93	.53
9	1.17	4.4	.47	7.1	1.57	5.8	11.6	11.1	1.63	4.1	1.63	.53
10	1.45	3.1	.37	2.25	1.33	11.5	4.3	8.5	1.57	2.25	1.70	*.47
11	1.39	1.86	.33	1.22	1.22	9.1	4.3	*14.7	1.57	1.57	1.57	.44
12	1.17	1.07	*.33	.99	1.22	5.2	4.6	8.9	1.57	1.33	1.93	.42
13	3.6	.81	.31	.85	1.17	4.1	2.7	19.8	1.57	1.17	2.15	.39
14	2.4	.74	.31	17.6	1.07	3.55	2.35	14.3	2.4	1.22	1.93	.37
15	2.0	.85	3.35	10.1	5.5	5.8	14.7	7.4	3.55	2.39	3.1	.42
16	5.4	.88	1.95	10.1	7.3	7.0	7.0	5.6	2.35	17.7	1.86	.61
17	3.75	.71	1.57	24.5	6.3	5.1	9.7	5.2	2.80	18.9	1.33	.78
18	1.93	2.7	1.07	7.4	4.6	4.1	44	10.3	3.2	6.8	1.12	.81
19	1.33	1.96	.78	3.2	3.2	3.0	15.6	5.2	2.25	5.2	1.03	.95
20	1.07	.99	.64	2.4	2.5	*2.4	11.3	4.7	1.78	7.9	.91	2.7
21	.91	.71	.53	12.4	4.4	2.15	22	4.8	1.57	3.1	.88	1.27
22	.85	.56	.44	12.1	2.7	1.93	25	4.1	1.45	2.0	.88	.95
23	.81	.50	.37	46	1.93	1.86	11.8	5.1	1.33	3.8	.88	.71
24	.74	.53	.35	22.5	1.63	1.70	16.7	4.7	1.22	6.4	.81	.61
25	.71	.56	.37	5.7	1.78	1.63	13.6	4.6	*1.24	4.7	.74	.58
26	.64	.44	.44	4.2	1.70	1.51	8.0	3.65	1.39	5.0	.71	.61
27	.74	.37	.37	3.95	1.86	1.45	5.9	3.0	1.22	7.9	.67	.58
28	.74	.33	.35	2.6	2.25	1.45	4.8	2..	1.12	15.6	.67	.53
29	.67	.31	.31	2.1	2.35	1.51	22	-	1.03	14.0	.64	.42
30	.64	.31	.31	8.0	19.7	1.57	35	-------	.99	13.0	.61	.42
31	.64	.35	-------	8.5	-------	1.39	7.8	-------	.95	-------	.61	-------
Total	43.82	35.27	20.16	233.61	113.46	198.60	325.05	351.05	56.78	180.00	58.24	20.71
Mean:												
mgd	1.41	1.14	0.672	7.54	3.78	6.41	10.5	12.5	1.83	6.00	1.88	0.690
cfs	2.18	1.76	1.04	11.7	5.85	9.92	16.2	19.3	2.83	9.28	2.91	1.07
Ac-ft	134	108	62	717	348	609	996	1,080	174	552	179	64

Calendar year 1956: Max 169 Min 0.31 Mean(mgd) 6.43 Mean(cfs) 9.95 Ac-ft 7,230
Fiscal year 1956-57: Max 54 Min 0.31 Mean(mgd) 4.48 Mean(cfs) 6.93 Ac-ft 5,020

Peak discharge (base, 200 mgd).--Oct. 23 (7:30 p.m.) 510 mgd (789 cfs), 5.30 ft; Jan. 29 (10:30 p.m.) 332 mgd (514 cfs), 4.76 ft.

* Discharge measurement made on this day.

130. Mohihi Stream at altitude 3,500 ft, near Waimea--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.78	1.82	7.0	0.75	0.45	442	12.0	5.7	21.5	1.53	1.59	0.61
2	4.1	1.04	2.35	.62	.46	148	4.2	3.55	19.0	1.22	2.25	.61
3	2.45	5.1	4.1	.52	.40	37	2.95	2.5	7.0	1.08	2.75	.55
4	1.03	18.0	*3.15	.48	.36	17.2	2.7	2.2	4.4	1.08	1.53	*.51
5	.67	4.7	1.47	.46	.34	9.0	2.6	2.1	4.0	1.22	1.04	.51
6	.47	21	1.06	.93	.35	10.9	2.15	1.76	3.15	.99	.90	.53
7	.39	31.5	.89	1.64	.39	17.2	1.89	1.47	2.6	.90	1.47	.51
8	.31	8.8	.78	.96	.67	8.2	1.83	1.26	2.25	.83	1.92	.49
9	.29	4.4	.69	.72	.64	19.2	1.83	1.17	2.6	.74	10.4	.61
10	4.1	2.35	.62	.58	.52	15.7	1.78	1.08	2.75	.70	9.6	.63
11	17.0	1.58	.58	.49	.46	22.5	1.60	.99	2.6	.70	3.75	.59
12	3.1	1.24	.58	.42	.69	18.4	1.54	1.04	2.9	.90	4.5	.87
13	1.33	1.42	.56	.39	.56	17.2	*1.60	.99	7.8	5.0	8.2	1.10
14	1.27	1.64	.49	.37	.45	12.5	1.45	1.67	3.05	3.25	2.35	.75
15	1.07	1.20	.46	*.44	.38	26	1.36	2.2	2.6	2.85	6.5	.63
16	.78	1.13	.45	.83	.35	9.3	1.27	1.35	2.6	1.64	17.2	.53
17	.61	1.06	.48	3.9	.33	8.1	1.18	4.6	2.1	1.22	6.0	.51
18	.47	1.16	.62	2.4	.30	7.2	1.13	*2.2	2.0	.99	3.1	.48
19	.39	1.64	.72	1.27	.30	7.8	1.09	1.53	1.94	.83	2.10	.45
20	.37	1.24	.60	1.16	18.0	7.0	1.09	11.3	1.59	2.9	1.58	.44
21	.42	.99	.51	1.58	d9.0	5.5	1.18	4.2	1.47	3.65	1.31	.41
22	.42	.83	.45	.96	d4.0	4.2	2.95	4.0	1.53	*1.59	1.22	.41
23	*.39	.75	.41	.72	d1.5	3.45	2.95	6.1	1.53	1.08	1.10	.53
24	.56	.75	.45	.58	d3.5	3.15	1.83	6.1	1.30	.83	.97	.87
25	.80	3.65	9.6	.52	*d5.5	2.7	1.38	3.4	1.59	.67	.87	.87
26	.63	3.25	3.55	.48	d8.0	6.8	1.13	1.94	6.1	.60	.90	1.22
27	1.04	1.64	1.65	.41	d9.5	4.3	1.06	2.45	2.2	.54	.93	2.55
28	1.58	1.32	1.16	.38	8.4	6.2	13.5	38	2.6	.52	.83	9.7
29	1.58	3.05	1.13	.35	37.5	14.2	17.6	-	3.25	.49	.72	12.2
30	1.82	3.15	.89	.35	90	8.0	41	-------	4.4	.49	.65	2.05
31	3.4	4.6	-------	.38	-------	11.4	15.7	-------	2.2	-------	.61	-------
Total	53.62	136.00	47.45	26.04	203.30	930.30	147.50	116.85	126.60	41.03	98.84	42.72
Mean:												
mgd	1.73	4.39	1.58	0.840	6.78	30.0	4.76	4.17	4.08	1.37	3.19	1.42
cfs	2.68	6.79	2.44	1.30	10.5	46.4	7.36	6.45	6.31	2.12	4.94	2.20
Ac-ft	165	417	146	80	624	2,850	453	359	389	126	303	131

Calendar year 1957: Max 442 Min 0.29 Mean(mgd) 6.54 Mean(cfs) 10.1 Ac-ft 7,330
Fiscal year 1957-58: Max 442 Min 0.29 Mean(mgd) 5.40 Mean(cfs) 8.36 Ac-ft 6,040

Peak discharge (base, 200 mgd).--Nov. 20 (8:30 p.m.) 305 mgd (472 cfs), 4.62 ft; Dec. 1 (6 p.m.) 1,120 mgd (1,730 cfs), 6.87 ft.

* Discharge measurement made on this day.
d Doubtful gage-height record; discharge estimated on basis of records for Kawaikoi Stream.

140. Kokee ditch near Waimea

Location.--Lat 22°06'25", long 159°40'45", on left bank 1,000 ft west of road and 10.5 miles north of Waimea.

Records available.--September 1926 to June 1958.

Gage.--Water-stage recorder and suppressed weir. Altitude of gage is 3,310 ft (by barometer).

Average discharge.--31 years (1927-58), 15.8 mgd (24.4 cfs).

Extremes.--1926-58: Maximum daily discharge, 68 mgd (105 cfs) Dec. 2, 1929, Mar. 4, 1933; no flow occasionally.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Kokee ditch diverts water at altitude 3,400 ft from all streams tributary to Waimea River west of Mohihi Stream from irrigation near Kekaha. Flow regulated by headgates.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	8.8	5.0	3.5	2.2	11.7	13.6	12.2	13	23	9.3	23	5.8
2	8.2	4.5	5.0	2.2	8.4	11.2	11	15	22	9.3	17.5	6.0
3	10.0	4.2	7.0	2.5	7.2	17.7	10	16	20.5	12.2	23	6.0
4	16.9	7.0	5.5	6.2	20	11.6	9.7	18	19.2	41	19.2	5.5
5	8.6	7.4	5.5	14.8	32.5	14.6	9.2	16	29	20	16.8	4.4
6	7.0	5.2	16	5.7	19.2	32	9.0	16	22	14.4	23	5.0
7	6.3	4.4	8.4	10.1	*12.9	20.5	10	15	19.2	38	16.8	5.0
8	7.5	*19.5	5.0	13.7	10.0	6.6	13	15	18.0	42	13.7	4.9
9	8.6	20.5	4.0	26.5	8.6	3.45	40	15	16.8	23	12.4	4.8
10	9.5	9.3	3.5	9.2	7.5	10.6	15	15	16.8	15.7	11.7	*4.8
11	9.5	7.5	3.2	5.4	7.0	11.8	15	15	16.8	13.1	11.1	4.5
12	7.2	5.5	3.1	4.2	6.6	10.6	16	10	15.7	11.7	11.7	4.4
13	23.5	4.8	3.0	4.1	6.5	9.7	14	6	14.6	11.1	12.0	4.4
14	13.1	4.5	3.0	40	5.4	14.4	13	16	19.9	10.9	10.9	4.2
15	18.6	5.2	13	30	18.0	19.2	46	8.0	22	29	10.6	4.2
16	27	5.0	8.0	30	24.5	18	20	17.2	19.2	46	9.7	5.4
17	19.2	6.1	5.0	39	25.5	11	18	27	28.5	46	8.9	6.2
18	11.1	22	4.3	24	19.2	10	10	32.5	24.5	30.5	8.4	6.5
19	10.2	10.6	3.8	13.5	16.8	9.0	10	14.6	18.0	20.5	8.0	16.8
20	7.9	5.8	3.5	10.0	12.6	*8.0	10	11.3	14.6	25	7.5	18.6
21	7.0	4.4	3.0	25.5	18.0	7.5	10	9.8	14.6	16.8	7.5	9.5
22	6.8	3.85	2.7	25	12.4	6.6	24	10.8	14.2	13.9	7.5	6.8
23	6.5	3.6	2.7	15.8	9.7	5.8	18	24.5	13.5	15.7	7.2	5.4
24	5.7	3.7	2.7	34	11.3	11.8	18	16.8	13.1	24.5	7.0	4.9
25	5.2	4.2	2.5	16.8	14.6	14.6	22	23.5	*12.6	23	6.6	5.8
26	5.0	3.7	*2.5	12.4	10.2	14.6	19	30.5	13.1	29.5	6.6	10.2
27	6.3	3.35	2.3	12.0	10.6	14.6	17	26	12.4	33	6.3	8.0
28	6.8	3.1	2.3	9.5	14.2	15.7	8.0	23	11.3	42	6.2	5.5
29	5.7	3.0	2.2	8.0	12.0	15.7	36	-	10.4	37	6.0	4.6
30	7.2	3.0	2.2	16.7	21	13.9	18	-------	10.2	33	6.0	4.4
31	6.3	3.1	-------	27	-------	12.8	13	-------	9.7	-------	6.0	-------
Total	307.2	203.00	138.4	496.0	414.1	397.15	514.1	476.5	535.4	737.1	348.8	192.5
Mean:												
mgd	9.91	6.55	4.61	16.0	13.8	12.8	16.6	17.0	17.3	24.6	11.3	6.42
cfs	15.3	10.1	7.13	24.8	21.4	19.8	25.7	26.3	26.8	38.1	17.5	9.93
Ac-ft	943	623	425	1,520	1,270	1,220	1,580	1,460	1,640	2,260	1,070	591

Calendar year 1956: Max 45 Min 2.2 Mean(mgd) 15.0 Mean(cfs) 23.2 Ac-ft 16,820
Fiscal year 1956-57: Max 46 Min 2.2 Mean(mgd) 13.0 Mean(cfs) 20.1 Ac-ft 14,600

* Discharge measurement made on this day.

Note.--No gage-height record Aug. 30 to Sept. 26, Dec. 16-20, Jan. 2 to Feb. 14; discharge estimated on basis of recorded range in stage, records for nearby stations, and Kekaha Sugar Co.'s records.

140. Kokee ditch near Waimea--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	11.7	10.0	19.8	4.1	2.85	39	12.2	35.5	11.3	14.6	26.5	8.0
2	27.5	6.6	9.7	3.7	3.0	13.7	7.3	27.5	11.7	13.3	23	8.0
3	14.3	14.0	16.8	3.45	2.75	6.5	14.9	22	8.9	12.6	21	7.5
4	7.2	40	11.2	3.35	2.5	6.3	19.2	23.5	10.2	15.6	13.7	6.6
5	5.5	20	*7.0	3.2	2.3	4.4	19.2	26	15.4	14.2	10.6	6.5
6	4.9	34.5	5.7	3.6	2.4	8.1	16.8	16.8	20	12.0	9.8	6.3
7	5.0	46	4.9	5.0	2.5	10.2	15.7	13.5	18.2	11.1	15.7	6.2
8	4.9	39	4.6	4.1	5.1	3.2	15.7	11.7	11.7	10.4	22.5	6.8
9	5.0	24.5	4.4	3.35	3.7	8.0	16.8	11.1	11.3	10.0	39	13.7
10	34.5	14.6	4.1	3.1	2.85	18.0	14.6	11.5	13.7	9.7	27	7.9
11	39.5	11.3	3.85	3.0	2.5	15.7	13.7	12.0	16.8	9.7	14.2	7.0
12	15.9	9.5	4.1	2.75	2.5	13.3	13.1	11.7	18.2	17.7	22	7.0
13	8.9	11.4	3.95	2.65	2.5	16.9	13.1	11.3	18.5	31	12.3	6.8
14	9.8	11.8	3.6	2.5	2.3	15.7	12.0	18.5	10.6	28.5	12.1	6.3
15	8.9	8.8	3.45	3.6	2.2	20.5	*11.3	21.5	12.8	25.5	20.5	5.8
16	6.3	7.7	3.35	4.8	2.2	13.5	10.9	14.2	14.6	16.8	25.5	5.4
17	5.5	7.0	3.6	24	2.0	26.5	10.2	22	11.3	13.9	11.9	5.4
18	5.2	7.5	10.7	10.6	2.0	35.5	9.8	12.5	12.4	11.3	9.4	5.2
19	4.8	9.1	5.7	6.2	1.92	30.5	9.7	16.8	15.2	10.4	18.0	5.0
20	4.8	8.0	4.2	8.0	7.4	23	9.3	21.5	18.0	28.5	14.4	4.9
21	5.0	6.6	3.6	9.0	30.5	15.7	9.8	13.1	16.8	22.5	12.6	4.8
22	4.5	5.7	3.35	5.0	24.5	11.1	14.4	11.3	20.5	11.3	14.4	4.6
23	4.2	5.0	3.1	3.95	11.0	15.7	19.2	21.5	18.0	12.8	11.7	12.3
24	12.8	5.9	6.5	3.45	15.2	19.2	15.7	18.1	15.7	*11.5	10.2	9.5
25	6.3	28	39	3.35	22	18.0	11.5	12.4	17.7	10.6	9.3	12.2
26	4.9	16.2	20.5	3.1	30.5	19.8	10.2	18.0	24.5	9.8	12.3	17.0
27	7.4	8.4	9.3	2.85	34.5	10.2	9.5	18.5	9.3	9.3	12.4	23.5
28	13.5	8.7	6.5	2.75	27.5	19.6	34	19.6	13.2	9.1	9.7	26
29	9.3	21	5.5	2.5	40	24.5	33.5	-	19.7	8.8	8.6	31.5
30	11.7	15.3	4.6	2.5	44	15.2	44	-------	22	8.9	7.9	15.7
31	16.8	9.8	-------	2.65	-------	12.4	44	-------	16.8	-------	7.5	-------
Total	326.5	469.9	236.65	146.15	337.17	509.9	511.3	493.6	475.0	431.4	485.7	293.4
Mean:												
mgd	10.5	15.2	7.89	4.71	11.2	16.4	16.5	17.6	15.3	14.4	15.7	9.78
cfs	16.2	23.5	12.2	7.29	17.3	25.4	25.5	27.2	23.7	22.3	24.3	15.1
Ac-ft	1,000	1,440	726	449	1,030	1,560	1,570	1,510	1,460	1,320	1,490	900

Calendar year 1957: Max 46 Min 1.92 Mean(mgd) 13.2 Mean(cfs) 20.4 Ac-ft 14,810
Fiscal year 1957-58: Max 46 Min 1.92 Mean(mgd) 12.9 Mean(cfs) 20.0 Ac-ft 14,460

* Discharge measurement made on this day.

160. Waimea River at altitude 890 ft, near Waimea

Location.--Lat 22°04'45", long 159°39'15", on right bank in Waimea Canyon, 0.5 mile upstream from confluence with Koaie Stream and 8.8 miles north of Waimea.

Drainage area.--20.0 sq mi.

Records available.--February to October 1916, October 1917 to June 1918, May 1925 to June 1958. Prior to July 1, 1952, published as Waiahulu Stream near Waimea.

Gage.--Water-stage recorder. Altitude of gage is 890 ft (by barometer). Prior to May 25, 1925, at datum 1.55 ft lower.

Average discharge.--30 years (1925-48, 1951-58), 31.2 mgd (48.3 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 2,600 mgd (4,020 cfs) Oct. 23 (gage height, 7.86 ft), from rating curve extended above 320 mgd on basis of slope-area measurement at gage height 11.45 ft; minimum, 9.1 mgd (14.1 cfs) Nov. 12-14.
1957-58: Maximum discharge during fiscal year, 3,770 mgd (5,830 cfs) Dec. 1 (gage height, 8.93 ft), from rating curve extended above 320 mgd as explained above; minimum, 8.5 mgd (13.2 cfs) Oct. 2-5.
1916, 1917-18, 1925-58: Maximum discharge, 18,100 mgd (28,000 cfs) Aug. 17, 1950 (gage height, 18.3 ft, from floodmarks), from rating curve extended above 320 mgd; minimum, 5.2 mgd (8.0 cfs) Nov. 4, 1927.

Remarks.--Records good except those for periods of no gage-height record, which are poor. Kokee ditch diverts water above station for irrigation near Kekaha (see preceding page).

Revisions (fiscal years).--WSP 1095: 1928(M).

Rating tables, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

July 1, 1956, to Dec. 1, 1957				Dec. 2, 1957, to June 30, 1958			
1.6	6.2	3.0	106	1.3	9.7	2.5	53
1.7	8.8	3.5	182	1.6	12.4	3.0	106
1.9	15.8	4.0	289	1.8	18.6	3.5	182
2.2	30.5	5.0	590	2.0	25.5	4.0	289
2.5	52	6.0	1,050	2.2	34.5	4.5	424

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	12.0	12.0	11.0	10.4	12.8	494	12	48	22.5	13	31.5	11.7
2	12.0	12.0	11.0	10.4	10.4	267	12	54	21	*13	19.2	12.0
3	12.0	12.0	11.4	10.4	9.8	194	12	350	20	16.7	15.4	12.4
4	14.3	12.0	11.4	13.6	156	63	11	600	19	99	14.3	12.0
5	12.4	12.8	11.4	21	48	33	11	400	30	16.5	13.9	12.0
6	12.0	12.4	11.4	12.8	13.9	242	11	200	25	13.5	14.7	12.0
7	12.0	12.0	12.4	12.0	11.4	112	15	210	21	53	14.3	12.0
8	12.0	49	12.0	13.5	10.4	47	54	150	19	50	13.5	12.0
9	12.8	24.5	11.4	25	9.8	41	54	80	18	18.4	13.1	11.7
10	13.1	13.9	*11.0	13.9	9.8	96	17.5	75	17	13.9	13.1	11.4
11	13.1	13.1	11.0	12.0	9.4	65	16.2	150	17	13.1	13.1	11.4
12	12.8	12.0	10.7	11.4	9.1	39	17.1	60	17	12.8	14.3	11.4
13	20.5	11.4	10.7	11.0	9.1	*31.5	15.8	130	16	12.4	13.9	11.4
14	15.0	11.0	10.7	101	9.1	29	16.6	80	27	12.8	13.5	11.4
15	13.9	11.0	15.2	39.5	47	37	111	45	24	32	*14.3	11.4
16	18.8	11.0	17.7	22.5	51	33	25.5	42	22	140	13.5	11.7
17	17.5	11.0	13.1	95	37	30.5	183	120	35	117	12.8	11.7
18	14.3	14.0	12.0	27	27	25	612	*110	27	51	12.4	12.0
19	13.1	13.9	11.4	13.9	17.5	22	134	43	21	15.4	12.0	12.4
20	12.8	12.0	11.0	18.2	15.6	18.7	89	38.5	19	20.5	12.0	17.9
21	12.4	11.4	10.7	31.5	21.5	17	540	38	18	14.7	12.0	12.8
22	12.0	11.0	10.4	40	16.2	16	243	33.5	18	13.5	12.0	12.0
23	12.0	11.0	10.4	260	13.1	15	134	51	17	13.1	12.0	11.7
24	12.0	11.0	10.4	147	11.7	14	257	39.5	16	19.0	12.0	11.7
25	12.0	11.0	10.4	26	11.0	14	138	35.5	15	15.8	12.0	11.7
26	12.0	11.0	10.4	17.5	11.7	13	66	30.5	17	20.5	12.0	11.7
27	*12.0	11.0	10.4	17.9	13.5	13	51	26	16	46	12.0	11.7
28	12.0	11.0	10.4	13.9	15.0	15	44	24	15	58	11.7	11.7
29	12.0	11.0	10.4	*10.4	15.8	14	274	-	14	60	11.7	11.7
30	12.0	11.0	10.4	14.6	368	13	240	-------	14	60	11.7	11.4
31	12.0	11.4	-------	27	-------	12	66	-------	14	-------	11.7	-------
Total	408.8	414.8	342.2	1,100.3	1,021.6	2,075.7	3,482.7	3,263.5	611.5	1,054.6	425.6	360.0
Mean:												
mgd	13.2	13.4	11.4	35.5	34.1	67.0	112	117	19.7	35.2	13.7	12.0
cfs	20.4	20.7	17.6	54.9	52.8	104	173	181	30.5	54.5	21.2	18.6
Ac-ft	1,250	1,270	1,050	3,380	3,140	6,370	10,690	10,020	1,880	3,240	1,310	1,100

Calendar year 1956: Max 961 Min 9.0 Mean(mgd) 44.1 Mean(cfs) 68.2 Ac-ft 49,500
Fiscal year 1956-57: Max 612 Min 9.1 Mean(mgd) 39.9 Mean(cfs) 61.7 Ac-ft 44,700

Peak discharge (base, 1,200 mgd).--Oct 23 (8:30 p.m.) 2,600 mgd (4,020 cfs), 7.86 ft; Jan 18 (8 a.m.) 1,800 mgd (2,790 cfs), 7.13 ft; Jan. 21 (2:30 p.m.) 1,200 mgd (1,860 cfs), 6.32 ft; Jan. 29 (9:30 p.m.) 2,100 mgd (3,250 cfs), 7.36 ft.

* Discharge measurement made on this day.
Note.--No gage-height record Dec. 21 to Jan. 7, Feb. 2-18, Mar. 2 to Apr. 2; discharge estimated on basis of records for Kawaikoi Stream and stations near Waimea.

160. Waimea River at altitude 890 ft, near Waimea--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	*11.4	14.7	24.5	8.8	9.8	1,830	90	22	198	13.6	13.7	10.0
2	25	12.8	14.3	8.8	9.8	400	30	16.2	212	12.7	14.8	10.0
3	17.1	24	12.8	8.5	9.8	200	24	13.6	64	12.1	14.2	9.7
4	12.4	133	15.8	8.5	9.4	140	22	13.3	38.5	12.1	12.7	9.7
5	11.4	*21.5	12.4	8.8	9.4	80	20	13.0	30.5	12.1	11.9	9.7
6	11.0	181	11.0	10.4	9.8	90	16	12.1	25.5	12.1	11.3	9.7
7	10.7	227	10.4	11.0	9.8	140	14	11.6	20.5	11.9	11.6	9.7
8	10.4	50	10.4	10.7	9.8	60	13	11.3	18.9	11.9	12.1	9.7
9	10.4	21.5	10.4	9.8	10.7	180	*13	11.3	22.5	11.6	35.5	10.0
10	24.5	13.5	10.4	9.4	10.4	120	12.1	11.0	31	11.3	39	10.2
11	94	12.4	10.4	9.4	10.4	210	11.9	10.5	26	11.3	17.8	10.0
12	17.1	11.0	10.4	8.8	10.4	170	11.9	11.0	27.5	11.6	29.5	9.7
13	12.8	11.0	10.4	8.8	10.4	140	11.9	10.5	48	23.5	35.5	10.5
14	15.8	12.0	10.4	8.8	10.4	90	11.3	13.8	20.5	20.5	14.6	10.2
15	13.9	11.4	10.4	8.8	9.8	250	11.0	16.8	18.3	19.4	24	10.0
16	12.0	11.0	10.4	9.4	9.8	80	11.0	13.8	18.6	13.6	83	10.0
17	11.4	11.0	*9.8	19.0	9.8	60	10.8	50	17.0	12.1	24	*10.0
18	11.4	10.7	9.8	14.3	9.8	50	10.8	17.4	16.0	11.9	14.5	10.0
19	11.0	11.4	10.7	12.0	9.8	60	10.5	15.3	16.0	11.3	12.7	10.0
20	11.0	11.4	10.4	10.7	183	50	10.5	45	15.1	39	11.9	10.0
21	11.0	11.4	9.8	11.4	86	36	11.0	25.5	14.5	22	11.3	10.0
22	11.0	11.0	9.4	11.0	23	28	14.5	22	14.5	13.6	11.0	10.0
23	11.4	10.7	8.8	10.4	14.7	24	31.5	49	14.8	12.1	10.8	10.2
24	11.4	10.7	8.8	9.8	12.4	22	13.9	38	13.9	11.6	10.8	11.0
25	11.7	17.3	65	9.4	14.2	20	11.9	22	13.6	*11.0	10.5	11.0
26	11.7	19.1	19.1	9.4	33	50	11.0	*16.7	28.5	11.0	10.5	11.0
27	11.7	12.8	12.0	9.4	46	30	10.5	22	16.6	11.0	10.5	16.6
28	12.8	11.4	10.7	9.4	24	46	124	310	14.5	11.0	10.5	72
29	13.9	12.0	9.8	*9.4	160	120	142	-	14.7	11.0	10.2	133
30	12.8	17.1	9.4	9.4	813	60	353	-------	20.5	11.0	10.0	14.7
31	14.3	15.2	-------	9.8	-------	85	74	-------	15.8	-------	10.0	-------
Total	488.4	961.0	398.3	313.5	1,598.6	4,921	1,163.0	844.7	1,066.3	420.9	560.4	498.3
Mean:												
mgd	15.8	31.0	13.3	10.1	53.3	159	37.5	30.2	34.4	14.0	18.1	16.6
cfs	24.4	48.0	20.6	15.6	82.5	246	58.0	46.7	53.2	21.7	28.0	25.7
Ac-ft	1,500	2,950	1,220	962	4,910	15,100	3,570	2,590	3,270	1,290	1,720	1,530

Calendar year 1957: Max 1,830 Min 8.5 Mean(mgd) 49.0 Mean(cfs) 75.8 Ac-ft 54,880
Fiscal year 1957-58: Max 1,830 Min 8.5 Mean(mgd) 36.3 Mean(cfs) 56.2 Ac-ft 40,610

Peak discharge (base, 1,200 mgd).--Nov. 20 (8 p.m.) 2,100 mgd (3,250 cfs), 7.35 ft; Dec. 1 (2 p.m.) 3,770 mgd (5,830 cfs), 8.93 ft.

* Discharge measurement made on this day.
Note.--No gage-height record Dec. 1 to Jan. 9; discharge estimated on basis of record for Kawaikoi Stream and stations near Waimea.

220. Kekaha ditch at camp 1, near Waimea

Location.--Lat 22°02'35", long 159°38'30", on right bank 0.2 mile downstream from lower intake and 6.2 miles northeast of Waimea.

Records available.--November 1907 to June 1958.

Gage.--Water-stage recorder. Altitude of gage is 520 ft (by barometer). Prior to July 12, 1921, staff gages at several sites within 1 mile of present site at various datums.

Average discharge.--39 years (1918-24, 1925-58), 35.6 mgd (55.1 cfs).

Extremes.--1907-58: Maximum daily discharge, 67 mgd (104 cfs) Jan. 6, Mar. 3, 6, 7, 17, 18, 24-26, 29-31, 1921; no flow at times.

Remarks.--Records good except those for periods of no gage-height record, which are poor. Ditch diverts water from Waimea River 1 mile downstream from mouth of Waialae River. Flow regulated by headgates. Water used for irrigation in vicinity of Kekaha.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	36.5	32	39	28	51	28	26	24	34.5	25	46	26
2	34.5	32	34.5	28	44	28	32	24	25	37	46	26
3	34.5	32	32	28	36.5	28	34.5	25	28	32	39	30
4	37	37	30	36.5	41	28	32	24	46	46	32	28
5	34	39	32	41	51	28	28	25	46	39	36.5	26
6	34.5	36.5	39	30	51	31	30	24	46	32	39	26
7	35	32	39	34.5	44	31	48	24	46	36.5	36.5	25
8	36.5	39	34.5	36.5	41	28	51	24	34.5	46	34.5	26
9	39	51	30	46	36.5	28	51	24	24	46	32	25
10	47	41	29	41	34.5	30	51	24	26	39	32	24
11	51	38	28	34.5	34.5	28	46	24	39	34.5	34.5	25
12	39	36.5	28	34.5	34.5	28	41	23	44	32	36.5	24
13	39.5	32	28	32	39	27	44	24	46	32	39	24
14	39	32	28	44	36.5	*26	48	23	46	32	36.5	24
15	42	39	33.5	51	43	28	44	24	34.5	36.5	*44	25
16	48	39	44	51	30	28	48	24	24	46	39	26
17	51	32	44	51	30	28	41	24	25	46	32	28
18	46	40	34.5	51	28	28	24	26.5	41	41	32	32
19	44	39	32	46	30	28	24	30	46	39	30	32
20	39	36.5	30	41	30	28	24	28	44	44	28	44
21	36.5	32	30	44	28	28	25	28	41	36.5	28	41
22	36.5	32	30	48	28	26	23	25	33	39	28	34.5
23	34.5	30	28	42	28	28	23	24	25	39	28	30
24	34.5	30	28	31.5	30	26	24	24	27	46	28	26
25	32	32	28	32	28	26	25	28	30	46	28	26
26	32	30	28	32	28	26	24	41	35	41	28	26
27	*37	29	28	32	28	26	25	46	38	34.5	26	26
28	36.5	28	28	32	30	26	24	46	30	36.5	26	25
29	34.5	30	28	*34.5	30	28	24	-	26	46	26	26
30	32	30	28	44	28	26	23	-------	25	46	26	25
31	32	30	-------	51	-------	26	24	-------	24	-------	26	-------
Total	1,185.0	1,068.5	953.0	1,208.5	1,052.0	857	1,031.5	754.5	1,079.5	1,172.0	1,023.0	831.5
Mean:												
mgd	38.2	34.5	31.8	39.0	35.1	27.6	33.3	26.9	34.8	39.1	33.0	27.7
cfs	59.1	53.4	49.2	60.3	54.3	42.7	51.5	41.6	53.8	60.5	51.1	42.9
Ac-ft	3,640	3,280	2,920	3,710	3,230	2,630	3,170	2,320	3,310	3,600	3,140	2,550

Calendar year 1956: Max 56 Min 0 Mean(mgd) 37.0 Mean(cfs) 57.2 Ac-ft 41,560
Fiscal year 1956-57 : Max 51 Min 23 Mean(mgd) 33.5 Mean(cfs) 51.8 Ac-ft 37,500

* Discharge measurement made on this day.
Note.--No gage-height record Dec. 1-13, Mar. 22 to Apr. 2; discharge estimated on basis of records for nearby stations.

220. Kekaha ditch at camp 1, near Waimea--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	31	46	44	30	39	32	44	36.5	39	36.5	34.5	28
2	41	34.5	41	28	32	29	48	36.5	39	36.5	39	28
3	41	36.5	46	26	28	39	48	36.5	36.5	36.5	39	28
4	34.5	41	48	26	26	39	46	39	39	39	36.5	28
5	28	*47	39	26	26	41	48	36.5	39	39	34.5	28
6	28	46	34.5	28	26	41	46	36.5	39	36.5	34.5	28
7	30	46	32	45	26	41	44	36.5	39	36.5	36.5	28
8	28	46	30	32	32	41	41	36.5	36.5	34.5	36.5	28
9	28	44	28	30	30	41	41	34.5	39	34.5	39	30
10	39	39	28	28	28	41	*41	34.5	36.5	32	39	32
11	44	36.5	28	28	32	44	39	32	36.5	32	39	36.5
12	44	34.5	28	28	36.5	44	39	34.5	36.5	34.5	39	48
13	36.5	36.5	26	26	32	41	41	34.5	39	36.5	39	41
14	32	46	26	25	28	41	39	36.5	39	36.5	39	32
15	34.5	46	26	26	26	41	36.5	39	39	39	39	30
16	28	44	25	28	26	48	34.5	39	39	39	39	28
17	28	41	26	36.5	28	51	34.5	39	36.5	39	39	*28
18	26	44	28	44	26	51	34.5	39	39	36.5	36.5	28
19	36.5	44	30	36.5	26	48	32	36.5	36.5	36.5	36.5	28
20	30	39	28	30	32	48	32	39	36.5	36.5	36.5	28
21	36.5	34.5	28	30	46	46	34.5	39	36.5	36.5	34.5	26
22	28	30	26	28	41	46	51	39	36.5	36.5	32	26
23	28	30	25	28	41	*51	51	39	36.5	36.5	32	28
24	26	30	25	26	36.5	46	46	39	36.5	34.5	32	30
25	28	46	44	28	36.5	44	39	39	36.5	32	30	32
26	26	46	48	26	48	44	34.5	*39	39	32	30	41
27	30	46	44	26	39	44	34.5	39	39	30	30	51
28	36.5	39	39	26	32	44	44	39	39	30	30	44
29	41	46	41	*25	36.5	41	51	-	39	30	30	51
30	44	48	30	25	32	41	51	-------	39	30	28	46
31	48	44	-------	26	-------	41	46	-------	39	-------	28	-------
Total	1,040.0	1,277.0	991.5	901.0	974.0	1,330	1,291.5	1,044.5	1,176.5	1,055.5	1,088.0	988.5
Mean:												
mgd	33.5	41.2	33.0	29.1	32.5	42.9	41.7	37.3	38.0	35.2	35.1	33.0
cfs	51.8	63.7	51.1	45.0	50.3	66.4	64.5	57.7	58.8	54.5	54.3	51.1
Ac-ft	3,190	3,920	3,040	2,770	2,990	4,080	3,960	3,210	3,610	3,240	3,340	3,030

Calendar year 1957: Max 51 Min 23 Mean(mgd) 34.0 Mean(cfs) 52.6 Ac-ft 38,080
Fiscal year 1957-58: Max 51 Min 25 Mean(mgd) 36.0 Mean(cfs) 55.7 Ac-ft 40,380

* Discharge measurement made on this day.

310. Waimea River near Waimea

Location.--Lat 21°58'55", long 159°39'50", on right bank 1.2 miles upstream from confluence with Makaweli River and 1.8 miles north of Waimea.

Drainage area.--57.8 sq mi.

Records available.--July 1910 to October 1919, November 1943 to June 1958.

Gage.--Water-stage recorder. Altitude of gage is 25 ft (by hand levels from estuary at confluence with Makaweli River). Prior to Oct. 5, 1911, staff gage at site 1 mile downstream at different datum. Oct. 5, 1911, to June 30, 1918, staff gage at present site at different datum.

Average discharge.--14 years (1944-58), 80.5 mgd (125 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 10,500 mgd (16,200 cfs) Oct. 23 (gage height, 13.07 ft), from rating curve extended above 3,900 mgd as explained below; minimum, 1.00 mgd (1.55 cfs) June 25.

1957-58: Maximum discharge during fiscal year, 14,900 mgd (23,100 cfs) Dec. 1 (gage height, 15.26 ft), from rating curve extended above 3,900 mgd as explained below; minimum, 0.29 mgd (0.45 cfs) Oct. 2.

1943-58: Maximum discharge, 24,000 mgd (37,100 cfs) Feb. 7, 1949 (gage height, 19.3 ft), from rating curve extended above 3,900 mgd on basis of slope-area measurements at gage heights 10.28 and 18.7 ft; minimum, less than 0.01 mgd (0.02 cfs) Sept. 27, 1948.

Remarks.--Records good except those below 10 mgd, which are fair, and those for period of no gage-height record, which are poor. Several ditches divert most of flow for irrigation of sugarcane.

Rating tables, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)
(Shifting-control method used Oct. 24 to Nov. 4, 1956, June 15-28, 1958)

July 1 to Nov. 30, 1956				Dec. 1, 1956, to Dec. 1, 1957				Dec. 2, 1957, to June 30, 1958			
2.9	1.28	4.2	135	2.8	0.34	4.5	180	2.9	0.55	4.5	115
3.0	2.85	4.5	210	3.0	2.4	5.0	375	3.1	2.15	5.0	240
3.1	5.4	5.0	385	3.2	7.3	5.5	620	3.3	5.6	5.5	430
3.3	15.8	5.5	620	3.4	15.8	6.0	940	3.5	12.0	6.0	695
3.5	31.5	6.0	940	3.6	29	7.0	1,700	3.8	28	7.0	1,420
3.7	52	7.0	1,700	3.9	61	9.0	3,800	4.1	56	9.0	3,500
4.0	95			4.2	110	11.0	6,700				

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.8	3.55	10.1	1.95	32.5	1,030	22	*152	27.5	3.05	59	3.45
2	4.3	3.3	4.9	1.80	13.9	618	14.0	154	35.5	3.45	30	3.65
3	3.8	3.05	2.25	1.95	14.6	363	6.5	668	33.5	3.85	*12.0	4.5
4	4.6	23.5	2.25	40	122	149	*5.1	1,210	16.4	78	13.9	4.3
5	4.6	23.5	2.1	62	138	91	9.4	880	12.9	*25.5	8.0	2.8
6	3.8	5.0	*2.45	28.5	28.5	607	9.9	445	15.3	9.2	4.8	2.6
7	3.8	3.05	4.8	3.4	13.3	*393	85	330	10.6	22	3.25	2.8
8	8.7	12.3	3.05	2.45	6.5	159	135	352	*11.5	80	2.4	2.6
9	26.5	37.5	2.25	8.6	*4.3	140	248	175	24	29	2.1	2.6
10	12.5	5.6	1.95	10.0	3.8	330	39	142	22.5	6.5	2.25	2.4
11	10.2	14.1	1.95	3.3	3.8	202	58	268	12.0	3.45	2.4	2.4
12	6.9	3.5	1.95	3.8	3.55	123	56	159	9.2	2.6	13.0	*2.4
13	19.4	2.25	1.95	2.85	3.55	93	25.5	193	15.4	2.4	12.2	2.4
14	31	1.95	1.95	102	4.3	75	*27	250	13.4	2.4	7.7	1.98
15	15.2	1.95	2.85	97	60	78	481	*118	*42	2.8	28	1.84
16	*6.5	4.0	19.4	71	178	86	99	97	31.5	116	9.9	1.98
17	*24.5	2.65	11.1	197	95	81	602	88	42	162	*3.65	1.98
18	7.5	19.7	4.6	74	90	*68	*2,050	194	47	65	2.1	2.6
19	5.4	24	2.65	17.2	65	54	501	86	20	90	2.4	4.3
20	6.1	4.2	2.1	9.6	53	45	308	78	9.5	146	2.4	31
21	4.6	2.25	1.95	55	72	39	1,380	78	6.7	31	2.4	*9.7
22	4.3	1.95	1.95	178	62	36	853	68	*6.2	10.3	2.8	12.3
23	3.8	1.95	1.80	891	43	33.5	372	86	14.4	27.5	2.8	3.65
24	3.8	1.95	1.67	581	35.5	31.5	620	78	13.4	104	*2.6	1.98
25	3.3	2.25	1.80	84	31.5	30	440	*72	6.5	60	3.05	1.14
26	3.3	2.45	1.95	49	31.5	28.5	198	54	4.3	*49	3.45	1.28
27	3.05	1.95	1.95	48	38	26	145	40	3.85	55	3.45	1.70
28	4.8	1.95	1.67	32.5	44	28.5	120	31	3.45	100	3.05	*1.70
29	4.0	1.95	1.67	25.5	45	29	303	-	3.25	75	3.05	1.98
30	3.05	2.25	1.95	*48	*991	28.5	1,380	-------	3.05	110	3.25	2.1
31	3.05	2.45	-------	125	-------	25.5	220	-------	3.05	-------	*3.45	-------
Total	251.15	222.00	104.96	2,855.40	2,327.10	5,121.0	10,812.4	6,546	519.85	1,475.00	254.80	122.11
Mean:												
mgd	8.10	7.16	3.50	92.1	77.6	165	349	234	16.8	49.2	8.22	4.07
cfs	12.5	11.1	5.42	142	120	255	540	362	26.0	76.1	12.7	6.30
Ac-ft	771	681	322	8,760	7,140	15,720	33,180	20,090	1,600	4,530	782	375

Calendar year 1956: Max 2,990 Min 1.67 Mean(mgd) 117 Mean(cfs) 181 Ac-ft 131,100
Fiscal year 1956-57: Max 2,050 Min 1.14 Mean(mgd) 83.9 Mean(cfs) 130 Ac-ft 93,950

Peak discharge (base, 5,600 mgd).--Oct. 23 (10 p.m.) 10,500 mgd (16,200 cfs), 13.07 ft.

* Discharge measurement made on this day.

310. Waimea River near Waimea--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.1	22	124	0.39	*1.35	5,810	114	a40	241	10.6	3.0	1.35
2	38.5	*5.2	22.5	.34	6.6	*3,430	39	a30	313	7.6	6.3	1.35
3	35	82	44	.39	2.6	712	21	*a20	123	5.9	14.5	1.15
4	4.5	203	51	.49	.84	308	15.1	17.0	76	6.6	11.1	.82
5	1.42	39.5	8.7	.61	.61	145	14.2	18.1	58	19.2	4.9	.76
6	1.14	215	*3.4	1.42	.68	140	11.6	13.8	50	9.1	3.45	.82
7	.84	505	2.25	8.0	.84	277	8.4	10.2	32	6.4	*3.45	.88
8	1.42	115	2.6	7.0	*.93	117	6.7	8.8	25	5.0	4.0	1.01
9	*1.14	48	2.1	2.85	2.25	170	5.6	8.1	50	4.6	52	.94
10	1.67	17.9	1.56	2.1	1.14	*160	5.2	8.4	71	4.4	79	1.08
11	150	8.3	1.42	*1.70	.93	226	5.2	7.3	80	4.0	37	1.35
12	33	3.85	1.42	1.70	4.3	192	5.2	6.4	45	2.9	21	7.3
13	5.6	3.75	*1.42	1.98	2.5	172	4.8	6.4	76	6.6	59	9.5
14	2.1	42	1.98	1.98	*2.4	123	4.2	7.0	*38.5	30.5	18.7	1.65
15	6.5	7.7	2.1	1.98	1.14	218	*4.0	30.5	24.5	38	7.8	1.08
16	2.1	10.4	1.56	2.25	1.28	*96	3.8	15.5	22	14.9	109	.94
17	1.42	4.5	1.70	2.45	1.42	71	4.0	*50	18.8	7.3	62	.94
18	1.28	3.85	1.98	*12.2	1.00	145	4.4	23.5	15.5	5.4	19.3	.94
19	*2.55	11.6	2.8	4.8	.76	88	4.2	9.8	14.2	7.0	9.2	.88
20	4.0	3.85	*2.8	2.25	296	98	3.8	96	12.4	18.9	5.4	.82
21	5.7	2.6	2.6	.84	289	53	4.2	68	10.6	35.5	4.0	.70
22	3.4	1.84	2.1	.84	*35.5	52	14.8	42	10.2	11.9	3.45	.65
23	1.84	1.14	1.84	.93	14.8	29.5	46	81	10.9	4.2	3.3	.60
24	1.84	1.14	1.56	.93	8.8	43	16.4	72	9.8	2.9	2.9	.60
25	1.84	25.5	61	*1.28	4.2	37	6.7	45	8.8	3.6	2.9	.76
26	*1.98	43	35.5	1.14	16.0	104	5.0	22.5	*23.5	3.45	2.45	1.35
27	4.1	17.4	*8.3	1.28	41	64	4.4	16.0	17.8	3.15	2.05	*6.5
28	17.2	3.4	2.8	1.14	35	70	a80	481	66	2.9	1.85	35.5
29	21.5	3.25	4.4	1.00	157	132	a85	-	19.4	2.45	1.95	205
30	7.3	*20.5	1.52	.93	1,420	67	a500	-------	25.5	2.6	1.45	18.0
31	25.5	7.2	-------	.93	-------	*67	a130	-------	17.4	-------	1.45	-------
Total	390.48	1,479.37	402.91	68.12	2,350.87	13,406.5	1,176.9	1,254.3	1,605.6	287.55	557.85	305.22
Mean:												
mgd	12.6	47.7	13.4	2.20	78.4	432	38.0	44.8	51.8	9.56	18.0	10.2
cfs	19.5	73.8	20.7	3.40	121	668	58.8	69.3	80.1	14.8	27.9	15.8
Ac-ft	1,200	4,540	1,240	209	7,210	41,140	3,610	3,850	4,930	882	1,710	937

Calendar year 1957: Max 5,810 Min 0.34 Mean(mgd) 104 Mean(cfs) 161 Ac-ft 116,100
Fiscal year 1957-58: Max 5,810 Min 0.34 Mean(mgd) 63.8 Mean(cfs) 98.7 Ac-ft 71,460

Peak discharge (base, 5,600 mgd).--Dec. 1 (11 p.m.) 14,900 mgd (23,100 cfs), 15.26 ft.

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for nearby stations.

360. Makaweli River near Waimea

Location.--Lat 21°58'15", long 159°38'55", on left bank 0.7 mile upstream from mouth, 1.9 miles northeast of Waimea, and 3.8 miles northwest of Makaweli.

Drainage area.--25.0 sq mi.

Records available.--October 1911 to June 1917, July 1943 to June 1958.

Gage.--Water-stage recorder. Altitude of gage is 30 ft (by hand levels from estuary at confluence with Waimea River). Oct. 6, 1911, to June 30, 1917, staff gage at site 0.2 mile downstream at different datum.

Average discharge.--19 years (1912-17, 1944-58), 59.8 mgd (92.5 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 7,840 mgd (12,100 cfs) Oct. 23 (gage height, 10.33 ft, from floodmark), from rating curve extended above 1,300 mgd as explained below; minimum daily, 7.5 mgd (11.6 cfs) Aug. 23, 25-29, Sept. 21-24, Oct. 12.
1957-58: Maximum discharge during fiscal year, 8,670 mgd (13,400 cfs) Dec. 1 (gage height, 10.80 ft), from rating curve extended above 1,300 mgd as explained below; minimum daily, 6.5 mgd (10.1 cfs) Oct. 12-16, 19-28, Nov. 4-6.
1943-58: Maximum discharge, 8,800 mgd (13,600 cfs) Jan. 19, 1952 (gage height, 11.19 ft), from rating curve extended above 1,300 mgd on basis of slope-area measurement at gage height 9.46 ft; minimum, 2.05 mgd (3.15 cfs) July 19, 1951.

Remarks.--Records fair except those for periods of no gage-height record, which are poor. Olokele ditch diverts all low water from Olokele Stream 9 miles above station for irrigation near Makaweli.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	a13	f11.5	f19.6	a10	f25.5	215	36	*167	a19	a10	28	a9
2	a12	a10	a12	a9.5	a15	131	36	243	a19	f12.3	f16	a8.5
3	a12	f12.8	a12	a11	a14	73	36	980	a18	f13.7	*a15	a8.5
4	a11	f62	a18	f102	f24.5	44	*36	1,290	a18	f15.5	a14	a8.5
5	a11	a15	a13	f25	f30	29.5	39	687	a16	a13	a13	a8.5
6	a12	a15	f22	a12	a15	*267	35.5	268	a15	a10	a13	a8.5
7	a12	a11	a10	a10	a14	133	101	222	a15	a10	a12	a8.5
8	a11	f13.9	a9.5	a10	a13	96	249	*208	*a15	a10	a11	a8.5
9	f22	a13	a9.5	a9	a13	97	141	124	a14	a10	a10	a8.5
10	f33.5	f32.5	a9.5	a8.5	a12	214	44	124	a14	a11	a10	a8.5
11	f25	a12	a9.5	a8	a11	110	114	222	a15	a11	f10.0	a8.5
12	a15	a13	a9	a7.5	f25	97	60	158	f22.5	a13	f17.9	*a8.5
13	f72	a10	a9	a9	f18.7	73	47	148	f15.4	f22	f17.4	a8.5
14	f37	f20.5	*a9	f68	f19.8	62	114	110	f31	f32	f20.5	a8.5
15	f29.5	f36.5	f17.7	f33	f96	85	386	85	*a18	f17.2	f22.5	f9.4
16	f35	a10	a12	57	*61	85	110	73	a14	f18.5	a14	f18.0
17	*f21.5	a11	a11	f195	36	83	810	36	f47	f19.2	*a11	f10.7
18	f32	f52	a9.5	f45	f22	62	*1,100	36	f27.5	f19.5	a10	a10
19	f27.5	a12	a9	f17.8	f29	53	261	29.5	a18	f222	a10	f32.5
20	f15.6	a10	a8.5	a15	a15	44	226	a28	a16	159	a10	f26.5
21	a14	a9	*a7.5	f46	79	44	660	a26	a14	f20	a10	*f17.1
22	f18.8	a9	a7.5	132	44	44	365	a24	a13	a14	f12.6	a14
23	a12	a7.5	a7.5	f849	36	44	236	a22	a13	f116	a10	a11
24	a13	a9	a7.5	f326	29.5	44	294	a24	a12	127	*a9.5	a10
25	a12	a7.5	a8.5	f58	29.5	36	186	*a22	a11	115	a9.5	a9
26	a11	a7.5	a9	a24	36	36	110	a22	a11	*56	a9	a9
27	f25	a7.5	a8.5	a30	36	36	85	a20	a12	21.5	a8.5	a8.5
28	a12	a7.5	a8.5	a46	f48	44	85	a20	a11	36	a8.5	*a8.5
29	a10	a7.5	a9.5	a30	a15	44	245	-	*a11	33.5	a8.5	a10
30	a10	a8	a11	*f104	*f202	36	86	-------	a10	35.5	a9	a9
31	a9.5	*f91	-------	97	-------	36	140	-------	a10	-------	a9	-------
Total	605.9	552.7	324.3	2,404.3	1,144.5	2,497.5	7,258.5	5,418.5	515.4	1,225.4	391.4	332.7
Mean:												
mgd	19.5	17.8	10.8	77.6	38.2	80.6	234	194	16.6	40.8	12.6	11.1
cfs	30.2	27.5	16.7	120	59.1	125	362	300	25.7	63.1	19.5	17.2
Ac-ft	1,860	1,700	995	7,380	3,510	7,660	22,280	16,630	1,580	3,760	1,200	1,020

Calendar year 1956: Max 2,340 Min 7.5 Mean(mgd) 91.2 Mean(cfs) 141 Ac-ft 102,400
Fiscal year 1956-57: Max 1,290 Min 7.5 Mean(mgd) 62.1 Mean(cfs) 96.1 Ac-ft 69,580

Peak discharge (base, 1,300 mgd).--Oct. 23 (time unknown) 7,840 mgd (12,100 cfs), 10.33 ft (from high-water mark in well); Jan. 18 (9 a.m.) 2,830 mgd (4,380 cfs), 6.24 ft; Jan. 21 (8 p.m.) 2,010 mgd (3,110 cfs), 5.23 ft; Jan. 29 (11:30 p.m.) 4,430 mgd (6,850 cfs), 7.80 ft; Feb. 4 (3 p.m.) 2,830 mgd (4,380 cfs), 6.15 ft.

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of discharge measurements, occasional staff-gage readings, and records for nearby streams.
f Fragmentary gage-height record; discharge computed from partly estimated gage heights.

360. Makaweli River near Waimea--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	f19.0	f17.4	f58	a10	*f33	3,340	a14	a18	f34	a10	a12	a8
2	f72	a11	a14	a9	a7	1,750	a13	a14	f40	f19.8	a16	a8
3	f16.5	f168	f128	*a8	a7	400	a13	*a12	a19	f51	f22.5	a8
4	a9	90	f26	a9	a6.5	279	a13	a12	a15	f32.5	a12	a8
5	a8.5	f23	a12	a10	a6.5	119	a13	a12	a16	a22	a12	a8
6	f16.3	f102	*a10	a11	a6.5	121	a13	a11	a14	a18	a10	a7.5
7	a12	385	a9.5	f11.8	f24.5	120	a12	a14	a13	a19	*a8.5	a7.5
8	a9.5	97	a9	a9.5	*f21	78	a12	a8	a13	a14	a16	a13
9	a9	29	a8.5	a8	f11.0	90	a12	a8	f46	a13	f29	a18
10	f11.8	f16.6	a8.5	a8.5	f14.3	*78	a12	a8	f44	a12	a18	a10
11	f53	a14	a8	*a7	f39	f108	a11	a8	f33.5	a13	a15	f20.5
12	f13.1	a12	a8	a6.5	f19.6	a80	a12	a10	a19	a12	a17	f34.5
13	a11	f80	*a8	a6.5	f13.7	a80	a12	a10	a16	a16	a19	a11
14	f17.7	43	a8	a6.5	a7	a90	a11	a18	*a14	f20.5	a10	a9
15	f12.4	61	a7.5	a6.5	*f9.4	a120	*a11	a15	a13	a17	a8.5	a8
16	a9.5	31	a7.5	a6.5	f10.0	a80	a10	a12	a12	a14	a16	a8
17	a9	f19.7	a7.5	a10	a9	a95	a9	*a12	a12	a17	a14	a9
18	f13.4	f41	f15.9	*a9	a7	a180	a9	a10	a11	a22	a8.5	a9.5
19	*a11	f23	a8	a6.5	a8.5	a360	a9	a11	a10	a28	a8	a8
20	f15.5	f17.9	*a8	a6.5	f203	a130	a9	f60	a10	a26	a8	a8
21	a12	a10	a7.5	a6.5	118	a20	a9	a15	a10	a26	a8	a8
22	a11	a9	a8	a6.5	*f14.8	a14	f33.5	f25	a10	a26	a8	a8
23	f16.0	a8.5	a8	a6.5	a11	a120	a14	a19	a10	a26	a8	a20
24	f12.2	f13.8	a9	a6.5	a9	a100	a9	a14	a9.5	a22	a8	a10
25	a9	f42	f29	*a6.5	a8	a280	a8.5	a10	a9.5	a14	a8	a11
26	*a8.5	f80	f17.6	a6.5	a9	a380	a8	a9.5	*a20	a12	a9	a11
27	f64	f15.2	*a10	a6.5	a8	a95	a8	a15	f93	a11	a8	*a11
28	f39	f12.2	f19.7	a6.5	a8	a120	a9	f155	f78	a11	a7.5	f49
29	f20	f12.8	a14	a7	f14.3	a30	f70	-	a22	a10	a8	f49
30	f24.5	f14.1	f16.1	a7	415	a17	214	-------	a12	a11	a7.5	a14
31	f51	f53	-------	f13.3	-------	a14	f59	-------	a11	-------	a8	-------
Total	616.4	1,552.2	508.8	245.6	1,078.6	8,888	672.0	545.5	689.5	565.8	368.0	412.5
Mean:												
mgd	19.9	50.1	17.0	7.92	36.0	287	21.7	19.5	22.2	18.9	11.9	13.8
cfs	30.8	77.5	26.3	12.3	55.7	444	33.6	30.2	34.3	29.2	18.4	21.4
Ac-ft	1,890	4,760	1,560	754	3,310	27,280	2,060	1,670	2,120	1,740	1,130	1,270

Calendar year 1957: Max 3,340 Min 6.5 Mean(mgd) 76.8 Mean(cfs) 119 Ac-ft 86,020
Fiscal year 1957-58: Max 3,340 Min 6.5 Mean(mgd) 44.2 Mean(cfs) 68.4 Ac-ft 49,540

Peak discharge (base, 1,300 mgd).--Nov. 29 (10:30 p.m.) 1,640 mgd (2,540 cfs), 4.73 ft; Dec. 1 (9 p.m.) 8,670 mgd (13,400 cfs), 10.80 ft.

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage, discharge measurements, occasional staff-gage readings, and records for nearby streams.
f Fragmentary gage-height record; discharge computed from partly estimated gage heights.

490. Hanapepe River below Manuahi Stream, near Eleele

Location.--Lat 21°57'20", long 159°33'15", on left bank just downstream from Manuahi Stream, 4 miles northeast of Eleele.

Drainage area.--18.8 sq mi.

Records available.--May 1917 to January 1921, December 1926 to June 1958. Prior to July 1952, published as "at Koula, near Eleele." August 1910 to December 1916 at site half a mile upstream; records not equivalent due to inflow.

Gage.--Water-stage recorder. Altitude of gage is 150 ft (by barometer). Prior to Dec. 15, 1926, staff gage and Dec. 16, 1926, to June 30, 1951, water-stage recorder, at same site at datum 1.00 ft higher.

Average discharge.--34 years (1917-20, 1927-58), 54.7 mgd (84.6 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 4,900 mgd (7,580 cfs) Oct. 23, Jan. 17, from rating curve extended above 2,400 mgd as explained below; maximum gage height, 9.05 ft Jan. 17; minimum discharge, 8.5 mgd (13.2 cfs) Aug. 28, 29, Sept. 22, 23, 27.

1957-58: Maximum discharge during fiscal year, 5,560 mgd (8,600 cfs) Dec. 1 (gage height, 9.64 ft), from rating curve extended above 2,400 mgd as explained below; minimum, 7.2 mgd (11.1 cfs) May 28, 30, June 22.

1910-21, 1926-58: Maximum discharge, 10,400 mgd (16,100 cfs) Dec. 17, 1949 (gage height, 11.74 ft), from rating curve extended above 2,400 mgd by test on model of station site; minimum, 3.3 mgd (5.1 cfs) May 21, 1954.

Remarks.--Records good. Hanapepe ditch diverts water from river 3 miles above station for irrigation in vicinity of Makaweli.

Revisions (fiscal years).--WSP 740: 1931.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	12.9	10.6	14.1	10.0	33	63	10.8	70	13.8	9.8	30	9.8
2	11.8	9.4	9.7	9.7	21	32	10.8	170	13.4	12.7	17.2	9.8
3	11.4	12.6	9.7	10.3	17.8	23	10.8	1,040	13.0	10.9	14.3	9.8
4	11.0	39.5	10.6	150	17.6	17.3	10.8	1,260	*12.6	10.2	13.0	9.5
5	10.6	15.5	9.7	24	18.3	14.2	11.4	546	12.3	9.8	12.0	9.5
6	11.8	15.3	*19.6	10.3	*13.8	241	19.8	197	12.0	9.8	12.0	9.8
7	11.4	10.0	11.4	9.4	12.5	73	55	144	11.6	9.8	11.6	9.5
8	11.0	38.5	9.7	9.4	11.8	53	197	139	11.2	9.8	11.2	9.5
9	39.5	16.1	9.1	9.1	11.1	33	106	75	11.2	9.8	10.9	9.5
10	18.9	22.5	9.1	9.1	10.8	107	68	64	11.2	10.2	10.9	9.5
11	13.3	10.3	9.1	9.7	10.8	*39	160	130	12.0	10.2	10.9	9.2
12	11.4	10.6	8.8	12.3	14.0	32	47	79	29.5	9.8	114	9.2
13	71	9.4	8.8	15.8	18.3	20.5	82	193	17.1	10.8	19.3	9.2
14	25.5	18.4	10.0	113	34.5	18.4	*157	80	27	22	28	9.2
15	28	17.4	19.1	44	161	31.5	483	49	13.4	*12.0	17.0	10.6
16	29.5	9.7	11.8	105	55	54	69	40	11.6	11.2	12.0	12.4
17	17.0	11.2	10.6	174	65	42	*739	34	35.5	16.3	11.2	10.9
18	22	52	9.7	108	30	21.5	744	27.5	18.2	13.3	10.6	10.2
19	26.5	11.0	9.1	105	30.5	20.5	139	23	13.0	122	10.6	38
20	13.6	9.7	9.1	64	69	15.5	158	23	11.6	108	10.6	21.5
21	11.4	9.4	8.8	101	125	13.4	290	19.8	11.2	19.6	10.6	19.7
22	16.8	9.1	9.8	130	44	12.5	206	17.7	10.9	12.0	13.0	11.2
23	10.6	9.1	8.8	508	23	12.2	122	16.8	10.9	91	10.9	10.2
24	11.0	9.7	8.5	135	17.3	11.8	159	17.2	10.6	113	10.2	9.8
25	10.3	9.4	9.6	46	15.5	11.8	92	16.4	10.2	108	10.2	9.8
26	*10.0	9.1	9.1	28	19.4	11.4	54	15.9	10.2	52	10.2	9.8
27	16.6	9.4	8.8	31.5	16.0	11.4	41	14.7	10.6	30	9.8	9.5
28	10.3	9.1	8.8	37.0	15.4	13.4	34	14.7	10.2	45	9.5	9.5
29	9.1	9.1	9.4	21.5	15.1	13.1	41	-	10.2	23	9.8	10.6
30	9.4	9.4	11.0	121	169	11.1	494	--------	9.8	25.5	10.2	9.8
31	9.1	82	--------	39	--------	11.1	60	--------	9.8	--------	*10.2	--------
Total	533.3	504.5	309.6	2,318.1	1,115.3	1,085.2	4,860.4	4,518.7	428.9	363.5	362.2	345.5
Mean: mgd	17.2	16.3	10.3	74.7	37.2	35.0	157	161	13.7	32.1	16.2	11.6
cfs	26.6	25.2	15.9	116	57.8	54.2	243	249	21.2	49.7	25.1	17.9
Ac-ft	1,640	1,550	950	7,110	3,420	3,330	14,920	13,870	1,310	2,960	1,540	1,060

Calendar year 1956: Max 1,630 Min 9.1 Mean(mgd) 64.6 Mean(cfs) 100 Ac-ft 72,500
Fiscal year 1956-57. Max 1,260 Min 8.1 Mean(mgd) 47.9 Mean(cfs) 74.1 Ac-ft 53,660

Peak discharge (base, 2,300 mgd).--Oct. 23 (7:30 p.m.) 4,900 mgd (7,580 cfs), 9.02 ft; Jan. 17 (9:30 p.m.) 4,900 mgd (7,580 cfs), 9.05 ft; Jan. 30 (1 a.m.) 4,350 mgd (6,730 cfs), 8.50 ft.

* Discharge measurement made on this day.

490. Hanapepe River below Manuahi Stream, near Eleele--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	12.5	16.0	59	9.5	28	2,290	24.5	11.6	13.9	8.2	8.2	7.4
2	77	12.0	23.5	9.5	9.5	673	15.7	9.9	13.5	7.9	9.3	7.4
3	15.0	126	163	*9.2	9.2	180	13.5	9.3	11.3	8.5	11.6	7.4
4	11.2	206	55	9.5	9.0	147	12.4	9.3	10.2	18.5	8.2	7.4
5	10.9	41	21.5	9.8	9.0	*100	11.6	9.3	10.5	9.3	8.5	7.6
6	26.5	181	13.8	10.2	9.0	100	10.9	9.0	9.9	8.8	*7.9	7.4
7	19.2	445	12.3	11.2	34	84	10.5	8.8	9.3	8.8	7.4	7.4
8	12.0	128	11.6	9.8	16.3	63	10.5	8.5	9.3	8.5	9.5	10.4
9	*11.4	50	11.2	9.5	10.3	59	10.5	8.2	25	8.2	16.2	12.0
10	19.0	25.5	10.9	9.8	38	56	10.2	8.2	22.5	8.2	9.6	9.0
11	62	17.7	10.6	9.5	46	67	9.9	8.2	17.4	8.8	8.8	27
12	16.2	14.7	10.6	9.2	14.4	57	10.2	8.8	11.6	8.5	9.3	39.5
13	12.3	63	10.2	9.2	11.2	58	10.2	8.8	10.5	11.3	9.9	9.6
14	39.5	40	10.2	9.2	*10.7	70	9.9	11.2	9.9	35.5	7.9	7.9
15	38	82	9.8	9.2	11.1	94	9.6	10.7	9.3	14.3	7.6	7.4
16	12.0	92	9.8	9.2	25	55	*9.2	9.0	9.0	9.9	9.4	7.4
17	11.2	35.5	9.8	10.9	9.9	72	9.0	8.8	9.0	14.0	8.8	8.1
18	15.8	63	12.2	9.8	9.0	120	8.8	8.5	8.8	23	7.6	8.2
19	11.2	48	9.5	9.2	9.8	212	8.8	8.8	8.5	33.5	7.4	7.4
20	32.5	25	9.5	9.2	121	95	8.8	17.5	8.5	31.5	7.4	7.4
21	13.2	15.1	9.5	9.2	58	40	8.8	10.5	8.5	31	7.4	7.4
22	10.6	*12.6	9.8	9.0	12.6	25	13.3	12.0	8.5	31.5	7.4	7.2
23	13.3	11.6	9.8	9.0	10.6	103	9.3	11.3	8.5	31	7.4	15.3
24	17.6	16.9	10.2	9.0	9.8	79	8.8	9.9	8.2	25	7.4	10.1
25	10.9	63	18.8	9.2	9.5	149	8.5	*8.9	8.2	9.9	7.4	13.4
26	10.2	113	13.0	9.0	9.8	223	8.2	8.8	8.2	8.2	7.9	13.0
27	90	39.5	10.9	9.0	9.5	76	8.2	10.4	31.5	7.9	7.4	13.4
28	54	22.5	25.5	9.0	9.5	95	8.5	71	20	7.9	7.2	46
29	19.4	24.5	11.2	9.2	10.0	51	39	-	9.0	7.6	7.4	54
30	29	22	10.9	9.2	240	32	156	-------	8.8	7.9	7.2	*15.9
31	39	65	-------	11.9	-------	24.5	25.5	-------	8.5	-------	7.4	-------
Total	772.6	2,117.1	613.6	295.3	819.7	5,549.5	518.8	335.2	365.8	453.1	262.0	409.0
Mean:												
mgd	24.9	68.3	20.5	9.53	27.3	179	16.7	12.0	11.8	15.1	8.45	13.6
cfs	38.5	106	31.7	14.7	42.2	277	25.8	18.6	18.3	23.4	13.1	21.0
Ac-ft	2,370	6,500	1,880	906	2,520	17,030	1,590	1,030	1,120	1,390	804	1,260

Calendar year 1957: Max 2,290 Min 9.0 Mean(mgd) 59.7 Mean(cfs) 92.4 Ac-ft 66,870
Fiscal year 1957-58: Max 2,290 Min 7.2 Mean(mgd) 34.3 Mean(cfs) 53.1 Ac-ft 38,400

Peak discharge (base, 2,300 mgd).--Dec. 1 (8:30 p.m.) 5,560 mgd (8,600 cfs), 9.64 ft.

* Discharge measurement made on this day.

600. South Fork Wailua River near Lihue

Location.--Lat 22°02'10", long 159°22'55", on right bank 0.3 mile upstream from Wailua Falls and 5 miles north of Lihue. Prior to June 24, 1958, at site 10 ft downstream.
Drainage area.--22.4 sq mi.
Records available.--December 1911 to June 1957, August, September 1957, November 1957 to February 1958, June 1958.
Gage.--Water-stage recorder. Altitude of gage is 230 ft (by barometer). Prior to Nov. 18, 1918, at site 0.3 mile upstream at different datum. Nov. 18, 1918, to June 30, 1957, at site 10 ft downstream from present site at datum 2.48 ft higher. July 1, 1957, to June 23, 1958, at site 10 ft downstream at present datum.
Average discharge.--35 years (1921-24, 1925-57), 67.0 mgd (104 cfs).
Extremes.--1956-57: Maximum discharge during fiscal year, 12,500 mgd (19,300 cfs) Jan. 17 (gage height, 8.96 ft), from rating curve extended above 4,200 mgd by logarithmic plotting; minimum, 1.7 mgd (2.6 cfs) June 15-19, 24-30.
1957-58: Maximum discharge during fiscal year, 6,550 mgd (10,100 cfs) Dec. 1 (gage height, 16.05 ft); minimum not determined.
1911-58: Maximum discharge, 30,200 mgd (46,700 cfs) Nov. 12, 1955 (gage height, 11.52 ft), from rating curve extended above 4,200 mgd by logarithmic plotting; minimum, 1.09 mgd (1.69 cfs) Sept. 21, 1953.
Remarks.--Records good prior to Oct. 18, 1956, fair thereafter except for periods of doubtful or no gage-height record, which are poor. Several ditches divert about 20 mgd for irrigation of cane lands above station.
Revisions (fiscal years).--WSP 1249: 1941-47(M), 1948-51(P).

Rating tables, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)
(Shifting-control method used Feb. 26 to Mar. 25, 1957)

July 1 to Oct. 18, 1956				Oct. 19, 1956, to Mar. 25, 1957				July 1, 1957, to June 30, 1958			
0.6	1.82	2.0	47	0.8	3.2	2.5	90	1.5	2.2	6.0	426
.8	3.2	2.5	111	1.0	5.2	3.0	179	1.8	6.6	8.0	875
1.0	5.2	3.0	225	1.3	10.4	4.0	540	2.1	14.0	10.0	1,620
1.3	10.6	3.5	395	1.6	19.1	5.0	1,300	2.5	29	12.0	2,750
1.6	20.5			2.0	39	6.0	2,650	3.0	56	13.0	3,480
								4.0	140		

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.55	2.65	4.8	3.75	60	173	19.1	95	7.5	*3.4	3.4	2.2
2	3.55	2.6	3.9	3.75	54	94	17.0	179	16.4	5.0	3.4	2.2
3	3.4	2.45	4.1	*3.65	49	53	12.2	1,450	34	3.4	3.4	2.1
4	3.1	8.1	3.4	228	61	46	8.4	1,400	15.5	3.4	3.4	2.1
5	3.1	5.3	3.2	80	66	43	8.4	659	5.8	3.3	3.5	2.0
6	3.2	5.8	3.55	18.4	45	*679	13.4	234	5.2	3.3	3.4	*1.9
7	4.2	3.05	4.0	10.2	42	199	32	201	5.0	3.3	3.3	1.9
8	25	260	4.1	6.6	49	99	122	177	4.9	*3.2	3.2	1.9
9	110	291	3.75	5.5	38	82	127	113	4.9	3.2	3.2	1.9
10	22	124	3.2	5.3	37	357	*63	100	4.9	3.2	3.1	1.9
11	4.4	44	2.75	5.3	35	123	200	150	5.0	3.2	3.0	1.9
12	3.05	61	3.0	5.5	27.5	89	45	133	5.1	3.2	400	1.8
13	*23	*17.1	3.3	5.0	*176	73	121	685	5.5	3.2	10	1.8
14	4.8	7.3	22	117	226	63	204	209	6.7	42	15	1.8
15	5.6	17.9	62	227	258	87	*568	113	6.7	10	6	1.7
16	16.2	5.6	97	152	138	155	113	96	5.0	5.0	4.0	1.7
17	4.9	4.9	37.5	288	243	134	2,290	78	4.9	3.4	3.7	1.7
18	3.1	45	16.5	373	107	95	1,300	53	*5.5	3.4	3.4	*1.7
19	11.8	21	8.5	337	94	83	258	47	5.2	3.9	3.2	1.7
20	8.3	16.5	5.0	126	103	69	181	65	4.9	100	3.1	1.8
21	3.4	5.2	4.2	119	276	44	357	57	4.8	10	3.0	1.8
22	8.0	4.4	3.9	166	117	46	267	48	4.6	5.0	3.4	1.8
23	8.5	4.0	3.65	395	76	44	148	45	4.3	7	3.2	1.8
24	3.0	3.75	3.55	242	60	38.5	148	42	4.2	*30	3.1	1.7
25	2.7	3.55	3.45	89	57	38	100	36.5	3.9	20	3.0	1.7
26	2.7	3.45	3.45	78	56	33	75	7.9	3.8	7	2.8	1.7
27	3.0	3.2	3.4	81	64	29.5	64	*6.3	3.8	3.4	2.7	1.7
28	2.7	3.1	3.2	70	65	36	35	7.1	3.7	4.0	2.6	1.7
29	2.5	3.0	3.4	50	51	37	22	-	3.6	3.5	2.5	1.7
30	2.75	3.45	3.55	102	311	25	894	-------	3.5	3.4	2.4	1.7
31	2.5	15.9	-------	123	-------	22	96	-------	3.4	-------	2.3	-------
Total	308.00	998.25	331.30	3,515.95	3,041.5	3,189.0	7,908.5	6,486.8	202.2	305.3	515.7	55.0
Mean:												
mgd	9.94	32.2	11.0	113	101	103	255	232	6.52	10.2	16.6	1.83
cfs	15.4	49.8	17.0	175	156	159	395	359	10.1	15.8	25.7	2.83
Ac-ft	945	3,060	1,020	10,790	9,330	9,790	24,270	19,910	621	937	1,580	169

Calendar year 1956: Max 2,930 Min 2.45 Mean(mgd) 95.7 Mean(cfs) 148 Ac-ft 107,400
Fiscal year 1956-57: Max 2,290 Min 1.7 Mean(mgd) 73.6 Mean(cfs) 114 Ac-ft 82,420

Peak discharge (base, 3,700 mgd).--Jan. 17 (10 p.m.) 12,500 mgd (19,300 cfs), 8.96 ft; Jan. 30 (2:30 a.m.) 11,500 mgd (17,800 cfs), 8.79 ft; Feb. 3 (7:30 p.m.) 6,020 mgd (9,310 cfs), 7.38 ft.

* Discharge measurement made on this day.
Note.--No gage-height record Mar. 26 to June 30; discharge estimated on basis of records for stations on nearby streams.

600. South Fork Wailua River near Lihue--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1		-	129		-	*2,870	89					-
2		-	a61		-	*1,250	70					-
3		a54	147		-	348	-					-
4		a234	a78		-	160	-					-
5		a64	-		-	110	-					-
6		a96	-		-	93	-					-
7		527	-		-	85	-					-
8		130	-		-	-	-					-
9		a21	-		-	-	-					-
10		-	-		-	-	-					-
11		-	-		-	-	-					-
12		-	-		-	-	-					-
13		a112	-		-	-	-					-
14		a12.6	-		-	-	-					-
15		a65	-		-	a66	-					-
16		a130	-		-	-	-					-
17		a57	-		-	a55	-					-
18		98	-		-	a86	-					-
19		a66	-		-	a105	-					-
20		a19.9	-		a236	a77	-					-
21		-	-		a167	-	-					-
22		-	-		-	-	-					-
23		-	-		-	a134	-					-
24		-	-		-	191	-					3.4
25		a116	-		-	275	-					3.3
26		241	-		-	220	-					3.4
27		a97	-		-	130	-					3.55
28		-	-		-	159	-	a129				5.4
29		-	-		-	110	-	-				23
30		-	-		*240	106	90	-------				5.6
31		a73	-------		-------	85	-	-------		-------		-------
Total		-	-	-	-	-	-	-	-	-	-	-
Mean:												
mgd		-	-	-	-	-	-	-	-	-	-	-
cfs		-	-	-	-	-	-	-	-	-	-	-
Ac-ft		-	-	-	-	-	-	-	-	-	-	-

Calendar year	. Max	Min	Mean(mgd)	Mean(cfs)	Ac-ft
Fiscal year	: Max	Min	Mean(mgd)	Mean(cfs)	Ac-ft

Peak discharge (base, 3,700 mgd).--Dec. 1 (10 p.m.) 6,550 mgd (10,100 cfs), 16.05 ft.

* Discharge measurement made on this day.
a Doubtful or no gage-height record; discharge estimated on basis of recorder graph.
Note.--Data insufficient to estimate discharge for days for which no figures are given.

610. North Wailua ditch near Lihue

Location.--Lat 22°03'40", long 159°27'55", on left bank 300 ft downstream from intake diversion dam on North Fork Wailua River, 8 miles west of Wailua, and 8.5 miles northwest of Lihue.

Records available.--July 1932 to June 1958 in reports of Geological Survey. October 1925 to June 1932 in files of Lihue Plantation Co.

Gage.--Water-stage recorder and sharp-crested weir. Datum of gage is 1,105.45 ft above mean sea level (levels by Lihue Plantation Co.).

Average discharge.--26 years (1932-58), 12.0 mgd (18.6 cfs).

Extremes.--1932-58: Maximum daily discharge, 38 mgd (59 cfs) Dec. 21, 1933, Apr. 24, 1934; no flow at times.

Remarks.--Records good. Water used for power and irrigation in vicinity of Lihue.

Revisions (fiscal years).--WSP 770: 1933.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	11.3	11.7	8.2	12.3	8.8	9.3	12.5	12.8	11.6	10.7	13.8	11.3
2	11.4	11.0	8.2	11.9	8.8	8.8	12.7	13.1	11.6	12.7	13.4	11.3
3	11.6	11.6	8.2	12.5	8.5	8.9	12.2	14.9	11.6	13.6	13.4	11.5
4	11.6	13.4	9.6	11.8	9.3	9.3	12.8	11.3	11.6	13.8	13.4	11.0
5	11.6	12.8	11.6	8.0	8.8	11.0	14.3	8.5	11.6	12.5	13.7	11.0
6	12.5	12.2	11.3	9.9	8.8	11.1	14.9	7.5	11.3	12.5	13.4	11.0
7	11.6	11.6	9.6	9.6	9.0	9.1	15.3	6.4	11.3	13.7	13.4	11.0
8	12.6	12.0	9.9	9.6	8.8	10.2	17.2	8.7	11.3	13.4	12.9	10.7
9	11.9	10.2	9.9	9.7	8.5	10.7	14.9	8.5	11.3	12.5	12.8	10.7
10	11.8	10.7	10.7	10.0	8.5	8.9	15.2	8.5	12.5	11.9	12.8	10.5
11	13.7	9.9	11.3	10.1	8.8	6.7	13.0	9.1	13.4	11.6	14.9	10.5
12	13.7	9.9	11.1	9.9	9.9	8.9	11.3	8.8	13.6	11.9	17.0	10.5
13	13.3	9.6	11.0	10.5	9.9	11.6	11.9	10.2	13.4	14.3	14.0	11.1
14	12.5	11.7	11.3	11.6	9.4	11.6	12.5	8.8	13.7	14.3	13.1	10.5
15	12.2	12.1	11.9	11.0	9.9	12.5	11.6	10.2	12.8	14.9	12.4	12.6
16	12.5	11.3	12.8	10.5	9.1	12.8	11.0	11.9	12.5	15.9	13.4	13.1
17	11.9	11.9	11.9	11.9	9.1	12.8	12.1	11.9	14.6	*14.4	13.1	12.8
18	12.5	12.5	10.8	11.1	8.8	11.9	6.5	11.6	13.1	13.7	13.1	12.7
19	12.2	11.3	10.2	11.0	9.1	12.2	2.7	11.6	13.1	16.5	13.1	14.5
20	12.2	11.3	11.3	11.0	9.4	11.3	3.45	11.6	12.3	14.9	12.8	14.0
21	11.6	11.0	11.3	10.7	9.7	11.3	8.1	11.6	11.9	14.3	12.8	14.1
22	11.9	11.3	11.0	11.0	8.8	11.3	.75	11.6	11.6	13.4	14.0	12.2
23	11.6	11.3	11.0	11.7	8.8	11.3	5.8	11.6	11.6	15.3	13.1	11.3
24	11.6	11.6	11.0	8.7	8.8	11.3	13.1	11.6	11.3	14.2	12.5	11.0
25	11.3	11.3	11.0	11.3	8.8	11.3	12.5	11.6	11.3	14.3	12.2	11.0
26	11.3	11.3	11.3	12.2	8.5	11.9	12.2	11.6	11.0	13.7	12.2	11.0
27	11.9	11.3	11.6	13.1	8.8	12.8	12.2	11.6	10.7	13.1	11.9	10.7
28	11.3	11.3	11.6	13.1	10.8	14.9	11.9	12.2	10.7	14.0	11.6	10.7
29	11.3	11.1	11.6	12.2	*11.6	13.4	13.2	-	10.7	14.6	11.3	12.5
30	11.9	11.4	12.8	11.3	11.0	12.8	4.7	-------	11.0	14.0	11.6	12.5
31	11.3	11.7	-------	9.1	-------	12.2	6.1	-------	11.0	-------	11.6	-------
Total	371.6	353.3	325.0	338.3	276.8	344.1	338.60	299.3	371.0	410.6	404.7	349.3
Mean:												
mgd	12.0	11.4	10.8	10.9	9.23	11.1	10.9	10.7	12.0	13.7	13.1	11.6
cfs	18.6	17.6	16.7	16.9	14.3	17.2	16.9	16.6	18.6	21.2	20.3	17.9
Ac-ft	1,140	1,080	997	1,040	849	1,060	1,040	919	1,140	1,260	1,240	1,070

Calendar year 1956: Max 15.5 Min 0 Mean(mgd) 10.5 Mean(cfs) 16.2 Ac-ft 11,740
Fiscal year 1956-57: Max 17.2 Min 0.75 Mean(mgd) 11.5 Mean(cfs) 17.8 Ac-ft 12,840

* Discharge measurement made on this day.

610. North Wailua ditch near Lihue--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	14.1	12.5	13.1	12.5	13.1	19.1	9.6	12.5	12.2	10.8	13.5	10.9
2	15.8	12.2	13.4	12.2	11.9	15.6	9.3	12.2	11.6	10.7	14.1	10.5
3	12.5	14.0	14.3	11.9	11.9	12.6	9.9	11.9	10.5	12.5	14.5	10.2
4	11.9	14.3	13.4	11.6	11.1	7.5	10.2	11.9	10.5	13.5	13.7	10.7
5	12.6	12.8	12.2	11.3	11.0	11.9	10.2	11.6	10.5	12.2	13.4	12.2
6	12.8	14.9	11.9	12.8	11.9	12.2	10.2	11.3	10.2	11.6	12.5	10.5
7	12.8	14.7	11.9	12.2	14.6	11.9	10.5	11.0	10.2	12.3	12.2	10.2
8	12.2	14.0	11.9	11.6	12.8	11.6	10.2	10.7	10.2	12.0	13.5	13.4
9	11.9	12.8	11.6	11.3	13.1	12.2	10.2	10.7	12.1	11.0	13.1	14.9
10	12.8	12.2	11.9	12.2	15.9	12.2	10.5	10.7	11.5	11.9	13.4	15.3
11	13.4	12.2	11.6	11.6	14.3	12.1	11.3	*10.7	11.4	11.4	13.1	15.3
12	12.2	12.2	11.6	11.3	14.1	11.9	11.0	10.7	11.6	11.4	13.1	15.6
13	11.9	12.0	11.3	11.3	12.8	11.9	11.0	10.5	11.6	12.8	12.8	13.4
14	14.3	7.9	11.6	11.3	12.5	11.9	11.0	11.7	10.7	13.5	*12.2	12.2
15	*12.8	12.2	11.3	11.9	13.6	11.9	10.8	10.5	10.5	12.8	13.6	12.5
16	12.2	12.2	11.3	11.4	14.1	11.6	10.7	10.5	10.2	12.2	12.8	12.8
17	11.9	11.6	12.5	12.8	13.1	12.2	10.7	10.5	10.2	12.9	11.6	12.6
18	12.5	12.2	12.2	12.8	*12.5	10.2	10.7	10.2	10.2	12.2	11.3	11.6
19	12.2	11.9	11.6	11.6	12.5	11.0	10.7	10.6	9.9	11.6	10.5	11.0
20	12.8	11.8	11.3	11.0	16.1	9.9	11.0	12.5	9.9	11.6	11.0	10.7
21	12.2	11.6	11.3	10.7	13.7	10.2	12.5	11.0	9.9	11.0	11.9	11.3
22	11.9	11.3	11.0	10.7	13.1	9.9	12.8	11.6	9.9	11.0	11.6	10.7
23	12.4	11.6	11.0	10.7	12.8	11.3	11.0	11.6	10.2	10.5	11.3	14.9
24	12.5	12.8	12.2	11.0	13.7	11.0	10.7	11.6	10.5	10.5	11.3	14.3
25	11.9	14.0	13.4	11.9	13.4	10.5	10.5	10.5	*11.6	10.5	11.3	15.3
26	12.8	14.0	12.8	10.2	12.8	10.4	10.5	10.3	10.8	11.3	12.5	20
27	14.6	12.8	12.5	10.2	12.5	10.2	10.5	13.8	14.6	12.5	11.6	14.3
28	13.4	12.5	13.7	9.9	12.5	10.5	13.4	13.7	12.8	12.2	11.0	20.5
29	12.8	12.8	12.5	10.2	14.0	9.9	14.2	-	12.6	11.3	10.7	19.4
30	13.4	12.8	13.4	11.0	16.2	9.9	15.3	-------	12.2	12.2	10.7	17.9
31	13.4	14.0	-------	14.6	-------	10.2	13.1	-------	11.9	-------	10.5	-------
Total	396.9	390.6	365.7	357.7	397.6	355.4	344.2	317.0	342.7	353.9	380.3	405.1
Mean:												
mgd	12.8	12.6	12.2	11.5	13.3	11.5	11.2	11.3	11.1	11.8	12.3	13.5
cfs	19.8	19.5	18.9	17.8	20.6	17.8	17.2	17.5	17.2	18.3	19.0	20.9
Ac-ft	1,220	1,200	1,120	1,100	1,220	1,090	1,060	973	1,050	1,090	1,170	1,240

Calendar year 1957: Max 19.1 Min 0.75 Mean(mgd) 12.2 Mean(cfs) 18.9 Ac-ft 13,620
Fiscal year 1957-58: Max 20.5 Min 7.5 Mean(mgd) 12.1 Mean(cfs) 18.7 Ac-ft 13,530

* Discharge measurement made on this day.

620. Stable storm ditch near Lihue

Location.--Lat 22°04'00", long 159°26'45", on left bank 100 ft downstream from intake, 7.8 miles northwest of Lihue, and 8.2 miles west of Kapaa.

Records available.--December 1936 to June 1958.

Gage.--Water-stage recorder and sharp-crested weir. Altitude of gage is 710 ft (by barometer).

Average discharge.--21 years (1937-58), 7.31 mgd (11.3 cfs).

Extremes.--1936-58: Maximum daily discharge, 46 mgd (71 cfs) Apr. 3, 1948; no flow at times each year.

Remarks.--Records good. Ditch diverts water from North Fork Wailua River for irrigation of sugarcane in vicinity of Lihue. Flow regulated by headgates.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	13.8	16.6	0.15	10.6	0	0.15	0	0.15	0	4.9	22	18.3
2	14.7	10.6	.15	8.2	0	.08	.04	.15	0	12.2	29.5	18.3
3	14.9	12.8	.08	12.4	0	.08	.15	.23	0	12.0	29.5	19.0
4	13.5	30	6.9	20.5	0	.08	.09	.31	0	18.2	29.5	18.3
5	15.4	29.5	11.3	.23	0	0	0	.08	0	7.3	29.5	17.4
6	20.5	22	25	.15	0	.23	0	0	4.5	6.2	29.5	17.1
7	16.9	14.6	14.9	.15	0	.15	0	0	6.6	11.9	26	*17.1
8	22	9.9	10.9	8.6	0	.08	.15	0	6.6	13.2	24.5	16.8
9	26.5	.31	9.6	17.3	0	0	.08	0	6.6	13.8	24.5	16.8
10	22	.23	8.4	19.5	0	.08	0	0	6.6	23	24.5	16.6
11	15.4	.23	7.5	19.7	0	.08	.08	0	11.5	21.5	30.5	16.6
12	13.5	.23	7.3	17.4	0	0	.08	0	*12.0	21.5	32	16.6
13	17.3	.23	6.8	18.3	.08	0	.15	.15	12.6	26.5	.31	16.8
14	.23	.23	7.7	33	.08	0	.23	.08	13.3	31.5	.31	16.6
15	.23	.15	13.4	11.7	.23	0	.23	.08	8.2	31	.23	21
16	.23	.08	25	.23	.15	0	.15	0	6.4	33	21	24
17	.23	.08	19.3	.23	.23	0	.70	0	17.6	33	28	23
18	20	.08	23	.23	.23	0	.40	0	9.1	33	26	19.8
19	23	.08	18.3	.15	.15	0	.23	0	8.9	40	24.5	26.5
20	23	0	13.0	.15	.15	0	.23	0	7.0	13.3	23	29.5
21	16.0	8.6	10.9	.15	.15	0	.23	0	6.4	.23	23	29.5
22	19.6	11.9	9.9	.08	.15	0	.15	0	6.2	20.5	28	19.8
23	13.5	10.9	9.4	.31	.15	0	.15	0	5.7	34.5	23	18.3
24	14.0	11.9	8.9	.15	.08	0	.08	0	5.7	36.5	21.5	17.3
25	12.2	9.6	8.9	.08	.08	0	.08	0	5.7	11.8	19.8	19.8
26	11.4	9.1	7.9	.08	0	0	.08	0	5.5	.40	19.8	19.9
27	16.8	8.7	7.7	.08	0	0	0	0	5.3	.40	19.8	18.3
28	11.4	8.7	7.0	0	0	0	0	0	5.3	.40	19.8	18.3
29	10.9	8.7	6.6	0	0	0	0	-	5.1	.40	19.8	23
30	15.6	9.1	12.3	0	.08	0	.23	-------	4.9	.40	19.8	21.5
31	10.9	16.9	-------	0	-------	0	.15	-------	4.9	-------	18.3	-------
Total	445.62	262.03	318.18	199.65	1.99	1.01	4.14	1.23	198.2	512.53	687.45	591.8
Mean:												
mgd	14.4	8.45	10.6	6.44	0.066	0.033	0.134	0.044	6.39	17.1	22.2	19.7
cfs	22.3	13.1	16.4	9.96	0.102	0.051	0.207	0.068	9.89	26.5	34.3	30.5
Ac-ft	1,370	804	976	613	6.1	3.1	13	3.8	608	1,570	2,110	1,820

Calendar year 1956: Max 33 Min 0 Mean(mgd) 4.69 Mean(cfs) 7.25 Ac-ft 5,270
Fiscal year 1956-57: Max 40 Min 0 Mean(mgd) 8.83 Mean(cfs) 13.7 Ac-ft 9,900

* Discharge measurement made on this day.

620. Stable storm ditch near Lihue--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	27	0.15	0.15	27	30	1.92	0	0.23	0	0	0	6.0
2	33	.23	.08	24.5	23	.31	0	.15	0	.10	0	5.5
3	23	.23	.08	23	23	.15	0	.15	0	.40	0	5.5
4	23	.23	.15	11.7	19.8	.15	0	0	0	.60	0	9.1
5	29.5	.23	.15	.23	19.8	.15	0	0	0	.70	0	23
6	31	.23	.15	.23	21.5	.15	0	.04	0	.70	0	16.8
7	31	.23	.23	15.5	29.5	.08	0	.23	0	.70	0	17.7
8	29.5	.23	.23	21.5	26	.08	0	.15	0	.70	0	23
9	8.5	.15	.23	19.8	26	0	.23	.15	0	.70	0	29.5
10	.31	.15	.15	24.5	34.5	0	.23	.08	0	.70	0	30.5
11	.31	.15	.15	21.5	18.6	0	.15	.15	0	.70	0	33
12	.23	.15	.08	19.8	.23	0	.15	.23	0	.70	0	33
13	.23	.15	18.6	19.8	.23	0	.08	.23	0	.70	0	24.5
14	.23	.08	26	19.8	.23	0	0	.23	0	.70	0	21.5
15	.15	.08	24.5	24.5	.23	0	.08	.23	0	.50	0	21.5
16	.08	.08	24.5	21.5	.23	0	5.3	.23	0	.31	.23	23
17	0	.08	31	28	.23	0	7.3	.23	0	.23	.23	23
18	0	0	33	28	.23	0	6.6	.23	0	.15	.23	19.8
19	0	.08	28	21.5	.23	.08	6.8	.23	0	.15	.23	19.8
20	14.8	0	26	21.5	.40	.08	6.6	.23	0	0	.15	18.3
21	26	0	24.5	19.8	.23	0	9.3	.15	0	0	.23	19.8
22	21.5	0	23	18.3	.23	0	11.0	.15	0	0	.23	18.3
23	6.0	0	21.5	18.3	.23	0	6.0	.15	0	0	.15	28.5
24	.20	0	24.5	19.8	.23	.15	5.5	.15	0	0	.08	24.5
25	15.9	0	32	21.5	.23	.15	5.5	.08	0	0	.08	27
26	27	.08	29.5	18.3	.15	.08	5.3	0	0	0	0	33
27	12.2	0	26	18.3	.15	0	5.3	.23	.15	.15	0	26
28	.31	.08	34.5	18.3	.15	0	16.6	.23	0	.08	0	32.5
29	.23	.08	28	18.3	.23	0	20.5	-	0	0	3.35	33
30	.23	.08	31	20.5	.23	0	34.5	-------	0	.08	5.1	29.5
31	.23	.15	-------	36.5	-------	0	7.7	-------	0	-------	5.3	-------
Total	361.64	3.38	487.93	621.76	276.00	3.53	160.72	4.54	0.15	9.75	15.59	676.1
Mean:												
mgd	11.7	0.109	16.3	20.1	9.20	0.114	5.18	0.162	0.005	0.325	0.503	22.5
cfs	18.1	0.169	25.2	31.1	14.2	0.176	8.01	0.251	0.008	0.503	0.778	34.8
Ac-ft	1,110	10	1,500	1,910	847	11	493	14	0.5	30	48	2,070

Calendar year 1957: Max 40 Min 0 Mean(mgd) 10.3 Mean(cfs) 15.9 Ac-ft 11,510
Fiscal year 1957-58: Max 36.5 Min 0 Mean(mgd) 7.18 Mean(cfs) 11.1 Ac-ft 8,040

630. North Fork Wailua River at altitude 650 ft, near Lihue

Location.--Lat 22°03'50", long 159°26'20", on right bank 0.5 mile downstream from intake of Stable storm ditch and 7.8 miles northwest of Lihue.
Drainage area.--6.6 sq mi.
Records available.--September 1914 to June 1958.
Gage.--Water-stage recorder. Altitude of gage is 650 ft (from topographic map). Prior to Sept. 9, 1944, at same site at datum 2.0 ft higher.
Average discharge.--37 years (1921-58), 46.4 mgd (71.8 cfs).
Extremes.--1956-57: Maximum discharge during fiscal year, 2,950 mgd (4,560 cfs) Jan. 29 (gage height, 9.20 ft), from rating curve extended above 500 mgd on basis of slope-area measurement at 10.65 ft; minimum daily, 0.26 mgd (0.40 cfs) June 13, 14.

1957-58: Maximum discharge during fiscal year, 2,220 mgd (3,430 cfs) Dec. 1 (gage height, 8.30 ft), from rating curve extended above 500 mgd as explained above; minimum, 0.38 mgd (0.59 cfs) Oct. 27-29, Nov. 5.

1914-58: Maximum discharge, 8,550 mgd (13,200 cfs) Nov. 12, 1955 (gage height, 13.53 ft), from rating curve extended above 500 mgd as explained above; minimum, 0.22 mgd (0.34 cfs) Oct. 27, 1953.

Revisions.--The figures of maximum discharge for some fiscal years have been revised, as shown in the following table. They supersede figures published in the water-supply papers indicated.

WSP	Fiscal year	Date	Discharge (mgd)	Discharge (cfs)	Gage height (feet)
430	1915	Sept.26, 1914	3,700	5,720	9.5
445	1916	Jan. 26, 1916	2,230	3,450	7.9
465	1917	Dec. 18, 1916	2,130	3,300	7.45
485	1918	Mar. 12, 1918	2,440	3,780	7.78
515	1919	Nov. 25, 1918	(†)	(†)	-
516	1920	Jan. 16, 1920	2,840	4,390	8.30
535	1921	Jan. 16, 1921	2,280	3,530	7.64
555	1922	Feb. 19, 1922	1,250	1,930	5.68
575	1923	Sept.11, 1922	3,100	4,800	8.25
595	1924	Dec. 23, 1923	1,750	2,710	6.50
615	1925	Feb. 11, 1925	4,000	6,190	9.10
635	1926	Sept.13, 1925	2,100	3,250	7.04
655	1927	Apr. 15, 1927	2,000	3,130	6.86
985	1943	June 2, 1943	6,200	9,590	9.96
1015	1944	Mar. 3, 1944	3,000	4,640	7.27
1045	1945	Apr. 9, 1945	1,250	1,930	6.98
1065	1946	Dec. 5, 1945	1,980	3,060	8.10
1095	1947	Nov. 14, 1946	2,620	4,050	8.92
1125	1948	Apr. 1, 1948	4,060	6,280	10.31
1155	1949	Feb. 7, 1949	2,800	4,330	9.12
1185	1950	Dec. 17, 1949	5,940	9,190	11.78
1219	1951	Aug. 16, 1950	5,940	9,190	11.85
1249	1952	Jan. 19, 1952	3,880	6,000	9.77
1289	1953	Mar. 4, 1953	1,200	1,860	6.53
1349	1954	Jan. 1, 1954	3,770	5,830	9.72
1399	1955	Aug. 5, 1954	3,990	6,170	9.90
1449	1956	Nov. 12, 1955	8,500	13,200	13.53

† Discharge uncertain.

Remarks.--Records good except those for periods of doubtful or no gage-height record, which are fair. Since 1925, Hanalei tunnel has discharged its water into river, and North Wailua and Stable storm ditches have diverted water above station for irrigation in vicinity of Lihue.
Revisions (fiscal years).--WSP 555: 1921. The figures of peak discharge for the water years 1948-56 have been revised as shown below, superseding those published in WSP 1125, 1155, 1185, 1219, 1249, 1289, 1349, 1399, and 1449.

Revised peak discharge.--1947-48: Mar. 24 (8 a.m.) 2,300 mgd (3,560 cfs); Apr. 1 (7 p.m.) 4,060 mgd (6,280 cfs); May 31 (7 a.m.) 1,700 mgd (2,630 cfs); June 29 (1:30 p.m.) 1,840 mgd (2,850 cfs).

1948-49: Aug. 17 (3 p.m.) 2,380 mgd (3,680 cfs); Dec. 1 (11 a.m.) 1,380 mgd (2,140 cfs); Jan. 8 (6 p.m.) 1,640 mgd (2,540 cfs); Jan. 18 (1:30 p.m.) 2,380 mgd (3,680 cfs); Feb. 7 (12:30 p.m.) 2,600 mgd (4,330 cfs).

1949-50: Dec. 17 (2 p.m.) 5,940 mgd (9,190 cfs), 11.78 ft; Jan. 6 (8 p.m.) 2,620 mgd (4,050 cfs), 8.86 ft; May 17 (3 p.m.) 2,140 mgd (3,310 cfs), 8.28 ft.

1950-51: Aug. 16 (time unknown) 5,940 mgd (9,190 cfs), 11.85 ft; Feb. 20 (1 a.m.) 1,510 mgd (2,340 cfs), 7.42 ft.

1951-52: Sept. 8 (2 p.m.) 1,690 mgd (2,610 cfs), 7.38 ft; Jan. 2 (10 p.m.) 2,910 mgd (4,500 cfs), 8.92 ft; Jan. 19 (7:30 p.m.) 3,880 mgd (6,000 cfs), 9.77 ft; Mar. 20 (5:30 p.m.) 1,690 mgd (2,610 cfs), 7.35 ft.

1952-53: No peak above base.

1953-54: Jan. 1 (5 a.m.) 3,770 mgd (5,830 cfs), 9.72 ft; Feb. 22 (8 p.m.) 2,100 mgd (3,250 cfs), 8.00 ft; Feb. 26 (1 a.m.) 1,450 mgd (2,240 cfs), 6.95 ft; Feb. 28 (7:30 p.m.) 2,100 mgd (3,250 cfs), 7.96 ft.

1954-55: July 13 (7 a.m.) 1,630 mgd (2,520 cfs), 7.30 ft; Aug. 5 (2 p.m.) 3,990 mgd (6,170 cfs), 9.90 ft; Nov. 28 (6:30 p.m.) 3,660 mgd (5,660 cfs), 9.64 ft; Dec. 6 (2 a.m.) 1,820 mgd (2,820 cfs), 7.55 ft; Feb. 6 (9 a.m.) 3,440 mgd (5,320 cfs), 9.42 ft.

1955-56: Nov. 12 (10 a.m.) 8,550 mgd (13,200 cfs), 13.53 ft; Dec. 19 (4 p.m.) 1,910 mgd (2,960 cfs), 7.88 ft; Jan. 11, 1,610 mgd (2,490 cfs), 7.47 ft; Jan. 25 (11 a.m.) 5,510 mgd (8,530 cfs), 11.45 ft; Feb. 16 (2 p.m.) 2,650 mgd (4,100 cfs), 8.87 ft; Feb. 25 (2:30 a.m.) 1,530 mgd (2,370 cfs), 7.35 ft.

630. North Fork Wailua River at altitude 650 ft, near Lihue--Continued

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.23	3.5	18.9	1.15	28.5	79	9.0	110	9.0	0.36	13.2	0.51
2	1.23	.99	13.4	1.07	26	37	9.8	160	8.3	8.5	2.3	.56
3	1.15	.59	13.1	1.23	21.5	25.5	8.7	380	8.3	12.9	1.96	.51
4	1.07	9.0	5.7	*89	56	21	8.7	400	8.0	*4.4	2.05	.56
5	1.07	5.0	.91	49	28.5	16.9	16.2	240	*7.6	.56	4.6	.51
6	7.2	3.8	4.5	20.5	25	209	16.2	160	3.4	.46	2.55	*.51
7	1.23	.59	1.23	16.9	33.5	41	22.5	95	.66	1.25	.96	.46
8	12.5	84	.83	5.6	22.5	31	89	120	.61	.90	.61	.41
9	40	89	.75	1.62	19.4	37	30.5	48	.56	1.03	.56	.41
10	4.9	75	.67	13.4	17.6	175	*26	48	.56	.90	.56	.41
11	1.15	26.5	.59	2.7	18.0	38.5	50	65	.66	.41	49	.41
12	.91	24.5	.59	1.62	44	31	27.5	55	.78	.36	152	.31
13	*16.9	19.8	.48	13.1	74	22.5	56	180	.84	31.5	48	.26
14	23.5	43	1.07	52	70	21	111	28	3.1	60	65	.26
15	26	36	3.15	56	84	32.5	131	15	.72	60	37.5	1.17
16	30.5	18.9	44	50	38	37.5	32.5	13	.56	74	10.9	1.85
17	20.5	*22	3.15	117	42	35.5	460	13	2.95	33	1.03	.96
18	13.7	37	7.9	100	30	22.5	265	14	.61	14.9	.84	.51
19	15.8	17.3	2.2	111	30	29.5	84	12	.56	60	.84	11.7
20	3.15	14.8	1.74	65	65	18.9	94	9.0	.61	53	.84	3.1
21	.91	5.6	1.39	56	79	16.6	227	10	.56	51	.90	8.3
22	2.45	1.07	1.23	60	32.5	15.1	89	9.0	.51	13.6	8.3	.61
23	.83	1.07	1.15	160	25.5	14.8	60	8.3	.46	38.5	.90	.56
24	.83	.99	1.15	65	22.5	14.1	48	8.3	.46	27.5	.78	.51
25	.75	.99	1.15	37	27.5	12.8	29.5	8.3	.46	60	.78	.51
26	.75	.83	1.15	37	20.5	11.8	24	8.3	.41	53	.72	.56
27	1.97	.75	1.15	46	*24	10.9	21	8.3	.41	45	.66	.56
28	1.07	.75	1.07	44	16.9	23	19.4	12	.36	49	.66	.46
29	1.23	.75	1.07	28.5	14.1	12.5	124	-	.36	53	.61	.84
30	3.8	.83	1.15	56	84	10.1	190	-------	.36	43	.56	.51
31	1.23	49	-------	37	-------	9.5	85	-------	.36	-------	.51	-------
Total	239.51	593.90	136.52	1,394.39	1,120.0	1,113.0	2,464.5	2,237.5	63.09	852.03	410.68	38.80
Mean:												
mgd	7.73	19.2	4.55	45.0	37.3	35.9	79.5	79.9	2.04	28.4	13.2	1.29
cfs	12.0	29.7	7.04	69.6	57.7	55.5	123	124	3.16	43.9	20.4	2.00
Ac-ft	735	1,820	419	4,280	3,440	3,420	7,560	6,870	194	2,610	1,260	119

Calendar year 1956: Max 900 Min 0.48 Mean(mgd) 41.0 Mean(cfs) 63.4 Ac-ft 46,070
Fiscal year 1956-57: Max 460 Min 0.26 Mean(mgd) 29.2 Mean(cfs) 45.2 Ac-ft 32,730

Peak discharge (base, 1,200 mgd).--Dec. 6 (10 a.m.) 2,080 mgd (3,220 cfs), 8.10 ft; Jan. 17 (9:30 p.m.) 2,150 mgd (3,330 cfs), 8.20 ft; Jan. 29 (12 p.m.) 2,950 mgd (4,560 cfs), 9.20 ft.

* Discharge measurement made on this day.

Note.--Doubtful gage-height record Jan. 30 to Mar. 5; discharge estimated on basis of recorder graph and records for station near Kapaa and nearby streams.

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	10.0	41	88	1.12	12.7	706	30	11.0	8.2	5.0	30.5	0.63
2	23.5	35.5	76	.78	.50	296	21.5	8.0	6.6	4.5	27.5	.63
3	.72	104	123	.66	.50	213	*19.0	7.2	5.5	7.4	38.5	.63
4	.56	99	84	9.0	.46	90	18.3	6.6	5.7	18.8	23.5	.58
5	4.1	55	55	20	.42	54	16.0	6.4	6.1	7.1	18.7	5.9
6	8.7	113	45	34.5	.42	49	14.6	6.1	5.7	5.3	11.3	.73
7	7.7	140	41	8.1	38	39.5	13.6	6.1	5.7	6.2	8.7	.68
8	1.49	93	40	.63	2.25	28.5	12.8	5.9	5.7	5.5	18.3	1.84
9	14.4	56	37	*.63	3.25	31.5	12.2	5.9	10.0	4.8	15.3	10.7
10	39	46	*35.5	1.58	52	33	11.3	5.7	60	6.3	17.0	6.9
11	67	40	33.5	.73	37.5	48	10.0	5.7	22	5.5	14.7	12.6
12	31.5	41	32.5	.63	48	42	9.4	5.5	12	5.5	13.0	14.8
13	26.5	109	9.2	.58	28	35	8.9	5.5	8.0	10.5	11.8	.94
14	79	77	1.98	.58	23	39.5	8.7	*6.6	6.4	22	8.4	.83
15	*48	109	1.41	1.11	35.5	44	8.4	5.5	6.0	12.4	20.5	.78
16	32.5	94	1.33	.73	51	24	3.75	5.2	5.8	7.2	*69	.83
17	28.5	76	11.8	1.28	30	50	.78	5.2	5.7	11.2	31	1.78
18	36.5	113	11.9	3.65	23.5	43	.78	5.0	5.6	7.7	26	.88
19	30	94	1.10	.68	21.5	70	.73	4.8	5.6	6.0	17.1	.78
20	30	60	.96	.68	180	35	.78	7.8	5.5	8.0	13.6	.78
21	3.1	52	.84	.58	71	36.5	.94	5.0	5.4	6.4	11.6	.73
22	2.55	45	.84	.54	37.5	30	.88	5.2	5.4	5.5	11.6	.73
23	28.5	41	.78	.50	32.5	96	.58	5.2	5.4	5.3	9.2	8.0
24	37	58	2.25	.50	50	85	.58	5.7	5.2	5.2	8.7	2.7
25	10.3	111	10.4	.50	38	65	.58	4.8	*5.8	5.0	9.4	2.4
26	8.4	125	4.0	.46	33	68	.58	4.4	6.2	5.8	14.4	7.0
27	115	74	.87	.38	32.5	44	.63	23	47	11.1	7.5	2.7
28	67	56	17.3	.38	30	57	9.8	49	18.1	8.6	6.6	22
29	44	71	.78	.42	71	42	41	-	10.3	5.7	3.55	17.5
30	60	67	8.2	.46	189	39	27	-------	7.5	14.5	1.43	5.2
31	60	111	-------	28	-------	39	9.5	-------	6.3	-------	.96	-------
Total	955.52	2,406.5	776.44	120.37	1,173.00	2,572.5	313.59	228.0	324.4	240.0	519.34	133.18
Mean:												
mgd	30.8	77.6	25.9	3.88	39.1	83.0	10.1	8.14	10.5	8.00	16.8	4.44
cfs	47.7	120	40.1	6.00	60.5	128	15.6	12.6	16.2	12.4	26.0	6.87
Ac-ft	2,930	7,390	2,380	369	3,600	7,890	962	700	996	737	1,590	409

Calendar year 1957: Max 706 Min 0.26 Mean(mgd) 38.6 Mean(cfs) 59.7 Ac-ft 43,170
Fiscal year 1957-58: Max 706 Min 0.38 Mean(mgd) 26.7 Mean(cfs) 41.3 Ac-ft 29,950

Peak discharge (base, 1,200 mgd).--Dec. 1 (8:30 p.m.) 2,220 mgd (3,430 cfs), 8.30 ft.

* Discharge measurement made on this day.

Note.--No gage-height record Mar. 8-25; discharge estimated on basis of records for nearby stations.

680. East Branch of North Fork Wailua River near Lihue

Location.--Lat 22°04'10", long 159°25'05", on right bank 1,200 ft upstream from mouth and 7.5 miles northwest of Lihue.

Drainage area.--6.2 sq mi.

Records available.--July 1912 to June 1958.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 500 ft (by barometer). Prior to Oct. 1, 1914, staff gage at site 725 ft downstream at different datum. Oct. 1, 1914, to May 10, 1934, water-stage recorder 75 ft upstream at same datum.

Average discharge.--38 years (1920-58), 30.4 mgd (47.0 cfs).

Extremes.--1955-56: Maximum gage height during fiscal year, 14.7 ft, from floodmarks, Nov. 12 (discharge not determined), minimum daily discharge, 13 mgd (20 cfs) Nov. 7, Dec. 16.

1956-57: Maximum discharge during fiscal year, 1,930 mgd (2,990 cfs) Feb. 13 (gage height, 6.92 ft), from rating curve extended above 600 mgd; minimum, 8.4 mgd (13.0 cfs) June 27, 28.

1957-58: Maximum discharge during fiscal year, 1,330 mgd (2,060 cfs) Dec. 1 (gage height, 6.04 ft), from rating curve extended above 600 mgd; minimum, 7.8 mgd (12.1 cfs) Apr. 19, 20.

1912-58: Maximum gage height, 14.7 ft, from floodmarks, Nov. 12, 1955 (discharge not determined); minimum discharge, 4.4 mgd (6.8 cfs) July 3, 13, 1926.

Remarks.--Records good except those for period of no gage-height record, which are poor.

Revisions (fiscal years).--WSP 770: 1932-33.

Rating tables, July 1, 1955, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

July 1, 1955, to June 12, 1956				June 13, 1956, to Dec. 1, 1957				Dec. 2, 1957, to June 30, 1958			
1.0	8.0	2.0	54	1.0	6.7	2.5	136	1.0	5.8	2.0	62
1.2	14.0	2.5	94	1.2	13.1	3.0	220	1.1	8.0	2.5	119
1.4	21.5	3.0	151	1.5	30	4.0	469	1.3	14.3	3.0	208
1.6	31	3.5	215	2.0	74	5.0	835	1.6	29.5	4.0	469
1.8	42										

Discharge, in million gallons a day, fiscal year July 1955 to June 1956

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	16.6	18.7	22.5	21.5	30	22	36	26	120	36	19	30
2	18.9	17.3	34	32	18	44	26	60	60	24	18	26
3	16.2	122	21.5	25	16	40	22	28	40	22	18	36
4	14.4	26.5	20	33	15	26	20	24	30	20	18	42
5	13.7	23.5	19.3	23	14	24	19	26	28	19	20	46
6	126	27.5	18.1	20.5	14	24	18	44	26	18	28	42
7	25.5	20	17.3	21.5	13	22	18	30	26	18	80	55
8	24.5	23	17.7	21.5	95	20	17	24	36	18	60	30
9	18.1	26.5	17.0	21.5	120	20	19	22	26	24	26	26
10	16.6	33	15.8	18.1	48	22	16	24	24	19	36	32
11	15.1	27	21	17.7	200	28	90	22	22	18	65	30
12	16.6	21.5	17.3	16.2	700	19	170	80	20	20	28	26
13	18.1	21.5	19.3	15.8	100	17	110	80	20	18	24	22.5
14	23	37.5	16.6	17.3	60	15	38	55	20	17	55	21.5
15	36	*33.5	15.5	15.5	40	14	44	46	22	26	50	21
16	37	26.5	21.5	29	80	13	36	340	36	20	24	28
17	27.5	24	15.1	23.5	75	15	28	300	36	46	20	20.5
18	25	32	14.4	16.6	65	14	22	160	22	48	19	22.5
19	21.5	43	14.0	15.8	55	220	18	60	20	50	26	20.5
20	21.5	213	17.6	15.1	42	80	18	44	28	38	24	18.9
21	17.7	56	27	14.4	70	46	19	34	28	28	20	25.5
22	16.2	35	76	14.0	60	38	22	28	30	22	30	26.5
23	15.1	29	48	14.0	65	26	20	90	22	20	36	26
24	15.1	27.5	30	15.1	55	26	100	120	34	19	24	21.5
25	18.9	46	23.5	21.5	38	24	1,000	210	44	18	20	18.4
26	23.5	28	19.7	18.5	28	22	300	130	65	18	30	17.3
27	23.5	25	18.9	32	26	20	95	140	70	36	36	21.2
28	25	28.5	17.3	18.5	36	19	55	70	42	24	90	17.3
29	46	28.5	17.7	48	36	18	140	65	60	20	55	15.9
30	25.5	26.5	40	107	22	24	55	-------	60	20	36	15.9
31	22	23	-------	28.5	-------	170	30	-------	42	-------	32	-------
Total	780.3	1,170.5	693.6	751.6	2,206	1,132	2,621	2,382	1,159	742	1,065	801.9
Mean:												
mgd	25.2	37.8	23.1	24.2	73.5	36.5	84.5	82.1	37.4	24.7	34.4	26.7
cfs	39.0	58.5	35.7	37.4	114	56.5	131	127	57.9	38.2	53.2	41.3
Ac-ft	2,390	3,590	2,130	2,310	6,770	3,470	8,040	7,310	3,560	2,280	3,270	2,460

Calendar year 1955: Max 700 Min 13 Mean(mgd) 37.7 Mean(cfs) 58.3 Ac-ft 42,260
Fiscal year 1955-56: Max 1,000 Min 13 Mean(mgd) 42.4 Mean(cfs) 65.6 Ac-ft 47,580

Peak discharge (base, 1,000 mgd).--Not determined.

* Discharge measurement made on this day.

Note.--No gage-height record Nov. 1 to June 12; discharge estimated on basis of records for nearby stations.

680. East Branch of North Fork Wailua River near Lihue--Continued

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	15.4	14.7	15.4	17.8	29	69	16.4	45	18.4	10.9	25.5	12.4
2	16.5	13.1	12.4	*14.0	28.5	39	16.4	60	17.3	15.0	21	12.0
3	14.0	13.1	12.0	15.9	24.5	30	15.4	341	16.4	20	21	12.0
4	14.0	23	12.0	94	69	26	15.4	*266	15.9	29	22.5	11.7
5	14.0	20	12.4	63	35	24	16.4	158	15.9	12.7	21.5	11.3
6	15.0	16.9	19.6	28	27.5	184	17.3	96	14.5	12.0	22.5	*11.3
7	14.5	14.5	14.5	28	33	51	18.4	96	14.0	16.9	17.8	10.9
8	22.5	114	12.0	20.5	24	37	49	79	14.0	22	16.9	10.9
9	*16.8	212	11.7	26.5	21.5	32.5	34.5	55	14.0	13.6	17.8	10.9
10	14.5	102	11.3	28	20.5	147	29	51	14.0	12.0	16.4	10.2
11	14.5	34	11.3	21.5	20	44	36.5	59	15.9	11.7	19.6	9.9
12	14.0	27.5	10.9	21.5	21.5	36	22.5	52	16.4	11.3	56	9.9
13	23	23	10.6	30	85	31.5	45	221	19.2	11.3	40	9.9
14	16.9	37	30	80	72	30	77	84	21.5	107	64	9.2
15	20	38	70	64	64	40	181	52	15.9	77	33	9.9
16	21.5	*22.5	117	53	41	44	41	45	14.0	74	24.5	10.6
17	17.3	21.5	47	78	56	40	466	43	19.5	59	21	*10.9
18	24.5	29	37	161	37.5	31.5	291	50	*15.0	34.5	19.5	10.2
19	27	20	26	132	38.5	31	109	35.5	14.0	33	18.4	13.2
20	21.5	17.8	21.5	54	105	28.5	89	33	14.0	36	17.3	13.1
21	16.4	16.9	20	48	80	24.5	110	30	13.1	23.5	16.9	14.5
22	17.8	15.9	18.4	44	42	23.5	82	28	12.7	20	19.5	9.9
23	15.0	15.4	17.8	159	34.5	22.5	57	26.5	12.4	38.5	16.4	9.2
24	14.5	15.0	16.9	73	31.5	20.5	48	25.5	12.0	*31	15.4	8.9
25	14.0	14.0	17.3	46	38.5	20	41	24.5	12.0	29.5	14.5	8.9
26	13.6	13.1	16.9	46	28.5	19.5	36	23.5	11.7	26.5	14.5	8.9
27	16.4	12.7	16.4	42	*37.5	18.9	32.5	23	11.3	24	14.0	8.7
28	13.6	12.0	15.9	37.5	28	27	30	21	10.9	31	13.6	8.7
29	13.6	*11.7	15.0	32.5	23.5	20.5	58	-	11.3	31	13.1	10.2
30	15.0	12.0	16.9	52	65	17.8	175	-------	11.3	26.5	12.7	9.5
31	13.1	27	-------	38.5	-------	16.9	39	-------	11.3	-------	12.4	-------
Total	520.4	979.3	686.1	1,649.2	1,262.0	1,227.6	2,294.7	2,123.5	449.8	900.4	679.2	317.8
Mean:												
mgd	16.8	31.6	22.9	53.2	42.1	39.6	74.0	75.8	14.5	30.0	21.9	10.6
cfs	26.0	48.9	35.4	82.3	65.1	61.3	114	117	22.4	46.4	33.9	16.4
Ac-ft	1,600	3,010	2,110	5,060	3,870	3,770	7,040	6,520	1,380	2,760	2,080	975

Calendar year 1956: Max 1,000 Min 10.6 Mean(mgd) 41.2 Mean(cfs) 63.7 Ac-ft 46,340
Fiscal year 1956-57: Max 466 Min 8.7 Mean(mgd) 35.9 Mean(cfs) 55.5 Ac-ft 40,180

Peak discharge (base, 1,000 mgd).--Aug. 9 (11 a.m.) 1,120 mgd (1,730 cfs), 5.64 ft; Dec. 10 (9 a.m.) 1,120 mgd (1,730 cfs), 5.57 ft; Jan. 17 (7:30 p.m.) 1,650 mgd (2,550 cfs), 6.51 ft; Jan. 30 (1 a.m.) 1,790 mgd (2,770 cfs), 6.69 ft; Feb. 13 (8:30 p.m.) 1,930 mgd (2,990 cfs), 6.92 ft; Apr. 14 (3 a.m.) 1,220 mgd (1,890 cfs), 5.84 ft.

* Discharge measurement made on this day.

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	14.5	14.3	45	13.4	19.3	*701	38.5	18.1	12.9	10.3	32.5	10.6
2	27	11.7	31	13.1	10.9	355	29	15.1	10.6	10.3	23.5	10.3
3	11.7	28	*42	11.7	10.2	109	*26	14.0	10.3	10.3	21.5	9.7
4	10.2	43	34.5	11.3	9.5	69	23.5	13.3	9.4	14.6	16.0	9.4
5	12.0	22.5	24	10.9	9.2	53	22	12.6	9.7	11.2	16.0	10.3
6	15.0	54	21	17.2	9.9	48	20.5	12.3	9.7	10.6	12.3	9.4
7	13.1	70	20	13.1	21.5	57	19.5	11.9	9.4	10.3	10.6	9.2
8	12.0	41	18.9	11.3	15.1	36	18.5	11.6	9.4	9.7	17.4	9.4
9	10.2	24.5	17.3	*10.6	13.1	37	18.1	11.2	11.6	9.2	17.0	11.6
10	23.5	19.5	16.4	16.9	25.5	45	16.8	10.9	49	8.9	17.3	12.3
11	42	16.9	15.9	11.7	22.5	59	16.0	*10.6	24.5	9.2	15.3	15.1
12	14.5	18.3	15.4	10.6	20.5	47	15.6	10.3	18.1	9.2	14.6	14.6
13	11.3	17.9	14.0	10.2	24	41	15.1	10.3	16.2	13.3	14.6	10.6
14	16.5	22	13.6	9.9	16.0	42	14.3	10.0	12.6	23.5	12.3	9.4
15	14.0	39	13.6	12.4	*16.1	53	14.0	10.0	11.9	15.0	15.2	9.4
16	*10.9	28	12.7	10.6	25	33.5	13.6	9.7	11.2	10.0	*43	9.2
17	9.5	29.5	15.4	13.1	17.3	47	13.3	9.7	10.9	8.9	27.5	12.4
18	11.3	53	18.4	14.5	14.5	33.5	12.9	9.4	10.6	8.3	28	10.0
19	10.6	38	14.0	12.4	*12.7	38.5	12.9	9.2	10.3	7.8	18.5	9.2
20	16.4	27.5	13.1	11.3	130	33	12.6	9.2	9.7	14.2	16.4	8.9
21	11.3	21.5	12.0	10.6	64	33.5	12.6	9.2	9.4	10.0	15.6	8.9
22	9.5	18.4	11.3	9.5	28.5	29.5	12.3	9.2	9.4	8.6	14.7	8.9
23	11.7	15.9	11.3	9.3	22.5	53	11.9	8.9	9.4	8.3	14.3	12.9
24	21.5	22.5	11.7	9.5	28.5	58	11.6	9.4	9.2	8.3	13.6	11.2
25	12.0	54	22.5	11.7	26.5	45	11.2	8.9	10.4	8.6	13.3	12.3
26	13.5	37	15.0	10.2	24.5	47	11.2	8.6	12.6	9.6	16.6	14.7
27	52	28.5	12.4	9.5	27.5	37	10.6	10.9	20.5	13.7	12.6	13.6
28	27.5	22.5	18.4	9.5	26.5	50	23.5	54	23.5	11.8	11.9	23.5
29	15.4	26	13.1	9.5	52	43	60	-	12.9	9.7	10.9	25
30	15.4	31.5	16.4	9.9	143	46	82	-------	11.6	13.2	10.6	15.1
31	20.5	40	-------	15.9	-------	44	28	-------	10.9	-------	10.3	-------
Total	516.5	936.4	560.3	361.5	886.3	2,423.5	647.6	348.5	417.8	326.6	533.9	357.1
Mean:												
mgd	16.7	30.2	18.7	11.7	29.5	78.2	20.9	12.4	13.5	10.9	17.2	11.9
cfs	25.8	46.7	28.9	18.1	45.6	121	32.3	19.2	20.9	16.9	26.6	18.4
Ac-ft	1,590	2,870	1,720	1,110	2,720	7,440	1,990	1,070	1,280	1,000	1,640	1,100

Calendar year 1957: Max 701 Min 8.7 Mean(mgd) 34.1 Mean(cfs) 52.8 Ac-ft 38,200
Fiscal year 1957-58: Max 701 Min 7.8 Mean(mgd) 22.8 Mean(cfs) 35.3 Ac-ft 25,530

Peak discharge (base, 1,000 mgd).--Nov. 20 (9 p.m.) 1,170 mgd (1,810 cfs), 5.72 ft; Dec. 1 (8:30 p.m.) 1,330 mgd (2,060 cfs), 6.04 ft.

* Discharge measurement made on this day.

690. Wailua ditch near Kapaa

Location.--Lat 22°04'25", long 159°24'05", on right bank 2,000 ft downstream from Wailua Reservoir, 5.2 miles west of Kapaa, and 7 miles north of Lihue.

Records available.--November 1936 to June 1958 in reports of Geological Survey. April 1932 to November 1936 in files of East Kauai Water Co.

Gage.--Water-stage recorder. Altitude of gage is 462 ft (by estimating slope of 2,000-foot length of ditch on basis of levels by Lihue Plantation Co.).

Average discharge.--21 years (1937-58), 10.8 mgd (16.7 cfs).

Extremes.--1936-58: Maximum daily discharge, 41 mgd (63 cfs) June 4, 1937; no flow at times.

Remarks.--Records fair. Ditch diverts water from North Fork Wailua River to reservoir 2,000 ft above station and thence to fields for irrigation of sugarcane. Flow regulated by gates at reservoir.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	13.2	20	6.4	2.1	4.6	2.3	0	0.30	0.64	10.4	22.5	16.5
2	13.2	18.8	4.9	*2.3	4.4	1.69	0	.30	0	10.4	20	14.3
3	13.8	18.8	4.8	2.3	4.3	1.20	0	.36	0	17.6	15.4	13.8
4	13.8	14.3	4.7	2.3	4.3	1.34	0	.42	4.2	20	11.0	12.6
5	13.8	13.8	7.1	2.4	4.3	2.2	0	.36	6.0	10.8	8.9	12.6
6	13.8	14.3	10.5	2.05	4.2	.90	0	.30	5.7	7.4	12.1	12.1
7	14.3	14.3	11.0	1.76	3.9	.08	0	.30	1.93	7.9	16.5	12.1
8	14.3	15.4	7.8	3.4	3.9	0	0	.30	.02	8.4	18.8	12.1
9	14.3	16.5	5.1	5.1	4.1	0	0	.36	0	12.1	23.5	12.1
10	14.3	16.5	9.8	4.6	4.1	.08	0	.36	0	14.3	25	12.1
11	14.3	14.2	12.1	4.6	4.3	0	0	.36	0	14.3	15.1	11.6
12	14.3	15.4	12.1	5.1	4.2	0	.35	.36	2.4	14.3	11.0	11.6
13	14.3	15.4	12.1	5.1	4.5	.29	.54	.42	5.1	11.0	13.2	11.6
14	14.3	11.6	12.1	5.1	4.4	.30	.54	.42	5.0	9.4	12.1	11.6
15	14.3	9.9	7.0	5.1	4.4	.08	.54	.42	5.0	8.9	16.5	11.6
16	14.3	*9.4	4.6	4.2	4.2	.30	.48	.42	5.2	11.6	21	12.8
17	14.3	9.4	4.1	3.3	4.0	.30	.58	.42	5.2	14.3	21	*12.6
18	14.3	8.9	4.1	3.4	3.7	.30	.58	.42	5.4	*11.0	15.5	12.1
19	14.3	8.9	7.3	3.65	3.3	.30	.30	.42	*5.7	7.9	6.4	13.2
20	14.3	8.4	8.8	3.65	2.9	.30	.30	.42	6.0	7.9	19.5	20
21	14.3	12.4	8.8	3.65	2.85	.30	.24	.36	6.4	8.9	*21	21
22	14.3	14.3	9.3	2.2	2.55	.24	.05	.36	6.4	10.4	16.5	16.5
23	19.7	14.3	9.3	1.27	2.05	.12	0	.36	6.4	14.3	11.6	12.1
24	22.5	9.8	8.8	1.02	1.90	0	0	.36	6.9	18.8	9.3	11.0
25	21	7.9	8.3	.90	1.83	0	0	.36	8.3	23.5	12.6	10.4
26	21	7.9	4.6	.84	1.69	0	0	.36	9.9	17.7	12.6	10.4
27	21	4.9	1.97	.78	1.55	0	0	.36	10.4	9.4	18.8	10.4
28	17.0	2.4	2.2	.72	1.48	0	0	.87	10.4	9.4	27.5	10.4
29	21	5.1	2.2	.66	1.14	0	.04	-	10.4	8.4	27.5	11.0
30	20	9.4	2.05	3.9	2.1	0	.30	-------	9.9	12.6	25	11.6
31	20	10.4	-------	*5.1	-------	0	.30	-------	9.9	-------	21	-------
Total	493.6	373.0	213.92	92.55	101.14	12.62	5.14	10.83	158.79	363.3	528.4	383.8
Mean: mgd	15.9	12.0	7.13	2.99	3.37	0.407	0.166	0.387	5.12	12.1	17.0	12.8
cfs	24.6	18.6	11.0	4.63	5.21	0.630	0.257	0.599	7.92	18.7	26.3	19.8
Ac-ft	1,510	1,140	656	284	310	39	16	33	487	1,110	1,620	1,180

Calendar year 1956: Max 26.5 Min 0 Mean(mgd) 5.39 Mean(cfs) 8.34 Ac-ft 6,040
Fiscal year 1956-57: Max 27.5 Min 0 Mean(mgd) 7.50 Mean(cfs) 11.6 Ac-ft 8,380

* Discharge measurement made on this day.

690. Wailua ditch near Kapaa--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	16.5	17.6	14.3	28.5	30.5	7.2	0.24	0.24	1.14	1.69	3.5	16.5
2	16.5	15.4	14.3	31.5	26.5	4.1	.24	.18	1.08	1.55	3.15	16.5
3	15.4	13.2	14.3	33	16.9	.36	.24	.12	1.08	1.41	3.55	18.8
4	14.3	13.2	17.6	30.5	16.5	.30	.24	.02	1.02	1.34	3.9	20
5	14.3	20	18.8	30.5	14.3	.30	.24	0	1.02	1.34	3.9	18.8
6	15.4	23.5	18.8	31.5	13.2	.36	.36	0	1.02	1.48	3.65	13.2
7	16.5	23.5	15.6	36	16.5	.30	.36	.18	.90	1.69	3.4	4.55
8	16.5	23.5	18.8	31.5	23.5	.30	.36	.30	.90	1.69	3.3	4.7
9	16.5	16.5	18.8	26.5	20	.30	.36	.30	.84	2.8	3.25	4.9
10	*21	10.9	17.6	21	20	.30	.36	.30	.84	2.85	3.4	5.3
11	25	12.9	20	20	23.5	.30	.42	.24	.66	1.13	3.3	7.9
12	16.5	22	23.5	20	21	.30	.42	.24	.48	0	3.25	15.4
13	12.6	20	23.5	18.8	13.8	.24	.42	.24	.42	0	3.15	22.5
14	13.2	17.6	16.5	18.8	12.1	.24	11.4	.18	.48	1.01	3.15	13.4
15	13.8	17.6	13.8	18.8	11.5	.18	27.5	.06	.48	1.14	3.15	8.9
16	17.6	14.3	13.8	18.8	10.8	.18	20	.06	.48	.72	3.3	16.5
17	22.5	10.3	18.8	18.8	20	.18	11.6	0	1.55	3.55	3.5	16.5
18	27.5	12.1	23.5	20	27.5	.12	11.6	0	2.2	5.3	3.7	16.5
19	31.5	16.5	26.5	20	37.5	.12	11.6	.60	1.97	5.2	3.15	16.5
20	15.0	23.5	30.5	20	27	.12	15.4	.90	1.76	5.2	3.25	15.4
21	12.6	25	26.5	20	7.3	.18	20	.84	1.76	4.8	3.15	16.5
22	12.6	25	22.5	20	.42	.18	18.8	.90	1.76	3.25	3.5	17.6
23	13.2	16.5	22.5	18.8	.36	.18	18.8	.90	1.76	3.4	4.0	16.5
24	18.8	11.6	21	20	.36	.18	18.8	.90	1.83	3.25	4.2	17.6
25	29	13.8	22.5	18.8	.36	.18	17.6	.90	2.1	3.15	4.2	16.5
26	27.5	13.8	25	18.8	.30	.18	17.6	.90	1.76	3.25	4.1	16.5
27	22.5	13.8	27.5	18.8	.30	.18	16.5	1.02	1.83	3.3	4.1	20
28	23.5	13.8	20	18.8	.30	.18	14.3	1.14	1.41	3.25	6.7	21
29	25	13.8	16.5	18.8	.36	.18	10.4	-	1.41	3.4	8.9	26.5
30	21	13.8	17.6	18.8	.30	.24	10.4	-------	1.41	3.3	14.3	26.5
31	18.8	14.3	-------	19.4	-------	.24	6.0	-------	1.48	-------	16.5	-------
Total	582.6	519.3	600.9	705.5	412.96	17.90	282.56	11.66	38.83	75.44	141.55	467.95
Mean:												
mgd	18.8	16.8	20.0	22.8	13.8	0.577	9.11	0.416	1.25	2.51	4.57	15.6
cfs	29.1	26.0	30.9	35.3	21.4	0.893	14.1	0.644	1.93	3.88	7.07	24.1
Ac-ft	1,790	1,590	1,840	2,170	1,270	55	867	36	119	232	434	1,440

Calendar year 1957: Max 37.5 Min 0 Mean(mgd) 11.8 Mean(cfs) 18.3 Ac-ft 13,160
Fiscal year 1957-58: Max 37.5 Min 0 Mean(mgd) 10.6 Mean(cfs) 16.4 Ac-ft 11,840

* Discharge measurement made on this day.

710. North Fork Wailua River near Kapaa

Location.--Lat 22°02'55", long 159°22'25", on right bank 1.1 miles upstream from confluence with South Fork, 4.0 miles southwest of Kapaa, and 5.0 miles north of Lihue.

Drainage area.--18.7 sq mi.

Records available.--July 1952 to June 1958.

Gage.--Water-stage recorder. Altitude of gage is 30 ft (from topographic map).

Average discharge.--6 years (1952-58), 73.3 mgd (113 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 4,350 mgd (6,730 cfs) Jan. 30 (gage height, 8.47 ft), from rating curve extended above 2,400 mgd as explained below; minimum, 3.5 mgd (5.4 cfs) June 23-25.

1957-58: Maximum discharge during fiscal year, 3,700 mgd (5,720 cfs) Dec. 1 (gage height, 7.99 ft), from rating curve extended above 2,400 mgd as explained below; minimum, 2.9 mgd (4.5 cfs) Oct. 27.

1952-58: Maximum discharge, 34,400 mgd (53,200 cfs) Nov. 12, 1955 (gage height, 19.88 ft in gage well, 20.8 ft from floodmarks), from rating curve extended above 930 mgd on basis of slope-area measurement of peak flow; minimum, 1.37 mgd (2.12 cfs) Oct. 28, 1953.

Remarks.--Records good except those for period of doubtful or no gage-height record, which are fair. Wailua ditch diverts water between this station and station at altitude 650 ft.

Rating tables, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)
(Shifting-control method used July 1-8, July 10 to Aug. 8, 1956)

July 1 to Oct. 18, 1956				Oct. 19, 1956, to July 27, 1957				July 28, 1957, to June 30, 1958			
1.2	4.6	2.5	91	1.1	2.9	3.0	200	1.1	2.9	3.0	195
1.4	9.7	3.0	171	1.3	7.3	3.5	337	1.3	7.2	3.5	328
1.6	17.0	3.5	285	1.5	14.7	4.0	510	1.5	14.1	4.0	500
1.8	27	4.0	430	1.8	32	5.0	1,030	1.8	30.5	5.0	1,000
2.0	40			2.1	58	6.0	1,760	2.1	54	6.0	1,730
				2.5	108			2.5	103		

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	18.4	6.9	44	6.0	73	189	25	159	58	5.7	136	4.0
2	17.3	8.3	35.5	*5.4	69	120	18	228	48	6.2	108	4.1
3	9.7	8.6	34	15.0	60	85	*12	954	47	10.6	101	3.9
4	9.4	7.7	20.5	188	139	66	20	1,010	37	4.6	112	4.1
5	9.4	7.7	7.7	164	93	*44	30	510	36.5	17.6	108	3.9
6	9.5	7.5	7.7	85	71	535	45	278	41	8.3	73	*3.9
7	12.3	7.7	8.0	77	85	198	70	252	32	6.7	47	3.7
8	19.9	163	7.7	46	67	108	250	203	32	6.7	45	3.7
9	44	316	14.1	30	57	108	100	140	35	5.7	46	3.7
10	17.0	197	15.8	40	47	391	60	131	36	5.4	46	3.7
11	13.2	68	10.7	25.5	52	123	130	158	40	5.7	52	3.7
12	13.5	52	9.1	21.5	73	108	66	138	38	5.7	431	3.7
13	24.5	40	8.0	20.5	202	89	111	523	42	11.0	239	3.7
14	31.5	60	18.8	126	195	85	227	252	42	218	374	3.7
15	41	91	54	144	182	108	548	131	22.5	162	150	3.7
16	46	*47	159	109	124	123	131	108	11.8	198	50	3.7
17	35.5	42	60	204	162	126	*1,270	101	29	153	35	3.7
18	37	51	45	285	108	101	1,100	108	*13.6	111	25	*3.7
19	33	44	25	401	116	104	250	88	6.2	108	18	3.7
20	24	25	16	178	126	93	300	77	6.0	117	14	3.85
21	15.0	6.4	13	168	291	84	700	79	6.0	60	12	3.85
22	16.7	6.7	11	168	108	81	300	71	5.7	13.2	30	3.7
23	11.4	6.7	9.5	470	90	82	210	67	5.4	73	10	3.5
24	8.6	6.4	8.4	337	84	77	150	64	5.4	*65	8	3.5
25	8.3	6.4	7.4	150	89	64	110	61	5.4	125	7	3.5
26	8.6	6.4	6.6	110	77	40	80	58	5.4	116	6	3.7
27	8.3	6.7	6.2	130	81	30	60	53	5.4	116	5	3.7
28	8.0	8.5	5.8	120	71	70	50	59	5.7	139	4.5	3.7
29	8.0	15.8	5.4	90	60	45	*250	-	5.7	183	4.5	3.7
30	8.3	21	6.0	140	199	33	595	-------	6.0	168	4.2	3.7
31	7.2	68	-------	*95	-------	28	140	-------	5.7	-------	4.0	-------
Total	574.5	1,409.4	679.9	4,148.9	3,251	3,538	7,408	6,061	715.4	2,225.1	2,305.2	112.40
Mean:												
mgd	18.5	45.5	22.7	134	108	114	239	216	23.1	74.2	74.4	3.75
cfs	28.6	70.4	35.1	207	167	176	370	334	35.7	115	115	5.80
Ac-ft	1,760	4,330	2,090	12,730	9,980	10,860	22,730	18,600	2,200	6,830	7,070	345

Calendar year 1956.	Max	4,750	Min	5.4	Mean(mgd)	112	Mean(cfs)	173	Ac-ft	125,500
Fiscal year 1956-57.	Max	1,270	Min	3.5	Mean(mgd)	88.8	Mean(cfs)	137	Ac-ft	99,520

Peak discharge (base, 2,300 mgd).--Dec. 6 (11:30 a.m.) 2,400 mgd (3,710 cfs), 6.73 ft; Jan. 17 (1:30 p.m.) 3,400 mgd (5,260 cfs), 7.73 ft; Jan. 30 (12:30 a.m.) 4,350 mgd (6,730 cfs), 8.47 ft; Feb. 13 (9 p.m.) 2,300 mgd (3,560 cfs), 6.59 ft.

* Discharge measurement made on this day.

Note.--Doubtful or no gage-height record Sept. 17 to Oct. 2, Oct. 25-31, Dec. 26 to Jan. 11, Jan. 19-29, May 15 to June 6; discharge estimated on basis of records for nearby streams.

710. North Fork Wailua River near Kapaa--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.7	69	155	5.4	3.2	*1,700	100	41	32.5	19.7	75	5.4
2	4.0	33	116	5.2	3.2	995	76	33.5	24.5	18.2	49	5.7
3	4.0	128	194	5.2	3.2	440	90	30	21.5	20.5	69	5.7
4	3.7	180	136	4.7	3.2	193	75	28	20	37.5	55	6.0
5	3.7	113	84	4.7	3.2	126	35.5	27	21	23.5	45	6.2
6	4.0	146	65	5.0	3.5	108	26.5	20.5	21.5	19.1	32.5	6.4
7	4.0	261	59	5.7	4.8	120	16.3	7.5	20	19.1	27	6.4
8	3.85	144	58	4.2	7.6	77	11.1	9.9	19.7	18.2	35	7.0
9	3.85	81	54	4.0	3.5	107	23.5	23.5	23.5	17.2	54	7.0
10	12.0	66	47	5.4	6.9	110	38.5	25.5	89	12.8	46	6.7
11	108	56	*26	4.5	16.4	125	37	24	74	*5.2	38.5	7.2
12	35	51	15.3	4.0	51	106	35.5	21.5	33.5	6.5	38	15.0
13	4.2	113	31	4.0	104	89	35.5	22	41	26.5	37	5.8
14	62	100	8.1	*4.0	54	96	26.5	23.5	25.5	75	18.5	4.2
15	50	173	6.2	4.0	53	119	7.2	16.4	23	63	5.2	4.5
16	*40	153	6.4	3.85	78	79	6.4	17.2	22	7.3	95	4.5
17	17.2	126	6.4	3.85	18.8	113	*6.2	17.7	21.5	5.0	69	4.5
18	15.5	188	8.8	3.7	8.1	89	6.4	17.7	21.5	12.0	77	4.7
19	6.3	144	7.0	3.5	4.7	121	6.4	17.7	19.1	18.6	42	4.7
20	46	95	6.7	3.35	*286	88	6.4	21	17.2	26	33.5	4.7
21	19.7	68	6.4	3.2	264	88	6.4	20	16.8	47	25	4.7
22	8.2	56	7.2	3.05	149	76	6.4	18.2	16.8	45	7.0	4.7
23	4.5	46	6.4	3.5	118	162	6.2	17.7	16.4	5.9	5.0	5.2
24	21	65	5.4	3.2	113	165	6.2	*18.6	13.9	4.0	9.9	5.2
25	17.1	167	5.4	3.2	92	138	6.0	18.2	6.2	3.8	23.5	4.7
26	8.9	195	5.7	3.05	68	147	5.7	17.2	11.3	4.0	*33.5	5.0
27	146	135	6.2	3.05	6.4	103	5.7	26	55	7.9	19.0	5.4
28	71	103	6.2	3.05	7.8	120	6.7	141	61	19.5	6.2	5.2
29	31	115	6.0	3.05	69	108	80	-	27	5.4	14.4	5.7
30	46	113	6.0	3.05	415	110	143	-------	25	4.7	8.4	5.0
31	89	161	-------	3.2	-------	103	53	-------	21	-------	5.4	-------
Total	893.40	3,644	1,150.8	122.85	2,018.5	6,321	991.2	722.0	861.9	598.1	1,098.5	173.1
Mean:												
mgd	28.8	118	38.4	3.96	67.3	204	32.0	25.8	27.8	19.9	35.4	5.77
cfs	44.6	183	59.4	6.13	104	316	49.5	39.9	43.0	30.8	54.8	8.93
Ac-ft	2,740	11,180	3,530	377	6,190	19,400	3,040	2,220	2,650	1,840	3,370	531

Calendar year 1957: Max 1,700 Min 3.05 Mean(mgd) 90.3 Mean(cfs) 140 Ac-ft 101,200
Fiscal year 1957-58: Max 1,700 Min 3.05 Mean(mgd) 50.9 Mean(cfs) 78.8 Ac-ft 57,070

Peak discharge (base, 2,300 mgd).--Dec. 1 (9:30 p.m.) 3,700 mgd (5,720 cfs), 7.99 ft.

* Discharge measurement made on this day.

770. Makaleha ditch near Kealia

Location.--Lat 22°06'55", long 159°22'05", on left bank at end of last tunnel from which flow enters Mimino Reservoir, 3.9 miles northwest of Kealia and 4.1 miles northwest of Kapaa.

Records available.--December 1936 to June 1958 in reports of Geological Survey. July 1925 to November 1936 in files of East Kauai Water Co.

Gage.--Water-stage recorder and Parshall flume. Prior to December 1936, water-stage recorder at site 150 ft downstream at different datum.

Average discharge.--21 years (1937-58), 4.16 mgd (6.44 cfs).

Extremes.--1936-58: Maximum daily discharge, 17.9 mgd (27.7 cfs) Oct. 31, 1954, Aug. 3, 20, 1955; no flow Jan. 11, 12, Apr. 1, 6, 1958.

Remarks.--Records good. Ditch diverts water from Makaleha Stream for irrigation of sugarcane. Diversion is regulated by headgates.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	7.4	10.4	9.1	7.8	3.9	1.55	0.12	0.45	3.35	5.9	9.3	5.5
2	8.8	7.4	6.9	6.4	3.9	1.20	.10	.34	.22	7.4	7.4	5.5
3	6.9	7.8	6.9	9.3	3.8	.72	.10	2.25	.17	10.4	8.2	5.8
4	6.4	13.1	6.4	14.2	4.1	.53	.10	3.4	.14	12.6	7.8	5.5
5	6.9	13.6	6.4	7.7	3.9	.39	.12	1.76	.12	7.1	8.8	5.4
6	8.2	10.4	12.0	1.15	3.6	2.1	.10	.88	.08	6.9	10.3	5.4
7	7.4	8.3	8.0	.72	3.7	1.58	.12	.57	2.2	12.4	8.7	5.4
8	11.6	15.4	6.9	.39	3.6	.79	.22	.49	3.85	13.4	7.4	5.4
9	10.4	13.6	6.4	5.7	4.1	.49	.34	.34	.14	7.8	9.5	5.4
10	7.8	10.8	6.0	8.3	4.6	2.2	.31	.25	.10	6.9	8.9	5.4
11	9.5	8.8	5.9	8.8	4.7	1.06	.28	.22	4.2	6.4	8.8	5.4
12	8.3	8.8	5.8	9.9	4.9	.60	.20	.22	9.3	6.4	16.6	5.3
13	14.1	7.8	5.8	9.8	6.4	.39	.22	.20	5.5	6.4	12.0	5.4
14	11.4	8.8	8.2	13.6	6.4	.34	.34	.34	1.61	4.6	12.2	5.4
15	13.1	7.8	13.1	14.2	6.0	.34	2.25	.25	.40	6.3	11.4	6.0
16	13.6	6.9	13.1	13.6	3.1	.31	.68	.22	.17	12.9	8.3	7.4
17	10.4	6.9	13.6	13.6	1.50	.31	7.3	.28	.12	15.4	7.3	8.2
18	13.6	10.4	12.6	14.8	1.20	.25	9.2	.46	1.76	10.9	6.9	6.0
19	12.6	8.8	9.8	9.4	.92	.22	2.75	.34	*6.4	14.7	6.4	9.0
20	12.0	7.4	8.3	1.02	.75	.22	1.45	.31	9.3	14.2	6.0	8.3
21	8.3	6.9	7.3	.75	.72	.17	1.34	.25	7.4	10.4	6.0	10.0
22	11.4	6.9	6.4	.68	.57	.14	1.24	.22	6.9	7.8	8.9	6.0
23	7.8	6.9	6.4	2.15	.46	.14	.72	.20	6.4	12.7	6.4	5.7
24	7.8	7.8	6.4	1.34	.39	.12	.36	.20	6.4	13.6	6.0	5.5
25	7.4	6.9	6.5	.79	.46	.12	.31	.20	6.0	12.6	4.8	5.4
26	7.4	6.4	4.4	.64	.34	.12	.25	3.3	6.0	10.7	5.8	5.4
27	10.4	6.4	7.4	.49	.34	.10	.20	6.0	5.9	10.4	5.8	5.2
28	7.4	6.0	6.1	.36	.34	.28	.17	6.4	5.9	11.4	5.6	5.4
29	7.8	6.0	6.0	2.7	.25	.20	.56	-	5.9	12.0	5.6	7.8
30	9.3	6.4	7.4	4.2	.67	.14	1.17	-------	5.9	9.8	5.7	6.4
31	6.9	14.0	-------	4.0	-------	.12	.42	-------	5.9	-------	5.6	-------
Total	292.3	273.8	235.5	188.48	79.61	17.24	33.04	30.34	117.73	300.4	248.4	183.9
Mean:												
mgd	9.43	8.83	7.85	6.08	2.65	0.556	1.07	1.08	3.80	10.0	8.01	6.13
cfs	14.6	13.7	12.1	9.41	4.10	0.860	1.66	1.67	5.88	15.5	12.4	9.48
Ac-ft	897	840	723	578	244	53	101	93	361	922	762	564

Calendar year 1956: Max 15.4 Min 0.05 Mean(mgd) 5.58 Mean(cfs) 8.63 Ac-ft 6,260
Fiscal year 1956-57: Max 16.6 Min 0.08 Mean(mgd) 5.48 Mean(cfs) 8.48 Ac-ft 6,140

* Discharge measurement made on this day.

770. Makaleha ditch near Kealia--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	9.4	7.8	5.0	6.9	10.3	8.7	0.25	0.17	0.79	0	1.66	5.4
2	12.9	6.4	5.0	*5.7	5.8	6.1	.22	.08	.75	.11	1.60	5.2
3	6.4	12.6	5.1	5.2	6.0	1.76	.20	.05	.64	.05	1.55	4.5
4	5.8	16.6	5.0	4.9	5.1	.88	.14	.05	.60	.10	1.50	4.3
5	7.4	10.9	5.0	4.7	5.0	.53	.12	.10	.60	.02	1.45	6.4
6	4.5	16.6	4.9	8.4	6.4	.46	.10	.05	.57	0	1.40	4.5
7	4.5	16.6	4.6	6.4	11.4	.64	.10	.05	.49	.08	1.34	4.2
8	*6.0	14.8	4.7	5.1	9.2	.42	.10	.05	.49	.17	1.40	5.6
9	6.4	9.4	5.6	4.8	9.8	.31	.08	.03	.49	1.88	1.34	10.5
10	10.4	7.4	6.4	9.8	13.1	.22	.03	.02	.49	4.6	1.34	11.6
11	11.4	6.4	5.6	6.0	11.4	.20	0	.02	.46	5.4	1.34	12.2
12	7.8	9.0	6.0	5.2	9.8	.17	0	1.37	.46	6.0	1.34	9.4
13	6.4	10.4	5.4	5.0	10.4	.15	1.35	4.0	.46	8.3	*1.24	5.9
14	10.4	13.1	5.6	9.5	10.4	.14	4.5	4.1	.39	3.4	1.20	5.4
15	9.3	14.8	5.4	10.9	10.8	.10	4.6	4.2	.36	.25	1.20	4.9
16	6.9	13.4	5.1	6.4	12.0	.10	4.4	4.2	.36	.22	1.20	4.4
17	6.4	4.7	10.6	8.3	9.8	.12	4.4	4.3	.36	.46	1.06	4.9
18	8.3	.57	10.4	8.0	6.9	.14	4.0	4.2	.36	.64	1.66	4.6
19	7.8	10.0	6.4	7.4	5.9	.14	4.6	4.2	.22	.64	1.40	4.2
20	9.8	10.9	6.0	7.8	11.4	.12	4.5	4.2	.02	.60	1.20	4.1
21	7.4	7.4	5.4	5.7	6.2	.10	5.8	4.2	.02	.46	1.10	4.2
22	6.0	6.0	5.3	5.1	.88	.10	4.8	2.25	.02	.46	1.02	4.2
23	6.0	6.0	5.0	5.3	.72	.10	5.2	1.02	.02	.39	1.02	10.4
24	10.9	6.4	6.0	6.0	.68	.10	4.5	.92	.02	.49	.97	8.4
25	6.9	6.9	12.6	9.1	.68	.08	4.3	.92	3.2	.79	.92	6.9
26	5.1	6.4	7.4	5.6	.53	.08	4.3	.92	6.9	1.15	.92	12.0
27	10.9	6.4	6.3	5.1	.46	.08	4.2	.92	4.6	1.71	.88	7.9
28	10.4	8.8	10.9	5.0	.39	.08	12.3	.97	.11	1.66	.88	11.7
29	8.8	10.9	6.9	5.3	.53	.08	11.8	-	.05	1.71	.88	10.1
30	10.4	9.4	10.0	5.8	1.76	.12	16.6	-------	.02	1.76	2.55	7.4
31	11.4	5.0	-------	12.6	-------	.20	6.0	-------	.02	-------	4.2	-------
Total	252.4	291.97	193.6	207.0	193.73	22.52	113.49	47.56	24.34	43.50	42.76	205.4
Mean:												
mgd	8.14	9.42	6.45	6.68	6.46	0.726	3.66	1.70	0.785	1.45	1.38	6.85
cfs	12.6	14.6	9.98	10.3	10.0	1.12	5.66	2.63	1.21	2.24	2.14	10.6
Ac-ft	775	896	594	635	595	69	348	146	75	133	131	630

Calendar year 1957: Max 16.6 Min 0.08 Mean(mgd) 5.69 Mean(cfs) 8.80 Ac-ft 6,370
Fiscal year 1957-58: Max 16.6 Min 0 Mean(mgd) 4.49 Mean(cfs) 6.95 Ac-ft 5,030

* Discharge measurement made on this day.

790. Kapahi ditch near Kealia

Location.--Lat 22°06'00", long 159°22'30", on right bank 500 ft downstream from intake and 4.0 miles west of Kealia.

Records available.--April 1909 to May 1914, May 1915 to June 1958.

Gage.--Water-stage recorder and Parshall flume. Altitude of gage is 360 ft (by barometer). Prior to Nov. 26, 1936, water-stage recorder at site 61 ft upstream at datum 2.52 ft higher.

Average discharge.--40 years (1917-20, 1921-58), 4.96 mgd (7.67 cfs).

Extremes.--1909-58: Maximum daily discharge, 89.2 mgd (138 cfs) Feb. 6, 1913; no flow at times.

Remarks.--Records good except those for period of no gage-height record, which are poor. Ditch diverts water from Kapaa River for irrigation in vicinity of Kapaa. Flow regulated by headgates.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.85	2.6	3.6	0.23	5.3	0.07	0.10	0.10	5.0	2.7	4.3	a2.5
2	3.5	1.92	2.8	.16	3.7	.07	.10	.04	.92	3.25	3.8	a2.4
3	2.7	2.0	2.6	1.47	.19	.07	1.64	.19	.31	11.1	3.9	2.4
4	2.7	6.5	2.6	1.63	.27	.07	1.21	.16	7.5	10.3	3.9	2.4
5	2.8	5.3	2.6	.10	.16	.07	1.29	.10	7.1	3.35	4.2	2.4
6	2.4	4.1	3.8	.07	.13	.10	.27	.07	*5.6	3.15	4.9	2.4
7	1.20	3.05	3.15	.07	.13	.07	1.14	.07	1.79	1.66	4.1	2.4
8	.27	6.8	2.4	.07	.10	.07	1.21	.07	2.0	5.4	3.6	2.4
9	1.28	6.1	2.3	.10	.07	.07	.27	.07	.89	3.8	7.8	2.4
10	2.9	5.4	2.3	1.84	.07	.07	.23	.04	.16	3.15	4.9	2.4
11	3.3	2.95	2.3	2.8	.10	.07	.23	.02	2.65	3.05	5.8	2.4
12	2.9	.62	2.2	.35	5.4	.07	.27	.02	4.1	2.9	9.2	2.3
13	8.3	*3.2	2.1	.35	4.1	1.17	.27	.04	5.4	2.9	2.9	2.4
14	2.1	2.2	5.6	.27	.31	1.65	.19	.07	6.9	3.5	4.8	2.3
15	.53	3.25	5.5	1.92	.27	.19	.17	.04	7.0	4.1	6.5	2.4
16	4.6	3.55	.44	5.0	.23	.16	.04	.04	4.0	8.8	5.7	2.6
17	3.95	3.15	2.75	4.5	.19	.16	.14	.04	.16	17.3	4.5	2.8
18	5.9	.16	.23	4.8	.10	1.26	.04	.04	3.15	8.4	4.0	2.4
19	6.4	.19	1.96	4.6	.07	2.8	.02	.02	4.4	7.0	3.8	3.8
20	4.6	3.2	3.8	1.70	.10	2.8	.02	.02	3.8	8.0	3.45	2.9
21	3.45	2.9	3.15	.27	.02	2.7	.04	.46	3.45	5.1	*3.35	3.4
22	4.4	2.9	2.7	.27	.02	1.63	.04	1.49	3.15	4.2	4.6	2.4
23	3.15	2.9	2.7	.38	.02	.27	.02	.27	3.05	10.9	3.45	2.2
24	3.05	3.15	2.6	.19	.11	.23	.02	.23	2.9	7.6	a3.2	2.1
25	2.8	2.8	4.2	.16	0	.19	.01	3.1	2.9	5.7	a3.0	2.0
26	2.8	2.6	4.7	.16	0	.13	.01	3.8	2.8	4.9	a3.8	2.0
27	3.4	2.4	1.32	.16	.07	.10	.01	4.9	2.7	4.4	a3.4	2.0
28	2.2	2.4	1.15	1.25	.10	.10	.01	4.9	2.6	5.0	a3.2	2.0
29	2.2	2.4	1.57	4.5	.10	.10	.24	-	2.6	5.4	a3.0	2.4
30	2.4	2.6	.94	10.1	.10	.07	.30	-------	2.6	4.6	a2.8	2.3
31	2.2	5.2	-------	4.9	-------	.10	.07	-------	2.6	-------	a2.6	-------
Total	95.23	98.49	80.06	54.37	21.53	16.68	9.62	20.41	104.18	171.61	132.45	73.2
Mean:												
mgd	3.07	3.18	2.67	1.75	0.718	0.538	0.310	0.729	3.36	5.72	4.27	2.44
cfs	4.75	4.92	4.13	2.71	1.11	0.832	0.480	1.13	5.20	8.85	6.61	3.78
Ac-ft	292	302	246	167	66	51	30	63	320	527	406	225

Calendar year 1956: Max 10.1 Min 0 Mean(mgd) 1.84 Mean(cfs) 2.85 Ac-ft 2,700
Fiscal year 1956-57: Max 17.3 Min 0 Mean(mgd) 2.40 Mean(cfs) 3.71 Ac-ft 2,700

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage and records for nearby streams.

790. Kapahi ditch near Kealia--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.1	1.30	2.8	2.8	6.2	4.7	0.68	0.10	0.35	0.68	0.11	1.92
2	11.6	2.5	2.7	2.5	2.4	0	.68	.10	.31	.74	.10	1.83
3	2.8	4.4	6.4	2.4	2.3	0	7.0	.36	1.04	.74	.07	1.74
4	2.4	7.5	15.8	2.3	2.0	0	10.4	.19	1.30	.80	.07	1.83
5	4.6	6.1	11.1	2.3	1.92	.07	9.8	1.49	1.30	.68	.07	2.1
6	8.8	8.6	7.4	6.7	2.3	.16	9.1	1.74	1.00	.56	.07	2.1
7	7.8	3.85	6.2	3.25	21	.16	8.8	3.75	.74	.97	.69	2.0
8	5.0	2.1	2.65	2.5	4.7	.04	9.3	7.4	.74	1.14	.13	2.2
9	2.5	1.92	2.65	2.3	5.1	.07	9.0	7.4	.74	1.00	.13	2.9
10	7.5	3.0	3.7	9.5	10.2	.84	8.6	7.2	.68	.92	.13	3.05
11	8.1	3.25	3.25	2.9	4.8	1.46	8.4	3.4	.62	.66	.13	5.1
12	2.9	2.75	3.15	2.4	1.61	.97	8.2	1.92	.56	.23	.10	3.55
13	2.6	1.64	2.9	2.3	1.07	1.14	6.5	1.83	.40	.23	.10	2.6
14	4.5	1.46	2.9	2.5	1.38	1.07	3.35	1.83	.40	.23	1.95	2.2
15	4.0	1.30	2.8	7.9	1.00	1.07	3.25	.70	.45	.19	3.05	2.0
16	2.7	1.22	2.5	2.7	1.00	1.00	3.15	.19	.40	.61	1.28	1.83
17	2.5	4.5	4.0	2.8	1.00	.86	3.05	.35	1.40	1.00	.10	2.1
18	3.15	5.8	4.8	3.35	2.65	.86	3.2	.50	2.3	1.30	.07	2.2
19	2.7	6.8	3.05	2.7	3.15	.80	3.15	1.22	2.1	.72	.07	1.92
20	4.3	6.1	2.9	2.4	2.8	.74	2.9	1.14	.98	.31	.07	1.92
21	2.8	6.1	2.6	2.2	.12	.74	3.15	1.07	.31	.13	.07	1.83
22	2.3	4.5	2.5	2.0	0	.74	2.9	1.66	.40	1.96	3.3	1.83
23	2.3	3.35	2.4	2.0	0	.74	2.7	2.6	.27	2.6	6.2	3.45
24	5.7	3.55	2.4	2.1	0	.80	2.6	2.4	*2.0	2.2	2.3	2.4
25	3.05	3.05	5.6	2.75	.04	.74	2.6	2.2	3.05	2.2	.10	2.6
26	4.2	7.0	3.15	2.2	.13	.74	2.6	2.2	2.1	1.92	.10	2.9
27	4.4	11.2	2.6	2.1	.05	.74	2.5	1.84	.80	1.92	2.55	2.9
28	2.45	7.8	4.9	2.1	0	.74	7.3	.80	.56	1.11	5.8	5.8
29	1.55	5.1	2.8	2.0	0	.68	2.05	-	.50	.56	5.5	5.3
30	1.30	7.2	4.1	2.1	0	.68	.16	-------	.40	.24	3.7	2.9
31	1.22	4.7	-------	5.8	-------	.68	.10	-------	.74	-------	1.74	-------
Total	125.82	139.64	126.70	95.85	78.92	24.03	147.17	57.58	28.94	28.55	39.85	78.80
Mean:												
mgd	4.06	4.50	4.22	3.09	2.63	0.775	4.75	2.06	0.934	0.952	1.29	2.63
cfs	6.28	6.96	6.53	4.78	4.07	1.20	7.35	3.19	1.45	1.47	2.00	4.07
Ac-ft	386	429	389	294	242	74	452	177	89	88	122	242

Calendar year 1957: Max 21 Min 0 Mean(mgd) 3.02 Mean(cfs) 4.67 Ac-ft 3,380
Fiscal year 1957-58: Max 21 Min 0 Mean(mgd) 2.66 Mean(cfs) 4.12 Ac-ft 2,980

* Discharge measurement made on this day.

800. Kapaa River at Kapahi ditch intake, near Kapaa

Location.--Lat 22°06'05", long 159°22'30", on right bank 4 miles northwest of Kapaa and 4.5 miles northwest of Wailua.

Drainagea area.--3.3 sq mi.

Records available.--July 1936 to June 1958.

Gage.--Water-stage recorder and masonry control. Altitude of gage is 365 ft (by barometer).

Average discharge.--22 years, 13.5 mgd (20.9 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 1,840 mgd (2,850 cfs) Jan. 18 (gage height, 3.54 ft), from rating curve extended above 330 mgd by logarithmic plotting; no flow many times.

1957-58: Maximum discharge during fiscal year, 1,270 mgd (1,960 cfs) Dec. 1 (gage height, 3.00 ft), from rating curve extended above 330 mgd by logarithmic plotting; no flow many times.

1936-58: Maximum discharge, 4,960 mgd (7,670 cfs) Jan. 25, 1956 (gage height, 5.34 ft), from rating curve extended above 330 mgd by logarithmic plotting; no flow at times.

Remarks.--Records good except those for period of no gage-height record, which are fair. Entire low flow is diverted into several ditches above station. Records do not include flow of Kapahi ditch (see preceding page).

Cooperation.--Records for July 1 to Dec. 14, 1936, furnished by East Kauai Water Co.

Rating table, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

-0.03	0	0.8	54
0.0	.10	1.0	90
.2	2.55	1.2	140
.4	11.5	1.5	235
.6	28.5	2.0	470

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.7	0	0.26	4.4	3.9	49	10.3	26.5	3.4	0	0	
2	.22	0	0	4.1	11.8	22	11.9	30.5	10.9	0	0	
3	0	0	0	3.6	9.7	16.2	9.4	174	11.5	5.2	0	
4	.06	.87	0	70	75	12.9	10.3	129	3.25	.23	0	
5	.13	.78	0	35.5	24.5	11.5	12.1	57	4.7	0	0	
6	.54	.03	.73	17.3	15.0	106	11.5	30.5	4.6	0	0	
7	2.05	0	.04	19.8	17.8	23	12.2	31.5	6.1	4.4	0	
8	18.4	89	0	12.9	11.5	15.7	29	26.5	4.1	3.95	0	
9	3.75	55	0	12.3	8.6	15.0	17.6	18.1	8.6	0	2.25	
10	.36	26	0	3.35	7.5	104	16.5	18.1	10.3	0	0	
11	0	5.6	0	4.5	7.5	21	17.3	23.5	5.6	0	2.25	
12	0	6.6	0	7.4	1.91	15.7	12.2	19.8	0	0	7.4	
13	1.33	1.72	0	16.8	78	12.9	20.5	79	3.1	0	6.0	
14	1.43	13.2	2.8	38.5	*44	12.2	26	29	7.4	3.35	42	
15	6.1	13.2	32.5	27.5	33	22.5	104	18.1	4.4	36	4.2	
16	1.99	2.55	18.8	11.0	19.8	23.5	16.5	16.5	6.3	28.5	0	
17	.1	3.15	11.3	21	39.5	24	315	15.6	17.8	6.1	0	
18	1.22	9.1	8.9	91	22	15.0	240	21.5	6.6	.05	0	
19	.17	3.75	2.95	30	19.8	13.6	49	13.6	1.23	3.9	0	
20	0	.02	0	18.1	28.5	15.0	33	13.6	0	2.25	0	
21	0	0	0	22.5	28.5	11.5	62	12.9	0	0	0	
22	.32	0	0	25	18.1	10.9	35.5	10.9	0	0	0	
23	0	0	0	114	15.0	12.9	22	11.5	0	1.76	0	
24	0	0	0	34	13.5	12.2	18.1	11.5	0	0	0	
25	0	0	0	18.1	19.8	11.5	15.0	8.6	0	0	0	
26	0	0	0	18.4	14.3	10.9	14.3	4.5	0	0	0	
27	0	0	1.52	15.0	19.0	10.3	13.6	0	0	0	0	
28	0	0	2.1	12.9	15.7	28.5	13.6	0	0	0	0	
29	0	0	1.39	7.5	12.9	14.3	44	-	0	0	0	
30	0	0	1.48	7.3	41	11.5	114	-------	0	0	0	
31	0	3.9	-------	6.7	-------	10.9	17.3	-------	0	-------	0	-------
Total	40.87	234.47	84.77	730.45	677.11	696.1	1,343.7	851.8	119.88	95.69	64.10	0
Mean:												
mgd	1.32	7.56	2.83	23.6	22.6	22.5	43.3	30.4	3.87	3.19	2.07	0
cfs	2.04	11.7	4.38	36.5	35.0	34.8	67.0	47.0	5.99	4.94	3.20	0
Ac-ft	125	720	260	2,240	2,080	2,140	4,120	2,610	368	294	197	0

Calendar year 1956. Max 1,210 Min 0 Mean(mgd) 20.6 Mean(cfs) 31.9 Ac-ft 23,130
Fiscal year 1956-57: Max 315 Min 0 Mean(mgd) 13.5 Mean(cfs) 20.9 Ac-ft 15,150

Peak discharge (base, 1,400 mgd).--Jan. 18 (9 a.m.) 1,840 mgd (2,850 cfs), 3.54 ft; Feb. 13 (8:30 p.m.) 1,480 mgd (2,290 cfs), 3.15 ft.

* Discharge measurement made on this day.

800. Kapaa River at Kapahi ditch intake, near Kapaa--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0	1.78	22	0	0	411	17.8	11.5	9.7	6.1	33	0
2	0	.27	17.8	0	0	162	12.9	9.1	7.0	6.1	19.5	0
3	0	5.8	23	0	0	*34	4.35	8.0	5.2	8.6	17.8	0
4	0	12.5	11.4	0	0	24.5	0	8.0	5.2	16.6	13.6	0
5	0	0	0	0	0	18.1	0	5.6	5.2	8.6	12.5	0
6	0	18.7	0	.34	0	19.7	0	5.6	6.1	7.0	8.6	0
7	0	24	0	0	.37	33	0	3.85	6.1	6.1	7.2	0
8	0	8.1	3.1	0	0	15.0	0	0	5.6	6.1	17.5	0
9	0	3.4	2.65	0	0	17.3	0	0	10.3	4.3	18.5	0
10	0	.86	0	.61	0	21	0	0	15.2	1.47	17.3	0
11	10.4	0	0	0	1.46	23	0	3.3	15.4	1.85	14.8	.62
12	.74	2.2	0	0	5.6	18.2	0	4.2	21	2.3	14.3	0
13	0	3.25	0	0	10.7	17.3	0	1.47	13.5	5.9	*11.8	0
14	9.2	5.5	0	0	7.3	17.3	0	1.47	7.5	22.5	6.1	0
15	.68	9.0	0	0	6.8	23	0	2.55	6.6	15.0	7.8	0
16	0	5.7	0	0	10.3	12.9	0	2.55	6.6	9.1	55	0
17	0	8.0	2.55	0	4.1	26	0	2.3	6.1	7.5	31	0
18	.22	28	1.95	0	1.23	14.3	0	2.55	5.6	6.6	33.5	0
19	0	11.1	0	0	0	19.0	0	1.65	4.4	6.1	12.9	0
20	.40	.24	0	0	72	14.3	0	1.85	6.1	14.9	9.1	0
21	0	0	0	0	32	15.0	0	2.05	6.1	9.7	8.6	0
22	0	0	0	0	15.0	13.6	0	2.55	6.1	4.8	4.5	0
23	0	0	0	0	12.0	27.5	0	2.85	6.1	4.1	.63	0
24	1.84	5.3	0	0	19.4	28	0	5.1	a4.5	4.1	3.95	0
25	0	45	1.88	0	18.9	19.8	0	3.4	a3	3.75	7.1	0
26	1.36	16.5	0	0	14.3	20.5	0	3.1	a3	4.[illegible]	13.1	0
27	26	3.1	0	0	13.2	15.7	0	9.2	a15	11.1	4.1	0
28	7.3	.43	.29	0	14.3	23	12.1	47	a8	7.0	0	0
29	2.55	0	0	0	27.5	18.8	42	-	a6	5.2	0	0
30	2.5	1.8	.02	0	90	26.5	48	-------	a6	24	0	0
31	3.1	21.5	-------	0	-------	25.5	12.9	-------	a6	-------	0	-------
Total	66.29	242.03	86.64	0.95	376.46	1,174.8	150.05	150.79	238.2	240.87	403.78	0.62
Mean:												
mgd	2.14	7.81	2.89	0.031	12.5	37.9	4.84	5.39	7.68	8.03	13.0	0.021
cfs	3.31	12.1	4.47	0.048	19.3	58.6	7.49	8.34	11.9	12.4	20.1	0.032
Ac-ft	203	743	266	2.9	1,160	3,610	460	463	731	739	1,240	1.9

Calendar year 1957: Max 411 Min 0 Mean(mgd) 12.1 Mean(cfs) 18.7 Ac-ft 13,570
Fiscal year 1957-58: Max 411 Min 0 Mean(mgd) 8.58 Mean(cfs) 13.3 Ac-ft 9,620

Peak discharge (base, 1,400 mgd).--No peak above base.

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage and records for Kapahi ditch.

860. Anahola ditch wasteway near Kealia

Location.--Lat 22°08'10", long 159°22'30", on right bank 300 ft downstream from wasteway gates on Anahola ditch, 500 ft north of Kaneha Reservoir, 3.8 miles west of Anahola, and 4.9 miles northwest of Kealia.

Records available.--July 1936 to June 1958.

Gage.--Water-stage recorder and sharp-crested weir. Datum of gage is 820 ft above mean sea level (by hand levels from East Kauai Water Co. bench mark).

Average discharge.--22 years (1936-58), 2.43 mgd (5.31 cfs).

Extremes.--1936-58: Maximum daily discharge, 54 mgd (84 cfs) Nov. 12, 1955; no flow at times.

Remarks.--Records fair except those for period of no gage-height record, which are poor. Water that passes station flows into Kaupaku Stream and thence into Anahola River 2 miles below the Anahola River station.

Cooperation.--Records for July to November 1936 furnished by East Kauai Water Co.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.19	0	0.13	0	0.38	28	2.6	8.6	0.45	0.19	0.32	0.26
2	.26	0	.13	0	.45	12.7	3.15	11.4	.38	.26	.32	.26
3	.19	0	.13	0	.45	8.7	2.8	25.5	.38	.45	.32	.26
4	.26	0	.13	1.59	10.0	5.7	2.8	26	.38	.45	.38	.19
5	.26	0	.19	10.9	18.2	4.7	3.8	20.5	.51	.32	.38	.19
6	.26	0	.19	8.0	8.2	24	3.85	15.1	.38	.32	.45	.19
7	.19	0	.19	16.8	9.3	9.7	5.5	13.2	.32	.45	.38	.19
8	.19	.09	.19	5.3	5.3	6.0	17.2	10.3	.32	.45	.38	.26
9	.19	a15.4	.19	8.2	4.2	5.3	*7.3	6.8	.32	.32	.45	.26
10	.19	a11.8	.19	6.3	3.8	23	4.4	5.7	.32	.26	.38	.26
11	.26	5.1	.19	3.8	3.4	8.5	9.8	6.6	.38	.19	.38	.26
12	.26	4.2	.19	3.7	3.4	6.0	3.8	9.0	.32	.19	.45	.26
13	.19	2.15	.19	10.9	21.5	5.1	6.5	11.4	.32	.19	.32	.26
14	.19	.19	.19	22.5	13.6	5.8	9.7	11.0	.38	.54	.45	.26
15	.19	.19	.19	16.8	*11.1	12.0	15.3	5.6	.26	.38	.32	.26
16	.19	.19	.19	9.9	a13.0	10.6	4.9	4.7	.19	.38	.32	.26
17	.19	.12	.19	17.4	a16.7	9.2	31.5	6.5	.19	.45	.32	.26
18	.26	.19	.13	24	9.2	5.5	31	10.0	.19	3.95	.26	.26
19	.19	.19	.13	13.6	6.8	6.0	17.1	4.5	.19	11.1	.26	.32
20	.19	.26	.06	7.1	11.0	5.5	13.4	3.95	.19	9.4	.26	.32
21	.19	.26	0	7.1	9.8	4.7	21.5	3.6	.19	4.9	.26	.26
22	.19	.32	0	8.3	5.3	3.6	12.0	3.35	.19	3.8	.32	.19
23	.19	.32	0	22.5	4.3	3.4	7.3	3.4	.26	3.65	.26	.19
24	.19	.26	0	12.6	14.0	3.25	6.0	3.1	.26	.32	.26	.19
25	.19	.19	0	6.2	13.5	3.1	5.0	1.91	.26	.26	.19	.19
26	.19	.19	0	5.8	5.7	3.1	4.5	.45	.26	.32	.26	.19
27	.13	.19	0	6.6	5.4	3.15	4.2	.45	.26	.38	.26	.19
28	.13	.19	0	5.2	5.1	17.1	3.95	.45	.19	.45	.26	.19
29	.06	.19	0	2.65	3.95	5.1	12.1	-	.19	.38	.26	.19
30	.13	.26	0	.45	19.5	3.4	16.0	-------	.19	.38	.26	.26
31	.06	.19	-------	.45	-------	2.95	5.7	-------	.26	-------	.26	-------
Total	5.94	42.43	3.31	264.64	256.53	255.05	294.65	233.06	8.88	45.08	9.95	7.08
Mean:												
mgd	0.192	1.37	0.110	8.54	8.55	8.23	9.50	8.32	0.286	1.50	0.321	0.236
cfs	0.297	2.12	0.170	13.2	13.2	12.7	14.7	12.9	0.443	2.32	0.497	0.365
Ac-ft	18	130	10	812	787	783	904	715	27	138	31	22

Calendar year 1956: Max 33.5 Min 0 Mean(mgd) 4.61 Mean(cfs) 7.13 Ac-ft 5,160
Fiscal year 1956-57: Max 31.5 Min 0 Mean(mgd) 3.91 Mean(cfs) 6.05 Ac-ft 4,380

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for nearby stations.

860. Anahola ditch wasteway near Kealia--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.26	0.35	11.9	0.45	0.45	30	8.2	4.4	7.4	1.61	10.8	0.38
2	.32	.32	10.2	.45	.51	19.0	*5.5	3.4	3.4	1.49	9.4	.38
3	.26	.38	13.4	.45	.51	10.8	4.6	2.95	2.8	1.61	7.7	.38
4	.19	.45	11.8	.45	.51	8.9	4.2	2.95	2.3	4.1	5.1	.38
5	.19	.32	6.2	.45	.45	7.5	3.8	2.6	3.15	2.0	5.2	.38
6	.26	.45	5.0	.45	.51	7.5	1.71	2.3	3.25	1.61	3.95	.38
7	.26	9.5	4.5	.32	.51	10.7	.45	2.15	1.68	1.49	3.1	.32
8	.19	12.1	3.95	.32	.45	6.8	.45	2.0	1.73	1.49	4.8	.36
9	.19	6.5	3.6	.32	.51	6.4	.45	2.0	4.1	1.49	10.1	.45
10	.26	4.9	1.15	.45	a.51	8.7	.45	1.85	6.4	1.49	8.2	.32
11	.32	3.95	.45	.45	a.45	8.2	.38	1.73	2.2	1.61	7.3	.38
12	.19	5.1	.45	.45	a.45	6.8	.38	1.73	4.8	1.37	*9.5	.26
13	.19	4.5	.45	.38	a.45	7.8	.38	1.61	4.8	5.0	6.7	.32
14	.26	7.4	.38	.38	a.45	7.3	.38	1.61	2.95	10.4	3.8	.32
15	.26	11.6	.38	.45	a.45	9.9	.38	1.61	2.45	5.4	5.6	.26
16	.19	7.6	.45	.26	.45	5.7	.38	1.49	2.3	2.45	14.6	.26
17	.19	5.7	.45	.38	.45	8.7	.38	2.3	2.6	2.15	14.6	.26
18	.19	9.2	.45	.45	.51	5.7	.38	1.61	4.0	2.15	14.5	.26
19	.19	10.1	.45	.45	.51	6.4	.45	1.49	2.0	1.73	6.4	.19
20	.26	6.0	.45	.45	1.31	6.0	.45	1.37	1.85	9.8	4.7	.19
21	.32	*4.5	.27	.26	10.7	7.7	.45	1.37	1.73	4.6	3.95	.26
22	.32	1.93	.38	.19	6.4	5.5	.45	1.37	1.85	2.6	3.4	.26
23	.32	.45	.45	.32	4.9	9.4	.45	1.49	1.61	2.15	3.1	.32
24	.45	.45	.45	.32	10.1	7.5	.45	5.3	*1.61	2.0	2.95	.26
25	.32	.45	.45	.45	6.8	6.8	.32	1.85	2.5	1.85	3.2	.19
26	.32	4.4	.45	.38	5.7	7.1	.32	1.49	4.6	2.0	5.6	.32
27	.38	6.0	.45	.45	6.4	6.4	.32	3.3	5.7	5.5	2.6	.19
28	.38	6.0	.45	.45	6.2	9.4	.38	17.4	6.6	2.3	2.45	.32
29	.32	9.5	.45	.45	10.4	8.0	.32	-	3.1	2.15	1.49	.32
30	.32	14.5	.45	.45	19.6	9.9	.32	-------	2.3	6.0	.45	.26
31	.38	13.6	-------	.45	-------	9.9	5.6	-------	1.85	-------	.38	-------
Total	8.45	168.20	80.31	12.38	97.60	276.4	43.13	76.72	99.61	91.59	185.62	9.13
Mean:												
mgd	0.273	5.43	2.68	0.399	3.25	8.92	1.39	2.74	3.21	3.05	5.99	0.304
cfs	0.422	8.40	4.15	0.617	5.03	13.8	2.15	4.24	4.97	4.72	9.27	0.470
Ac-ft	26	516	246	38	300	848	132	235	306	281	570	28

Calendar year 1957: Max 31.5 Min 0.19 Mean(mgd) 3.40 Mean(cfs) 5.26 Ac-ft 3,810
Fiscal year 1957-58. Max 30 Min 0.19 Mean(mgd) 3.15 Mean(cfs) 4.87 Ac-ft 3,530

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for nearby streams.

880. Anahola ditch above Kaneha Reservoir, near Kealia

Location.--Lat 22°08'00", long 159°22'30", on left bank at point of discharge into Kaneha Reservoir, 500 ft below wasteway gates and 5 miles northwest of Kealia.

Records available.--December 1921 to June 1958. May 1915 to December 1921 at site 0.3 mile upstream; records not equivalent owing to diversion.

Gage.--Water-stage recorder and Parshall flume. Datum of gage is 821.8 ft above mean sea level (Lihue Plantation bench mark). Dec. 9, 1921, to June 2, 1934, at site 480 ft upstream at different datum.

Average discharge (corrected).--34 years (1922-25, 1927-58), 3.12 mgd (4.83 cfs).

Extremes.--1921-58: Maximum daily discharge, 40 mgd (62 cfs) Nov. 12, 1947; no flow at times.

Remarks.--Records good except those for period of no gage-height record, which are fair. Ditch diverts water from Anahola River to Kaneha Reservoir, where it is stored for irrigation. Flow sometimes diverted by Anahola ditch wasteway (see preceding page).

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.65	3.65	3.75	2.75	3.9	0.33	0.09	0.09	3.3	1.04	4.5	1.18
2	4.8	2.25	2.2	1.73	3.65	.16	.09	.09	2.0	1.85	3.55	1.11
3	2.25	2.1	2.1	3.55	2.8	.12	.06	.20	1.82	10.8	3.55	1.11
4	2.1	5.5	1.91	31	14.5	.12	.06	.20	1.82	6.1	6.2	1.04
5	2.1	5.9	3.1	12.1	.12	.09	.06	.12	7.5	1.97	4.9	.97
6	2.35	3.2	6.3	.06	.06	.28	.09	.09	2.2	1.73	5.0	.97
7	2.2	4.9	2.65	.12	.06	.09	.09	.09	1.82	6.9	2.8	.97
8	4.0	76	1.73	.06	.04	.09	.12	.06	1.64	6.7	2.25	.97
9	a2.2	15.5	1.64	.09	.04	.09	.09	.09	1.58	2.25	4.6	.97
10	a2.1	.06	1.50	.06	.04	.16	.06	.09	1.64	1.73	3.3	.97
11	a2.1	.06	1.50	.06	.06	.09	.06	.09	2.55	1.58	4.6	.97
12	a2.1	.09	1.34	.06	.06	.09	.04	.09	2.25	1.42	7.8	.90
13	a5.0	1.64	1.50	.06	.16	.09	.06	.09	2.65	1.71	3.2	.90
14	a2.0	7.7	3.95	.12	.12	.09	.12	.09	6.0	15.0	8.0	.90
15	a5.0	*9.8	8.5	.09	.09	.06	.16	.06	2.65	11.4	4.7	.97
16	a5.2	3.55	15.3	.09	.06	.09	.06	.06	1.82	15.0	3.0	1.26
17	a3.5	3.8	5.0	.09	.23	.09	1.14	.09	4.3	16.8	2.45	1.64
18	7.9	7.5	5.9	.12	.04	.09	.31	.09	2.25	3.75	2.2	1.18
19	9.7	3.35	2.65	.06	.04	.09	.12	.09	*3.5	.09	2.1	2.1
20	5.3	2.8	2.25	.06	.06	.06	.09	.06	4.8	.09	1.82	2.65
21	5.0	2.45	1.91	.06	.06	.06	.16	.04	2.45	.06	1.82	2.2
22	7.7	2.35	1.73	.09	.06	.04	.06	.04	1.73	.06	3.65	1.26
23	2.9	2.35	1.73	.12	.06	.06	.04	.06	1.58	5.6	1.91	1.04
24	2.8	2.8	1.58	.09	.09	.06	.04	.09	1.50	7.4	1.64	1.04
25	2.35	2.2	1.64	.06	.09	.09	.06	1.00	1.42	5.1	1.42	.97
26	2.2	1.91	1.82	.06	.09	.06	.06	2.25	1.42	5.4	1.42	1.82
27	4.6	1.82	2.25	.09	.12	.06	.09	2.2	1.26	7.2	1.34	1.42
28	2.2	1.82	1.64	.09	.12	.09	.09	2.25	1.18	10.5	1.26	.97
29	2.45	2.1	1.34	1.58	.09	.09	.21	-	1.11	7.4	1.18	1.50
30	6.9	3.95	1.50	10.2	.20	.09	.16	-------	1.11	5.8	1.18	1.26
31	2.55	13.7	-------	5.1	-------	.09	.09	-------	1.04	-------	1.18	-------
Total	116.20	156.80	91.91	69.87	27.11	3.16	4.03	9.86	73.89	162.43	98.52	37.21
Mean:												
mgd	3.75	5.06	3.06	2.25	0.904	0.102	0.130	0.352	2.38	5.41	3.18	1.24
cfs	5.80	7.83	4.73	3.48	1.40	0.158	0.201	0.545	3.68	8.37	4.92	1.92
Ac-ft	357	481	282	214	83	9.7	12	30	227	498	302	114

Calendar year 1956: Max 36 Min 0.02 Mean(mgd) 2.21 Mean(cfs) 3.42 Ac-ft 2,480
Fiscal year 1956-57: Max 36 Min 0.04 Mean(mgd) 2.33 Mean(cfs) 3.61 Ac-ft 2,610

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for nearby stations.

880. Anahola ditch above Kaneha Reservoir, near Kealia--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.55	4.0	0.06	2.55	4.9	0.59	0.09	0.06	0.06	0	0.09	1.73
2	7.8	3.0	.06	*2.1	2.0	.20	.06	.06	.06	0	.06	1.91
3	1.64	8.4	.09	1.91	2.1	.09	.06	.06	0.06	0	.06	1.50
4	1.11	16.8	.09	1.64	1.73	.09	.06	.06	.06	0	.06	1.42
5	1.72	6.4	.06	1.58	1.64	.09	.06	.06	.06	0	.06	1.50
6	3.2	18.8	.06	6.5	1.91	.09	1.97	.04	.06	0	.06	1.34
7	4.2	7.8	.06	3.15	9.2	.09	3.0	.06	.13	0	.06	1.34
8	2.2	.12	.06	1.91	4.1	.09	3.0	.06	.06	0	.06	2.25
9	1.42	.06	.06	1.73	3.9	.09	2.78	.06	.09	0	.06	5.3
10	9.4	.06	2.1	2.5	11.3	.09	2.55	.06	.09	0	.06	4.3
11	13.8	.06	2.55	1.73	6.2	.06	2.35	.06	.09	0	.06	5.8
12	3.0	.06	2.35	1.50	4.7	.06	2.25	.06	.09	0	.06	2.89
13	2.27	.06	2.2	1.50	7.2	.06	2.1	.06	.06	0	.04	1.91
14	9.6	.09	2.1	1.73	9.1	.06	2.0	.04	0	0	.04	1.64
15	4.0	.09	2.0	5.0	7.4	.06	1.91	.04	0	0	.04	1.42
16	2.4	.09	2.0	2.35	7.4	.04	1.82	.04	0	0	.09	1.42
17	2.1	.06	6.7	4.4	4.4	.06	1.73	.04	0	0	.09	1.42
18	2.1	.09	7.0	4.8	3.2	.06	1.64	.04	0	0	.06	1.34
19	1.82	.12	2.8	3.65	2.9	.06	1.64	.04	0	0	.04	1.18
20	4.2	.09	2.1	8.2	13.4	.06	1.73	.04	0	.07	.04	1.18
21	3.5	.09	1.78	3.1	4.7	.06	2.0	.04	0	0	.04	1.11
22	2.4	2.0	1.73	2.2	.09	.06	1.64	.04	0	0	.04	1.11
23	2.25	2.9	1.58	1.91	.09	.06	2.8	.02	0	0	.04	6.2
24	8.1	5.3	3.1	1.91	.12	.06	1.58	.02	0	0	.04	1.73
25	3.0	17.0	8.9	3.25	.09	.04	1.50	.02	0	0	.04	2.09
26	3.75	3.95	3.2	1.91	.09	.04	1.42	.02	0	0	.06	5.9
27	10.3	.04	2.1	1.82	.09	.04	1.42	.02	0	.06	.04	5.1
28	6.3	.04	5.2	1.64	.09	.06	8.4	.17	0	.09	.04	9.8
29	4.8	.04	2.65	1.58	.12	.06	11.8	-	0	.06	.71	7.3
30	5.7	.06	6.0	1.64	.20	.09	21	-------	0	.06	1.64	5.0
31	9.1	.09	-------	4.7	-------	.09	3.1	-------	0	-------	1.64	-------
Total	139.73	97.76	70.74	86.09	114.36	2.75	89.46	1.39	0.97	0.34	5.52	88.13
Mean:												
mgd	4.51	3.15	2.36	2.78	3.81	0.089	2.89	0.050	0.031	0.011	0.178	2.94
cfs	6.98	4.87	3.65	4.30	5.89	0.138	4.47	0.077	0.048	0.017	0.275	4.55
Ac-ft	429	300	217	264	351	8.4	275	4.3	3.0	1.0	17	270

Calendar year 1957. Max 18.8 Min 0.04 Mean(mgd) 2.46 Mean(cfs) 3.81 Ac-ft 2,750
Fiscal year 1957-58: Max 21 Min 0 Mean(mgd) 1.91 Mean(cfs) 2.96 Ac-ft 2,140

* Discharge measurement made on this day.

890. Anahola River near Kealia

Location.--Lat 22°08'55", long 159°21'20", on right bank just upstream from intake of Lower Anahola ditch, 4.5 miles northwest of Kealia.

Drainage area.--5.5 sq mi.

Records available.--August to November 1910, December 1910 to November 1912 (fragmentary), December 1912 to June 1958.

Gage.--Water-stage recorder and concrete dam and orifice control. Datum of gage is 295.11 ft above mean sea level (Highway Department bench mark). Aug. 22 to Nov. 2, 1910, water-stage recorder, Dec. 15, 1910, to Dec. 29, 1912, staff gage, and Dec. 30, 1912, to May 3, 1934, water-stage recorder, at site an eighth of a mile upstream at different datum.

Average discharge.--39 years (1919-58), 13.5 mgd (20.9 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 3,340 mgd (5,170 cfs) Jan. 17 (gage height, 7.53 ft), from rating curve extended above 380 mgd; minimum, 1.55 mgd (2.40 cfs) Aug. 2, 3.
1957-58: Maximum discharge during fiscal year, 1,430 mgd (2,210 cfs) Dec. 1 (gage height, 5.48 ft); minimum, 1.8 mgd (2.79 cfs) July 19.
1910, 1912-58: Maximum discharge, about 12,700 mgd (19,600 cfs) Jan. 25, 1956 (gage height, 14.6 ft, from floodmark), from rating curve extended above 380 mgd; minimum, 1.28 mgd (1.98 cfs) Oct. 27, 1953.

Remarks.--Records fair except those for period of no gage-height record, which are poor. Anahola ditch diverts water 3 miles above station for irrigation in vicinity of Kealia (see preceding page).

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.2	1.90	4.6	3.8	6.8	166	6.6	18.6	13.3	4.6	5.4	2.25
2	4.8	1.70	4.1	3.65	6.8	47	6.1	27.5	7.2	5.1	5.8	2.2
3	4.3	1.80	4.1	5.1	6.4	29.5	6.8	145	6.8	47	5.8	2.25
4	4.2	2.8	3.95	156	166	22	7.5	166	6.6	12.0	6.3	2.2
5	4.2	3.1	4.5	100	37	17.8	7.8	70	20.5	5.1	5.6	2.1
6	4.2	2.2	5.9	26.5	16.2	166	8.0	36	*6.8	4.8	6.1	2.05
7	4.1	2.1	4.6	46	22	38	8.4	32.5	6.4	5.4	5.3	2.05
8	4.1	145	3.95	*13.5	12.0	22	28	24	6.1	7.0	5.1	2.0
9	4.1	202	3.75	15.5	9.9	18.6	*12.0	19.5	6.1	4.8	6.0	2.0
10	3.95	34	3.55	9.4	8.4	110	7.8	17.0	6.3	4.6	5.6	1.95
11	3.95	15.5	3.55	7.8	8.0	21.5	17.8	17.0	6.3	4.6	5.6	1.90
12	3.95	9.4	3.45	7.0	7.8	16.2	7.8	17.8	6.1	4.3	6.1	1.85
13	5.3	8.0	3.55	9.9	50	13.5	7.2	49	5.9	4.3	5.9	1.90
14	3.8	8.9	3.65	37	22	12.0	23	63	7.0	136	47	1.85
15	5.0	*8.9	20.5	21.5	*21.5	17.0	50	20.5	6.1	17.0	5.6	2.0
16	5.4	6.8	19.0	17.0	25	17.0	12.0	16.2	5.6	14.5	4.3	2.25
17	4.5	6.8	5.3	17.8	58	17.8	505	31.5	6.4	23	4.2	2.55
18	11.3	8.0	6.6	72	26.5	11.3	311	32.5	5.8	*7.8	4.1	2.05
19	17.8	6.4	4.2	35	21.5	10.5	81	14.5	5.9	18.6	3.95	2.3
20	7.0	5.9	4.2	17.0	21.5	9.4	56	14.5	9.9	14.5	*3.95	2.9
21	4.9	5.3	3.8	13.5	19.5	8.4	85	13.5	6.4	6.4	3.75	2.25
22	5.8	4.8	3.75	11.3	13.5	8.0	55	12.0	5.3	5.8	3.8	2.05
23	2.8	4.8	3.65	59	11.3	7.5	28.5	13.5	5.1	20.5	3.55	1.85
24	2.3	5.4	3.65	19.5	36	7.5	23	9.9	5.0	8.0	3.25	1.90
25	2.05	5.4	3.65	9.4	30.5	7.2	19.5	9.4	4.8	6.3	3.1	1.80
26	2.0	4.8	3.8	8.4	15.5	6.8	17.0	8.9	4.8	6.6	3.0	1.85
27	2.4	4.6	3.8	7.8	17.0	6.8	15.5	8.4	4.7	6.3	2.8	1.95
28	2.0	4.3	3.65	6.8	17.0	34	*13.5	8.4	4.6	8.4	2.75	1.80
29	1.85	4.3	3.45	7.2	11.3	9.4	90	-	4.6	6.6	2.7	1.90
30	2.3	4.5	3.25	9.4	104	7.5	107	-------	4.6	5.9	2.55	1.80
31	2.05	9.4	-------	7.8	-------	7.0	20.5	-------	4.5	-------	2.35	-------
Total	140.60	538.80	153.45	781.55	828.9	893.2	1,644.3	916.6	205.5	425.8	181.30	61.75
Mean:												
mgd	4.54	17.4	5.12	25.2	27.6	28.8	53.0	32.7	6.63	14.2	5.85	2.06
cfs	7.02	26.9	7.92	39.0	42.7	44.6	82.0	50.6	10.3	22.0	9.05	3.19
Ac-ft	431	1,650	471	2,400	2,540	2,740	5,050	2,810	631	1,310	556	190

Calendar year 1956: Max 1,000 Min 1.70 Mean(mgd) 23.5 Mean(cfs) 36.4 Ac-ft 26,420
Fiscal year 1956-57: Max 505 Min 1.70 Mean(mgd) 18.6 Mean(cfs) 28.8 Ac-ft 20,780

Peak discharge (base, 900 mgd).--Aug. 9 (4 p.m.) 1,220 mgd (1,890 cfs), 5.22 ft; Oct. 5 (8 p.m.) 1,020 mgd (1,580 cfs), 4.86 ft; Dec. 1 (1 p.m.) 960 mgd (1,490 cfs), 4.77 ft; Dec. 10 (8 a.m.) 1,360 mgd (2,100 cfs), 5.35 ft; Jan. 17 (1 p.m.) 3,340 mgd (5,170 cfs), 7.53 ft; Jan. 29 (12 p.m.) 1,290 mgd (2,000 cfs), 5.29 ft; Feb. 3 (10 p.m.) 1,020 mgd (1,580 cfs), 4.90 ft; Apr. 14 (2 a.m.) 1,360 mgd (2,100 cfs), 5.43 ft.

* Discharge measurement made on this day.

890. Anahola River near Kealia--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.05	3.45	24	3.45	3.95	506	26.5	4.7	15	3.8	36	4.1
2	7.8	2.6	9.9	*3.1	3.0	227	*9.4	4.1	10	3.65	7.8	4.3
3	3.1	7.2	24	2.9	2.75	63	8.9	3.95	5.4	3.8	11.3	4.2
4	2.3	21.5	14.5	2.75	2.45	39	7.2	4.3	5	4.2	6.3	3.8
5	2.2	6.1	7.5	2.6	2.4	30	7.0	4.2	5	3.8	5.8	3.65
6	2.25	53	6.4	7.2	2.7	28.5	7.0	3.95	5	3.45	5.3	3.15
7	3.05	71	6.1	4.8	8.4	63	6.8	3.8	5	3.35	4.8	3.15
8	*2.7	25	5.6	3.35	6.0	22	7.0	3.75	5	3.35	5.3	3.55
9	2.05	7.5	5.3	2.9	4.9	20.5	6.8	3.75	4.5	3.15	7.8	4.7
10	7.2	5.0	5.0	4.3	5.8	26	7.0	3.65	5	3.1	7.0	4.5
11	42	4.3	4.8	3.15	5.3	26.5	7.0	3.65	5	3.35	7.0	5.0
12	2.8	8.0	4.6	2.75	4.7	13.5	6.3	3.65	5.5	3.0	*7.8	3.55
13	2.1	7.8	4.5	2.6	*5.2	15.5	6.3	*3.55	5	3.95	7.5	3.25
14	5.6	8.9	4.5	2.8	14.5	12.0	6.1	3.45	4.5	11.3	5.3	2.75
15	3.0	22	4.2	4.5	6.3	31	5.9	3.25	4.5	6.6	5.3	2.7
16	2.2	7.8	4.1	2.9	20.5	11.3	5.8	3.35	4.5	4.5	29.5	2.45
17	2.0	5.6	5.8	3.15	6.3	22.5	5.8	4.3	4.5	4.2	27.5	2.45
18	1.95	6.4	5.9	4.1	4.6	11.3	5.6	3.25	4.5	4.3	41	2.45
19	1.85	7.0	4.6	3.95	4.2	10.5	5.6	3.0	4.5	3.55	8.4	2.25
20	2.4	5.9	3.95	9.4	106	9.9	5.6	3.0	4.5	63	6.8	2.2
21	2.3	*4.8	3.65	5.4	48	11.3	5.8	2.9	4.5	6.3	6.1	2.1
22	2.0	4.5	3.45	4.6	15.5	8.9	5.6	4.1	4.5	4.6	5.6	2.2
23	2.2	4.2	3.25	4.2	9.4	18.5	6.6	4.1	4.5	4.2	5.1	5.6
24	13.5	4.6	3.55	4.2	17.0	11.3	5.3	4.1	*4.3	3.8	5.1	3.0
25	2.75	48	5.9	5.2	8.9	9.4	5.1	4.1	4.3	3.55	5.1	2.55
26	2.7	10.5	4.5	4.5	7.5	11.3	5.0	10	4.7	3.65	5.1	3.45
27	46	6.8	3.55	4.2	6.8	8.0	5.0	30	5.0	6.1	4.2	5.3
28	4.7	5.8	3.75	4.2	7.5	14.5	19.5	20	5.4	4.2	4.5	9.4
29	3.8	6.8	3.65	3.9	11.3	13.5	74	-	4.5	3.75	4.5	6.4
30	3.5	23	3.75	3.9	102	32	71	-------	4.2	5.8	4.3	4.3
31	5.4	15.5	-------	4.2	-------	21.5	6.3	-------	3.95	-------	4.3	-------
Total	189.75	420.55	194.25	125.15	453.85	1,349.2	362.8	153.90	161.75	189.35	297.4	112.45
Mean:												
mgd	6.12	13.6	6.48	4.04	15.1	43.5	11.7	5.50	5.22	6.31	9.59	3.75
cfs	9.47	21.0	10.0	6.25	23.4	67.3	18.1	8.51	8.08	9.76	14.8	5.80
Ac-ft	582	1,290	596	384	1,390	4,140	1,110	472	496	581	913	345

Calendar year 1957: Max 506 Min 1.80 Mean(mgd) 16.9 Mean(cfs) 26.1 Ac-ft 18,930
Fiscal year 1957-58: Max 506 Min 1.85 Mean(mgd) 11.0 Mean(cfs) 17.0 Ac-ft 12,300

Peak discharge (base, 900 mgd).--Nov. 20 (9 p.m.) 1,360 mgd (2,100 cfs), 5.44 ft; Dec. 1 (8 p.m.) 1,430 mgd (2,210 cfs), 5.48 ft.

* Discharge measurement made on this day.
Note.--No gage-height record Feb. 22 to Mar. 23; discharge estimated on basis of recorded range in stage and records for nearby stations.

910. Lower Anahola ditch near Kealia

Location.--Lat 22°08'00", long 159°19'30", on left bank 100 ft downstream from last waste-way, 1.3 miles southwest of mouth of Anahola River, and 2.5 miles northwest of Kealia.

Records available.--December 1936 to June 1958 in reports of Geological Survey. July 1925 to December 1936 in files of East Kauai Water Co.

Gage.--Water-stage recorder and Parshall flume. Datum of gage is 276.11 ft above mean sea level (Highway Department bench mark).

Average discharge.--21 years (1937-58), 2.36 mgd (3.65 cfs).

Extremes.--1936-58: Maximum daily discharge, 12.0 mgd (18.6 cfs) June 1, 1938; no flow at times.

Remarks.--Records good. Ditch diverts water from Anahola River for irrigation of sugar-cane. Flow regulated by spillways and gates.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.04	3.25	0.04	2.1	1.50	0.01	0	0	3.1	1.71	5.0	0.04
2	1.42	1.89	.04	2.7	1.73	0	0	0	.05	2.05	5.0	.04
3	1.33	1.25	.04	2.7	.03	0	0	0	.05	2.6	3.55	1.04
4	.04	.03	1.42	3.7	.03	0	0	0	2.6	2.5	.04	1.21
5	1.33	.03	1.46	2.1	.03	0	0	0	3.15	1.92	.04	2.45
6	1.22	1.14	1.47	.01	.03	0	0	0	2.45	.04	3.55	3.2
7	.04	1.06	1.54	.01	.03	0	0	0	2.5	.04	4.8	3.2
8	.03	.03	.04	.01	.03	0	0	0	2.25	2.2	4.8	3.1
9	1.34	1.90	.04	2.2	.40	0	0	0	.05	4.0	4.8	3.1
10	1.27	2.6	1.25	2.35	.01	0	0	0	.04	5.2	3.3	3.1
11	1.11	.01	1.14	2.1	0	0	0	0	.04	5.2	.04	3.0
12	1.29	.01	1.09	2.25	2.7	0	0	0	2.2	3.85	.04	2.85
13	1.33	2.2	1.19	.03	3.0	0	0	2.5	2.35	.04	4.6	2.85
14	.04	2.75	1.16	.03	*2.75	0	0	.04	2.65	.04	4.8	2.85
15	.03	*4.0	.04	2.2	.58	0	.04	.04	2.55	1.98	5.2	2.85
16	1.14	3.75	.04	2.5	.01	0	.02	.02	.05	4.8	4.7	3.05
17	1.20	2.3	1.32	2.45	.01	0	.07	.02	.04	5.2	4.5	3.1
18	1.36	.04	1.47	2.6	.01	0	.06	.02	2.05	3.4	1.73	2.9
19	1.32	.03	1.53	2.65	0	0	0	.02	*2.1	.04	.04	3.05
20	1.80	2.95	1.20	.03	0	0	0	0	2.25	.04	3.15	3.1
21	.04	4.0	1.37	.03	0	0	0	0	2.3	.04	4.2	3.05
22	.04	4.0	.01	.03	0	0	0	0	2.0	6.0	4.5	3.0
23	1.59	2.35	.01	.03	0	0	0	0	.05	9.1	4.9	2.55
24	1.46	2.4	2.15	2.5	0	0	0	0	.04	6.4	2.75	2.55
25	1.43	.04	3.4	2.35	0	0	0	.42	2.85	5.6	.04	2.45
26	1.38	.03	3.25	2.65	0	0	0	2.8	3.85	2.65	.04	2.6
27	1.35	1.34	3.35	.04	0	0	0	3.15	6.0	.04	1.55	2.4
28	.04	1.39	1.91	.04	0	0	0	2.85	5.6	.04	1.34	2.4
29	.03	1.38	.03	1.85	0	0	0	-	6.0	3.75	1.58	2.45
30	2.5	1.35	.03	1.50	0	0	0	-------	.04	5.1	1.29	2.4
31	3.25	1.58	-------	1.58	-------	0	0	-------	.02	-------	1.26	-------
Total	31.79	51.08	33.03	47.32	12.88	0.01	0.19	11.88	61.27	85.57	87.13	75.93
Mean:												
mgd	1.03	1.65	1.10	1.53	0.429	0.0003	0.006	0.424	1.98	2.85	2.81	2.53
cfs	1.59	2.55	1.70	2.37	0.664	0.0005	0.009	0.656	3.08	4.41	4.35	3.91
Ac-ft	98	157	101	145	40	0.03	0.6	36	188	263	267	233

Calendar year 1956: Max 4.0 Min 0 Mean(mgd) 0.581 Mean(cfs) 0.899 Ac-ft 651
Fiscal year 1956-57: Max 9.1 Min 0 Mean(mgd) 1.36 Mean(cfs) 2.10 Ac-ft 1,530

* Discharge measurement made on this day.

910. Lower Anahola ditch near Kealia--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.45	3.0	0.07	3.9	3.55		0	0			0	0.16
2	3.05	2.85	.05	*4.1	3.3		0	0			0	2.8
3	2.9	3.4	.43	3.15	3.05		0	0			0	4.5
4	2.6	4.4	.05	.02	2.8		0	0			0	4.8
5	2.4	4.4	.05	.02	2.8		0	0			0	4.4
6	2.35	5.2	2.9	.02	2.85		.60	0			0	3.85
7	2.45	6.4	.04	3.0	3.4		1.72	0			0	3.8
8	*2.6	8.2	.02	3.9	3.9		4.4	0			0	3.8
9	2.45	5.5	.02	3.55	3.7		4.4	0			0	1.22
10	2.55	.07	.02	4.4	3.8		2.85	0			0	1.56
11	3.05	.05	.02	2.45	3.85		.02	0			0	4.2
12	2.85	5.2	.02	.05	3.85		.02	.09			0	4.0
13	2.7	7.8	.02	.04	4.4		2.8	.14			0	3.6
14	2.8	4.8	0	2.3	4.1		3.6	1.73			0	3.3
15	2.9	.04	0	3.8	4.3		3.5	4.1			0	3.2
16	2.6	2.85	0	3.5	5.6		3.4	4.2			0	3.1
17	2.45	.13	0	3.5	4.7		2.75	3.85			0	3.0
18	2.45	.09	0	2.4	4.5		1.80	3.85			0	3.0
19	2.4	2.85	0	.05	4.4		1.97	4.6			0	2.85
20	2.7	3.15	0	.05	3.2		2.9	2.35			0	2.8
21	2.8	2.95	0	.04	0		3.25	0			0	2.8
22	2.7	2.85	0	.53	0		3.25	0			0	2.8
23	2.55	1.77	1.85	3.5	0		3.3	0			0	3.6
24	3.2	.07	4.2	3.5	0		1.97	0			0	3.5
25	3.0	.07	4.6	2.4	0		.07	0			0	3.05
26	2.85	2.65	4.5	.18	0		.05	0			0	3.1
27	4.0	.05	3.05	.11	0		1.85	0			4.2	3.8
28	3.4	.04	.05	2.55	0		3.7	0			2.9	3.85
29	3.25	3.0	.04	3.1	0		2.1	-			.04	4.8
30	3.05	3.2	1.33	3.1	0		.05	-------			3.2	3.9
31	3.1	.07	-------	3.2	-------		0	-------		-------	3.0	-------
Total	86.60	87.10	23.33	66.41	76.05	0	56.32	24.91	0	0	13.34	99.14
Mean:												
mgd	2.79	2.81	0.778	2.14	2.54	0	1.82	0.890	0	0	0.430	3.30
cfs	4.32	4.35	1.20	3.31	3.93	0	2.82	1.38	0	0	0.665	5.11
Ac-ft	266	267	72	204	233	0	173	76	0	0	41	304

Calendar year 1957: Max 9.1 Min 0 Mean(mgd) 1.81 Mean(cfs) 2.80 Ac-ft 2,030
Fiscal year 1957-58: Max 8.2 Min 0 Mean(mgd) 1.46 Mean(cfs) 2.26 Ac-ft 1,640

* Discharge measurement made on this day.

942. Ka Loko ditch near Kilauea

Location.--Lat 22°10'35", long 159°23'00", on left bank 35 ft downstream from Moloaa ditch, 400 ft upstream from Ka Loko Reservoir, and 3.5 miles southeast of Kilauea.

Records available.--August 1932 to June 1958.

Gage.--Water-stage recorder and Parshall flume. Altitude of gage is 750 ft (from topographic map).

Average discharge.--25 years (1933-58), 3.51 mgd (5.43 cfs).

Extremes.--1932-58: Maximum daily discharge, 63 mgd (98 cfs) Dec. 10, 1935; minimum daily, 0.46 mgd (0.71 cfs) Nov. 21, 22, 1949.

Remarks.--Records good except those for period of no gage-height record, which are fair. Ditch diverts water from Moloaa and Puu Ka Ele Streams, 0.5 mile southeast and 1.5 miles southwest of station, respectively. Water used for irrigation in vicinity of Kilauea. Flow regulated by wasteway gates.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.98	1.98	1.16	1.63	2.25	10.4	1.39	1.39	*3.05	1.23	1.98	1.09
2	2.5	1.54	.95	1.47	1.98	2.65	1.39	.95	2.25	1.54	1.98	1.09
3	1.89	1.47	1.02	2.9	1.98	1.63	1.63	1.09	2.15	6.1	2.05	1.09
4	1.80	2.15	.95	22.5	28.5	1.16	1.54	1.39	1.80	2.4	2.05	1.09
5	1.89	2.45	1.09	15.1	7.0	2.65	1.54	1.09	4.4	1.47	1.80	1.02
6	1.89	1.89	1.86	5.6	3.8	4.4	1.78	2.5	1.71	1.31	1.89	1.02
7	1.80	1.98	1.39	12.8	5.6	1.98	2.45	3.05	1.54	1.80	1.63	1.02
8	1.80	19.8	1.47	3.7	3.15	1.31	4.2	2.35	1.92	2.25	1.54	1.02
9	1.71	22	1.39	5.4	2.65	1.09	2.25	1.71	1.89	1.47	2.5	1.02
10	1.63	3.2	a1.35	3.45	2.45	2.7	1.63	1.09	1.98	1.31	1.89	1.02
11	1.80	1.98	a1.3	2.75	2.25	1.39	2.7	2.15	2.25	1.23	1.98	.95
12	1.80	1.63	a1.25	2.45	2.15	1.88	2.55	2.75	2.15	1.16	2.25	.95
13	2.9	1.47	a1.2	3.2	4.5	1.89	2.55	3.45	2.15	1.16	1.71	.95
14	1.91	1.63	a1.2	5.9	1.61	1.89	5.1	1.94	3.05	15.9	3.15	.95
15	2.3	1.71	a1.18	4.6	1.37	1.47	7.0	.88	1.98	4.4	1.80	.95
16	2.15	1.31	a1.16	5.4	2.05	1.09	3.05	.88	1.80	*4.6	1.47	1.09
17	1.80	1.39	a5.0	5.5	2.55	*1.47	5.6	.88	2.45	5.1	1.39	1.23
18	3.65	2.25	a2.5	12.4	1.65	1.09	2.25	1.54	1.89	3.05	1.39	1.02
19	3.8	1.23	a2.5	5.9	1.39	1.02	1.16	1.98	2.85	4.0	1.31	1.31
20	2.95	1.16	*2.45	3.7	1.97	.95	2.4	1.89	3.55	5.0	1.23	1.54
21	2.45	1.09	1.89	3.45	1.31	.95	4.8	1.80	2.45	2.45	1.23	1.09
22	3.4	1.09	1.63	3.45	1.02	.88	1.02	1.71	1.98	2.15	1.39	1.02
23	1.98	1.02	1.54	7.3	.95	.81	2.9	1.71	1.71	4.9	1.31	1.02
24	1.80	1.16	1.47	4.8	1.65	1.23	3.25	1.31	1.63	3.35	1.23	.95
25	1.71	.95	1.71	3.05	1.78	.95	2.45	1.39	1.54	2.55	1.16	.95
26	1.54	.95	1.71	2.75	1.02	1.31	1.80	1.89	1.54	2.85	1.16	.95
27	1.98	.95	1.71	3.15	2.75	1.80	1.63	2.4	1.47	2.45	1.16	.95
28	1.63	.95	1.54	2.55	2.95	4.2	2.25	2.45	1.39	3.45	1.16	.95
29	1.54	.95	1.39	2.35	1.80	1.09	3.45	-	1.39	2.65	1.16	.95
30	2.05	1.02	1.39	3.9	8.2	.88	4.2	-------	1.31	2.45	1.16	.95
31	1.54	1.80	-------	2.75	-------	1.31	2.35	-------	1.31	-------	1.09	-------
Total	65.57	86.15	48.35	165.85	104.28	59.52	84.26	49.61	64.53	95.73	50.20	31.20
Mean:												
mgd	2.12	2.78	1.61	5.35	3.48	1.92	2.72	1.77	2.08	3.19	1.62	1.04
cfs	3.28	4.30	2.49	8.28	5.38	2.97	4.21	2.74	3.22	4.94	2.51	1.61
Ac-ft	201	264	148	509	320	183	259	152	198	294	154	96

Calendar year 1956: Max 28.5 Min 0.52 Mean(mgd) 2.81 Mean(cfs) 4.35 Ac-ft 3,160
Fiscal year 1956-57: Max 28.5 Min 0.81 Mean(mgd) 2.49 Mean(cfs) 3.84 Ac-ft 2,780

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of periodic gage readings, of recorded range in stage, and weather records.

942. Ka Loko ditch near Kilauea--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.98	1.52	6.7	1.68	2.3	1.06	5.1	2.7	6.4	1.37	6.6	1.77
2	3.4	1.21	5.2	1.52	1.37	13.4	4.1	2.3	3.55	1.37	5.9	2.15
3	*1.29	3.85	7.7	1.45	1.21	11.0	3.75	2.25	2.9	1.37	5.0	1.68
4	1.13	4.6	4.8	*1.37	*1.21	6.3	3.55	2.25	2.5	1.86	2.7	1.60
5	1.06	2.3	3.35	1.29	1.13	5.2	3.35	2.05	3.45	1.45	2.4	1.60
6	1.06	6.6	2.9	2.65	1.13	5.6	3.1	1.96	2.75	1.37	1.96	1.52
7	1.13	14.6	2.8	1.86	5.6	6.1	3.1	1.86	2.4	1.37	1.77	1.45
8	1.06	6.6	2.6	1.37	2.6	4.0	3.25	1.86	2.25	1.37	2.6	1.98
9	1.06	3.25	2.5	1.29	2.15	3.65	3.1	1.86	3.55	1.29	4.2	2.3
10	2.35	2.6	2.4	1.52	2.5	3.75	3.35	1.77	5.3	1.29	4.3	2.25
11	5.3	2.3	2.3	1.29	1.96	3.55	3.75	1.68	*3.45	1.29	3.65	2.7
12	1.52	2.4	2.25	1.29	1.77	3.1	2.9	1.60	3.9	1.21	3.55	1.77
13	1.13	2.6	2.25	1.21	1.77	3.1	2.7	1.60	3.45	1.52	3.0	1.45
14	2.4	3.25	2.15	1.21	5.7	3.0	2.6	1.60	2.4	5.6	2.15	1.37
15	1.45	4.1	2.05	1.86	3.5	3.55	2.6	1.45	2.15	3.1	2.15	1.45
16	1.13	3.1	2.05	1.29	7.7	2.8	2.6	1.45	2.05	1.60	7.3	1.37
17	1.13	2.3	2.95	1.37	2.8	*5.5	2.6	2.05	2.05	1.37	8.5	1.37
18	1.13	3.0	3.0	1.52	2.15	4.6	2.6	1.52	2.05	1.29	7.9	1.37
19	1.06	3.35	2.15	1.60	1.96	4.4	2.4	1.45	1.77	1.21	3.55	1.29
20	1.71	2.8	1.86	5.6	9.6	4.2	2.3	1.37	1.77	10.0	2.9	1.29
21	1.13	*2.25	1.77	2.05	8.9	4.4	2.5	1.37	1.77	2.6	2.6	1.29
22	1.06	2.05	1.77	1.45	4.6	3.9	2.3	1.29	1.68	1.60	2.5	1.29
23	1.85	1.86	1.60	1.29	3.55	5.2	3.5	1.45	1.68	1.37	2.3	2.15
24	3.85	2.05	1.77	1.37	3.9	5.3	2.25	3.05	1.60	1.29	2.25	1.37
25	1.52	10.0	3.0	3.35	2.9	4.6	2.05	1.60	1.68	1.21	2.25	1.29
26	1.52	4.7	1.96	1.45	2.8	5.1	2.05	1.29	1.86	1.21	2.3	*2.05
27	6.6	3.55	1.77	1.29	2.7	4.2	1.96	6.2	2.7	1.96	2.15	2.05
28	2.25	2.8	2.05	1.29	3.65	5.8	4.9	32	2.7	1.37	2.05	4.2
29	1.45	3.3	1.77	1.21	3.8	5.1	9.5	-	1.77	1.37	1.96	2.95
30	1.45	5.3	2.5	1.29	6.5	8.3	11.8	-------	1.52	3.3	1.86	1.96
31	2.35	5.8	-------	1.86	-------	6.2	4.3	-------	1.45	-------	1.77	-------
Total	57.51	119.99	83.92	52.14	103.41	155.96	109.91	84.88	80.50	59.58	106.07	54.33
Mean:												
mgd	1.86	3.87	2.80	1.68	3.45	5.03	3.55	3.03	2.60	1.99	3.42	1.81
cfs	2.88	5.99	4.33	2.60	5.34	7.78	5.49	4.69	4.02	3.08	5.29	2.80
Ac-ft	176	368	258	160	317	479	337	260	247	183	326	167

Calendar year 1957: Max 15.9 Min 0.88 Mean(mgd) 2.60 Mean(cfs) 4.02 Ac-ft 2,910
Fiscal year 1957-58: Max 32 Min 0.98 Mean(mgd) 2.93 Mean(cfs) 4.53 Ac-ft 3,280

* Discharge measurement made on this day.

950. Puu Ka Ele ditch near Kilauea

Location.--Lat 22°11'05", long 159°24'20", on left bank 200 ft upstream from Puu Ka Ele Reservoir and 2 miles south of Kilauea.

Records available.--August 1932 to June 1958.

Gage.--Water-stage recorder and Parshall flume. Altitude of gage is 430 ft (by barometer).

Average discharge.--25 years (1933-58), 2.75 mgd (4.25 cfs).

Extremes.--1932-58: Maximum daily discharge, 21 mgd (32 cfs) Sept. 2, 1943; no flow at times each year.

Remarks.--Records good except those for period of no gage-height record, which are fair. Ditch diverts water from Puu Ka Ele Stream 0.8 mile south of station. Water used for irrigation of sugarcane in vicinity of Kilauea. Flow regulated by wasteway gates.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.5	2.85	3.6	2.4	3.65	2.4	0	0	0	1.02	0	1.39
2	2.6	2.1	2.9	2.4	3.55	.57	2.85	.14	0	1.69	0	1.39
3	2.4	2.0	3.0	3.2	3.3	.16	4.1	.81	0	2.6	0	1.31
4	2.3	2.85	2.9	12.2	4.3	0	4.1	1.92	0	1.52	0	1.31
5	2.4	3.95	3.2	11.3	.51	0	4.3	.56	.08	1.16	0	1.31
6	2.4	2.6	5.8	8.8	0	2.0	4.6	.16	0	1.09	0	1.31
7	2.3	3.3	4.0	4.5	.09	.19	4.1	.03	0	1.31	0	1.31
8	2.2	12.2	3.5	0	0	0	3.65	.50	0	1.31	0	1.23
9	2.1	13.9	3.1	.12	0	0	1.76	.36	0	1.16	0	1.23
10	2.0	8.8	2.8	0	0	1.51	0	.16	0	1.09	0	1.23
11	2.0	6.4	2.5	0	0	.09	.05	.04	0	1.09	0	1.23
12	2.1	5.7	2.3	0	0	0	0	.04	0	1.02	0	1.23
13	2.85	5.1	2.2	.13	.59	0	0	1.23	0	1.02	0	1.31
14	2.2	6.0	2.1	.32	.06	0	.01	.06	0	6.6	.10	1.31
15	2.3	5.9	2.0	.16	.08	.09	.18	0	0	.96	0	1.39
16	2.5	4.6	1.98	.27	.10	.09	0	0	0	0	0	1.64
17	2.2	4.7	9.0	2.0	.04	.14	4.3	.08	0	0	0	1.73
18	4.3	6.2	4.5	.63	.08	0	2.5	.04	0	0	0	1.47
19	4.5	4.2	4.5	.14	0	0	.19	0	1.15	.09	0	1.92
20	3.2	3.95	*4.6	0	.06	0	0	0	1.73	.02	0	1.92
21	3.2	3.65	3.65	0	.03	0	.44	0	1.54	0	0	1.64
22	3.55	3.65	3.3	0	0	0	.16	0	1.23	0	.74	1.39
23	2.75	3.55	3.1	.65	0	0	0	0	1.16	.08	1.64	1.31
24	2.75	3.8	2.95	3.55	.14	0	0	0	1.16	0	1.64	1.31
25	2.5	3.3	3.2	4.6	.17	0	3.2	0	1.09	0	1.64	1.31
26	2.3	3.2	2.95	4.3	0	0	4.7	0	1.02	0	1.64	1.31
27	2.6	3.1	2.75	4.6	.01	0	4.5	0	1.02	0	1.54	1.31
28	2.3	3.1	2.6	3.95	.12	.44	1.73	0	.95	0	1.54	1.39
29	2.3	2.95	2.4	3.8	0	0	.72	-	.95	0	1.54	1.47
30	2.2	3.8	2.4	5.0	2.2	0	.40	-------	1.02	0	1.47	1.31
31	2.1	5.0	-------	4.5	-------	0	0	-------	1.02	-------	1.47	-------
Total	79.90	146.40	99.78	83.52	19.08	7.68	52.54	6.13	15.12	24.83	14.96	41.92
Mean:												
mgd	2.58	4.72	3.33	2.69	0.636	0.248	1.69	0.219	0.488	0.828	0.483	1.40
cfs	3.99	7.30	5.15	4.16	0.984	0.384	2.61	0.339	0.755	1.28	0.747	2.17
Ac-ft	245	449	306	256	59	24	161	19	46	76	46	129

Calendar year 1956: Max 13.9 Min 0 Mean(mgd) 2.22 Mean(cfs) 3.43 Ac-ft 2,490
Fiscal year 1956-57: Max 13.9 Min 0 Mean(mgd) 1.82 Mean(cfs) 2.51 Ac-ft 1,820

* Discharge measurement made on this day.
Note.--No gage-height record Sept. 1-19; discharge estimated on basis of recorded range in stage and records for Ko Loko ditch.

950. Puu Ka Ele ditch near Kilauea--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.39	2.0	7.2	1.92	2.3	4.2	0	2.85	0	0.36	0.78	0.36
2	*3.35	1.83	6.8	1.64	1.47	1.87	0	2.5	0	.36	.97	.72
3	1.47	4.2	7.4	1.54	1.47	.46	3.1	2.3	0	.41	.75	.12
4	1.31	3.8	5.7	1.47	*1.39	.23	3.55	2.3	0	.46	.57	0
5	1.73	2.85	4.9	1.39	*1.47	0	3.3	2.2	0	.41	.52	0
6	1.54	5.2	4.5	1.83	1.47	.06	3.2	.57	0	.41	.46	0
7	1.47	9.8	4.1	1.73	4.1	.09	3.1	0	0	.36	.41	0
8	1.47	6.9	3.55	1.47	2.6	0	3.1	0	0	.36	.52	0
9	1.39	4.7	3.2	1.47	2.2	0	2.85	0	0	.36	.57	0
10	2.4	3.8	2.95	1.54	2.3	0	2.85	0	0	.36	.57	0
11	3.9	3.1	2.75	1.31	2.1	0	2.75	0	0	.36	.52	0
12	1.83	2.85	2.6	1.31	2.1	0	2.5	0	0	.36	.57	0
13	1.54	3.1	2.3	1.31	1.83	0	2.5	0	0	.41	.52	0
14	2.1	3.65	2.2	1.31	5.4	0	2.4	0	0	.57	.46	0
15	1.64	3.8	2.1	1.54	3.65	.01	2.3	0	0	.46	.46	.74
16	1.54	3.8	2.1	1.31	3.8	0	2.2	0	0	.36	.81	1.16
17	1.54	2.95	2.75	1.39	2.85	0	2.2	0	0	.36	.97	1.16
18	1.54	3.55	2.6	1.64	2.4	0	2.2	0	0	.36	.98	1.16
19	1.64	4.2	2.0	1.64	2.1	0	2.1	0	0	.36	.63	1.09
20	2.1	3.65	1.92	4.2	3.05	0	2.1	0	0	1.03	.52	1.02
21	1.54	3.1	1.83	1.92	5.5	0	2.0	0	0	.46	.52	1.02
22	1.39	2.75	1.73	1.54	5.3	0	2.0	0	0	.41	.52	1.23
23	2.3	*2.6	1.64	1.54	4.5	0	3.4	0	0	.36	.46	1.54
24	4.3	2.75	1.83	1.54	4.2	.11	2.2	0	0	.36	.46	1.39
25	2.2	7.3	2.6	1.73	3.8	0	2.2	0	.22	.32	.41	1.31
26	2.0	5.4	2.0	1.47	3.55	0	2.1	0	.36	.32	.41	1.47
27	5.0	4.9	1.73	1.39	1.90	0	2.1	.83	.46	.41	.41	1.47
28	2.75	4.1	1.92	1.39	0	0	*3.5	.23	.46	.36	.41	1.96
29	2.1	3.95	1.83	1.31	0	0	4.0	-	.41	.36	.41	2.1
30	2.2	4.9	2.75	1.54	.46	0	6.8	-------	.36	.52	.41	1.64
31	2.6	7.6	-------	1.83	-------	0	3.65	-------	.36	-------	.41	-------
Total	65.27	129.08	93.48	50.16	79.26	7.03	82.25	13.78	2.63	12.36	17.39	22.66
Mean:												
mgd	2.11	4.16	3.12	1.62	2.64	0.227	2.65	0.492	0.085	0.412	0.561	0.755
cfs	3.26	6.44	4.83	2.51	4.08	0.351	4.10	0.761	0.132	0.637	0.868	1.17
Ac-ft	200	396	287	154	243	22	252	42	8.1	38	53	70

Calendar year 1957: Max 9.8 Min 0 Mean(mgd) 1.59 Mean(cfs) 2.46 Ac-ft 1,780
Fiscal year 1957-58: Max 9.8 Min 0 Mean(mgd) 1.58 Mean(cfs) 2.44 Ac-ft 1,770

* Discharge measurement made on this day.
Note.--No gage-height record Jan. 16-28, Mar. 9, 10; discharge estimated on basis of recorded range in stage, ditchman's readings, and records for nearby stations.

952. Ross ditch near Kilauea

Location.--Lat 22°11'10", long 159°24'35", on left bank 1,000 ft downstream from intake on Puu Ka Ele Stream and 1.7 miles south of Kilauea.

Records available.--October 1956 to June 1958.

Gage.--Water-stage recorder and Parshall flume.

Extremes.--1956-58: Maximum daily discharge, 10.6 mgd (16.4 cfs) Jan. 18, 1957; minimum daily, 0.12 mgd (0.19 cfs) Feb. 25, 1957, June 3, 1958.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Ditch diverts water for irrigation in vicinity of Kilauea. Flow regulated by headgates.

Discharge, in million gallons a day, October 1956 to January 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1				-	2.45	9.6	6.2	7.6	*4.6	2.1	4.8	1.98
2				-	2.2	9.1	3.8	8.1	4.4	3.5	4.4	1.98
3				-	2.05	8.6	1.92	9.6	4.1	9.0	4.5	1.98
4				-	9.1	8.1	1.82	10.1	4.0	4.0	4.3	1.98
5				-	8.6	8.1	1.87	9.6	9.0	2.6	4.2	1.98
6				-	8.1	9.6	2.05	9.1	4.5	2.5	4.1	2.05
7				-	8.1	8.6	3.75	8.6	*3.9	4.5	3.8	1.98
8				-	7.6	8.1	6.8	8.1	3.85	5.0	3.65	1.98
9				-	7.2	7.6	7.2	8.1	3.8	3.3	4.8	1.98
10				*7.6	7.2	9.7	7.2	8.1	4.0	2.4	4.4	1.92
11				7.2	6.7	8.6	7.6	8.1	*4.2	2.2	3.9	1.92
12				7.2	6.7	8.1	5.8	8.6	5.8	2.1	4.1	1.92
13				7.2	8.6	8.1	5.8	8.5	5.4	2.4	3.55	1.92
14				8.1	7.0	7.6	7.6	9.1	5.4	10.0	5.1	1.92
15				8.1	8.0	8.1	8.1	8.1	4.6	7.0	4.2	1.92
16				8.1	8.0	8.1	6.7	7.6	4.0	*6.9	3.45	1.92
17				8.1	8.1	*8.1	9.3	7.6	5.0	7.2	3.2	1.87
18				8.6	8.1	8.1	10.6	8.1	4.1	5.8	3.1	1.87
19				8.1	8.1	7.6	9.1	7.6	4.6	6.7	3.05	1.87
20				7.6	7.6	7.6	8.6	7.6	4.2	7.6	2.85	1.87
21				7.6	7.4	7.6	9.1	7.2	3.9	5.8	2.85	1.87
22				7.6	7.4	7.2	8.6	7.2	3.6	*5.0	*2.9	1.87
23				8.6	7.2	7.2	8.1	6.3	3.4	7.2	2.1	1.87
24				5.5	8.1	7.2	*7.6	.17	3.1	7.2	2.05	1.87
25				3.3	8.1	6.7	5.5	.12	2.9	6.2	2.05	1.87
26				3.0	7.6	6.2	3.8	5.0	2.7	6.2	2.05	1.87
27				3.5	7.6	6.7	3.5	4.9	2.5	5.4	2.05	1.82
28				3.0	8.1	8.6	5.3	4.8	2.3	5.8	1.98	1.82
29				2.9	7.6	7.6	8.0	-	2.1	5.4	1.98	1.82
30				5.7	9.4	7.2	8.6	-------	2.2	5.4	1.98	1.82
31				3.45	-------	6.7	7.6	-------	2.3	-------	1.98	-------
Total				-	218.00	246.0	197.51	203.59	124.45	156.4	103.42	57.31
Mean:												
mgd				-	7.27	7.94	6.37	7.27	4.01	5.21	3.34	1.91
cfs				-	11.2	12.3	9.86	11.2	6.20	8.06	5.17	2.96
Ac-ft				-	669	755	606	625	382	490	317	176

Calendar year	. Max	Min	Mean(mgd)	Mean(cfs)	Ac-ft
Fiscal year	. Max	Min	Mean(mgd)	Mean(cfs)	Ac-ft

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 12, Nov. 14-16, 20-22, Feb. 25 to Mar. 1, Mar. 4-7, Mar. 17 to Apr. 16; discharge estimated on basis of recorded range in stage and records for nearby stations.

952. Ross ditch near Kilauea--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.82	1.30	4.3	1.55	1.35	8.3	4.4	1.35	5.0	2.5	4.3	2.95
2	*1.99	1.15	3.7	1.35	.94	8.7	4.3	1.11	4.3	2.45	4.3	2.15
3	.85	2.95	4.4	1.35	.89	6.9	3.2	1.02	4.1	2.55	4.4	.12
4	.65	2.7	3.65	*1.30	*.85	6.0	2.05	1.06	3.9	2.95	3.8	1.80
5	.94	1.87	2.8	1.25	.85	5.2	1.88	.97	3.95	2.55	3.6	2.8
6	1.02	3.05	2.35	1.45	.85	5.2	1.70	1.98	3.95	2.35	3.3	2.7
7	.89	4.8	2.25	1.45	2.4	5.2	1.65	2.75	3.65	2.35	3.15	2.6
8	.89	4.2	2.1	1.20	2.0	4.8	1.65	2.75	3.5	2.35	3.35	2.95
9	.76	2.65	1.98	1.15	1.40	4.7	1.60	2.6	3.7	2.25	3.7	3.65
10	1.15	2.05	1.82	1.20	1.45	4.7	1.50	2.6	4.1	2.1	3.95	3.6
11	2.1	1.82	1.76	1.15	1.35	4.6	1.40	2.6	*3.95	2.2	3.6	4.1
12	1.11	1.65	1.76	1.06	1.25	4.6	1.40	2.55	3.7	2.1	3.8	3.8
13	.89	1.70	1.70	1.02	1.15	4.6	1.30	2.5	3.7	2.45	3.5	3.0
14	1.41	2.2	1.65	1.02	2.9	4.6	1.20	2.5	3.45	3.3	3.3	2.8
15	1.11	2.2	1.55	1.11	2.35	4.7	1.20	2.45	3.35	3.35	3.25	2.2
16	.94	2.35	1.55	1.06	2.15	4.5	1.20	2.35	3.3	2.7	4.2	1.50
17	.98	1.87	1.98	1.06	1.55	*4.7	1.15	2.9	3.35	2.75	4.5	1.45
18	.98	2.15	2.15	1.11	1.30	4.6	1.11	2.5	3.3	2.55	4.6	1.45
19	1.06	2.7	1.60	1.11	1.20	4.4	1.11	2.35	3.25	2.3	4.2	1.40
20	1.41	2.4	1.45	3.2	2.0	4.4	1.11	2.35	3.1	4.3	3.8	1.30
21	1.02	1.92	1.40	1.45	4.1	4.4	1.06	2.3	3.0	3.65	3.65	1.30
22	.85	1.70	1.35	1.11	2.9	4.4	1.02	2.25	3.0	3.1	3.5	1.20
23	.94	*1.60	1.30	1.11	2.05	4.6	1.40	2.6	2.95	2.9	3.3	1.66
24	2.4	1.70	1.35	1.06	1.98	4.5	1.02	3.35	2.9	2.7	3.25	1.25
25	1.35	3.6	1.92	1.06	1.76	4.4	.92	2.7	2.9	2.6	3.25	1.20
26	1.15	3.7	1.60	.98	1.76	4.5	.88	2.35	2.95	2.6	3.3	1.40
27	3.05	2.6	1.40	.89	2.75	4.4	.86	3.5	3.6	3.0	3.1	1.45
28	1.82	2.1	1.65	.85	3.8	4.4	1.98	7.4	3.6	2.6	3.0	2.75
29	1.35	2.1	1.55	.89	3.9	4.3	2.1	-	2.95	2.55	2.9	3.2
30	1.60	3.1	2.3	.94	4.9	4.6	4.1	-------	2.7	2.95	2.9	1.88
31	1.60	4.2	-------	1.15	-------	4.5	2.2	-------	2.6	-------	2.9	-------
Total	40.08	76.08	62.32	37.64	60.08	154.4	53.67	69.69	107.75	81.05	111.65	65.61
Mean:												
mgd	1.29	2.45	2.08	1.21	2.00	4.98	1.73	2.49	3.48	2.70	3.60	2.19
cfs	2.00	3.79	3.22	1.87	3.09	7.71	2.68	3.85	5.38	4.18	5.57	3.39
Ac-ft	123	233	191	116	184	474	165	214	331	249	343	201

Calendar year 1957: Max 10.6 Min 0.12 Mean(mgd) 3.49 Mean(cfs) 5.40 Ac-ft 3,920
Fiscal year 1957-58: Max 8.7 Min 0.12 Mean(mgd) 2.52 Mean(cfs) 3.90 Ac-ft 2,820

* Discharge measurement made on this day.

960. Kalihiwai ditch near Kilauea

Location.--Lat 22°10'55", long 159°25'55", on right bank 0.1 mile upstream from Kalihiwai Reservoir and 2.4 miles southwest of Kilauea.

Records available.--June 1934 to June 1958.

Gage.--Water-stage recorder and Parshall flume. Altitude of gage is 410 ft (by barometer).

Average discharge.--23 years (1934-42, 1943-58), 2.55 mgd (3.95 cfs).

Extremes.--1934-58: Maximum daily discharge, 29.5 mgd (45.6 cfs) July 16, 1937; no flow at times.

Remarks.--Records good except those for periods of no gage-height record, which are poor. Ditch diverts low-water flow from most branches of Pohakuhono Stream at intakes, about 1 mile south of station. Diversion of flow to Kahiliholo Stream, 0.1 mile above station, regulated by gates. Water discharges into Kalihiwai Reservoir, where it is stored for irrigation in vicinity of Kilauea.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.05	1.70	0.47	0	2.25	0.82	0.08	0.64	2.85	1.87	1.96	1.38
2	2.15	1.62	.42	0	2.25	.52	1.43	.76	2.75	2.75	2.05	1.30
3	2.05	1.62	.42	0	2.05	.47	2.25	.95	2.65	7.5	2.25	1.30
4	1.96	5.1	.37	.08	1.85	.37	2.35	1.30	2.65	3.9	2.25	1.30
5	1.96	3.45	a.40	5.8	.58	.25	2.85	.88	4.8	2.35	2.25	1.30
6	1.96	2.65	a.52	5.6	.42	.72	3.4	.64	2.65	2.25	2.05	1.16
7	1.96	3.2	a.45	11.5	.42	.47	3.75	.58	2.85	3.25	1.87	1.16
8	1.96	22	a.37	4.4	.37	.37	7.2	.52	2.65	3.7	1.87	1.16
9	1.87	5.6	a.34	3.65	.37	.25	5.3	.47	2.65	2.55	1.96	1.16
10	1.87	6.8	a.29	3.05	.33	.56	4.3	.47	2.65	2.15	1.87	1.09
11	1.87	3.7	a.25	2.45	.25	.25	2.55	.47	2.75	1.96	1.96	1.02
12	1.96	3.25	a.23	1.78	.25	.21	1.96	.42	2.65	1.78	2.15	1.02
13	3.0	2.95	a.21	1.87	.29	.17	2.05	.58	3.05	2.15	1.78	1.02
14	2.55	4.9	a.19	2.25	.17	.17	1.16	.47	3.45	12.7	2.35	1.02
15	2.55	4.4	a.18	1.20	.17	.17	.70	.42	2.85	6.8	1.87	1.16
16	2.55	3.05	a.17	.52	.14	.17	.58	.42	2.55	*6.6	1.62	1.38
17	2.15	3.05	a1.4	.64	.14	.17	1.02	.42	3.8	8.1	1.54	1.46
18	2.75	4.9	a.60	.58	.14	.14	1.09	.37	2.85	4.8	1.54	1.09
19	4.9	3.15	a.25	.47	.11	.14	.64	.37	3.45	7.7	1.46	1.30
20	3.05	2.75	*.17	.42	.08	.11	.47	.29	3.15	7.5	1.38	1.46
21	2.85	2.45	.14	.37	.84	.06	.42	.25	2.85	4.3	1.46	1.30
22	3.05	2.45	.14	.21	1.70	.08	.33	.25	2.65	3.05	1.46	1.09
23	2.25	2.35	.14	.21	1.70	.11	.29	.21	2.45	4.7	1.46	1.02
24	1.96	2.75	.14	.17	2.35	.06	.25	.21	2.35	3.2	1.38	1.02
25	1.78	2.35	.08	1.59	2.35	.06	2.6	1.11	2.25	2.35	1.46	1.02
26	1.62	2.25	.06	2.35	1.35	.06	4.2	1.54	2.15	2.35	1.46	1.02
27	1.87	1.96	.06	2.55	.52	.11	3.8	1.54	2.05	2.15	1.38	.88
28	1.70	1.62	.06	2.25	.42	.14	3.6	2.15	1.96	2.15	1.38	.95
29	1.70	.88	.04	2.25	.42	.08	5.8	-	1.87	2.05	1.30	1.09
30	2.45	.82	.02	2.55	.70	.06	6.3	-------	1.96	2.15	1.30	1.09
31	1.70	.52	-------	2.45	-------	.08	.64	-------	2.05	-------	1.30	-------
Total	70.05	113.24	8.58	63.21	24.98	7.40	73.36	18.70	84.29	120.81	53.37	34.72
Mean:												
mgd	2.26	3.85	0.286	2.04	0.833	0.239	2.37	0.668	2.72	4.03	1.72	1.16
cfs	3.50	5.65	0.443	3.16	1.29	0.370	3.67	1.03	4.21	6.24	2.66	1.79
Ac-ft	215	348	26	194	77	23	225	57	259	371	164	107

Calendar year 1956: Max 22 Min 0 Mean(mgd) 2.29 Mean(cfs) 3.54 Ac-ft 2,570
Fiscal year 1956-57: Max 22 Min 0 Mean(mgd) 1.84 Mean(cfs) 2.85 Ac-ft 2,070

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage, ditchman's daily readings, and records for nearby stations.

960. Kalihiwai ditch near Kilauea--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.16	2.35	10.7	1.62	1.78	1.37	0.02	3.15	0.64	1.70	2.45	1.62
2	2.05	1.78	8.0	1.46	1.23	.95	.02	2.55	.42	1.62	3.05	1.78
3	.88	3.6	6.7	1.38	1.23	.47	2.0	2.15	.33	1.62	2.55	1.62
4	1.23	4.2	1.48	*1.30	1.16	.33	3.7	2.15	.29	1.78	1.87	1.54
5	1.30	3.2	.42	1.30	1.09	.25	3.4	1.78	.21	1.62	1.87	1.54
6	1.62	2.8	.33	1.70	*1.02	.21	3.2	.89	.25	1.54	1.70	1.38
7	1.78	20	.33	1.46	3.15	.14	3.0	.29	.21	1.46	1.62	1.38
8	1.62	8.6	.37	1.23	2.15	.11	3.0	.25	.21	1.38	1.98	1.98
9	1.38	6.4	.37	1.16	1.78	.11	2.8	.21	.17	1.23	2.45	2.05
10	2.05	3.4	.33	1.23	2.55	.09	2.8	.21	.17	1.23	2.55	1.78
11	2.75	3.0	.33	1.09	2.65	.08	2.6	.80	1.32	1.23	2.35	2.05
12	1.16	2.8	.33	1.02	2.05	.08	2.6	1.23	2.15	1.23	2.45	1.70
13	1.23	2.8	.33	1.09	1.62	.08	2.4	1.23	1.96	1.46	2.25	1.46
14	2.65	2.4	1.04	1.09	2.3	.08	2.2	1.23	1.62	2.45	1.87	1.30
15	1.87	2.8	1.70	1.30	1.96	.08	2.2	1.23	1.54	2.15	2.05	1.30
16	1.46	2.8	1.70	1.02	1.62	.08	2.2	1.23	1.46	1.70	3.8	1.16
17	1.46	2.8	2.15	1.16	1.54	.08	1.8	1.46	1.46	1.54	3.6	1.09
18	1.62	2.8	2.35	1.30	1.38	.08	1.8	1.38	1.54	1.38	4.0	1.09
19	1.54	6.0	1.70	1.30	1.30	.08	1.8	1.38	1.30	1.30	2.55	1.02
20	2.65	5.0	1.62	2.45	4.9	.08	1.8	1.38	1.38	3.5	2.15	.95
21	1.87	4.0	1.62	1.62	8.0	.08	1.6	1.30	1.38	1.96	2.05	1.02
22	1.54	2.6	1.62	1.30	3.5	.08	1.6	1.30	1.46	1.54	1.96	1.02
23	2.45	*2.6	1.46	1.23	1.70	.06	2.2	1.54	1.46	1.30	1.87	1.54
24	3.95	3.05	1.62	1.16	1.62	.06	1.6	1.78	1.38	1.23	1.87	1.23
25	2.25	9.8	2.35	1.23	1.23	.06	1.6	1.54	1.46	1.09	1.87	1.16
26	1.87	6.9	2.05	1.16	1.87	.06	1.4	1.46	1.62	1.09	1.96	1.62
27	4.0	5.0	1.62	1.16	1.16	.04	1.4	1.82	2.65	1.23	1.78	1.78
28	2.85	4.0	1.96	1.02	.47	.04	*5.0	1.30	2.65	1.02	1.70	5.6
29	2.15	3.9	1.70	.95	.47	.04	7.3	-	2.05	1.16	1.62	5.3
30	2.45	8.6	1.96	1.09	.58	.02	14.5	-------	1.87	1.82	1.62	3.35
31	3.05	15.5	-------	1.62	-------	.02	5.2	-------	1.78	-------	1.62	-------
Total	61.89	155.48	60.24	40.20	59.06	5.38	88.74	38.22	38.39	46.56	69.06	53.39
Mean:												
mgd	2.00	5.02	2.01	1.30	1.97	0.174	2.86	1.36	1.24	1.55	2.23	1.78
cfs	3.09	7.77	3.11	2.01	3.05	0.269	4.43	2.10	1.92	2.40	3.45	2.75
Ac-ft	190	477	185	123	181	17	272	117	118	143	212	164

Calendar year 1957: Max 20 Min 0.02 Mean(mgd) 2.10 Mean(cfs) 3.25 Ac-ft 2,360
Fiscal year 1957-58: Max 20 Min 0.02 Mean(mgd) 1.96 Mean(cfs) 3.03 Ac-ft 2,200

* Discharge measurement made on this day.
Note.--No gage-height record Aug. 4-23, Dec. 20 to Jan. 3, Jan. 5-28; discharge estimated on basis of recorded range in stage, ditchman's readings, and records for nearby stations.

970. Pohakuhonu Stream near Kilauea

Location.--Lat 22°10'35", long 159°25'35", on left bank 0.75 mile upstream from confluence with Halaulani Stream, 1.25 miles above stone dam, and 2.5 miles southwest of Kilauea.

Drainage area.--1.8 sq mi.

Records available.--October 1957 to June 1958.

Gage.--Water-stage recorder. Altitude of gage is 380 ft (from topographic map).

Extremes.--1957-58: Maximum discharge during period, 420 mgd (650 cfs) Dec. 1 (gage height, 4.21 ft), from rating curve extended above 200 mgd on basis of slope-area measurement at gage height 11.0 ft; minimum, 0.95 mgd (1.47 cfs) Feb. 22.
Maximum stage known, 11.0 ft on Jan. 24, 1957, from floodmarks (discharge, 3,620 mgd or 5,600 cfs, from slope-area measurement at peak flow).

Remarks.--Records good. Kalihiwai ditch diverts as average of about 3 mgd about 0.5 mile above station for domestic water supply and irrigation of sugarcane.

Rating table, Oct. 7, 1957, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

0.3	0.88	1.3	37.5
.5	3.2	1.6	60
.7	8.2	2.0	96
1.0	20	3.0	210

Discharge, in million of gallons a day, October 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1				-	1.58	179	5.6	1.80	5.0	1.19	4.1	1.28
2				-	1.19	87	4.0	1.58	2.5	1.11	7.4	1.48
3				-	1.11	1.02	2.65	1.48	1.94	1.11	4.4	1.19
4				-	1.11	6.8	2.35	1.48	1.69	1.28	2.35	1.19
5				-	1.02	7.0	2.1	1.38	1.80	1.11	*2.2	1.11
6				-	*1.02	6.8	1.94	1.28	1.58	1.11	1.80	1.11
7				1.19	3.85	8.4	1.80	1.28	1.48	1.11	1.69	1.11
8				1.11	2.1	5.1	1.80	1.28	1.38	1.02	2.4	1.64
9				1.11	1.48	4.9	1.69	1.28	1.48	1.02	3.05	1.69
10				1.11	1.69	4.9	1.58	1.28	1.78	1.02	3.2	1.28
11				1.11	1.80	4.7	1.48	1.19	1.48	1.02	2.75	2.0
12				1.02	1.69	3.85	1.46	1.19	1.67	1.02	3.05	1.58
13				1.02	1.38	4.0	1.38	1.19	1.58	1.19	2.65	1.28
14				1.11	1.84	3.85	1.38	1.19	1.28	2.95	1.94	1.19
15				1.38	1.38	4.9	1.38	1.11	1.28	1.87	2.15	1.19
16				1.19	1.28	3.6	1.28	1.11	1.28	1.28	6.0	1.11
17				1.19	1.19	*5.1	1.28	1.28	1.28	1.28	6.9	1.11
18				1.28	1.19	4.5	1.28	1.11	1.28	1.28	8.9	1.11
19				1.19	1.11	4.2	1.28	1.02	1.19	1.19	3.6	1.11
20				2.65	15.6	4.2	1.28	1.02	*1.11	9.7	2.65	1.02
21				1.48	5.4	4.5	1.19	1.02	1.11	2.45	2.35	1.02
22				1.28	2.35	4.2	1.19	.95	1.11	1.58	2.2	1.02
23				1.28	1.69	6.2	1.28	1.11	1.02	1.38	1.80	1.28
24				*1.19	1.80	5.1	1.19	1.28	1.02	1.28	1.69	1.11
25				1.28	1.80	5.2	1.11	1.11	1.11	1.19	1.58	1.11
26				1.19	1.58	7.2	1.11	1.02	1.19	1.19	1.69	*1.38
27				1.11	1.80	5.3	1.02	13.2	2.55	1.28	1.48	1.38
28				1.11	2.2	6.8	*2.3	54	2.45	1.19	1.38	5.4
29				1.11	1.94	5.9	6.8	-	1.38	1.33	1.28	4.2
30				1.19	18.3	7.4	12.0	-------	1.28	2.3	1.28	2.2
31			-------	1.38	-------	6.8	2.65	-------	1.28	-------	1.28	-------
Total				-	83.47	427.70	70.85	99.22	49.58	49.03	93.19	45.88
Mean:												
mgd				-	2.78	13.8	2.29	3.54	1.60	1.63	3.01	1.53
cfs				-	4.30	21.4	3.54	5.48	2.48	2.52	4.66	2.37
Ac-ft				-	256	1,310	217	304	152	150	286	141

Calendar year . Max Min Mean(mgd) Mean(cfs) Ac-ft
Fiscal year : Max Min Mean(mgd) Mean(cfs) Ac-ft

* Discharge measurement made on this day.

975. Halaulani Stream at altitude 400 ft, near Kilauea

Location.--Lat 22°10'35", long 159°25'15", on left bank 0.5 mile upstream from confluence with Pohakuhona, 1 mile above stone dam, and 2.5 miles southwest of Kilauea.

Drainage area.--1.1 sq mi.

Records available.--November 1957 to June 1958.

Gage.--Water-stage recorder. Altitude of gage is 400 ft (from topographic map).

Extremes.--1957-58: Maximum discharge during period November to June, 422 mgd (653 cfs) Dec. 1 (gage height, 4.73 ft), from rating curve extended above 130 mgd; minimum, 2.6 mgd (4.0 cfs) June 20-22.

Remarks.--Records good.

Rating table, Nov. 5, 1957, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

0.8	2.0	1.6	17.2
.9	3.0	1.8	25
1.0	4.3	2.1	43
1.1	5.6	2.5	79
1.2	7.3	3.0	133
1.4	11.5	3.5	200

Discharge, in million gallons a day, November 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1					-	173	7.9	5.2	10.0	3.25	9.9	3.25
2					-	80	6.3	4.6	6.1	3.15	13.3	3.9
3					-	*18.3	5.8	4.3	5.1	3.15	9.6	3.0
4					-	11.6	5.4	4.4	4.7	3.75	6.1	3.0
5					*2.8	8.7	5.0	4.0	5.0	3.15	*5.6	3.0
6					2.8	9.2	4.8	3.75	4.8	3.0	4.7	2.9
7					8.1	11.3	4.6	3.65	4.0	3.0	4.2	2.8
8					4.8	6.8	4.6	3.65	3.9	3.0	5.8	4.2
9					4.1	6.3	4.3	3.5	4.4	2.9	7.1	4.8
10					5.5	6.5	4.2	3.5	*4.8	2.9	7.5	4.0
11					5.4	6.1	4.0	3.4	4.3	2.8	6.5	5.2
12					4.6	5.4	3.9	3.4	5.1	2.8	7.1	4.2
13					4.6	5.6	3.75	3.25	4.7	3.4	6.1	3.4
14					7.0	5.6	3.65	3.25	3.75	8.6	4.8	3.0
15					5.1	8.4	3.75	3.25	3.65	5.7	5.1	3.0
16					4.7	5.6	3.65	3.25	3.65	4.0	13.3	2.9
17					4.2	8.0	3.5	3.8	3.65	3.65	12.6	2.8
18					3.65	*6.0	3.5	3.0	3.75	3.25	13.6	2.7
19					3.5	6.0	3.5	2.9	3.25	3.15	7.1	2.7
20					19.9	6.5	3.5	2.9	3.25	17.1	5.8	2.7
21					13.1	7.1	3.4	2.9	3.25	5.9	5.4	2.8
22					7.0	6.3	3.4	2.9	3.25	4.3	5.0	2.8
23					5.4	9.5	3.9	3.15	3.25	3.9	4.4	4.2
24					5.8	7.5	3.25	4.1	3.15	3.65	4.2	2.9
25					5.2	7.1	3.15	3.15	3.4	3.4	4.0	2.9
26					5.1	9.1	3.15	2.9	3.75	3.4	4.2	*4.5
27					5.2	7.1	3.15	23.5	6.4	4.2	3.65	4.4
28					7.0	9.5	6.5	59	5.8	3.4	3.5	8.9
29					6.2	8.1	*16.6	-	4.0	3.8	3.4	7.5
30					33	11.1	23	-------	3.5	6.7	3.25	5.0
31			-------		-------	9.5	7.7	-------	3.4	-------	3.15	-------
Total					-	486.8	166.80	174.55	135.00	128.35	199.95	112.95
Mean: mgd					-	15.7	5.38	6.23	4.35	4.28	6.45	3.76
cfs					-	24.3	8.32	9.64	6.73	6.62	9.98	5.82
Ac-ft					-	1,490	512	536	414	394	614	347

Calendar year . Max Min Mean(mgd) Mean(cfs) Ac-ft
Fiscal year : Max Min Mean(mgd) Mean(cfs) Ac-ft

* Discharge measurement made on this day.

995. Hanalei ditch near Kilauea

Location.--Lat 22°11'10", long 159°26'10", on right bank 55 ft upstream from Kalihiwai Reservoir, 365 ft downstream from inverted siphon across Kalihiwai River, and 2.4 miles southwest of Kilauea.

Records available.--July 1956 to June 1958 in reports of Geological Survey. July 1951 to June 1956 in files of Kilauea Sugar Co.

Gage.--Water-stage recorder and sharp-crested weir. Altitude of gage is 390 ft (from topographic map).

Extremes.--1956-58: Maximum daily discharge, 19.3 mgd (29.9 cfs) Sept. 17, 1956; no flow at times.

Remarks.--Records fair. Ditch diverts water from Kalihiwai River, 2.2 miles southwest of station. Water used for irrigation of sugarcane in vicinity of Kilauea.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1		0	5.1	6.7							0	7.1
2		0	5.8	6.7							0	7.1
3		0	9.3	6.8							0	7.1
4		0	14.4	5.7							0	6.7
5		0	7.1	.94							0	6.6
6		0	7.0	0							0	6.4
7		0	6.7	0							0	6.3
8		0	6.6	0							0	6.2
9		0	6.6	0							0	6.0
10		0	6.7	0							0	6.0
11		0	6.6	0							0	5.9
12		0	6.4	0							0	5.8
13		0	6.4	0							0	5.8
14		0	6.6	0							0	5.8
15		0	7.8	0							0	6.0
16		0	15.5	0							0	7.3
17		0	19.3	0							0	7.5
18		0	8.6	0							0	7.0
19		0	7.0	0							1.1	7.4
20		0	*7.0	0							7.8	8.0
21		0	6.8	0							7.8	8.0
22		0	6.7	0							*7.8	7.1
23		0	7.7	0							8.0	6.4
24		0	7.0	0							7.8	6.2
25		0	6.6	0							7.7	6.2
26		0	6.4	0							7.7	6.8
27		0	6.4	0							7.5	6.2
28		0	6.2	0							*7.4	5.9
29		0	6.3	0							7.4	6.8
30		3.35	6.7	0							7.3	6.8
31		5.5	-------	0	-------						7.3	-------
Total	0	8.85	233.3	26.84	0	0	0	0	0	0	92.6	198.4
Mean:												
mgd	0	0.285	7.78	0.866	0	0	0	0	0	0	2.99	6.61
cfs	0	0.441	12.0	1.34	0	0	0	0	0	0	4.63	10.2
Ac-ft	0	27	716	82	0	0	0	0	0	0	284	609

Calendar year 1956. Max - Min - Mean(mgd) - Mean(cfs) - Ac-ft -
Fiscal year 1956-57: Max 19.3 Min 0 Mean(mgd) 1.53 Mean(cfs) 2.37 Ac-ft 1,720

* Discharge measurement made on this day.

995. Hanalei ditch near Kilauea--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	8.1	9.2	0	8.6	9.6							0
2	*8.8	9.0	0	8.1	9.3							0
3	8.4	7.2	0	8.0	3.65							0
4	7.7	2.8	0	*7.7	0							0
5	8.1	0	0	7.7	0							0
6	8.8	0	0	8.1	3.45							0
7	8.7	0	0	8.4	9.2							0
8	8.4	0	0	7.8	5.5							0
9	8.1	0	0	7.7	0							0
10	9.0	0	0	8.0	0							1.25
11	9.4	0	0	7.7	2.65							5.7
12	9.0	0	0	7.8	0							4.9
13	8.7	0	0	8.2	0							6.8
14	9.0	0	0	8.2	0							7.4
15	9.0	0	0	9.2	0							7.1
16	8.7	0	0	9.2	0							6.8
17	8.6	0	0	9.4	0							6.7
18	8.7	0	0	9.6	0							7.1
19	8.7	0	5.7	9.4	0							7.4
20	9.0	0	8.0	7.5	0							7.1
21	8.7	0	7.7	1.08	0							7.0
22	8.4	0	7.5	0	0							7.0
23	8.7	0	7.4	0	0							8.2
24	9.2	0	7.8	0	0							8.2
25	8.8	0	8.8	0	0							8.4
26	8.8	0	8.7	0	0							8.7
27	7.6	0	8.0	0	0							8.8
28	2.7	0	8.6	0	0							9.2
29	0	0	8.2	5.1	0							9.6
30	0	0	8.2	8.4	0			-------				10.4
31	6.6	0	-------	9.4	-------			-------		-------		-------
Total	242.4	28.2	94.6	190.28	43.35	0	0	0	0	0	0	153.75
Mean:												
mgd	7.82	0.910	3.15	6.14	1.44	0	0	0	0	0	0	5.12
cfs	12.1	1.41	4.87	9.50	2.23	0	0	0	0	0	0	7.92
Ac-ft	744	87	290	584	133	0	0	0	0	0	0	472

Calendar year 1957 . Max 9.6 Min 0 Mean(mgd) 2.44 Mean(cfs) 3.78 Ac-ft 2,730
Fiscal year 1957-58: Max 10.4 Min 0 Mean(mgd) 2.06 Mean(cfs) 3.19 Ac-ft 2,310

* Discharge measurement made on this day.

1000. Hanalei tunnel outlet near Lihue

Location.--Lat 22°05'00", long 159°28'15", on right bank at end of Hanalei tunnel, 2.2 miles downstream from intake on Kaapoko Stream and 9.8 miles northwest of Lihue.

Records available.--July 1932 to June 1958 in reports of Geological Survey. October 1925 to June 1932 in files of Lihue Plantation Co.

Gage.--Water-stage recorder and sharp-crested weir. Altitude of gage is 1,210 ft (from tunnel-profile).

Average discharge.--26 years (1932-58), 19.0 mgd (29.4 cfs).

Extremes.--1932-58: Maximum daily discharge, 64 mgd (99 cfs) Apr. 11, 25, 26, 1942; no flow at times.

Remarks.--Records good except those for period of no gage-height record, which are fair. Tunnel diverts water from Kaapoko Stream and Hanalei River and empties into North Branch of North Fork Wailua River, from which it is later diverted and used for irrigation in vicinity of Lihue and Kapaa. Flow regulated by spillway and headgates.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.39	0.28	0.18	0.39	0.39	0.64	0.64	1.42	1.25	0.82	21	12.6
2	.39	.28	.18	.39	.51	.51	.78	1.60	1.25	.51	18.0	12.6
3	.39	.28	.18	.51	.39	.45	.78	3.2	1.25	.64	17.6	13.6
4	.39	.39	.18	.64	.64	.39	.78	4.2	1.25	.51	18.4	12.6
5	.39	.39	.18	.51	.28	.39	.93	2.0	1.25	.51	18.4	12.6
6	.51	.28	.18	.51	.28	1.90	1.25	1.80	1.25	.51	18.0	12.6
7	.51	.39	.18	.51	.39	.51	1.25	1.42	1.25	.51	16.4	*12.3
8	.51	.44	.18	.39	.28	.51	1.42	1.42	1.25	.51	15.2	12.3
9	.51	.64	.18	.39	.28	.51	.84	1.42	1.25	8.1	14.9	12.3
10	.26	.28	.18	.53	.28	1.22	.93	1.42	1.25	15.6	14.9	12.3
11	.18	.28	.18	.39	.28	.44	1.09	1.42	1.25	15.6	21	11.9
12	.18	.28	.18	.39	.39	.51	.93	1.32	1.25	16.8	30.5	11.9
13	.18	.28	.18	.39	.51	.51	.93	2.5	1.25	26.5	18.8	12.3
14	.28	.28	.18	.78	.44	.51	1.56	1.42	1.25	24	24	11.9
15	.28	.22	.18	.64	.51	.51	1.11	1.42	1.25	31	18.6	15.2
16	.28	.18	.51	.51	.51	.51	.78	1.42	1.25	38	16.4	15.7
17	.28	.18	.51	a.64	.51	.51	4.3	1.42	1.25	*29	15.6	15.4
18	.28	.18	.28	a.93	.51	.51	2.65	1.42	1.25	22	14.9	14.1
19	.28	.18	.18	a.64	.51	.51	1.25	1.42	1.25	35.5	14.9	22
20	.28	.18	.18	a.51	.70	.51	1.25	1.25	1.25	28	14.5	20.5
21	.28	.16	.18	a.51	.51	.51	2.0	1.25	1.25	23	14.3	22.5
22	.28	.18	.18	a.51	.39	.51	1.25	1.25	1.25	18.0	18.3	15.2
23	.28	.16	.18	a.93	.51	.51	.93	1.25	1.25	28.5	14.9	14.9
24	.28	.18	.26	a.39	.51	.51	.93	1.25	1.25	25.5	13.8	13.7
25	.18	.09	.28	.39	.51	.51	1.09	1.25	1.25	26	13.8	15.6
26	.18	.09	.28	.39	.51	.64	1.25	1.25	1.25	22.5	13.8	16.4
27	.18	.09	.28	.51	.51	.64	1.25	1.25	1.25	22	13.4	14.9
28	.18	.09	.28	.51	.39	.64	1.25	1.25	1.25	23	13.0	14.5
29	.18	.18	.28	.51	.39	.64	2.7	-	1.25	24.5	13.0	18.0
30	.28	.18	.39	.51	.64	.64	2.1	-------	1.42	22.5	13.0	17.2
31	.28	.28	-------	.39	-------	.78	1.25	-------	1.42	------	13.0	-------
Total	9.33	7.61	6.97	16.14	13.46	18.59	41.45	44.91	39.09	530.12	516.3	439.6
Mean: mgd	0.301	0.245	0.232	0.521	0.449	0.600	1.34	1.60	1.26	17.7	16.7	14.7
cfs	0.466	0.379	0.359	0.806	0.695	0.928	2.07	2.48	1.95	27.4	25.8	22.7
Ac-ft	29	23	21	50	41	57	127	138	120	1,630	1,580	1,350

Calendar year 1956, Max 4.9 Min 0.09 Mean(mgd) 0.374 Mean(cfs) 0.579 Ac-ft 420
Fiscal year 1956-57: Max 38 Min 0.09 Mean(mgd) 4.61 Mean(cfs) 7.13 Ac-ft 5,170

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage and ditchman's readings.

1000. Hanalei tunnel outlet near Lihue--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	24	22	30.5	17.9	21.5	47	0.93	0.64	0.78	0.51	0.59	0
2	28	19.6	29.5	17.2	15.6	10.5	.78	.51	.64	.51	.51	0
3	17.2	35.5	40	16.4	16.4	8.4	.64	.51	.51	.51	.39	0
4	17.2	38	29	15.6	14.9	2.4	.51	.51	.39	.64	.18	5.3
5	23.5	26	23	15.6	14.9	1.42	.51	.51	.28	.51	.09	13.4
6	23.5	39	21.5	19.6	16.0	1.25	.51	.51	.28	.51	.18	13.4
7	23	41	20	16.4	28.5	1.25	.51	.51	.39	.64	.39	13.4
8	19.6	33	18.8	15.6	18.0	.78	.39	.51	.39	.39	.39	17.1
9	18.1	24.5	18.4	15.2	19.0	.78	.39	.51	.51	.39	.39	25
10	28.5	21.5	*18.0	16.8	34	1.25	.39	.51	.51	.39	.39	25
11	32.5	19.6	19.4	15.2	28	1.84	.39	.51	.51	.39	.39	25.5
12	21	19.2	18.4	14.9	28	1.42	.39	.51	.93	.39	.39	28
13	18.8	25.5	17.2	14.9	*20.5	1.25	.39	.51	.64	.64	.39	18.4
14	30.5	28.5	17.2	15.2	18.0	1.25	.39	.51	.39	.78	.39	16.8
15	23.5	35.5	16.4	19.2	20.5	1.09	.28	.51	.39	.64	.39	16.8
16	19.6	32.5	16.4	17.1	22.5	.93	.39	.51	.39	.39	.39	18.0
17	18.3	29.5	24	21.5	18.8	1.25	.39	.51	.51	.39	.28	17.6
18	21.5	33	22.5	21	17.1	1.09	.39	.51	.51	.28	.28	15.6
19	19.5	32	17.6	16.4	16.4	1.60	.39	.51	.39	.18	.28	14.9
20	23.5	25	16.4	16.4	33.5	.93	.39	.51	.51	.39	.28	14.9
21	18.8	23	16.0	15.6	25.5	.93	.39	.39	.51	.09	.39	14.9
22	16.8	21	15.6	14.9	19.6	.78	.28	.28	.51	.09	.28	14.9
23	19.9	20	15.6	14.9	19.6	1.80	.28	.39	.39	.39	.28	23
24	21.5	28	19.3	15.2	22.5	1.60	.28	.39	.39	.39	.18	19.6
25	16.8	35.5	26	15.2	19.6	1.60	.28	.51	.51	.39	.09	20
26	19.8	38	20.5	14.5	19.7	1.47	.28	.51	.39	.39	0	27
27	33.5	28	19.2	14.5	19.6	.93	.39	1.54	1.80	.39	0	20.5
28	29.5	25.5	28	14.1	18.8	1.25	.93	1.96	.78	.28	0	30.5
29	24	30	18.4	14.1	29.5	1.09	2.45	-	.51	.28	0	28
30	27	30	22	15.6	40	.93	1.80	-------	.51	.28	0	25
31	28	35.5	-------	29.5	-------	.93	.78	-------	.51	-------	0	-------
Total	706.9	894.9	634.8	516.2	656.5	100.99	17.49	16.30	16.66	12.44	8.18	522.5
Mean:												
mgd	22.8	28.9	21.2	16.7	21.9	3.26	0.564	0.582	0.537	0.415	0.264	17.4
cfs	35.3	44.7	32.8	25.8	33.9	5.04	0.873	0.900	0.831	0.642	0.408	26.9
Ac-ft	2,170	2,750	1,950	1,580	2,010	310	54	50	51	38	25	1,600

Calendar year 1957. Max 47 Min 0.51 Mean(mgd) 14.0 Mean(cfs) 21.7 Ac-ft 15,720
Fiscal year 1957-58: Max 47 Min 0 Mean(mgd) 11.2 Mean(cfs) 17.3 Ac-ft 12,590

* Discharge measurement made on this day.

1080. Wainiha River near Hanalei

Location.--Lat 22°08'10", long 159°33'40", on left bank at Puwainui Falls, 1.5 miles upstream from Wainiha powerplant intake and 6.0 miles southwest of Hanalei.
Drainage area.--10.2 sq mi.
Records available.--August 1952 to February 1956, October 1957 to June 1958. Gage-height records collected in this vicinity from April 1923 to December 1940 are contained in files of McBryde Sugar Co.
Gage.--Water-stage recorder. Altitude of gage is 960 ft (from topographic map).
Extremes.--Maximum and minimum discharges for the fiscal years 1953-56, 1958 are contained in the following table:

Fiscal year	Maximum				Minimum			
	Date	Discharge (mgd)	Discharge (cfs)	Gage height (feet)	Date	Discharge (mgd)	Discharge (cfs)	Gage height (feet)
1953†	Mar. 4, 1953	2,650	4,100	5.40	Apr. 30, May 1, 1953	28	43	1.31
1954	Feb.22, 1954	4,000	6,190	5.95	Feb. 12, 1954	22.5	34.8	1.17
1955	Dec.22, 1954	3,510	5,430	5.81	Nov. 24, 1954	25.5	39.5	1.25
1956‡	Nov.11, 1955	5,710	8,830	6.55	Dec. 16-18, 1955	a32	*50	-
1958††	Dec. 1, 1957	10,200	15,800	7.72	Oct.28-30,Nov.19, 1957	24.5	37.9	1.23

† Period August to June.
‡ Period July 1 to Feb. 9 (destroyed by flood).
†† Period October to June.
a Minimum daily.

1953-55, 1958: Maximum discharge, 10,200 mgd (15,800 cfs) Dec. 1, 1957 (gage height, 7.72 ft), from rating curve extended above 660 mgd on basis of slope-area measurement of peak flow; minimum, 22.5 mgd (34.8 cfs) Feb. 12, 1954 (gage height, 1.17 ft).
Flood of Feb. 17, 1956, reached a stage of about 14.1 ft (discharge not determined).
Remarks.--Records good except those for periods of fragmentary gage-height record, which are fair, and those for periods of no gage-height record, which are poor. Water passing station is used for power by McBryde Sugar Co.

Rating tables, Aug. 31, 1952, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

Aug. 31, 1952, to Dec. 1, 1957				Dec. 1, 1957, to June 30, 1958			
1.1	20	3.0	291	1.1	26.5	2.6	195
1.5	37.5	3.5	510	1.4	41	3.0	310
1.7	51	4.0	820	1.7	63	3.5	530
2.0	79	5.2	2,290	2.0	94	4.0	850
2.5	156			2.3	135	4.5	1,350

Discharge, in million gallons a day, fiscal year August 1952 to June 1953

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1			104	33.5	126	240	70	29	48	38	29	49
2			80	34	64	139	61	29	46	35	33.5	54
3			60	31.5	64	68	44	29	423	33.5	205	37
4			48	31.5	49	107	37.5	29	700	42	68	31.5
5			66	37	65	*78	35	29	247	35	66	32.5
6			79	40	57	74	34.5	30	458	32	88	30
7			144	33.5	43	55	51	33.5	104	32	59	42
8			79	31.5	37.5	44	35	38.5	59	38.5	65	44
9			68	31	47	39.5	32.5	59	45	42	124	46
10			128	31	44	37.5	34.5	32.5	39.5	32.5	41	43
11			64	96	324	36.5	39.5	30	36.5	31	35	79
12			44	51	129	35.5	35	29.5	37	30	35	67
13			42	48	72	34.5	*37.5	379	41	29	41	87
14			67	48	68	34	31.5	298	45	29.5	41	68
15			57	163	134	35	31.5	88	54	200	76	51
16			43	56	108	32.5	31.5	143	39	75	*60	55
17			39.5	*64	113	34.5	31	110	133	111	45	105
18			41	206	276	44	30.5	80	82	97	32.5	105
19			35.5	73	178	236	30.5	183	51	81	45	47
20			34.5	50	116	152	30.5	115	48	55	36.5	41
21			34.5	64	55	95	30.5	69	41	41	73	34
22			34.5	45	45	48	30	47	44	36.5	34	31.5
23			33.5	108	47	41	32	43	52	34	45	30
24		-	31.5	167	58	37	31.5	127	83	31.5	35	29
25			32	408	43	36	31.5	58	37.5	31	42	*31
26			34.5	101	54	37	30.5	*38.5	73	30	65	34.5
27			32.5	59	115	37.5	30	79	150	29.5	33.5	39
28			31.5	64	55	42	30	99	127	29	174	36
29			31.5	152	98	42	29.5	-	116	29	95	37.5
30			31.5	126	213	37	31.5	-------	*100	28.5	43	32.5
31		57	-------	105	-------	32.5	30	-------	43	-------	62	-------
Total		-	1,671.0	2,588.5	2,897.5	2,041.5	1,101.0	2,354.5	3,602.5	1,419.0	1,927.0	1,449.0
Mean: mgd		-	55.7	83.5	96.6	65.9	35.5	84.1	116	47.3	62.2	48.3
cfs		-	86.2	129	149	102	54.9	130	179	73.2	96.2	74.7
Ac-ft		-	5,130	7,940	8,890	6,270	3,380	7,230	11,060	4,350	5,910	4,450

Calendar year	. Max	Min	Mean(mgd)	Mean(cfs)	Ac-ft
Fiscal year	: Max	Min	Mean(mgd)	Mean(cfs)	Ac-ft

* Discharge measurement made on this day.

1080. Wainiha River near Hanalei--Continued

Discharge, in million gallons a day, fiscal year July 1953 to June 1954

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	39	38	30.5	39.5	46	33	a450	31	336	71	37	107
2	65	106	28	28.5	30	71	155	27.5	107	38	34.5	74
3	44	63	26.5	27.5	26.5	64	50	25.5	84	28	52	106
4	64	48	32	24.5	43	140	87	27	297	26	116	60
5	39	35	36.5	23.5	33.5	85	81	38	356	90	86	82
6	33	34	29.5	23	*26.5	72	51	*28	232	42	64	69
7	37.5	45	26.5	23.5	95	117	47	25	148	31.5	55	163
8	40	80	34.5	27.5	46	93	36	24	134	27.5	49	140
9	35	67	43	23.5	55	96	32.5	23	143	26	40	71
10	32	36	110	29	162	48	29.5	23	137	24.5	35.5	81
11	54	*38.5	38	26.5	53	83	28	23	98	24	31	61
12	42	43	31.5	23.5	32.5	137	26.5	31	64	23.5	29.5	48
13	39.5	103	26.5	47	27.5	435	26	a140	50	24	28.5	53
14	78	43	25.5	45	35.5	*81	25	a70	43	24.5	27.5	112
15	49	32	24.5	82	114	46	24.5	a62	36.5	23.5	28	175
16	45	29	24.5	41	467	37.5	24.5	a160	33.5	184	30.5	61
17	38	27.5	24	46	244	34	24	a75	31	653	42	61
18	41	28.5	23.5	42	106	112	96	a35	30.5	100	34	82
19	36.5	30	*23	59	99	39.5	43	a30	33.5	*46	29	*64
20	33.5	40	28.5	29	56	45	32	a32	30	35.5	31	81
21	33.5	30	25	25.5	39	40	147	a35	29	31.5	32.5	51
22	58	35	27	28	32.5	52	55	a570	29	30.5	52	43
23	36	31	27.5	38	30.5	58	37.5	a330	30	33.5	153	39.5
24	44	63	39	25.5	73	34	31.5	64	26.5	29	195	68
25	31.5	40	57	24	69	30.5	48	54	25	27	89	161
26	39.5	34.5	40	23.5	42	78	31.5	139	24.5	26.5	122	44
27	44	47	30.5	25	35.5	47	28	58	24.5	26	183	131
28	37	43	38.5	32.5	32.5	32	26.5	369	24.5	308	138	70
29	88	34	30.5	41	54	30	34	-	24	217	82	64
30	36	30	33.5	49	43	29.5	63	-------	23.5	51	383	59
31	39	29	-------	53	-------	28.5	31	-------	23	-------	128	-------
Total	1,371.5	1,383.0	1,015.0	1,076.0	2,249.0	2,328.5	1,901.5	2,549.0	2,707.5	2,322.5	2,437.5	2,481.5
Mean:												
mgd	44.2	44.6	33.8	34.7	75.0	75.1	61.3	91.0	87.3	77.4	78.6	82.7
cfs	68.4	69.0	52.3	53.7	116	116	94.8	141	135	120	122	128
Ac-ft	4,210	4,240	3,120	3,300	6,900	7,150	5,840	7,820	8,310	7,130	7,480	7,620

Calendar year 1953: Max 700 Min 23 Mean(mgd) 58.3 Mean(cfs) 90.4 Ac-ft 64,300
Fiscal year 1953-54: Max 653 Min 23 Mean(mgd) 65.3 Mean(cfs) 101 Ac-ft 73,120

Peak discharge (base, 2,000 mgd).--Feb. 22 (9:30 p.m.) 4,000 mgd (6,190 cfs), 5.95 ft.

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for nearby streams.

Discharge, in million gallons a day, fiscal year July 1954 to June 1955

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	150	67	38.5	30	66	91	177	61	43	148	55	81
2	100	41	37.5	35	39	441	108	135	39.5	156	71	47
3	101	42	62	49	34	144	250	232	42	82	124	67
4	189	46	59	47	31.5	424	f310	146	74	46	60	49
5	74	291	45	48	30.5	855	80	67	60	44	66	43
6	46	101	58	42	29.5	832	49	567	44	48	64	39
7	39.5	69	45	48	*28.5	470	43	518	56	41	55	37
8	45	92	51	84	28.5	635	44	140	f212	39	49	36
9	52	49	102	56	29	126	38	74	109	39.5	50	35
10	182	51	36.5	105	28.5	136	36.5	64	f124	39.5	56	41
11	405	88	32.5	175	27.5	102	172	100	123	37.5	52	38
12	236	a88	47	113	27	205	815	319	f185	39	51	46
13	497	a70	75	53	27	97	126	117	110	41	47	61
14	82	a60	42	43	32.5	264	88	100	59	80	54	72
15	58	a75	44	35.5	81	157	114	91	f259	132	44	43
16	60	a55	51	32.5	38.5	168	69	59	112	154	42	99
17	64	45	76	43	29.5	67	80	96	74	278	37.5	51
18	200	171	73	82	27.5	47	107	124	62	94	99	114
19	64	79	71	37.5	26.5	41	48	95	50	89	86	170
20	92	83	40	34	26.5	37.5	66	85	45	59	249	151
21	58	307	35.5	52	26.5	35.5	484	55	43	84	94	57
22	97	144	33.5	59	26	375	71	156	91	100	45	49
23	50	62	39	58	26	122	51	214	74	107	61	124
24	50	113	35.5	37	29	55	45	*129	80	143	59	100
25	44	57	104	41	47	44	42	140	55	121	219	51
26	55	42	44	31.5	30	39	98	68	46	74	155	55
27	42	65	34	30	311	47	60	55	43	130	152	44
28	50	96	33.5	29.5	872	147	46	47	60	121	128	56
29	121	53	32	30	222	219	43	-	51	372	75	81
30	94	39	30.5	46	385	159	43	-------	73	103	60	52
31	72	35	-------	214	-------	*428	47	-------	99	-------	65	-------
Total	3,469.5	2,676	1,507.5	1,820.5	2,663.0	7,010.0	3,850.5	4,054	2,597.5	3,041.5	2,524.5	1,989
Mean:												
mgd	112	86.3	50.2	58.7	88.8	226	124	145	83.8	101	81.4	66.3
cfs	173	134	77.7	90.8	137	350	192	224	130	156	126	103
Ac-ft	10,650	8,210	4,630	5,590	8,170	21,510	11,820	12,440	7,970	9,330	7,750	6,100

Calendar year 1954: Max 872 Min 23 Mean(mgd) 91.9 Mean(cfs) 142 Ac-ft 103,000
Fiscal year 1954-55: Max 872 Min 26 Mean(mgd) 102 Mean(cfs) 158 Ac-ft 114,200

Peak discharge (base, 2,000 mgd).--Nov. 28 (8 a.m.) 2,290 mgd (3,540 cfs), 5.22 ft; Dec. 6 (3 a.m.) 2,460 mgd (3,810 cfs), 5.27 ft; Dec. 22 (6:30 p.m.) 3,510 mgd (5,430 cfs), 5.81 ft; Feb. 6 (8 p.m.) 3,280 mgd (5,070 cfs), 5.67 ft.

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for Hanalei River.
f Fragmentary gage-height record: discharge computed on basis of partly estimated gage heights.

ISLAND OF KAUAI

1080. Wainiha River near Hanalei--Continued

Discharge, in million gallons a day, July 1955 to February 1956

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	56	51	70	58	48	75	57	46				
2	93	55	115	130	36.5	145	49	52				
3	53	463	51	101	35	57	44	45				
4	52	64	54	117	34	42	43	43				
5	44	54	49	74	33.5	*37.5	39	55				
6	112	216	43	61	34	36	37	227				
7	45	55	39.5	71	32.5	36	35.5	114				
8	59	96	39.5	68	227	35	35	71				
9	39.5	85	39	55	280	34	45	51				
10	42	127	39	43	91	36.5	37	†45.7				
11	48	73	41	46	304	47	645	-				
12	66	58	41	39	1,310	36	736	-				
13	78	63	54	43	127	34	303	-				
14	114	169	47	96	179	33.5	80	-				
15	186	151	40	39	133	32.5	267	-				
16	170	87	67	*78	162	32	115	-				
17	117	75	39	58	568	32	59	-				
18	125	123	36.5	39	343	32	48	-				
19	63	136	45	37.5	186	480	43	-				
20	67	174	41	37	152	395	39.5	-				
21	51	83	89	36.5	348	654	37.5	-				
22	41	50	52	35.5	201	210	36.5	-				
23	39	45	44	37	209	63	35.5	-				
24	46	104	53	50	110	50	85	-				
25	61	214	39.5	70	59	44	827	-				
26	96	85	39.5	46	48	41	514	-				
27	135	79	50	45	51	38	220	-				
28	93	98	43	44	56	37	64	-				
29	226	90	46	64	97	36	67	-				
30	71	75	53	87	42	408	95	-------				
31	108	68	-------	39.5	-------	108	55	-------		-------		-------
Total	2,596.5	3,366	1,499.5	1,845.0	5,536.5	3,377.0	4,793.5	-				
Mean:												
mgd	83.8	109	50.0	59.5	185	109	155	-				
cfs	130	169	77.4	92.1	286	169	240	-				
Ac-ft	7,970	10,330	4,600	5,660	16,990	10,360	14,710	-				

Calendar year 1955; Max 1,310 Min 32 Mean(mgd) 99.4 Mean(cfs) 154 Ac-ft 111,300
Fiscal year 1955-56: Max - Min - Mean(mgd) - Mean(cfs) - Ac-ft -

Peak discharge (base, 2,000 mgd).--Nov. 11 (10:30 p.m.) 5,710 mgd (8,830 cfs), 6.55 ft; Dec. 30 (2 p.m.) 2,850 mgd (4,410 cfs), 5.48 ft; Jan. 25 (4:30 a.m.) 2,460 mgd (3,810 cfs), 5.32 ft.

* Discharge measurement made on this day.
† Result of discharge measurement.

Discharge, in million gallons a day, October 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1				-	58	*2,220	94	73	63	40	74	33
2				-	29	1,180	55	53	53	37	93	30.5
3				-	27	489	46	43	42	59	71	28.5
4				-	26.5	173	54	43	37.5	94	56	31
5				-	25.5	61	43	41	45	51	58	54
6				-	33	87	39.5	37	39	40	46	31.5
7				-	114	96	37.5	35.5	35.5	49	45	29.5
8				-	39.5	72	39.5	34.5	34	38	100	48
9				-	45	113	38	34	50	34.5	105	65
10				-	94	142	37	33	46	36	98	56
11				-	88	179	35.5	32.5	40	44	77	75
12				-	67	140	36	32.5	50	44	79	93
13				-	32	128	35.5	32	53	96	72	38
14				-	28	121	34.5	38	37	100	45	33
15				-	36	168	34	35.5	37	62	91	32
16				-	38.5	70	33.5	33	37.5	46	198	34.5
17				-	29.5	126	33	35.5	35.5	65	80	33
18				-	25.5	124	33	32	37	45	62	31.5
19				-	24.5	220	34.5	33.5	*34.5	36	44	28.5
20				-	253	88	34.5	55	33.5	66	38	29
21				-	84	97	38.5	36.5	34	51	38.5	29.5
22				-	50	70	55	44	40	38	45	31
23				25.5	39	167	41	42	34.5	34.5	36	64
24				25.5	47	91	35.5	53	32.5	33	34.5	50
25				29	58	103	33	38	34	32	38	61
26				26.5	66	196	32	33.5	57	31.5	53	93
27				25	71	103	32	*78	268	35	34.5	54
28				24.5	64	147	146	234	89	*32	31.5	211
29				24.5	301	125	309	-	76	30	30	119
30				24.5	728	97	465	-------	58	32	29.5	58
31			-------	65	-------	135	127	-------	51	-------	29.5	-------
Total				-	2,621.5	7,328	2,141.5	1,345.5	1,634.0	1,431.5	1,932.0	1,605.0
Mean:												
mgd				-	87.4	236	69.1	48.1	52.7	47.7	62.3	53.5
cfs				-	135	365	107	74.4	81.5	73.8	96.4	82.8
Ac-ft				-	8,050	22,490	6,570	4,130	5,010	4,390	5,930	4,930

Calendar year . Max Min Mean(mgd) Mean(cfs) Ac-ft
Fiscal year : Max Min Mean(mgd) Mean(cfs) Ac-ft

Peak discharge (base, 2,000 mgd).--Dec. 1 (8 p.m.) 10,200 mgd (15,800 cfs) 7.72 ft.

* Discharge measurement made on this day.

2030. Kaukonahua ditch near Wahiawa

Location.--Lat 21°30'45", long 157°59'20", on left bank 3 miles northeast of Wahiawa.

Records available.--March 1947 to June 1958.

Gage.--Water-stage recorder and Parshall flume. Altitude of gage is 1,100 ft (from topographic map).

Average discharge.--11 years, 3.07 mgd (4.75 cfs).

Extremes.--1947-58: Maximum daily discharge, 10.1 mgd (15.6 cfs) Jan. 27, 1948; no flow at times.

Remarks.--Records good except those for period of no gage-height record, which are poor. Ditch diverts water from North Fork Kaukonahua Stream for domestic use.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.0	4.7	6.9	4.6	5.5	5.9	2.1	5.7	3.5	1.69	6.3	1.53
2	3.0	4.8	6.8	5.1	5.5	5.7	2.05	6.3	3.3	1.61	6.5	1.46
3	3.0	5.3	6.6	5.0	5.2	5.0	2.1	6.8	3.1	1.93	5.9	1.46
4	3.0	5.2	6.4	6.5	5.1	4.3	2.4	7.3	2.9	5.1	5.7	1.61
5	3.0	5.1	6.6	5.2	5.1	4.0	1.94	6.5	2.9	*2.65	5.4	1.46
6	3.0	5.0	7.0	5.0	4.8	5.1	2.05	6.0	2.7	1.61	5.1	1.32
7	4.0	4.8	6.3	4.1	5.0	6.5	2.1	4.7	2.4	1.69	5.0	1.18
8	5.0	5.0	6.0	3.85	4.7	5.5	3.75	4.0	2.3	3.95	4.5	1.12
9	3.5	2.95	5.7	5.1	4.5	4.7	3.95	3.5	2.2	4.5	4.1	1.12
10	2.8	1.17	5.5	4.2	4.3	5.1	6.1	3.2	2.3	2.2	3.75	1.06
11	2.8	1.32	5.1	2.9	4.7	4.6	6.0	3.85	3.6	1.61	4.1	1.06
12	4.5	1.32	4.3	2.8	5.0	4.1	4.1	3.85	5.6	1.77	6.0	1.06
13	6.5	4.4	*4.0	3.6	5.1	3.85	3.15	3.1	5.6	1.39	6.4	1.06
14	5.7	6.6	4.2	5.8	5.2	3.4	*5.3	1.94	5.3	5.1	*5.5	1.06
15	5.4	6.1	5.2	6.1	5.5	5.1	5.2	3.65	4.7	4.7	5.0	3.8
16	5.2	6.1	5.9	6.9	5.5	6.6	4.3	5.7	4.5	5.2	4.5	3.2
17	5.0	7.0	5.9	7.2	5.4	6.0	3.75	5.6	6.0	5.6	4.1	3.85
18	6.5	4.9	5.2	6.4	4.3	5.9	3.45	5.6	5.7	5.6	3.75	3.85
19	7.0	1.86	4.6	6.4	4.5	4.8	5.7	5.4	4.5	7.0	3.5	3.05
20	*5.0	3.55	4.0	6.0	4.7	6.0	6.6	5.2	4.0	6.0	3.2	4.6
21	4.6	6.3	3.6	5.9	*5.3	5.1	7.8	5.1	4.1	5.2	3.2	*4.1
22	4.6	6.3	3.4	*5.7	5.9	5.0	7.4	5.0	3.75	5.0	4.5	2.4
23	4.6	6.4	4.4	5.6	5.6	4.2	6.3	5.0	2.8	6.4	3.3	1.77
24	4.7	6.6	3.4	5.9	5.5	3.5	6.6	4.8	2.4	6.4	3.5	1.46
25	4.7	6.4	3.2	5.4	6.1	3.2	6.0	4.6	2.2	7.8	3.2	2.8
26	4.7	6.4	3.1	6.2	5.6	3.0	5.7	*4.2	2.2	6.4	2.7	2.2
27	4.7	6.3	3.85	6.5	5.4	2.8	5.7	3.85	1.94	5.9	2.2	1.46
28	4.7	6.4	2.5	6.1	5.4	2.7	5.6	3.75	1.85	5.7	2.1	3.4
29	4.7	6.4	3.05	5.9	4.8	2.5	5.9	-	1.77	5.4	1.94	3.85
30	4.7	7.4	5.2	6.5	6.0	2.4	6.0	-------	1.77	5.7	1.85	3.3
31	4.7	7.4	-------	6.0	-------	2.3	5.4	-------	1.77	-------	1.69	-------
Total	138.3	159.47	147.90	168.45	155.2	138.85	144.49	134.19	103.65	130.80	128.48	66.65
Mean:												
mgd	4.46	5.14	4.93	5.43	5.17	4.48	4.66	4.79	3.34	4.36	4.14	2.22
cfs	6.90	7.95	7.63	8.40	8.00	6.93	7.21	7.41	5.17	6.75	6.41	3.43
Ac-ft	424	489	454	517	476	426	443	412	318	401	394	205

Calendar year 1956. Max 7.4 Min 0.36 Mean(mgd) 4.08 Mean(cfs) 6.31 Ac-ft 4,580
Fiscal year 1956-57: Max 7.8 Min 1.06 Mean(mgd) 4.43 Mean(cfs) 6.85 Ac-ft 4,960

* Discharge measurement made on this day.
Note.--No gage-height record July 1-27; discharge estimated on basis of recorded range in stage and records for nearby streams.

2030. Kaukonahua ditch near Wahiawa--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.5	4.7	5.1	4.3	3.85	5.6	1.53	2.2	2.3	1.53	1.46	1.74
2	3.3	4.5	5.1	4.0	3.5	4.0	1.39	1.85	1.25	1.32	4.5	4.5
3	2.8	5.1	5.1	4.0	3.3	2.9	1.32	1.69	1.00	1.25	4.7	2.2
4	3.1	4.8	5.0	3.75	*2.5	2.8	1.32	1.77	.88	4.6	3.85	2.5
5	3.75	*4.5	5.0	3.4	2.5	2.6	1.32	1.61	6.1	2.05	2.8	4.6
6	3.4	5.3	4.8	3.2	3.5	3.55	1.25	1.46	3.3	1.32	2.8	2.4
7	3.3	7.4	4.7	2.9	4.5	.67	1.82	1.39	.78	1.25	2.9	2.4
8	3.1	6.4	4.6	2.8	4.0	.27	2.5	1.32	.46	1.12	3.6	3.85
9	2.9	5.4	4.6	2.5	4.3	.25	2.6	1.25	.33	1.06	2.6	6.5
10	3.1	5.1	4.5	2.5	4.3	1.18	2.6	1.47	.27	2.0	3.5	6.3
11	3.3	5.0	4.5	3.1	4.3	2.7	2.4	1.61	.21	.41	4.2	6.5
12	3.75	5.0	4.5	3.0	4.1	*2.1	2.3	1.46	.24	1.06	3.1	6.3
13	3.5	5.0	4.6	3.3	3.85	2.05	2.2	1.39	.92	1.12	4.1	5.1
14	3.85	5.0	4.5	2.8	3.75	2.2	2.1	1.32	.39	.94	2.9	4.6
15	3.75	3.9	4.3	3.4	3.85	2.75	2.05	1.25	.27	.83	*3.6	4.2
16	3.5	3.8	4.1	3.5	4.0	2.7	1.94	1.12	.21	3.3	6.5	3.6
17	3.3	5.1	3.85	3.75	3.5	2.5	1.94	1.12	.16	5.2	5.7	3.6
18	4.1	5.1	4.4	3.75	4.0	3.85	2.2	1.06	.13	3.55	5.0	3.3
19	4.6	5.5	4.0	3.5	3.75	3.3	2.2	.94	.12	2.05	4.5	2.8
20	4.7	5.1	*3.75	2.7	3.6	2.6	2.2	.94	.12	2.15	4.5	2.5
21	4.3	5.0	3.4	3.5	2.4	2.6	*2.1	.88	.26	2.5	3.85	3.0
22	3.85	4.8	3.2	2.5	1.68	1.85	2.2	.78	.94	1.25	3.6	3.4
23	4.1	4.8	2.9	2.3	3.3	1.85	2.3	.78	1.00	1.00	3.0	5.1
24	4.6	5.6	2.8	2.75	3.3	2.25	2.05	.73	.83	.88	2.9	4.7
25	4.1	5.6	2.6	3.3	3.2	1.85	1.85	.63	.73	.83	3.35	4.1
26	4.5	5.6	2.9	2.3	3.1	2.2	1.69	*.58	.63	.78	4.6	5.6
27	5.1	5.2	4.3	1.85	2.7	1.77	1.61	1.40	5.9	5.4	2.8	*4.7
28	5.4	5.1	4.3	1.61	3.1	2.2	2.55	4.0	3.9	5.4	2.3	5.4
29	4.5	5.7	4.3	1.61	3.1	2.2	3.6	-	4.6	3.1	2.05	4.7
30	5.1	5.5	4.5	2.05	4.5	1.61	5.5	-------	4.2	2.05	1.77	4.1
31	5.4	5.2	-------	3.75	-------	1.53	3.75	-------	2.05	-------	1.69	-------
Total	120.65	159.8	126.40	93.67	105.33	72.48	68.38	38.00	44.48	61.30	108.72	124.29
Mean:												
mgd	3.89	5.15	4.21	3.02	3.51	2.34	2.21	1.36	1.43	2.04	3.51	4.14
cfs	6.02	7.97	6.51	4.67	5.43	3.62	3.42	2.10	2.21	3.16	5.43	6.41
Ac-ft	370	490	388	287	323	222	210	117	137	188	334	381

Calendar year 1957. Max 7.8 Min 0.25 Mean(mgd) 3.80 Mean(cfs) 5.88 Ac-ft 4,250
Fiscal year 1957-58: Max 7.4 Min 0.12 Mean(mgd) 3.08 Mean(cfs) 4.77 Ac-ft 3,450

* Discharge measurement made on this day.

2040. North Fork Kaukonahua Stream near Wahiawa

Location.--Lat 21°30'55", long 157°59'20", on left bank 3 miles northeast of Wahiawa and 8.6 miles north of Pearl City.

Drainage area.--4.86 sq mi (revised).

Records available.--September 1946 to June 1958.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 970 ft (from topographic map).

Average discharge.--11 years (1947-58), 21.7 mgd (33.6 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 1,910 mgd (2,960 cfs) Feb. 4 (gage height, 13.57 ft), from rating curve extended above 190 mgd on basis of slope-area measurements at gage heights 8.39 and 15.55 ft; minimum, 0.60 mgd (0.93 cfs) June 10-13.

1957-58: Maximum discharge during fiscal year, 1,480 mgd (2,290 cfs) Mar. 5 (gage height, 10.74 ft), from rating curve extended above 190 mgd as explained above; minimum, 0.39 mgd (0.60 cfs) Oct. 28, 29, Apr. 26, May 31.

1946-58: Maximum discharge, 2,200 mgd (3,400 cfs), revised, Nov. 28, 1954 (gage height, 15.55 ft), from rating curve extended above 190 mgd as explained above; no flow at times in 1953.

Revisions.--The maximum discharge for the fiscal year 1955 has been revised to 2,200 mgd (3,400 cfs) Nov. 28, 1954 (gage height, 15.55 ft), superseding figure published in WSP 1399.

Remarks.--Records good. Poamoho tunnel diverts floodwater from Poamoho Stream into North Fork Kaukonahua Stream about 1 mile above station. Kaukonahua ditch diverts water 2.6 miles above station for domestic use in Wahiawa (see preceding page).

Revisions (fiscal years).--WSP 1289: 1947-52.

Rating table, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

0.3	0.39	1.6	37.5
.4	.80	2.0	74
.5	1.45	2.4	130
.6	2.35	3.0	247
.8	5.0	4.0	429
1.0	9.1	5.0	570
1.3	20		

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	14.3	14.3	10.6	2.75	38	13.6	1.32	36.5	3.15	1.26	26	0.93
2	9.6	5.1	5.2	3.7	19.3	8.5	1.26	44	3.05	1.19	37.5	.86
3	9.1	51	3.65	6.5	6.2	3.25	1.19	121	2.9	1.47	13.2	.80
4	7.3	77	2.8	47	4.8	2.6	1.32	299	2.8	18.0	10.7	.86
5	6.4	102	2.6	5.5	3.65	2.35	1.32	128	2.9	*3.7	6.5	.86
6	6.6	21	9.5	2.25	3.05	93	1.61	68	2.7	1.63	4.2	.76
7	8.7	15.0	2.7	3.0	7.6	37.5	3.1	32.5	2.35	1.45	3.5	.72
8	13.3	102	1.81	*1.26	3.4	5.8	10	23.5	2.15	3.9	3.15	.72
9	6.8	232	1.45	6.8	1.90	3.8	7.0	19.6	2.1	11.7	2.9	.72
10	5.4	25.5	1.63	4.1	1.54	4.1	20	16.6	2.15	2.5	2.7	.64
11	6.6	18.3	1.72	1.38	4.6	3.7	70	48	2.9	1.72	2.6	.80
12	6.5	15.0	1.32	1.12	20.5	2.8	6.3	76	27.5	1.32	77	.64
13	70	19.8	1.26	2.0	30.5	2.8	2.9	99	13.6	1.19	39.5	.68
14	34.5	78	1.32	63	88	2.45	*43	30	10.9	33.5	7.4	.72
15	13.8	19.4	22.5	26.5	20.5	4.3	16.8	25	6.9	8.7	3.5	8.5
16	14.2	8.9	5.4	35	9.5	28	11.5	13.5	3.95	8.7	2.7	4.0
17	11.9	116	13.7	160	39.5	10.9	8.4	10.9	20	28	2.25	3.75
18	73	69	5.2	40	22.5	10.7	8.0	10.9	18	7.9	1.90	4.3
19	87	18.7	1.99	26	20.5	3.5	50	8.0	5.6	133	1.81	2.15
20	*25.5	13.1	1.00	12.3	44	19.9	174	7.0	4.6	33	1.72	13.5
21	11.8	8.2	.80	5.7	15.5	4.6	276	6.4	3.8	7.4	1.72	*9.8
22	15.9	6.6	.80	4.1	6.7	2.9	*143	5.4	4.6	3.95	3.25	2.1
23	8.1	5.9	1.41	3.4	5.0	3.2	41	5.2	2.9	104	2.6	.93
24	17.0	9.2	1.95	8.8	4.1	2.25	80	4.7	2.15	36	2.1	.76
25	26	5.2	.93	2.3	29.5	2.1	28.5	4.2	1.81	66	2.45	1.42
26	8.1	3.65	.78	59	5.6	1.90	16.2	3.6	1.72	30.5	1.72	1.74
27	10.1	3.15	.93	60	3.8	1.81	12.1	3.4	1.63	11.2	1.38	.76
28	12.8	5.4	.80	12.7	3.65	1.72	9.7	3.25	1.54	13.1	1.26	2.55
29	10.3	2.9	.76	6.0	2.8	1.54	22	-	1.38	6.6	1.12	21
30	10.6	40	3.85	28.5	31	1.38	28.5	-------	1.32	7.8	1.06	3.25
31	19.3	75	-------	15.3	-------	1.38	8.6	-------	1.26	-------	1.00	-------
Total	580.5	1,186.30	110.34	655.96	496.99	288.33	1,104.62	1,153.15	164.31	590.38	270.39	91.02
Mean: mgd	18.7	38.3	3.68	21.2	16.6	9.30	35.6	41.5	5.30	19.7	8.72	3.03
cfs	28.9	59.3	5.69	32.8	25.7	14.4	55.1	63.7	8.20	30.5	13.5	4.69
Ac-ft	1,780	3,640	339	2,010	1,530	885	3,390	3,540	504	1,810	830	279

Calendar year 1956 : Max 683 Min 0.76 Mean(mgd) 29.0 Mean(cfs) 44.9 Ac-ft 32,540
Fiscal year 1956-57 : Max 299 Min 0.60 Mean(mgd) 18.3 Mean(cfs) 28.3 Ac-ft 20,540

Peak discharge (base, 1,100 mgd).--Aug. 9 (3 a.m.) 1,220 mgd (1,890 cfs), 9.12 ft; Feb. 4 (5 p.m.) 1,910 mgd (2,960 cfs), 13.57 ft.

* Discharge measurement made on this day.

2040. North Fork Kaukonahua Stream near Wahiawa--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.38	6.5	14.6	10.5	11.8	404	11.2	9.4	4.1	1.26	0.80	0.47
2	13.6	4.1	14.2	4.6	2.5	80	9.4	5.4	1.26	1.00	16.4	6.3
3	4.0	26.5	26	6.2	5.2	25	8.2	3.95	.72	1.12	13.9	1.42
4	11.9	15.5	10.9	2.15	.93	26	7.3	3.8	.55	3.1	3.25	.99
5	79	*5.9	8.0	1.26	.60	14.3	6.6	4.4	484	2.3	1.90	18.2
6	24.5	28	6.4	.93	2.05	140	6.3	2.8	193	1.26	1.26	1.19
7	13.5	155	5.4	.76	107	36	5.4	2.45	27.5	1.19	1.72	.60
8	6.6	65	3.95	.72	7.5	17.0	4.1	2.25	15.7	1.00	3.25	1.90
9	4.4	16.6	3.25	.68	25	15.0	4.4	2.1	11.5	.86	2.6	49
10	10.5	11.2	2.7	.68	24	26.5	4.6	1.90	8.9	8.0	7.4	39
11	19.4	7.7	2.8	.93	21	28	3.65	1.32	7.5	3.45	10.0	34.5
12	11.4	12.1	3.8	1.91	9.1	*12.8	3.15	.93	6.4	1.19	2.6	36
13	5.2	8.5	11.0	1.20	4.9	11.2	3.05	.86	6.8	1.06	4.4	6.8
14	69	8.2	5.4	1.80	2.7	14.0	2.6	.93	5.0	*.93	2.6	3.95
15	13.0	98	3.75	5.0	6.1	36	2.35	1.00	4.6	.76	*2.6	2.7
16	6.8	16.5	1.90	2.75	13.3	34	2.15	.80	4.2	2.8	148	1.90
17	7.5	7.5	1.38	3.15	2.9	13.1	1.90	.86	3.95	17.6	15.1	1.54
18	7.8	12.4	6.2	2.9	4.0	38.5	1.81	.80	3.65	5.0	5.1	1.63
19	9.0	12.2	3.2	2.7	2.15	92	2.15	.72	3.4	1.38	2.6	1.32
20	7.3	9.9	*1.37	1.00	1.22	32	1.72	.76	3.05	1.63	2.2	1.19
21	3.25	5.0	1.12	2.45	119	67	*1.45	.76	2.8	2.6	2.0	1.38
22	2.15	4.1	1.00	1.22	41	19.1	1.63	.68	2.35	1.06	1.54	1.81
23	1.63	4.4	1.00	.60	26.5	17.8	1.90	.72	2.25	.68	.93	22
24	14.8	73	1.19	.72	22.5	55	1.45	.68	1.81	.55	.68	4.9
25	4.0	112	1.26	4.4	16.3	22.5	1.26	.64	1.54	.47	.68	3.85
26	7.4	41	1.32	.80	8.0	36	1.12	*.55	1.45	.43	8.5	16.3
27	47	15.7	9.3	.51	8.0	17.4	1.06	.55	85	31.5	1.26	*9.2
28	40	13.2	9.2	.39	6.5	18.5	33	40	6.6	28.0	.60	19.7
29	7.9	72	9.2	.47	9.5	27.5	17.4	-	12.6	3.45	.51	5.7
30	10.3	57	36.5	.60	31.5	13.2	142	-------	6.6	1.32	.47	4.2
31	39.5	22.5	-------	20.5	-------	11.2	50	-------	1.90	-------	.43	-------
Total	503.71	947.2	207.29	84.48	542.75	1,400.6	344.30	90.01	920.68	126.95	265.28	299.65
Mean:												
mgd	16.2	30.6	6.91	2.73	18.1	45.2	11.1	3.29	29.7	4.23	8.56	9.99
cfs	25.1	47.3	10.7	4.22	28.0	69.9	17.2	5.08	46.0	6.54	13.2	15.5
Ac-ft	1,550	2,910	636	259	1,670	4,300	1,060	282	2,830	390	814	920

Calendar year 1957. Max 404 Min 0.39 Mean(mgd) 19.3 Mean(cfs) 29.9 Ac-ft 21,680
Fiscal year 1957-58: Max 484 Min 0.39 Mean(mgd) 15.7 Mean(cfs) 24.3 Ac-ft 17,620

Peak discharge (base, 1,100 mgd).--Nov. 21 (1:30 a.m.) 1,240 mgd (1,920 cfs), 9.24 ft, Dec. 1 (10 a.m.) 1,170 mgd (1,810 cfs), 8.80 ft; Dec. 6 (7 p.m.) 1,360 mgd (2,100 cfs), 9.93 ft; Mar. 5 (4 p.m.) 1,480 mgd (2,290 cfs), 10.74 ft.

* Discharge measurement made on this day.

2060. South Fork Kaukonahua Stream near Wahiawa

Location.--Lat 21°30'05", long 157°56'50", on right bank at Canon Dam, 5.4 miles east of Wahiawa and 7.7 miles north of Pearl City.

Drainage area.--1.93 sq mi (revised).

Records available.--May 1944 to June 1957 (discontinued).

Gage.--Water-stage recorder and masonry dam control. Altitude of gage is 1,070 ft (from topographic map).

Average discharge.--13 years, 7.17 mgd (11.1 cfs).

Extremes.--Maximum discharge during year, 1,060 mgd (1,640 cfs) Aug. 8 (gage height, 7.03 ft), from rating curve extended above 15 mgd by test on model of station site; minimum, 0.12 mgd (0.19 cfs) June 14.

1944-57: Maximum discharge, 1,560 mgd (2,410 cfs) Nov. 28, 1954 (gage height, 8.55 ft), from rating curve extended above 15 mgd by test on model of station site; minimum, 0.01 mgd (0.02 cfs) Feb. 21, 1945, Nov. 14, 15, 1953.

Remarks.--Records fair except those for period of no gage-height record, which are poor.

Rating table, fiscal year 1956-57 (gage height, in feet, and discharge, in million gallons a day)

0.3	0.09	1.0	2.3
.4	.17	1.1	5.5
.5	.30	1.4	19.2
.6	.47	1.7	38
.7	.68	2.0	64
.8	.95	2.4	109
.9	1.33		

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	7.2	5.5	5.1	5.6	*3.4	3.95	0.41	3.95	1.25	0.31	20	0.30
2	*5.5	3.6	4.7	2.15	3.4	2.3	*.37	4.8	1.17	.30	18.0	.28
3	5.1	29	3.6	1.62	2.05	1.50	.37	17.8	1.09	.40	12.3	.27
4	4.3	32.5	*2.75	16.6	1.73	1.21	.37	95	1.01	5.1	17.1	.27
5	3.95	26.5	4.8	2.5	1.56	1.01	.34	32	1.01	.83	5.9	.25
6	3.95	8.9	8.8	2.5	2.55	33	.34	19.2	.86	.32	3.95	.21
7	8.1	12.8	3.3	1.41	4.0	7.7	.34	8.5	.75	.31	3.0	.20
8	5.5	96	2.3	1.33	1.45	1.84	.62	8.8	.68	4.5	2.5	.19
9	3.6	45	3.35	6.3	1.17	1.41	2.25	4.7	.66	4.1	1.84	.19
10	3.0	10.2	2.3	1.83	1.25	1.37	8.6	4.3	.68	.65	1.63	.17
11	3.0	8.1	1.73	1.01	1.77	1.25	11.6	28	.92	.35	1.63	.17
12	6.7	7.6	1.56	.86	1.93	.98	1.13	16.0	2.15	.49	13.0	.16
13	19.9	11.0	1.63	10.8	5.6	.86	.59	21.5	4.5	.30	18.3	.15
14	18.8	24.5	1.80	34	24	.80	1.55	13.7	4.1	17.0	2.3	.14
15	9.3	11.3	13.1	9.5	6.2	2.45	6.2	12.4	1.73	2.15	1.45	.30
16	8.5	6.8	3.15	13	4.2	14.1	2.1	6.4	2.65	4.6	1.25	.98
17	6.8	79	9.7	33	12.2	4.9	1.06	4.7	6.4	7.8	1.09	4.4
18	35.5	22.5	6.5	15	6.7	4.3	1.36	4.7	4.4	2.65	.98	3.75
19	80	9.8	2.05	7.0	4.4	2.2	10.8	3.6	1.21	10.6	.86	9.3
20	13.1	8.1	1.45	4.5	10.4	3.75	35	3.0	1.11	2.8	.75	10.1
21	9.8	6.8	1.25	3.7	3.65	1.33	79	2.75	2.6	.98	.73	2.8
22	7.6	6.4	1.13	3.2	2.3	1.97	38	2.5	1.37	.59	.77	.73
23	5.9	5.9	2.95	2.7	1.56	1.16	9.9	2.3	.70	12.3	.68	.53
24	5.5	11.1	1.31	6.0	1.45	.86	23	2.05	.57	6.2	.70	.51
25	6.8	5.1	1.09	2.0	15.1	.73	8.2	1.73	.51	19.5	.66	4.6
26	4.7	4.3	1.12	10	2.05	.66	4.7	1.56	.47	13.2	.70	1.31
27	5.1	3.6	1.47	25	1.45	.61	3.3	1.45	.41	3.6	.53	.67
28	10.2	7.5	.86	3.3	1.29	.57	2.75	1.33	.39	11.1	.45	7.0
29	17.0	6.6	1.51	3.3	1.21	.53	8.0	-	.37	2.5	.41	9.0
30	10.9	28	3.5	10	22	.49	6.4	-------	.36	11.5	.36	1.49
31	8.5	11.3	-------	12	-------	.45	2.5	-------	.32	-------	.32	-------
Total	343.80	556.3	99.86	251.91	152.02	100.24	271.35	326.72	46.40	147.03	134.14	60.60
Mean:												
mgd	11.1	17.9	3.33	8.13	5.07	3.23	8.75	11.7	1.50	4.90	4.33	2.02
cfs	17.2	27.7	5.15	12.6	7.84	5.00	13.5	18.1	2.32	7.58	6.70	3.13
Ac-ft	1,060	1,710	306	773	467	308	833	1,000	142	451	412	186

Calendar year 1956: Max 102 Min 0.45 Mean(mgd) 9.58 Mean(cfs) 14.8 Ac-ft 10,770
Fiscal year 1956-57: Max 96 Min 0.14 Mean(mgd) 6.82 Mean(cfs) 10.6 Ac-ft 7,650

Peak discharge (base, 400 mgd).--July 19 (5:30 p.m.) 452 mgd (699 cfs), 4.46 ft; Aug. 8 (9 p.m.) 1,060 mgd (1,640 cfs), 7.03 ft; Oct. 26 (11 p.m.) 514 mgd (795 cfs), 4.75 ft; Jan. 21 (4 p.m.) 452 mgd (699 cfs), 4.53 ft; Feb. 4 (4:30 p.m.) 741 mgd (1,150 cfs), 5.82 ft.

* Discharge measurement made on this day.
Note.--No gage-height record Oct. 14 to Nov. 1; discharge estimated on basis of records for station above Wahiawa Reservoir.

2090. South Fork Kaukonahua Stream above Wahiawa Reservoir, near Wahiawa

Location.--Lat 21°29'35", long 157°59'55", on right bank 2 miles southeast of Wahiawa and 7.5 miles north of Waipahu.

Drainage area.--5.26 sq mi (revised).

Records available.--October 1946 to July 1958 (discontinued).

Gage.--Water-stage recorder and concrete control. Datum of gage is 844.51 ft above mean sea level, datum of 1929.

Average discharge.--11 years (1947-58), 16.0 mgd (24.8 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 1,650 mgd (2,550 cfs) Aug. 8 (gage height, 12.05 ft), from rating curve extended above 100 mgd; minimum, 0.80 mgd (1.24 cfs) June 13.

1957-58: Maximum gage height during fiscal year, 13.33 ft Mar. 5, backwater from Wahiawa Reservoir (discharge not determined); minimum, 0.85 mgd (1.38 cfs) several days.

1946-58: Maximum discharge, 2,840 mgd (4,390 cfs) Nov. 28, 1954 (gage height, 18.16 ft), from rating curve extended above 100 mgd; maximum gage height, 22.55 ft Feb. 25, 1956; minimum discharge, 0.27 mgd (0.42 cfs) Apr. 11-15, 26, 28, 1954.

Remarks.--Records good except those for periods of indefinite stage-discharge relation or no gage-height record, which are fair. Ku Tree Reservoir (capacity, 293,000,000 gal) and Koolau Reservoir (capacity, 43,000,000 gal) located on tributary, divert small quantity of water 0.1 mile below Canon Dam for domestic use, fire protection, and as a standby in case of emergency. Excess water spills back into stream.

Revisions (fiscal years).--WSP 1249: 1951(M), drainage area.

Rating tables, July 1, 1956, to July 6, 1958 (gage height, in feet, and discharge, in million gallons a day)

July 1, 1956, to June 30, 1957

0.4	0.90	1.6	36.5
.5	1.58	2.0	70
.7	3.7	2.5	131
1.0	9.8	3.0	193
1.3	20.5	3.5	257

July 1, 1957, to July 6, 1958

1.6	36.5	3.5	257
2.0	76	4.0	322
2.5	132	5.0	470
3.0	193	6.0	620

Note.--Same as preceding table below 1.6 ft.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	14.9	9.5	9.2	7.0	6.8	14.6	2.25	9.3	5.3	2.15	45	1.37
2	10.6	5.9	8.8	6.6	7.3	5.9	2.05	12.3	5.0	2.05	35	1.51
3	9.3	50	7.8	4.8	5.0	4.2	2.05	35	4.7	2.25	*20	1.44
4	8.5	47	*5.8	22.5	4.5	3.45	2.25	e230	4.5	5.1	24	1.23
5	8.0	34	6.1	7.4	4.2	2.95	2.05	112	4.7	3.9	10.6	1.30
6	7.2	13.4	14.1	15.8	3.85	100	2.05	55	4.0	2.25	7.5	1.23
7	10.2	10.6	6.8	6.2	6.2	51	2.3	30	3.55	1.94	6.2	1.23
8	9.0	171	5.0	3.85	4.3	8.3	5.3	23	3.45	3.6	5.5	1.18
9	7.5	192	6.1	7.9	3.3	5.9	6.4	19	3.45	8.2	5.1	.96
10	6.4	17.6	5.1	6.3	3.7	4.8	31.5	16	3.7	3.2	4.5	1.16
11	6.1	13.4	4.2	3.55	4.8	4.5	28	40	4.8	2.15	4.3	1.16
12	7.1	11.8	3.7	2.95	5.1	4.0	6.8	70	5.0	1.94	5.6	1.23
13	50	14.2	3.85	25.5	6.9	3.85	3.55	90	10.2	2.05	32.5	*1.00
14	27.5	30.5	4.3	75	23	3.7	4.2	27	17.2	15.7	10.5	1.16
15	15.1	20	22	23.5	18.0	5.8	10.2	22	9.8	6.4	*5.4	1.17
16	14.5	10.1	8.6	34.5	8.3	40	9.5	16	6.8	5.6	4.2	2.3
17	13.4	162	12.1	67	31.5	11.8	*5.0	14	18.2	12.3	4.2	4.7
18	41	48	9.0	22	11.0	11.4	6.2	13	16.9	4.6	3.3	7.6
19	118	16.4	5.3	14.9	12.1	6.1	24	11	6.6	18.1	3.2	6.9
20	*30	12.0	3.7	10.7	11.7	6.8	e110	9.5	4.7	8.8	2.85	19.6
21	13.7	10.4	3.55	8.0	11.1	4.8	e250	9.0	5.6	3.5	2.65	8.0
22	12.3	9.5	3.2	*6.5	5.1	4.8	159	8.0	6.3	2.35	2.95	3.2
23	9.0	9.0	3.75	5.9	4.5	4.7	37	7.0	3.7	17.4	2.65	1.94
24	9.0	22.5	4.2	12.0	4.0	3.45	65	6.6	3.05	19.4	2.65	1.30
25	10.0	10.4	3.3	4.8	16.7	3.05	29	6.3	2.85	93	2.35	3.0
26	7.5	7.7	3.05	6.7	5.6	2.95	16.8	*6.1	*2.8	40	3.3	3.85
27	8.0	7.0	3.3	57	4.0	2.85	13.0	5.9	2.65	10.8	2.45	1.54
28	15.8	10.2	2.95	6.8	3.55	2.55	11.2	5.7	2.55	16.9	1.94	2.15
29	20.5	6.8	4.4	6.7	3.3	2.45	13.5	-	2.55	7.7	1.76	9.7
30	15.9	37.5	6.4	16.3	*26.5	2.35	23.5	-------	2.35	12.8	1.67	4.6
31	10.1	15.6	-------	21	-------	2.35	9.3	-------	2.35	-------	1.58	-------
Total	546.1	1,036.0	189.65	519.65	265.90	335.35	892.95	908.7	179.30	336.13	265.40	98.71
Mean:												
mgd	17.6	33.4	6.32	16.8	8.86	10.8	28.8	32.5	5.78	11.2	8.56	3.29
cfs	27.2	51.7	9.78	26.0	13.7	16.7	44.6	50.3	8.94	17.3	13.2	5.09
Ac-ft	1,680	3,180	582	1,590	816	1,030	2,740	2,790	550	1,030	814	303

Calendar year 1956: Max 450 Min 2.35 Mean(mgd) 19.6 Mean(cfs) 30.3 Ac-ft 22,050
Fiscal year 1956-57: Max 250 Min 0.96 Mean(mgd) 15.3 Mean(cfs) 23.7 Ac-ft 17,100

* Discharge measurement made on this day.
e Stage-discharge relation indefinite; discharge estimated on basis of records for stations on North Fork and at Canon Dam.

Note.--No gage-height record Feb. 7-26; discharge estimated on basis of records for stations on North Fork and at Canon Dam.

2090. South Fork Kaukonahua Stream above Wahiawa Reservoir, near Wahiawa--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.15	9.5	19.3	7.6	9.9	282	8.3	10.1	4.9	2.35	1.16	1.44
2	17.1	5.7	17.2	3.7	2.8	64	8.0	6.1	2.15	2.05	2.65	24
3	5.0	10.8	17.6	3.05	1.94	16.0	6.2	4.8	1.51	1.94	10.6	3.35
4	6.7	21	12.6	2.85	1.37	14.0	5.7	4.8	1.23	2.25	4.3	2.05
5	13.4	11.6	12.0	2.45	.96	8.5	5.1	5.0	e500	2.45	2.05	5.0
6	10.6	43	10.4	2.25	1.65	101	4.8	3.55	e190	2.15	1.51	2.15
7	4.5	203	9.3	2.05	53	27.5	4.5	3.2	23	2.15	2.15	1.58
8	3.7	82	8.5	1.85	*7.7	9.8	4.5	3.05	12.6	*1.58	8.7	10.3
9	3.45	26	7.7	1.64	16.1	8.0	4.7	2.85	9.0	1.51	7.2	36
10	9.7	17.2	7.0	2.15	5.8	15.1	5.1	2.45	6.8	1.44	16.1	7.5
11	25	13.4	8.2	1.51	7.4	18.0	4.3	2.25	5.9	1.44	11.7	8.0
12	9.4	15.2	7.9	1.32	3.45	9.4	4.0	2.05	5.0	1.44	7.0	6.5
13	4.6	10.6	6.8	1.67	2.45	8.0	3.85	1.85	5.1	1.51	8.8	4.0
14	21	10.4	7.5	1.67	1.85	15.0	3.3	1.85	4.2	1.58	4.5	3.05
15	7.2	66	6.2	1.52	1.44	29	3.05	1.94	3.7	1.67	4.0	2.45
16	5.0	15.3	5.3	3.05	4.4	*27.5	2.85	1.76	3.3	6.2	60	2.15
17	4.4	10.6	4.8	10.3	3.0	14.0	2.75	1.67	3.2	4.1	12.7	2.05
18	4.0	13.0	*6.0	6.7	1.44	29.5	2.65	1.67	2.95	2.75	6.6	1.94
19	3.8	13.9	6.4	6.5	1.23	31.5	2.75	1.37	2.75	1.85	4.2	1.94
20	8.7	12.3	4.5	3.25	1.47	32	2.55	1.44	2.55	1.67	3.55	1.58
21	3.65	8.2	4.0	2.9	121	63	*2.25	1.37	2.55	1.67	3.3	1.58
22	2.6	7.2	3.7	2.5	20	16.8	2.75	1.30	2.45	1.58	3.95	2.7
23	1.80	9.2	3.2	1.58	11.3	13.7	2.85	1.30	2.45	1.37	*2.5	32
24	21.5	150	3.05	1.37	13.4	18.3	2.25	1.30	2.25	1.09	2.05	7.5
25	*5.6	88	3.7	1.44	11.8	12.3	1.94	1.23	2.15	.96	2.15	8.2
26	4.2	23.5	4.5	1.58	5.9	20.5	1.76	1.09	2.05	.90	8.7	11.7
27	11.4	19.7	7.5	1.23	9.5	10.6	1.67	*1.09	2.6	17.9	2.9	12.8
28	26	20.5	9.8	1.02	5.5	14.8	27	19.1	3.2	9.7	1.94	36.5
29	7.9	137	4.8	.90	6.5	19.5	23.5	-	9.0	3.05	1.67	10.0
30	10.3	82	8.0	1.02	28	9.8	149	-------	6.5	1.51	1.51	5.9
31	*43	28	-------	2.6	-------	8.0	41	-------	2.85	-------	1.44	-------
Total	307.35	1,183.8	237.45	85.22	362.25	967.1	344.92	91.53	827.89	83.81	211.58	255.91
Mean:												
mgd	9.91	38.2	7.92	2.75	12.1	31.2	11.1	3.27	26.7	2.79	6.83	8.53
cfs	15.3	59.1	12.3	4.25	18.7	48.3	17.2	5.06	41.3	4.32	10.6	13.2
Ac-ft	943	3,630	729	262	1,110	2,970	1,060	281	2,540	257	649	785

Calendar year 1957: Max 282 Min 0.90 Mean(mgd) 16.0 Mean(cfs) 24.8 Ac-ft 17,870
Fiscal year 1957-58: Max 500 Min 0.90 Mean(mgd) 13.6 Mean(cfs) 21.0 Ac-ft 15,220

* Discharge measurement made on this day.
e Stage-discharge relation indefinite; discharge estimated on basis of records for nearby stations.

Discharge, in million gallons a day, 1958

July 1	6.4	July 4	96
2	26	5	18.5
3	143	6	11.8

2110. Poamoho Stream near Wahiawa

Location.--Lat 21°31'25", long 157°58'55", on left bank just below concrete diversion dam, 3.5 miles northeast of Wahiawa and 9.5 miles north of Waipahu.

Drainage area.--1.79 sq mi (revised).

Records available.--January 1947 to June 1958.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 1,150 ft (from topographic map).

Average discharge.--11 years, 2.79 mgd (4.32 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 360 mgd (557 cfs) Feb. 4 (gage height, 3.50 ft), from rating curve extended above 48 mgd by test on model of station site; no flow Feb. 6.

1957-58: Maximum discharge during fiscal year, 360 mgd (557 cfs) Mar. 5 (gage height, 3.50 ft), from rating curve extended above 48 mgd as explained above; minimum daily, 0.01 mgd (0.02 cfs) several days in August, September, and March.

1947-58: Maximum discharge, 916 mgd (1,420 cfs) Mar. 30, 1947 (gage height, 5.68 ft), from rating curve extended as explained above; no flow at times.

Remarks.--Records good except those for period of no gage-height record, which are poor. Poamoho tunnel diverts floodwater into North Fork Kaukonahua Stream about 175 ft above station.

Rating table, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

0.0	0	0.8	5.2
.1	.03	1.0	9.8
.2	.18	1.2	16.2
.4	.96	1.4	25.5
.6	2.5	1.6	39.5

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.0	3.0	2.75	0.57	7.9	0.23	0.09	0.09	0.12	0.08	0.06	0.06
2	2.7	1.33	1.63	.71	2.75	.23	.08	.06	.12	.08	.05	.08
3	2.4	4.5	1.40	2.5	1.71	.20	.08	.08	.12	.09	.05	.08
4	2.15	6.0	1.14	11.1	1.47	.18	.08	16.3	.12	.06	.05	.08
5	2.05	11.9	1.14	2.5	1.26	.18	.08	.01	.10	.02	.04	.08
6	2.05	2.8	1.97	1.08	1.20	.93	.08	*1.04	.09	.02	.04	.08
7	2.4	1.87	1.08	1.26	1.40	.20	.08	.12	.08	.02	.04	.06
8	3.25	6.4	.91	.96	1.14	.18	.08	.09	.08	.02	.04	.05
9	2.15	29.5	.86	3.05	.96	.16	.06	.10	.08	.02	.05	.05
10	1.96	3.8	.86	1.75	.93	.16	.06	.10	.08	.02	.05	.05
11	2.3	2.7	.91	.81	1.08	.18	.09	.10	.08	.02	.04	.03
12	2.05	2.25	.81	.61	4.6	.16	.06	.09	.09	.02	.06	.03
13	6.8	2.25	.86	1.19	6.4	.14	.06	.10	.08	.02	.06	.03
14	5.2	6.3	.86	6.6	11.7	.12	.14	.10	.09	.03	.04	.03
15	3.2	2.7	4.0	5.3	4.9	.12	.16	.10	.08	.03	.04	.04
16	3.95	1.79	1.83	7.2	.86	.12	.14	.14	.09	.03	.03	.04
17	2.65	8.4	3.85	11.5	.61	.10	.14	.14	.09	.04	.03	.04
18	8.4	7.8	1.28	7.2	.38	.10	.12	.14	.09	.18	.04	.04
19	7.6	2.4	.91	5.6	.35	.10	.14	.14	.09	.23	.05	.04
20	5.2	1.96	.71	3.1	.35	.09	.27	.16	.09	.14	.06	.05
21	2.4	1.71	.66	2.15	*.29	.09	.53	.16	.09	.12	.06	*.18
22	2.15	1.55	.57	1.63	.26	.09	.23	.12	.12	.10	.05	.29
23	*1.71	1.47	1.01	1.40	.26	.08	.16	.12	.10	.14	.06	.26
24	1.87	1.79	.86	1.26	.26	.08	.16	.14	.09	.09	.06	.23
25	5.1	1.40	.61	1.14	.26	.08	.12	.14	.09	.10	.06	.18
26	1.96	1.20	.57	12.0	.26	.06	.12	*.12	.09	.09	.08	.18
27	1.71	1.14	.71	17.1	.26	.06	.10	.12	.09	.08	.08	.16
28	1.79	1.14	.57	4.7	.26	.06	.10	.12	.09	.06	.08	.14
29	1.96	1.08	.49	2.4	.26	.06	.10	-	.09	.06	.06	.14
30	2.05	5.9	.66	4.9	.26	.09	.09	-------	.09	.06	.06	.12
31	2.65	9.5	-------	3.1	-------	.09	.08	-------	.09	-------	.06	-------
Total	97.81	137.53	36.47	126.37	54.58	4.72	3.88	20.24	2.89	2.07	1.63	2.92
Mean:												
mgd	3.16	4.44	1.22	4.08	1.82	0.152	0.125	0.723	0.093	0.069	0.053	0.097
cfs	4.89	6.87	1.89	6.31	2.82	0.235	0.193	1.12	0.144	0.107	0.082	0.150
Ac-ft	300	422	112	388	167	14	12	62	8.9	6.4	5.0	9.0

Calendar year 1956: Max 71 Min 0 Mean(mgd) 2.88 Mean(cfs) 4.46 Ac-ft 3,240
Fiscal year 1956-57: Max 29.5 Min 0.01 Mean(mgd) 1.35 Mean(cfs) 2.09 Ac-ft 1,510

Peak discharge (base, 130 mgd).--Aug. 9 (3:30 a.m.) 225 mgd (348 cfs), 2.93 ft; Oct. 17 (4:30 p.m.) 175 mgd (271 cfs), 2.69 ft; Feb. 4 (5 p.m.) 360 mgd (557 cfs), 3.50 ft.

* Discharge measurement made on this day.

2110. Poamoho Stream near Wahiawa--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.06	0.03	0.01	1.92	2.55	12.0	0.29	1.40	0.49	0.71	0.14	0.32
2	.05	.04	.01	1.32	.83	.61	.29	1.40	.45	.71	.18	1.47
3	.04	.03	.01	1.82	1.26	.53	.29	1.08	.38	.49	.18	.62
4	.03	.02	.01	.81	.53	.49	.32	1.08	.32	.41	.14	.41
5	.04	*.02	.01	.57	.38	.45	.35	1.20	35.5	.38	.14	1.12
6	.02	.02	.01	.45	.79	a4.0	.35	.86	.05	.32	.16	.49
7	.02	.02	.72	.38	9.8	a.20	.35	.76	.03	.29	.16	.29
8	.02	.02	1.02	.32	2.2	a.15	.35	.66	.03	.29	.16	.35
9	.02	.01	.96	.26	3.35	a.12	.38	.61	.02	*.26	.16	3.85
10	.02	.02	.86	.26	3.7	a.10	.38	.57	.02	.26	.16	8.9
11	.05	.01	.86	.32	3.55	a.04	.38	.53	.01	.23	.16	7.1
12	.05	.02	.86	.41	4.8	a.03	.45	.45	.01	.20	.14	8.2
13	.03	.02	1.18	1.17	1.83	.02	.49	.45	.01	.20	.14	1.60
14	.05	.02	1.12	.82	1.08	.02	.49	.45	.01	.18	*.12	.96
15	.02	.02	.91	1.68	2.3	.02	.49	.49	.01	.18	.12	.76
16	.02	.01	.66	1.15	1.33	.02	.49	.38	.02	.20	1.49	.66
17	.02	.01	.57	.91	.81	.88	.51	.45	.02	.23	2.6	.68
18	.02	.01	1.16	1.34	3.05	1.26	.38	.41	.02	.23	1.90	.71
19	.02	.01	1.01	.86	1.14	1.02	.41	.29	.02	.20	1.26	.49
20	.02	.01	*.61	.49	.93	.66	.41	.32	.02	.26	1.26	.38
21	.02	.01	.57	1.56	11.4	.57	*.35	.32	.02	.29	1.02	.38
22	.02	.01	.49	.66	7.0	.49	.41	.26	.03	.26	.96	.45
23	.02	.01	.41	.38	5.9	.41	.57	.26	.09	.26	.66	2.85
24	.03	.02	.38	1.47	5.2	.41	*.41	.23	.23	.26	.57	.91
25	.04	.02	.38	1.65	4.0	.35	.35	.18	.29	.23	.57	.66
26	.04	.02	.38	.57	2.4	.32	.35	.14	.20	.18	1.08	2.35
27	.03	.01	1.16	.38	1.79	.32	.38	.26	1.60	.18	.66	*2.65
28	.02	.01	1.51	.26	1.40	.32	*4.0	.61	.71	.20	.45	3.25
29	.02	.02	1.61	.23	1.14	.32	5.4	-	.71	.14	.38	3.0
30	.04	.01	3.7	.32	1.02	.29	13.6	-------	.71	.14	.35	1.51
31	.03	.01	-------	6.1	-------	.29	2.55	-------	.71	-------	.32	-------
Total	0.93	0.52	23.15	30.84	87.46	26.71	36.22	16.10	42.74	8.37	17.79	57.37
Mean:												
mgd	0.030	0.017	0.772	0.995	2.92	0.862	1.17	0.575	1.38	0.279	0.574	1.91
cfs	0.046	0.026	1.19	1.54	4.52	1.33	1.81	0.890	2.14	0.432	0.888	2.96
Ac-ft	2.9	1.6	71	95	268	82	111	49	131	26	55	176

Calendar year 1957: Max 16.3 Min 0.01 Mean(mgd) 0.557 Mean(cfs) 0.862 Ac-ft 624
Fiscal year 1957-58: Max 35.5 Min 0.01 Mean(mgd) 0.954 Mean(cfs) 1.48 Ac-ft 1,070

Peak discharge (base, 130 mgd).--Nov. 21 (1 a.m.) 140 mgd (217 cfs), 2.51 ft; Mar. 5 (3 p.m.) 360 mgd (557 cfs), 3.50 ft.

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for nearby stations.

2128. Kipapa Stream near Wahiawa

Location.--Lat 21°28'15", long 157°57'50", on left bank 1,700 ft below Forest Reserve Boundary, 4.9 miles southeast of Wahiawa Post Office, and 6.3 miles northeast of Waipahu.

Drainage area.--4.29 sq mi.

Records available.--January 1957 to June 1958.

Gage.--Water-stage recorder. Altitude of gage is 690 ft (from topographic map).

Extremes.--1957: Maximum discharge during period January to June, 895 mgd (1,380 cfs) Jan. 21 (gage height, 7.89 ft), from rating curve extended above 190 mgd on basis of slope-area measurement at gage height 7.96 ft; minimum observed, 0.007 mgd (0.011 cfs) June 13.

1957-58: Maximum discharge during fiscal year, 1,520 mgd (2,350 cfs) Dec. 6 (gage height, 9.57 ft), from rating curve extended as explained above; minimum, about 0.07 mgd (0.11 cfs) Oct. 29.

Remarks.--Records good except those for period of no gage-height record or indefinite stage-discharge relation, which are poor.

Rating table, Jan. 1, 1957, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

2.0	0	3.6	39
2.2	.11	4.0	66
2.4	.82	4.1	82
2.6	2.6	4.5	141
2.8	5.9	5.0	210
3.0	11.6	5.5	292
3.2	19.2		

Discharge, in million gallons a day, January to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1							a0.2	4.5	0.59	0.11	8.8	
2							a.2	6.5	.54	.10	8.0	
3							*.21	13.3	.45	.10	*2.7	(*)
4							.21	72	.45	19.8	1.76	
5							.18	33.5	.45	1.74	1.18	
6							.24	23	.41	.45	.77	
7							.31	9.9	.31	.24	.59	
8							.34	6.0	.28	.82	.45	
9							.50	3.85	.28	7.5	.36	e0.01
10							3.75	3.0	.31	*1.07	.31	
11							7.3	15.0	.50	.45	.28	
12							1.66	8.4	.82	.24	7.1	
13							.64	7.4	.77	.24	32.5	(*)
14							1.46	3.45	.59	24	3.0	
15							6.6	*2.95	.45	4.8	1.33	
16							4.6	2.75	.36	8.2	.73	
17							1.97	1.86	.97	14.8	.54	.18
18							1.66	2.6	1.33	5.1	.41	.21
19							18.1	1.76	.45	7.4	.34	.14
20							54	1.48	.64	3.9	.28	.28
21							*145	1.33	.73	1.30	.24	.45
22							83	1.04	.36	.68	.28	.37
23							*23.5	.97	.24	20.5	.34	.09
24							45	.97	.18	4.8	.28	.06
25							17.5	.97	.16	8.0	.24	.21
26							7.4	.73	*.16	5.7	.16	.50
27							4.8	.68	.14	2.4	.11	.24
28							*3.5	.64	.11	4.6		e.08
29							8.8	-	.10	2.15	e.09	5.2
30							10.3	-------	.11	1.40		1.94
31							2.9	-------	.11	-------		-------
Total							455.83	230.53	13.35	152.59	73.44	10.11
Mean:												
mgd							14.7	8.23	0.431	5.09	2.37	0.337
cfs							22.7	12.7	0.667	7.88	3.67	0.521
Ac-ft							1,400	707	41	468	225	31

Calendar year	Max	Min	Mean(mgd)	Mean(cfs)	Ac-ft
Fiscal year	Max	Min	Mean(mgd)	Mean(cfs)	Ac-ft

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for nearby streams.

e Stage-discharge relation indefinite; discharge estimated on basis of recorder chart and 2 discharge measurements.

2128. Kipapa Stream near Wahiawa--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.45	1.77	3.45	1.48	3.35	146	1.76	5.1	2.75	0.31	0.26	0.18
2	.92	.89	2.4	.54	.68	33.5	1.55	2.6	.82	.26	.26	.31
3	1.38	1.61	7.1	.28	.28	14.3	1.33	1.66	.50	.26	6.5	.24
4	.41	3.9	3.35	.18	.10	9.8	1.11	1.40	.31	.45	3.3	.14
5	1.55	1.55	1.97	.11	e.08	4.7	1.04	1.40	*218	.41	.84	.36
6	4.7	4.8	1.33	.11		75	.89	.97	97	.26	.41	.24
7	1.32	24.5	1.18	.10	58	17.6	.82	.73	15.8	.24	.45	.11
8	.54	15.8	.97		5.4	6.4	.82	.68	7.5	.18	.64	.17
9	.31	5.6	.82		15.5	4.4	1.04	.59	4.6	.16	.73	7.5
10	.26	2.9	.68	e.09	7.8	9.0	1.40	.54	3.0	.14	5.5	7.8
11	1.78	1.86	.68		6.6	5.9	1.04	.45	2.4	.21	6.9	*4.3
12	1.86	16.5	.73		3.15	3.7	.73	.36	1.86	.11	1.86	4.8
13	.74	3.8	2.1	.11	1.88	2.9	.64	.34	1.76	.24	1.55	1.84
14	18.5	2.45	2.0	.11	1.04	5.8	.54	.34	1.18	.31	1.04	.82
15	4.4	29.5	1.60	.10	*.73	14.3	.45	.34	.97	.14	.90	.54
16	1.55	4.0	.64	.50	.82	11.4	.45	.31	.82	.21	47	.36
17	.97	2.3	.41	.96	.50	4.8	.41	.34	.73	.34	15.9	.28
18	.77	1.97	.53	1.23	.45	4.4	.36	.28	.68	.18	5.5	.31
19	1.41	1.97	1.44	.86	.64	*33.5	.41	.21	.59	.10	2.9	.36
20	1.86	1.55	.59	.31	.50	11.3	.41	.28	.54	.20	2.4	.18
21	.59	.97	.31	1.04	49	24.5	.34	.28	.54	.47	1.79	.18
22	.28	.77	.26	.68	17.8	6.9	.50	.18	.54	.31	1.55	.28
23	.21	.68	.21	.18	14.0	5.1	.73	.16	.54	.11	.82	3.85
24	10.7	10.2	.21	.91	13.0	4.8	.59	.14	.45	e.09	.59	1.57
25	*2.1	30.5	.28	4.3	13.1	4.2	.34	.11	.36	e.08	.50	1.29
26	1.49	7.8	*.24	.55	5.1	10.6	.24	.10	.34	e.08	3.0	.97
27	6.8	3.7	.85	.18	4.4	3.6	.21	.10	2.95	14.2	.97	1.55
28	4.4	2.9	1.56	e.08	3.6	2.9	12.3	19.7	1.86	10.8	.41	5.2
29	1.87	14.8	.73		4.5	3.7	10.8	-	.82	*1.73	.28	1.99
30	1.40	7.6	.45	.10	6.3	2.4	37.5	-------	1.03	.54	.24	.73
31	5.3	6.7	-------	1.21	-------	1.97	*26.5	-------	.45	-------	.18	-------
Total	80.82	215.84	39.07	16.74	238.38	489.37	107.25	39.69	371.69	33.12	115.17	48.45
Mean:												
mgd	2.61	6.96	1.30	0.540	7.95	15.8	3.46	1.42	12.0	1.10	3.72	1.62
cfs	4.04	10.8	2.01	0.836	12.3	24.4	5.35	2.20	18.6	1.70	5.76	2.51
Ac-ft	248	662	120	51	732	1,500	329	122	1,140	102	353	149

Calendar year 1957: Max 146 Min 0.01 Mean(mgd) 5.52 Mean(cfs) 8.54 Ac-ft 6,180
Fiscal year 1957-58: Max 218 Min 0.08 Mean(mgd) 4.92 Mean(cfs) 7.61 Ac-ft 5,510

Peak discharge (base, 200 mgd).--Nov. 7 (8:30 a.m.) 225 mgd (348 cfs), 5.13 ft; Nov. 21 (2 a.m.) 835 mgd (1,290 cfs), 7.69 ft; Dec. 1 (7:30 p.m.) 530 mgd (820 cfs), 6.59 ft; Dec. 6 (7 p.m.) 1,520 mgd (2,350 cfs), 9.57 ft; Mar. 5 (3:30 p.m.) 930 mgd (1,440 cfs), 7.96 ft.

* Discharge measurement made on this day.
e Stage-discharge relation indefinite; discharge estimated on basis of recorder graph and weather records.

2130. Waikele Stream at Waipahu

Location.--Lat 21°23'10", long 158°00'50", on left bank at Farrington Highway bridge, 0.3 mile south Waipahu and 2.5 miles west of Pearl City.

Drainage area.--44.9 sq mi (revised).

Records available.--June 1951 to March 1952 (fragmentary), April 1952 to June 1958.

Gage.--Water-stage recorder and concrete control. Datum of gage is 2.67 ft above mean sea level, datum of 1929.

Average discharge.--6 years (1952-58), 25.5 mgd (39.5 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 1,320 mgd (2,040 cfs) Jan. 20 (gage height, 6.52 ft), from rating curve extended above 470 mgd on basis of slope-area measurement at gage height 14.82 ft; minimum, 10.6 mgd (16.4 cfs) June 27.
1957-58: Maximum discharge during fiscal year, 3,930 mgd (6,080 cfs) Mar. 5 (gage height, 10.87 ft), from rating curve extended as explained above; minimum, 8.7 mgd (13.5 cfs) Oct. 29, 30.
1951-58: Maximum discharge, 7,220 mgd (11,200 cfs) Nov. 28, 1954 (gage height, 14.82 ft), from rating curve extended above 470 mgd on basis of slope-area measurement of peak flow; minimum recorded, 6.4 mgd (9.9 cfs) Sept. 28-30, 1953.

Remarks.--Records good except those for periods of faulty, doubtful, or no gage-height record, which are poor. Flow regulated by plantation operation.

Rating table, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

1.9	6.7	3.5	230
2.1	11.3	4.0	380
2.3	17.9	4.5	530
2.5	31	5.0	710
2.7	52	6.0	1,110
3.1	119	7.0	1,570

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	21.5	19	17.9	15.6	22	79	17	44	27	16.0	19.0	15.2
2	14.9	20	16.5	14.9	19	37.5	19	51	29.5	15.6	19.1	17.1
3	15.2	19	19.6	14.9	17	30	16	49	29	16.3	17.1	14.8
4	19.6	26	15.0	15.2	16	26	16	144	22	19.0	19.0	13.5
5	15.6	50	14.1	15.2	15	23.5	18	198	20.5	15.2	19.6	13.5
6	14.1	24	13.3	17.1	15	162	16	105	22.5	20	17.1	13.5
7	19.6	20	13.3	17.1	15	120	16	67	19.0	22.5	16.8	12.4
8	20	100	17.6	16.8	16	46	16	50	19.3	16.0	15.6	13.5
9	19.0	180	17.9	16.0	18	34	17	42	26	14.9	15.6	14.1
10	17.3	40	14.9	16.0	16	30	20	40	26.5	15.6	18.4	12.7
11	16.3	24	14.9	15.2	16	26	19	45	19.6	17.1	19.0	13.3
12	14.5	19	16.0	15.6	15	24	18	55	19.0	17.1	21	14.5
13	14.5	16	15.2	15.6	15	22	17	48	19.0	19.6	60	16.0
14	19.0	19	14.9	35.5	15	20	17	42	18.5	25.5	25	15.2
15	19.6	17	20.5	95	15	19	18	37.5	19.6	24	17.0	14.1
16	16.0	16	16.6	28	15	22	34	37.5	25	18.1	16.4	14.9
17	13.8	44	14.9	18	50	24	20	34.5	26	*17.5	16.8	15.2
18	13.8	55	13.3	30	30	20	*24	39	20	17.5	17.8	16.8
19	55	24	13.5	*22	32	19	56	35.5	19.6	22	20	16.2
20	40	19	12.7	19.0	32	20	309	37.5	17.9	22.5	16.8	14.3
21	20	17	13.0	19.0	30	22	662	36.5	17.1	23.5	15.2	13.0
22	18	17	13.5	19.5	22	20	573	33.5	16.8	14.9	15.4	13.1
23	17	16	14.9	17.9	20	19	236	33.5	22.5	22	16.4	14.9
24	18	16	15.2	17.9	18	19	315	33.5	24	25	15.2	13.0
25	18	16.6	14.9	17.5	30	18	165	29.5	17.3	19.0	16.0	13.3
26	18	15.6	15.2	17.5	26	18	79	26.5	16.8	17.9	17.9	13.7
27	19	15.2	14.9	55	24	18	64	27	17.5	20.5	19.9	12.9
28	18	13.5	14.9	20	*24	17	60	28	16.0	22	18.0	13.0
29	17	13.5	15.2	16	22	17	55	-	15.2	19.6	15.2	13.8
30	16	17.1	16.4	17	106	17	64	-------	20.5	20.5	15.6	15.2
31	18	16.8	-------	19	-------	16	47	-------	23	-------	14.1	-------
Total	596.3	925.3	464.7	689.0	726	1,005.0	3,243	1,449.5	652.2	578.9	564.0	426.7
Mean:												
mgd	19.2	29.8	15.5	22.2	24.2	32.4	105	51.8	21.0	19.3	18.8	14.2
cfs	29.7	46.1	24.0	34.3	37.4	50.1	162	80.1	32.5	29.9	29.1	22.0
Ac-ft	1,830	2,840	1,430	2,110	2,230	3,080	9,950	4,450	2,000	1,780	1,790	1,310

Calendar year 1956: Max 1,110 Min 12.7 Mean(mgd) 32.9 Mean(cfs) 50.9 Ac-ft 36,900
Fiscal year 1956-57: Max 662 Min 12.4 Mean(mgd) 31.1 Mean(cfs) 48.1 Ac-ft 34,800

Peak discharge (base, 700 mgd).--Aug. 8 (11:30 p.m.) 910 mgd (1,410 cfs), 5.52 ft; Dec. 6 (10:30 p.m.) 1,270 mgd (1,960 cfs), 6.42 ft; Jan. 20 (11:30 p.m.) 1,320 mgd (2,040 cfs), 6.52 ft.

* Discharge measurement made on this day.
Note.--Doubtful or no gage-height record July 19 to Aug. 24, Oct. 15-19, Oct. 27 to Nov. 28, Dec. 7 to Jan. 18; discharge estimated on basis of records for nearby stations.

2130. Waikele Stream at Waipahu--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	12.7	11.4	15.2	10.6	9.4	d219	20	22	26	20	20	17.5
2	14.6	12.0	15.8	10.6	10.3	d201	20	19.6	21.5	20	20	15.2
3	13.5	12.7	13.2	10.8	12.7	d48	20	17.5	20	20	19.6	14.5
4	13.7	12.7	12.8	10.8	10.5	d40	19.0	17.5	18.5	20	22	14.1
5	19.6	12.1	12.3	11.6	9.8	d26.5	19.0	18.5	1,210	20	21.5	14.1
6	17.3	14.5	12.6	11.9	9.6	d140	19.0	17.1	a675	19.6	20.5	13.8
7	15.6	17.0	13.5	10.3	27	d116	19.0	17.1	a120	19.6	20	13.5
8	14.8	17.3	13.8	10.8	12.5	d36.5	19.0	17.5	a55	19.6	20	13.5
9	13.1	12.1	13.3	10.8	13.0	d26.5	19.0	17.1	a37.5	19.6	20	*15.4
10	12.3	12.7	12.8	10.8	13.0	d24	18.5	17.1	a33.5	19.6	19.6	12.7
11	12.0	12.8	12.4	10.3	11.3	d24	18.5	17.1	a33	19.0	22.5	12.1
12	12.4	13.9	12.5	8.9	10.4	d23	18.5	17.1	a32	19.0	22.5	13.3
13	12.4	13.0	12.1	10.7	11.7	d20	18.5	17.1	a31	19.0	22	12.7
14	14.1	12.4	11.1	12.2	11.9	d20	18.5	17.5	a29.5	19.0	22.5	12.1
15	15.6	19.7	11.3	11.1	11.3	d29.5	17.1	17.1	a29	19.0	20.5	12.1
16	12.4	12.2	12.1	10.6	11.6	d50	16.0	17.1	a26.5	19.0	63	12.4
17	13.8	15.7	11.9	10.8	12.1	d33	15.6	16.8	a26	19.0	59	11.1
18	12.2	14.7	11.9	10.8	12.1	d23	15.6	17.1	a24	19.0	38	11.9
19	13.5	11.7	11.6	11.6	11.9	d31	16.0	17.1	22	19.0	23	11.1
20	14.0	11.2	11.9	12.4	12.2	d40	20.5	17.1	22.5	19.0	21.5	11.3
21	14.9	11.9	12.1	11.1	118	d59	19.9	17.1	22.5	19.6	20.5	11.3
22	13.2	11.1	13.8	10.6	20	d38	14.5	17.1	22.5	19.0	20.5	11.3
23	12.3	12.0	11.6	11.6	d16.0	d27	14.5	17.1	22	19.0	19.6	10.8
24	12.7	12.4	10.8	9.9	d15.2	26.5	14.1	17.1	21.5	19.0	19.0	11.1
25	12.8	20.5	*10.8	8.9	d15.2	33	14.1	17.1	20.5	19.0	19.0	11.3
26	12.1	19.4	10.8	8.9	d14.9	27	14.5	17.1	20.5	19.0	19.0	11.1
27	15.7	12.7	10.8	9.9	d14.9	25	14.5	17.1	21.5	19.6	19.6	11.9
28	15.6	12.7	11.1	10.1	d14.9	22.5	14.5	68	20.5	30	19.6	11.1
29	12.7	11.9	12.1	8.7	d14.9	23.5	17.6	-	20.5	24	19.6	11.1
30	11.9	12.1	11.4	8.9	d16.4	23.5	33	-------	20.5	21.5	19.0	10.8
31	11.9	16.0	-------	9.1	-------	22	61	-------	20.5	-------	17.9	-------
Total	425.6	424.5	369.2	327.3	504.5	1,498.0	599.5	539.8	2,725.5	597.9	731.0	376.2
Mean:												
mgd	13.7	13.7	12.3	10.6	16.8	48.3	19.3	19.3	87.9	19.9	23.6	12.5
cfs	21.2	21.2	19.0	16.4	26.0	74.7	29.9	29.9	136	30.8	36.5	19.3
Ac-ft	1,310	1,300	1,130	1,000	1,550	4,600	1,840	1,660	8,360	1,830	2,240	1,150

Calendar year 1957: Max 862 Min 8.7 Mean(mgd) 28.7 Mean(cfs) 44.4 Ac-ft 32,170
Fiscal year 1957-58: Max 1,210 Min 8.7 Mean(mgd) 25.0 Mean(cfs) 38.7 Ac-ft 27,970

Peak discharge (base, 700 mgd).--Dec. 6 (8:30 p.m.) 1,030 mgd (1,590 cfs), 5.75 ft; Mar. 5 (9:30 p.m.) 3,930 mgd (6,080 cfs), 10.87 ft.

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for nearby streams and recession of hydrograph.
d Doubtful gage-height record; discharge computed on basis of doubtful gage-height record and records for nearby streams.

2140. Pearl Harbor Springs at Waiawa, near Pearl City

Location.--Lat 21°23'35", long 157°59'10", on right bank at rear of Oahu Sugar Co.'s pumping plant 9, 0.7 mile west of Pearl City and 9.8 miles northwest of Honolulu.

Records available.--March 1931 to June 1934, July 1937 to June 1958.

Gage.--Water-stage recorder and sharp-crested weir. Datum of gage is 0.73 ft below mean sea level, datum of 1929.

Average discharge.--24 years (1931-34, 1937-38), 12.1 mgd (18.7 cfs), unadjusted for pumpage.

Extremes.--1931-34, 1937-58: Maximum daily discharge, 18.7 mgd (28.9 cfs) Feb. 27, 1949; minimum daily, 6.0 mgd (9.3 cfs) for several days in 1941 and 1947.

Remarks.--Records good. Oahu Sugar Co.'s pump 9 diverts about 3 mgd at times when water is needed for irrigation of sugarcane. Surface runoff from floods not included in figures of discharge given below.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	12.3	8.3	11.9	8.9	9.6	13.5	12.7	12.7	11.2	12.3	12.3	12.3
2	9.3	8.0	12.3	8.9	11.2	13.5	12.7	12.7	12.7	10.6	11.9	12.3
3	9.3	8.6	12.3	8.6	10.9	13.1	11.2	12.7	12.7	10.6	10.6	11.2
4	12.3	10.2	10.2	8.6	11.6	13.1	10.9	12.7	11.2	*10.9	11.9	12.3
5	9.3	11.9	10.6	10.9	9.3	13.1	12.7	13.1	13.1	10.9	12.3	10.9
6	9.3	9.3	*9.9	11.6	11.6	13.1	12.7	13.1	12.7	11.9	10.9	10.9
7	9.9	10.2	9.9	11.9	8.0	13.1	10.9	13.1	12.7	11.9	10.9	10.2
8	11.9	9.3	9.6	9.9	8.0	13.5	10.9	13.1	12.3	10.6	11.9	10.9
9	8.6	8.6	11.9	9.9	8.0	13.5	10.9	13.1	12.7	10.6	11.9	11.9
10	8.6	8.9	9.3	9.6	11.2	13.1	*10.6	13.1	12.7	10.6	11.9	10.2
11	8.6	9.6	9.3	8.9	11.6	13.5	11.2	13.1	12.7	9.6	12.3	10.2
12	8.0	11.9	8.6	8.3	8.3	13.5	11.2	13.1	12.3	9.9	12.3	9.6
13	8.0	9.3	9.6	9.3	7.7	13.5	11.2	13.1	10.6	11.9	12.7	8.9
14	8.9	9.3	8.6	11.6	8.0	13.5	9.6	13.1	10.9	12.3	12.3	8.6
15	9.3	9.3	9.6	11.9	8.6	13.1	11.2	13.1	10.9	12.3	12.3	9.9
16	8.3	8.3	11.9	11.9	8.9	13.1	11.2	13.1	12.3	10.6	12.3	11.6
17	*8.6	10.2	9.3	10.2	11.6	13.1	11.2	13.1	12.7	10.9	12.3	9.6
18	8.6	10.6	9.3	10.6	11.6	13.1	11.2	12.7	10.9	12.3	12.3	8.9
19	8.3	12.3	9.3	9.9	11.6	13.1	11.6	13.1	12.3	12.7	12.3	8.3
20	8.9	10.6	9.3	11.9	11.6	13.1	11.9	13.1	10.9	12.7	12.3	7.4
21	9.6	8.6	8.9	11.9	11.9	13.1	11.9	13.5	10.2	12.7	*11.9	7.7
22	10.6	9.9	9.3	11.6	11.9	12.7	11.9	13.1	10.2	10.2	11.9	10.6
23	8.6	10.6	11.9	*11.9	11.9	12.7	12.3	13.1	11.9	11.6	11.9	10.9
24	9.6	10.2	9.3	11.6	11.9	12.7	12.3	13.1	12.3	10.6	12.3	7.4
25	8.6	10.2	9.6	8.6	11.9	13.1	12.3	13.1	9.6	12.3	12.3	9.6
26	9.3	8.6	9.6	9.3	11.9	12.7	12.3	11.6	12.3	12.7	12.3	8.0
27	8.3	9.3	9.3	11.2	11.9	12.7	12.3	11.2	9.9	12.7	12.3	8.9
28	8.9	9.6	8.9	11.6	*12.7	12.7	12.3	11.2	10.6	12.7	12.3	8.9
29	11.9	10.6	9.3	9.9	12.7	12.7	12.3	-	10.2	12.7	10.6	10.2
30	9.3	10.9	11.9	11.6	13.1	12.7	12.3	-------	12.3	12.7	12.3	10.2
31	11.6	9.9	-------	10.6	-------	12.7	12.7	-------	12.3	-------	10.2	-------
Total	292.6	303.1	300.7	323.1	320.7	405.7	362.6	359.9	362.3	347.0	370.2	298.5
Mean:												
mgd	9.44	9.78	10.0	10.4	10.7	13.1	11.7	12.9	11.7	11.6	11.9	9.95
cfs	14.6	15.1	15.5	16.1	16.6	20.3	18.1	20.0	18.1	17.9	18.4	15.4
Ac-ft	898	930	923	992	984	1,250	1,110	1,100	1,110	1,060	1,140	916

Calendar year 1956: Max 16.0 Min 7.7 Mean(mgd) 12.2 Mean(cfs) 18.9 Ac-ft 13,740
Fiscal year 1956-57: Max 13.5 Min 7.4 Mean(mgd) 11.1 Mean(cfs) 17.2 Ac-ft 12,410

* Discharge measurement made on this day.

2140. Pearl Harbor Springs at Waiawa, near Pearl City--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	9.3	8.3	10.9	7.7	9.6	10.9	11.9	11.2	11.9	12.7	13.5	12.3
2	8.6	8.0	10.9	9.6	10.6	10.9	11.9	11.2	11.9	12.7	13.5	*11.2
3	8.9	8.0	8.6	9.3	10.9	10.9	11.9	11.2	11.9	13.1	13.1	11.6
4	10.2	10.9	7.4	8.9	8.6	10.9	11.9	11.2	11.9	13.1	12.3	10.2
5	7.1	8.3	7.7	9.6	7.7	11.2	11.9	11.2	11.9	13.1	12.7	8.3
6	10.6	*8.6	8.0	10.9	8.0	11.2	11.9	11.2	11.9	13.1	12.7	8.3
7	10.6	8.6	9.3	9.3	8.0	11.2	11.2	11.2	11.9	13.1	12.7	8.3
8	8.0	9.3	10.6	7.7	7.7	11.2	8.0	11.2	12.3	13.1	12.7	8.0
9	8.9	10.2	8.9	7.4	10.6	11.2	9.6	11.2	12.3	13.1	13.1	7.7
10	9.6	10.9	8.9	7.4	10.6	11.2	9.6	11.2	12.3	13.1	13.1	7.4
11	9.9	10.9	8.9	7.7	8.0	11.2	11.6	11.2	12.3	13.1	13.1	7.4
12	8.3	10.9	8.6	8.0	8.0	11.6	11.6	11.2	12.3	13.1	13.1	7.4
13	8.6	10.9	9.6	10.6	8.6	11.6	8.3	11.6	12.7	13.1	12.7	7.4
14	10.6	10.9	10.2	9.3	8.6	11.6	8.3	11.6	12.7	13.1	12.7	7.4
15	7.4	10.9	9.6	9.3	8.6	11.6	8.6	11.6	12.7	13.1	12.7	7.4
16	7.7	10.9	6.8	9.3	10.2	11.6	8.6	11.6	12.7	13.1	12.7	7.1
17	8.9	10.9	7.7	9.6	10.2	11.6	8.6	11.6	12.7	13.1	12.3	6.8
18	8.9	10.9	9.3	9.3	7.7	11.6	9.9	11.9	12.7	13.1	12.3	10.9
19	8.6	9.3	9.3	9.3	8.0	11.9	11.2	11.9	12.7	13.1	12.3	9.9
20	8.6	9.3	8.9	10.9	7.4	11.9	10.9	11.9	12.7	13.1	12.3	7.1
21	10.2	9.3	8.9	9.3	10.2	11.9	8.6	11.9	12.7	13.1	12.3	7.1
22	8.0	9.6	10.2	9.3	10.2	11.9	8.3	11.9	12.7	13.1	12.3	7.1
23	9.3	9.3	8.3	8.0	10.2	*11.9	8.9	11.9	12.7	13.1	12.3	7.1
24	9.3	10.9	8.6	7.7	10.2	11.9	7.7	11.9	12.7	13.1	12.3	7.1
25	7.7	10.9	*8.3	8.9	10.2	11.9	8.6	11.9	12.7	13.1	12.7	7.1
26	8.6	9.3	7.7	10.9	10.6	11.9	9.3	11.9	12.7	13.1	12.7	7.1
27	9.3	9.3	7.7	10.9	10.6	11.9	8.6	11.9	12.7	13.1	12.7	7.1
28	10.9	9.3	8.3	8.0	10.6	11.9	9.6	11.9	12.7	*13.5	12.7	7.1
29	7.7	10.6	10.9	8.9	10.6	11.9	*9.6	-	12.7	13.8	12.7	9.3
30	8.0	10.6	7.4	8.9	10.6	11.9	10.9	-------	12.7	13.8	12.7	7.7
31	8.3	10.6	-------	7.3	-------	11.9	10.9	-------	12.7	-------	12.3	-------
Total	276.6	306.6	266.4	281.2	281.6	357.9	308.4	323.3	386.1	394.0	393.3	245.9
Mean: mgd	8.92	9.89	8.88	9.07	9.39	11.5	9.95	11.5	12.5	13.1	12.7	8.20
cfs	13.8	15.3	13.7	14.0	14.5	17.8	15.4	17.8	19.3	20.3	19.6	12.7
Ac-ft	849	941	818	863	864	1,100	946	992	1,180	1,210	1,210	755

Calendar year 1957 . Max 13.5 Min 6.8 Mean(mgd) 10.6 Mean(cfs) 16.4 Ac-ft 11,870
Fiscal year 1957-58 : Max 13.8 Min 6.8 Mean(mgd) 10.5 Mean(cfs) 16.2 Ac-ft 11,730

* Discharge measurement made on this day.

2150. Morikone pond outlet at Pearl City

Location.--Lat 21°23'30", long 157°59'10", on left bank of Waiawa Springs flow, 0.7 mile west of Pearl City, 1.5 miles east of Waipahu, and 9.8 miles northwest of Honolulu.

Records available.--August 1951 to June 1958.

Gage.--Water-stage recorder and submerged orifice control.

Average discharge.--6 years (1952-58), 0.958 mgd (1.48 cfs).

Extremes.--1951-58: Maximum daily discharge, 2.1 mgd (3.2 cfs) Jan. 12, 1956; no flow on Aug. 31, 1952.

Remarks.--Records poor. Surface runoff from floods not included in figures of discharge given below.

Revisions (fiscal years).--WSP 1399: 1952-53.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.44	1.43	1.50	1.11	1.54	1.07	1.46	1.60	1.46	1.20	1.10	1.14
2	1.44	1.45	1.42	1.12	1.68	1.64	1.27	1.64	1.40	1.16	1.08	1.08
3	1.50	1.52	1.50	1.09	1.39	1.21	1.24	1.68	1.40	1.10	1.01	1.07
4	1.53	1.62	1.43	1.12	1.63	1.30	1.10	1.66	1.35	1.05	1.02	1.02
5	1.59	1.64	1.40	1.17	1.38	1.24	1.06	1.53	1.35	.99	1.09	.97
6	1.58	1.63	1.45	1.12	1.46	1.20	1.00	1.50	1.38	1.08	1.02	1.02
7	1.80	1.56	1.18	1.20	1.38	1.30	.84	1.55	1.42	1.11	.98	.99
8	1.77	1.64	1.16	1.10	1.50	1.04	1.22	1.60	1.45	.96	.96	1.08
9	1.54	1.52	1.20	1.15	1.32	.98	1.11	1.62	1.52	1.04	.92	1.19
10	1.40	1.52	1.18	1.08	1.33	.87	1.16	1.56	1.52	1.05	.96	1.14
11	1.52	1.51	1.16	1.08	1.30	.76	1.30	1.63	1.54	1.04	.98	1.08
12	1.54	1.49	1.16	1.05	1.29	.86	1.43	1.72	1.60	1.06	1.02	1.10
13	1.52	1.36	1.18	1.02	1.28	.95	1.46	1.72	1.51	1.08	1.06	1.05
14	1.37	1.40	1.24	1.14	1.36	1.02	1.36	1.69	1.52	1.06	1.02	1.06
15	1.37	1.38	1.21	1.21	1.48	1.20	1.82	1.51	1.51	1.10	1.00	.98
16	1.40	1.36	1.26	1.17	1.58	1.41	1.64	1.52	1.44	1.03	.97	1.15
17	1.41	1.50	1.15	1.16	1.69	1.69	1.56	1.36	1.35	.93	.92	1.05
18	1.42	1.48	1.16	1.12	1.82	1.70	1.60	1.36	1.24	.90	.88	.99
19	1.42	1.42	1.10	1.20	1.78	1.53	1.68	1.44	1.34	.86	.87	.89
20	1.38	1.44	1.05	1.20	1.66	1.40	1.54	1.40	1.22	.81	.97	.79
21	1.33	1.49	1.15	1.40	1.74	1.30	1.87	1.55	1.22	.78	1.08	.76
22	1.50	1.38	1.15	1.46	1.47	1.16	1.89	1.52	1.10	.70	.98	.93
23	1.38	1.33	1.18	1.37	1.37	1.16	1.68	1.56	1.10	.90	.98	1.13
24	1.46	1.36	1.25	1.46	1.41	1.13	1.60	1.58	1.13	.86	1.01	1.04
25	1.44	1.33	1.06	1.42	1.38	1.31	1.76	1.65	1.18	.92	1.06	1.12
26	1.41	1.43	1.14	*1.34	1.40	1.38	1.80	1.52	1.13	.90	1.13	.94
27	1.44	1.35	1.10	1.42	1.57	1.16	1.78	1.46	1.10	1.04	1.20	.96
28	1.36	1.39	1.06	1.44	1.42	1.52	1.80	1.48	1.08	1.08	1.13	.96
29	1.35	1.48	.99	1.48	1.43	1.18	1.70	-	1.11	1.06	1.11	1.02
30	1.32	1.58	1.08	1.57	1.70	1.52	1.66	-------	1.12	1.12	1.16	.96
31	1.46	1.52	-------	1.51	-------	1.53	1.66	-------	1.18	-------	1.09	-------
Total	45.41	45.54	36.25	38.48	44.74	38.72	46.05	43.61	40.97	29.97	31.86	30.66
Mean:												
mgd	1.46	1.47	1.21	1.24	1.49	1.25	1.49	1.56	1.32	0.999	1.03	1.02
cfs	2.26	2.27	1.87	1.92	2.31	1.93	2.31	2.41	2.04	1.55	1.59	1.58
Ac-ft	139	140	111	118	137	119	141	134	126	92	98	94

Calendar year 1956: Max 2.1 Min 0.76 Mean(mgd) 1.35 Mean(cfs) 2.09 Ac-ft 1,520
Fiscal year 1956-57: Max 1.89 Min 0.70 Mean(mgd) 1.29 Mean(cfs) 2.00 Ac-ft 1,450

* Discharge measurement made on this day.

2150. Morikone pond outlet at Pearl City--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.80	0.54	0.76	0.76	0.64	1.78	1.38	1.49	1.92	1.51	1.51	1.44
2	.78	.46	.81	.84	.77	2.0	1.42	1.52	1.93	1.42	1.53	1.2
3	.71	.48	.72	.89	.84	1.82	1.49	1.52	1.90	1.19	1.47	1.3
4	.78	.52	.64	.86	.82	1.76	1.44	1.71	1.90	.99	1.77	1.4
5	.70	.42	.67	.91	.76	1.74	1.41	1.75	1.95	.88	1.74	1.3
6	.82	.46	.66	.90	.84	1.83	1.44	1.78	1.97	.88	1.84	1.3
7	.94	.52	.70	.86	.88	1.56	1.34	1.85	1.82	.94	1.53	1.1
8	.80	.68	.78	.92	.97	1.48	1.22	1.72	1.70	.93	1.52	.9
9	.82	.72	.66	.78	1.10	1.50	1.27	1.72	1.70	1.16	1.41	.8
10	.80	.69	.62	.81	1.18	1.52	1.28	1.74	1.72	1.15	1.47	.8
11	.78	.68	.64	.78	1.10	1.48	1.32	1.70	1.70	.92	1.42	.7
12	.72	.63	.88	.92	1.06	1.48	1.36	1.78	1.62	.87	1.42	.7
13	.68	.66	.72	.96	1.03	1.45	1.24	1.75	1.60	.98	1.46	.7
14	.66	.60	.88	.90	1.03	1.48	1.28	1.73	1.60	.96	1.51	.8
15	.54	.66	.80	.77	1.24	1.54	1.36	1.70	1.61	.94	1.52	.8
16	.38	.50	.70	.80	1.44	1.56	1.29	1.70	1.41	.93	1.54	.8
17	.49	.54	.63	.85	1.51	1.55	1.28	1.74	1.36	.86	1.61	.7
18	.54	.64	.78	.90	1.40	1.58	1.38	1.72	1.34	.87	1.59	.9
19	.62	.55	.85	.93	1.49	1.57	1.43	1.73	1.46	.96	1.57	.9
20	.71	.66	.86	.94	1.50	1.55	1.44	1.68	1.50	1.12	1.57	.8
21	.96	.69	.85	.82	1.80	1.54	1.26	1.60	1.46	1.04	1.70	.8
22	.88	.76	.84	.84	1.58	1.54	1.26	1.74	1.54	.97	1.39	.8
23	.98	.84	.74	.87	1.62	1.50	1.18	1.72	1.53	.91	1.32	.7
24	1.08	.92	.76	.85	1.58	1.48	1.14	1.72	1.52	.88	1.30	.7
25	.89	.84	.68	.79	1.52	1.46	1.20	1.60	1.52	.90	1.21	.7
26	.84	.72	.88	.83	1.54	1.38	1.29	1.74	1.40	1.02	1.23	.7
27	.82	.80	.74	.74	1.62	1.29	1.27	1.74	1.45	.94	1.17	.6
28	.78	.70	.88	.53	1.62	1.26	1.27	1.99	1.38	1.15	1.24	.6
29	.65	.66	.92	.49	1.62	1.23	1.26	-	1.54	1.22	1.27	.8
30	.58	.75	.78	.46	1.61	1.24	1.38	-------	1.41	1.28	1.35	.7
31	.54	.79	-------	.41	-------	1.28	1.44	-------	1.50	-------	1.35	-------
Total	23.07	20.08	22.63	24.91	37.71	47.43	41.02	47.88	49.96	30.75	45.33	26.44
Mean:												
mgd	0.744	0.648	0.754	0.804	1.26	1.53	1.32	1.71	1.61	1.02	1.46	0.881
cfs	1.15	1.00	1.17	1.24	1.95	2.37	2.04	2.65	2.49	1.58	2.26	1.36
Ac-ft	71	62	69	76	116	146	126	147	153	94	139	81

Calendar year 1957: Max 2.00 Min 0.38 Mean(mgd) 1.09 Mean(cfs) 1.69 Ac-ft 1,220
Fiscal year 1957-58: Max 2.00 Min 0.38 Mean(mgd) 1.14 Mean(cfs) 1.76 Ac-ft 1,280

Note.--No gage-height record June 2-30; discharge estimated on basis of records for nearby stations and probable increase or decrease in flow.

2160. Waiawa Stream near Pearl City

Location.--Lat 21°23'55", long 157°58'50" (revised), on left bank 100 ft upstream from bridge on Farrington Highway, 0.6 mile northwest of Pearl City, and 2.0 miles northeast of Waipahu.

Drainage area.--26.4 sq mi (revised).

Records available.--June 1952 to June 1958.

Gage.--Water-stage recorder and concrete control. Datum of gage is 1.81 ft above mean sea level, datum of 1929.

Average discharge.--6 years, 15.5 mgd (24.0 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 3,930 mgd (6,080 cfs) Jan. 21 (gage height, 11.60 ft, from floodmark), from rating curve extended above 700 mgd on basis of slope-area measurement at gage height 17.1 ft; minimum, 1.67 mgd (2.58 cfs) June 8.

1957-58: Maximum discharge during fiscal year, 5,050 mgd (7,810 cfs) Mar. 5 (gage height, 13.04 ft, from floodmark), from rating curve extended as explained above; minimum daily, 2.7 mgd (4.2 cfs) Feb. 12-27, May 3.

1952-58: Maximum discharge, 10,900 mgd (16,900 cfs) Nov. 28, 1954 (gage height, 19.27 ft), from rating curve extended as explained above; minimum, that of June 8, 1957.

Remarks.--Records good except those for periods of no gage-height record, which are poor. Small quantity of water diverted occasionally for irrigation.

Rating table, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

1.5	1.67	3.5	155
1.6	2.6	4.0	280
1.8	5.4	5.0	490
2.0	9.2	6.0	700
2.2	14.9	7.0	940
2.5	29.5	8.0	1,270
3.0	75	9.0	1,870

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	6.8	6.2	11.0	3.85	9.5	42	3.2	6.8	3.35	3.0	3.6	2.5
2	5.0	6.6	5.0	4.2	7.8	13.5	3.1	6.9	3.5	3.0	6.0	2.6
3	5.0	6.8	4.2	4.3	4.9	7.7	3.0	9.4	3.5	3.0	7.5	2.4
4	4.9	14.1	3.6	4.9	4.0	5.9	3.1	a120	3.2	*3.2	5.9	2.4
5	4.3	42	3.7	6.0	4.0	4.8	3.0	a170	3.2	3.0	4.4	2.5
6	4.8	13.6	5.8	4.0	4.0	139	3.0	a80	3.2	3.0	3.6	2.4
7	5.5	8.6	5.1	3.6	4.3	92	3.1	a32	3.2	3.0	3.2	2.4
8	5.0	89	4.4	3.5	4.3	20.5	3.0	16.8	3.2	3.1	3.0	2.4
9	5.0	153	4.0	3.7	4.9	11.7	3.0	11.2	3.2	3.1	2.85	2.6
10	5.5	26	3.6	4.2	4.4	8.9	*2.85	8.6	3.2	3.1	2.85	2.6
11	5.0	13.2	3.7	4.8	4.0	6.6	2.85	15.4	3.1	3.2	2.85	2.5
12	4.8	7.9	4.2	4.2	3.6	6.9	2.85	25	3.1	3.35	3.1	2.5
13	4.4	6.1	4.3	4.3	3.7	6.6	3.0	14.9	3.1	3.2	71	2.6
14	8.0	9.1	4.3	27.5	4.4	6.2	3.2	10.7	3.5	3.2	7.1	2.5
15	7.1	9.3	4.3	87	11.1	5.9	3.2	7.5	3.6	3.5	4.4	2.5
16	*5.9	6.9	3.7	12.9	11.4	7.9	17.5	6.2	3.6	3.2	3.35	2.5
17	7.3	33.5	3.95	12.2	45	8.8	7.8	5.4	3.5	3.3	3.1	2.5
18	16.4	46	3.6	24.5	20.5	6.4	9.5	5.0	3.5	12.0	2.85	2.6
19	46	11.9	3.85	16.5	22.5	4.9	46	4.6	3.6	4.3	2.85	*2.5
20	34.5	7.5	4.8	7.9	22	5.0	189	4.3	4.3	5.3	2.6	2.6
21	11.7	5.7	5.0	5.0	19.4	5.5	a790	4.2	3.7	3.5	2.6	2.7
22	9.0	6.0	6.0	4.2	7.8	4.2	a300	3.85	3.5	3.1	2.6	2.6
23	6.9	5.9	4.9	*3.6	5.7	3.7	a70	3.7	3.5	7.7	2.7	2.7
24	7.5	5.9	4.9	3.5	4.8	3.6	a120	3.6	3.6	9.1	2.6	2.3
25	7.7	6.6	5.9	3.35	13.8	3.5	a65	3.5	3.5	13.5	2.6	2.5
26	7.7	5.5	4.7	6.5	7.6	3.5	29	3.5	3.2	12.4	2.7	2.6
27	8.1	5.4	4.2	4.0	7.0	3.35	17.2	3.5	3.5	7.2	2.6	2.85
28	7.4	5.2	4.4	7.4	5.0	3.5	12.3	3.35	3.5	4.9	2.6	3.0
29	5.0	4.6	5.2	4.6	4.8	3.5	10.0	-	3.35	4.0	2.5	3.0
30	5.5	27.5	4.3	3.7	79	3.2	13.7	-------	3.35	3.6	2.5	2.85
31	5.7	23	-------	4.3	-------	3.2	8.8	-------	3.2	-------	2.5	-------
Total	273.4	618.6	140.60	339.20	355.4	451.95	1,751.25	589.90	105.55	144.05	174.60	77.50
Mean:												
mgd	8.82	20.0	4.69	10.9	11.8	14.6	56.5	21.1	3.40	4.80	5.63	2.58
cfs	13.6	30.9	7.25	16.9	18.3	22.6	87.4	32.6	5.26	7.43	8.71	3.99
Ac-ft	839	1,900	431	1,040	1,090	1,390	5,370	1,810	324	442	536	238

Calendar year 1956: Max 1,000 Min 3.2 Mean(mgd) 17.8 Mean(cfs) 27.5 Ac-ft 20,010
Fiscal year 1956-57: Max 790 Min 2.4 Mean(mgd) 13.8 Mean(cfs) 21.4 Ac-ft 15,410

Peak discharge (base, 800 mgd).--Aug. 8 (10:30 p.m.) 1,660 mgd (2,570 cfs), 8.70 ft; Dec. 6 (9:30 p.m.) 2,730 mgd (4,220 cfs), 10.06 ft; Jan. 21 (5 p.m.) 3,930 mgd (6,080 cfs), 11.60 ft.

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for nearby streams.

2160. Waiawa Stream near Pearl City--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.85	3.2	6.2	3.0	3.1	292	3.6	12.1	7.8	3.0	3.0	3.0
2	3.0	3.2	4.6	3.1	3.0	86	3.5	7.1	3.7	3.0	2.85	3.0
3	3.0	3.2	3.85	3.0	3.0	24	3.2	4.9	3.1	3.0	2.7	3.0
4	3.0	4.3	4.6	3.0	3.1	17.8	3.1	4.0	2.85	3.0	2.85	3.0
5	3.0	5.9	4.2	3.0	3.5	8.5	3.1	3.6	1,360	3.0	2.85	3.1
6	3.0	*3.0	3.85	3.1	3.6	73	3.0	3.35	1,210	3.0	2.85	*3.6
7	3.0	5.3	3.7	2.85	67	45	3.0	3.2	87	3.0	3.85	3.5
8	3.0	8.6	3.5	3.0	12.0	11.8	3.0	3.0	42	2.9	6.2	3.55
9	2.85	7.0	3.1	3.2	12.1	7.5	3.0	3.0	28.5	3.0	6.2	3.6
10	3.0	4.2	4.3	3.6	6.8	12.3	3.0	3.0	17.0	2.85	4.0	3.7
11	3.0	3.2	8.2	4.0	7.4	10.1	3.0	2.85	8.8	2.85	2.9	3.9
12	2.85	3.6	6.7	3.6	5.7	6.8	3.0	2.7	7.5	2.85	3.0	4.4
13	2.85	5.0	3.35	3.5	4.9	5.4	3.0	2.7	6.0	2.85	3.1	4.9
14	3.0	3.1	3.2	3.5	3.85	4.8	3.5	2.7	5.2	2.85	3.5	5.2
15	3.2	25.5	3.0	3.35	3.5	12.7	3.6	2.7	4.6	2.85	4.5	6.3
16	3.5	7.8	2.85	3.2	3.2	30.5	3.7	2.7	4.3	2.85	40	5.5
17	3.5	4.3	2.85	3.1	3.1	14.1	4.0	2.7	4.3	2.85	10	5.4
18	3.7	3.2	2.85	3.1	3.1	9.4	4.5	2.7	*3.7	2.85	6.0	6.8
19	3.5	3.2	2.85	3.2	3.1	39.5	3.7	2.7	3.6	2.85	4.0	6.4
20	3.35	3.1	3.0	3.0	3.35	25	3.5	2.7	3.5	2.85	4.0	6.2
21	3.2	3.0	2.85	3.35	88	48	3.6	2.7	3.35	2.85	3.9	6.6
22	3.0	3.0	3.0	3.35	33	19.9	3.85	2.7	3.35	2.85	3.7	6.4
23	3.2	3.6	*3.35	3.6	25	*11.2	4.6	2.7	3.1	2.85	3.5	6.4
24	3.2	6.4	3.2	4.3	22.5	8.8	5.0	2.7	3.2	2.85	3.4	6.7
25	3.1	35.5	3.35	4.3	26	8.4	5.5	2.7	3.1	2.85	3.3	5.9
26	3.5	17.2	3.35	4.3	8.0	13.5	5.5	2.7	3.1	2.85	3.2	5.5
27	3.5	9.7	3.2	3.6	6.8	8.4	4.3	2.7	3.1	8.6	3.1	5.4
28	3.5	6.2	3.2	3.7	7.2	5.7	3.7	18.5	3.1	*22	3.0	4.8
29	3.5	16.0	3.2	3.6	6.0	5.4	*3.35	-	3.1	6.8	3.0	4.3
30	4.3	12.1	3.1	3.35	10.0	5.2	36	-------	3.1	3.5	3.0	4.7
31	3.6	11.5	-------	3.35	-------	4.2	46	-------	3.0	-----	3.0	-------
Total	99.75	234.3	112.55	105.20	390.90	876.9	190.40	111.80	2,848.05	116.25	154.45	144.85
Mean:												
mgd	3.22	7.56	3.75	3.39	13.0	28.3	6.14	3.99	91.9	3.88	4.98	4.83
cfs	4.98	11.7	5.80	5.25	20.1	43.8	9.50	6.17	142	6.00	7.71	7.47
Ac-ft	306	719	345	323	1,200	2,690	584	343	8,740	357	474	445

Calendar year 1957. Max 790 Min 2.4 Mean(mgd) 12.8 Mean(cfs) 19.8 Ac-ft 14,300
Fiscal year 1957-58. Max 1,360 Min 2.7 Mean(mgd) 14.8 Mean(cfs) 22.9 Ac-ft 16,530

Peak discharge (base, 800 mgd).--Dec. 1 (7 p.m.) 1,040 mgd (1,610 cfs), 7.35 ft; Dec. 6 (8:30 p.m.) 840 mgd (1,300 cfs), 6.62 ft; Mar. 5 (12 p.m.) 5,050 mgd (7,810 cfs), 13.04 ft.

* Discharge measurement made on this day.
Note.--No gage-height record May 8 to June 5, June 9, 10; discharge estimated on basis of records for nearby stations.

2190. Hawaiian Electric Co. tunnel at Waiau, near Pearl City

Location.--Lat 21°23'30", long 157°57'55", on right bank of ditch at Hawaiian Electric Co.'s Waiau powerplant, 0.6 mile east of Pearl City and 8.8 miles northwest of Honolulu.

Records available.--October 1939 to December 1945, July 1952 to June 1958.

Gage.--Water-stage recorder and Parshall flume. Datum of gage is 2.91 ft above mean sea level, datum of 1929. Prior to July 1, 1952, water-stage recorder at site 120 ft downstream at datum 2.27 ft lower.

Average discharge.--8 years (1940-41, 1944-45, 1952-58), 10.3 mgd (15.9 cfs).

Extremes.--1939-45, 1952-58: Maximum daily discharge, 17.3 mgd (26.8 cfs) Mar. 26, 27, 1940; minimum daily, 6.0 mgd (9.3 cfs) Aug. 3, 1941.

Remarks.--Records good. Flow regulated by valves. Water used for cooling condensers of powerplant and afterwards for irrigation of sugarcane.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	12.2	12.1	11.2	10.8	11.3	9.4	11.9	14.2	12.2	9.4	9.4	11.0
2	12.2	12.2	11.1	10.8	11.3	9.4	12.2	14.2	12.2	9.4	8.8	9.9
3	12.8	11.8	11.1	11.1	11.6	9.4	12.5	14.2	12.2	9.9	8.8	11.0
4	12.8	11.8	12.1	11.4	11.0	9.4	11.9	14.2	12.5	9.4	8.8	11.0
5	12.8	11.4	12.0	10.9	11.6	9.4	10.7	14.2	12.2	9.9	8.8	11.0
6	12.1	12.0	11.4	10.4	11.0	9.4	11.6	14.2	12.2	11.0	11.0	11.0
7	11.8	12.1	10.8	11.1	11.9	9.4	12.2	14.2	12.2	10.4	11.0	11.0
8	11.8	12.2	8.8	10.7	11.9	10.4	12.5	14.2	11.6	*11.6	11.0	11.0
9	11.8	12.2	8.8	9.8	11.6	11.0	11.9	14.2	9.9	11.6	11.0	9.9
10	12.1	12.2	8.8	11.4	11.3	9.4	11.9	14.2	12.2	11.6	11.0	11.0
11	11.8	11.9	8.8	11.6	11.3	10.7	11.3	14.2	12.2	11.6	11.0	11.0
12	*11.8	8.8	8.2	10.2	11.3	9.4	11.3	14.2	12.2	11.6	9.4	11.6
13	12.0	12.1	10.5	11.2	11.6	9.4	11.6	14.2	11.0	11.0	11.0	12.2
14	11.8	12.2	11.7	8.8	11.6	11.9	11.9	13.5	9.9	8.8	10.9	11.6
15	11.8	12.1	11.2	9.2	11.6	11.6	11.9	12.8	9.9	10.4	11.0	11.6
16	12.2	12.2	8.8	9.8	11.3	11.6	11.6	12.2	9.9	9.4	11.0	9.9
17	12.2	12.1	11.1	10.7	9.4	11.9	11.9	12.2	9.4	9.9	11.0	11.0
18	12.3	11.8	11.2	10.7	9.4	11.9	11.0	12.2	11.0	8.8	11.0	11.0
19	12.2	9.4	11.4	10.7	9.4	11.9	9.9	12.2	9.4	8.8	9.4	11.0
20	12.8	12.1	12.2	10.4	9.9	11.0	9.9	12.8	9.4	9.4	11.6	*10.8
21	12.8	12.1	11.6	9.9	9.4	11.6	10.4	12.2	9.9	8.8	*11.0	11.0
22	9.4	12.1	11.4	9.4	11.4	10.8	9.9	12.2	9.9	9.4	11.0	11.0
23	12.2	12.1	11.1	10.7	10.0	11.6	9.9	12.2	9.9	9.4	11.0	9.4
24	12.8	12.0	11.6	*11.1	10.4	11.0	9.9	12.2	9.4	11.0	11.0	11.0
25	12.8	11.8	11.5	11.3	10.8	11.6	10.4	12.2	9.9	11.0	10.4	11.0
26	12.8	11.5	11.5	11.3	11.3	11.9	9.9	12.2	9.9	11.0	9.9	11.6
27	12.8	12.1	11.5	10.8	9.9	11.9	9.9	12.2	11.0	9.4	11.0	11.0
28	11.8	*11.8	9.2	11.0	9.7	11.9	12.6	12.2	11.0	9.4	10.4	11.0
29	10.1	11.8	10.9	11.6	*9.4	11.3	14.2	-	11.0	9.4	11.0	11.0
30	11.5	12.8	10.5	12.1	9.4	10.4	14.2	-------	9.9	9.4	10.4	9.4
31	12.1	12.8	-------	11.7	-------	11.3	14.2	-------	9.4	-------	10.4	-------
Total	374.4	367.6	322.0	332.8	323.0	333.2	357.1	370.1	334.9	302.1	324.4	326.9
Mean:												
mgd	12.1	11.9	10.7	10.7	10.8	10.7	11.5	13.2	10.8	10.1	10.5	10.9
cfs	18.7	18.4	16.6	16.6	16.7	16.6	17.8	20.4	16.7	15.5	16.2	16.9
Ac-ft	1,150	1,130	988	1,020	991	1,020	1,100	1,140	1,030	927	998	1,000

Calendar year 1956: Max 13.8 Min 8.2 Mean(mgd) 11.3 Mean(cfs) 17.5 Ac-ft 12,650
Fiscal year 1956-57: Max 14.2 Min 8.2 Mean(mgd) 11.1 Mean(cfs) 17.2 Ac-ft 12,490

* Discharge measurement made on this day.

2190. Hawaiian Electric Co. tunnel at Waiau, near Pearl City--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	11.0	10.4	8.2	8.2	10.4	9.9	8.8	10.4	8.8	8.8	9.4	8.8
2	11.0	11.0	8.2	9.4	10.4	11.6	8.8	9.4	8.8	8.8	9.4	9.4
3	10.4	11.0	9.4	8.8	9.9	11.6	8.8	11.0	8.8	9.4	9.4	9.4
4	8.2	9.4	8.2	8.8	9.9	12.2	9.9	*11.0	8.8	9.4	8.8	*9.4
5	10.4	11.0	9.4	9.9	10.4	12.8	8.8	11.6	11.7	9.4	9.4	9.4
6	11.0	11.0	8.2	8.2	10.4	12.8	9.9	10.4	10.4	8.8	9.4	9.4
7	8.8	11.0	8.2	8.2	10.4	12.8	10.4	10.4	8.8	9.4	9.4	9.4
8	11.0	11.0	8.2	8.2	10.4	12.8	11.6	8.2	8.8	9.4	9.4	8.8
9	11.0	8.2	8.2	8.2	9.9	12.8	11.0	8.8	9.4	9.4	9.4	9.4
10	11.0	8.2	8.2	8.2	9.4	12.8	8.8	11.6	9.4	9.4	9.4	8.8
11	10.4	8.2	9.9	9.4	10.4	12.8	8.8	12.2	9.4	9.4	9.4	8.8
12	11.0	*10.4	9.9	9.4	10.4	12.2	8.8	11.6	9.4	9.4	9.9	8.8
13	11.0	10.4	9.9	8.8	10.4	12.2	9.9	11.6	9.4	9.4	9.4	9.9
14	9.4	8.8	9.4	9.4	9.9	12.2	8.8	11.0	9.4	9.4	9.4	11.6
15	11.0	8.8	8.2	9.9	9.9	12.2	9.9	11.6	8.8	9.4	9.4	11.6
16	11.0	8.2	9.9	9.9	10.4	12.2	10.4	8.8	8.8	9.4	9.9	11.6
17	11.0	8.2	8.2	9.4	8.2	12.2	10.4	11.6	9.4	9.4	9.4	11.6
18	11.0	8.2	8.2	9.9	10.4	12.2	9.9	11.6	9.4	9.4	9.4	11.6
19	11.0	10.4	8.2	9.9	10.4	12.2	9.9	10.4	9.4	9.4	9.4	11.6
20	11.0	9.9	8.2	8.8	10.4	12.2	10.4	11.0	*9.4	9.4	9.4	11.6
21	9.4	10.4	8.2	9.9	11.0	12.2	12.2	10.4	9.4	9.4	9.4	11.6
22	10.4	9.4	8.2	9.9	10.4	12.2	12.2	8.8	9.4	9.4	9.4	11.6
23	10.4	8.8	8.2	9.9	10.4	12.2	11.0	8.8	9.4	*9.4	9.4	11.6
24	11.0	8.2	*7.7	9.9	9.4	12.2	11.0	10.4	9.4	8.8	9.4	11.6
25	9.4	8.2	7.7	9.9	10.4	12.2	11.0	9.4	9.4	8.8	9.4	11.6
26	11.0	8.2	7.7	9.9	10.4	12.2	11.0	11.0	9.4	8.8	9.4	11.6
27	9.4	8.2	7.7	8.8	10.4	12.2	11.0	9.4	9.4	8.8	9.4	11.6
28	9.4	8.2	7.7	9.9	8.8	12.2	11.0	9.4	9.4	9.4	9.4	11.6
29	11.0	8.2	7.7	9.9	10.4	12.2	10.4	-	9.4	8.8	9.4	11.0
30	10.4	8.2	8.2	9.9	10.4	12.2	10.4	-------	9.4	8.8	9.4	11.6
31	10.4	8.2	-------	10.4	-------	9.9	10.4	-------	8.8	-------	9.4	-------
Total	323.8	287.9	253.4	289.2	304.3	376.6	315.6	291.8	289.3	276.6	291.8	316.3
Mean:												
mgd	10.4	9.29	8.45	9.33	10.1	12.1	10.2	10.4	9.33	9.22	9.41	10.5
cfs	16.1	14.4	13.1	14.4	15.6	18.7	15.8	16.1	14.4	14.3	14.6	16.2
Ac-ft	994	884	778	888	934	1,160	969	896	888	849	896	971

Calendar year 1957: Max 14.2 Min 7.7 Mean(mgd) 10.5 Mean(cfs) 16.2 Ac-ft 11,830
Fiscal year 1957-58: Max 12.8 Min 7.7 Mean(mgd) 9.91 Mean(cfs) 15.3 Ac-ft 11,110

* Discharge measurement made on this day.

2230. Waimalu Stream near Aiea

Location.--Lat 21°23'35", long 157°57'00" (revised), on right bank of stream just downstream from bridge on Moanalua Highway, 1.5 miles northwest of Aiea and 1.6 miles east of Pearl City.

Drainage area.--6.07 sq mi (revised).

Records available.--January 1952 to June 1958.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 1.5 ft (from topographic map). Prior to Jan. 30, 1957, at same site at datum 3.5 ft higher.

Average discharge.--6 years, 4.50 mgd (6.96 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year not determined; minimum, 0.21 mgd (0.32 cfs) May 29.

1957-58: Maximum discharge during fiscal year, 1,620 mgd (2,510 cfs) Mar. 6 (gage height, 7.28 ft), from rating curve extended above 630 mgd by logarithmic plotting; minimum daily, 0.19 mgd (0.29 cfs) Apr. 24.

1952-58: Maximum discharge, 1,900 mgd (2,940 cfs) Nov. 28, 1954 (gage height, 8.03 ft), from rating curve extended above 600 mgd by test on model of station site; minimum, 0.01 mgd (0.02 cfs) Jan. 18, 1952.

Remarks.--Records fair except those for period of no gage-height record and Mar. 8 to June 30, 1958, which are poor. Small quantities of water diverted for irrigation.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.62	0.69	0.86	0.48	1.26	5.7	0.55	*1.44	0.82	1.36	1.14	0.50
2	.69	.55	.69	.55	.95	1.95	.62	1.29	.77	*1.59	.92	.73
3	1.05	.55	.62	.69	.69	1.40	.48	*1.29	.99	1.07	1.93	.42
4	1.15	.84	.55	1.01	.48	.86	.36	*9.6	.92	*1.22	.99	*1.39
5	.86	13.6	.77	2.05	.48	.86	.48	*35.5	.77	1.93	.92	1.36
6	.77	2.5	3.3	1.81	.48	57	.36	*16.0	.72	1.84	.87	1.22
7	.55	1.15	.82	1.40	.36	25.5	.41	7.3	.72	1.36	1.14	.93
8	.55	32	.86	.95	.27	4.5	.62	5.8	1.22	1.51	.72	.82
9	.55	52	.69	.77	.36	2.4	1.31	4.1	1.07	1.22	.56	1.06
10	.48	4.4	.55	.62	.31	1.53	1.40	3.35	.82	1.22	.46	.87
11	.41	1.81	.48	.55	.62	1.40	1.27	7.5	1.29	1.07	.61	.72
12	.41	.95	.48	.48	.55	1.05	.77	13.0	.87	1.22	.61	.72
13	.36	.62	.41	.48	.62	.86	.77	7.7	.87	.99	*5.8	.59
14	.79	.69	1.00	33.5	.36	.86	.62	5.1	*2.1	.99	.77	.51
15	.62	.86	1.88	43	.48	.86	*.69	3.35	*1.29	1.07	.61	.42
16	.62	.55	.86	2.55	.86	.86	.55	2.45	.92	.99	.51	.51
17	1.01	13.4	.95	4.0	15.1	.77	.77	2.0	.82	.72	.32	.38
18	7.3	17.9	1.05	7.4	4.9	1.38	.86	1.93	.99	.77	.35	.42
19	2.9	2.1	1.15	1.27	4.4	1.15	12.9	2.0	.77	1.07	.38	*.59
20	3.35	1.15	1.15	.69	2.7	.95	79	1.75	.72	.92	.82	.76
21	1.05	1.15	1.27	.55	2.1	.95	a350	1.44	.82	1.59	.99	.87
22	.86	1.15	1.15	.55	1.05	.86	*a70	1.36	.82	.92	1.59	.76
23	.69	1.15	.77	*.62	.77	.77	*a35	1.36	.99	1.14	1.14	.68
24	.69	1.15	.62	.41	.69	.69	a20	1.29	.82	*3.25	1.29	1.23
25	.86	1.05	1.06	.41	5.3	.69	a10	1.14	.72	3.1	1.36	*1.70
26	.95	.86	1.40	1.15	1.05	.69	a6	.99	.66	4.5	1.36	1.22
27	.95	.77	1.40	2.65	*.69	.69	a4	1.22	.61	2.35	1.22	.93
28	.86	.77	1.05	.41	5.3	.55	a3	.87	.56	1.14	.60	.76
29	.69	*.77	.69	.31	.77	.62	a2	-	.99	.82	*.29	.72
30	.77	9.5	.55	.31	10.4	.62	*3.7	-------	.92	1.29	.29	.59
31	.95	1.40	-------	.36	-------	.55	*1.66	-------	.87	-------	.29	-------
Total	34.36	168.03	29.08	111.98	64.35	119.52	610.15	142.12	28.24	44.23	30.85	24.38
Mean:												
mgd	1.11	5.42	0.969	3.61	2.14	3.86	19.7	5.08	0.911	1.47	0.995	0.813
cfs	1.72	8.39	1.50	5.59	3.31	5.97	30.5	7.86	1.41	2.27	1.54	1.26
Ac-ft	105	516	89	344	197	367	1,870	436	87	136	95	75

Calendar year 1956: Max 391 Min 0.27 Mean(mgd) 5.82 Mean(cfs) 9.00 Ac-ft 6,540
Fiscal year 1956-57: Max 350 Min 0.27 Mean(mgd) 3.86 Mean(cfs) 5.97 Ac-ft 4,320

Peak discharge (base, 250 mgd).--Aug. 8 (10 p.m.) 420 mgd (650 cfs), 2.84 ft; Oct. 14 (12 m.) 510 mgd (789 cfs), 317 ft; Dec. 6 (9:30 p.m.) 590 mgd (913 cfs), 3.59 ft; Jan. 21 (3:30 p.m.) discharge unknown.

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for nearby streams.
Note.--Gage-height record Jan. 30 to May 27 from one or more daily readings.

2230. Waimalu Stream near Aiea--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.59	0.42	2.4	0.87	0.38	82	0.59	6.2	3.5	0.72	0.87	0.53
2	.72	.38	1.33	.68	.38	29	.63	2.5	1.23	.59	.79	.32
3	.76	.38	2.35	.55	.51	7.2	.76	1.33	.57	.59	.68	*.29
4	.76	.47	1.88	.59	.63	4.6	.82	.99	*.24	.76	1.27	.31
5	.72	.82	1.10	.59	.76	2.4	.72	.82	*449	.59	.91	.38
6	.87	*1.04	.87	.47	1.12	28.5	.72	.72	*313	.63	.93	.92
7	.76	3.5	.68	.47	37	16.1	1.03	.68	23	.68	2.25	.87
8	1.16	2.55	.59	.51	4.8	4.1	.93	.42	9.0	.51	2.35	.99
9	1.62	1.70	.60	.59	6.8	2.05	.87	.51	4.8	.51	1.16	1.16
10	1.32	1.22	.59	.68	2.95	2.5	.87	.47	2.65	.68	1.10	1.34
11	.76	1.28	.59	.76	2.85	2.55	.68	.42	1.79	.76	.59	1.40
12	.72	1.15	.55	.76	1.24	1.51	.63	.38	1.27	.47	.87	1.48
13	.76	.87	.51	.76	*.87	1.16	.55	.38	1.04	.47	.82	1.52
14	.76	.76	.38	.93	.72	1.35	.51	.31	.82	.31	1.04	1.74
15	.82	1.35	.34	.76	.55	7.1	.73	.42	.87	.55	.99	1.27
16	1.03	.76	.51	.72	.51	10.4	.62	.31	1.33	.55	9.7	1.02
17	.51	.59	1.36	.63	.51	4.4	.54	.29	2.65	.55	2.3	.78
18	.80	.55	1.62	.59	.51	3.6	.38	.31	2.15	.39	.99	.66
19	10.4	.94	1.33	.51	.42	17.6	.47	.26	2.15	.27	.93	.54
20	.38	.55	1.10	.51	.35	7.2	.38	.31	2.4	.42	.99	.49
21	.76	.53	1.10	.47	*26	36	.34	.34	1.79	.38	.99	.47
22	1.16	.38	1.10	.42	28	7.4	.34	.31	.51	.38	.99	.51
23	.99	.34	*.93	.55	9.5	3.65	.82	.26	.68	.31	.47	.68
24	.93	1.31	.82	.51	17.8	4.3	2.05	.31	.42	.19	.72	.78
25	1.04	8.7	.68	.42	12.0	3.25	.93	.24	.38	.29	.76	.53
26	.99	5.3	.59	.38	2.55	3.8	.68	.21	.47	.34	.87	.47
27	.82	2.95	.80	.34	2.65	2.25	.55	.21	.38	.24	.99	.43
28	.72	2.9	.51	.38	1.97	1.18	*.51	*33.5	.26	.46	.72	.46
29	.63	6.3	.81	.55	2.4	.93	.47	-	.47	.31	.29	.33
30	.55	4.8	1.26	.59	5.8	.72	27.5	-------	.82	.51	.42	.29
31	.47	3.9	-------	.47	-------	.68	37	-------	.82	-------	.53	-------
Total	35.28	58.69	29.28	18.01	172.53	299.48	84.62	53.41	830.46	14.41	39.28	22.96
Mean:												
mgd	1.14	1.89	0.976	0.581	5.75	9.66	2.73	1.91	26.8	0.480	1.27	0.765
cfs	1.76	2.92	1.51	0.899	8.90	14.9	4.22	2.96	41.5	0.743	1.96	1.18
Ac-ft	108	180	90	55	529	919	260	164	2,550	44	121	70

Calendar year 1957: Max 350 Min 0.29 Mean(mgd) 4.09 Mean(cfs) 6.33 Ac-ft 4,580
Fiscal year 1957-58: Max 449 Min 0.19 Mean(mgd) 4.54 Mean(cfs) 7.02 Ac-ft 5,090

Peak discharge (base, 250 mgd).--Nov. 21 (2:30 a.m.) 275 mgd (425 cfs), 4.13 ft; Dec. 6 (7:30 p.m.) 460 mgd (712 cfs), 4.75 ft; Feb. 28 (8:30 a.m.) 300 mgd (464 cfs), 4.22 ft; Mar. 6 (12:30 a.m.) 1,620 mgd (2,510 cfs), 7.28 ft.

* Discharge measurement made on this day.

2240. Pearl Harbor Springs at Kalauao, near Aiea

Location.--Lat 21°23'05", long 157°56'45", on left bank 900 ft downstream from Oahu Sugar Co.'s pump 6, 1.1 miles west of Aiea, and 7.6 miles northwest of Honolulu.

Records available.--March 1931 to June 1958.

Gage.--Water-stage recorder and sharp-crested weir. Datum of gage is 1.38 ft below mean sea level, datum of 1929.

Average discharge.--27 years, 16.0 mgd (24.8 cfs), unadjusted for pumpage.

Extremes.--1931-58: Maximum daily discharge, 25 mgd (39 cfs) Feb. 17-26, 1938, Feb. 23, 24, 1955; minimum daily, 7.2 mgd (11.1 cfs) Aug. 25, Sept. 2, 1947.

Remarks.--Records good. When water is needed for irrigation of sugarcane, Oahu Sugar Co.'s pump 6 diverts about 7 mgd as a high-lift pump or 9 mgd as a low-lift pump. Surface runoff from floods not included in figures of discharge given below.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	16.7	12.9	19.0	15.9	14.6	21	19.0	22	16.3	13.3	12.9	12.5
2	12.9	12.5	19.0	12.1	16.3	21	13.3	22	22	13.3	12.9	13.3
3	13.3	14.2	18.5	11.3	21	21	13.3	22	18.5	13.3	13.3	12.5
4	17.6	19.4	12.1	13.3	19.8	20.5	16.3	22	12.9	13.3	15.9	12.5
5	11.7	19.4	12.1	12.5	15.9	20.5	21	22	12.9	15.9	16.7	12.5
6	13.8	15.9	*11.7	12.0	21	21	17.6	22	13.3	21	12.9	12.5
7	14.2	15.0	11.7	17.6	16.3	21	14.6	22	13.3	17.6	12.5	15.4
8	19.4	12.5	15.4	12.5	12.9	21	14.6	22	15.9	13.3	12.5	12.5
9	12.5	14.6	16.3	11.3	15.9	21	12.9	22	21	12.9	12.5	12.5
10	11.7	12.9	11.7	11.3	21	21	12.9	22	19.8	13.8	12.5	12.5
11	11.7	15.9	11.7	11.3	17.6	21	15.4	22	15.9	12.9	12.5	12.5
12	11.7	16.3	11.7	11.3	12.5	21	21	22	14.2	15.9	12.9	12.5
13	12.9	14.2	12.5	16.3	12.5	21	19.8	22.5	13.8	20.5	14.2	12.5
14	15.4	12.9	13.3	19.0	12.5	20.5	15.4	22.5	12.9	19.8	12.9	12.5
15	17.2	12.5	15.9	19.0	12.5	20.5	21	22.5	*15.4	21	12.5	12.5
16	11.7	11.3	17.2	19.0	16.7	20.5	*21	22.5	20.5	21	12.5	12.5
17	12.1	11.3	11.3	19.0	21	19.8	21	22.5	16.7	*21	15.9	11.7
18	14.2	14.2	11.3	19.0	21	18.5	21	22.5	15.9	17.2	16.7	11.7
19	16.7	16.7	11.7	19.0	21	21	21	22.5	14.6	21	20.5	11.7
20	16.3	11.7	12.5	19.0	21	21	21	22.5	12.9	21	13.8	12.1
21	17.2	11.7	11.7	19.0	20.5	21	21	22.5	12.9	16.3	13.8	12.1
22	19.0	12.1	18.0	17.2	21	21	21.5	16.7	16.3	12.9	12.5	12.1
23	14.6	11.3	17.6	12.5	21	21	22	22	21	12.9	12.5	12.5
24	12.1	12.9	12.5	*14.6	21	21	22.5	16.7	18.0	13.3	12.5	12.1
25	12.1	13.3	13.3	14.2	21	21	22.5	14.6	14.2	14.6	18.5	12.1
26	11.7	18.0	12.9	15.9	21	19.0	22	13.3	15.4	15.9	17.2	12.1
27	12.1	13.3	11.3	20.5	21	13.3	22	13.3	16.3	17.2	15.0	12.1
28	14.2	16.3	11.7	19.4	21	15.4	22	13.3	15.4	20.5	12.5	12.1
29	15.4	18.0	15.9	15.4	*21	21	22	-	16.3	17.6	12.5	12.1
30	12.1	13.8	19.0	16.3	21	21	22.5	-------	21	14.6	12.5	12.1
31	13.3	19.0	-------	13.8	-------	21	22.5	-------	18.5	-------	15.4	-------
Total	437.5	446.0	420.5	481.4	552.5	629.5	595.6	576.4	504.0	494.8	433.9	372.3
Mean:												
mgd	14.1	14.4	14.0	15.5	18.4	20.3	19.2	20.6	16.3	16.5	14.0	12.4
cfs	21.8	22.3	21.7	24.0	28.5	31.4	29.7	31.9	25.2	25.5	21.7	19.2
Ac-ft	1,340	1,370	1,290	1,480	1,700	1,930	1,830	1,770	1,550	1,520	1,330	1,140

Calendar year 1956. Max 23 Min 11.3 Mean(mgd) 17.8 Mean(cfs) 27.5 Ac-ft 19,950
Fiscal year 1956-57 Max 22.5 Min 11.3 Mean(mgd) 16.3 Mean(cfs) 25.2 Ac-ft 18,250

* Discharge measurement made on this day.

2240. Pearl Harbor Springs at Kalauao, near Aiea--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	13.3	11.0	13.8	9.8	16.7	18.5	19.0	17.6	19.0	19.8	19.8	18.0
2	12.9	13.3	15.9	9.8	16.7	18.5	15.9	18.0	19.4	19.8	19.8	12.1
3	16.7	18.0	10.6	9.8	17.2	18.5	16.3	18.0	19.4	19.8	19.8	12.1
4	17.2	15.4	10.6	9.8	17.2	18.5	19.0	17.6	19.4	19.8	19.8	12.1
5	12.5	10.6	10.6	13.8	12.5	19.0	19.0	17.6	19.4	19.8	20.5	*12.1
6	12.5	10.6	10.6	15.0	9.8	19.0	19.0	17.6	20.5	19.8	19.8	11.3
7	15.0	10.6	13.3	9.8	9.8	19.0	18.5	17.6	19.8	19.8	19.8	11.3
8	12.1	13.3	15.0	13.8	12.5	19.0	18.5	17.6	19.8	19.8	19.8	11.0
9	12.1	18.0	12.9	17.2	17.2	19.0	18.5	17.6	19.8	19.8	19.8	11.0
10	12.1	15.4	10.2	17.2	14.6	19.0	18.5	18.0	19.8	19.8	19.8	11.0
11	11.7	11.0	10.2	16.7	9.8	19.0	18.5	18.0	19.8	19.8	19.8	10.6
12	11.7	10.6	10.2	16.7	9.8	19.0	18.5	18.0	19.4	19.4	19.8	10.6
13	12.1	10.6	10.2	16.7	12.5	19.0	18.5	18.0	19.4	19.4	19.8	10.6
14	12.1	10.6	13.3	16.7	13.8	19.0	15.4	18.5	19.4	19.4	19.8	10.6
15	11.7	10.6	17.6	16.7	13.8	19.0	11.7	19.0	19.4	19.4	19.8	10.6
16	11.7	12.9	11.0	16.7	18.5	19.0	11.7	19.0	19.4	19.4	19.8	13.3
17	11.7	10.6	10.2	16.7	15.4	19.0	11.7	19.0	19.4	19.4	19.8	14.2
18	11.7	10.6	10.2	16.7	10.6	19.0	11.0	19.0	19.4	19.4	19.8	12.9
19	11.7	10.6	16.7	16.7	10.2	19.0	11.3	19.0	19.8	19.4	19.8	13.3
20	11.7	10.6	12.9	17.2	9.5	19.0	12.5	19.0	19.8	19.4	19.8	15.0
21	11.7	10.6	11.0	17.2	17.2	19.0	12.5	19.0	19.8	19.8	19.8	18.0
22	11.7	10.6	15.4	16.7	17.6	19.0	14.6	19.0	19.8	19.8	19.8	17.6
23	11.7	12.1	9.8	16.7	17.6	19.0	14.6	19.0	19.8	19.8	19.4	14.6
24	11.7	12.9	9.8	16.7	17.6	19.0	12.9	19.0	19.8	19.8	19.4	14.6
25	11.3	18.0	9.8	16.7	18.0	17.2	15.9	19.0	19.8	*19.8	19.4	14.6
26	13.3	12.9	9.8	16.7	18.0	15.9	11.7	19.0	19.8	19.8	19.4	12.5
27	12.9	10.6	*9.8	16.7	18.0	14.2	11.0	19.0	19.8	19.8	19.4	15.0
28	11.7	10.6	9.8	16.7	18.0	13.0	11.3	19.0	19.8	19.8	19.4	17.2
29	11.7	10.6	9.8	16.7	18.0	16.7	12.1	-	19.8	19.8	19.8	17.2
30	11.3	10.6	9.8	16.7	18.5	14.6	17.6	-------	19.8	19.8	19.8	17.2
31	*11.0	12.9	-------	16.7	-------	15.9	17.6	-------	19.8	-------	19.8	-------
Total	334.2	377.3	350.8	477.7	446.6	567.5	474.8	515.7	609.3	590.4	612.1	402.2
Mean:												
mgd	12.4	12.2	11.7	15.4	14.9	18.3	15.3	18.4	19.7	19.7	19.7	13.4
cfs	19.2	18.9	18.1	23.8	23.1	28.3	23.7	28.5	30.5	30.5	30.5	20.7
Ac-ft	1,180	1,160	1,080	1,470	1,370	1,740	1,460	1,580	1,870	1,810	1,880	1,230

Calendar year 1957. Max 22.5 Min 9.5 Mean(mgd) 15.3 Mean(cfs) 23.7 Ac-ft 17,140
Fiscal year 1957-58. Max 20.5 Min 9.5 Mean(mgd) 15.9 Mean(cfs) 24.6 Ac-ft 17,830

* Discharge measurement made on this day.

2245. Kalauao Stream at Moanalua Road at Aiea

Location.--Lat 21°23'07", long 157°56'22", on left bank of stream at Moanalua Road Bridge, 0.4 mile northwest of Aiea Post Office and 2.3 miles southeast of Pearl City Post Office.

Drainage area.--2.59 sq mi.

Records available.--July 1957 to June 1958.

Gage.--Water-stage recorder. Datum of gage is 12.75 ft above mean sea level, datum of 1929. July 22, 1953, to June 19, 1957, at site 0.1 mile downstream. Records not equivalent due to spring inflow.

Extremes.--1957-58: Maximum discharge recorded during fiscal year, 760 mgd (1,180 cfs) Mar. 5 (gage height, 6.44 ft), from rating curve extended above 180 mgd; minimum daily, 0.08 mgd (0.12 cfs) June 25-30.

Remarks.--Records fair except those for periods of no gage-height record and those for periods when stage-discharge relation was indefinite, which are poor.

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.24	0.20	0.24	0.15	0.11	22.5	0.25	1.84	2.15	0.14	0.21	0.17
2	.18	.20	.17	.15	.12	9.1	.25	.52	.56	.14	.20	.17
3	.17	.20	.22	.20	.13	2.4	.25	.20	.25	.14	.20	.17
4	.17	.10	.18	.49	.25	1.52	.25	.20	.25	.14	.19	.17
5	.17	.13	.15	.32	.13	.69	.24	.20	*168	.14	.19	.17
6	.15	.82	.19	.18	.13	9.8	.24	*.20	75	.14	.18	.17
7	.17	*.59	.14	.12	7.2	6.0	.25	.20	13	.14	.18	.17
8	.25	*.18	.14	.12	.63	1.43	.48	.18	1.7	.14	.18	.17
9	.15	.18	.14	.12	1.42	.59	.24	.18	1.1	.14	.18	.17
10	.15	.18	.13	.14	.30	.34	.24	.18	.59	.14	.17	.17
11	.15	.18	.14	.29	.20	.30	.24	.20	.42	.13	.17	.17
12	.15	.18	.13	.15	*.13	.29	.24	.22	*.32	.13	.17	.18
13	.39	.11	.17	.11	.14	.29	.22	.18	.28	.13	.17	.20
14	.49	.10	.23	.11	.14	.27	.22	.18	.24	.13	*.17	.22
15	.59	.12	.14	.12	.14	.36	.22	.18	.22	.13	.17	.20
16	.46	.13	.14	.12	.14	1.32	.22	.17	.20	.13	2.7	*.19
17	.22	.14	.33	.12	.14	.76	.24	.18	.18	.13	.90	.17
18	.31	.14	.14	.12	.14	*.69	.43	.25	.18	.13	.22	.17
19	.35	.14	.13	.12	.14	4.9	.40	.15	.17	.13	.20	.17
20	.34	.13	.13	.13	.14	2.4	.22	.17	.16	.13	.18	.15
21	.18	.12	.13	.13	*7.3	10.2	.22	.17	.16	*.13	*.18	.13
22	.18	.13	.14	.12	12.6	2.3	.22	.17	.16	.13	.17	.11
23	.22	.13	*.14	.12	7.3	a.98	.22	.17	.15	*.16	.17	.10
24	.40	.25	.17	.12	10.7	a1.0	.20	.17	.15	.16	.17	.09
25	.18	2.7	.18	.12	5.0	a.63	.27	.17	.15	.16	.17	.08
26	.19	.89	.15	.17	1.34	a1.2	.22	.17	.15	.16	.17	.08
27	.17	.40	.15	.19	1.20	a.67	.18	.17	.14	5.5	.17	.08
28	.37	.78	.14	.12	.59	a.30	.18	*22	*.14	.29	.17	.08
29	.56	2.55	.14	.11	1.58	a.29	.17	-	.14	.25	.17	*.08
30	.59	1.22	.14	.11	3.0	.27	12.1	-------	.14	.22	.17	.08
31	.35	.85	-------	.11	-------	.27	10.4	-------	.14	-------	.17	-------
Total	8.64	14.17	4.86	4.80	62.48	84.76	29.72	28.97	266.59	9.86	8.81	4.43
Mean:												
mgd	0.279	0.457	0.162	0.155	2.08	2.73	0.959	1.03	8.60	0.329	0.284	0.148
cfs	0.432	0.707	0.251	0.240	3.22	4.22	1.48	1.59	13.3	0.509	0.439	0.229
Ac-ft	27	43	15	15	192	260	91	89	818	30	27	14

Calendar year 1957. Max - Min - Mean(mgd) - Mean(cfs) - Ac-ft -
Fiscal year 1957-58: Max 168 Min 0.08 Mean(mgd) 1.45 Mean(cfs) 2.24 Ac-ft 1,620

Peak discharge (base, 150 mgd).--Dec. 6 (7:30 a.m.) 172 mgd (266 cfs), 4.72 ft; Feb. 28 (7 a.m.) 340 mgd (526 cfs), 5.43 ft; Mar. 5 (4:30 p.m.) 760 mgd (1,180 cfs), 6.44 ft.

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for nearby stations.
Note.--Stage-discharge relation indefinite Aug. 3-16, Mar. 6 to June 30: discharge estimated on basis of measurements and records for nearby stations.

2250. Kalauao Stream at Aiea

Location (revised).--Lat 21°22'59", long 157°56'28", on left bank of stream 600 ft upstream from Kamehameha Highway Bridge, 0.4 mile northwest of Aiea Post Office, 0.7 mile west of Aiea Sugar Mill, and 2.3 miles east of Pearl City.

Drainage area.--2.61 sq mi (revised).

Records available.--July 1953 to June 1957 (discontinued).

Gage.--Water-stage recorder and concrete control. Datum of gage is 4.00 ft above mean sea level, datum of 1929.

Extremes.--1956-57: Maximum discharge during fiscal year, 390 mgd (603 cfs) Dec. 6 (gage height, 5.16 ft), from rating curve extended above 240 mgd; minimum, 0.22 mgd (0.34 cfs) May 9.

1953-57: Maximum discharge, 1,050 mgd (1,620 cfs) Nov. 28, 1954 (gage height, 7.29 ft), from rating curve extended above 240 mgd; minimum daily, that of May 9, 1957.

Remarks.--Records fair except those for periods of no gage-height record and indefinite stage-discharge relation, which are poor.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.14	2.3	1.07	0.78	0.89	5.7	0.83	1.14	0.89	0.83	0.90	0.5
2	.95	.91	.89	1.03	.95	1.58	.83	1.21	.89	*1.13	2.3	.8
3	.95	.99	.89	.95	.89	1.21	.73	1.14	.89	1.01	2.65	.7
4	.89	2.75	.89	2.3	.83	.95	.73	10.4	.89	.83	.78	1.0
5	1.26	8.6	1.09	1.60	.89	1.01	.78	20.5	.89	1.59	.60	1.4
6	1.17	2.25	2.3	.95	.83	25.5	.78	11.4	.89	1.01	.60	1.3
7	1.79	1.14	1.33	.89	.95	14.2	.78	4.4	.89	.89	.87	.9
8	.89	10.0	.95	.78	1.21	2.7	.78	2.25	.95	1.62	.51	.8
9	1.08	17.2	.89	1.45	.95	1.58	.73	1.50	.89	1.22	.22	.9
10	.95	2.9	.73	1.66	.73	1.35	.78	1.21	.89	.78	.37	1.0
11	.83	1.35	.89	1.20	.68	1.14	.87	4.0	.89	.78	.47	.9
12	.89	.89	.78	1.07	.78	.95	.78	3.35	.83	1.01	.43	.8
13	1.07	.95	.95	1.06	.78	.89	.78	1.84	.84	.78	9.6	.8
14	1.48	1.07	.78	19.2	.89	.89	*.86	1.42	1.07	.78	.73	.7
15	1.47	1.01	.83	12.4	1.21	.89	1.67	1.14	1.01	.96	.64	.7
16	1.01	1.14	.73	5.0	4.4	1.14	2.0	1.07	1.01	.78	e.55	.7
17	1.14	7.7	.95	4.1	16.6	1.07	1.0	1.01	1.01	5.3	e.58	.7
18	2.4	10.1	.83	5.0	5.9	.95	1.5	1.01	1.01	2.05	e.68	.7
19	12.0	1.84	.89	1.93	4.8	.89	12.0	.95	1.01	.83	e.78	.9
20	3.7	1.14	.83	1.21	3.2	.89	34.5	.89	.95	.73	e.78	.7
21	1.42	1.21	.78	1.21	2.85	.89	150	.89	1.01	.73	e.78	.7
22	1.07	.83	.78	*1.43	1.28	.89	40	1.01	.95	.73	e.73	.7
23	1.07	1.13	.73	.95	1.21	.89	19.3	.89	1.01	.99	e.73	.7
24	1.21	.89	.89	.89	.83	.89	13.2	.89	1.01	1.32	e.73	.7
25	1.21	.78	.89	.89	6.4	.89	7.3	1.01	.89	4.8	e.78	.7
26	1.21	.73	.78	.89	1.28	.89	3.1	1.03	.83	4.2	e.89	.7
27	1.14	.89	.78	1.21	*.95	.89	2.0	*.89	.95	1.50	.9	1.2
28	1.01	.96	.89	1.07	3.95	.95	1.66	.78	1.08	.89	.8	1.4
29	1.13	*.80	.89	1.07	1.07	.89	1.50	-	1.26	.78	.6	1.1
30	1.35	5.5	.78	.89	8.3	.89	1.35	-------	.78	.68	.5	.7
31	1.90	2.1	-------	.89	-------	.83	1.21	-------	.78	-------	.5	-------
Total	50.78	92.05	27.68	75.95	76.48	75.27	304.33	79.22	29.14	41.53	32.98	25.5
Mean:												
mgd	1.64	2.97	0.923	2.45	2.55	2.43	9.82	2.83	0.940	1.38	1.06	0.850
cfs	2.54	4.60	1.43	3.79	3.95	3.76	15.2	4.38	1.45	2.14	1.64	1.32
Ac-ft	156	282	85	233	235	231	934	243	89	127	101	78

Calendar year 1956: Max 137 Min 0.68 Mean(mgd) 3.81 Mean(cfs) 5.89 Ac-ft 4,280
Fiscal year 1956-57: Max 150 Min 0.22 Mean(mgd) 2.50 Mean(cfs) 3.87 Ac-ft 2,790

Peak discharge (base, 150 mgd).--Oct. 14 (11 p.m.) 190 mgd (294 cfs), 4.07 ft; Dec. 6 (9 p.m.) 390 mgd (603 cfs), 5.16 ft; Jan. 20 (9 p.m.) 330 mgd (511 cfs), 4.90 ft.

* Discharge measurement made on this day.
e Stage-discharge relation indefinite; discharge estimated on basis of records for nearby stations.
Note.--No gage-height record Jan. 17, 18, 21, 22, May 27 to June 30; discharge estimated on basis of records for nearby stations.

2260. North Halawa Stream near Aiea

Location.--Lat 21°23'45", long 157°53'35" (revised), on left bank 2.7 miles above confluence with South Halawa Stream and 2.7 miles northeast of Aiea Post Office.

Drainage area.--3.45 sq mi.

Records available.--August 1929 to June 1933, July 1953 to June 1958.

Gage.--Water-stage recorder. Altitude of gage is 30 ft (by barometer).

Average discharge.--7 years (1931-33, 1953-58), 4.83 mgd (7.47 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 350 mgd (542 cfs) Dec. 6 (gage height, 9.24 ft), from rating curve extended above 70 mgd; no flow at times.
1957-58: Maximum discharge during fiscal year, 910 mgd (1,410 cfs) Mar. 5 (gage height, 11.77 ft), from rating curve extended above 70 mgd; no flow at times.
1929-33, 1953-58: Maximum discharge, 4,300 mgd (6,650 cfs) Feb. 28, 1932 (gage height, 13.36 ft); no flow several times each year.

Remarks.--Records fair except those for periods of no gage-height record, which are poor.

Rating tables, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

July 1, 1956, to June 30, 1957				July 1, 1957, to June 30, 1958			
4.3	0	5.5	14.0	4.4	0	5.6	14.5
4.4	.05	5.8	24.5	4.6	.27	6.0	28.5
4.6	.33	6.2	44	4.8	1.08	6.5	52
4.8	1.30	6.6	70	5.0	2.7	7.0	83
5.0	3.1	7.5	144	5.2	5.4	8.0	174
5.2	6.3			5.4	9.3	9.0	305

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.74	1.63	0.91	0	0.04	4.3	0	0.52		0	0.55	
2	.29	.33	.33	0	0	1.52	0	.60		0	2.95	
3	.18	.45	.18	0	0	.76	0	.72		0	2.3	
4	.12	4.0	.13	5.8	0	.41	0	18.6		0	1.34	
5	.08	11.5	.10	.47	0	.24	0	24.5		0	.72	
6	.06	2.75	2.35	.10	0	17.1	0	15.6		0	.49	
7	.31	3.65	.44	.07	0	11.8	0	4.9		0	.33	
8	.35	31	.11	1.19	0	2.75	0	2.35		0	.22	
9	.60	29	.08	1.85	0	1.30	0	1.46		0	.13	
10	.16	4.1	.04	.56	0	.72	0	1.18		0	.10	
11	.10	1.70	0	.13	0	.41	0	9.4		0	.04	
12	.07	1.01	0	.09	0	.29	0	4.2		0	0	
13	1.39	.72	0	.06	0	.20	0	2.4		0	20	
14	2.55	.45	0	28	0	.14	0	1.30		0	1.43	
15	.85	.51	.46	10.8	.58	.34	.49	.72		.46	.50	
16	.86	.24	.40	9.4	5.8	.31	*.15	.41		1.14	.25	
17	.66	12.3	.10	*9.2	18.1	.16	.02	.29		15.0	.16	
18	1.59	10.8	.04	7.0	9.4	.22	.13	2.85		2.6	.10	
19	18.2	1.81	0	2.25	6.3	.14	15.3	1.30		.68	.05	
20	5.9	.84	0	1.13	5.3	2.3	37	.72		.33	.01	
21	2.35	.41	0	1.35	2.05	.40	119	.41		.22	0	
22	1.24	.24	0	.68	.95	.16	71	.29		.13	0	
23	.52	.18	0	.29	.49	.10	*22	.20		1.09	0	
24	.27	.41	0	.18	.27	.07	9.0	.14		1.53	0	
25	.39	.24	0	.11	8.0	.05	5.1	0		3.4	0	
26	.30	.11	0	.72	*.81	.01	2.5	0		2.15	0	
27	.14	.07	0	1.39	3.85	0	1.54	0		1.13	0	
28	.69	.05	0	.35	2.85	0	1.13	0		.89	0	
29	2.7	.03	0	.12	.49	0	.84	-		.52	0	
30	3.05	16.0	0	.11	13.0	0	.84	-------		.41	0	
31	4.5	2.35	-------	.08	-------	0	.60	-------		-------	0	
Total	51.23	138.88	5.67	83.48	78.28	46.82	286.64	93.26	0	31.68	31.67	0
Mean:												
mgd	1.65	4.48	0.189	2.69	2.61	1.51	9.25	3.33	0	1.06	1.02	0
cfs	2.55	6.93	0.292	4.16	4.04	2.34	14.3	5.15	0	1.64	1.58	0
Ac-ft	157	426	17	256	240	144	880	286	0	97	97	0

Calendar year 1956: Max 167 Min 0 Mean(mgd) 4.35 Mean(cfs) 6.73 Ac-ft 4,880
Fiscal year 1956-57: Max 119 Min 0 Mean(mgd) 2.32 Mean(cfs) 3.59 Ac-ft 2,600

Peak discharge (base, 300 mgd).--Dec. 6 (10 p.m.) 350 mgd (542 cfs), 9.24 ft.

* Discharge measurement made on this day.
Note.--No gage-height record Feb. 14-17, Feb. 19 to Mar. 6; discharge estimated on basis of records for Halawa Stream.

2260. North Halawa Stream near Aiea--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0	0.11	1.02		0	39	0.11	3.3	4.1	0	0.70	0
2	0	.11	.54		0	14.1	.03	1.40	1.40	0	.50	0
3	0	.07	1.14		0	5.2	0	.64	.58	0	1.10	0
4	0	0	.50		0	2.7	0	.43	.34	0	1.64	0
5	0	0	.29		0	1.20	0	.32	267	0	.90	0
6	0	0	.18		0	10.0	0	.22	*114	0	.64	0
7	0	*1.84	.11		18.7	7.5	0	.15	16.2	0	.47	0
8	0	*1.99	.02		1.28	2.15	0	.09	8.5	0	.20	0
9	0	1.08	0		4.3	1.20	0	.03	5.2	0	.07	0
10	0	.40	0		1.64	.80	0	0	3.55	0	0	0
11	0	.22	0		1.08	.58	0	0	2.5	0	.27	0
12	0	*.14	0		.32	.40	0	0	2.15	0	1.08	0
13	0	.06	0		.14	.29	0	0	1.72	0	1.02	0
14	1.22	0	0		.11	.37	0	0	1.40	0	.70	0
15	.68	.39	0		.06	1.14	0	0	1.33	0	.54	0
16	.14	.22	0		0	1.80	0	0	1.20	0	16.0	0
17	.06	.14	0		0	1.08	0	0	1.02	0	7.1	0
18	0	.07	0		0	.75	0	0	.80	0	3.4	0
19	0	0	0		0	7.0	0	0	.64	0	2.15	0
20	0	0	0		0	2.95	0	0	.50	0	1.80	0
21	0	0	0		16.3	18.4	0	0	.34	0	1.26	0
22	0	0	0		24.5	3.8	0	0	.27	0	.96	0
23	0	0	0		13.0	1.80	0	0	.15	0	.70	0
24	0	1.73	0		20.5	1.20	0	0	0	0	.37	0
25	0	5.6	0		8.1	1.76	0	0	0	0	.18	0
26	0	1.96	0		2.35	1.74	0	0	0	2.2	.04	0
27	0	.80	0		1.14	.80	0	0	0	16.4	0	0
28	.84	2.45	0		.70	.50	0	30.5	0	5.0	0	2.9
29	.37	3.90	0		.70	.34	.20	-	0	1.98	00	1.64
30	.17	2.70	0		3.5	*.22	18.0	-------	0	.96	0	.80
31	.17	2.15	-------		-------	.15	15.1	-------	0	-------	0	-------
Total	3.65	28.13	3.80	0	118.42	130.92	33.44	37.08	434.89	26.54	43.79	5.34
Mean:												
mgd	0.118	0.907	0.127	0	3.95	4.22	1.08	1.32	14.0	0.885	1.41	0.178
cfs	0.183	1.40	0.196	0	6.11	6.53	1.67	2.04	21.7	1.37	2.18	0.275
Ac-ft	11	86	12	0	363	402	103	114	1,330	81	134	16

Calendar year 1957: Max 119 Min 0 Mean(mgd) 1.99 Mean(cfs) 3.08 Ac-ft 2,230
Fiscal year 1957-58: Max 267 Min 0 Mean(mgd) 2.37 Mean(cfs) 3.67 Ac-ft 2,650

Peak discharge (base, 300 mgd).--Feb. 28 (7 a.m.) 369 mgd (571 cfs), 9.41 ft; Mar. 5 (10:30 p.m.) 910 mgd (1,410 cfs), 11.77 ft.

* Discharge measurement made on this day.

2270. Halawa Stream near Aiea

Location.--Lat 21°22'25", long 157°55'40" (revised), on right bank 0.7 mile southeast of Aiea Post Office and 6.2 miles northeast of Honolulu Post Office.

Drainage area.--8.78 sq mi (revised).

Records available.--April 1953 to June 1958.

Gage.--Water-stage recorder and concrete control. Datum of gage is 16.52 ft above mean sea level, datum of 1929.

Average discharge.--5 years, 7.68 mgd (11.9 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 760 mgd (1,180 cfs) Jan. 21 (gage height, 6.65 ft); minimum daily, 0.10 mgd (0.16 cfs) Jan. 8, 9.
1957-58: Maximum discharge during fiscal year, 2,300 mgd (3,560 cfs) Mar. 5 (gage height, 10.59 ft); minimum, 0.38 mgd (0.59 cfs) Apr. 19-27.
1953-58: Maximum discharge, that of Mar. 5, 1958; no flow at times.

Remarks.--Records good except those for periods of shifting control, which are fair, and those for periods of no gage-height record, which are poor. At times the Oahu Sugar Co. installs flashboards on the control diverting the entire flow for irrigation.

Revisions (fiscal years).--WSP 1449: 1955(M).

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.1	3.2	2.3	0.83	0.77	10.5	0.49	1.95	2.3	1.50	2.8	2.5
2	1.95	1.39	1.95	.77	.83	3.9	.38	1.95	2.65	*1.67	5.2	1.95
3	1.95	1.05	1.73	.66	1.28	3.0	.27	a1.80	1.61	1.95	5.6	1.84
4	1.73	1.39	1.50	4.6	.94	2.8	.25	a10.5	1.84	2.3	4.5	1.95
5	1.73	11.5	1.39	3.5	.94	2.65	.21	a40	3.0	3.35	3.2	2.5
6	1.84	4.8	2.5	2.5	.94	50	.16	a20	3.0	3.0	2.8	3.35
7	1.73	2.55	3.8	1.95	.94	34	.12	12.5	3.0	2.1	3.2	3.2
8	1.50	38	6.8	1.95	.94	10.1	.10	7.1	3.0	2.3	3.9	2.5
9	2.3	59	5.0	2.3	.83	7.9	a.10	5.0	2.3	3.35	4.1	1.84
10	3.0	6.8	2.8	2.3	.83	7.3	a2.6	3.5	1.73	3.35	3.9	1.61
11	3.7	4.1	2.3	1.95	.83	a6.4	*a2.3	10.7	1.61	3.2	2.8	1.73
12	2.8	3.35	2.3	1.84	.77	a5.8	1.95	7.9	1.73	3.35	1.95	2.1
13	*2.55	2.8	3.0	1.73	.72	a5.4	1.61	5.2	1.84	2.5	*22	2.5
14	3.7	2.3	2.8	11.8	.72	a5.2	1.84	3.7	1.95	1.95	5.2	2.65
15	3.0	1.95	1.61	38.5	.77	a5.0	1.84	2.8	1.95	4.0	4.3	2.5
16	1.73	1.61	1.61	13.6	9.3	a6.0	1.61	2.3	2.1	2.3	5.0	2.3
17	1.84	9.5	1.73	11.6	37.5	6.8	1.39	1.84	1.73	13.5	4.1	2.3
18	1.61	15.5	1.84	11.5	15.4	6.2	2.2	3.55	1.61	5.0	3.0	1.95
19	22.5	3.9	1.73	*5.3	12.9	5.4	23	1.84	1.73	2.3	2.3	2.3
20	11.9	3.2	1.73	2.8	8.2	6.6	93	1.50	2.3	1.50	2.3	2.3
21	3.9	2.5	1.61	2.1	4.5	5.8	350	1.28	2.8	1.28	1.84	1.95
22	2.65	1.95	1.39	1.39	1.95	4.8	*215	1.17	2.8	1.50	1.73	3.2
23	1.61	1.73	1.28	1.28	1.39	3.9	65	.94	2.3	2.5	1.95	3.7
24	1.39	1.50	1.28	1.50	2.65	3.2	24.5	.94	1.73	3.9	2.3	4.5
25	1.17	1.28	1.61	1.61	11.8	2.5	15.1	1.17	1.95	5.9	2.1	4.1
26	1.17	1.05	1.61	1.61	*2.7	1.95	a9.0	1.28	2.5	5.4	1.73	3.2
27	1.05	.77	1.50	1.95	3.25	1.61	a6.6	*1.28	2.3	3.2	1.61	3.35
28	.83	.66	1.39	1.39	6.3	1.28	a5.0	1.61	2.3	2.3	1.61	3.0
29	.83	*.49	1.28	1.05	1.73	.94	a4.0	-	2.3	1.95	1.95	2.8
30	3.5	14.9	1.05	.83	17.4	.77	3.2	-------	1.95	2.3	3.0	2.5
31	3.6	3.9	-------	.77	-------	.66	2.65	-------	1.73	-------	3.7	-------
Total	96.86	208.62	64.42	137.46	150.02	218.36	835.47	155.30	67.64	94.70	115.67	78.17
Mean:												
mgd	3.12	6.73	2.15	4.43	5.00	7.04	27.0	5.55	2.18	3.16	3.73	2.61
cfs	4.83	10.4	3.33	6.85	7.74	10.9	41.8	8.59	3.37	4.89	5.77	4.04
Ac-ft	297	640	198	422	460	670	2,560	477	208	291	355	240

Calendar year 1956: Max 389 Min 0.49 Mean(mgd) 8.76 Mean(cfs) 13.6 Ac-ft 9,830
Fiscal year 1956-57: Max 350 Min 0.10 Mean(mgd) 6.09 Mean(cfs) 9.42 Ac-ft 6,820

Peak discharge (base, 300 mgd).--Aug. 8 (11:30 p.m.) 315 mgd (487 cfs), 4.55 ft; Dec. 6 (9 p.m.) 488 mgd (755 cfs), 5.46 ft; Jan. 21 (6:30 a.m.) 760 mgd (1,180 cfs), 6.65 ft.

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for North Halawa and nearby streams.

2270. Halawa Stream near Aiea--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.3	1.84	5.0	3.5	3.9	64	1.50	5.6	16.1	0.61	0.66	1.39
2	2.65	1.85	2.95	3.9	2.8	41	1.17	5.8	7.7	.61	.55	1.39
3	2.65	4.4	2.5	4.1	1.05	16.7	1.05	4.3	5.2	.61	.55	1.39
4	2.5	5.8	3.35	5.4	1.44	10.8	.94	3.5	3.9	.55	.55	2.3
5	2.65	6.4	3.35	4.8	1.28	7.3	.94	3.0	*807	.55	.49	1.95
6	3.35	5.0	2.1	4.8	1.39	34.5	1.05	2.65	492	.55	.55	*1.84
7	3.5	4.7	1.73	4.8	18.5	21.5	1.39	2.5	38	.61	.55	2.5
8	3.9	3.9	1.17	5.0	7.9	6.6	1.84	2.3	16.1	.66	.55	2.65
9	3.9	4.3	1.28	5.0	7.9	3.7	2.1	1.61	9.6	.55	.49	3.9
10	3.5	3.0	1.95	3.5	4.5	2.5	2.5	.94	6.2	.49	.49	3.35
11	4.1	2.65	3.2	3.35	5.2	1.84	2.3	.94	4.3	.49	.49	3.0
12	3.9	2.5	4.1	4.3	*5.2	1.61	1.84	.83	3.35	.49	.49	2.65
13	3.5	2.5	4.3	5.0	4.2	1.50	1.61	.77	*2.65	.49	.49	2.5
14	3.35	2.95	5.4	4.5	1.73	1.39	1.73	.72	2.1	.49	.49	2.8
15	2.8	4.1	4.1	5.0	1.84	1.84	1.73	.66	1.73	.49	.49	3.35
16	2.65	5.1	3.5	3.9	1.73	4.5	2.3	.61	1.50	.49	10.4	3.0
17	3.35	4.0	4.8	3.9	1.39	3.2	2.1	.61	1.39	.49	6.1	3.0
18	2.8	2.85	5.4	3.7	1.39	*2.8	2.65	.55	1.39	.44	2.3	2.5
19	2.8	3.0	4.8	2.8	1.84	9.4	2.1	.55	1.28	.38	1.17	1.95
20	2.8	3.95	5.8	3.5	2.1	7.5	2.1	.55	1.17	.38	.83	1.95
21	2.8	4.6	5.4	3.9	26	28	2.3	.55	1.17	.38	.77	1.84
22	3.0	4.5	2.8	4.8	28.5	8.9	3.35	1.03	1.05	.38	.72	1.84
23	2.8	3.45	*2.65	5.0	15.4	4.8	2.8	1.95	.83	.38	.66	2.1
24	3.0	3.0	4.5	5.6	23	3.2	2.5	1.95	.83	.38	.66	2.8
25	2.8	8.1	5.0	6.0	12.7	3.5	2.1	1.61	.77	.38	.72	3.7
26	3.35	5.6	5.2	5.2	4.8	3.5	3.0	1.39	.72	.38	.55	4.8
27	3.5	3.5	4.5	3.0	2.65	2.5	3.0	1.39	.72	10.7	.55	4.8
28	7.6	3.9	3.5	2.8	1.95	1.73	*3.7	96	.72	2.5	.94	5.0
29	6.0	5.7	3.2	5.0	1.61	1.39	3.35	-	.66	1.28	1.28	3.2
30	4.0	6.6	2.3	5.4	3.8	1.39	7.8	-------	.66	.94	1.50	3.5
31	*3.05	7.5	-------	3.9	-------	1.61	11.3	-------	.66	-------	1.39	-------
Total	104.85	131.24	109.83	135.35	197.69	304.70	80.14	144.86	1,431.45	28.12	38.42	82.94
Mean:												
mgd	3.38	4.23	3.66	4.37	6.59	9.83	2.59	5.17	46.2	0.937	1.24	2.76
cfs	5.23	6.54	5.66	6.76	10.2	15.2	4.01	8.00	71.5	1.45	1.92	4.27
Ac-ft	322	403	337	415	607	935	246	445	4,390	86	118	255

Calendar year 1957: Max 350 Min 0.10 Mean(mgd) 6.39 Mean(cfs) 9.89 Ac-ft 7,150
Fiscal year 1957-58: Max 807 Min 0.38 Mean(mgd) 7.64 Mean(cfs) 11.8 Ac-ft 8,560

Peak discharge (base, 300 mgd).--Feb. 28 (7:30 a.m.) 558 mgd (863 cfs), 5.81 ft; Mar. 5 (12 p.m.) 2,300 mgd (3,560 cfs), 10.59 ft.

* Discharge measurement made on this day.

Note.--Shifting-control method used July 31 to Aug. 3, Aug. 23 to Nov. 13, Jan. 20 to Feb. 1, June 14-30.

2280. Moanalua Stream near Honolulu

Location.--Lat 21°22'50", long 157°52'20", on left bank 5 miles upstream from mouth and 5 miles north of Honolulu Post Office.

Drainage area.--2.73 sq mi (revised).

Records available.--June 1926 to June 1958.

Gage.--Water-stage recorder and concrete weir. Datum of gage is 339.12 ft above mean sea level (city and county of Honolulu bench mark).

Average discharge.--32 years, 2.04 mgd (3.16 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 385 mgd (596 cfs) Nov. 30 (gage height, 4.73 ft), from rating curve extended above 71 mgd as explained below; no flow for many days.

1957-58: Maximum discharge during fiscal year, 980 mgd (1,520 cfs) Mar. 5 (gage height, 7.42 ft), from rating curve extended above 71 mgd as explained below; no flow for many days.

1926-58: Maximum discharge, 2,960 mgd (4,580 cfs) Nov. 18, 1930 (gage height, 11.58 ft), from rating curve extended above 71 mgd by test on model of station site; no flow at times each year.

Remarks.--Records good except those for period of no gage-height record, which are fair. Continuous records of rainfall are obtained at station.

Revisions (fiscal years).--WSP 905: Drainage area. WSP 935: 1931(M).

Rating tables, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

July 1, 1956, to Mar. 5, 1958				Mar. 6 to June 30, 1958			
-0.2	0	1.1	13.8	-0.2	0	1.1	13.3
0.0	.03	1.5	34	0.0	.03	1.5	29
.2	.30	2.0	72	.2	.30	2.0	61
.4	1.13	3.0	165	.4	1.13	2.5	105
.6	2.9	4.0	283	.6	2.85	3.0	155
.8	5.8			.8	5.7		

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.02	0	0.02	0	0	4.3	0	0.02		0	0	
2	.02	0	0	0	0	1.02	0	.03		0	0	
3	0	0	0	0	0	.36	0	.12		0	0	
4	0	0	0	0	0	.08	0	8.1		0	0	
5	0	4.1	0	0	0	.03	0	14.2		0	0	
6	0	.60	0	0	0	12.2	0	11.2		0	0	
7	0	.07	0	0	0	6.6	0	3.55		0	0	
8	0	28	0	0	0	1.42	0	1.68		0	0	
9	0	13.7	0	0	0	.63	0	.81		0	0	
10	0	1.94	0	0	0	.23	0	.41		0	0	
11	0	.57	0	0	0	.08	0	1.74		0	0	
12	0	.14	0	0	0	.04	0	1.89		0	3.75	
13	0	.02	0	0	0	.02	0	.81		0	7.5	
14	0	.01	0	12.2	0	.02	0	.44		0	.38	
15	0	0	0	7.2	0	.01	0	.25		0	.02	
16	0	0	0	2.0	2.25	0	0	.12		0	0	
17	0	3.85	0	*2.1	5.8	0	0	.06		1.76	0	
18	0	4.8	0	4.6	5.1	0	0	a.05		.26	0	
19	2.65	.45	0	.73	4.2	0	8.0	a.04		0	0	
20	.40	.06	0	.11	2.8	0	22	a.03		0	0	
21	.18	.02	0	.02	.97	0	94	.03		0	0	
22	.06	.01	0	.02	.18	0	57	.02		0	0	
23	0	0	0	0	.02	0	*20	.01		0	0	
24	0	0	0	0	.01	0	7.4	0		0	0	
25	0	0	0	0	4.1	0	3.85	0		0	0	
26	0	0	0	0	*.17	0	1.74	0		0	0	
27	0	0	0	0	.62	0	.81	0		0	0	
28	0	0	0	0	1.00	0	.38	0		0	0	
29	0	0	0	0	.04	0	.17	-		0	0	
30	0	7.3	0	0	18.4	0	.06	-------		0	0	
31	0	*.38	-------	0	-------	0	.03	-------		-------	0	
Total	3.33	66.02	0.02	28.98	45.66	27.04	215.44	45.61	0	2.02	11.65	0
Mean:												
mgd	0.107	2.13	0.001	0.935	1.52	0.872	6.95	1.63	0	0.067	0.376	0
cfs	0.166	3.30	0.002	1.45	2.35	1.35	10.8	2.52	0	0.104	0.582	0
Ac-ft	10	203	0.06	89	140	83	661	140	0	6.2	36	0

Calendar year 1956: Max 146 Min 0 Mean(mgd) 2.17 Mean(cfs) 3.36 Ac-ft 2,440
Fiscal year 1955-56: Max 94 Min 0 Mean(mgd) 1.22 Mean(cfs) 1.89 Ac-ft 1,370

Peak discharge (base, 150 mgd).--Aug. 8 (11 p.m.) 232 mgd (359 cfs), 3.61 ft; Oct. 14 (9 p.m.) 165 mgd (255 cfs), 3.04 ft; Nov. 30 (5:30 p.m.) 385 mgd (596 cfs), 4.73 ft; Dec. 6 (8 p.m.) 283 mgd (438 cfs), 4.04 ft; Jan. 21 (7 a.m.) 232 mgd (359 cfs), 3.55 ft.

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for nearby streams and recorded range in stage.

2280. Moanalua Stream near Honolulu--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1		0	0.12		0	30	.02	0.71	2.45	0	0	
2		0	.02		0	12.2	.02	.05	.74	0	0	
3		0	0		[illegible]	4.7	.01	.09	.25	0	0	
4		0	0		0	2.7[illegible]	.01	.05	.08	0	0	
5		0	0		0	1.22	0	.02	281	0	0	
6		0	0		0	13.2	0	.01	*141	0	0	
7		0	0		*13.7	6.1	0	0	16.4	0	0	
8		0	0		.17	2.0	0	0	6.7	0	0	
9		0	0		1.52	1.01	0	0	3.15	0	0	
10		0	0		.00	.55	0	0	1.62	0	0	
11		0	0		0	.25	0	0	.96	0	0	
12		0	0		0	.08	0	0	.59	0	0	
13		0	0		0	.04	0	0	.38	0	0	
14		0	0		0	.02	0	0	.17	0	0	
15		0	0		0	1.64	0	0	.07	0	0	
16		0	0		0	1.98	0	0	.04	0	.98	
17		0	0		0	*.71	0	0	.03	0	.11	
18		0	0		0	.35	0	0	.02	0	0	
19		0	0		0	4.0	0	0	0	0	0	
20		0	0		.04	2.2	0	0	0	0	0	
21		0	0		3.6	12.2	0	0	0	0	0	
22		0	0		18.6	2.5	0	0	0	0	0	
23		0	0		10.0	1.38	0	0	0	0	0	
24		0	0		14.6	.81	0	0	0	0	0	
25		0	0		5.8	1.69	0	0	0	0	0	
26		0	0		1.89	1.07	0	0	0	0	0	
27		0	0		.71	.63	0	0	0	4.8	0	
28		0	0		.25	.38	0	29.5	0	.51	0	
29		0	0		.12	.19	0	-	0	.02	0	
30		.98	0		.56	.07	6.1	-------	0	0	0	
31		1.18	-------		-------	.03	3.65	-------	0	-------	0	
Total	0	2.16	0.14	0	71.66	106.25	9.81	30.63	455.65	5.33	1.09	0
Mean:												
mgd	0	0.070	0.005	0	2.39	3.43	0.316	1.09	14.7	0.178	0.035	0
cfs	0	0.108	0.008	0	3.70	5.31	0.489	1.69	22.7	0.275	0.054	0
Ac-ft	0	6.6	0.4	0	220	326	30	94	1,400	16	3.3	0

Calendar year 1957: Max 94 Min 0 Mean(mgd) 1.25 Mean(cfs) 1.93 Ac-ft 1,400
Fiscal year 1957-58: Max 281 Min 0 Mean(mgd) 1.87 Mean(cfs) 2.89 Ac-ft 2,100

Peak discharge (base, 150 mgd).--Dec. 6 (5:30 p.m.) 186 mgd (288 cfs), 3.25 ft; Feb. 28 (8 a.m.) 208 mgd (322 cfs), 3.44 ft; Mar. 5 (11 p.m.) 980 mgd (1,520 cfs), 7.42 ft.

* Discharge measurement made on this day.

2290. Kalihi Stream near Honolulu

Location.--Lat 21°22'00", long 157°50'50" (revised), on right bank at Kioi Pool, 0.4 mile upstream from Catholic Orphanage and 4.1 miles north of Honolulu Post Office.

Drainage area.--2.61 sq mi (revised).

Records available.--September 1913 to June 1958.

Gage.--Water-stage recorder and concrete control. Datum of gage is 464.40 ft above mean sea level, datum of 1929. Prior to Oct. 12, 1923, water-stage recorder at same site at datum 2.00 ft lower.

Average discharge.--41 years (1916-20, 1921-58), 4.50 mgd (6.96 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 315 mgd (487 cfs) Jan. 21 (gage height, 6.41 ft); minimum not determined.
1957-58: Maximum discharge during fiscal year, 415 mgd (642 cfs) Mar. 5 (gage height, 6.81 ft); minimum recorded, 0.52 mgd (0.80 cfs) Aug. 23, Oct. 4-10, Nov. 4, 5.
1913-58: Maximum discharge, about 5,400 mgd (about 8,400 cfs) Nov. 18, 1930, by observing, on model of station site, the hydraulic conditions which would produce flood-marks of 13.8 ft in gage shelter; minimum, 0.06 mgd (0.09 cfs) Oct. 22, 1933.

Remarks.--Records poor. Water for domestic use diverted from stream above station.

Revisions (fiscal years).--WSP 795: 1921-30(M), 1932(M). WSP 1399: 1931(M).

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.4				a1.69		1.09	a4.4				0.38
2	3.1				a1.48		1.09	a4.4				.38
3	2.8				a1.48		1.09	a4.4				.44
4	2.65				a1.28		a1.18	a8.0				.44
5	2.25				a1.28		a1.18	a13.8				.52
						a2.0						
6					a1.28		a1.18	a8.2				
7					a1.28		.91	a5.4		*a1.0		
8					a1.18		1.28	a4.4				
9				a1.0	a1.18		1.09	a4.4				
10					a1.28		a2.0	a4.4				
									a1.5			
11					a1.18		a1.48	a6.7				
12					a1.18		a1.18	a6.7				
13					a1.18		a1.18	a5.6				
14					a1.28		a1.18	a3.75				
15					a1.38		a1.18	a4.6		3.1		
		a2.5	a2.0								a0.7	
16					a1.80		a1.18	a3.75		2.0		
17				a10.1	a2.0		a1.18	a3.75		4.2		a.4
18				*a3.9	a3.25		*1.18	a4.6		1.38		
19	a2.0			a3.55	a2.95	a1.0	19.5	a2.5		1.69		
20				a3.1	a2.95		34	*a2.5		1.18		
21				a3.1	a2.95		95	a2.5		1.00		
22				a2.65	a2.95		57	a2.5		a.82	(*)	
23				a2.25	a2.95		a19.5	a2.5		a2.65		
24				a2.25	a2.95		a26	a2.15		a2.5		
25				a2.0	a2.95		a12.4	a2.15		a2.0		
26				a1.91	*a2.95	a1.38	a8.0	a2.15	a1.0	a1.60		
27				a1.91	a3.25	a1.38	a7.1	a2.15		a1.38		*a.51
28				a1.91	a3.0	a1.38	a6.2	a2.15		a1.09		a.59
29				a1.91	a3.25	a1.28	a6.2	-		a1.00		a.59
30				a1.80	a3.25	a1.28	a5.2	-------		a1.00		a.59
31				a1.80	-------	a1.18	a4.2	-------		-------		-------
Total	66.20	77.5	60.0	60.14	63.01	42.88	322.13	124.50	41.0	42.59	21.7	12.84
Mean:												
mgd	2.14	2.50	2.00	1.94	2.10	1.38	10.4	4.45	1.32	1.42	0.700	0.428
cfs	3.31	3.87	3.09	3.00	3.25	2.14	16.1	6.89	2.04	2.20	1.08	0.662
Ac-ft	203	238	184	185	193	132	989	382	126	131	67	39

Calendar year 1956: Max 97 Min - Mean(mgd) 4.50 Mean(cfs) 6.96 Ac-ft 5,040
Fiscal year 1956-57: Max 95 Min - Mean(mgd) 2.56 Mean(cfs) 3.96 Ac-ft 2,870

Peak discharge (base, 400 mgd).--No peak above base.

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for Nuuanu and Haiku Streams.

2290. Kalihi Stream near Honolulu--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	a1.18	a0.91	a1.69	a0.74	a1.09	a11.8	a2.4	2.4	2.95	1.48	1.18	1.48
2	a1.28	a.74	a1.48	a.74	a.74	a6.5	a2.15	1.58	1.80	1.48	2.15	1.38
3	a1.18	a.91	a1.48	a.66	a.59	a5.0	a1.91	1.38	1.38	1.28	2.15	1.28
4	a1.58	a1.09	a1.80	a.52	a.52	a4.1	a1.80	1.28	1.28	1.09	1.69	*1.48
5	a1.80	a1.09	a1.69	.52	a.52	a3.4	a1.69	1.28	126	1.09	1.28	1.48
6	a1.38	a1.00	1.58	.52	a.74	a11.5	a1.69	1.18	a66	.91	1.28	1.28
7	a1.18	a1.80	1.38	.52	a10.4	a5.4	a1.69	1.18	14.0	1.58	1.91	1.28
8	a1.09	a1.69	1.28	.52	a2.4	a3.1	a1.58	1.09	9.7	.82	1.69	1.28
9	a1.09	*a1.1	1.18	.52	a1.91	a2.8	a2.0	1.09	7.6	.82	1.58	2.65
10	a1.00	a1.00	1.09	.52	a1.58	a2.65	a1.69	1.00	5.8	.82	1.91	2.4
11	a1.00	a1.00	1.18	a.59	a1.38	a2.15	a1.58	1.00	5.4	.82	1.69	2.4
12	a1.00	a.91	1.18	a.59	a1.18	a1.91	a1.58	.91	5.0	.82	1.69	2.95
13	a1.00	a.91	1.38	a.59	a.91	a1.80	a1.48	.91	4.2	.82	a1.58	2.0
14	a2.4	a1.09	1.69	a1.28	a.82	a1.58	a1.38	.91	3.9	*.74	a2.0	1.58
15	a1.48	a2.5	1.18	a.82	a.74	a2.8	a1.28	.91	3.55	a.74	a2.25	1.48
16	a1.09	*a.98	1.18	a.74	a.74	a2.15	a1.28	.91	3.25	a1.18	a5.6	1.38
17	a1.00	a1.00	1.09	a.74	a.66	*a2.6	a1.28	.91	2.95	a1.38	a3.55	1.38
18	a.91	a1.00	2.0	a.66	a.66	a1.58	a1.18	.82	2.8	a1.18	a2.95	1.28
19	a.91	1.09	.82	a.66	a.66	a4.1	a1.09	*.74	2.65	a.82	a2.5	1.18
20	a.82	.74	.74	a.66	a.91	a3.4	a1.18	.82	2.5	a.82	a2.15	1.09
21	a.82	.66	a.66	a.66	a9.2	a4.8	a1.18	.82	2.25	a.74	a1.91	1.09
22	a.82	.59	a.66	a.66	a6.9	a3.25	a1.09	.82	2.15	a.82	a1.91	1.09
23	a1.00	.52	a.66	a.66	a3.4	a2.65	a1.09	.91	2.15	a.82	a1.80	1.38
24	a1.00	a9.9	a.66	a.66	a6.0	a2.8	a1.00	.82	*1.91	a.82	a1.69	1.18
25	a.82	a6.0	a.66	a.59	a7.8	a2.8	a1.00	*.74	1.69	a.74	a1.58	1.18
26	a1.00	a3.75	a.66	a.59	a9.7	a3.25	a.90	.66	1.58	a.91	a1.58	1.38
27	a1.00	a2.25	a.59	a.59	a6.5	a2.95	*a.80	1.09	2.15	a3.9	a1.48	1.18
28	a.91	a1.80	a.59	a.59	a4.6	a2.8	a1.91	17.3	a2.15	a3.4	a1.48	2.95
29	a.82	a2.25	a.66	a.59	a4.2	a2.25	4.1	-	a2.15	a1.80	1.48	1.80
30	a.91	a1.91	a.74	a.82	a3.4	a2.15	10.4	-------	a2.14	a1.28	1.48	1.69
31	a1.09	a1.80	-------	a1.38	-------	a2.15	4.8	-------	1.48	-------	1.48	-------
Total	34.56	53.98	33.63	20.90	90.85	112.17	60.18	45.46	294.52	35.92	60.65	47.63
Mean:												
mgd	1.11	1.74	1.12	0.674	3.03	3.62	1.94	1.62	9.50	1.20	1.96	1.59
cfs	1.72	2.69	1.73	1.04	4.69	5.60	3.00	2.51	14.7	1.86	3.03	2.96
Ac-ft	106	166	103	64	279	344	185	140	904	110	186	146

Calendar year 1957: Max 95 Min 0.38 Mean(mgd) 2.50 Mean(cfs) 3.87 Ac-ft 2,800
Fiscal year 1957-58: Max 126 Min 0.52 Mean(mgd) 2.44 Mean(cfs) 3.78 Ac-ft 2,730

Peak discharge (base, 400 mgd).--Mar. 5 (10 a.m.) 415 mgd (642 cfs), 6.81 ft.

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of intermittent observations and records for Nuuanu and Moanalua Streams.

2320. Nuuanu Stream below reservoir 2 wasteway, near Honolulu

Location.--Lat 21°20'55", long 157°49'40", on right bank near Pali Road in upper Nuuanu Valley, 0.2 mile downstream from reservoir 2 wasteway and 3.5 miles northeast of Honolulu Post Office.

Drainage area.--3.35 sq mi (revised).

Records available.--October 1913 to June 1958.

Gage.--Water-stage recorder and sharp-crested weirs. Datum of gage is 631.71 ft above mean sea level, datum of 1929. Prior to Sept. 7, 1915, staff gage at same site at datum 0.03 ft lower. Sept. 7, 1915, to Apr. 4, 1918, staff gage at same site and datum.

Average discharge.--39 years (1917-20, 1922-58), 4.86 mgd (7.52 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 234 mgd (362 cfs) Oct. 14 (gage height, 4.26 ft); minimum, 0.44 mgd (0.68 cfs) June 10, 26.

1957-58: Maximum discharge during fiscal year, 476 mgd (736 cfs) Mar. 5 (gage height, 5.06 ft), from rating curve extended above 300 mgd as explained below; minimum, 0.31 mgd (0.48 cfs) Nov. 4.

1913-58: Maximum discharge, 4,520 mgd (6,990 cfs) Jan. 16, 1921 (gage height, 8.74 ft, from floodmarks), from rating curve extended above 300 mgd by test on model of station site; minimum, 0.06 mgd (0.09 cfs) Sept. 10, 11, 1925.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Reservoirs 2, 3, and 4 (capacities, 21, 34, and 1,630 acre-ft, respectively) regulate flow. Honolulu Board of Water Supply diverts ground water from tunnels in drainage area.

Revisions (fiscal years).--WSP 985: 1921-35(M).

Rating table, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

0.2	0.38	1.3	9.7
.3	.69	1.6	19.0
.5	1.45	2.0	37.5
.7	2.4	3.0	105
.9	3.5	4.0	195
1.1	5.2		

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.4	2.35	2.85	1.76	4.1	4.0	2.2	7.2	3.1	1.63	2.65	1.21
2	3.35	2.25	2.85	1.72	3.85	3.1	2.2	7.7	2.95	1.58	2.1	1.17
3	3.4	2.65	2.8	1.81	3.8	2.95	2.2	8.4	2.9	1.76	1.72	1.17
4	3.15	3.3	2.55	2.9	3.9	2.8	2.15	12.6	2.85	*2.2	1.93	1.17
5	3.15	7.0	2.9	1.81	2.95	2.8	2.1	13.8	2.85	1.58	1.50	1.01
6	3.1	2.7	3.95	1.72	2.3	13.8	2.05	8.7	2.6	1.54	1.50	1.17
7	3.05	2.35	2.4	1.81	2.3	4.5	2.0	6.6	2.3	1.58	1.50	1.09
8	3.05	18.5	2.25	1.64	1.95	3.2	2.3	6.4	2.45	1.76	1.41	1.05
9	3.15	10.0	2.25	2.9	1.95	3.05	2.15	5.8	2.4	1.58	1.33	1.05
10	2.9	3.35	2.2	1.81	2.0	3.05	2.3	5.6	2.5	1.54	1.33	.91
11	2.9	3.0	2.05	1.76	1.95	3.0	2.4	9.2	2.5	1.50	1.37	.98
12	2.95	2.9	2.15	1.72	2.2	2.95	2.0	7.0	2.8	1.41	9.0	1.01
13	3.35	2.9	2.15	2.1	2.4	2.9	2.05	8.0	2.4	1.37	5.5	1.17
14	3.7	3.6	2.25	31.5	2.55	2.9	2.25	11.0	2.3	1.45	1.81	1.13
15	2.95	2.95	2.2	7.0	3.4	2.9	3.25	15.3	2.25	5.0	1.63	1.25
16	3.15	2.75	2.25	4.6	4.9	3.1	2.4	14.7	2.3	1.90	1.58	1.13
17	2.8	11.7	2.1	10.2	9.3	2.75	2.15	14.4	2.3	2.25	1.63	1.05
18	3.0	5.3	1.90	6.7	5.8	2.8	2.3	14.4	2.5	1.72	1.50	1.05
19	2.9	3.15	2.0	3.6	4.6	3.3	13.5	13.4	2.2	2.15	1.50	1.05
20	2.5	2.7	1.95	3.05	3.6	3.35	31.5	*12.5	2.15	1.63	1.41	1.01
21	2.6	2.8	2.0	3.05	3.1	2.85	61	8.4	2.1	1.50	1.45	.98
22	2.55	2.8	2.05	2.6	2.9	2.75	38.5	3.75	2.0	1.45	1.45	.94
23	2.95	2.85	2.1	*2.6	*2.7	2.6	15.3	3.55	2.0	4.9	1.37	.94
24	2.6	2.9	1.81	2.5	3.25	2.6	21	3.8	1.90	2.5	1.45	.94
25	2.85	2.8	1.90	2.65	3.7	2.55	13.4	3.4	1.86	2.3	1.45	1.13
26	2.6	2.7	1.95	5.1	2.7	2.35	9.7	3.35	1.81	1.68	1.41	.76
27	2.4	2.7	1.81	4.0	4.4	2.4	8.2	3.2	1.76	1.76	1.37	.98
28	2.7	2.7	1.81	3.6	3.1	2.35	7.2	3.1	1.72	1.81	1.37	1.17
29	2.6	2.8	1.86	3.55	2.7	2.3	8.2	-	1.68	1.50	1.33	1.05
30	2.35	6.2	1.81	4.5	14.7	2.25	6.8	-------	1.68	1.71	1.33	1.01
31	2.55	3.4	-------	3.75	-------	2.25	6.2	-------	1.68	-------	1.17	
Total	90.65	130.05	67.10	130.01	113.05	100.45	280.95	235.25	70.79	58.24	59.05	31.73
Mean:												
mgd	2.92	4.20	2.24	4.19	3.77	3.24	9.06	8.40	2.28	1.94	1.90	1.06
cfs	4.52	6.50	3.47	6.48	5.83	5.01	14.0	13.0	3.53	3.00	2.94	1.64
Ac-ft	278	399	206	399	347	308	862	722	217	179	181	97

Calendar year 1956 : Max 100 Min 1.64 Mean(mgd) 5.74 Mean(cfs) 8.88 Ac-ft 6,440
Fiscal year 1956-57 : Max 61 Min 0.76 Mean(mgd) 3.75 Mean(cfs) 5.80 Ac-ft 4,200

Peak discharge (base, 150 mgd).--Oct. 14 (9 p.m.) 234 mgd (362 cfs), 4.26 ft; Jan. 20 (9 p.m.) 218 mgd (337 cfs), 4.20 ft.

* Discharge measurement made on this day.

2320. Nuuanu Stream below reservoir 2 wasteway, near Honolulu--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.91	0.87	1.17	0.73	0.69	12.7	3.3	2.55	2.15	3.15	2.15	1.86
2	1.05	.73	1.21	.69	.73	7.2	2.9	2.25	1.90	3.1	2.7	1.72
3	.94	.90	1.13	.66	.60	5.6	2.7	2.15	1.63	3.15	2.55	1.58
4	1.27	.90	1.01	.63	.47	4.6	2.5	2.45	1.58	3.05	2.25	1.76
5	1.44	1.0	.94	.63	.47	4.0	2.5	2.1	125	2.9	2.15	1.68
6	1.01	2.1	.98	.60	.66	13.2	2.4	2.0	77	2.9	1.90	1.58
7	.94	1.7	.87	.60	10.8	5.8	2.3	2.0	15.0	2.65	2.25	1.54
8	.94	1.7	.87	.60	1.29	3.8	2.6	1.90	9.4	2.75	2.3	1.58
9	.83	1.11	.87	.57	3.0	3.45	3.1	1.86	7.2	2.7	2.1	2.4
10	.98	.87	.83	.57	1.33	3.85	3.0	1.81	6.0	2.6	2.4	2.45
11	1.05	.87	.98	.60	1.25	3.6	2.5	1.76	5.4	2.6	2.2	2.0
12	.91	.64	.74	.54	1.13	3.35	2.3	1.72	5.2	2.5	2.15	2.2
13	.94	.71	.84	.66	.87	3.45	2.2	1.68	5.0	2.5	2.0	1.72
14	2.55	1.15	1.00	.57	.83	3.5	2.1	1.63	4.9	2.45	2.0	1.58
15	.98	1152	.87	1.09	.83	5.0	2.1	1.63	4.8	2.4	2.7	1.72
16	.91	.91	.80	.63	.80	4.0	2.0	1.58	4.6	2.6	8.1	1.90
17	.87	.91	.80	.69	.80	3.6	2.0	1.58	4.6	2.9	3.9	2.05
18	.87	.94	.83	.66	.80	3.45	2.4	1.54	4.5	2.35	2.75	2.05
19	.91	.83	.87	.54	.76	6.4	2.1	1.54	4.2	2.35	2.3	2.05
20	.87	.76	.73	.63	.88	4.1	2.0	1.58	4.0	2.45	2.25	2.1
21	.80	1.07	.69	.74	9.7	6.4	1.9	1.50	4.0	2.15	2.1	2.15
22	.76	.50	.69	.54	6.0	3.75	2.0	1.50	4.0	2.1	2.05	2.3
23	.90	.65	.66	.54	3.75	3.6	2.2	1.54	3.8	2.1	2.0	2.3
24	1.01	9.1	.69	.67	6.9	3.6	2.0	1.41	3.7	2.05	2.0	2.15
25	.83	5.4	.69	.57	4.0	3.8	1.8	1.37	3.6	2.0	2.05	2.3
26	.94	1.93	.73	.63	2.95	4.0	1.7	1.33	3.7	2.1	2.0	2.55
27	.99	1.33	.76	.69	2.7	3.4	1.6	1.58	4.1	6.2	1.90	2.3
28	.98	1.21	.80	.56	2.7	3.45	2.25	6.7	3.4	3.3	1.86	3.45
29	.78	1.87	.76	.56	2.7	3.15	3.35	-	3.75	2.5	1.81	2.55
30	.95	1.72	.97	.54	3.35	3.1	10.2	-------	3.4	2.3	1.81	2.25
31	1.16	1.45	-------	1.12	-------	3.0	4.4	-------	3.35	-------	1.81	-------
Total	31.27	47.35	25.78	20.05	73.74	145.90	82.40	54.24	334.86	80.85	74.49	61.82
Mean:												
mgd	1.01	1.53	0.859	0.647	2.46	4.71	2.66	1.94	10.8	2.70	2.40	2.06
cfs	1.56	2.37	1.33	1.00	3.81	7.29	4.12	3.00	16.7	4.18	3.71	3.19
Ac-ft	96	145	79	62	226	448	253	166	1,030	248	229	190

Calendar year 1957 : Max 61 Min 0.47 Mean(mgd) 2.96 Mean(cfs) 4.58 Ac-ft 3,310
Fiscal year 1957-58 : Max 125 Min 0.47 Mean(mgd) 2.83 Mean(cfs) 4.38 Ac-ft 3,170

Peak discharge (base, 150 mgd).--Mar. 5 (12 p.m.) 476 mgd (736 cfs), 5.06 ft.

* Discharge measurement made on this day.
Note.--No gage-height record Aug. 2-9, Dec. 31 to Jan. 27; discharge estimated on basis of records for West Branch Manoa Stream.

2390. East Branch Manoa Stream near Honolulu

Location.--Lat 21°19'50", long 157°48'10", on right bank just downstream from highway bridge, 400 ft upstream from confluence with West Branch and 4.2 miles northeast of Honolulu Post Office.

Drainage area.--1.06 sq mi (revised).

Records available.--May 1913 to January 1921, August 1925 to June 1958.

Gage.--Water-stage recorder and combination Parshall flume and concrete weir. Datum of gage is 294.50 ft above mean sea level (Honolulu Board of Water Supply bench mark). Prior to May 20, 1914, staff gage at site 200 ft upstream at different datum. May 20, 1914, to Jan. 16, 1921, water-stage recorder at site 50 ft upstream at different datum. Aug. 18, 1925, to Oct. 18, 1933, water-stage recorder at present site at datum 0.41 ft higher.

Average discharge.--39 years (1913-20, 1926-58), 3.15 mgd (4.87 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 395 mgd (611 cfs) Oct. 14 (gage height, 3.95 ft), from rating curve extended above 28 mgd by test on model of station site; minimum, 1.44 mgd (2.23 cfs) June 11-14, 21-24, 26, 27.

1957-58: Maximum discharge during fiscal year, 650 mgd (1,010 cfs) Mar. 5 (gage height, 4.67 ft), from rating curve extended above 28 mgd as explained above; minimum daily, 1.36 mgd (2.10 cfs) Jan. 27, Feb. 24-26.

1913-21, 1925-58: Maximum gage height, 10.4 ft Jan. 16, 1921, from floodmarks, site and datum then in use (discharge, 2,000 mgd or 3,090 cfs, estimated from rating curve extended above 37 mgd); minimum discharge, 0.4 mgd (0.6 cfs) June 7, 8, 1926.

Remarks.--Records good for 1956-57 except those for periods of fragmentary or no gage-height record, which are fair; records fair for 1957-58 except that for period of no gage-height record, which are poor. Honolulu Board of Water Supply at times diverts a small amount of ground water from tunnels in drainage area.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.85	3.25	3.0	2.65	2.7	3.65	1.95	2.85	2.45	1.74	4.4	1.59
2	2.8	2.7	2.7	2.45	2.6	2.8	1.95	2.8	2.45	1.74	3.9	1.59
3	2.8	3.4	2.6	2.35	2.5	2.7	2.05	2.85	2.45	2.05	3.15	1.52
4	3.45	5.7	2.5	3.4	2.45	2.5	2.05	9.4	2.45	2.05	4.3	1.59
5	2.8	f9.0	4.0	2.45	2.35	2.45	2.05	10.7	2.45	1.81	2.7	1.52
6	2.8	3.8	3.1	2.35	3.0	9.0	2.05	5.6	2.25	1.74	2.45	1.52
7	3.35	3.15	2.8	2.9	2.7	4.3	1.95	3.8	2.2	1.81	2.25	1.52
8	3.15	f5.7	2.7	2.5	2.35	2.8	2.1	3.35	2.2	3.65	2.2	1.52
9	2.6	f11.7	2.6	5.2	2.35	2.5	2.1	3.05	2.2	2.1	2.1	1.52
10	2.55	3.5	2.5	2.7	2.35	2.5	2.25	2.85	2.25	1.81	*1.99	1.52
11	2.8	2.9	2.5	2.45	2.35	2.45	2.25	6.0	2.25	1.74	4.3	1.52
12	2.35	2.6	2.5	2.35	3.45	2.35	2.05	3.9	2.5	1.74	12.7	1.52
13	3.4	2.7	2.5	2.75	2.8	2.25	1.88	3.35	2.35	1.74	5.8	1.52
14	4.7	4.5	2.8	31.5	2.7	2.25	2.05	2.95	2.2	1.88	2.7	1.52
15	6.5	2.7	3.05	8.7	3.8	2.25	4.3	3.05	2.2	10.1	2.25	1.66
16	4.8	2.5	2.9	*3.7	3.6	3.2	2.75	2.7	2.25	3.7	2.1	2.05
17	3.3	12	2.95	7.8	8.9	2.45	2.25	2.6	2.35	3.45	2.05	*1.97
18	*4.4	4.5	2.85	5.1	5.2	2.45	2.2	3.3	2.85	2.1	2.05	1.81
19	f8.3	3.5	2.5	3.6	3.95	2.65	11.6	*2.6	2.2	2.65	2.05	1.81
20	4.0	3.0	2.45	3.05	2.95	3.15	25.5	2.6	2.1	2.1	2.05	1.66
21	3.4	2.8	2.45	3.15	2.5	2.45	*33.5	2.5	2.1	1.95	2.05	1.52
22	3.15	2.6	2.45	2.8	2.35	2.5	16.0	2.5	2.05	1.88	2.1	1.52
23	2.95	2.5	2.95	2.8	2.45	2.25	7.1	2.5	1.95	6.4	2.05	1.52
24	2.85	2.7	2.35	2.6	f3.5	2.2	7.8	2.8	1.95	4.1	2.05	1.44
25	4.5	2.5	2.35	2.7	6.2	2.2	4.7	2.5	1.95	3.05	2.05	1.59
26	3.4	2.4	2.45	5.2	3.2	2.2	3.7	2.45	1.88	2.45	2.05	1.52
27	2.95	2.4	2.35	3.15	2.7	2.1	3.25	2.45	1.88	2.35	1.95	1.44
28	5.7	2.3	2.25	2.7	2.4	2.1	2.95	2.45	1.88	2.45	1.88	1.80
29	4.8	2.6	2.45	2.7	2.3	2.05	3.4	-	1.85	2.2	1.88	2.3
30	3.05	7.0	2.6	4.0	*f11.2	2.05	2.95	-------	1.74	2.25	1.81	2.05
31	4.1	3.5	-------	2.8	-------	1.95	2.7	-------	1.74	-------	1.74	-------
Total	114.55	126.10	80.15	134.55	103.85	84.70	165.38	100.45	67.57	80.78	89.10	49.15
Mean:												
mgd	3.70	4.07	2.67	4.34	3.46	2.73	5.33	3.59	2.18	2.69	2.87	1.64
cfs	5.72	6.30	4.13	6.71	5.35	4.22	8.25	5.55	3.37	4.16	4.44	2.54
Ac-ft	352	387	246	413	319	260	508	308	207	248	273	151

Calendar year 1956: Max 31.5 Min 1.81 Mean(mgd) 3.74 Mean(cfs) 5.79 Ac-ft 4,210
Fiscal year 1956-57: Max 33.5 Min 1.44 Mean(mgd) 3.28 Mean(cfs) 5.07 Ac-ft 3,670

Peak discharge (base, 200 mgd).--Oct. 14 (9 p.m.) 395 mgd (611 cfs), 3.95 ft; Nov. 30 (6:30 p.m.) 236 mgd (365 cfs), 3.42 ft; Dec. 6 (9 p.m.) 236 mgd (365 cfs), 3.38 ft; Jan. 20 (7:30 p.m.) 285 mgd (441 cfs), 3.59 ft.

* Discharge measurement made on this day.
f Fragmentary gage-height record; discharge computed from partly estimated gage heights.
Note.--No gage-height record July 25, 28, Aug. 11 to Sept. 8, Sept. 10, 11; discharge estimated on basis of records for West Branch.

2390. East Branch Manoa Stream near Honolulu--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.66	1.74	2.85	1.66	2.2	14.5	2.35	2.4	1.78	1.78	1.71	2.35
2	2.55	1.44	3.35	1.52	2.05	7.5	2.1	2.0	1.71	1.78	4.2	4.3
3	1.95	1.84	2.95	1.44	1.81	4.9	2.0	1.85	1.57	1.78	3.45	2.1
4	2.45	2.3	2.45	1.44	1.66	3.8	1.93	2.5	1.50	1.85	2.15	2.9
5	2.05	2.4	2.2	1.37	1.66	3.35	1.93	1.93	*80	1.78	1.93	2.6
6	1.74	5.5	2.1	1.52	*2.9	17.4	1.85	1.71	41	1.78	1.93	2.0
7	1.59	2.95	2.1	1.37	19.3	a4.5	1.78	1.64	6.0	1.71	3.05	1.93
8	1.59	3.0	1.95	1.44	2.95	2.9	2.1	1.64	4.1	1.85	2.95	2.35
9	2.05	2.1	1.88	1.37	4.9	2.8	2.3	1.64	3.25	1.71	2.25	4.7
10	2.4	1.81	1.88	1.44	3.5	3.0	2.25	1.57	2.9	1.64	3.65	3.15
11	2.8	1.74	1.95	1.52	2.6	2.55	1.78	1.57	2.55	1.64	3.0	2.8
12	2.05	1.81	*1.78	1.52	2.25	2.15	1.71	1.50	2.4	1.64	2.35	2.9
13	2.3	1.81	1.88	2.3	2.1	*2.4	1.71	1.43	2.25	1.78	2.15	2.4
14	8.2	2.95	2.6	1.44	1.95	3.25	1.71	1.43	2.15	1.78	2.0	2.15
15	2.7	2.9	1.88	3.25	1.95	3.85	1.64	1.43	2.1	1.78	2.7	2.15
16	2.1	2.1	1.74	1.66	1.95	3.15	*1.64	1.43	2.1	2.0	15.5	2.15
17	1.95	1.81	1.88	2.15	1.88	2.65	1.57	1.43	2.1	2.0	5.4	1.93
18	1.95	1.95	3.75	2.4	1.81	2.35	1.88	1.43	2.1	1.71	3.95	1.85
19	2.05	1.95	1.95	1.74	1.74	3.6	1.71	*1.43	2.1	1.78	2.75	1.78
20	2.1	1.74	1.88	1.81	1.81	3.45	1.64	1.57	2.15	1.93	2.4	1.71
21	1.88	1.66	1.81	1.66	12.7	5.5	1.57	1.50	2.15	1.71	2.25	1.78
22	1.88	1.59	1.74	1.44	13.6	2.8	1.64	1.43	2.35	1.57	2.15	1.93
23	2.1	1.66	1.81	1.44	9.1	2.55	*1.84	1.43	2.15	1.57	2.0	[illegible]
24	2.05	17.7	1.88	2.4	14.2	2.65	1.57	1.36	2.1	1.57	2.0	[illegible]
25	1.74	10.9	1.88	1.66	6.2	2.8	1.50	1.36	2.0	1.64	3.0	[illegible]
26	3.05	3.5	2.6	1.52	4.1	3.8	1.43	1.36	2.15	4.0	2.5	2.0
27	2.25	3.05	2.1	1.44	3.4	2.5	1.36	1.50	2.25	14.5	2.0	2.0
28	2.25	3.35	1.66	1.44	3.6	2.55	1.91	4.3	1.85	5.8	1.93	3.9
29	2.2	5.7	1.52	1.59	3.6	2.4	4.3	-	2.1	2.15	1.85	2.25
30	1.88	5.7	2.55	1.66	5.2	2.25	13.7	-------	1.85	1.78	1.85	1.93
31	2.6	3.5	-------	3.55	-------	2.15	4.5	-------	1.78	-------	2.0	-------
Total	72.11	104.15	64.55	54.16	138.67	126.00	72.90	47.77	188.54	71.93	93.00	72.94
Mean:												
mgd	2.33	3.36	2.15	1.75	4.62	4.06	2.35	1.71	6.08	2.40	3.00	2.43
cfs	3.61	5.20	3.33	2.71	7.15	6.28	3.64	2.65	9.41	3.71	4.64	3.76
Ac-ft	221	320	198	166	426	387	224	147	579	221	285	224

Calendar year 1957 : Max 33.5 Min 1.37 Mean(mgd) 3.05 Mean(cfs) 4.72 Ac-ft 3,410
Fiscal year 1957-58 : Max 80 Min 1.36 Mean(mgd) 3.03 Mean(cfs) 4.69 Ac-ft 3,400

Peak discharge (base, 200 mgd).--Dec. 6 (8 p.m.) 395 mgd (611 cfs), 4.00 ft; Mar. 5 (8 a.m.) 650 mgd (1,010 cfs), 4.67 ft.

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for station on West Branch.

2400. West Branch Manoa Stream near Honolulu

Location (revised).--Lat 21°19'55", long 157°48'10", on left bank 100 ft upstream from highway bridge and 4.2 miles northeast of Honolulu Post Office.
Drainage area.--1.14 sq mi (revised).
Records available.--May 1913 to January 1921, August 1925 to June 1958.
Gage.--Water-stage recorder and combination Parshall flume and V-notch weir. Datum of gage is 290.84 ft above mean sea level (Honolulu Board of Water Supply bench mark). Prior to June 17, 1914, staff gage at same site at different datum. June 17, 1914, to Jan. 16, 1921, water-stage recorder at site 150 ft upstream at different datum. Aug. 4, 1925, to Mar. 15, 1928, water-stage recorder at present site at datum 3.40 ft lower.
Average discharge.--39 years (1913-20, 1926-58), 2.48 mgd (3.84 cfs).
Extremes.--1956-57: Maximum discharge during fiscal year, 350 mgd (542 cfs) Nov. 30 (gage height, 3.79 ft), from rating curve extended above 38 mgd by test on model of station site; minimum, 0.10 mgd (0.16 cfs) June 13, 14.
1957-58: Maximum discharge during fiscal year, 480 mgd (743 cfs) Mar. 5 (gage height, 4.35 ft), from rating curve extended above 73 mgd by test on model of station site: minimum, 0.12 mgd (0.19 cfs) Feb. 26, 27.
1913-21, 1925-58: Maximum gage height, 10.4 ft Jan. 16, 1921, from floodmarks, site and datum then in use (discharge, 2,100 mgd or 3,250 cfs, estimated from rating curve extended above 40 mgd); minimum discharge, about 0.05 mgd (0.08 cfs) Mar. 16, 22, 1926.
Revisions.--The figures of maximum discharge for some fiscal years have been revised, as shown in the following table. They supersede figures published in the water-supply papers indicated.

WSP	Fiscal year	Date	Discharge (mgd)	Discharge (cfs)	Gage height (feet)
710	1930	Apr. 11, 1930	970	1,500	4.56
725	1931	Nov. 18, 1930	1,200	1,860	4.92
740	1932	Apr. 30, 1932	1,350	2,090	5.12

[illegible] --Records fair except those for period of no gage-height record, which are poor. [illegible] quantity of water is diverted occasionally for irrigation.

[illegible] g tables, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)
[illegible] shifting-control method used Oct. 3-7, 1956, Feb. 17-19, Aug. 24 to Sept. 2, Sept. 8-12, 1957, June 29, 30, 1958)

July 1, 1956, to Dec. 6, 1957				Dec. 7, 1957, to June 30, 1958			
[illegible]	0	0.6	3.8	0.0	0	0.8	6.2
.1	.22	.8	6.5	.1	.21	1.0	10.6
.2	.67	1.0	11.4	.2	.63	1.2	16.6
.3	1.28	1.2	18.7	.3	1.18	1.4	25
.4	2.0	1.6	40	.4	1.85	1.7	42
				.6	3.5	2.0	65
				.7	4.5	2.5	118

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.50	1.18	1.42	0.47	1.26	2.0	0.34	1.59	0.57	0.22	2.55	0.22
2	1.28	.85	1.53	.38	.91	1.16	.30	1.71	.52	.22	2.4	.22
3	1.16	3.5	1.10	.34	.79	1.04	.30	2.1	.47	.30	1.93	.22
4	1.16	4.9	.91	2.35	.67	.85	.30	10.2	.47	.68	2.55	.19
5	.98	11.3	3.75	2.0	.62	.73	.26	11.0	.47	.26	1.50	.19
6	.98	2.65	2.05	1.86	1.06	8.2	.26	5.0	.42	.22	1.10	.19
7	1.16	1.86	.98	3.05	1.05	2.3	.22	2.85	.42	.22	.85	.19
8	1.42	8.6	.79	3.5	.57	1.16	.42	2.15	.52	1.02	.73	.19
9	.85	7.5	.73	7.8	.52	.91	.39	1.78	.52	.48	.62	.19
10	.67	1.78	.67	3.7	.52	.91	.84	1.50	.62	.22	*.57	.19
11	.89	1.42	*.57	2.95	.57	.73	.71	7.0	.67	.19	1.38	.16
12	.67	1.22	.52	2.5	1.67	.62	.34	3.2	.90	.19	13.1	.13
13	1.86	1.29	.52	6.0	.98	.57	.22	2.75	.57	.16	4.5	.13
14	3.4	2.6	.81	35.5	1.50	.57	.30	1.86	.42	.35	1.50	.13
15	3.6	1.16	1.04	6.7	3.3	.57	1.96	1.78	.38	4.6	1.04	.22
16	2.45	.98	.62	*2.35	2.7	1.72	1.30	1.42	.70	1.14	.85	.47
17	1.28	14.8	.57	8.6	10.7	.79	.62	1.28	.73	1.35	.73	*.50
18	*2.6	4.1	.57	4.6	4.7	.73	.57	1.72	1.42	.47	.62	.49
19	3.1	1.86	.42	2.15	3.0	1.09	8.0	*1.08	.62	1.20	.57	.42
20	1.72	1.42	.42	1.42	2.05	1.28	21	1.04	.47	.73	.52	.38
21	1.28	1.22	.38	1.35	1.42	.73	*39.5	.91	.47	.47	.47	.22
22	1.10	1.16	.38	1.04	1.16	.95	21.5	.85	.42	.38	.47	.19
23	.85	1.16	.79	.98	.98	.57	8.5	.73	.38	5.0	.42	.19
24	.85	1.38	.38	.85	1.56	.52	10.0	1.07	.35	3.05	.38	.16
25	1.80	.98	.34	.94	4.5	.47	4.1	.73	.34	2.25	.38	.26
26	.98	.85	.38	4.7	1.10	.42	2.75	.67	.34	1.35	.42	.26
27	.98	.79	.34	1.74	.98	.42	2.15	.62	.30	.98	.38	.19
28	3.4	.73	.30	1.16	.85	.42	1.86	.57	.30	.91	.34	.36
29	2.45	1.13	.63	1.01	.79	.38	2.3	-	.22	.67	.30	.77
30	1.16	7.8	.68	2.35	*12.2	.38	1.78	-------	.22	.78	.26	.68
31	2.25	3.25	-------	1.16	-------	.34	1.35	-------	.22	-------	.26	-------
Total	49.83	95.42	24.59	115.50	64.68	33.53	134.44	69.16	15.44	30.06	43.69	8.30
Mean:												
mgd	1.61	3.08	0.820	3.73	2.16	1.08	4.34	2.47	0.498	1.00	1.41	0.277
cfs	2.49	4.77	1.27	5.77	3.34	1.67	6.71	3.82	0.771	1.55	2.18	0.429
Ac-ft	153	293	75	354	198	103	413	212	47	92	134	25

Calendar year 1956: Max 35.5 Min 0.30 Mean(mgd) 2.48 Mean(cfs) 3.84 Ac-ft 2,790
Fiscal year 1956-57: Max 39.5 Min 0.13 Mean(mgd) 1.88 Mean(cfs) 2.91 Ac-ft 2,100

Peak discharge (base, 200 mgd).--Oct. 14 (9 p.m.) 305 mgd (472 cfs), 3.62 ft; Nov. 30 (6 p.m.) 350 mgd (542 cfs), 3.79 ft; Dec. 6 (8 p.m.) 205 mgd (317 cfs), 3.24 ft; Jan. 20 (9 p.m.) 305 mgd (472 cfs), 3.59 ft.

* Discharge measurement made on this day.

2400. West Branch Manoa Stream near Honolulu--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.34	0.91	1.80	0.47	0.47	13.4	1.07	1.55	0.48	0.28	0.36	0.71
2	1.42	.67	1.88	.38	.47	6.6	.80	.90	.40	.24	2.2	1.86
3	.79	.91	1.78	.30	.38	3.8	.68	.68	.24	.28	1.42	.68
4	1.30	.91	1.22	.30	.26	2.4	.63	1.01	.21	.28	.80	1.50
5	1.28	.98	1.10	.26	.30	1.93	.58	.74	*83	.24	.58	1.21
6	.85	3.85	.98	.22	*.90	8.9	.53	.58	40	.21	.53	.68
7	.57	3.05	.85	.19	11.5	2.9	.53	.48	7.3	.21	1.37	.58
8	.52	3.1	.90	.19	1.71	1.78	.53	.44	3.9	.24	1.73	.87
9	.52	1.71	.85	.16	4.7	1.58	.86	.44	2.75	.18	1.12	4.7
10	.91	1.16	.85	.16	2.4	1.75	.91	.40	2.1	.18	1.93	3.05
11	1.18	.85	.88	.22	1.50	1.52	.53	.36	1.72	*.21	1.65	1.97
12	.67	.85	*.63	.19	.91	1.12	.48	.32	1.45	.21	1.18	2.1
13	.62	.79	.73	.48	.67	1.26	.44	.32	1.18	.28	1.02	1.31
14	5.3	1.68	1.31	.30	.57	1.92	.44	.32	1.02	.28	.74	1.02
15	1.50	2.3	.57	1.47	.52	2.6	.40	.32	.96	.28	.98	.89
16	.98	1.10	.47	.34	.57	2.3	.40	.28	.85	.50	7.8	.90
17	.67	.85	.52	.52	.34	1.72	*.36	.28	.74	.74	3.2	.74
18	.57	1.04	1.12	.78	.34	1.38	.64	.24	.68	.32	1.69	.63
19	.75	1.11	.52	.47	.30	3.35	.53	*.24	.58	.24	1.12	.58
20	.73	.79	.42	.60	.30	3.05	.40	.24	.53	.38	.96	.53
21	.52	.67	.34	.62	9.9	5.1	.36	.21	.48	.24	.85	.48
22	.38	.57	.30	.42	5.4	2.15	.40	.18	.58	.18	.74	.63
23	a.74	.52	.26	.42	3.3	1.72	*.62	.21	.44	.18	*.63	1.63
24	a1.1	19.2	.26	.76	7.1	1.58	.36	.18	.40	.18	.63	1.02
25	a.55	9.1	.30	.30	3.3	1.72	.28	.15	.36	.18	.97	1.22
26	a1.5	2.15	.67	.26	1.93	2.4	.28	.15	.40	.62	.88	*1.31
27	.85	1.42	.78	.26	1.50	1.31	.24	.24	.48	6.5	.58	1.25
28	1.12	1.64	.52	.22	1.50	1.38	.45	2.05	.36	2.25	.48	3.1
29	.85	6.6	.26	.34	1.54	1.18	1.84	-	.58	.80	.48	1.70
30	.79	4.7	1.23	.34	3.65	.96	11.0	-------	.36	.48	.44	1.25
31	1.99	2.65	-------	1.64	-------	.85	4.4	-------	.28	-------	.53	-------
Total	31.86	77.83	24.30	13.58	68.23	85.61	31.97	13.51	154.81	17.39	39.59	40.10
Mean:												
mgd	1.03	2.51	0.810	0.438	2.27	2.76	1.03	0.482	4.99	0.580	1.28	1.34
cfs	1.59	3.88	1.25	0.678	3.51	4.27	1.59	0.746	7.72	0.897	1.98	2.07
Ac-ft	98	239	75	42	209	263	98	41	475	53	121	123

Calendar year 1957: Max 39.5 Min 0.13 Mean(mgd) 1.65 Mean(cfs) 2.55 Ac-ft 1,850
Fiscal year 1957-58: Max 83 Min 0.15 Mean(mgd) 1.64 Mean(cfs) 2.54 Ac-ft 1,840

Peak discharge (base, 200 mgd).--Dec. 6 (6 p.m.) 205 mgd (317 cfs), 3.18 ft; Mar. 5 (7:30 a.m.) 480 mgd (743 cfs), 4.35 ft.

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for East Branch Manoa Stream.

2440. Pukele Stream near Honolulu

Location.--Lat 21°18'35", long 157°47'30", on right bank 200 ft upstream from bridge on Palolo Belt Road, 0.6 mile upstream from confluence with Waiomao Stream, and 4.8 miles east of Honolulu Post Office.

Drainage area.--1.18 sq mi (revised).

Records available.--April 1912 to September 1913, June 1926 to June 1958.

Gage.--Water-stage recorder and V-notch weir. Datum of gage is 344.78 ft above mean sea level (Honolulu Board of Water Supply bench mark). Apr. 16, 1912, to Sept. 30, 1913, staff gage just above present site at different datum.

Average discharge.--32 years (1926-58), 1.26 mgd (1.95 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 318 mgd (492 cfs) Oct. 14 (gage height, 4.60 ft), from rating curve extended above 62 mgd by test on model of station site; minimum, 0.14 mgd (0.22 cfs) June 1.

1957-58: Maximum discharge during fiscal year, 650 mgd (1,010 cfs) Mar. 5 (gage height, 5.89 ft), from rating curve extended above 62 mgd by test on model of station site; minimum, 0.24 mgd (0.37 cfs) July 16-26, Oct. 13-29.

1912-13, 1926-58: Maximum discharge, 1,680 mgd (2,600 cfs) Apr. 11, 1930 (gage height, 7.75 ft, from floodmarks), from rating curve extended above 62 mgd by test on model of station site; minimum, 0.07 mgd (0.11 cfs) Nov. 15-25, 1945.

Remarks.--Records good except those for periods of faulty or no gage-height record and those after June 30, 1957, which are fair. A 2-inch pipe diverts water from stream above station.

Revisions (fiscal years).--WSP 835: 1930(M).

Rating tables, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)
(Shifting-control method used Mar. 27, 1958)

July 1 to Oct. 14, 1956				Oct. 15, 1956, to June 30, 1958			
0.9	0.15	1.4	3.35	0.9	0.18	1.8	10.2
1.0	.42	1.7	7.8	1.0	.43	2.0	15.2
1.1	.87	2.0	14.3	1.1	.87	2.3	25
1.2	1.50	2.5	32	1.2	1.50	2.6	37.5
				1.4	3.4	3.0	60
				1.6	6.2	3.5	100

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.04	0.62	0.58	0.32	0.50	1.21	0.38	1.16	0.54	0.28	1.1	0.31
2	.98	.62	.62	.32	.50	.67	.34	1.16	.54	.28	.90	.28
3	.87	.67	.62	.29	.50	.67	.28	1.10	.54	.28	.80	.28
4	1.19	1.52	.62	.29	.50	.67	.28	3.25	.50	.31	1.5	.28
5	.82	3.75	2.35	.29	.46	.62	.28	6.5	.50	.28	.62	.28
6	.77	.94	1.27	.29	.46	6.7	.28	3.2	.50	.28	.60	.28
7	.77	.77	*.58	.29	.42	2.45	.28	1.50	.46	.28	.60	.28
8	.72	1.20	.54	.27	.42	.77	.28	1.10	.46	.37	.59	.26
9	.67	4.7	.54	.40	.42	.72	.28	1.10	.43	.28	.58	.26
10	.67	.98	.54	.27	.42	*.72	.28	1.10	.43	.26	.58	.26
11	.62	.87	.54	.27	.38	.72	.28	1.90	.40	.26	1.14	.26
12	.62	.87	.50	.27	.38	.67	.28	1.36	.43	.26	2.45	.24
13	.62	.87	.46	.27	.38	.62	.28	1.16	.40	.26	1.94	.24
14	.73	.87	.46	*19.7	.38	.62	.34	1.10	.40	.28	.67	.24
15	.81	.77	.46	*5.5	.42	.62	.31	1.10	.40	10	.67	.26
16	.65	.72	.65	.86	3.5	.67	.31	1.04	.40	3.0	.67	.26
17	.62	5.2	.46	2.1	4.6	.58	.31	.98	.40	2.5	.67	*.28
18	.62	2.2	.42	1.74	2.75	.54	.34	.92	.40	.90	.67	.28
19	.67	.82	.42	.77	1.47	.59	4.1	*.87	.37	.90	.62	.28
20	.67	.77	.42	.82	.72	.58	14.5	.82	.40	.60	.62	.28
21	.67	.77	.42	.84	.67	.50	*32	.77	.37	.45	.58	.28
22	.62	.82	.42	.82	.72	.50	13.5	.77	.37	.37	.54	.28
23	.62	.77	.42	.77	*.72	.50	5.4	.72	.37	2.0	.50	.28
24	.62	.77	.38	.77	.90	.50	3.05	.72	.37	1.8	.46	.28
25	1.05	.72	.38	.72	1.76	.50	2.0	.62	.37	1.0	.46	.28
26	.58	.67	.38	.67	.72	.46	1.43	.62	.34	.78	.43	.28
27	.58	.62	.35	.62	.72	.46	1.36	.58	.34	.78	.43	.28
28	.88	.62	.35	.58	.67	.42	1.29	.58	.34	.85	.40	.26
29	1.50	.62	.35	.58	.62	.42	1.36	-	*.31	.75	.37	.26
30	.62	3.9	.32	*.62	*4.9	.42	1.29	-------	.31	.80	.37	.26
31	.62	.62	-------	.54	-------	.38	1.22	-------	.28	-------	.34	-------
Total	23.49	40.63	16.82	42.86	31.98	26.47	87.91	37.80	12.67	31.44	22.87	8.13
Mean:												
mgd	0.758	1.31	0.561	1.38	1.07	0.854	2.84	1.35	0.409	1.05	0.738	0.271
cfs	1.17	2.03	0.868	2.14	1.66	1.32	4.39	2.09	0.633	1.62	1.14	0.419
Ac-ft	72	125	52	132	98	81	270	116	39	96	70	25

Calendar year 1956: Max 19.7 Min 0.27 Mean(mgd) 1.15 Mean(cfs) 1.78 Ac-ft 1,300
Fiscal year 1956-57: Max 32 Min 0.24 Mean(mgd) 1.05 Mean(cfs) 1.62 Ac-ft 1,180

Peak discharge (base, 90 mgd).--Oct. 14 (9 p.m.) 318 mgd (492 cfs), 4.60 ft; Dec. 6 (7:30 p.m.) 190 mgd (294 cfs), 4.00 ft; Jan. 20 (8:30 p.m.) 100 mgd (155 cfs), 3.52 ft.

* Discharge measurement made on this day.

Note.--Faulty or no gage-height record Dec. 8, 9, Jan. 23, 24, Apr. 10 to May 10; discharge estimated on basis of records for nearby stations.

2440. Pukele Stream near Honolulu--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.26	0.28	0.98	0.34	0.28	9.1	0.87	1.04	0.40	0.54	0.50	0.50
2	.26	.28	1.04	.34	.28	5.7	.77	.87	.40	.54	.58	.50
3	.26	.28	.98	.34	.28	2.35	.77	.87	.37	.54	.72	.43
4	.26	.28	.92	.31	.28	1.58	.72	1.05	.37	.50	.62	.46
5	.26	.26	.87	.28	.28	1.43	.62	.92	*100	.50	.62	.43
6	.26	.37	.82	.28	.31	4.8	.62	.92	49	.50	.62	.40
7	.26	.31	.77	.28	5.9	3.0	.58	.87	3.55	.50	.80	.40
8	.26	.28	.72	.28	.46	1.50	.58	.82	2.05	.50	.72	.40
9	.26	.28	.62	.28	.78	1.43	.54	.77	1.58	.46	.58	.73
10	.26	.28	.58	.28	.62	1.50	.58	.72	1.43	.46	.72	.43
11	.28	.28	.54	.28	.54	1.36	.54	.67	1.43	*.46	.58	.43
12	.27	.28	*.54	.26	.54	1.29	.50	.62	1.36	.43	.54	.58
13	.25	.28	.54	.26	.58	*1.22	.50	.62	1.36	.43	.58	.50
14	.25	.34	.50	.26	.58	1.29	.50	*.58	1.29	.40	.54	.50
15	.25	.31	.50	.26	.58	1.89	.50	.54	1.22	.40	.80	.50
16	.24	.31	.46	.26	.54	1.36	*.46	.50	1.22	.40	9.5	.54
17	.24	.31	.43	.26	.50	1.29	.43	.50	1.10	.40	3.95	.50
18	.24	.31	.43	.26	.46	1.22	.43	.50	1.04	.37	1.79	.50
19	.24	.28	.40	.26	.46	1.29	.40	.46	.92	.37	.98	.54
20	.24	.28	.40	.26	.55	1.31	.40	.46	.87	.37	.92	.50
21	.24	.28	.37	.26	5.3	2.9	.40	.46	.77	.37	*.92	.50
22	.24	.26	.37	.26	8.2	1.29	.40	.46	.72	.37	.87	.46
23	.24	.26	.37	.24	6.4	1.22	.40	.46	.67	.37	.92	.50
24	.24	10.3	.37	.24	10.0	1.16	.37	.46	.62	.34	.82	.43
25	.24	5.4	.37	.24	4.6	1.16	.37	*.43	.58	.34	.84	.46
26	*.26	1.20	.34	.24	1.92	1.22	.37	.37	.58	.34	.67	*.37
27	.26	.67	.34	.24	1.22	1.04	.37	.34	.56	5.6	.62	.37
28	.26	.77	.34	.24	1.22	1.12	.48	1.34	.58	2.4	.58	.53
29	.26	2.4	.34	.24	1.29	.98	1.53	-	.62	.46	.54	.40
30	.26	1.82	.34	.26	1.50	.98	10.7	-------	.54	.50	.50	.37
31	.28	1.10	-------	.34	-------	.87	4.3	-------	.54	-------	.54	-------
Total	7.88	30.34	16.59	8.43	56.45	59.85	31.00	18.62	177.74	20.16	34.48	14.16
Mean: mgd	0.254	0.979	0.553	0.272	1.88	1.93	1.00	0.665	5.73	0.672	1.11	0.472
cfs	0.393	1.51	0.856	0.421	2.91	2.99	1.55	1.03	8.87	1.04	1.72	0.730
Ac-ft	24	93	51	26	173	184	95	57	545	62	106	43

Calendar year 1957: Max 32 Min 0.24 Mean(mgd) 1.04 Mean(cfs) 1.61 Ac-ft 1,170
Fiscal year 1957-58: Max 100 Min 0.24 Mean(mgd) 1.30 Mean(cfs) 2.01 Ac-ft 1,460

Peak discharge (base, 90 mgd).--Dec. 6 (7 p.m.) 100 mgd (155 cfs), 3.50 ft; Mar. 5 (7:30 a.m.) 650 mgd (1,010 cfs), 5.89 ft.

* Discharge measurement made on this day.

2460. Waiomao Stream above Pukele Stream, near Honolulu

Location.--Lat 21°18'35" (revised), long 157°47'10", on left bank 300 ft west of road, 0.8 mile (corrected) upstream from confluence with Pukele Stream, and 5 miles east of Honolulu Post Office.

Drainage area.--1.04 sq mi (revised).

Records available.--April 1911 to December 1912, June 1926 to June 1958.

Gage.--Water-stage recorder and V-notch weir. Datum of gage is 373.66 ft above mean sea level (Honolulu Board of Water Supply bench mark). Apr. 12, 1911, to Dec. 31, 1912, staff gage at site 0.5 mile (corrected) downstream at different datum.

Average discharge.--32 years (1926-58), 1.16 mgd (1.79 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 252 mgd (390 cfs) Oct. 14 (gage height, 4.56 ft), from rating curve extended above 58 mgd as explained below; no flow June 10-17.

1957-58: Maximum discharge during fiscal year, 550 mgd (851 cfs) Mar. 5 (gage height, 5.32 ft), from rating curve extended above 58 mgd as explained below; no flow Oct. 12.

1911-12, 1926-58: Maximum discharge, 602 mgd (931 cfs) Oct. 15, 1938 (gage height, 5.43 ft), from rating curve extended above 58 mgd by test on model of station site; no flow at times.

Remarks.--Records good for 1956-57 except those for periods of faulty or no gage-height record, which are poor; records fair for 1957-58 except those for periods of no gage-height record, which are poor. Honolulu Board of Water Supply diverts ground water from tunnels in drainage area.

Rating tables, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

July 1 to Oct. 14, 1956				Oct. 15, 1956, to June 30, 1957				July 1, 1957, to June 30, 1958			
0.9	0.02	1.7	5.2	0.84	0	2.0	10.6	0.9	0.01	2.1	13.3
1.0	.06	1.9	8.5	1.0	.10	2.2	16.5	1.1	.26	2.4	24.5
1.1	.22	2.2	16.5	1.2	.69	2.4	24.5	1.3	1.12	2.7	39
1.3	1.07	2.6	34	1.4	1.95	2.7	39	1.5	2.75	3.0	56
1.5	2.7			1.6	4.0	3.0	56	1.7	5.4	3.4	83
				1.8	7.0			1.9	8.6	3.9	125

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.25	0.20	0.30	0.06	0.23	1.71	0.06	0.38	0.10	0.01	0.40	0.05
2	.24	.23	.22	.05	.19	.64	.05	.41	.09	.01	.34	.04
3	.23	.40	.18	.04	.19	.44	.04	.41	.08	.16	.28	.03
4	.55	1.0	.16	.07	.17	.32	.04	1.91	.07	.38	.60	.02
5	.23	3.0	.55	.06	.15	.23	.04	6.5	.06	.10	.21	.05
6	.21	.45	1.1	.04	.19	8.2	.03	3.3	.13	.06	.18	.03
7	.21	.30	*.30	.20	.15	2.9	.02	1.29	.06	.06	.18	.02
8	.20	.50	.22	.30	.13	.82	.03	.79	.05	.60	.21	.01
9	.18	3.5	.18	1.06	.10	.44	.03	.52	.05	.12	.18	.02
10	.18	.60	.14	.43	.10	.35	.08	.38	.04	.08	.15	.01
11	.16	.40	.12	.20	.11	.29	.10	1.48	.04	.04	1.8	0
12	.16	.37	.09	.14	.25	.23	.07	.98	.08	.03	1.0	0
13	.16	.36	.11	.30	.21	.19	.05	.64	.07	.02	*3.3	0
14	1.0	.36	.80	26	.17	.19	.45	.44	.05	.02	1.06	0
15	1.1	.33	.28	*9.1	.66	.21	.92	.44	.05	8.3	.56	0
16	.90	.25	.56	1.95	2.4	.44	.66	.35	.07	2.0	.38	0
17	.50	4.0	.22	2.15	8.4	.26	.48	.26	.15	1.8	.32	.04
18	.45	1.5	.59	3.0	3.65	.29	.38	.93	.25	.55	.23	.13
19	*.40	.60	.28	1.04	2.5	.29	6.1	*.41	.15	.47	.21	.13
20	.33	.55	.16	.69	1.29	.86	24.5	.32	.13	.31	.19	.15
21	.28	.43	.12	.79	.79	.35	45	.26	.18	.22	.15	.09
22	.25	.36	.11	.48	.52	.23	17.7	.19	.26	.12	.17	.06
23	.25	.33	.18	.41	*.35	.19	6.9	.15	.10	.85	.15	.04
24	.20	.33	.09	.35	1.03	.17	*3.6	.17	.07	.75	.11	.04
25	.30	.33	.09	.29	2.7	.13	2.4	.17	.04	.65	.11	.12
26	.14	.22	.09	.36	.56	.11	1.22	.13	.03	.55	.11	.10
27	.14	.20	.09	.41	.38	.10	.79	.11	.02	.55	.10	.06
28	.50	.16	.06	.26	.29	.09	.60	.10	.02	.31	.10	.28
29	.90	.16	.06	.21	.23	.08	.70	-	.01	.26	.09	.69
30	.25	3.8	.05	.67	5.4	.07	.60	-------	.01	.28	.08	.41
31	.20	.50	-------	.38	-------	.06	.41	-------	.01	-------	.06	-------
Total	11.05	25.72	7.50	52.49	33.49	20.88	114.05	23.42	2.52	19.66	13.01	2.62
Mean:												
mgd	0.356	0.830	0.250	1.69	1.12	0.674	3.68	0.836	0.081	0.655	0.420	0.087
cfs	0.551	1.28	0.387	2.61	1.73	1.04	5.69	1.29	0.125	1.01	0.650	0.135
Ac-ft	34	79	23	161	103	64	350	72	7.7	60	40	8.0

Calendar year 1956. Max 26 Min 0.04 Mean(mgd) 0.955 Mean(cfs) 1.48 Ac-ft 1,070
Fiscal year 1956-57: Max 45 Min 0 Mean(mgd) 0.894 Mean(cfs) 1.38 Ac-ft 1,000

Peak discharge (base, 70 mgd).--Oct. 14 (9 p.m.) 252 mgd (390 cfs), 4.56 ft; Dec. 6 (7 p.m.) 135 mgd (209 cfs), 4.01 ft; Jan. 20 (8:30 p.m.) 156 mgd (241 cfs), 4.24 ft.

* Discharge measurement made on this day.

Note.--No gage-height record July 1 to Aug. 12, Aug. 17-20, Aug. 30 to Sept. 7, Feb. 26 to Mar. 4, Apr. 5 to May 13; discharge estimated on basis of records for stations on nearby streams.

2460. Waiomao Stream above Pukele Stream, near Honolulu--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.21	0.23	0.70	0.19	0.69	7.5	0.17	1.1	0.87	0.06	0.58	0.21
2	.86	.17	.70	.12	.35	3.0	.13	.58	.66	.06	1.99	.38
3	.50	.29	.65	.10	.23	1.3	.13	*.42	.35	.06	2.65	.19
4	.50	.55	.60	.08	.15	.95	.10	.98	.26	.04	1.00	.32
5	.38	.42	.50	.05	.12	.90	.09	.83	121	.04	.75	.96
6	.21	1.80	.45	.04	*.58	5.5	.09	.35	39	.04	.62	.32
7	.15	1.03	.38	.05	13.8	2.75	.07	.23	4.6	.04	1.06	.17
8	.15	.76	.32	.03	1.62	1.18	.07	.19	1.98	.04	.90	.23
9	.13	.35	.26	.02	1.96	.85	.07	.15	1.18	.02	.75	1.61
10	.32	.21	.24	.01	1.82	1.00	.06	.15	.75	.02	1.30	.76
11	.70	.17	.22	.01	1.20	1.06	.05	.12	.54	.02	1.21	.54
12	.42	.26	.19	.01	.75	.66	.05	.10	.42	.02	.80	.46
13	.21	.29	.10	.15	.54	*.58	.05	.09	.32	.01	.80	.29
14	3.5	.33	.57	.07	.32	.90	.05	*.08	.26	.01	.66	.23
15	.87	.52	.26	.40	.26	1.50	.10	.08	.26	.01	2.3	.19
16	.50	.21	.13	.19	.21	.90	.04	.07	.23	.09	12.5	.30
17	.46	.21	.09	.26	.19	.70	.04	.06	.15	.07	6.2	.21
18	.35	.21	.42	.64	.15	.62	.04	.08	.13	.07	2.65	.17
19	.26	.26	.23	.23	.13	.80	.04	.05	.09	.07	1.70	.13
20	.29	.19	.15	.34	.16	.80	.10	.06	.08	.12	.90	.12
21	.21	.15	.12	.87	6.2	1.6	.04	.03	.09	.12	*.62	.10
22	.13	.12	.08	.26	10	.45	.04	.02	.08	*.06	.46	.12
23	.19	.10	.05	.19	9.0	.42	.35	.02	.08	.04	.35	.32
24	.42	9.1	.06	1.58	15	.60	.19	.02	.07	.04	.29	.12
25	.17	6.6	.10	.63	8.5	.38	.05	*.02	.07	.03	.51	.32
26	*.93	1.4	.13	.29	1.8	.26	.04	.01	.07	.67	.66	*.29
27	.46	.70	.29	.21	.70	.26	.03	.01	.10	8.1	.26	.23
28	.38	.72	.19	.19	.72	.28	.10	2.4	.09	3.95	.21	.92
29	.42	1.6	.12	.21	.74	.19	.85	-	.10	1.00	.19	.58
30	.26	1.2	.37	.58	.85	.19	15	-------	.06	.70	.19	.35
31	.35	.80	-------	1.94	-------	.17	3.7	-------	.06	-------	.21	-------
Total	14.89	30.95	8.67	9.94	78.74	38.25	21.93	8.30	174.00	15.62	45.27	11.14
Mean:												
mgd	0.480	0.998	0.289	0.321	2.62	1.23	0.707	0.296	5.61	0.521	1.46	0.371
cfs	0.743	1.54	0.447	0.497	4.05	1.90	1.09	0.458	8.68	0.806	2.26	0.574
Ac-ft	46	95	27	31	242	117	67	25	534	48	139	34

Calendar year 1957. Max 45 Min 0 Mean(mgd) 0.977 Mean(cfs) 1.51 Ac-ft 1,100
Fiscal year 1957-58. Max 121 Min 0.01 Mean(mgd) 1.25 Mean(cfs) 1.93 Ac-ft 1,400

Peak discharge (base, 70 mgd).--Nov. 21 (2 a.m.) 98 mgd (152 cfs), 3.58 ft; Dec. 6 (6 p.m.) 110 mgd (170 cfs), 3.77 ft; Mar. 5 (7:30 a.m.) 550 mgd (851 cfs), 5.32 ft.

* Discharge measurement made on this day.

Note.--No gage-height record July 4, Aug. 26 to Sept. 12, Nov. 6, Nov. 21 to Dec. 6, Dec. 14 to Feb. 3, Mar. 22 to Apr. 11; discharge estimated on basis of recorded graph and records for nearby streams.

2470. Palolo Stream near Honolulu

Location.--Lat 21°17'35", long 157°48'25", on left bank 250 ft downstream from bridge on Palolo Avenue and 3.9 miles east of Honolulu Post Office.

Drainage area.--3.63 sq mi (revised).

Records available.--April 1952 to June 1958.

Gage.--Water-stage recorder. Altitude of gage is 95 ft (from topographic map).

Average discharge.--6 years, 3.65 mgd (5.65 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 780 mgd (1,210 cfs) Jan. 20 (gage height, 3.38 ft), from rating curve extended above 450 mgd by test on model of station site; minimum, 0.16 mgd (0.25 cfs) June 24, 27.

1957-58: Maximum discharge during fiscal year, 2,100 mgd (3,250 cfs) Mar. 5 (gage height, 5.33 ft), from rating curve extended above 450 mgd by test on model of station site; minimum daily, 0.03 mgd (0.05 cfs) June 23-25.

1952-58: Maximum discharge, that of Mar. 5, 1958; minimum daily, that of June 23-25, 1958.

Remarks.--Records fair except those for periods of doubtful or no gage-height record, which are poor.

Rating tables, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)
(Shifting-control method used Jan. 30 to Feb. 25, June 23-26, 1958)

July 1, 1956, to June 30, 1957

1.08	0.03	1.9	17.0
1.2	.12	2.0	33
1.3	.24	2.2	82
1.4	.50	2.4	153
1.5	1.00	2.6	275
1.7	4.5		

July 1, 1957, to June 30, 1958

1.9	17.0	2.5	212
2.0	28	2.7	393
2.1	45	2.9	540
2.3	104		

Note.--Same as preceding table below 1.9 ft.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.15	0.90	1.2	0.44	0.82	3.7	0.42	1.76	0.88	0.28	1.90	0.30
2	2.35	.90	1.1	.44	.88	1.35	.39	1.88	.88	.28	1.65	.30
3	1.88	1.4	1.0	.52	.71	1.08	.34	2.05	.82	.44	1.35	.28
4	2.9	4.0	.95	.45	.62	.94	.30	9.8	.71	1.01	2.8	.28
5	1.76	12	7.0	.60	.54	.88	.34	19.8	.71	.46	.94	.24
6	1.76	1.7	5.5	.57	.67	29	.34	8.0	.76	.50	.88	.28
7	1.88	1.3	*1.07	1.03	.62	8.3	.32	3.5	.71	.58	.88	.24
8	2.0	2.2	.88	.72	.50	2.0	.63	2.15	.58	1.83	.94	.24
9	1.65	15	.82	2.05	.42	1.16	.46	2.0	.54	1.03	.82	.24
10	1.55	2.0	.76	.87	.42	1.00	.48	2.0	.49	.58	.76	.22
11	1.35	1.5	.71	.54	.51	.88	.47	4.9	.54	.42	5.6	.22
12	1.37	1.4	.66	.39	.59	.82	.42	2.95	.66	.39	3.85	.22
13	1.57	1.4	.62	1.04	.58	.76	.39	2.15	.58	.36	7.5	.22
14	2.9	1.4	1.38	70	.67	.76	2.25	1.88	.58	.42	2.0	.22
15	2.95	1.3	1.22	*25	2.3	.72	2.7	2.1	.58	37	1.88	.26
16	2.7	1.1	2.15	4.2	13.1	1.10	1.76	1.65	.58	6.3	1.76	.30
17	1.65	17	.86	9.7	30	.76	1.65	1.45	.58	4.6	1.65	.39
18	*1.68	8.0	.90	9.6	10.1	.76	2.1	2.15	.66	1.55	1.65	.37
19	1.55	2.0	.71	2.95	6.5	.74	21.5	*1.25	.58	1.55	1.55	.30
20	1.31	1.5	.76	2.15	2.75	1.32	109	1.16	.58	1.08	1.35	.33
21	1.16	1.4	.66	2.5	1.76	.76	*193	1.00	.66	.82	1.25	.26
22	1.0	1.3	.80	1.55	1.25	.71	82	.94	.88	.62	1.25	.22
23	.95	1.3	.84	1.45	*1.07	.62	20.5	.94	.54	3.45	1.08	.22
24	.90	1.3	.58	1.25	1.46	.58	9.1	1.61	.50	3.2	.88	.22
25	1.7	1.2	.60	1.16	5.2	.54	5.9	1.35	.46	1.76	.62	.33
26	.90	1.1	.70	1.35	1.45	.50	2.95	1.08	.39	1.35	.58	.24
27	.90	1.1	.50	1.59	1.16	.58	2.15	1.00	.36	1.35	.54	.31
28	2.0	1.0	.42	.76	.94	.58	2.15	.88	.34	1.45	.46	.44
29	3.2	1.0	.58	.82	.82	.46	2.5	-	.32	1.25	.42	.82
30	1.0	16	.42	*1.68	18.4	.50	2.15	-------	.30	1.35	.39	.50
31	.92	1.3	-------	.88	-------	.42	2.0	-------	.28	-------	.34	-------
Total	53.54	106.00	36.35	148.25	106.81	64.28	470.66	83.38	18.03	77.26	49.52	9.01
Mean:												
mgd	1.73	3.42	1.21	4.78	3.56	2.07	15.2	2.98	0.582	2.58	1.60	0.300
cfs	2.68	5.29	1.87	7.40	5.51	3.20	23.5	4.61	0.900	3.99	2.48	0.464
Ac-ft	164	325	112	455	328	197	1,440	256	55	237	152	28

Calendar year 1956: Max 70 Min 0.39 Mean(mgd) 3.22 Mean(cfs) 4.98 Ac-ft 3,620
Fiscal year 1956-57: Max 193 Min 0.22 Mean(mgd) 3.35 Mean(cfs) 5.18 Ac-ft 3,750

Peak discharge (base, 220 mgd).--Oct. 14 (9:30 p.m.) 870 mgd (1,040 cfs), 3.21 ft; Nov. 16 (11:30 p.m.) 248 mgd (384 cfs), 2.55 ft; Dec. 6 (8:30 p.m.) 288 mgd (446 cfs), 2.62 ft; Jan. 20 (8:30 p.m.) 780 mgd (1,210 cfs), 3.38 ft; Apr. 15 (1 p.m.) 382 mgd (591 cfs), 2.77 ft.

* Discharge measurement made on this day.

Note.--No gage-height record July 22 to Sept. 5; discharge estimated on basis of records for Waiomao and Pukele Streams.

2470. Palolo Stream near Honolulu--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.35	0.46	1.76	0.32	1.25	25.5	1.35	1.65	1.35	0.26	1.1	0.82
2	1.07	.36	1.88	.26	.63	15.6	1.16	.94	2.1	.26	2.7	.94
3	.71	.53	1.88	.24	.46	7.5	1.00	.82	.94	.24	3.7	.76
4	.71	.78	1.55	.22	.34	2.75	1.00	1.34	.88	.28	1.8	.80
5	.68	.98	1.16	.21	.30	2.35	1.00	1.00	*532	.36	1.3	1.24
6	.36	2.75	1.00	.20	.58	26	.94	.76	85	.50	1.2	.66
7	.28	1.45	.94	.20	25	7.0	.88	.66	14	.36	1.9	.54
8	.26	1.34	.76	.20	2.15	3.0	.76	.62	5.0	.54	1.6	.68
9	.35	.82	.76	.20	3.3	2.35	1.11	.54	3.3	.54	1.3	2.1
10	.57	.66	.71	.18	2.8	3.15	2.15	.54	2.4	.46	2.1	1.16
11	1.05	.76	.66	.20	1.88	2.55	.94	.50	2.1	.54	1.8	.82
12	.65	.66	.71	.21	1.35	2.0	.76	.46	1.8	.50	1.4	1.11
13	.43	.54	.58	.30	1.16	1.94	.71	.42	1.7	.46	1.4	.66
14	4.1	.71	.97	.24	.94	2.55	.62	.39	1.6	.50	1.2	.54
15	1.25	.88	.71	.74	.82	5.9	.54	.36	1.5	.54	5.0	.81
16	1.00	.50	.54	.41	.82	3.8	.54	.35	1.4	.62	28	.79
17	1.00	.58	.46	.56	.62	3.0	.54	.52	1.3	.53	9.0	.57
18	.88	.46	.66	.77	.54	2.55	.59	.42	1.2	.28	4.8	.06
19	.82	.42	.54	.42	.50	2.75	.54	.32	1.1	.30	2.8	.04
20	.76	.34	.39	.48	2.0	3.5	.50	.40	1.0	.31	1.8	.06
21	.58	.30	.34	1.11	26.5	6.4	.46	.32	.76	.36	1.6	.04
22	.50	.26	.28	.46	20.5	2.75	.65	.40	.82	.28	1.25	.06
23	.53	.26	.30	.32	18.2	2.35	.93	.36	.66	.24	1.08	.03
24	.69	24	.32	1.29	23.5	2.55	.71	.36	.66	.24	1.00	.03
25	.42	17.6	.34	.77	10.3	2.0	.50	.36	.58	.22	1.50	.03
26	1.17	5.2	.26	.39	5.1	2.75	.46	.36	.54	4.0	1.55	.07
27	.66	2.0	.42	.30	2.75	1.76	.42	.36	1.13	26	.94	.16
28	.62	1.88	.60	.26	3.45	2.5	1.60	6.7	.62	5.5	.82	1.54
29	.62	8.9	.32	.61	3.2	1.65	5.8	-	.98	2.5	.76	.75
30	.54	3.8	.46	.99	4.4	1.35	38	-------	.42	1.2	.82	1.00
31	.62	2.35	-------	2.9	-------	1.25	6.8	-------	.26	-------	.82	-------
Total	24.23	82.53	22.26	15.96	165.34	153.05	73.96	22.23	669.10	48.92	88.04	18.87
Mean:												
mgd	0.782	2.66	0.742	0.515	5.51	4.94	2.39	0.794	21.6	1.63	2.84	0.629
cfs	1.21	4.12	1.15	0.797	8.53	7.64	3.70	1.23	33.4	2.52	4.39	0.973
Ac-ft	74	253	68	49	507	470	227	68	2,050	150	270	58

Calendar year 1957: Max 193 Min 0.18 Mean(mgd) 3.21 Mean(cfs) 4.97 Ac-ft 3,590
Fiscal year 1957-58: Max 532 Min 0.03 Mean(mgd) 3.79 Mean(cfs) 5.86 Ac-ft 4,240

Peak discharge (base, 220 mgd).--Nov. 21 (12:30 a.m.) 346 mgd (535 cfs), 2.63 ft; Dec. 6 (6 p.m.) 346 mgd (535 cfs), 2.63 ft; Mar. 5 (7 a.m.) 2,100 mgd (3,250 cfs), 5.33 ft.

* Discharge measurement made on this day.

Note.--Doubtful gage-height record Mar. 6-20, Apr. 26 to May 21, June 29, 30; discharge estimated on basis of records for Waiomao and Pukele Streams.

2500. Maunawili ditch near Waimanalo

Location.--Lat 21°20'45", long 157°45'10", on left bank 80 ft downstream from Aniani Nui Fidge tunnel and 2.1 miles west of Waimanalo.

Records available.--March 1954 to June 1958.

Gage.--Water-stage recorder and sharp-crested weir. Altitude of gage is 390 ft (from topographic map).

Extremes.--1954-58: Maximum daily discharge, 7.0 mgd (10.8 cfs) Mar. 5, 1958; no flow at times.

Remarks.--Records fair. Ditch diverts water from headwaters of Maunawili Stream for irrigation in vicinity of Waimanalo.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.25	1.94	2.5	2.1	2.25	1.25	0.76	1.48	1.46	1.71	2.1	2.1
2	2.3	1.94	2.45	2.05	2.25	1.00	.76	1.88	1.52	1.66	2.05	2.1
3	2.3	2.0	2.35	2.0	1.91	.46	.80	1.76	1.35	*2.15	2.05	2.05
4	2.25	2.05	2.35	2.1	1.10	.15	*.85	1.86	1.35	2.1	2.1	2.1
5	2.35	2.1	2.6	2.2	1.33	.21	.85	2.35	1.40	2.05	2.05	2.1
6	2.35	2.05	2.5	2.25	2.2	.53	.85	2.0	1.30	2.05	2.0	2.1
7	2.35	2.2	2.35	2.45	1.94	.21	.85	1.88	1.30	2.0	1.94	2.05
8	2.3	1.82	2.3	2.25	2.1	.12	.90	1.76	1.30	2.1	2.0	2.05
9	2.3	.95	2.3	2.45	2.1	.12	.90	1.70	1.30	2.0	*2.0	2.0
10	2.3	1.74	2.25	2.25	2.1	.15	.95	2.0	1.30	2.0	2.0	2.05
11	2.3	2.2	2.25	2.2	2.1	.32	.90	2.0	1.25	1.94	2.25	1.58
12	2.25	2.1	2.25	2.2	2.1	.72	.90	1.82	1.25	1.94	2.35	.67
13	2.35	2.05	2.25	2.2	2.1	.76	.95	1.82	1.25	1.94	3.2	1.43
14	2.3	2.05	2.85	2.75	2.1	.85	1.05	1.76	1.91	2.0	2.3	2.0
15	2.45	2.0	2.9	1.44	*2.1	.90	1.25	1.76	2.35	2.25	2.25	2.05
16	2.35	2.0	2.5	.21	2.2	.90	1.15	1.74	2.35	.59	2.2	2.1
17	2.35	2.4	2.45	.24	2.45	.90	1.05	1.64	2.3	.55	2.2	*2.05
18	2.3	2.25	2.35	1.19	2.5	.85	1.00	1.94	2.25	1.76	2.1	2.05
19	2.25	2.2	2.3	2.65	2.5	.85	1.88	1.58	2.25	2.65	2.0	2.05
20	2.2	2.2	2.25	2.6	2.45	.85	3.6	1.52	2.1	2.5	2.05	2.0
21	2.25	2.05	2.25	2.5	2.35	.85	3.05	*1.52	2.3	2.35	2.2	1.76
22	2.2	2.05	2.25	2.45	2.3	.85	1.15	1.52	2.2	2.25	2.1	2.0
23	2.2	2.05	2.3	2.45	2.25	.80	.58	1.52	2.1	2.35	2.0	2.0
24	2.1	2.0	2.2	2.3	2.3	.80	1.10	1.68	2.1	2.45	2.0	2.0
25	*2.15	2.0	2.2	2.3	2.45	.80	.76	1.46	2.1	2.05	1.94	2.0
26	2.05	2.0	2.1	2.45	2.3	.80	.67	1.40	2.1	1.52	1.94	2.0
27	2.05	2.0	2.1	2.35	2.25	.80	.63	1.57	2.1	1.46	1.94	2.0
28	2.1	2.0	2.1	2.3	2.25	.80	.59	1.46	2.05	1.76	1.94	2.1
29	2.1	2.2	2.1	2.3	2.25	.80	.59	-	2.0	2.1	1.94	2.05
30	2.0	*2.95	2.05	2.35	2.4	.80	.59	-------	2.0	2.1	1.88	2.0
31	2.0	2.6	-------	2.25	-------	.76	.59	-------	2.0	-------	2.05	-------
Total	69.35	64.14	69.95	65.78	64.98	20.96	32.50	48.38	55.89	58.33	65.12	58.59
Mean:												
mgd	2.24	2.07	2.33	2.12	2.17	0.676	1.05	1.73	1.80	1.94	2.10	1.95
cfs	3.47	3.20	3.61	3.28	3.36	1.05	1.62	2.68	2.79	3.00	3.25	3.02
Ac-ft	213	197	215	202	199	64	100	148	172	179	200	180

Calendar year 1956: Max 3.6 Min 0 Mean(mgd) 1.88 Mean(cfs) 2.91 Ac-ft 2,110
Fiscal year 1956-57: Max 3.6 Min 0.12 Mean(mgd) 1.85 Mean(cfs) 2.86 Ac-ft 2,070

* Discharge measurement made on this day.

2500. Maunawili ditch near Waimanalo--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.94	1.82	2.1	2.05	1.82	2.75	1.70	1.70	1.46	0.95	2.35	2.3
2	2.0	1.82	2.1	2.0	1.82	1.32	1.70	1.70	1.52	1.05	2.5	2.3
3	1.94	1.98	2.05	2.0	1.88	*1.91	1.64	1.64	1.70	1.05	3.35	2.3
4	2.0	1.88	2.05	2.0	1.82	2.8	1.64	1.70	1.42	1.20	2.9	2.3
5	2.0	1.88	2.0	1.94	1.88	2.8	1.64	1.64	7.0	1.15	2.65	2.3
6	2.05	2.0	2.0	2.0	1.88	3.75	1.76	1.58	2.75	1.15	2.6	2.25
7	2.1	1.94	2.0	2.0	3.05	1.98	1.76	1.58	.37	1.05	2.5	2.25
8	2.2	1.94	2.05	2.0	2.6	.21	1.82	1.58	.24	1.15	2.45	2.25
9	2.25	*1.94	2.0	2.0	2.35	.21	1.82	1.52	.18	1.10	2.35	2.25
10	2.3	1.94	2.0	1.94	2.25	.15	1.82	1.52	.15	*1.15	2.35	2.25
11	2.35	1.88	2.0	1.94	2.1	.15	1.76	1.52	.12	1.65	2.3	2.1
12	2.35	1.94	2.0	1.88	2.1	.15	1.76	1.70	.12	2.2	2.3	2.2
13	2.5	1.94	1.94	1.88	2.05	1.23	1.76	1.82	.12	2.2	2.3	2.2
14	2.8	1.94	2.05	1.82	2.05	1.94	1.70	1.76	.12	1.64	2.25	2.2
15	2.5	1.88	1.94	1.94	2.05	1.94	*1.70	1.70	.09	2.25	2.35	2.1
16	2.5	1.94	*1.94	1.82	2.05	1.88	1.70	1.70	.09	1.85	3.1	2.1
17	2.45	2.0	1.94	1.88	2.05	1.88	1.70	1.70	.09	2.3	3.7	2.2
18	2.45	1.94	2.05	1.82	2.05	1.82	1.82	1.82	.09	2.2	3.55	2.05
19	2.45	2.0	2.0	1.82	2.05	1.88	1.88	1.88	.09	2.3	3.45	1.88
20	2.45	2.0	2.0	1.88	2.2	1.82	1.94	1.94	.09	2.5	3.2	2.0
21	2.45	2.0	2.0	1.88	3.3	1.82	2.0	1.94	.45	2.3	2.5	2.1
22	2.45	2.0	2.0	1.88	3.55	1.82	2.05	1.88	1.10	2.3	*2.65	2.1
23	2.5	2.0	2.0	1.88	1.74	1.76	2.0	1.82	1.05	2.25	2.6	2.05
24	2.45	2.3	2.0	2.0	.37	1.76	1.88	*1.76	1.05	2.25	2.6	2.05
25	2.3	2.3	2.0	1.88	.30	1.76	1.76	1.70	1.05	2.35	2.5	2.05
26	2.25	2.05	2.05	1.88	.30	1.76	1.52	1.70	1.00	2.65	2.45	2.05
27	2.2	2.05	2.05	1.88	1.56	1.70	1.52	1.64	1.00	3.05	2.35	2.05
28	1.94	2.1	2.05	*1.82	2.95	1.70	1.52	1.98	1.00	2.8	2.35	2.2
29	2.0	2.1	2.05	1.82	2.95	1.70	1.64	-	1.00	2.6	2.35	2.05
30	1.64	2.2	2.05	1.82	2.9	1.70	1.70	-------	.95	2.45	2.35	2.05
31	1.52	2.1	-------	1.94	-------	1.70	1.70	-------	.95	-------	2.3	-------
Total	69.28	61.70	60.46	59.29	62.02	51.75	54.31	48.12	26.41	57.13	81.50	64.53
Mean:												
mgd	2.23	1.99	2.02	1.91	2.07	1.67	1.75	1.72	0.916	1.90	2.63	2.15
cfs	3.45	3.08	3.13	2.96	3.20	2.59	2.71	2.66	1.42	2.94	4.07	3.33
Ac-ft	213	189	186	182	190	159	167	148	87	175	250	198

Calendar year 1957: Max 3.75 Min 0.15 Mean(mgd) 1.87 Mean(cfs) 2.89 Ac-ft 2,100
Fiscal year 1957-58: Max 7.0 Min 0.09 Mean(mgd) 1.91 Mean(cfs) 2.96 Ac-ft 2,140

* Discharge measurement made on this day.

2750. Haiku Stream near Heeia

Location (revised).--Lat 21°24'45", long 157°49'35", on left bank 1.7 miles west of Kaneohe Post Office and 1.8 miles southwest of Heeia.

Drainage area.--0.97 sq mi (revised).

Records available.--January 1914 to October 1919, July 1939 to June 1958.

Gage.--Water-stage recorder. Datum of gage is 271.9 ft above mean sea level (levels by city and county of Honolulu). Prior to Apr. 28, 1914, staff gage and Apr. 29, 1914, to Oct. 25, 1919, water-stage recorder, at same site at different datum.

Extremes.--1956-57: Maximum discharge during fiscal year, 545 mgd (843 cfs) Dec. 6 (gage height, 4.37 ft), from rating curve extended above 21 mgd as explained below; minimum daily, 0.35 mgd (0.54 cfs) Oct. 2.

1957-58: Maximum discharge during fiscal year, 650 mgd (1,010 cfs) Mar. 5 (gage height, 4.56 ft), from rating curve extended above 21 mgd as explained below; minimum daily, 0.25 mgd (0.39 cfs) Oct. 10.

1914-19, 1939-58: Maximum discharge, 1,150 mgd (1,780 cfs) Mar. 26, 1951 (gage height, 5.39 ft), from rating curve extended above 21 mgd by test on model of station site; minimum daily, 0.19 mgd (0.29 cfs) July 13, Oct. 17, 19-21, 23-26, 1945, Sept. 18-20, 1946.

Remarks.--Records fair. Suburban Water System diverts ground water from tunnel in drainage area.

Revisions (fiscal years).--WSP 935: 1940.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.05	1.23	0.78	0.68	0.78	2.35	0.99	0.99	0.68	0.63	0.84	0.58
2	1.17	1.10	.78	.35	.78	1.68	.94	.99	.63	.58	.84	.58
3	1.17	1.04	.68	.53	.78	1.36	.99	.99	.68	*.82	.84	.58
4	1.10	1.04	.68	2.65	.78	.99	.94	1.04	.68	.78	.78	.65
5	1.08	1.10	.53	1.12	.78	.99	.94	1.30	.73	.63	.78	.69
6	1.10	1.10	.58	.53	1.17	14.4	.94	1.78	.68	.63	.89	.50
7	1.10	1.48	.53	.55	.99	3.2	.89	1.23	.68	.68	.99	.50
8	1.17	13.7	.53	.63	.73	1.55	.94	1.10	.68	.73	.97	.53
9	1.10	10.3	.58	.99	.73	1.36	.89	.99	.73	.68	.94	.55
10	1.04	1.69	.58	.85	.73	1.42	.84	.99	.73	.68	.94	.54
11	1.08	1.42	.53	.58	.73	1.24	.78	1.23	.68	.66	.94	.58
12	1.04	1.23	*.63	.53	.73	1.30	.53	1.10	.73	.58	1.77	.66
13	1.04	.99	.63	.58	.73	1.23	.53	1.04	.73	.79	3.1	.84
14	.99	.68	.63	9.1	.68	1.23	.53	.99	.73	1.98	1.10	.43
15	.99	.68	.73	3.05	.73	1.23	.68	.94	.73	1.70	.84	.53
16	1.04	.68	.89	3.15	.88	1.23	.63	.94	.73	1.42	.73	.63
17	.94	1.60	.89	2.0	1.76	1.23	.63	.76	.78	14.4	*.73	.68
18	1.14	2.05	.89	*3.05	2.25	1.23	.68	1.35	.78	3.1	.68	*.62
19	1.77	1.30	.73	1.68	2.0	1.30	5.1	.99	.78	1.55	.68	.58
20	1.23	.94	.50	1.55	*2.15	1.36	7.9	.94	.73	1.30	.68	.53
21	1.23	.78	.53	1.70	1.68	1.30	*35.5	.89	.78	1.25	.68	.53
22	1.10	.78	.50	1.49	1.42	1.17	17.3	.89	.73	.90	.68	.53
23	.84	.84	.58	1.42	1.36	1.17	5.8	.84	.73	.99	.68	.53
24	*.53	.84	.66	1.04	1.54	1.17	3.2	.84	.68	1.04	.68	.53
25	.58	.78	.53	.89	2.05	1.17	2.15	*.73	.68	1.17	.68	.53
26	.73	.84	.53	.99	1.55	1.17	1.84	.68	.68	1.04	.68	.56
27	1.01	.89	.50	.89	8.3	1.10	1.62	.78	.68	1.10	.63	.61
28	1.04	.89	.37	.84	2.1	1.04	1.36	.78	.63	1.10	.63	.80
29	1.10	.94	.44	.84	1.30	1.04	1.17	-	.63	1.04	.63	.57
30	1.17	*4.5	.50	.78	11.0	1.04	1.10	-------	.63	.94	.63	.63
31	1.52	1.32	-------	.78	-------	.99	1.04	-------	.63	-------	.58	-------
Total	33.19	58.75	18.44	45.81	53.19	54.24	99.37	28.11	21.78	44.89	27.24	17.60
Mean:												
mgd	1.07	1.90	0.615	1.48	1.77	1.75	3.21	1.00	0.703	1.50	0.879	0.587
cfs	1.66	2.94	0.952	2.29	2.74	2.71	4.97	1.55	1.09	2.32	1.36	0.908
Ac-ft	102	180	57	141	163	166	305	86	67	138	84	54

Calendar year 1956: Max 14.4 Min 0.35 Mean(mgd) 1.61 Mean(cfs) 2.49 Ac-ft 1,810
Fiscal year 1956-57: Max 35.5 Min 0.35 Mean(mgd) 1.38 Mean(cfs) 2.14 Ac-ft 1,540

Peak discharge (base, 100 mgd).--Aug. 8 (10:30 p.m.) 144 mgd (223 cfs), 2.97 ft; Oct. 14 (7:30 p.m.) 129 mgd (200 cfs), 2.86 ft; Nov. 27 (8 p.m.) 122 mgd (189 cfs), 2.82 ft; Nov. 30 (6:30 p.m.) 172 mgd (266 cfs), 3.12 ft; Dec. 6 (8 p.m.) 545 mgd (843 cfs), 4.37 ft; Jan. 21 (7 a.m.) 144 mgd (223 cfs), 2.97 ft; Apr. 17 (4 p.m.) 136 mgd (210 cfs), 2.92 ft.

* Discharge measurement made on this day.

2750. Haiku Stream near Heela--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.52	0.37	0.43	0.31	0.27	27	1.17	1.05	1.63	0.68	0.64	0.49
2	.56	.37	.43	.31	.27	7.1	1.17	.99	1.11	.68	.64	.49
3	.56	.40	.43	.31	.29	3.35	1.17	.93	.88	*.64	.64	.49
4	.64	.40	.37	.31	.29	2.55	1.11	.99	.64	.68	.60	.49
5	.60	.43	.37	.29	.29	1.99	1.11	.91	153	.68	.60	.49
6	.56	.46	.37	.29	.31	9.1	1.05	.93	44	.68	.60	.49
7	.52	.46	.37	.27	5.7	3.1	.83	.93	7.3	.68	.60	.49
8	.52	.46	.34	.27	1.17	1.99	.99	.93	3.1	.68	.60	.49
9	.52	.43	.34	.27	.73	1.72	1.11	.93	2.35	.68	.60	.49
10	.56	.40	.34	.25	.68	1.54	1.11	.80	1.90	.64	.64	.49
11	.52	.40	.34	.27	.60	1.46	1.05	.88	1.38	.64	.64	.52
12	.49	.40	.37	.31	.56	1.46	1.13	.88	1.17	.64	.60	.49
13	.46	.40	.43	.37	.56	1.46	.78	.88	1.38	.64	.60	.46
14	.56	.40	.43	.37	.52	1.46	*.78	.88	1.17	.64	.60	.43
15	.56	.40	.40	.43	.56	1.46	.68	.88	.88	.64	.64	.40
16	.57	.37	.29	.37	.56	1.38	.60	.88	.88	.68	.99	.37
17	.40	.37	.29	.40	.56	1.31	.68	.88	.88	.64	.93	.43
18	.40	.37	.37	.40	.60	1.31	.68	.88	.93	.64	.68	.40
19	.43	.37	.31	.40	.60	1.46	.68	.88	.81	.61	.64	.37
20	.34	.34	.31	.40	.60	1.38	.68	.90	.88	.60	*.60	.37
21	.34	.34	.31	.40	14.0	2.5	.68	*.88	.89	.56	.60	.37
22	.34	.34	.31	.40	18.4	1.54	.73	.83	.93	.56	.60	.37
23	.37	.34	.31	.40	10.9	1.31	.78	.88	.93	.52	.56	.37
24	.40	.40	.31	.49	14.1	1.31	.80	.88	.93	.52	.56	.37
25	.40	.43	.31	.43	5.9	1.38	.64	.83	.99	.72	.60	.37
26	.40	.40	.31	.34	2.65	1.31	.64	.83	.93	1.78	.56	.37
27	.40	.40	.31	.31	1.81	1.24	.60	.73	.83	2.7	.56	.40
28	.40	.40	.31	.29	1.54	1.24	.78	*16.5	.78	1.17	.49	.49
29	*.40	.40	.31	.29	1.54	1.24	.99	-	.83	.88	.49	.43
30	.40	.43	.34	.29	1.54	1.24	1.17	-------	.68	.73	.49	.40
31	.40	.43	-------	.31	-------	1.17	1.24	-------	.68	-------	.49	-------
Total	14.54	12.31	10.46	10.55	88.10	89.06	27.61	40.57	235.67	23.23	19.08	13.08
Mean:												
mgd	0.469	0.397	0.349	0.340	2.94	2.87	0.891	1.45	7.60	0.774	0.615	0.436
cfs	0.725	0.614	0.540	0.526	4.55	4.44	1.38	2.24	11.8	1.20	0.952	0.675
Ac-ft	45	38	32	32	270	273	85	125	723	71	59	40

Calendar year 1957: Max 35.5 Min 0.25 Mean(mgd) 1.27 Mean(cfs) 1.96 Ac-ft 1,420
Fiscal year 1957-58: Max 153 Min 0.25 Mean(mgd) 1.60 Mean(cfs) 2.48 Ac-ft 1,790

Peak discharge (base, 100 mgd).--Nov. 21 (1 a.m.) 348 mgd (538 cfs), 3.65 ft; Dec. 1 (6 p.m.) 194 mgd (300 cfs), 3.18 ft; Dec. 6 (6 p.m.) 545 mgd (843 cfs), 4.35 ft; Feb. 28 (6 a.m.) 220 mgd (340 cfs), 3.28 ft; Mar. 5 (4:30 p.m.) 650 mgd (1,010 cfs), 4.56 ft.

* Discharge measurement made on this day.

2780. Iolekaa Stream mauka near Heeia

Location.--Lat 21°25'15", long 157°49'50", on left bank 0.7 mile upstream from confluence with Haiku Stream, 1.5 miles southwest of Heeia, and 1.8 miles west of Kaneohe Post Office.

Drainage area.--0.28 sq mi (revised).

Records available.--March 1940 to June 1958.

Gage.--Water-stage recorder and concrete control. Datum of gage is 320 ft above mean sea level (transit levels by U. S. Navy).

Average discharge.--17 years (1940-42, 1943-58), 0.384 mgd (0.594 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 16.0 mgd (24.8 cfs) Aug. 8 (gage height, 1.57 ft), from rating curve extended above 4.0 mgd as explained below; minimum, 0.28 mgd (0.43 cfs) June 11, 12.

1957-58: Maximum discharge during fiscal year, 30 mgd (46 cfs) Feb. 28 (gage height, 1.87 ft), from rating curve extended above 4.0 mgd as explained below; minimum, 0.25 mgd (0.39 cfs) July 16-23, 28.

1940-58: Maximum discharge, 69 mgd (107 cfs) Oct. 22, 1941 (gage height, 2.40 ft), from rating curve extended above 4.0 mgd by rating for Columbus-type control and test on model of station site; minimum daily, 0.10 mgd (0.16 cfs) Oct. 31 to Nov. 9, Nov. 24, 27, 1946.

Remarks.--Records fair.

Revisions (fiscal years).--WSP 935: 1940.

Rating table, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)
(Shifting-control method used Dec. 1, 1957, to Jan. 30, 1958)

0.5	0.18	1.0	2.9
.6	.35	1.1	4.2
.7	.68	1.2	5.9
.8	1.20	1.3	8.0
.9	1.92		

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.45	0.45	0.48	0.42	0.38	0.99	0.38	0.42	0.38	0.35	0.42	0.33
2	.45	.45	.45	.38	.38	.65	.38	.42	.38	.35	.42	.33
3	.45	.45	.45	.38	.38	.58	.38	.42	.38	*.40	.42	.33
4	.42	.45	.45	1.19	.38	.38	.38	.68	.38	.38	.42	.35
5	.42	.48	.45	.45	.38	.35	.35	.68	.38	.35	.42	.35
6	.42	.45	.56	.42	.62	1.20	.35	.58	.38	.35	.42	.35
7	.45	.70	.45	.47	.38	.91	.35	.52	.38	.35	.42	.33
8	.45	2.75	.45	.42	.38	.55	.35	.48	.38	.38	*.42	.32
9	.45	1.96	.42	.48	.35	.48	*.35	.48	.42	.35	.42	.32
10	.45	.78	.42	*.42	.35	.42	.35	.45	.42	.35	.42	.30
11	.45	.55	.42	.42	.35	.38	.35	.61	.42	.35	.38	.28
12	.45	.48	*.40	.42	.35	.38	.32	.52	.42	.35	.42	.28
13	.45	.45	.35	.42	.35	.35	.32	.48	.42	.48	.53	.30
14	.45	.45	.35	1.58	.35	.35	.32	.48	.42	1.22	.38	.32
15	.42	.45	.56	.90	.38	.35	.56	.48	.42	.75	.38	.33
16	.45	.45	.38	.82	.39	.35	.35	.45	.42	.52	.38	.35
17	.45	.79	.38	.68	.70	.38	.35	.48	.42	2.05	.38	.35
18	.48	.85	.38	.98	.99	.35	.35	.70	.42	.99	.38	*.35
19	.67	.52	.38	.61	.58	.38	1.90	.42	.38	.52	.38	.35
20	.45	.48	.38	.52	*.94	.38	2.5	.42	.38	.42	.38	.35
21	.45	.48	.38	.42	.53	.38	4.9	.42	.38	.38	.38	.35
22	.42	.48	.38	.45	.48	.38	2.95	.42	.38	.35	.38	.35
23	.42	.48	.38	.45	.42	.38	1.42	.42	.38	.38	.38	.38
24	.42	.48	.38	.42	.46	.38	.78	.42	.38	.38	.38	.38
25	.42	.48	.38	.42	.65	.38	.61	*.42	.38	.38	.35	.42
26	.42	.48	.38	.42	.42	.38	.52	.42	.35	.38	.35	.42
27	.42	.48	.38	.42	1.29	.38	.48	.42	.35	.38	.35	.42
28	.45	.48	.38	.38	.78	.38	.45	.38	.35	.38	.35	.57
29	.45	.48	.38	.38	.52	.38	.45	-	.35	.38	.35	.42
30	.45	1.28	.42	.38	1.55	.38	.45	-------	.35	.42	.35	.33
31	.81	.55	-------	.38	-------	.38	.42	-------	.35	-------	.33	-------
Total	14.26	20.54	12.40	16.96	16.52	14.34	24.37	13.49	12.00	15.07	12.14	10.61
Mean: mgd	0.460	0.663	0.413	0.547	0.551	0.463	0.786	0.482	0.387	0.502	0.392	0.354
cfs	0.712	1.03	0.639	0.846	0.853	0.716	1.22	0.746	0.599	0.777	0.607	0.548
Ac-ft	44	63	38	52	51	44	75	41	37	46	37	33

Calendar year 1956: Max 2.8 Min 0.33 Mean(mgd) 0.505 Mean(cfs) 0.781 Ac-ft 569
Fiscal year 1956-57: Max 4.0 Min 0.28 Mean(mgd) 0.501 Mean(cfs) 0.775 Ac-ft 561

Peak discharge (base, 15 mgd).--Aug. 8 (1:30 p.m.) 16.0 mgd (24.8 cfs), 1.57 ft.

* Discharge measurement made on this day.

2780. Iolekaa Stream mauka near Heeia--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.32	0.28	0.28	0.30	0.32	2.55	0.30	0.33	0.68	0.35	0.42	0.38
2	.32	.26	.28	.30	.32	.99	.28	.33	.48	.33	.45	.38
3	.32	.26	.28	.30	.32	.58	.28	.33	.42	.33	.55	.38
4	.32	.26	.28	.30	.32	.38	.28	.33	.38	.32	.42	.38
5	.32	.26	.28	.30	*.30	.33	.28	.35	7.9	.32	.38	.38
6	.32	.26	.28	.30	.32	1.71	.30	.33	4.9	.32	.38	.38
7	.32	.28	.28	.30	1.67	.84	.30	.33	1.34	*.32	.38	.38
8	.33	.28	.28	.30	.45	.48	.30	.33	.84	.33	.42	.38
9	.33	.26	.28	.30	.38	.38	.30	.32	.65	.33	.42	.38
10	.35	.26	.30	.30	.35	.33	.30	.32	.55	.33	.38	.38
11	.35	.26	.30	.30	.32	*.42	.30	.33	*.52	.33	.38	.38
12	.33	.26	.30	.30	.32	.45	.28	*.32	.55	.33	.35	.38
13	.33	.26	.30	.30	.30	.35	.28	.32	.52	.33	*.35	.38
14	.45	.26	.30	.30	.30	.32	.28	.32	.48	.35	.38	.38
15	.28	.26	.28	.33	.30	.30	*.28	.32	.48	.35	.42	.42
16	.25	.26	.28	.32	.30	.30	.28	.32	.48	.35	1.11	.42
17	.25	.28	*.28	.30	.30	.30	.28	.32	.45	.35	.48	.42
18	.25	.28	.30	.30	.28	.30	.30	.30	.45	.33	.45	.38
19	.25	.28	.32	.30	.28	.30	.30	.30	.36	.33	.42	.38
20	.25	.28	.32	.32	.30	.28	.30	.32	.38	.38	.42	.38
21	.25	.28	.30	.39	1.44	.38	.30	.30	.38	.33	.42	.38
22	.25	.26	.30	.30	2.6	.28	.32	.30	.38	.33	.42	.38
23	.25	.26	.30	.30	1.89	.28	.32	.33	.42	.33	.38	.35
24	.26	.28	.30	.45	2.35	.30	.28	.32	.42	.33	.38	.35
25	.26	.28	.30	.33	1.10	.30	.28	.32	.38	.57	.42	*.35
26	.26	.26	.30	.32	.55	.30	.28	.33	.38	1.11	.38	.35
27	.26	.26	.30	.32	.38	.28	.28	.33	.38	1.03	.38	.35
28	.25	.26	.30	.32	.32	.28	.32	2.1	.38	.55	.38	.54
29	.28	.26	.30	.32	.30	.28	.32	-	.35	.45	.38	.35
30	*.28	.26	.30	.32	.33	.28	.58	-------	.32	.42	.38	.35
31	.28	.26	-------	.35	-------	.30	.33	-------	.35	-------	.38	-------
Total	9.12	8.26	8.80	9.70	19.01	15.15	9.41	10.80	26.97	12.16	13.26	11.47
Mean:												
mgd	0.294	0.266	0.293	0.313	0.634	0.489	0.304	0.386	0.870	0.405	0.428	0.382
cfs	0.455	0.412	0.453	0.484	0.981	0.757	0.470	0.597	1.35	0.627	0.662	0.591
Ac-ft	28	25	27	30	58	46	29	33	83	37	41	35

Calendar year 1957: Max 4.9 Min 0.25 Mean(mgd) 0.432 Mean(cfs) 0.668 Ac-ft 483
Fiscal year 1957-58: Max 7.9 Min 0.25 Mean(mgd) 0.422 Mean(cfs) 0.653 Ac-ft 472

Peak discharge (base, 15 mgd).--Nov. 21 (1 a.m.) 28.5 mgd (44 cfs), 1.90 ft; Dec. 1 (5 to 6 p.m.) 15.2 mgd (23.5 cfs), 1.65 ft; Feb. 28 (5:30 p.m.) 30 mgd (46 cfs), 1.87 ft; Mar. 5 (12 m.) 17.0 mgd (26.5 cfs), 1.60 ft.

* Discharge measurement made on this day.

2830. Kahaluu Stream near Heeia

Location.--Lat 21°26'20", long 157°51'20" (revised), on left bank 40 ft upstream from intake of Libby ditch, 0.5 mile upstream from forest-reserve boundary, and 3.0 miles northwest of Heeia.

Drainage area.--0.28 sq mi (revised).

Records available.--October 1935 to June 1958.

Gage.--Water-stage recorder and Parshall flume. Datum of gage is 357.52 ft above mean sea level (levels by Wright, Harvey, & Wright).

Extremes.--1956-57: Maximum discharge during fiscal year, 63 mgd (98 cfs) Dec. 6 (gage height, 3.03 ft), from rating curve extended above 9 mgd by test on model of station site; minimum, 0.07 mgd (0.11 cfs) June 11.

1957-58: Maximum discharge during fiscal year occurred Mar. 5 (discharge unknown); minimum, 0.03 mgd (0.05 cfs) June 25.

1935-58: Maximum discharge, 290 mgd (449 cfs) Sept. 27, 1937 (gage height, 5.47 ft, control then in use), from rating curve computed from 11 to 240 mgd by Parshall flume formula and extended above; minimum, that of June 25, 1958.

Remarks.--Records fair except those for periods of no gage-height record, which are poor. Honolulu Board of Water Supply diverts ground water from tunnel in drainage area. Continuous records of rainfall are obtained at station.

Rating table, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)
(Shifting-control method used Apr. 21 to May 8, July 20-22, 1957)

0.0	0	0.7	3.9
.1	.13	.9	6.2
.3	.84	1.2	10.5
.5	2.1		

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.26	0.15	0.13	0.20	0.29	0.51	0.39	0.55	0.99	*0.71	0.94	0.55
2	.26	.15	.15	.20	.32	.43	.39	.55	.89	.71	.89	.55
3	.23	.15	.15	.23	.32	.43	.43	.63	.89	.79	.89	.51
4	.23	.15	.15	.92	.32	.43	.43	1.22	.89	.89	.94	.51
5	.23	.20	.17	.29	.29	.39	.43	.89	.94	.84	.94	.51
6	.20	.17	.15	.26	.32	2.05	.47	.71	.94	.79	.89	.47
7	.20	.17	.15	.26	.26	.55	*.43	.67	.94	.84	.79	.47
8	.23	1.16	.15	.29	.29	.39	.51	.67	.89	1.04	.74	.47
9	.32	a3.0	.15	.29	.32	.35	.55	.71	.89	.99	.75	.47
10	.17	.20	.15	*.30	.32	.35	.55	.67	.89	.99	.67	.47
11	.17	.11	.15	.29	.32	.35	.55	.79	.89	.94	.67	.20
12	.17	.13	.15	.29	.32	.35	.55	.75	.84	.89	1.03	.29
13	.20	.11	.15	.32	.32	.39	.55	.75	.84	.98	.84	.17
14	.20	.11	*.15	1.47	.32	.43	.59	.75	.84	1.66	.75	*.19
15	.20	.11	.23	.35	.32	.47	.63	.71	.79	1.71	.79	.26
16	.23	.11	.23	.26	.35	.47	.59	.71	.79	1.28	.75	.29
17	.20	.20	.23	.37	.78	.47	.63	.74	.89	2.75	.75	.32
18	.63	.49	.23	.86	.51	.43	.63	.79	.84	1.28	.75	.35
19	.23	.15	.20	.32	.43	.43	1.76	.84	.84	1.04	.75	.32
20	.20	.13	.20	.29	*.45	.47	2.85	.79	.84	.99	.71	.35
21	.17	.13	.20	.29	.43	.43	5.1	.79	.89	.97	.71	.32
22	.20	.13	.20	.29	.39	.43	2.85	.79	.89	.94	.67	.29
23	.17	.13	.20	.29	.39	.43	.79	.79	.94	1.04	.67	.26
24	*.15	.13	.20	.29	.39	.43	.72	.94	.89	.94	.67	.29
25	.15	.13	.20	.29	a.58	.43	.59	*.91	.84	.84	.67	.29
26	.15	.13	.20	.32	.39	.43	.55	.89	.79	.79	.67	.29
27	.15	.13	.20	.32	.67	.43	.55	.94	.79	.79	.67	.26
28	.15	.13	.20	.29	.43	.43	.59	1.04	.71	.84	.63	.35
29	.15	.15	.20	.29	.39	.43	.59	-	.71	.79	.63	.35
30	.17	.48	.20	.32	a1.7	.43	.51	-------	.79	.75	.63	.39
31	.19	.15	-------	.32	-------	.39	.51	-------	.75	-------	.59	-------
Total	6.56	8.97	5.42	11.37	12.93	14.83	27.26	21.98	26.54	30.80	23.44	10.81
Mean:												
mgd	0.212	0.289	0.181	0.367	0.431	0.478	0.879	0.785	0.856	1.03	0.756	0.360
cfs	0.328	0.447	0.280	0.568	0.667	0.740	1.36	1.21	1.32	1.59	1.17	0.557
Ac-ft	20	28	17	35	40	46	84	67	81	95	72	33

Calendar year 1956: Max 3.0 Min 0.11 Mean(mgd) 0.453 Mean(cfs) 0.701 Ac-ft 510
Fiscal year 1956-57: Max 5.1 Min 0.11 Mean(mgd) 0.550 Mean(cfs) 0.851 Ac-ft 618

Peak discharge (base, 30 mgd).--Dec. 6 (8 p.m.) 63 mgd (98 cfs), 3.03 ft.

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for Waihee Stream.

2830. Kanaluu Stream near Heeia--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.39	0.29	0.39	0.23	0.20	5.5	0.43	0.43	a0.70	0.67	0.35	0.35
2	.35	.29	.39	.20	.20	.81	.39	.43	a.55	.59	.43	.32
3	.39	.29	.39	.17	.20	.32	.35	.39	a.52	.59	.47	.29
4	.43	.29	.29	.17	.17	.26	.32	.43	a.50	.55	.39	.26
5	.43	.32	.29	.17	*.17	.20	.32	.43	a10	.48	.39	.26
6	.47	.39	.29	.17	.17	1.72	.32	.43	a7.0	.51	.39	.26
7	.39	.43	.29	.15	2.9	.39	.32	.47	a.75	*.49	.43	.23
8	.32	.39	.29	.15	.35	.26	.35	.47	.71	.39	.39	.23
9	.29	.35	.29	.15	.29	.23	.35	.43	.71	.39	.43	.26
10	.32	.32	.26	.17	.26	.26	.35	.43	.71	.39	.43	.26
11	.35	.35	.26	.23	.26	*.26	.32	.43	.71	.32	.43	.23
12	.39	.39	.26	.17	a.24	.26	.32	.39	.71	.39	.43	.23
13	.35	.35	.26	.20	a.23	.26	.32	.43	.71	.35	*.40	.17
14	.51	.35	.26	.20	a.23	.29	*.35	.43	.71	.35	.35	.17
15	.43	.39	.20	.20	a.23	.29	.43	.39	.75	.32	.39	.17
16	.39	.32	.17	.20	a.23	.29	.43	.35	.71	.35	1.38	.17
17	.35	.32	*.17	.20	a.23	.26	.43	.39	.67	.35	.71	.20
18	.35	.32	.17	.20	.23	.29	.47	.35	.71	.32	.51	.20
19	.39	.32	.17	.20	.20	.46	.51	.32	.75	.32	.51	.17
20	.41	.29	.17	.20	1.29	.35	.51	.39	.71	.39	.51	.17
21	.60	.29	.17	.23	1.54	.52	.47	*.43	.63	.43	.47	.17
22	.31	.29	.17	.20	3.2	.35	.47	.43	.71	.39	.43	.17
23	.23	.29	.15	.20	1.66	.35	.47	.51	.75	.32	.29	*.15
24	.39	.32	.15	.40	2.85	.39	.47	.51	.71	.29	.35	.09
25	.39	.39	.15	.32	.57	.39	.43	.51	.75	.43	.39	.08
26	.43	.35	.15	.23	.26	.35	.51	.51	.71	.86	.35	.17
27	.51	.29	.20	.20	.23	.35	.51	.51	.75	2.4	.32	.20
28	.55	.29	.20	.20	.23	.35	.51	a4.5	.68	.64	.29	.23
29	.43	.29	.20	.20	.23	.35	.43	-	.75	.47	.29	.23
30	*.37	.32	.32	.20	.26	.35	.59	-------	.71	.43	.26	.23
31	.29	.39	-------	.23	-------	.35	.47	-------	.71	-------	.29	-------
Total	12.20	10.27	7.12	6.34	19.31	17.06	12.92	16.12	37.15	15.17	13.45	6.32
Mean:												
mgd	0.394	0.331	0.237	0.205	0.644	0.550	0.417	0.576	1.20	0.506	0.434	0.211
cfs	0.610	0.512	0.367	0.317	0.996	0.851	0.645	0.891	1.86	0.783	0.671	0.326
Ac-ft	37	32	22	19	59	52	40	49	114	47	41	19

Calendar year 1957: Max 5.5 Min 0.15 Mean(mgd) 0.594 Mean(cfs) 0.904 Ac-ft 653
Fiscal year 1957-58: Max 10 Min 0.08 Mean(mgd) 0.475 Mean(cfs) 0.735 Ac-ft 531

Peak discharge (base, 30 mgd).--Nov. 20 (11:30 p.m.) 38.5 mgd (59.6 cfs), 2.35 ft; Dec. 1 (5 p.m.) 51 mgd (79 cfs), 2.68 ft; Dec. 6 (5 p.m.) 71 mgd (110 cfs), 3.24 ft; Feb. 28 (time and discharge unknown); Mar. 5 (time and discharge unknown).

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for Waihee Stream.

2840. Waihee Stream near Heeia

Location (revised).--Lat 21°27'00", long 157°51'40", on left bank 70 ft upstream from intake of Kihe ditch, 120 ft downstream from forest-reserve boundary, 3.5 miles northwest of Heeia, and 4.4 miles northwest of Kaneohe.

Drainage area.--0.93 sq mi (revised).

Records available.--December 1935 to June 1958.

Gage.--Water-stage recorder and Parshall flume. Datum of gage is 191.45 ft above mean sea level (levels by Austin and Towill).

Average discharge.--22 years (1936-58), 6.41 mgd (9.92 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 122 mgd (189 cfs) Dec. 6, Jan. 21, from rating curve extended above 30 mgd; maximum gage height, 3.80 ft Jan. 21; minimum daily discharge, 5.4 mgd (8.4 cfs) Dec. 25, Dec. 31 to Jan. 4, June 20-27.
1957-58: Maximum discharge during fiscal year, 200 mgd (309 cfs) Mar. 6 (gage height, 4.74 ft), from rating curve extended as explained above; minimum, 4.4 mgd (6.8 cfs) Oct. 29, 30.
1935-58: Maximum discharge, 465 cfs (719 cfs) Feb. 28, 1939 (gage height, 5.47 ft, control then in use), from rating curve computed from 20 to 230 mgd by Parshall flume formula and extended above; minimum, 2.75 mgd (4.25 cfs) Sept. 6, Oct. 31 to Nov. 2, 1955.

Remarks.--Records good except those for periods of fragmentary gage-height record, which are fair, and those for periods of no gage-height record, which are poor. Honolulu Board of Water Supply diverts ground water from tunnel in drainage area.

Rating tables, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)
(Shifting-control method used Dec. 7-9, 1956)

July 1 to Oct. 4, 1956				Oct. 5, 1956, to June 30, 1958			
0.8	5.5	1.2	12.8	0.7	3.6	1.6	20.5
.9	7.1	1.4	17.5	.9	6.1	2.0	32.5
1.0	8.8			1.1	9.3	2.5	52
				1.3	13.1		

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	6.8	6.3	6.6	6.0	5.8	7.2	5.4	6.4	6.1	6.0	6.1	5.7
2	6.8	6.1	6.4	5.8	6.2	6.4	5.4	6.4	6.1	6.0	6.1	5.7
3	6.8	6.3	6.3	5.8	5.8	6.2	5.4	6.4	6.1	6.0	6.1	5.7
4	6.6	6.3	6.3	9.5	5.8	6.1	5.4	8.2	6.1	6.0	6.1	5.7
5	6.6	6.4	6.3	6.0	5.8	6.0	5.8	7.4	6.1	5.8	6.1	5.7
6	6.6	6.1	6.4	5.7	6.1	11.6	5.6	6.8	6.0	6.0	6.0	5.7
7	6.8	6.6	6.3	5.6	5.8	9.7	*5.7	6.6	6.0	6.1	5.8	5.7
8	6.8	14.0	6.3	5.6	5.6	6.6	5.8	6.4	6.0	6.1	*5.7	5.7
9	6.6	15.7	6.3	5.6	5.8	6.4	5.6	6.2	6.1	6.1	5.7	5.7
10	6.3	7.8	6.3	*5.6	5.8	6.2	5.8	6.2	6.1	6.0	5.7	5.7
11	6.3	6.4	6.3	5.6	5.3	6.1	5.8	6.4	6.1	6.0	6.0	5.7
12	6.3	6.1	*6.3	5.6	5.8	6.0	5.8	6.4	6.1	6.0	7.0	5.7
13	6.4	6.1	6.3	5.8	5.8	5.9	5.8	6.4	6.1	6.8	7.3	5.7
14	6.4	6.1	6.3	11	5.8	5.9	5.8	8.2	6.1	9.4	6.1	*5.7
15	6.4	6.1	6.6	7.0	5.8	5.8	6.1	6.2	6.0	8.3	5.8	5.7
16	6.3	6.1	6.4	6.0	6.0	6.0	6.0	6.2	6.0	7.0	5.8	5.7
17	6.3	7.5	6.3	7.0	9.0	6.1	5.8	6.2	6.1	16.3	5.8	5.6
18	7.3	7.4	6.3	9.0	7.5	6.0	6.1	*6.2	6.0	8.8	5.8	5.6
19	7.1	6.4	6.3	8.3	7.0	6.1	10.4	6.1	6.1	7.2	5.8	5.6
20	6.6	6.3	6.3	5.8	8.4	5.8	15.8	6.1	6.1	6.6	5.7	5.4
21	6.6	6.3	6.3	5.8	6.7	5.7	38	6.1	6.1	6.2	5.8	5.4
22	6.6	6.3	6.3	5.8	6.2	5.7	21.5	6.1	6.1	6.1	5.7	5.4
23	6.6	6.3	6.3	5.8	6.1	5.6	11.1	6.1	6.1	6.6	5.7	5.4
24	6.4	6.3	6.4	5.8	6.4	5.6	11.6	6.1	6.0	6.1	5.7	5.4
25	*6.4	6.3	6.3	5.8	6.8	5.6	8.4	6.1	6.0	6.1	5.7	5.4
26	6.3	6.3	6.1	6.2	6.1	5.6	7.4	6.1	6.0	6.1	5.7	5.4
27	6.3	6.3	6.1	5.8	6.9	5.6	7.0	6.1	*5.8	6.1	5.7	5.4
28	6.3	6.3	6.1	5.8	6.6	5.6	6.8	6.2	5.8	6.1	5.7	5.7
29	6.3	6.3	6.1	5.8	6.2	5.6	6.7	-	5.8	6.1	5.7	5.7
30	6.3	10.0	6.1	5.8	9.8	5.8	6.7	-------	5.8	6.0	5.7	5.6
31	6.3	7.2	-------	5.8	-------	5.4	6.4	-------	6.0	-------	5.7	-------
Total	202.5	220.0	189.0	194.5	193.2	190.8	260.9	176.3	186.2	204.0	183.3	168.2
Mean:												
mgd	6.53	7.10	6.30	6.27	6.44	6.15	8.42	6.37	6.03	6.80	5.91	5.61
cfs	10.1	11.0	9.75	9.70	9.96	9.52	13.0	9.86	9.33	10.5	9.14	8.68
Ac-ft	621	675	580	597	593	586	801	547	574	626	563	516

Calendar year 1956: Max 17.1 Min 4.4 Mean(mgd) 6.40 Mean(cfs) 9.90 Ac-ft 7,190
Fiscal year 1956-57: Max 38 Min 5.4 Mean(mgd) 6.50 Mean(cfs) 10.1 Ac-ft 7,280

Peak discharge (base, 90 mgd).--Dec. 6 (8 p.m.) 122 mgd (189 cfs), 3.78 ft; Jan. 21 (4 p.m.) 122 mgd (189 cfs), 3.80 ft.

* Discharge measurement made on this day.
Note.--No gage-height record Sept. 15 to Nov. 19, Apr. 22 to May 7; discharge estimated on basis of records for Kahaluu Stream.

2840. Waihee Stream near Heeia--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	5.6	5.0	5.0	4.8	4.6	f30.5	4.9	4.9	5.6	5.2	5.6	5.3
2	5.6	5.0	5.0	4.8	4.6	12.1	4.9	4.9	5.0	5.2	5.6	5.3
3	5.6	5.0	4.9	4.8	4.5	7.4	4.9	5.0	4.8	*5.2	5.6	5.2
4	5.4	5.0	4.9	4.8	4.5	6.6	4.8	5.0	4.8	5.4	5.4	5.2
5	5.4	5.0	4.8	4.6	4.5	6.0	4.8	4.9	50	5.3	5.4	5.2
6	5.4	5.2	4.8	4.6	4.6	f10.4	4.9	4.9	39	5.3	5.4	5.2
7	5.3	5.0	4.8	4.6	13.2	7.2	4.9	4.8	8.6	5.3	5.4	5.2
8	5.3	5.0	4.8	4.6	5.8	6.1	5.0	4.8	6.2	5.3	5.4	5.3
9	5.3	5.0	4.8	4.6	5.4	5.7	4.9	4.8	5.7	5.3	5.4	5.3
10	5.3	5.0	4.8	4.6	5.2	5.7	4.9	4.8	5.6	5.3	5.4	5.3
11	5.3	5.0	4.8	4.8	5.0	5.3	4.9	4.8	5.4	5.3	5.4	5.2
12	5.3	5.3	4.6	4.6	4.9	5.2	4.9	4.8	5.3	5.3	5.4	5.3
13	5.3	5.2	*4.8	4.6	5.0	5.2	4.9	4.8	5.3	5.3	5.3	5.3
14	5.6	5.3	5.0	4.6	4.9	5.3	4.8	4.8	5.4	5.3	5.3	5.2
15	5.3	6.2	5.0	4.8	4.9	5.2	4.7	4.8	5.3	5.3	5.6	5.2
16	5.3	5.2	4.9	4.6	4.9	5.0	4.8	4.8	5.2	5.3	7.0	5.2
17	5.3	5.0	4.9	4.6	5.0	5.0	4.8	4.8	5.2	5.4	5.5	5.4
18	5.3	5.0	4.8	4.8	5.2	5.0	4.9	4.8	5.3	5.4	5.4	5.2
19	5.3	5.0	5.0	4.6	5.0	5.8	4.8	4.8	5.2	5.4	5.4	5.2
20	5.3	5.0	4.8	4.6	5.3	5.2	4.9	4.9	5.2	5.4	*5.4	5.2
21	5.3	5.0	4.8	4.6	13.4	5.6	4.8	4.9	5.2	5.4	5.4	5.2
22	5.3	5.0	4.8	4.6	18.3	5.0	5.0	4.9	5.3	5.4	5.3	5.2
23	5.3	5.0	4.8	4.6	12.7	4.9	4.9	4.8	5.2	5.4	5.3	*5.3
24	5.2	5.0	4.6	5.2	18.0	5.2	4.8	4.8	5.2	5.3	5.3	5.3
25	5.2	4.9	4.6	4.8	11.0	5.2	4.8	4.8	5.2	5.7	5.4	5.2
26	5.4	5.0	4.6	4.6	7.2	5.2	4.8	4.8	5.2	6.0	5.3	5.2
27	5.2	4.9	4.8	4.6	6.6	5.0	4.8	4.9	5.2	8.4	5.3	5.2
28	5.3	5.0	4.6	*4.6	6.2	4.9	5.0	f13.1	5.2	6.8	5.3	5.3
29	*5.0	5.3	4.6	4.5	6.0	4.9	5.0	-	5.2	5.8	5.3	5.2
30	5.0	5.0	4.6	4.4	6.6	4.9	5.4	-------	5.2	5.6	5.3	5.2
31	5.0	4.9	-------	4.6	-------	4.9	5.0	-------	5.2	-------	5.3	-------
Total	164.7	157.4	144.0	144.5	213.0	205.6	151.6	143.9	245.4	166.0	168.8	157.2
Mean:												
mgd	5.31	5.08	4.80	4.66	7.10	6.63	4.89	5.14	7.92	5.53	5.45	5.24
cfs	8.22	7.86	7.43	7.21	11.0	10.3	7.57	7.95	12.3	8.56	8.43	8.11
Ac-ft	505	483	442	443	654	631	465	442	753	509	518	482

Calendar year 1957: Max 38 Min 4.4 Mean(mgd) 6.06 Mean(cfs) 9.38 Ac-ft 6,780
Fiscal year 1957-58: Max 50 Min 4.4 Mean(mgd) 5.65 Mean(cfs) 8.74 Ac-ft 6,330

Peak discharge (base, 90 mgd).--Dec. 1 (time and discharge unknown); Mar. 6 (2 a.m.) 200 mgd (309 cfs), 4.74 ft.

* Discharge measurement made on this day.
f Fragmentary gage-height record; computed on basis of partly estimated gage heights.
Note.--No gage-height record July 19-23, May 2-20; discharge estimated on basis of records for Kahaluu Stream.

2850. Waiahole tunnel at Waianu, near Waiahole

Location.--Lat 21°29'05", long 157°53'15", on left bank in Waiahole tunnel at intake No. 29, 2.1 miles southwest of Waiahole.

Records available.--December 1950 to June 1958 in reports of Geological Survey. June 1916 to November 1950 in files of Waiahole Water Co.

Gage.--Water-stage recorder and Parshall flume.

Average discharge.--7 years (1951-58), 24.4 mgd (37.8 cfs).

Extremes.--1950-58: Maximum daily discharge, 74.0 mgd (114 cfs) July 28, 1954; minimum daily, 16.0 mgd (24.8 cfs) Jan. 24-29, 1952.

Remarks.--Records excellent except those for days of no gage-height record, which are fair. Tunnel diverts water from headwaters of nearly all streams from Waiahole Valley to Kahana Valley for irrigation in central Oahu. Water may be diverted at various intakes above station.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	26.5	27.2	28.3	*27.6	31.3	22.4	25.8	25.6	25.6	24.4	25.8	22.9
2	26.2	*26.5	27.6	26.9	28.6	21.8	25.8	25.6	25.6	24.2	*26.5	22.9
3	26.4	29.3	27.4	27.3	27.8	21.4	25.8	26.7	25.6	24.4	24.9	22.9
4	25.6	34.6	27.4	36.5	27.8	21.4	25.8	30.4	25.6	28.8	24.9	22.9
5	25.6	49.0	27.4	27.8	27.6	21.2	25.6	26.0	25.6	24.4	24.4	22.9
6	25.6	*28.4	a29.2	27.8	31.9	24.2	25.6	22.6	25.3	24.2	24.2	22.9
7	27.4	38.3	27.6	27.6	30.7	22.6	25.6	21.8	25.3	24.2	24.0	22.9
8	29.1	52.1	27.4	27.4	27.8	a21.6	*25.6	21.6	25.3	24.9	24.0	22.9
9	27.2	42.9	27.4	29.2	27.6	a21.4	25.8	21.4	25.3	25.1	24.0	22.6
10	25.8	30.4	27.2	27.8	27.2	a21.2	25.8	20.9	25.1	24.2	23.7	22.6
11	26.2	28.5	27.2	27.4	27.2	21.2	26.9	21.6	25.1	24.2	28.0	22.6
12	25.8	28.3	27.2	27.2	27.6	21.2	25.6	22.2	25.6	24.0	34.7	22.6
13	27.8	30.3	27.2	28.1	30.8	21.2	25.6	22.9	25.3	24.2	34.6	22.6
14	29.8	30.0	31.4	46.1	34.4	21.2	25.8	21.8	24.9	50.4	25.1	22.6
15	26.7	28.3	36.3	35.3	28.1	21.4	26.5	21.4	24.9	27.6	24.4	22.4
16	26.9	27.4	28.8	30.2	28.1	22.2	25.6	21.2	25.1	29.5	24.0	22.4
17	26.5	47.7	32.3	39.0	30.7	21.6	25.3	20.9	25.3	39.7	24.0	22.6
18	43.1	34.9	29.6	39.1	31.6	*21.4	25.6	20.9	24.9	29.0	23.7	22.4
19	45.1	28.3	27.8	34.3	26.5	21.4	35.7	20.9	24.9	30.4	23.7	22.4
20	30.4	27.8	27.6	30.4	26.5	25.1	38.8	20.7	24.9	27.2	23.7	22.4
21	29.2	27.8	27.6	29.0	23.1	26.7	45.0	20.7	25.1	25.6	23.7	22.2
22	27.8	27.6	27.4	28.5	22.2	28.7	31.6	20.7	24.6	25.1	23.5	22.0
23	27.2	27.4	28.5	31.1	22.0	26.5	27.4	20.5	24.4	31.1	23.5	22.0
24	27.2	28.1	27.4	28.8	22.4	26.5	28.8	20.3	24.4	26.2	23.3	22.0
25	28.1	27.4	27.4	28.3	23.7	26.2	26.7	23.1	24.4	25.8	23.3	22.2
26	26.9	27.2	27.4	36.5	21.8	26.2	25.8	24.9	24.4	25.8	23.3	22.0
27	26.7	27.2	27.2	30.6	21.6	26.2	25.8	25.1	24.4	24.9	23.3	22.2
28	26.9	27.8	26.9	28.5	21.6	26.0	25.6	25.6	24.4	25.1	23.3	23.7
29	28.1	29.0	26.9	28.3	21.4	26.0	26.2	-	24.4	24.4	23.1	24.6
30	27.6	37.9	27.4	28.5	25.6	26.0	25.8	-------	24.4	24.6	23.1	22.2
31	33.4	34.6	-------	28.1	-------	25.8	25.6	-------	24.4	-------	23.1	-------
Total	882.8	992.2	846.4	949.2	805.2	725.9	852.9	638.0	774.5	813.6	768.8	678.5
Mean:												
mgd	28.5	32.0	28.2	30.6	26.8	23.4	27.5	22.8	25.0	27.1	24.8	22.6
cfs	44.1	49.5	43.6	47.3	41.5	36.2	42.5	35.3	38.7	41.9	38.4	35.0
Ac-ft	2,710	3,040	2,600	2,910	2,470	2,230	2,620	1,960	2,380	2,500	2,360	2,080

Calendar year 1956: Max 53.4 Min 21.2 Mean(mgd) 28.2 Mean(cfs) 43.6 Ac-ft 31,640
Fiscal year 1956-57: Max 52.1 Min 20.3 Mean(mgd) 26.7 Mean(cfs) 41.3 Ac-ft 29,860

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for stations at wasteway and north portal.

2850. Waiahole tunnel at Waianu, near Waiahole--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	22.0	*21.2	23.5	21.9	22.0	66.7	24.9	25.1	18.6	18.0	17.8	22.2
2	23.3	21.2	24.2	23.7	21.4	33.3	*24.9	24.6	18.4	18.0	18.0	23.1
3	22.0	21.8	24.0	22.9	21.2	29.2	24.9	21.9	18.4	18.0	19.3	21.6
4	22.9	22.0	22.9	21.6	21.2	27.6	24.9	20.3	18.2	18.0	18.4	22.0
5	23.5	21.6	22.4	21.4	20.9	29.9	24.9	19.9	29.1	18.0	18.0	21.8
6	22.4	23.5	22.2	21.4	21.6	32.8	24.6	19.9	24.6	18.0	17.8	21.6
7	21.8	23.5	22.2	21.4	49.1	26.9	24.6	19.9	20.1	18.0	17.8	21.4
8	21.6	22.6	22.2	21.4	23.3	25.1	24.6	19.9	19.3	18.0	17.6	21.6
9	21.6	21.6	22.2	21.4	28.4	25.1	24.9	19.9	19.0	17.8	17.6	23.3
10	22.0	21.6	22.2	21.2	24.9	27.2	24.6	19.9	18.8	17.8	18.0	23.1
11	22.4	21.4	22.0	21.2	22.9	26.0	24.6	*19.9	18.6	18.0	18.0	22.2
12	21.6	39.7	22.2	21.2	22.0	25.6	24.6	19.7	18.4	18.0	17.6	21.8
13	22.0	24.4	24.2	21.4	22.0	25.3	24.6	19.5	18.4	18.0	17.6	21.6
14	32.6	26.6	22.9	21.2	22.0	26.5	24.6	19.5	18.2	17.8	17.6	21.2
15	22.6	29.4	22.2	21.4	21.8	27.4	24.6	19.3	18.2	17.8	17.6	21.2
16	21.8	23.1	22.0	21.2	24.7	27.6	24.6	19.3	18.0	17.8	21.8	21.2
17	21.4	22.4	21.8	22.4	21.8	25.6	24.4	19.0	18.0	17.8	20.5	21.2
18	21.6	22.6	22.4	22.2	24.2	25.6	24.4	18.8	18.0	17.8	19.0	21.2
19	21.8	22.0	22.0	22.0	21.8	29.6	24.2	18.8	18.0	17.8	18.4	21.2
20	21.4	21.8	21.6	21.8	22.4	26.9	24.0	18.4	18.2	17.8	18.4	20.9
21	21.2	21.8	21.6	21.8	37.6	32.3	24.0	18.2	18.2	17.6	18.0	20.9
22	20.9	21.6	21.4	20.9	50.7	26.0	23.7	18.2	18.2	17.6	18.0	20.7
23	20.9	21.6	21.4	20.9	44.4	25.3	23.7	18.2	18.2	17.6	18.0	23.8
24	23.5	29.7	21.4	25.6	48.9	28.8	23.7	18.0	18.2	17.6	17.8	21.2
25	21.4	40.7	21.4	22.4	32.2	25.6	23.7	18.0	18.2	17.6	18.4	20.9
26	27.3	24.4	21.6	21.4	25.6	27.4	23.7	18.0	18.2	19.3	18.2	22.0
27	26.0	22.9	21.6	21.2	24.4	25.6	23.5	18.0	18.2	22.0	17.8	21.2
28	23.1	23.1	21.4	21.2	24.0	25.1	29.6	20.7	18.0	18.8	17.6	22.2
29	21.8	30.2	22.0	20.7	23.7	25.1	27.4	-	18.0	18.0	19.7	20.9
30	21.4	31.9	25.6	20.9	25.1	25.1	38.0	-------	18.0	17.8	22.0	20.5
31	21.8	24.9	-------	24.2	-------	24.9	28.3	-------	18.0	-------	22.0	-------
Total	701.6	766.8	670.7	675.5	816.2	881.1	781.7	550.8	585.9	542.1	574.3	649.7
Mean:												
mgd	22.6	24.7	22.4	21.8	27.2	28.4	25.2	19.7	18.9	18.1	18.5	21.7
cfs	35.0	38.3	34.7	33.7	42.1	43.9	39.0	30.5	29.2	28.0	28.6	33.6
Ac-ft	2,150	2,350	2,060	2,070	2,500	2,700	2,400	1,690	1,800	1,660	1,760	1,990

Calendar year 1957: Max 66.7 Min 20.3 Mean(mgd) 24.8 Mean(cfs) 38.4 Ac-ft 27,730
Fiscal year 1957-58: Max 66.7 Min 17.6 Mean(mgd) 22.5 Mean(cfs) 34.8 Ac-ft 25,130

* Discharge measurement made on this day.

2860. Waiahole tunnel wasteway at intake 31, near Waiahole

Location.--Lat 21°28'30", long 157°53'15", on left bank 150 ft below wasteway gates of intake No. 31 of Waiahole tunnel and 2.2 miles southwest of Waiahole.

Records available.--January 1951 to June 1958.

Gage.--Water-stage recorder and Parshall flume.

Average discharge.--7 years, 1.13 mgd (1.75 cfs).

Extremes.--1951-58: Maximum daily discharge, 62.1 mgd (96.1 cfs) Dec. 1, 1957; no flow most of time.

Remarks.--Records good prior to June 30, 1957, fair thereafter. Station measures releases from Waiahole tunnel.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0	0	0	0	0	19.9	0	11.9		0	0	
2	0	0	0	0	0	19.5	0	11.9		0	0	
3	0	0	0	0	0	*19.8	0	16.1		0	0	
4	0	0	0	.05	0	20.1	0	*27.2		.05	0	
5	0	.05	0	0	0	20.1	0	23.8		0	0	
6	0	0	0	0	0	23.5	0	21.2		0	0	
7	0	.02	0	0	0	21.6	0	20.5		0	0	
8	0	1.36	0	0	0	20.8	0	20.3		0	0	
9	0	.15	0	0	0	20.3	0	20.3		0	0	
10	0	0	0	0	0	20.5	0	20.3		0	0	
11	0	0	0	0	0	20.1	0	20.8		0	0	
12	0	0	0	0	0	20.1	0	21.2		0	0	
13	0	0	0	0	0	19.9	0	21.6		0	.05	
14	0	0	0	.45	0	19.9	0	20.8		.15	0	
15	0	0	.05	0	0	19.9	0	20.5		0	0	
16	0	0	0	0	0	20.8	0	20.3		0	0	
17	0	.02	0	0	10.0	20.3	0	20.1		.08	0	
18	.05	0	0	0	26.6	20.1	0	20.1		0	0	
19	0	0	0	0	18.8	12.6	.05	19.9		0	0	
20	0	0	0	0	12.9	0	.08	19.9		0	0	
21	0	0	0	0	11.0	0	14.5	19.7		0	0	
22	0	0	0	0	10.5	0	15.0	19.7		0	0	
23	0	0	0	0	10.3	0	12.7	19.7		0	0	
24	0	0	0	0	10.5	0	14.0	19.7		0	0	
25	0	0	0	0	11.7	0	12.6	21.6		0	0	
26	0	0	0	.44	10.5	0	12.0	16.6		0	0	
27	0	0	0	0	16.4	0	11.9	0		0	0	
28	0	0	0	0	18.2	0	11.9	0		0	0	
29	0	0	0	0	18.2	0	12.2	-		0	0	
30	0	0	0	0	22.5	0	11.9	-------		0	0	
31	0	0	-------	0	-------	0	11.9	-------		-------	0	
Total	0.05	1.60	0.05	0.94	208.1	379.8	140.73	515.7	0	0.28	0.05	0
Mean:												
mgd	0.002	0.052	0.002	0.030	6.94	12.3	4.54	18.4	0	0.009	0.002	0
cfs	0.003	0.080	0.003	0.046	10.7	19.0	7.02	28.5	0	0.014	0.003	0
Ac-ft	0.2	4.9	0.2	2.9	639	1,170	432	1,580	0	0.9	0.2	0

Calendar year 1956: Max 26.6 Min 0 Mean(mgd) 1.64 Mean(cfs) 2.54 Ac-ft 1,850
Fiscal year 1956-57: Max 27.2 Min 0 Mean(mgd) 3.42 Mean(cfs) 5.29 Ac-ft 3,830

* Discharge measurement made on this day.

2860. Waiahole tunnel wasteway at intake 31, near Waiahole--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1		0			0	62.1	0	0	12.7	12.2	*4.74	
2		0			0	32.1	0	0	12.6	*12.4	4.74	
3		0			0	7.12	0	*7.83	*12.4	12.4	5.16	
4		0			0	0	0	14.4	12.2	12.4	4.88	
5		0			0	0	0	17.2	21.6	12.4	4.74	
6		0			0	.92	0	18.0	17.5	12.4	4.60	
7		0			.08	0	0	18.0	13.5	12.4	4.60	
8		0			0	0	0	18.0	13.1	12.4	4.60	
9		0			0	0	0	18.0	12.9	12.4	4.60	
10		0			0	0	0	15.9	12.7	12.4	4.74	
11		0			0	0	0	*12.6	12.7	11.5	4.60	
12		.03			0	0	0	12.6	12.6	11.0	4.60	
13		0			0	0	0	12.6	12.6	11.0	4.60	
14		0			0	0	0	12.6	12.6	9.54	4.60	
15		.01			0	0	0	12.6	12.6	8.90	4.60	
16		0			0	0	0	12.6	12.6	8.75	6.42	
17		0			0	0	0	12.4	12.6	8.60	5.44	
18		0			0	0	0	12.2	12.7	4.70	5.02	
19		0			0	.04	0	12.2	12.7	.08	4.88	
20		0			0	0	0	12.2	12.7	.08	4.88	
21		0			.65	0	0	12.0	12.7	4.15	4.74	
22		0			0	0	0	11.9	12.7	5.16	4.74	
23		0			0	0	0	11.9	12.7	5.16	4.60	
24		0			0	0	0	11.9	12.7	5.02	4.60	
25		.03			0	0	0	11.9	12.6	5.02	4.74	
26		0			0	0	0	11.9	12.6	5.44	4.60	
27		0			0	0	0	11.9	12.6	6.14	4.60	
28		0			0	0	.01	14.4	12.6	5.16	4.60	
29		0			0	0	.02	-	12.4	4.88	1.65	
30		0			8.32	0	.02	-------	12.2	4.74	0	
31		0			-------	0	0	-------	12.2	-------	0	
Total	0	0.07	0	0	9.05	102.28	0.05	349.73	405.6	248.82	135.91	0
Mean:												
mgd	0	0.002	0	0	0.302	3.30	0.002	12.5	13.1	8.29	4.38	0
cfs	0	0.003	0	0	0.467	5.11	0.003	19.3	20.3	12.8	6.78	0
Ac-ft	0	0.2	0	0	28	314	0.2	1,070	1,240	764	417	0

Calendar year 1957: Max 62.1 Min 0 Mean(mgd) 2.10 Mean(cfs) 3.25 Ac-ft 2,360
Fiscal year 1957-58: Max 62.1 Min 0 Mean(mgd) 3.43 Mean(cfs) 5.31 Ac-ft 3,830

* Discharge measurement made on this day.

2870. Waiahole tunnel at north portal, near Waiahole

Location.--Lat 21°28'15", long 157°53'30", on right bank in Waiahole tunnel at the boundary of Territorial and private lands, 2.6 miles southwest of Waiahole.

Records available.--January 1951 to June 1958 in reports of Geological Survey. May 1916 to December 1950 in files of Waiahole Water Co.

Gage.--Water-stage recorder and Parshall flume.

Average discharge.--7 years (1951-58), 25.4 mgd (39.3 cfs).

Extremes.--1951-58: Maximum daily discharge, 81.0 mgd (125 cfs) July 28, 1954; minimum daily, 1.48 mgd (2.29 cfs) Dec. 9, 1956.

Remarks.--Records excellent. Tunnel diverts water from headwaters of nearly all streams from Waiahole Valley to Kahana Valley for irrigation in central Oahu. Numerous intakes can divert water above station.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	28.5	31.2	32.2	*31.7	33.6	3.48	28.0	14.9	27.5	26.0	29.0	26.5
2	28.2	30.5	31.8	30.8	31.5	3.38	27.8	14.7	27.8	26.0	*29.5	26.2
3	28.7	33.0	31.5	31.0	31.2	2.44	28.0	11.9	27.8	26.2	28.8	26.2
4	28.2	37.9	31.2	41.6	31.2	1.73	28.0	*3.25	27.8	31.2	28.8	26.2
5	28.2	54.8	31.2	32.0	31.0	1.55	27.8	2.55	27.5	26.2	28.0	26.2
6	28.0	*32.7	33.2	31.5	35.0	2.22	27.8	2.27	27.5	26.0	27.8	26.2
7	30.0	41.8	31.2	31.2	34.2	2.00	27.5	2.27	27.5	26.0	27.5	26.2
8	31.4	62.2	31.2	31.0	31.2	1.55	*27.5	2.18	27.5	26.8	27.5	26.0
9	29.2	49.6	31.2	33.2	31.0	1.48	28.0	2.18	27.5	27.2	27.5	26.0
10	28.2	34.8	31.2	31.2	30.8	1.91	28.0	2.09	27.5	26.0	27.5	25.8
11	29.5	33.0	31.2	31.0	30.8	2.18	29.5	2.09	27.5	26.0	31.2	25.8
12	29.2	32.2	31.2	30.8	31.2	2.18	27.5	2.18	28.0	25.8	36.9	25.8
13	31.2	34.4	31.2	31.8	34.0	2.09	27.5	2.18	27.8	27.0	40.0	25.5
14	33.5	34.3	35.6	52.3	38.5	2.09	28.0	2.09	27.5	54.4	28.8	25.5
15	30.2	32.5	40.5	38.3	32.2	2.09	29.5	2.09	27.2	29.5	27.8	25.5
16	30.8	31.5	32.8	33.8	31.8	2.09	27.8	2.09	27.5	31.8	27.8	25.5
17	30.0	53.7	35.8	42.0	23.4	2.09	27.2	2.09	27.5	45.9	27.5	25.2
18	47.1	39.2	33.8	43.3	5.60	*2.09	27.8	2.09	27.2	32.5	27.5	25.2
19	49.1	31.0	32.0	37.6	8.72	9.59	38.5	2.09	27.0	33.8	27.5	25.2
20	34.8	31.5	31.8	33.8	15.8	26.0	42.7	2.00	27.2	30.5	27.2	25.2
21	33.5	31.8	31.5	32.2	13.7	28.5	36.7	2.00	27.2	29.0	26.8	24.5
22	31.8	31.5	30.5	31.8	13.4	28.5	19.7	2.00	27.0	28.5	26.8	25.0
23	31.5	31.5	30.8	34.1	13.2	28.2	16.4	2.00	26.8	35.0	27.0	25.0
24	30.2	32.2	31.0	32.0	13.4	28.2	17.4	2.00	26.8	29.2	27.0	25.0
25	31.5	31.5	31.2	31.5	14.7	28.2	15.8	2.00	26.5	29.0	26.8	25.2
26	30.8	31.2	31.2	40.0	13.2	28.0	15.2	9.04	26.5	28.8	26.8	25.0
27	30.5	30.8	31.0	35.7	7.12	28.0	15.0	27.0	26.5	28.0	26.8	25.0
28	30.5	32.2	31.0	31.5	4.42	28.0	14.9	27.5	26.5	27.8	26.8	26.8
29	31.5	32.5	31.0	31.2	4.18	28.0	15.4	-	26.2	27.8	26.5	28.0
30	31.2	43.9	31.2	31.2	4.67	28.0	15.0	-------	26.2	27.5	26.5	25.5
31	37.9	38.5	-------	31.0	-------	28.0	14.7	-------	26.2	-------	26.5	-------
Total	984.9	1,129.4	962.2	1,062.1	674.71	383.83	780.6	152.82	842.7	895.4	878.4	770.9
Mean:												
mgd	31.8	36.4	32.1	34.3	22.5	12.4	25.2	5.46	27.2	29.8	28.3	25.7
cfs	49.2	56.3	49.7	53.1	34.8	19.2	39.0	8.45	42.1	46.1	43.8	39.8
Ac-ft	3,020	3,470	2,950	3,260	2,070	1,180	2,400	469	2,590	2,750	2,700	2,370

Calendar year 1956: Max 62.2 Min 1.48 Mean(mgd) 28.8 Mean(cfs) 44.6 Ac-ft 32,330
Fiscal year 1956-57: Max 62.2 Min 1.48 Mean(mgd) 26.1 Mean(cfs) 40.4 Ac-ft 29,230

* Discharge measurement made on this day.

2870. Waiahole tunnel at north portal, near Waiahole--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	24.9	24.5	26.8	24.9	24.8	5.45	26.8	28.0	8.04	7.40	14.1	23.0
2	26.2	*24.5	27.0	26.8	24.0	3.23	26.8	26.5	7.88	7.40	14.5	25.2
3	25.0	25.0	26.8	26.0	23.8	*23.6	26.5	16.7	7.72	7.40	15.2	24.5
4	25.8	25.2	25.9	24.5	23.8	29.5	26.2	7.88	7.72	7.40	14.5	24.8
5	26.8	24.8	25.5	24.5	23.8	31.5	26.2	4.98	11.1	7.40	14.3	24.8
6	25.5	27.0	25.2	24.2	24.2	34.7	26.2	3.83	10.4	7.40	14.1	23.8
7	25.0	27.2	25.0	24.2	56.2	29.2	26.2	3.71	8.52	7.40	13.9	24.2
8	24.5	26.2	25.0	24.2	26.8	27.0	26.2	3.48	8.20	7.40	13.9	24.5
9	24.5	25.0	25.0	24.0	31.8	27.0	26.5	3.48	8.20	7.26	13.9	27.0
10	25.5	24.8	25.0	23.8	28.0	28.5	26.2	5.48	7.88	7.26	14.1	26.5
11	26.0	24.5	25.0	24.0	25.8	28.0	26.2	8.20	7.88	8.20	14.1	25.2
12	25.0	43.3	25.0	24.0	25.0	27.2	26.2	8.20	7.88	8.52	13.9	24.8
13	25.2	28.5	27.2	24.0	25.0	27.0	26.2	8.20	7.72	8.52	13.9	24.5
14	36.7	27.5	25.8	23.8	24.8	28.0	26.2	8.20	7.72	9.48	13.7	24.5
15	26.8	36.9	25.0	24.0	24.8	29.2	26.2	8.20	7.72	10.3	13.7	24.2
16	25.2	26.8	25.0	23.8	27.3	29.5	26.2	8.20	7.72	10.3	18.0	24.0
17	25.0	25.8	24.5	25.5	24.2	27.8	27.0	8.04	7.72	10.3	16.6	24.0
18	25.2	25.8	25.2	25.0	27.0	27.2	27.5	7.88	7.72	13.7	15.0	24.0
19	25.2	25.2	24.5	25.0	24.2	32.2	27.2	7.88	7.72	18.6	14.5	24.0
20	24.8	25.0	24.5	24.5	25.4	28.8	27.2	7.88	7.72	18.6	14.5	24.0
21	24.5	24.8	24.2	24.5	41.2	34.5	27.2	7.72	7.72	15.0	14.1	24.0
22	24.5	24.8	24.2	23.8	56.1	28.0	27.2	7.72	7.72	13.7	14.1	23.8
23	24.5	24.5	23.8	23.8	48.7	27.5	26.8	7.72	7.72	13.7	14.1	26.8
24	26.8	32.8	23.5	28.8	50.8	31.0	27.2	7.72	7.72	13.7	13.9	24.2
25	24.8	45.5	23.8	25.5	35.6	27.5	27.2	7.72	7.56	13.6	14.5	24.0
26	30.5	28.0	24.0	24.2	28.8	29.0	27.2	7.72	7.40	15.6	14.1	25.0
27	29.8	26.0	24.0	24.0	27.8	27.0	27.2	7.72	7.40	17.6	13.9	24.5
28	26.8	25.8	24.0	23.8	27.0	26.8	32.5	9.05	7.40	15.0	13.7	25.0
29	24.8	33.3	24.5	23.8	27.0	26.8	30.5	-	7.40	14.5	18.6	24.0
30	25.0	35.6	29.0	23.8	19.7	26.8	42.2	-------	7.40	14.1	23.0	23.8
31	25.5	28.5	-------	27.0	-------	26.8	32.5	-------	7.40	-------	22.8	-------
Total	806.3	873.1	753.9	763.7	903.4	836.28	857.6	248.01	246.02	336.74	467.2	736.6
Mean:												
mgd	26.0	28.2	25.1	24.6	30.1	27.0	27.7	8.86	7.94	11.2	15.1	24.6
cfs	40.2	43.6	38.8	38.1	46.6	41.8	42.9	13.7	12.3	17.3	23.4	38.1
Ac-ft	2,470	2,680	2,310	2,340	2,770	2,570	2,630	761	755	1,030	1,430	2,260

Calendar year 1957: Max 56.2 Min 2.00 Mean(mgd) 25.4 Mean(cfs) 39.3 Ac-ft 28,420
Fiscal year 1957-58: Max 56.2 Min 3.23 Mean(mgd) 21.4 Mean(cfs) 33.1 Ac-ft 24,010

* Discharge measurement made on this day.

2872. Waiahole tunnel at adit 8, near Waipahu

Location.--Lat 21°27'00", long 157°57'30", on left bank at adit 8, 2,700 ft downstream from eastern boundary of Ewa Forest Reserve and 5.2 miles northeast of Waipahu Post Office.

Records available.--August 1956 to June 1958 in reports of Geological Survey. May 1916 to July 1956 in files of Waiahole Water Co.

Gage.--Water-stage recorder and concrete control.

Extremes.--1956-58: Maximum daily discharge, 64.2 mgd (99.3 cfs) Nov. 7, 1957; minimum daily, 6.0 mgd (9.3 cfs) Dec. 9, 1956.

Remarks.--Records good except those for periods of no gage-height record and those for period of indefinite stage-discharge relation, which are fair.

Discharge, in million gallons a day, August 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1		-	38.6	37.6	*39.8	11.0	32.8	*21.2	31.5	31.2	*34.2	31.2
2		-	38.0	*37.0	38.2	10.9	32.8	20.9	31.8	*31.2	35.4	31.2
3		-	37.8	37.0	37.4	e9.2	32.8	19.2	31.8	31.5	34.1	31.2
4		-	37.8	47.0	37.2	e7.0	32.8	10.0	31.8	36.4	34.1	31.2
5		-	37.8	38.4	37.2	e6.2	32.8	9.00	31.8	32.1	33.4	31.2
6		-	39.4	37.8	42.0	e9.0	32.8	8.40	31.8	31.5	33.4	31.2
7		-	38.0	37.4	40.8	e8.0	32.8	8.40	31.8	31.5	33.1	31.2
8		-	37.8	37.4	37.8	e6.2	32.8	8.22	31.8	32.5	33.1	31.2
9		-	37.6	39.2	37.0	e6.0	32.8	8.03	31.8	32.8	33.1	30.9
10		-	*37.6	37.6	36.6	e7.5	33.1	8.03	31.8	31.5	33.1	30.9
11		-	37.6	37.4	36.6	e8.4	34.4	8.03	31.8	31.5	36.4	30.5
12		-	37.4	37.2	37.2	e8.4	33.1	8.03	32.1	31.2	41.0	30.5
13		-	37.4	37.8	39.8	e8.0	32.8	8.03	32.1	31.5	45.6	30.5
14		-	41.1	51.3	43.8	*e8.0	33.4	8.03	31.8	56.8	34.4	30.2
15		-	44.5	45.8	38.8	e8.0	34.7	8.03	31.5	35.4	33.7	30.5
16		-	39.2	40.4	37.2	e8.0	33.1	8.03	31.8	36.0	33.1	30.5
17		-	41.8	46.6	a32.2	e8.0	32.5	8.03	32.1	50.0	33.1	30.2
18		-	39.6	48.5	a13.1	e8.0	32.5	8.03	31.8	38.7	32.8	30.2
19		-	38.0	43.8	a16.3	14.0	42.0	8.03	31.5	39.0	32.5	30.2
20		-	37.6	39.8	23.6	*30.5	43.7	7.84	32.1	36.7	32.5	30.5
21		†37.7	37.6	38.4	*21.2	*32.8	47.0	7.84	32.1	34.7	31.8	29.9
22		38.4	36.8	38.4	20.5	32.8	26.5	7.84	31.8	34.1	31.8	30.2
23		38.2	37.0	40.4	20.3	33.1	23.6	7.84	31.5	39.3	32.1	30.2
24		38.6	36.8	39.2	20.5	33.1	23.6	7.84	31.5	35.0	32.1	29.9
25		38.0	37.2	38.2	22.3	33.1	22.5	7.66	31.5	34.7	31.8	29.9
26		37.8	37.2	41.7	20.5	33.1	21.7	12.0	31.5	34.7	31.8	29.6
27		37.4	37.2	44.8	a15.2	33.1	21.5	30.5	31.2	33.7	31.8	29.6
28		38.8	36.8	37.8	a12.0	33.1	21.2	31.5	31.2	33.7	31.8	31.5
29		39.2	36.8	37.8	a11.7	33.1	21.7	-	31.2	33.4	31.8	33.1
30		50.2	37.0	38.0	12.2	33.1	21.5	-------	31.2	33.1	31.5	30.2
31		45.4	-------	37.8	-------	32.8	21.2	-------	31.2	-------	31.5	-------
Total		-	1,145.0	1,247.5	879.0	553.5	952.5	314.51	982.2	1,055.4	1,041.9	919.3
Mean:												
mgd		-	38.2	40.2	29.3	17.9	30.7	11.2	31.7	35.2	33.6	30.6
cfs		-	59.1	62.2	45.3	27.7	47.5	17.3	49.0	54.5	52.0	47.3
Ac-ft		-	3,510	3,830	2,700	1,700	2,920	965	3,010	3,240	3,200	2,820

Calendar year	. Max	Min	Mean(mgd)	Mean(cfs)	Ac-ft
Fiscal year	: Max	Min	Mean(mgd)	Mean(cfs)	Ac-ft

* Discharge measurement made on this day.
† Result of discharge measurement.
a No gage-height record; discharge estimated on basis of records for station at North Portal.
e Stage-discharge relation indefinite; discharge estimated on basis of records for station at North Portal.

2872. Waiahole tunnel at adit 8, near Waipahu--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	29.6	28.9	31.2	28.9	29.3	24.2	31.5	34.7	14.8	*13.4	*20.2	28.3
2	30.7	*28.6	31.5	*29.2	28.3	11.0	31.5	33.7	14.6	13.4	20.2	*30.2
3	29.6	29.3	*31.5	31.2	28.3	25.1	*31.5	25.4	14.3	13.4	20.9	29.6
4	30.9	29.6	30.9	28.9	*28.0	*34.7	31.8	*15.8	14.1	13.6	20.4	29.9
5	31.2	28.9	30.5	28.9	28.3	34.7	32.1	13.0	17.8	13.4	20.2	29.9
6	30.5	30.5	30.5	28.9	28.6	38.5	32.1	11.2	18.3	13.4	19.9	29.3
7	30.2	31.5	30.5	28.6	64.2	34.1	32.1	11.0	15.6	13.4	19.9	29.9
8	29.9	*30.5	30.2	28.6	32.1	31.8	32.1	10.8	15.3	13.2	19.9	30.2
9	29.6	29.6	29.9	28.6	36.1	32.1	32.1	10.6	15.0	13.2	19.9	31.5
10	30.2	29.3	29.9	28.3	32.5	33.4	31.8	11.9	15.0	13.2	20.4	32.1
11	30.5	28.9	29.9	28.3	31.2	32.8	31.8	15.0	15.0	14.1	20.4	30.9
12	29.9	46.4	29.9	28.3	30.2	32.5	31.8	*15.0	15.0	14.3	20.2	30.5
13	29.6	32.8	31.2	28.3	29.9	32.1	31.8	14.8	14.8	14.1	19.9	30.2
14	40.6	31.5	30.2	28.3	29.9	32.8	31.8	15.0	14.8	15.6	19.9	29.9
15	31.8	41.6	29.9	28.3	29.9	33.7	31.8	14.8	14.6	16.3	19.9	29.9
16	30.2	31.2	29.3	28.3	32.1	33.7	31.8	15.0	14.6	16.0	23.3	29.9
17	29.9	30.5	29.3	29.6	29.9	32.1	32.8	14.8	14.3	16.0	22.8	29.9
18	30.2	30.5	29.9	28.9	31.5	32.1	32.8	14.8	14.3	18.3	21.2	29.9
19	30.2	29.9	29.3	29.6	29.9	37.0	32.8	14.8	14.3	24.2	20.9	29.6
20	29.6	29.6	28.9	28.6	29.9	33.7	32.8	14.8	14.3	24.2	20.7	29.6
21	29.3	29.3	28.6	28.9	47.1	39.0	33.7	14.6	14.3	20.7	20.4	29.6
22	29.3	29.3	28.6	28.3	58.0	33.1	33.7	14.6	13.9	19.6	20.4	29.6
23	28.9	29.3	28.3	28.3	51.7	32.8	33.4	14.3	13.9	19.6	20.2	32.5
24	31.2	35.0	28.0	32.1	52.8	33.4	33.7	14.3	13.9	19.6	20.2	29.9
25	29.3	48.5	28.3	30.5	42.6	32.5	33.7	14.3	13.9	19.6	20.4	29.6
26	33.7	32.8	28.3	28.9	34.4	34.1	33.7	14.3	13.9	20.9	20.4	30.2
27	34.1	30.5	28.6	28.3	33.1	32.5	33.7	14.3	13.9	23.6	20.2	30.2
28	30.9	30.2	28.0	28.3	32.5	31.8	38.4	15.6	13.9	21.5	19.9	30.9
29	29.3	37.4	28.3	28.3	32.1	31.8	37.3	-	13.6	20.7	23.9	29.9
30	29.3	38.0	31.8	28.3	26.0	31.8	46.4	-------	13.4	20.4	28.6	29.6
31	29.6	32.8	-------	30.2	-------	31.5	39.3	-------	13.4	-------	28.3	-------
Total	949.8	1,002.7	891.2	897.0	1,050.4	998.4	1,037.6	443.2	452.8	512.9	654.0	903.2
Mean:												
mgd	30.6	32.3	29.7	28.9	35.0	32.2	33.5	15.8	14.6	17.1	21.1	30.1
cfs	47.3	50.0	46.0	44.7	54.2	49.8	51.8	24.4	22.6	26.5	32.6	46.6
Ac-ft	2,910	3,080	2,730	2,750	3,220	3,060	3,180	1,360	1,390	1,570	2,010	2,770

Calendar year 1957: Max 64.2 Min 7.66 Mean(mgd) 30.3 Mean(cfs) 46.9 Ac-ft 33,900
Fiscal year 1957-58: Max 64.2 Min 10.6 Mean(mgd) 26.8 Mean(cfs) 41.5 Ac-ft 30,030

* Discharge measurement made on this day.

2910. Waiahole Stream at altitude 250 ft, near Waiahole

Location.--Lat 21°28'35", long 157°52'30", on left bank 1.5 miles southwest of Waiahole School and 2.7 miles northwest of Kahaluu.

Drainage area.--0.99 sq mi (revised).

Records available.--July 1955 to June 1958.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 250 ft (from topographic map).

Extremes.--1956-57: Maximum discharge during fiscal year, 238 mgd (368 cfs) Jan. 21 (gage height, 3.47 ft), from rating curve extended above 72 mgd; minimum daily, 1.98 mgd (3.06 cfs) July 30, Aug. 2-4, June 26, 27, 30.

1957-58: Maximum discharge during fiscal year, 238 mgd (368 cfs) Mar. 5 (gage height, 3.49 ft), from rating curve extended above 72 mgd; minimum, 1.71 mgd (2.65 cfs) Sept. 9, 10, 16.

1955-58: Maximum discharge, 238 mgd (368 cfs) Jan. 21, 1957, Mar. 5, 1958; maximum gage height, 3.49 ft Mar. 5, 1958, from rating curve extended above 72 mgd; minimum discharge, that of Sept. 9, 10, 16, 1957.

Remarks.--Records fair for 1956-57 except those for periods of doubtful or no gage-height record, which are poor; records good for 1957-58 except those for period of no gage-height record, which are poor.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.8	2.25	3.3	3.05	2.8	24	3.9	18.2	4.2	4.2	2.45	2.25
2	3.8	1.98	3.15	2.9	2.95	24	3.9	18.2	4.2	4.2	2.45	2.25
3	3.8	1.98	3.05	2.7	2.8	*24	3.9	22.5	4.2	4.4	2.25	2.35
4	3.8	1.98	3.05	4.6	2.7	24	3.9	38	4.2	4.5	2.25	2.35
5	3.55	2.7	*3.05	3.15	2.6	24	3.9	32	4.2	4.2	2.15	2.35
6	3.8	2.05	3.05	2.9	3.1	33	3.9	28	4.2	4.2	2.15	2.35
7	3.8	2.35	3.0	2.9	3.0	24	3.9	26	4.2	4.2	2.15	2.35
8	3.8	19.5	3.0	2.8	2.7	24	3.9	26	4.2	4.2	2.15	2.35
9	3.8	10.1	3.0	*2.9	2.6	24	*3.9	26	4.2	4.4	2.15	2.35
10	3.65	3.8	3.0	2.7	2.6	24	4.4	26	4.2	4.2	2.25	2.35
11	2.7	3.15	3.0	2.7	2.6	24	4.2	26	4.2	4.2	2.25	2.35
12	2.25	3.05	3.0	2.7	2.6	24	3.9	26	4.2	4.2	2.4	*2.25
13	2.25	2.9	3.0	2.8	3.0	24	3.9	26	4.2	4.5	4.2	2.25
14	2.25	2.9	6.0	14.0	4.0	24	4.0	26	4.2	10.6	2.55	2.15
15	2.15	2.8	3.8	6.1	2.8	24	4.5	24	4.2	4.6	2.45	2.15
16	2.15	2.8	3.4	3.9	2.7	24	4.2	24	4.2	4.5	2.45	2.25
17	2.05	4.5	3.05	3.9	11.7	24	4.2	24	4.2	15.7	*2.45	2.25
18	3.0	4.8	2.9	4.6	25.5	24	4.4	24	4.2	4.8	2.45	2.15
19	2.65	4.5	2.9	4.0	17.2	16	8.1	24	4.2	3.15	2.45	2.15
20	2.45	3.15	2.8	3.65	12.3	4.1	13.3	24	4.2	2.8	2.45	2.15
21	2.45	2.8	2.9	-3.55	9.2	4.1	*57	24	4.2	2.55	3.15	2.45
22	2.25	2.7	3.65	3.3	8.5	4.1	39	24	4.2	2.45	2.9	2.05
23	2.15	2.7	4.5	3.3	7.9	4.1	22.5	*24	4.2	3.1	2.45	2.05
24	2.45	2.7	3.4	3.3	7.8	4.0	30	24	4.2	2.7	2.45	2.05
25	2.55	2.55	2.9	3.3	10.0	3.9	20.5	26	4.2	2.55	2.45	2.05
26	*2.05	3.05	2.9	9.1	7.4	3.9	18.9	20	4.2	2.55	2.35	1.98
27	2.05	3.4	2.9	5.8	10.6	3.9	18.5	4.2	4.2	2.45	2.35	1.98
28	2.05	2.9	2.8	3.15	11.9	4.0	18.2	4.2	*4.2	2.45	2.35	2.25
29	2.05	3.0	2.8	3.05	10.7	3.9	19.7	-	4.2	2.45	2.35	2.15
30	1.98	4.4	2.8	2.9	24	4.0	18.5	-------	4.2	2.45	2.35	1.98
31	2.55	3.9	--------	2.7	--------	3.9	18.2	-------	4.2	-------	2.35	-------
Total	86.08	117.34	96.05	122.40	220.25	504.9	375.2	659.3	130.2	127.45	76.00	66.39
Mean:												
mgd	2.78	3.79	3.20	3.95	7.34	16.3	12.1	23.5	4.20	4.25	2.45	2.21
cfs	4.30	5.86	4.95	6.11	11.4	25.2	18.7	36.4	6.50	6.58	3.79	3.42
Ac-ft	264	360	295	376	676	1,550	1,150	2,020	400	391	233	204

Calendar year 1956: Max 33 Min 1.98 Mean(mgd) 5.77 Mean(cfs) 8.93 Ac-ft 6,480
Fiscal year 1956-57: Max 57 Min 1.98 Mean(mgd) 7.07 Mean(cfs) 10.9 Ac-ft 7,920

* Discharge measurement made on this day.

Note.--Doubtful or no gage-height record Sept. 7-15, Nov. 3-16, Dec. 1-3, Dec. 7 to Jan. 9, Feb. 6 to Mar. 28; discharge estimated on basis of records for nearby stations.

2910. Waiahole Stream at altitude 250 ft, near Waiahole--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.98	1.89	1.98	1.98	a1.9	80	3.65	2.8	17.0	15.5	7.9	3.9
2	1.98	1.89	1.98	1.89	a1.9	38.5	3.65	3.3	16.3	15.5	8.1	2.8
3	1.98	1.98	1.98	1.89	a1.9	10.9	3.65	9.7	15.9	15.5	8.7	2.35
4	1.98	1.89	1.89	1.89	a1.9	4.6	3.65	17.8	15.9	15.5	8.3	2.35
5	1.98	1.89	1.80	1.89	a1.9	4.4	3.65	20.5	79	15.5	8.1	2.35
6	1.98	1.98	1.80	1.80	a2.0	10.9	3.55	22	43	15.5	7.9	2.7
7	1.89	2.05	1.80	1.80	*a10	6.3	3.55	21.5	20.5	15.5	7.9	2.35
8	1.89	1.98	1.80	1.80	3.05	5.0	3.55	21.5	18.2	15.5	7.9	2.35
9	1.89	1.89	1.71	1.80	2.7	4.6	3.55	21	17.4	15.5	7.6	2.35
10	1.98	1.89	1.71	1.80	2.45	*4.5	3.4	18.9	17.0	15.5	7.9	2.35
11	1.89	1.80	1.80	1.89	2.35	4.5	3.4	15.9	16.6	14.5	7.9	2.35
12	1.89	4.0	1.80	1.89	2.15	4.4	3.4	15.9	16.6	13.8	7.6	2.35
13	1.89	2.55	1.89	1.89	2.15	4.2	3.4	15.9	16.6	13.8	7.6	2.25
14	2.35	2.35	1.80	1.89	2.15	4.2	3.4	15.9	16.3	12.9	7.6	2.15
15	2.05	3.15	1.80	1.89	2.15	4.2	3.4	15.9	16.3	11.9	7.6	2.15
16	1.89	2.25	1.71	1.89	2.15	4.0	3.4	15.9	16.3	11.9	21.5	2.15
17	1.89	2.05	1.89	1.89	2.05	4.0	2.35	15.9	16.3	11.9	11.6	2.25
18	1.98	1.98	1.89	1.98	2.05	3.9	2.05	15.4	15.9	8.8	9.2	2.25
19	1.98	1.98	*1.80	1.89	2.05	4.4	2.15	15.2	15.9	4.2	8.5	2.15
20	1.89	1.98	1.80	1.98	2.65	4.0	2.15	15.2	15.5	4.2	8.3	2.05
21	1.89	1.98	1.80	1.89	16.8	4.2	2.15	*15.2	15.5	6.9	8.1	2.05
22	1.80	1.89	1.80	1.89	15.0	3.9	2.25	15.5	15.5	8.1	7.9	2.05
23	1.80	1.89	2.25	a1.9	10.6	3.9	2.45	15.5	15.5	8.1	7.9	2.15
24	1.98	1.98	2.25	a2.2	12.6	3.9	2.15	15.5	15.5	7.9	7.9	2.05
25	1.89	2.15	1.98	a2.0	8.5	3.8	2.05	15.5	15.9	8.1	7.9	2.15
26	2.05	1.98	1.98	a1.9	5.0	3.9	2.05	15.5	15.9	9.2	7.9	2.15
27	2.15	1.89	1.98	a1.9	3.9	3.65	1.98	15.9	15.9	12.3	7.6	2.15
28	1.98	1.89	1.98	a1.9	3.65	3.65	2.25	*24.5	15.9	9.2	7.6	2.15
29	*2.25	1.98	1.98	a1.9	3.4	3.65	2.35	-	15.9	8.3	5.5	2.15
30	1.98	1.98	2.05	a1.9	10.8	3.65	2.7	-------	15.5	8.1	3.65	2.15
31	1.89	2.05	-------	a2.1	-------	3.65	2.35	-------	15.5	-------	3.9	-------
Total	60.89	65.08	56.68	59.10	141.85	253.35	89.68	449.2	595.0	349.1	253.55	69.15
Mean:												
mgd	1.96	2.10	1.89	1.91	4.73	8.17	2.89	16.0	19.2	11.6	8.18	2.30
cfs	3.03	3.25	2.92	2.96	7.32	12.6	4.47	24.8	29.7	17.9	12.7	3.56
Ac-ft	187	200	174	181	435	778	275	1,380	1,830	1,070	778	212

Calendar year 1957: Max 80 Min 1.71 Mean(mgd) 5.68 Mean(cfs) 8.79 Ac-ft 6,350
Fiscal year 1957-58: Max 80 Min 1.71 Mean(mgd) 6.69 Mean(cfs) 10.4 Ac-ft 7,500

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for nearby streams.

3020. Punaluu Ditch near Punaluu

Location.--Lat 21°33'40", long 157°54'10", on right bank of ditch 800 ft downstream from intake, 1.7 miles southwest of highway bridge at Punaluu, and 3.3 miles southeast of Hauula Post Office.

Records available.--May 1953 to June 1958.

Gage.--Water-stage recorder. Altitude of gage is 200 ft (from topographic map).

Extremes.--1953-58: Maximum daily discharge, 19.5 mgd (30.2 cfs) Dec. 1, 1957; minimum daily, 0.02 mgd (0.03 cfs) Jan. 9, 14, 1955, Nov. 8, 9, 1957.

Remarks.--Records good except those for periods of no gage-height record, which are poor. Ditch diverts water for irrigation of sugarcane in the Punaluu district.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	12.0	11.2	12	11.2	4.5	11.2	0.91	0.04	2.45	9.0	2.6	11.2
2	12.0	10.5	11	11.2	4.4	10.5	.96	.04	2.4	10.5	2.8	11.2
3	12.0	11.2	11	11.2	4.4	10.5	.96	.04	2.3	11.2	2.6	11.2
4	8.4	11.2	11	13.5	4.4	10.5	*.80	.07	2.3	11.2	2.6	11.2
5	6.6	13.6	11	11.2	4.4	10.5	.74	.04	2.3	10.5	2.6	11.2
6	6.6	11.2	11	12.0	4.4	12.3	.74	.04	2.3	10.5	*2.5	11.2
7	6.6	13.7	11	12.0	4.4	11.2	.74	.04	2.3	10.5	2.5	10.5
8	6.8	15	11	11.2	4.4	10.5	.74	.04	2.3	11.2	2.45	10.5
9	6.7	16	11	*12.4	4.3	10.5	.74	.04	2.2	11.2	4.0	11.2
10	6.6	14	11	12.0	4.3	10.5	.74	.05	2.05	10.5	4.7	10.5
11	6.8	13	11	8.7	4.3	10.5	.74	.05	2.05	10.5	5.1	10.5
12	6.7	12	11	4.7	4.3	10.5	.91	.04	2.05	10.5	6.2	*10.5
13	6.8	12	11	4.7	10.0	5.5	1.04	.04	2.05	10.5	7.0	10.5
14	7.0	12	*12	5.3	17.3	1.00	1.04	.04	2.05	12.0	5.6	10.5
15	6.8	11	13.7	5.3	13.6	1.00	1.04	.05	2.05	6.5	5.3	10.5
16	7.2	11	12.0	5.3	13.1	1.00	1.00	.04	2.15	6.5	6.2	10.5
17	6.8	14	13.3	5.7	13.6	1.00	1.00	.04	2.3	7.6	11.2	10.5
18	8.6	13	12.0	5.7	14.2	1.00	1.04	.05	4.4	6.5	11.2	10.5
19	8.5	12	12.0	5.4	*13.8	1.04	1.08	.05	5.4	6.6	11.2	10.5
20	9.2	12	12.0	5.2	15.3	1.04	.90	.05	5.4	6.1	11.2	10.5
21	12.0	12	11.2	5.1	12.8	1.04	.22	.05	5.4	5.7	12.0	10.5
22	12.0	12	11.2	5.1	12.8	1.04	.10	.05	5.4	5.4	11.2	10.5
23	12.0	12	11.2	5.0	11.2	1.04	.08	.05	5.3	3.95	11.2	10.5
24	12.0	11	11.2	4.9	11.2	.96	.08	.05	5.3	2.8	11.2	10.5
25	12.0	11	11.2	4.9	12.0	.96	.07	.05	5.3	2.8	11.2	10.5
26	*11.2	11	11.2	5.2	10.5	.96	.07	1.15	5.3	2.8	11.2	9.6
27	11.2	11	11.2	4.7	10.5	.96	.07	2.45	*5.4	2.7	11.2	9.8
28	11.2	11	11.2	4.5	10.5	.96	.05	2.45	5.3	2.7	11.2	11.2
29	11.2	11	11.2	4.4	10.5	.91	.04	-	5.4	2.7	11.2	11.2
30	11.2	13	11.2	4.4	12.3	.87	.04	-------	5.4	2.6	11.2	10.5
31	12.0	14	-------	4.4	-------	.91	.04	-------	5.4	-------	11.2	-------
Total	286.7	378.6	343.0	226.5	277.7	152.39	18.72	7.19	111.70	223.75	233.55	319.7
Mean:												
mgd	9.25	12.2	11.4	7.31	9.26	4.92	0.604	0.257	3.60	7.46	7.53	10.7
cfs	14.3	18.9	17.6	11.3	14.3	7.61	0.935	0.398	5.57	11.5	11.7	16.6
Ac-ft	880	1,160	1,050	695	852	468	57	22	343	687	717	981

Calendar year 1956: Max 17.3 Min 0.08 Mean(mgd) 7.61 Mean(cfs) 11.8 Ac-ft 8,540
Fiscal year 1956-57: Max 17.3 Min 0.04 Mean(mgd) 7.07 Mean(cfs) 10.9 Ac-ft 7,910

* Discharge measurement made on this day.
Note.--No gage-height record Aug. 8 to Sept. 14, Apr. 24 to May 7; discharge estimated on basis of records for nearby streams.

3020. Punaluu ditch near Punaluu--continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	10.5	7.3	10.5	9.4	9.4	19.5	6.6	4.3	4.3	11.2	5.1	5.0
2	10.5	7.3	10.5	9.4	9.0	13.9	6.5	4.3	4.3	11.2	5.1	5.0
3	9.8	7.4	9.8	9.8	8.8	12.4	6.5	4.2	4.2	11.2	5.2	4.9
4	10.5	7.3	9.8	9.4	8.7	12.0	6.5	4.2	4.2	11.2	5.1	4.9
5	10.5	7.2	9.8	9.2	8.7	11.2	6.4	4.2	3.95	11.2	5.1	4.9
6	10.5	7.3	9.8	9.1	9.1	12.8	6.4	4.2	1.33	11.2	5.1	4.9
7	10.5	7.2	9.8	9.1	4.3	10.5	6.2	4.2	1.22	10.5	5.1	5.0
8	9.8	7.2	9.8	9.1	.02	9.2	6.2	4.2	1.13	10.5	5.1	5.2
9	9.8	7.1	9.7	9.0	.02	*8.6	6.2	4.2	4.1	9.8	5.1	5.4
10	9.8	6.8	9.5	9.0	.03	8.2	6.2	4.2	8.0	9.8	5.1	5.4
11	10.5	6.3	9.5	9.1	.03	7.7	6.2	4.3	8.0	9.8	5.1	5.4
12	9.8	6.1	9.5	9.0	.03	7.3	6.2	4.3	7.9	9.7	*5.1	5.4
13	9.8	5.9	*9.5	9.8	.29	7.3	*6.1	4.4	7.8	9.8	5.1	5.3
14	13.2	7.9	9.5	9.1	1.04	7.2	6.0	4.4	7.7	9.8	5.1	5.1
15	10.5	10.5	9.4	9.4	1.04	7.3	5.9	4.4	7.7	9.8	5.1	7.4
16	10.5	9.8	9.4	9.2	1.00	7.3	5.8	4.4	7.7	9.8	5.8	3.95
17	10.5	9.8	9.4	9.2	6.3	7.0	3.3	4.3	7.6	6.2	5.6	.31
18	10.5	9.8	9.4	9.4	12.9	6.8	2.55	4.3	7.6	4.4	5.3	.05
19	9.8	9.8	9.4	9.0	11.2	7.4	5.6	4.3	7.6	4.5	5.2	.04
20	9.8	9.7	9.2	9.0	11.8	7.1	5.7	*4.3	7.6	4.6	5.2	.04
21	9.8	9.7	9.1	9.2	14.1	7.9	5.6	4.2	7.6	4.6	5.2	.05
22	9.8	9.5	9.0	9.2	16.2	7.1	5.6	4.2	7.7	4.6	5.2	4.1
23	9.8	9.5	9.0	9.4	16.2	7.1	2.5	4.2	7.7	4.6	5.2	3.65
24	*10.2	9.8	9.0	10.1	16.2	7.6	2.05	4.2	7.7	4.6	5.1	.14
25	9.8	11.2	9.0	9.8	16.2	7.0	4.6	4.1	7.7	4.7	5.1	.12
26	12.0	10.5	9.1	9.4	14.5	7.4	3.95	4.1	9.3	4.8	5.1	6.3
27	11.2	9.8	9.2	9.2	12.8	7.1	3.35	4.2	12.0	5.4	5.1	9.8
28	10.5	9.8	9.1	9.1	12.0	7.0	4.3	4.4	11.2	5.3	5.1	10.5
29	10.5	11.2	9.1	*9.0	12.0	6.8	4.1	-	11.2	5.1	5.1	9.8
30	8.5	11.2	9.5	8.8	12.0	6.7	4.5	-------	11.2	5.1	5.0	9.8
31	7.3	11.2	-------	9.8	-------	6.6	4.4	-------	*11.2	-------	4.9	-------
Total	316.5	271.1	284.3	287.7	245.90	269.0	162.00	119.2	218.43	235.0	159.8	137.85
Mean:												
mgd	10.2	8.75	9.48	9.28	8.20	8.68	5.23	4.26	7.05	7.83	5.15	4.60
cfs	15.8	13.5	14.7	14.4	12.7	13.4	8.09	6.59	10.9	12.1	7.97	7.12
Ac-ft	971	832	872	883	755	826	497	366	670	721	490	423

Calendar year 1957: Max 19.5 Min 0.02 Mean(mgd) 7.09 Mean(cfs) 11.0 Ac-ft 7,950
Fiscal year 1957-58: Max 19.5 Min 0.02 Mean(mgd) 7.42 Mean(cfs) 11.5 Ac-ft 8,310

* Discharge measurement made on this day.

3030. Punaluu Stream near Punaluu

Location.--Lat 21°33'35", long 157°54'05", on left bank at diversion dam, 1.8 miles southwest of Punaluu and 3.5 miles southeast of Hauula.

Drainage area.--2.78 sq mi (revised).

Records available.--May 1953 to June 1958.

Gage.--Water-stage recorder and masonry control. Altitude of gage is 212 ft (from topographic map).

Average discharge.--5 years, 9.50 mgd (14.7 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 1,450 mgd (2,240 cfs) Apr. 14 (gage height, 4.59 ft), from rating curve extended above 105 mgd; minimum, 0.09 mgd (0.14 cfs) June 27.

1957-58: Maximum discharge during fiscal year, 730 mgd (1,130 cfs) Dec. 6 (gage height, 3.35 ft), from rating curve extended above 105 mgd; no flow Nov. 4, 5, June 27, 29, 30.

1953-58: Maximum discharge, 1,760 mgd (2,720 cfs) Aug. 20, 1955 (gage height, 5.03 ft), from rating curve extended above 105 mgd; no flow at times.

Remarks.--Records fair except those for periods of no gage-height record, which are poor. Records do not include flow of Punaluu ditch.

Rating table, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

0.0	0	0.8	10.5
.1	.18	1.0	21
.2	.69	1.2	38
.3	1.53	1.5	79
.4	2.7	2.0	195
.6	5.9		

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.0	2.3	3.15	1.74	12.8	7.7	12.1	17.2	10.9	3.6	10.9	0.57
2	3.6	2.05	2.55	1.53	10.5	6.6	12.1	15.9	10.9	1.43	11.7	.57
3	3.2	2.45	2.3	1.74	10.0	5.9	12.1	19.6	10.9	3.65	10.5	.51
4	5.6	3.0	2.2	7.0	9.8	5.4	11.7	53	10.5	2.2	10.5	.63
5	7.9	6.5	2.2	2.05	9.5	5.0	11.7	28.5	10.9	1.53	10.0	.51
6	7.9	2.85	2.3	2.8	10.3	39	11.3	21.5	10.5	1.43	*9.8	.51
7	7.9	16.0	2.05	2.75	9.8	10.3	11.3	19.1	10.3	1.53	9.8	.45
8	9.3	26.5	1.96	2.05	9.3	7.0	11.3	17.8	10.3	2.25	9.8	.45
9	8.6	31	1.96	3.85	9.3	6.1	11.3	17.2	10.3	2.4	8.3	.45
10	7.9	7.4	1.96	2.3	9.1	6.9	11.3	16.5	10.3	1.53	7.4	.40
11	9.3	5.6	1.96	4.8	9.1	5.6	12.6	17.2	10.3	1.43	8.1	.40
12	8.8	4.7	1.85	8.1	9.3	5.2	10.5	17.2	10.3	1.33	11.5	.35
13	9.3	4.4	1.85	8.8	11.8	9.1	10.5	24	10.5	1.90	15.2	.30
14	9.8	4.4	*3.55	29	61	13.8	11.3	17.2	10.3	122	8.1	.30
15	9.1	3.6	12.2	14.5	10.0	14.2	11.7	18.4	10.3	17.0	7.7	.40
16	10	3.3	3.15	14.5	6.8	14.6	10.9	15.9	10.3	14.6	6.1	.40
17	9.1	11.7	6.2	41	8.3	13.8	10.9	15.9	10.3	29	1.07	.40
18	38	5.9	2.85	45	11.3	13.4	11.7	*19.0	7.7	14.2	.99	.35
19	30	3.75	2.45	25.5	*9.0	14.2	22.5	15.9	6.8	14.9	.99	.40
20	6.7	3.3	2.3	17.2	26.5	15.2	39	15.2	7.0	11.7	.91	.40
21	3.3	3.0	2.2	14.2	8.1	13.4	*101	14.6	7.2	10.5	.99	.30
22	3.3	3.0	2.05	12.6	6.8	13.4	70	14.6	6.8	9.8	.91	.26
23	2.8	2.85	2.2	12.1	6.8	13.4	31	14.6	6.6	13.5	.83	.33
24	2.8	2.85	1.96	10.9	9.0	13.0	42	14.6	6.6	12.6	.83	.30
25	3.9	2.7	1.96	10.5	12.0	12.6	24.5	14.2	6.3	11.7	.76	.26
26	*2.5	2.55	2.05	33	6.3	12.6	21	12.6	6.3	11.7	.69	.18
27	2.45	2.55	1.85	17.6	7.0	12.6	19.1	12.9	6.3	10.9	.69	.18
28	2.3	2.55	1.74	11.3	5.9	12.6	17.8	11.7	6.3	11.3	.69	.84
29	2.3	2.8	1.85	10.5	5.4	12.6	18.4	-	6.3	10.5	.69	.57
30	2.2	5.6	1.74	11.3	16.6	12.1	17.2	-------	6.3	10.9	.63	.22
31	3.35	14.2	-------	10.5	-------	12.1	15.2	-------	6.6	-------	.63	-------
Total	236.20	195.35	80.59	390.71	347.6	359.4	645.0	512.0	271.2	363.01	167.70	12.19
Mean:												
mgd	7.62	6.30	2.69	12.6	11.6	11.6	20.8	18.3	8.75	12.1	5.41	0.406
cfs	11.8	9.75	4.16	19.5	17.9	17.9	32.2	28.3	13.5	18.7	8.37	0.628
Ac-ft	725	600	247	1,200	1,070	1,100	1,980	1,570	832	1,110	515	37

Calendar year 1956: Max 138 Min 1.53 Mean(mgd) 12.1 Mean(cfs) 18.7 Ac-ft 13,530
Fiscal year 1956-57: Max 122 Min 0.18 Mean(mgd) 9.81 Mean(cfs) 15.2 Ac-ft 10,990

Peak discharge (base, 500 mgd).--Oct. 17 (3 p.m.) 560 mgd (866 cfs), 3.07 ft; Nov. 14 (6 p.m.) 500 mgd (774 cfs), 2.92 ft; Dec. 6 (8 p.m.) 520 mgd (805 cfs), 2.93 ft; Jan. 21 (3:30 p.m.) 930 mgd (1,440 cfs), 3.84 ft; Feb. 4 (3 p.m.) 580 mgd (897 cfs), 3.10 ft; Apr. 14 (7:30 a.m.) 1,450 mgd (2,240 cfs), 4.59 ft.

* Discharge measurement made on this day.

Note.--No gage-height record July 1-26; discharge estimated on basis of records for Punaluu ditch and weather records.

3030. Punaluu Stream near Punaluu--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.18	2.7	2.2	0.22	0.15	162	7.2	7.4	7.9	0.83	8.1	6.6
2	.26	2.7	2.05	.18	.05	41	7.0	7.2	7.0	.83	8.8	6.3
3	.18	3.0	2.2	.58	.01	29.5	6.8	7.0	6.6	.83	9.5	6.3
4	.26	2.85	1.85	.15	0	15.5	6.6	7.2	6.6	.91	8.1	6.3
5	.35	2.7	1.63	.09	0	12.7	6.3	7.0	174	.83	7.7	6.1
6	.26	3.45	1.53	.05	.12	47	6.3	6.8	79	.76	7.7	5.9
7	.26	3.15	1.24	.03	35.5	21.5	6.3	6.8	26	.69	7.4	5.9
8	.15	2.85	1.24	.02	13.0	13.8	6.3	6.6	19.1	.69	7.2	5.9
9	.15	2.85	1.07	.01	12.7	11.7	6.3	6.3	12.6	.63	7.0	5.7
10	.18	3.0	1.07	.01	11.7	10.9	6.3	6.3	7.4	.76	7.4	6.1
11	.22	3.45	.99	.09	10.9	9.8	6.1	6.3	6.6	.57	7.2	5.7
12	.15	10.8	.91	.03	10.3	8.8	5.9	6.3	6.1	.57	*6.6	5.6
13	.18	5.9	*.99	.61	9.8	8.6	6.1	6.3	5.7	.43	6.3	5.6
14	4.1	4.2	.99	.07	10.2	8.3	6.1	6.3	5.4	.26	6.3	5.6
15	.63	3.3	.91	.22	11.0	8.8	5.9	6.3	5.2	.22	6.6	a3.5
16	.40	1.43	.83	.09	9.3	8.6	5.9	6.3	5.0.	.18	27.5	a6.5
17	.30	1.24	.83	.05	4.4	8.1	7.9	6.3	4.7	4.0	13.8	a9.5
18	.30	1.15	1.15	.07	3.7	7.7	8.7	6.3	4.7	5.9	10.3	a9.0
19	.26	1.07	.91	.01	.76	9.1	6.1	6.3	4.5	5.9	9.8	a9.0
20	.15	.91	.76	.02	4.9	8.3	5.9	*6.3	4.5	7.5	9.5	a9.0
21	.12	.83	.76	.07	44	11.4	5.9	6.3	4.4	6.3	8.6	a9.0
22	.09	.83	.69	.07	44	8.1	5.9	6.3	4.5	5.9	8.1	a5.0
23	.09	.76	.63	.12	31.5	7.9	8.7	6.3	4.4	5.7	7.9	a5.5
24	*.17	1.51	.69	1.10	38.5	9.4	8.9	6.3	4.2	5.9	7.7	a9.2
25	.07	5.9	.57	.45	18.0	7.9	6.8	6.1	4.0	7.5	7.7	9.5
26	1.71	1.85	.69	.12	9.0	8.6	7.8	6.1	2.85	14.1	7.4	3.4
27	1.27	1.33	.83	.05	6.6	7.7	7.9	7.5	4.0	30.5	7.0	0
28	.35	1.28	.57	.02	5.6	7.7	8.7	*17.0	1.24	16.5	7.0	.07
29	.22	4.2	.42	.01	4.7	7.4	7.9	-	1.33	10.0	6.8	0
30	1.59	3.15	.40	.01	5.2	7.2	13.5	-------	.99	8.8	6.8	0
31	3.0	3.0	-------	1.01	-------	7.2	8.3	-------	*.83	-------	6.6	-------
Total	17.60	87.34	31.60	5.63	355.59	542.2	220.3	193.5	431.34	144.49	264.4	171.77
Mean:												
mgd	0.568	2.82	1.05	0.182	11.9	17.5	7.11	6.91	13.9	4.82	8.53	5.73
cfs	0.879	4.36	1.62	0.282	18.4	27.1	11.0	10.7	21.5	7.46	13.2	8.87
Ac-ft	54	268	97	17	1,090	1,660	676	594	1,320	443	811	527

Calendar year 1957: Max 162 Min 0 Mean(mgd) 8.25 Mean(cfs) 12.8 Ac-ft 9,230
Fiscal year 1957-58: Max 174 Min 0 Mean(mgd) 6.76 Mean(cfs) 10.5 Ac-ft 7,560

Peak discharge (base, 500 mgd).--Nov. 21 (12:30 a.m.) 630 mgd (975 cfs), 3.25 ft; Dec. 1 (10 p.m.) 680 mgd (1,050 cfs), 3.33 ft; Dec. 6 (5:30 p.m.) 730 mgd (1,130 cfs), 3.35 ft; Mar. 5 (5 p.m.) 680 mgd (1,050 cfs), 3.33 ft.

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of Punaluu ditch record and weather records.

4000. Halawa Stream near Halawa

Location (revised).--Lat 21°09'30", long 156°45'53", on right bank 600 ft downstream from confluence of two main branches, 1.5 miles west of Halawa, and 8.0 miles northeast of Pukoo.

Drainage area.--4.62 sq mi (revised).

Records available.--August 1917 to July 1932, November 1937 to June 1958.

Gage.--Water-stage recorder. Altitude of gage is 200 ft (from topographic map). Prior to June 25, 1923, at site 350 ft upstream at different datum.

Average discharge.--34 years (1918-32, 1938-58), 18.9 mgd (29.2 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 2,400 mgd (3,710 cfs) Apr. 14 (gage height, 8.50 ft), from rating curve extended above 45 mgd as explained below; minimum, 1.60 mgd (2.5 cfs) June 10, 11.

1957-58: Maximum discharge during fiscal year, 5,540 mgd (8,570 cfs) Nov. 21 (gage height, 11.7 ft from floodmark), from rating curve extended above 45 mgd as explained below; minimum, 2.3 mgd (3.6 cfs) Oct. 16, Apr. 12.

1917-32, 1937-58: Maximum discharge (revised), 6,320 mgd (9,780 cfs) Apr. 2, 1948 (gage height, 12.30 ft), from rating curve extended above 45 mgd on basis of slope-area measurement at gage height 6.7 ft; minimum, 0.80 mgd (1.24 cfs) Oct. 13, 14, 15, 19, 1917, Feb. 11, 1954.

Revisions.--The maximum discharge for the water year 1948 has been revised to 6,320 mgd (9,780 cfs), superseding figure of maximum discharge given in previous water-supply papers.

Remarks.--Records fair except those below 3.5 mgd, which are poor. A 2-inch pipeline diverts water about a quarter of a mile above station for domestic use of Halawa village.

Rating tables, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

July 1, 1956, to Apr. 14, 1957

0.9	1.2	2.5	83
1.0	1.8	3.0	134
1.2	3.5	3.5	201
1.4	7.7	4.0	294
1.6	17.0	4.5	405
1.8	31.5		

Apr. 15, 1957, to Feb. 28, 1958

0.9	1.5
1.0	2.1
1.2	4.0
1.4	7.7

Note.--Same as preceding table above 1.4 ft.

Mar. 1 to June 30, 1958

0.9	2.3	1.8	34.5
1.0	3.2	2.0	48
1.2	6.3	2.5	86
1.4	12.4	3.0	134
1.6	22.5	3.6	217

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	7.2	13.8	9.8	3.7	18.1	32.5	4.6	10.2	39.5	12.1	16.9	2.25
2	6.3	8.8	6.5	3.85	11.2	8.8	3.3	10.2	10.5	7.9	56	2.15
3	7.0	20.5	5.8	5.1	8.8	7.0	3.0	8.4	8.0	8.2	25.5	2.0
4	6.5	71	4.8	141	6.5	6.0	3.1	70	7.2	124	38	2.45
5	5.3	69	6.7	33.5	4.9	6.0	2.9	60	70	19.9	48	2.1
6	5.5	14.7	5.1	8.4	5.3	15.3	2.7	36	15.4	7.7	12.4	2.0
7	15.4	76	3.85	35	6.0	17.0	3.4	12.9	8.4	6.3	8.8	1.95
8	12.4	46	3.5	47	4.0	6.0	4.8	11.8	6.5	7.2	7.0	1.82
9	10.5	36	9.5	24	3.4	4.9	9.9	8.4	6.0	9.1	6.2	1.78
10	17.9	14.7	3.85	9.8	4.4	4.4	25	7.0	6.0	7.2	6.6	1.71
11	29	10.5	3.2	7.0	3.4	4.0	33	18.4	7.2	4.9	28	1.66
12	9.1	14.1	3.0	5.8	6.5	3.7	6.7	56	7.7	4.2	23.5	1.71
13	25.5	14.7	22	19.0	4.8	3.4	4.6	20	17.0	17.7	9.8	1.89
14	46	27.5	94	144	*28	3.4	24	11.8	23.5	358	6.2	2.25
15	11.2	13.6	66	38	10.2	10.4	9.8	10.5	11.2	111	5.2	4.2
16	11.2	13.6	18.4	42	4.9	11.2	6.5	8.8	10.5	28	4.6	5.2
17	7.5	35.5	10.5	40	7.5	14.4	4.4	7.0	49	15.3	4.3	3.1
18	65	32.5	8.0	28	83	21.5	4.6	46	21	10.2	4.0	7.7
19	85	12.4	6.5	20.5	47	15.7	39.5	9.4	9.4	19.1	3.8	7.7
20	21	8.8	5.5	17.5	36	19.1	35	17.6	8.8	15.3	*3.55	9.2
21	26.5	7.2	*4.8	18.4	12.9	7.2	24	14.4	6.5	8.8	3.35	3.45
22	*14.1	6.3	4.9	15.8	8.8	4.9	17.0	7.2	5.5	7.3	3.25	8.2
23	9.4	6.2	9.1	9.4	8.8	4.0	10.2	9.1	4.6	53	3.0	3.45
24	8.4	16.6	4.8	8.0	6.3	3.5	20.5	6.0	4.0	22.5	3.65	2.65
25	21	6.0	4.0	10.2	7.5	3.3	16.3	4.9	3.5	31	3.55	3.65
26	7.7	4.8	3.85	47	5.1	3.1	7.0	4.6	3.3	17.0	3.0	3.25
27	6.5	4.8	4.2	13.5	4.4	2.9	5.8	34	3.2	10.2	2.8	6.3
28	22.5	6.9	3.3	12.9	4.0	2.8	6.0	67	3.0	14.1	2.75	45
29	32	10.6	4.0	10.2	11.3	2.8	26.5	-	2.9	7.5	2.65	15.3
30	9.1	70	5.3	17.0	98	3.4	8.8	-------	2.9	21.5	2.4	5.9
31	30.5	28	-------	7.7	-------	19.7	5.8	-------	3.0	-------	2.3	-------
Total	592.2	721.1	344.75	842.75	471.0	272.3	378.7	587.6	385.2	986.2	351.05	161.95
Mean:												
mgd	19.1	23.3	11.5	27.2	15.7	8.78	12.2	21.0	12.4	32.9	11.3	5.40
cfs	29.6	36.1	17.8	42.1	24.3	13.6	18.9	32.5	19.2	50.9	17.5	8.36
Ac-ft	1,820	2,210	1,060	2,590	1,450	836	1,160	1,800	1,180	3,030	1,080	497

Calendar year 1956. Max 144 Min 2.8 Mean(mgd) 19.1 Mean(cfs) 29.6 Ac-ft 21,440
Fiscal year 1956-57. Max 358 Min 1.66 Mean(mgd) 16.7 Mean(cfs) 25.8 Ac-ft 18,710

Peak discharge (base, 950 mgd).--July 19 (8 a.m.) 1,480 mgd (2,290 cfs), 7.18 ft; Oct. 14 (8:30 p.m.) 1,540 mgd (2,380 cfs), 7.30 ft; Nov. 30 (10 p.m.) 1,780 mgd (2,750 cfs), 7.72 ft; Apr. 14 (9 p.m.) 2,400 mgd (3,710 cfs), 8.50 ft.

* Discharge measurement made on this day.

4000. Halawa Stream near Halawa--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.3	7.3	11.2	7.0	16.5	51	11.2	8.4	22.5	5.7	4.4	41
2	11.2	6.2	17.0	5.2	20	22.5	8.8	6.2	14.7	5.2	28.5	30
3	8.4	7.7	15.3	4.3	10.5	64	7.3	5.2	12.4	7.5	23.5	9.1
4	12.4	5.7	8.8	3.8	6.4	26	6.6	5.0	20	8.9	16.4	6.1
5	21.5	11.4	7.0	3.35	*5.5	43	6.2	10.2	64	6.3	6.0	5.7
6	6.4	65	6.2	3.1	22.5	38	*5.5	6.6	189	5.3	4.8	4.8
7	4.4	135	5.5	3.0	123	129	5.2	17.9	32	5.7	17.2	13.0
8	4.8	24	5.9	2.8	18.3	24	5.9	6.6	17.0	5.3	19.0	12.1
9	*8.1	12.9	5.2	2.75	43	22	7.7	4.9	12.4	4.8	8.9	28
10	26	8.4	4.4	2.65	29.5	37.5	5.2	4.2	14.7	4.5	34	34
11	10.5	7.0	*4.4	6.6	34	21	4.8	3.9	12.4	3.2	34.5	11.6
12	6.4	15.8	4.4	3.65	17.7	14.1	4.3	3.65	10.6	2.55	22.5	48
13	11.2	15.8	5.2	3.8	10.2	18.4	4.0	3.45	8.6	11.0	15.2	14.7
14	47	7.5	11.2	3.1	9.8	28	3.8	3.45	7.5	3.55	10.6	8.1
15	7.7	12.4	5.0	2.55	20.5	18.4	3.65	3.65	7.0	3.1	53	6.3
16	6.6	7.0	3.9	2.4	7.7	16.4	3.65	3.1	6.3	3.4	112	5.5
17	6.6	5.9	7.5	2.65	7.3	10.2	3.45	7.1	6.1	4.2	41	5.0
18	7.0	8.0	22	15.9	24	10.5	3.65	4.8	10.9	3.55	59	4.4
19	14.1	16.1	51	11.8	13.9	22.5	3.65	3.25	14.0	3.0	50	4.1
20	8.8	8.0	8.8	3.45	6.6	28	3.9	5.7	6.3	84	41	3.8
21	5.9	9.4	5.9	15.5	224	25	3.55	6.7	5.7	18.1	17.0	3.55
22	4.4	7.3	5.2	4.7	211	15.3	3.1	3.25	5.7	4.8	12.4	4.4
23	13.2	6.2	4.4	23	118	11.8	20	9.3	5.9	3.65	8.9	*19.1
24	12.4	102	4.0	54	174	11.2	18.4	37.5	6.8	3.55	7.8	12.1
25	5.4	27.5	3.65	16.3	85	15.3	4.4	17.4	5.3	29.5	6.5	9.3
26	16.4	14.1	3.45	5.9	40	24	3.65	5.9	4.8	5.9	7.5	11.8
27	9.4	11.2	3.8	5.9	24	10.2	6.3	77	10.2	97	7.9	10.9
28	10.2	15.8	4.2	4.0	17.0	13.5	38	209	8.3	*26.5	8.6	11.4
29	6.2	91	7.0	15.0	15.8	11.8	36.5	-	21.5	8.6	6.3	4.8
30	16.9	69	59	12.2	54	43	72	-------	12.4	5.0	4.8	4.2
31	18.6	18.4	-------	51	-------	15.3	23.5	-------	7.0	-------	15.1	-------
Total	352.4	758.0	310.50	301.35	1,409.7	840.9	337.85	483.30	582.5	383.35	704.3	386.85
Mean:												
mgd	11.4	24.5	10.4	9.72	47.0	27.1	10.9	17.3	18.8	12.8	22.7	12.9
cfs	17.6	37.9	16.1	15.0	72.7	41.9	16.9	26.8	29.1	19.8	35.1	20.0
Ac-ft	1,080	2,330	953	925	4,330	2,580	1,040	1,480	1,790	1,180	2,160	1,190

Calendar year 1957: Max 358 Min 1.66 Mean(mgd) 18.7 Mean(cfs) 28.9 Ac-ft 20,940
Fiscal year 1957-58: Max 224 Min 2.4 Mean(mgd) 18.8 Mean(cfs) 29.1 Ac-ft 21,040

Peak discharge (base, 950 mgd).--Nov. 21 (5:30 a.m.) 5,540 mgd (8,570 cfs), 11.7 ft; Feb. 28 (10 a.m.) 2,890 mgd (4,470 cfs), 9.10 ft; Mar. 6 (6 a.m.) 1,230 mgd (1,900 cfs), 6.73 ft.

* Discharge measurement made on this day.

4020. Pulena Stream near Wailau

Location.--Lat 21°07'34" (revised), long 156°49'50", on left bank 0.5 mile upstream from confluence with Waiakeakua Stream, 3 miles south of Wailau, and 4 miles northwest of Pukoo.

Drainage area.--4.38 sq mi (revised).

Records available.--October 1919 to December 1928, September 1937 to August 1957 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 591 ft above mean sea level (hand levels by Bureau of Reclamation). Prior to Sept. 1, 1937, at site 150 ft upstream at different datum.

Average discharge.--27 years (1920-28, 1938-57), 22.1 mgd (34.2 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 670 mgd (1,040 cfs) Oct. 14 (gage height, 4.65 ft), from rating curve extended above 220 mgd by test on model of station site; minimum, 3.2 mgd (5.0 cfs) Oct. 1, Jan. 5.

1957: Maximum discharge during period July to August, 565 mgd (874 cfs) Aug. 7 (gage height, 4.27 ft), from rating curve extended above 220 mgd by test on model of station site; minimum, 4.6 mgd (7.1 cfs) July 22, 25.

1919-28, 1937-57: Maximum discharge, 5,970 mgd (9,240 cfs) Jan. 26, 1948 (gage height, 13.16 ft), from rating curve extended above 220 mgd by test on model of station site; minimum, 3.0 mgd (4.6 cfs) June 28, July 14, 1920, Oct. 8, 1952, Sept. 27, 29, Oct. 10, 1953.

Flood of Jan. 20, 1929, reached a stage of at least 22 ft (discharge, approximately 11,000 mgd (17,000 cfs).

Remarks.--Records fair except those for period of no gage-height record and those for periods of indefinite stage-discharge relation, which are poor.

Revisions (fiscal years).--WSP 1185: 1938-48(M).

Rating table, July 1, 1956, to Aug. 21, 1957 (gage height, in feet, and discharge, in million gallons a day)
(Shifting-control method used Jan. 11-20)

0.75	2.65	1.5	24
.8	3.2	1.7	37.5
.9	4.6	1.9	55
1.0	6.0	2.1	76
1.1	8.0	2.4	115
1.3	14.0	2.7	163

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	14.0	8.0	12.4	3.9	23	51	3.9	14.8	9.4	7.0	37.5	e4.5
2	12.4	7.0	9.4	4.6	10	18.3	3.9	14.2	8.0	4.6	56	e4.4
3	10.7	28	9.4	6.5	11	14.0	3.9	16.4	7.0	8.6	30.5	e4.3
4	10.7	63	8.0	28	9.0	10.7	3.9	51	7.0	102	26	e4.2
5	9.4	57	10.7	9.7	7.3	9.4	3.2	145	17.1	23	33	e4.0
6	9.4	21	8.0	5.2	6.5	10.0	3.9	100	9.4	12.4	18.3	e4.1
7	9.4	27.5	7.0	16.2	6.4	12.2	4.6	59	7.0	10.7	16.2	e3.9
8	9.4	16.2	7.0	20	6.2	8.0	11.1	46	7.0	12.4	14.0	e3.8
9	8.0	12.4	8.0	21	6.0	8.0	20.0	27	6.0	9.4	12.4	e3.7
10	9.0	10.7	5.2	9.4	6.0	7.0	35	21	7.6	8.0	10.7	e3.6
11	12.4	9.4	5.2	7.0	5.4	6.0	52	61	9.4	8.0	12.4	e3.6
12	9.5	12.4	4.6	6.0	6.2	6.0	16.2	72	9.4	7.0	10.7	e3.5
13	24	12.4	5.8	16.2	6.4	6.0	12.4	30.5	14.0	7.0	10.7	e3.8
14	28	29.5	16.2	51	25	7.0	12.4	21	21	60	9.4	e3.6
15	14.0	15.6	8.0	40	8.0	11.9	25	18.3	27	66	8.0	e4.2
16	12.4	15.1	*7.8	57	6.0	22.5	14.0	14.0	16.2	27	8.0	e5.5
17	9.4	64	6.0	40	6.5	15.3	10.7	12.4	40	16.2	7.0	e6.3
18	12.4	39	*6.0	27	30	18.0	*14.0	64	28.5	12.4	7.0	10.7
19	*20.5	21	5.2	18.3	21	10.7	31	18.3	18.1	25.5	7.0	13.7
20	14.7	14.0	4.6	14.0	*19.2	10.7	31	24.5	12.4	12.4	6.0	10.1
21	14.0	12.4	4.6	12.4	12.4	8.0	69	18.3	10.7	10.7	6.0	e5.0
22	12.4	10.7	e4.8	11	9.4	7.0	57	12.4	9.4	9.4	*5.5	e4.5
23	9.4	11.7	e4.7	10	8.0	6.0	27	12.4	8.0	41	5.2	e4.2
24	9.4	17.0	e4.4	9.5	8.0	6.0	21	12.4	8.0	21	7.0	e4.0
25	9.4	9.4	e4.2	10	8.0	5.2	16.2	10.7	7.0	69	6.3	e5.0
26	8.0	8.0	e4.5	30	7.0	5.2	12.4	9.4	*6.4	33.5	7.0	e4.2
27	8.0	8.0	e4.3	14	6.0	4.6	10.7	9.4	6.0	24	e5.5	e5.0
28	17.1	8.0	e4.0	11	6.0	4.6	13.1	9.4	5.2	26.5	e5.2	7.7
29	22	13.9	5.2	12	37	4.6	29.5	-	5.2	18.3	e4.9	7.0
30	9.4	43	4.6	11	105	4.6	17.3	-------	5.2	62	e4.8	e4.8
31	9.4	18.3	-------	9.0	-------	4.6	10.7	-------	4.6	-------	e4.7	-------
Total	388.2	643.6	199.8	540.9	431.9	323.1	596.0	924.8	357.2	755.0	402.9	156.9
Mean:												
mgd	12.5	20.8	6.66	17.4	14.4	10.4	19.2	33.0	11.5	25.2	13.0	5.23
cfs	19.3	32.2	10.3	26.9	22.3	16.1	29.7	51.1	17.8	39.0	20.1	8.09
Ac-ft	1,190	1,980	613	1,660	1,330	992	1,830	2,840	1,100	2,320	1,240	482

Calendar year 1956. Max 200 Min 3.9 Mean(mgd) 19.7 Mean(cfs) 30.5 Ac-ft 22,180
Fiscal year 1956-57: Max 145 Min 3.2 Mean(mgd) 15.7 Mean(cfs) 24.3 Ac-ft 17,580

Peak discharge (base, 1,800 mgd).--No peak above base.

e Stage-discharge relation indefinite; discharge estimated on basis of records for Waiakeakua Stream.

Note.--No gage-height record Oct. 22 to Nov. 19; discharge estimated on basis of records for Waiakeakua Stream.

4020. Pulena Stream near Wailau--Continued

Discharge, in million gallons a day, July to August 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	e4.7	14.0										
2	16.5	12.4										
3	9.1	25										
4	11.7	12.4										
5	12.4	32.5										
6	7.0	191										
7	5.2	246										
8	6.0	66										
9	8.0	30.5										
10	16.6	21										
11	8.0	16.2										
12	5.2	14.0										
13	6.6	12.4										
14	28.5	13.2										
15	9.4	18.6										
16	8.0	10.7										
17	6.0	10.7										
18	6.0	10.7										
19	9.8	15.5										
20	8.0	9.4										
21	6.0	10.7										
22	4.6	†8.98										
23	7.3	-										
24	7.3	-										
25	4.9	-										
26	6.0	-										
27	10.5	-										
28	8.9	-										
29	9.1	-										
30	20.5	-										
31	33	-										
Total	310.8	-										
Mean:												
mgd	10.0	-										
cfs	15.5	-										
Ac-ft	954	-										

Calendar year	. Max	Min	Mean(mgd)	Mean(cfs)	Ac-ft
Fiscal year	: Max	Min	Mean(mgd)	Mean(cfs)	Ac-ft

Peak discharge (base, 1,800 mgd).--No peak above base.

† Result of discharge measurement.
e Stage-discharge relation indefinite; discharge estimated on basis of records for Waiakeakua Stream.

4030. Waiakeakua Stream near Wailau

Location (revised).--Lat 21°07'26", long 156°49'43", on right bank 0.5 mile upstream from confluence with Pulena Stream, 3.1 miles south of Wailau, and 4.3 miles northwest of Pukoo.
Drainage area.--1.41 sq mi (revised).
Records available.--November 1919 to September 1929, September 1937 to July 1957 (discontinued).
Gage.--Water-stage recorder. Datum of gage is 698 ft above mean sea level (hand levels by Bureau of Reclamation).
Average discharge.--28 years (1920-29, 1938-57), 7.52 mgd (11.6 cfs).
Extremes.--1956-57: Maximum discharge during fiscal year, 710 mgd (1,100 cfs), Apr. 14 (gage height, 6.65 ft), from rating curve extended above 25 mgd as explained below; minimum, 2.15 mgd (3.33 cfs) Jan. 6.
1919-29, 1937-57: Maximum discharge, 1,730 mgd (2,680 cfs) Jan. 26, Apr. 2, 1948, from rating curve extended above 25 mgd by test on model of station site; maximum gage height, 9.90 ft Jan. 26, 1948; minimum discharge, 1.15 mgd (1.78 cfs) Nov. 1, 1949.
Remarks.--Records fair except those for period of fragmentary gage-height record, which are poor.
Revisions (fiscal years).--WSP 1249: 1920(M), 1923(M), 1939(M), 1943(M), 1947(M), 1948(P).

Rating tables, July 1, 1956, to July 30, 1957 (gage height, in feet, and discharge, in million gallons a day)

July 1, 1956, to Oct. 14, 1956

1.8	1.7	2.4	17.2
1.9	3.1	2.6	27
2.0	5.0	3.0	55
2.2	9.9		

Oct. 15, 1956, to July 30, 1957

1.7	1.4	2.5	23
1.8	2.5	3.0	55
1.9	4.0	3.5	98
2.0	6.2	4.0	153
2.2	11.3		

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	5.2	4.4	6.1	2.8	11.8	10.4	2.5	4.9	7.6	3.1	11.4	2.5
2	4.2	3.65	5.0	2.8	4.9	4.6	2.4	4.2	3.7	2.8	20.5	2.5
3	4.0	12.5	4.8	4.2	5.9	4.2	2.4	5.7	3.7	3.9	11.9	2.4
4	3.65	31	4.6	26	4.4	3.85	2.4	24.5	3.55	28	10.9	2.5
5	3.65	25.5	5.0	6.3	3.85	3.7	2.3	29.5	6.6	4.9	14.2	2.4
6	3.5	8.6	3.85	3.65	3.7	4.4	2.3	18.5	3.85	3.7	7.3	2.5
7	6.1	12.7	3.65	4.0	3.7	4.0	2.5	9.9	3.4	3.55	5.9	2.4
8	4.8	8.2	3.5	7.9	3.55	3.4	3.4	7.3	3.25	3.7	5.1	2.4
9	3.85	7.0	4.8	11.0	3.4	3.25	5.6	5.9	3.25	3.55	4.6	2.3
10	8.6	5.2	3.3	4.4	3.4	3.25	9.8	5.3	3.55	3.25	4.4	2.3
11	8.6	4.6	3.1	3.65	3.1	3.1	14.8	12.2	3.7	3.1	8.5	2.4
12	5.4	6.8	2.95	3.3	3.55	2.95	4.0	22	3.9	2.95	7.1	2.3
13	11.8	6.3	7.5	6.0	3.55	2.8	3.4	8.5	6.8	3.25	4.9	2.5
14	19.0	12.8	25	46	13.3	2.8	3.55	7.3	6.1	100	4.0	2.3
15	6.3	6.1	12.1	15.2	4.6	3.4	4.6	6.7	5.7	37	3.85	2.8
16	5.9	6.4	*9.0	22.5	3.55	4.4	3.4	5.5	4.2	9.9	3.55	2.95
17	5.0	18.3	5.0	13.4	4.0	5.6	2.95	4.9	19.7	7.3	3.4	3.1
18	12.2	11.1	4.4	11.1	16.2	5.2	*3.0	12.0	8.8	6.2	3.25	4.0
19	*19.3	6.3	3.85	9.9	9.8	5.1	5.2	5.1	5.3	8.5	3.1	4.0
20	9.6	5.4	3.5	7.3	*8.8	5.1	6.0	6.3	4.6	5.9	2.8	3.85
21	9.9	4.8	3.3	5.7	5.9	3.4	5.1	5.1	4.0	4.6	2.8	2.65
22	6.1	4.2	3.5	5.1	4.6	3.4	4.2	4.2	3.85	4.0	*2.65	2.95
23	5.0	6.1	3.5	4.9	4.2	2.95	3.7	4.2	3.7	15.4	2.95	2.5
24	4.6	5.8	2.95	4.6	3.85	2.95	5.2	4.0	3.55	9.9	3.25	2.5
25	5.4	3.85	2.8	4.9	4.0	2.8	4.0	3.7	3.25	17.9	3.1	3.4
26	4.0	3.65	2.95	15.9	3.4	2.65	3.4	3.7	*3.25	9.2	2.8	2.8
27	3.85	3.65	2.7	5.7	3.25	2.65	3.25	8.3	3.1	7.3	2.65	3.75
28	8.1	3.85	2.55	4.9	3.25	2.5	5.7	7.1	3.1	7.3	2.8	10.3
29	11.1	13.0	2.95	5.9	9.8	2.8	11.1	-	2.95	5.9	2.65	5.5
30	4.2	23	2.95	5.3	20.5	2.65	4.4	-------	2.95	15.7	2.65	3.55
31	6.9	12.5	-------	4.2	-------	3.25	3.7	-------	3.1	-------	2.5	-------
Total	219.80	287.25	151.15	278.50	181.80	117.50	140.25	246.5	148.05	341.75	171.45	94.30
Mean:												
mgd	7.09	9.27	5.04	8.98	6.06	3.79	4.52	8.80	4.78	11.4	5.53	3.14
cfs	11.0	14.3	7.80	13.9	9.38	5.86	6.99	13.6	7.40	17.6	8.56	4.86
Ac-ft	675	882	464	855	558	361	430	756	454	1,050	526	289

Calendar year 1956. Max 50 Min 2.4 Mean(mgd) 7.56 Mean(cfs) 11.7 Ac-ft 8,490
Fiscal year 1956-57. Max 100 Min 2.3 Mean(mgd) 6.52 Mean(cfs) 10.1 Ac-ft 7,300

Peak discharge (base, 240 mgd).--Oct. 14 (9:30 p.m.) 250 mgd (387 cfs), 4.74 ft; Apr. 14 (8 p.m.) 710 mgd (1,100 cfs), 6.65 ft.

* Discharge measurement made on this day.
Note.--Fragmentary gage-height record Apr. 14 to May 22; discharge computed from partly estimated gage-heights.

Discharge, in million gallons a day, 1957

Day		Discharge	Day		Discharge	Day		Discharge	Day		Discharge
July	1.....	3.25	July	9.....	3.75	July	17.....	4.0	July	25.....	4.2
	2.....	6.0		10.....	8.5		18.....	4.0		26.....	4.9
	3.....	4.9		11.....	4.4		19.....	5.1		27.....	4.6
	4.....	5.1		12.....	3.7		20.....	4.4		28.....	4.9
	5.....	5.9		13.....	5.0		21.....	4.2		29.....	4.2
	6.....	4.0		14.....	18.1		22.....	3.55		30.....	7.9
	7.....	3.55		15.....	5.7		23.....	5.5		31.....	-
	8.....	3.55		16.....	3.7		24.....	6.6			

4040. Pelekunu Stream near Pelekunu

Location (revised).--Lat 21°08'12", long 156°52'47", on right bank 0.6 mile upstream from Lanipuni Stream, 1.8 miles south of Pelekunu, and 5.8 miles northwest of Pukoo.
Drainage area.--2.62 sq mi (revised).
Records available.--December 1919 to January 1929, September 1937 to August 1957 (discontinued).
Gage.--Water-stage recorder. Datum of gage is 546 ft above mean sea level (levels by Bureau of Reclamation). Prior to Sept. 15, 1937, at site 250 ft upstream at different datum.
Average discharge.--26 years (1920-28, 1938-47, 1948-57), 10.7 mgd (16.6 cfs).
Extremes.--1956-57: Maximum gage height during fiscal year, 2.97 ft Nov. 30 (discharge not determined); minimum, 2.05 mgd (3.17 cfs) Sept. 28.
1957: Maximum discharge during period July to August, 165 mgd (255 cfs) Aug. 7 (gage height, 2.39 ft), from rating curve extended above 25 mgd by test on model of station site; minimum, 3.5 mgd (5.4 cfs) Aug. 23.
1919-29, 1937-47, 1948-57: Maximum discharge observed, 2,660 mgd (4,120 cfs) revised, Nov. 20, 1940 (gage height, 6.81 ft), from rating curve extended above 25 mgd by test on model of station site; minimum, 1.46 mgd (2.26 cfs) Nov. 26, 27, 1943.
Flood of undetermined magnitude destroyed station on Jan. 26, 1948.
Revisions.--The maximum discharge for the fiscal year 1940 has been revised to 2,660 mgd (4,120 cfs), gage height 6.81 ft, superseding figure published in WSP 1449.
Remarks.--Records poor.

Rating table, July 1, 1956, to Aug. 25, 1957 (gage height, in feet, and discharge, in million gallons a day)
(Shifting-control method used July 1 to Oct. 14, 1956)

0.5	1.4	1.3	23
.6	2.1	1.6	44
.8	5.0	1.8	63
1.0	10.3	1.9	74

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	9.1	5.0	5.7	2.2	5.0	28.5	2.8	8.5	4.8	3.7	16.0	2.6
2	8.2	4.4	4.8	2.5	4.0	12.0	2.6	8.5	4.6	3.2	20	2.6
3	7.3	12.5	4.8	3.45	3.7	9.1	2.8	9.1	4.2	9.2	14.0	2.5
4	6.8	23	4.8	10.1	3.5	7.3	2.6	13.9	4.0	61	10.3	2.5
5	6.4	20	4.8	4.1	3.3	6.1	2.5	42	9.6	16.0	10.3	2.5
6	6.4	12.0	4.2	2.6	3.2	6.7	2.9	40	6.4	10.3	8.5	2.5
7	6.1	14.0	3.5	4.2	3.1	8.3	3.3	26	4.8	8.5	7.3	2.4
8	5.5	10.3	3.3	10.3	3.0	5.2	6.8	22	4.2	8.5	6.6	2.4
9	5.2	9.4	3.9	7.1	3.0	4.8	8.2	16.0	4.0	7.3	6.1	2.3
10	5.2	7.9	3.3	4.4	3.1	4.2	11.2	12.0	4.6	6.4	5.9	2.2
11	5.5	7.3	3.2	3.2	3.1	4.0	12.4	23	5.9	5.9	5.9	2.3
12	5.5	8.2	3.2	2.2	4.0	4.0	5.9	24	5.5	5.2	5.7	2.2
13	*10.8	7.6	3.2	6.7	3.2	3.7	4.4	14.0	7.1	5.0	5.5	2.5
14	11.0	12.0	3.3	23	6.8	4.0	4.0	10.3	12.1	6.4	4.6	2.2
15	8.2	7.9	*3.5	15.5	6.0	5.9	9.8	9.4	14.0	15.1	4.2	2.8
16	7.1	8.6	3.0	13.9	*3.5	9.9	*5.6	7.9	10.0	10.3	4.0	3.3
17	5.5	29	2.6	12.0	7.5	7.2	4.4	7.1	15.8	7.6	*3.9	4.1
18	6.8	20	2.5	9.4	10.5	7.7	4.9	24.5	13.8	6.4	3.9	5.0
19	7.1	14.0	2.5	7.9	12.0	5.2	12.1	9.7	10.7	10.3	3.7	6.1
20	7.1	12.0	2.4	6.4	8.8	4.6	14.6	13.6	8.2	7.1	3.3	4.6
21	7.9	9.4	2.4	5.7	6.4	4.0	45	10.3	*6.8	5.9	3.3	2.8
22	6.8	8.2	2.5	5.0	5.2	3.9	42	7.9	6.1	5.2	3.3	2.5
23	5.5	8.2	2.5	4.6	4.6	3.5	20	7.6	5.5	13.3	3.2	2.3
24	5.2	9.1	2.3	4.4	4.2	3.2	16.0	7.9	5.0	10.0	3.5	2.3
25	5.2	6.6	2.3	4.4	4.2	3.2	13.3	6.8	4.6	29	3.5	2.6
26	4.4	5.7	2.3	6.1	3.5	3.1	9.7	5.9	4.2	18.0	3.9	2.5
27	4.6	5.7	2.2	5.0	3.5	3.0	8.2	5.5	4.0	14.0	3.0	2.4
28	10.6	5.5	2.1	5.6	3.3	2.9	7.9	5.0	3.9	12.0	2.9	2.8
29	10.3	5.9	2.9	5.8	17.2	2.9	12.0	-	3.7	10.0	2.9	2.9
30	5.9	13.7	2.5	7.1	59	2.9	9.7	-------	3.7	23	2.8	2.4
31	5.7	7.1	-------	4.8	-------	3.1	7.1	-------	3.5	-------	2.8	-------
Total	212.9	330.2	95.9	209.65	211.4	184.1	314.7	398.4	205.3	353.8	184.8	85.1
Mean:												
mgd	6.87	10.7	3.20	6.76	7.05	5.94	10.2	14.2	6.62	11.8	5.96	2.84
cfs	10.6	16.6	4.95	10.5	10.9	9.19	15.8	22.0	10.2	18.3	9.22	4.39
Ac-ft	653	1,010	294	643	649	565	966	1,220	630	1,090	567	261

Calendar year 1956. Max 70 Min 2.1 Mean(mgd) 9.71 Mean(cfs) 15.0 Ac-ft 10,880
Fiscal year 1956-57. Max 61 Min 2.1 Mean(mgd) 7.63 Mean(cfs) 11.8 Ac-ft 8,550

Peak discharge (base, 300 mgd).--Oct. 14 (10:30 p.m.) discharge unknown; Nov. 30 (5 p.m.) discharge unknown, 2.97 ft.

* Discharge measurement made on this day.

Discharge, in million gallons a day, 1957

Day	July	Aug.	Day	July	Aug.	Day	July	Aug.	Day	July	Aug.	Day	July	Aug.
1	2.3	5.9	7	2.9	68	13	2.9	5.9	19	4.6	6.4	25	2.5	16.0
2	5.4	5.0	8	3.0	25.5	14	7.0	6.1	20	4.0	4.8	26	2.8	-
3	3.5	12.5	9	3.7	14.0	15	3.5	6.8	21	3.1	4.6	27	3.9	-
4	6.0	6.4	10	4.6	10.3	16	3.3	5.0	22	2.6	4.0	28	4.0	-
5	5.5	12.9	11	3.0	8.2	17	3.0	4.8	23	2.8	3.7	29	3.3	-
6	3.2	53	12	2.6	6.8	18	3.0	5.0	24	3.0	36	30	7.4	-
												31	9.1	-
Total													121.5	-
Mean in million gallons a day													3.92	-
Mean in cubic feet per second													6.07	-
Runoff in acre-feet													373	-

4050. Lanipuni Stream near Pelekunu

Location (revised).--Lat 21°08'38", long 156°52'26", on left bank 0.4 mile upstream from mouth, 1.5 miles southeast of Pelekunu, and 6.1 miles northwest of Pukoo.
Drainage area.--1.09 sq mi (revised).
Records available.--December 1919 to September 1929, September 1937 to August 1957 (discontinued).
Gage.--Water-stage recorder. Datum of gage is 418 ft above mean sea level (by hand levels from Geological Survey bench mark).
Average discharge.--27 years (1920-29, 1938-47, 1948-57), 9.12 mgd (14.1 cfs).
Extremes.--1956-57: Maximum discharge during fiscal year, 290 mgd (449 cfs) Apr. 4 (gage height, 4.40 ft), from rating curve extended above 35 mgd as explained below; minimum, 1.70 mgd (2.63 cfs) June 10.
1957: Maximum discharge during period July to August, 132 mgd (204 cfs) Aug. 7 (gage height, 3.07 ft), from rating curve extended above 35 mgd as explained below; minimum, 2.15 mgd (3.35 cfs) July 1.
1919-29, 1937-57: Maximum discharge, at least 3,000 mgd (4,640 cfs) Jan. 26, 1948 (gage height, at least 12 ft, from debris in shelter), from rating curve extended above 35 mgd by test on model of station site; minimum, 1.45 mgd (2.24 cfs) Jan. 29, 1944.
Remarks.--Records fair except those for periods of no gage-height record, which are poor.
Revisions (fiscal years).--WSP 1249: 1943(M).

Rating table, July 1, 1956, to Aug. 26, 1957 (gage height, in feet, and discharge, in million gallons a day)

0.2	1.23	1.0	20
.3	2.25	1.5	37
.4	3.6	2.0	57
.5	5.3	2.5	85
.7	9.9		

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	6.8	4.8	4.8	2.5	3.3	10	2.3	5.6	3.5	2.75	15.7	2.15
2	5.7	4.1	4.3	2.75	2.85	8.0	2.1	5.0	3.3	2.35	23	2.15
3	5.1	19.3	4.1	3.55	2.85	6.5	2.2	5.7	3.1	14.3	10.5	2.15
4	4.6	28	3.95	8.6	2.75	5.7	2.1	15.3	3.0	67	12.3	2.0
5	4.4	16.7	4.4	3.6	2.6	5.0	2.0	31	7.0	13.0	13.6	2.0
6	4.4	7.9	3.6	2.75	2.6	5.3	2.3	29.5	4.7	7.9	8.2	2.0
7	4.3	18.4	3.45	4.0	2.5	7.0	2.7	17.3	3.7	6.4	6.8	2.0
8	3.95	8.4	3.45	11.6	2.35	4.5	5.0	10.5	3.1	8.2	5.5	1.91
9	3.75	6.8	3.6	12.3	2.35	4.0	6.0	7.6	3.0	5.9	5.1	1.91
10	3.95	5.7	3.15	5.1	2.5	3.5	8.0	6.1	3.5	4.8	4.6	1.91
11	3.95	5.1	3.15	3.75	2.5	3.3	9.0	24	4.5	4.1	4.8	2.0
12	5.2	6.4	3.15	3.15	3.0	3.3	4.5	17.0	4.5	3.75	4.3	2.0
13	*8.8	5.9	3.45	7.4	2.6	3.2	2.6	8.2	5.5	3.75	3.75	2.35
14	8.8	14.6	3.5	14.5	4.2	3.3	2.8	6.4	9.0	9.6	3.6	1.91
15	5.9	7.4	*3.0	10.0	3.0	5.0	3.5	5.1	10	9.1	3.3	2.5
16	5.1	10.4	2.85	14.0	*2.35	8.0	*2.8	4.4	7.5	6.8	3.3	3.3
17	4.8	43	2.85	11.5	3.85	5.4	2.25	3.95	11	4.8	*3.0	4.6
18	6.8	17.1	2.85	7.6	6.3	5.5	3.25	25	9.0	4.3	3.15	4.4
19	6.7	8.4	2.75	5.9	6.8	4.5	5.9	7.5	7.0	13.7	2.85	6.1
20	7.4	7.0	2.75	4.8	4.6	4.0	6.2	10	5.5	5.5	2.75	4.5
21	7.4	5.9	2.6	4.1	3.15	3.5	23	7.5	*4.5	4.4	2.6	2.6
22	5.9	5.5	3.15	3.6	2.85	3.4	16.3	5.7	4.1	3.75	2.6	2.5
23	4.8	6.2	3.0	3.3	2.6	3.0	7.4	5.2	3.6	14.3	2.6	2.15
24	4.6	6.1	2.6	3.15	2.6	2.8	6.8	5.0	3.3	9.7	3.3	2.25
25	5.0	4.8	2.5	3.15	2.8	2.6	5.3	4.5	3.15	30	3.6	2.85
26	3.95	4.3	2.75	5.1	2.25	2.6	3.95	4.3	3.0	12.4	3.15	2.6
27	4.3	4.4	2.5	3.6	2.25	2.5	3.3	4.0	2.85	10.0	2.5	3.6
28	9.9	4.3	2.6	4.3	2.25	2.4	3.75	3.8	2.75	9.4	2.35	4.6
29	10.7	8.0	3.45	5.2	4.8	2.4	5.9	-	2.6	8.6	2.35	3.45
30	5.7	12.9	2.85	5.7	22.5	2.3	5.0	-------	2.6	28.5	2.25	2.6
31	6.4	6.1	-------	3.6	-------	2.5	3.3	-------	2.5	-------	2.25	-------
Total	179.05	313.9	97.10	184.15	113.90	135.0	161.50	285.15	146.35	329.05	169.65	83.04
Mean:												
mgd	5.78	10.1	3.24	5.94	3.80	4.35	5.21	10.2	4.72	11.0	5.47	2.77
cfs	8.94	15.6	5.01	9.19	5.88	6.73	8.06	15.8	7.30	17.0	8.46	4.29
Ac-ft	549	963	298	565	350	414	496	875	449	1,010	521	255

Calendar year 1956. Max 45 Min 2.25 Mean(mgd) 7.44 Mean(cfs) 11.5 Ac-ft 8,340
Fiscal year 1956-57: Max 67 Min 1.91 Mean(mgd) 6.02 Mean(cfs) 9.31 Ac-ft 6,740

Peak discharge (base, 300 mgd).--No peak above base.

* Discharge measurement made on this day.
Note.--No gage-height record Dec. 1 to Jan. 16, Feb. 18 to Mar. 21; discharge estimated on basis of records for Pelekunu and Pulena Streams.

Discharge, in million gallons a day, 1957

Day	July	Aug.	Day	July	Aug.	Day	July	Aug.	Day	July	Aug.	Day	July	Aug.
1	2.55	7.4	7	3.15	48	13	5.4	3.95	19	6.9	5.4	25	3.25	11.7
2	6.2	6.1	8	3.75	16.8	14	8.6	5.2	20	4.4	3.45	26	3.4	8.4
3	4.1	14.3	9	4.8	8.4	15	4.3	6.1	21	3.45	3.6	27	4.5	-
4	6.1	6.8	10	7.4	6.6	16	3.95	3.6	22	2.85	2.85	28	3.75	-
5	6.1	19.4	11	4.4	5.3	17	3.6	3.6	23	4.1	2.95	29	3.75	-
6	3.6	54	12	3.3	4.4	18	3.3	3.6	24	3.3	48	30	8.4	-
												31	11.0	-
Total													147.65	-
Mean in million gallons a day													4.76	-
Mean in cubic feet per second													7.36	-
Runoff in acre-feet													453	-

4055. Waikolu Stream at altitude 900 ft, near Kalaupapa

Location.--Lat 21°08'43", long 156°55'17", on right bank 2.3 miles from mouth and 5.3 miles southeast of Kalaupapa Post Office.
Drainage area.--1.99 sq mi.
Records available.--May 1956 to June 1958.
Gage.--Water-stage recorder. Altitude of gage is 900 ft (from topographic map).
Extremes.--1956: Maximum discharge during period May to June, 62 mgd (96 cfs) June 12 (gage height, 2.09 ft), from rating curve extended above 9 mgd on basis of shape of control section; minimum, 2.1 mgd (3.2 cfs) May 24.
1956-57: Maximum discharge during fiscal year, 300 mgd (464 cfs) Apr. 4, Nov. 30, from rating curve extended above 9 mgd on basis of shape of control section; maximum gage height, 4.24 ft Apr. 4; minimum discharge, 1.80 mgd (2.79 cfs) June 10-15.
1957-58: Maximum discharge during fiscal year, 470 mgd (727 cfs) Nov. 21 (gage height, 5.24 ft), from rating curve extended above 9 mgd as explained above; minimum, 1.40 mgd (2.17 cfs) Oct. 10.
Remarks.--Records good except those above 9 mgd and those for period of no gage-height record, which are fair.

Discharge, in million gallons a day, 1956

Day	May	June	Day	May	June	Day	May	June	Day	May	June	Day	May	June
1	-	4.3	7	-	6.5	13	-	18.3	19	-	3.5	25	4.6	4.3
2	-	3.95	8	-	4.6	14	-	14.8	20	-	3.35	26	5.0	3.35
3	-	8.6	9	-	5.5	15	-	6.0	21	*5.6	3.35	27	3.8	3.35
4	-	9.1	10	-	15.2	16	-	3.8	22	3.05	7.7	28	3.5	4.1
5	-	6.2	11	-	12.3	17	-	3.5	23	2.25	10.2	29	6.9	3.35
6	-	8.1	12	-	33.5	18	-	3.95	24	2.1	8.2	30	6.0	6.4
												31	9.7	-
Total													-	229.35
Mean in million gallons a day													-	7.64
Mean in cubic feet per second													-	11.8
Runoff in acre-feet													-	704

* Discharge measurement made on this day.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.5	2.9	2.6	1.98	2.35	11.6	2.0	2.95	2.0	2.0	9.2	2.0
2	2.9	2.6	2.35	1.98	2.25	3.25	2.0	5.4	1.90	2.0	15.3	2.0
3	2.6	8.2	2.25	1.98	2.1	2.7	2.0	5.8	1.90	3.3	4.1	2.0
4	2.6	26	2.25	3.6	2.1	2.7	2.0	9.0	1.90	79	4.1	2.0
5	2.5	12.5	2.25	3.35	2.1	2.45	2.0	39.5	21	9.3	7.8	1.90
6	2.5	3.8	2.1	2.5	2.0	5.9	2.0	24	6.0	3.4	3.25	1.90
7	2.5	15.3	2.1	2.85	2.0	8.7	2.1	13.1	2.85	2.85	2.6	1.90
8	2.5	5.3	2.1	16.8	2.0	2.85	2.5	9.4	2.25	5.7	2.25	1.90
9	2.5	3.5	2.1	17.9	2.0	2.35	3.5	4.4	2.0	4.2	2.1	1.90
10	2.5	2.9	1.98	4.5	2.0	2.25	6.0	3.0	2.0	3.0	2.1	1.90
11	2.5	2.6	1.98	3.05	2.0	2.1	7.0	13.0	2.35	3.0	2.1	1.80
12	2.5	2.9	1.98	2.6	2.0	2.1	3.0	14.0	2.85	2.6	2.1	1.80
13	3.0	3.35	2.25	2.75	2.0	2.1	2.2	3.7	3.95	2.45	2.1	1.80
14	4.5	6.7	4.1	35.5	2.1	2.1	2.1	2.7	9.6	2.6	2.1	1.80
15	3.5	5.9	3.2	11.8	2.95	2.85	5.4	2.25	9.7	12.6	2.1	1.80
16	3.0	4.2	2.5	6.4	2.25	6.4	3.5	2.1	5.0	5.6	2.1	1.90
17	2.9	28.5	2.25	8.0	3.85	5.4	3.0	2.0	14.3	3.95	2.0	2.0
18	2.9	8.5	2.25	3.65	7.6	5.5	2.5	34	8.6	2.6	2.0	3.1
19	2.9	3.8	2.1	2.85	7.1	2.7	5.0	3.4	3.55	6.1	*2.0	4.7
20	3.0	3.05	*2.1	2.45	3.65	2.35	*25	8.0	3.0	3.8	2.0	3.95
21	4.0	2.6	2.1	2.35	2.7	2.25	38	6.1	2.35	2.6	2.1	2.35
22	3.5	2.5	2.1	2.25	*2.35	2.1	24	2.7	2.1	2.25	2.1	2.1
23	*2.6	2.5	2.1	2.25	2.25	2.1	7.4	4.0	*2.0	7.0	2.1	2.0
24	2.5	2.6	2.1	2.1	2.25	2.0	8.3	6.3	2.0	5.8	2.1	1.90
25	2.35	2.5	1.98	2.1	2.25	2.0	6.8	3.75	2.0	25.5	2.1	1.90
26	2.35	2.35	2.1	2.1	2.1	2.0	2.7	2.45	2.0	9.4	2.1	1.90
27	2.35	2.25	1.98	2.1	2.1	2.0	2.25	2.25	1.90	6.8	2.1	1.90
28	6.7	2.25	1.98	2.35	2.1	2.0	2.1	2.1	1.90	7.2	2.1	1.90
29	9.6	2.6	1.98	2.95	13.5	2.0	3.15	-	1.90	8.0	2.0	1.90
30	3.6	11.7	1.98	4.2	73	2.0	3.65	-------	1.90	29	2.0	2.0
31	2.9	3.35	-------	2.85	-------	2.0	2.25	-------	1.90	-------	2.0	-------
Total	99.75	189.70	67.19	164.09	161.00	100.80	185.40	231.35	128.65	263.60	96.20	63.90
Mean:												
mgd	3.22	6.12	2.24	5.29	5.37	3.25	5.98	8.26	4.15	8.79	3.10	2.13
cfs	4.98	9.47	3.47	8.18	8.31	5.03	9.25	12.8	6.42	13.6	4.80	3.30
Ac-ft	306	582	206	504	494	309	569	710	395	809	295	196

Calendar year 1956. Max - Min - Mean(mgd) - Mean(cfs) - Ac-ft -
Fiscal year 1956-57: Max 79 Min 1.80 Mean(mgd) 4.80 Mean(cfs) 7.43 Ac-ft 5,380

Peak discharge (base, 250 mgd).--Nov. 30 (9:30 p.m.) 300 mgd (464 cfs), 4.24 ft; Apr. 4 (9:30 a.m.) 300 mgd (464 cfs), 4.15 ft.

* Discharge measurement made on this day.
Note.--No gage-height record July 9-22, Jan. 1-20; discharge estimated on basis of records for Waikolu Stream below pipeline crossing near Kalaupapa.

4055. Waikolu Stream at altitude 900 ft, near Kalaupapa--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.90	3.0	2.45	2.25	3.05	30	5.0	4.4	14.2	3.7	2.6	10.5
2	2.75	2.6	3.45	1.80	2.25	8.7	3.95	3.25	17.7	3.55	5.1	8.7
3	3.1	12.4	5.9	1.70	2.25	44	3.4	2.85	7.2	3.55	3.8	3.8
4	5.2	3.7	2.35	1.61	1.90	7.0	3.25	5.0	32	4.8	2.85	3.1
5	5.4	15.6	2.0	1.61	1.80	4.6	3.55	10.7	36.5	3.8	2.6	4.5
6	2.7	54	1.90	1.61	1.90	28.5	3.4	3.7	65	3.55	2.6	3.25
7	2.1	37	1.80	1.50	*13.2	53	3.1	2.85	9.5	4.3	11.7	3.95
8	2.1	10.5	1.70	1.50	3.0	8.7	*3.1	2.6	5.3	3.55	19.2	4.9
9	2.25	3.25	1.70	1.50	5.9	10.9	3.1	2.45	4.6	3.25	12.5	9.3
10	*4.2	2.35	1.70	1.50	7.9	21.5	3.0	2.45	41	3.1	13.9	7.0
11	2.45	2.1	1.70	1.50	13.9	63	3.0	2.35	6.6	3.0	11.2	4.3
12	2.0	1.90	*1.61	1.50	4.7	10.4	3.0	2.35	6.0	3.1	14.7	11.4
13	2.25	1.80	1.61	1.50	3.0	12.0	2.85	2.35	7.0	3.25	9.0	4.3
14	5.0	1.80	1.61	1.50	2.35	11.7	2.85	2.45	4.1	3.55	26.5	3.0
15	2.45	2.25	1.61	1.50	2.25	18.1	2.85	2.6	3.7	3.7	31.5	2.7
16	2.0	2.0	1.61	1.61	2.0	20	2.85	2.45	3.7	3.4	18.0	2.6
17	2.0	1.90	1.80	1.61	2.0	5.8	2.85	3.4	3.4	3.4	9.2	2.45
18	1.90	2.1	2.0	1.61	2.1	6.7	2.85	2.85	17.8	3.25	9.2	2.35
19	2.25	3.05	1.90	1.61	2.6	10.6	2.85	2.45	10.6	3.0	14.8	2.35
20	3.0	2.7	1.80	1.70	2.0	16.8	2.7	6.3	4.1	6.9	6.9	2.35
21	2.0	2.0	1.70	3.3	40	15.3	2.7	4.2	3.55	8.6	4.1	2.25
22	1.80	2.1	1.70	1.90	29.5	14.0	2.7	2.85	3.55	3.7	3.4	2.25
23	1.70	2.0	1.70	1.90	18.5	9.4	10.9	9.3	3.55	3.0	3.0	2.6
24	1.70	35.5	1.61	2.1	28	5.5	9.6	8.2	3.55	2.85	3.0	2.85
25	1.70	8.7	1.61	1.90	22	6.2	3.55	4.4	3.4	2.7	3.1	*4.9
26	1.80	5.4	1.61	1.80	15.8	13.1	3.0	*3.25	3.4	2.7	3.8	9.5
27	1.90	3.25	1.61	1.70	6.2	5.0	4.4	6.5	9.4	6.8	3.4	10.3
28	2.45	4.4	1.61	1.70	4.8	11.5	57	59	4.6	4.8	3.0	14.4
29	2.45	19.9	1.70	4.0	5.6	9.0	34.5	-	13.8	3.1	2.6	3.4
30	5.1	12.5	3.8	3.7	21.5	25	41	-------	18.6	*2.7	2.85	2.7
31	7.4	4.4	-------	3.85	-------	7.8	15.6	-------	5.0	-------	12.7	------
Total	87.00	266.15	60.85	60.07	271.95	513.8	248.45	167.50	372.40	114.65	272.80	151.95
Mean:												
mgd	2.81	8.59	2.03	1.94	9.06	16.6	8.01	5.98	12.0	3.82	8.80	5.06
cfs	4.35	13.3	3.14	3.00	14.0	25.7	12.4	9.25	18.6	5.91	13.6	7.83
Ac-ft	267	817	187	184	835	1,580	762	514	1,140	352	837	466

Calendar year 1957. Max 79 Min 1.50 Mean(mgd) 6.11 Mean(cfs) 9.45 Ac-ft 6,840
Fiscal year 1957-58: Max 65 Min 1.50 Mean(mgd) 7.09 Mean(cfs) 11.0 Ac-ft 7,940

Peak discharge (base, 250 mgd).--Nov. 21 (3:30 a.m.) 470 mgd (727 cfs), 5.24 ft; Dec. 6 (7:30 p.m.) 270 mgd (418 cfs), 4.04 ft; Jan. 28 (8 p.m.) 300 mgd (464 cfs), 4.18 ft; Feb. 28 (8:30 a.m.) 430 mgd (665 cfs), 4.96 ft; Mar. 4 (6:30 p.m.) 315 mgd (487 cfs), 4.32 ft; Mar. 10 (10:30 a.m.) 285 mgd (441 cfs), 4.14 ft.

* Discharge measurement made on this day.

4080. Waikolu Stream below pipeline crossing, near Kalaupapa

Location (revised).--Lat 21°09'45", long 156°55'54", on left bank 0.7 mile upstream from mouth and 4.4 miles southeast of Kalaupapa Lighthouse.

Drainage area.--3.68 sq mi (revised).

Records available.--June 1919 to July 1932, September 1937 to June 1958. Prior to November 1930, published as Waikolu Stream at pipeline crossing.

Gage.--Water-stage recorder and concrete control. Datum of gage is 253 ft above mean sea level (hand levels by Bureau of Reclamation). Prior to Nov. 18, 1930, water-stage recorder at site 500 ft upstream at different datum. Sept. 20, 1937, to July 1948, water-stage recorder at present site at datum 0.49 ft higher.

Average discharge.--28 years (1919-29, 1938-47, 1949-58), 11.7 mgd (18.1 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 601 mgd (930 cfs) Nov. 30 (gage height, 5.14 ft), from rating curve extended above 25 mgd by test on model of station site; minimum, 4.5 mgd (7.0 cfs) June 5-17, 22-30.

1957-58: Maximum discharge during fiscal year, 1,420 mgd (2,200 cfs) Nov. 21 (gage height, 6.84 ft), from rating curve extended above 25 mgd by test on model of station site; minimum, 4.5 mgd (7.0 cfs) July 1, 8, 22-27.

1919-32, 1937-58: Maximum discharge, 3,700 mgd (5,720 cfs) Jan. 26, 1948 (gage height, about 10.25 ft), from rating curve extended above 25 mgd by test on model of station site; minimum, 1.3 mgd (2.0 cfs) Nov. 1, 2, 1925, June 5, 1926.

Remarks.--Records good. Kalaupapa water-supply system diverts water above station.

Revisions (fiscal years).--WSP 1155: 1932(M), 1938-48(M).

Rating table, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

1.8	4.5	2.4	34
1.9	7.2	2.7	61
2.0	10.7	3.0	97
2.2	20.5	3.5	182

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	7.9	6.9	6.7	5.8	6.1	27.5	5.6	6.4	5.3	5.3	15.6	5.3
2	7.2	6.7	6.4	5.8	5.8	7.9	5.6	8.8	5.3	5.3	24	5.3
3	6.9	13.0	6.1	5.8	5.8	6.7	5.6	9.4	5.3	7.7	9.0	5.3
4	6.9	31.5	6.1	5.9	5.8	6.7	5.3	12.6	5.3	132	8.6	5.3
5	6.9	15.9	6.1	6.9	5.8	6.4	5.3	55	32.5	15.7	13.6	4.8
6	6.9	7.9	6.1	6.1	5.8	7.0	5.6	32	10.6	7.6	7.9	4.5
7	6.9	24	6.1	7.3	5.8	16.9	5.8	16.4	6.4	6.9	6.9	4.5
8	6.7	10.0	6.1	23	5.8	6.9	7.8	14.2	5.8	9.4	6.4	4.5
9	6.7	7.6	5.8	24.5	5.8	6.1	8.6	8.6	5.6	8.6	6.1	4.5
10	6.7	6.9	5.8	8.2	5.8	5.8	11.5	6.9	5.6	6.7	6.1	4.5
11	6.7	6.7	5.8	6.7	5.8	5.8	12.9	16.7	5.8	6.7	6.1	4.5
12	*6.7	6.9	*5.8	6.4	5.8	5.9	6.4	20	6.1	6.1	6.1	4.5
13	7.2	7.2	6.1	6.4	5.8	5.8	5.8	7.6	7.2	6.1	6.1	4.5
14	9.3	8.9	7.9	52	5.8	5.8	5.6	6.4	12.9	6.1	6.1	4.5
15	8.2	10.3	6.9	18.2	*6.7	6.1	*11.4	5.8	13.7	18.2	*5.6	4.5
16	7.9	8.8	6.4	10.8	6.1	9.6	9.0	5.6	9.0	10.4	5.6	4.5
17	6.9	52	6.1	11.8	6.6	9.0	6.7	5.6	19.6	8.2	5.6	4.8
18	7.9	14.6	6.1	7.9	12.8	10.5	6.4	46	13.0	6.7	5.6	5.8
19	7.9	9.3	5.8	6.9	12.2	6.4	15.9	7.2	7.2	11.0	5.6	7.3
20	7.9	7.6	5.8	6.7	7.9	6.1	15.5	10.9	*6.9	7.9	5.6	6.9
21	8.3	7.2	5.8	6.4	6.7	5.8	49	10.5	6.1	6.4	5.6	5.3
22	7.9	6.9	6.1	6.1	6.1	5.8	30	6.1	5.8	6.1	5.6	4.8
23	6.9	6.7	5.8	6.1	5.8	5.6	11.7	7.2	5.8	10.9	5.6	4.5
24	6.7	6.7	5.8	5.8	6.1	5.6	11.7	9.7	5.6	10.0	5.8	4.5
25	6.7	6.7	5.8	5.8	5.8	5.6	12.2	7.2	5.6	35.5	5.8	4.5
26	6.4	6.4	5.8	5.8	5.8	5.6	6.7	5.8	5.6	14.7	5.6	4.5
27	5.7	6.4	5.8	5.8	5.9	5.6	5.8	5.6	5.6	11.4	5.6	4.5
28	10.8	6.4	5.8	5.8	5.8	5.6	5.8	5.6	5.6	12.1	5.6	4.5
29	12.8	7.7	5.9	6.7	13.6	5.6	6.7	-	5.6	11.9	5.6	4.5
30	7.8	16.5	5.8	8.2	111	5.6	7.2	-------	5.6	42	5.3	4.5
31	7.2	7.6	-------	6.7	-------	5.8	5.8	-------	5.3	-------	5.3	-------
Total	235.3	347.9	182.3	303.3	306.3	231.0	314.9	359.8	251.3	453.6	223.6	146.4
Mean (mgd)	7.59	11.2	6.08	9.78	10.2	7.45	10.2	12.8	8.11	15.1	7.21	4.88
cfs	11.7	17.3	9.41	15.1	15.8	11.5	15.8	19.8	12.5	23.4	11.2	7.55
Ac-ft	722	1,070	559	931	940	709	966	1,100	771	1,390	686	449

Calendar year 1956. Max 111 Min 5.6 Mean(mgd) 10.8 Mean(cfs) 16.7 Ac-ft 12,180
Fiscal year 1956-57. Max 132 Min 4.5 Mean(mgd) 9.19 Mean(cfs) 14.2 Ac-ft 10,290

Peak discharge (base, 450 mgd).--Nov. 30 (11 p.m.) 601 mgd (930 cfs), 5.14 ft; Apr. 4 (9 a.m.) 533 mgd (825 cfs), 4.94 ft.)

* Discharge measurement made on this day.

4080. Waikolu Stream below pipeline crossing, near Kalaupapa--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.5	6.1	7.6	5.8	6.4	39.5	11.1	11.6	19.8	9.0	8.2	18.8
2	5.3	5.8	7.4	5.3	5.3	14.3	9.6	9.3	24	8.6	10.7	15.8
3	5.8	15.6	10.9	5.0	5.3	61	8.6	8.6	12.4	8.6	9.3	10.4
4	7.8	6.9	6.7	5.0	5.0	12.9	8.2	11.7	52	9.3	8.2	9.6
5	8.2	18.8	5.8	5.0	5.0	9.0	8.6	18.1	48	8.6	7.9	10.7
6	5.6	86	5.8	5.0	5.9	55	8.2	9.6	97	8.6	8.2	10.0
7	4.8	58	5.8	5.0	*20	87	7.9	8.2	17.8	8.6	16.6	10.4
8	4.8	15.5	5.6	5.0	6.7	15.0	*7.9	8.2	11.6	8.2	28.5	12.4
9	5.0	7.9	5.6	5.0	9.0	16.4	7.9	7.9	9.6	8.2	19.4	16.2
10	*6.9	6.4	5.6	5.0	10.1	35	7.9	7.9	55	8.2	19.4	12.8
11	5.6	5.8	5.6	5.0	17.4	107	7.6	7.9	12.8	7.9	16.6	10.4
12	5.0	5.8	*5.3	5.0	7.9	18.8	7.6	7.9	11.2	7.9	19.9	16.9
13	5.8	5.6	5.3	5.0	6.1	18.8	7.6	7.9	13.3	8.2	14.8	10.4
14	8.6	5.8	5.3	5.0	5.3	17.2	7.2	7.9	9.6	8.2	32	9.0
15	5.6	5.8	5.3	5.0	5.0	25	7.2	7.9	9.3	8.6	46	8.6
16	5.0	5.6	5.3	5.0	5.0	27.5	7.2	7.9	9.3	8.2	27.5	8.6
17	5.0	5.3	5.6	5.0	5.0	11.1	7.2	9.0	9.0	8.2	16.6	8.6
18	4.8	5.6	6.4	5.0	5.0	12.0	7.9	8.2	22	8.2	16.1	8.6
19	5.3	6.7	5.6	5.0	5.8	15.8	7.6	7.9	19.6	7.6	26.5	8.2
20	6.1	6.7	5.3	5.3	5.3	34	7.2	12.1	9.3	19.4	16.1	8.2
21	5.0	5.8	5.3	8.3	73	26	7.2	9.6	8.6	15.9	11.1	8.2
22	4.5	5.6	5.3	5.3	63	22.5	7.2	8.2	8.6	9.0	10.0	8.2
23	4.5	5.3	5.3	5.3	35.5	16.1	18.1	14.7	8.6	8.2	9.3	8.6
24	4.5	64	5.3	5.6	63	11.1	14.0	16.2	8.6	7.9	9.0	8.6
25	4.8	14.9	5.3	5.3	35	11.6	8.2	10.4	8.6	7.6	9.6	*10.4
26	4.5	9.6	5.3	5.0	23	19.8	7.2	*8.7	8.2	7.6	10.0	13.6
27	4.8	7.6	5.3	5.0	11.6	10.0	8.2	11.7	13.4	18.6	9.6	15.7
28	5.3	9.4	5.3	5.0	9.0	19.4	131	121	10.0	10.4	9.0	20
29	5.3	29.5	5.3	8.2	9.6	16.4	43	-	18.6	8.2	8.6	9.3
30	7.9	39.5	7.2	8.0	28	44	80	-------	28	*7.9	9.0	8.6
31	10.5	11.2	-------	6.9	-------	15.7	26.5	-------	10.4	-------	21.5	-------
Total	177.1	488.1	176.7	169.3	497.2	844.9	510.8	386.2	604.2	279.6	485.2	335.8
Mean:												
mgd	5.71	15.7	5.89	5.46	16.6	27.3	16.5	13.8	19.5	9.32	15.7	11.2
cfs	8.83	24.3	9.11	8.45	25.7	42.2	25.5	21.4	30.2	14.4	24.3	17.3
Ac-ft	543	1,500	542	520	1,530	2,590	1,570	1,190	1,850	858	1,490	1,030

Calendar year 1957. Max 132 Min 4.5 Mean(mgd) 11.2 Mean(cfs) 17.3 Ac-ft 12,590
Fiscal year 1957-58: Max 131 Min 4.5 Mean(mgd) 13.6 Mean(cfs) 21.0 Ac-ft 15,200

Peak discharge (base, 450 mgd).--Nov. 21 (4 a.m.) 1,420 mgd (2,200 cfs), 6.84 ft; Dec. 6 (8:30 p.m.) 601 mgd (930 cfs), 5.07 ft; Jan. 28 (7:30 p.m.) 715 mgd (1,110 cfs), 5.44 ft; Feb. 28 (10:30 p.m.) 1,370 mgd (2,120 cfs), 6.69 ft; Mar. 4 (7:30 p.m.) 675 mgd (1,040 cfs), 5.26 ft.

* Discharge measurement made on this day.

4110. Waialala Springs near Kalae

Location.--Lat 21°10'20", long 157°00'05", on left bank on highway from Kalae to Kalaupapa Pali, 0.8 mile northeast of Kalae and 5.7 miles northeast of Kaunakakai Post Office.

Records available.--September 1940 to June 1958.

Gage.--Water-stage recorder and sharp-crested V-notch weir. Altitude of gage is 1,600 ft (from topographic map).

Average discharge.--17 years (1941-58), 0.016 mgd (0.025 cfs).

Extremes.--1940-58: Maximum daily discharge, 0.275 mgd (0.425 cfs) Mar. 11, 1942; minimum daily, 0.001 mgd (0.002 cfs) Feb. 8-16, 1956.

Remarks.--Records good except those for period of no gage-height record, which are poor. Maui County Water Works diverts entire flow for domestic supply, from tail bay at station.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.007	0.006	0.013	0.010	0.010	0.011	0.009	0.010	0.010	0.011	0.011	0.011
2	.007	.006	.013	.010	.010	.010	.009	.010	.010	.011	.011	.011
3	.007	.006	.013	.010	.010	.010	.009	.010	.010	.011	.011	.011
4	.007	.006	.013	.010	.010	.010	.009	.010	.010	.011	.011	.011
5	.007	.006	.013	.010	.010	.009	.009	.010	.010	.011	.011	.011
6	.007	.006	.012	.011	.010	.010	.010	.010	.010	.011	.011	.011
7	.007	.006	.012	.010	.010	.010	.010	.010	.010	.011	.011	.011
8	.007	.006	.013	.011	.010	.010	.010	.010	.010	.011	.011	.011
9	.007	.006	.013	.011	.010	.010	.010	.010	.010	.011	.011	.011
10	.007	.006	.012	.011	.010	.010	.010	.010	.010	.011	.011	.011
11	.007	.006	.012	.011	.009	.010	.010	.010	.010	.011	.011	.011
12	.007	.006	.011	.011	.009	.010	.010	.010	.010	.011	.011	.011
13	.007	.006	.011	.011	.009	.009	.010	.010	.010	.011	.011	.011
14	.007	.006	.011	.011	.009	.009	.010	.010	.010	.011	.012	.011
15	.007	.006	.011	.011	.009	.009	.010	.010	.010	.011	.012	.011
16	.007	.006	.011	.010	.009	.009	.010	.010	.010	.011	.012	.011
17	.007	.006	.011	.010	.009	.009	.010	.010	.010	.011	.012	.011
18	.007	.006	.011	.010	.010	.009	.010	.010	.010	.011	.012	.011
19	.007	.006	.011	.010	.010	.009	.010	.010	.010	.011	.012	.011
20	.007	.006	.011	.010	.010	.009	.010	.010	.010	.011	.011	.011
21	.007	.006	.011	.010	.010	.009	.010	.010	.010	.011	.011	.011
22	.007	.006	.011	.010	.010	.009	.011	.010	.010	.011	.011	.011
23	.007	.006	.010	.010	.010	.009	.011	.010	.010	.012	.011	.011
24	.007	.006	.010	.010	.010	.009	.010	.010	.010	.012	.011	.011
25	.007	.006	.010	.010	.010	.009	.011	.010	.010	.011	.011	.011
26	.007	.006	.011	.010	.010	.009	.010	.010	.010	.011	.011	.011
27	.007	.006	.011	.010	.010	.009	.010	.010	.010	.011	.011	.011
28	.007	.006	.011	.010	.010	.009	.010	.010	.010	.011	.011	.011
29	.007	.006	.011	.010	.010	.009	.010	-	.011	.011	.011	.011
30	.007	.006	.011	.010	.011	.009	.010	-------	.011	.011	.011	.011
31	.007	.008	-------	.010	-------	.009	.010	-------	.011	-------	.011	-------
Total	0.217	0.188	0.345	0.319	0.294	0.291	0.308	0.280	0.313	0.332	0.347	0.330
Mean:												
mgd	0.007	0.006	0.012	0.010	0.010	0.009	0.010	0.010	0.010	0.011	0.011	0.011
cfs	0.011	0.009	0.019	0.016	0.016	0.014	0.016	0.016	0.016	0.017	0.017	0.017
Ac-ft	0.7	0.6	1.1	1.0	0.9	0.9	0.9	0.9	1.0	1.0	1.1	1.0

Calendar year 1956. Max 0.013 Min 0.001 Mean(mgd) 0.009 Mean(cfs) 0.014 Ac-ft 10
Fiscal year 1956-57: Max 0.013 Min 0.006 Mean(mgd) 0.010 Mean(cfs) 0.016 Ac-ft 11

4110. Waialala Springs near Kalae--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.011	0.010	0.010	0.010	0.01	0.010	0.013	0.013	0.015	0.017	0.016	0.015
2	.011	.010	.010	.010	.01	.010	.013	.013	.015	.017	.016	.015
3	.011	.010	.010	.010	.01	.011	.013	.013	.015	.016	.016	.015
4	.011	.010	.010	.010	.01	.011	.013	.013	.015	.016	.016	.015
5	.011	.010	.010	.010	.01	.010	.013	.013	.017	.016	.016	.015
6	.011	.010	.010	.010	.01	.011	.013	.013	.020	.016	.016	.015
7	.010	.010	.010	.010	.010	.012	.013	.013	.019	.016	.016	.015
8	*.010	.010	.010	.010	.010	.011	.013	.013	.018	.016	.016	.015
9	.010	.010	.010	.010	.010	.011	.013	.013	.018	.016	.016	.015
10	.010	.010	.010	.010	.010	.011	.013	.013	.005	.016	.016	.015
11	.010	.010	.010	.010	.010	.012	.013	.014	.012	.016	.016	.015
12	.010	.010	.010	.010	.010	.012	.013	.014	.018	.016	.016	.015
13	.010	.010	.010	.01	.010	.012	.013	.013	.018	.016	.016	.015
14	.010	.010	.010	.01	.010	.012	.013	.013	.018	.016	.015	.015
15	.010	.010	.010	.01	.010	.012	.013	.014	.018	.016	.015	.015
16	.010	.010	.009	.01	.010	.012	.013	.013	.017	.016	.015	.016
17	.010	.010	.009	.01	.010	.012	.013	.013	.017	.016	.015	.016
18	.010	.010	.009	.01	.010	.012	.013	.013	.017	.016	.015	.015
19	.010	.010	.009	.01	.010	.012	.013	.013	.017	.016	.016	.015
20	.010	.010	.009	.01	.009	.012	.013	.013	.017	.016	.015	.015
21	.009	.010	.009	.01	.011	.012	.013	.013	.017	.016	.015	.015
22	.009	.010	.009	.01	.012	.012	.013	.013	.017	.016	.015	.015
23	.010	.010	.009	.01	.011	.012	.014	.013	.017	.016	.015	.016
24	.010	.012	.009	.01	.013	.012	.013	.013	.017	.016	.015	.015
25	.010	.010	.009	.01	.012	.012	.013	.013	.017	.016	.015	.014
26	.010	.010	.009	.01	.011	.012	.013	.013	.017	.016	.015	.014
27	.010	.010	.009	.01	.010	.013	.013	.013	.017	.017	.015	.014
28	.010	.010	.009	.01	.010	.013	.014	.016	.017	.017	.015	.014
29	.010	.010	.009	.01	.010	.013	.013	-	.017	.016	.015	.014
30	.010	.012	.009	.01	.010	.013	.013	-------	.017	.016	.015	.014
31	.010	.011	-------	.01	-------	.013	.013	-------	.017	-------	.015	-------
Total	0.314	0.315	0.285	0.310	0.309	0.365	0.405	0.370	0.513	0.484	0.479	0.447
Mean:												
mgd	0.010	0.010	0.010	0.010	0.010	0.012	0.013	0.013	0.017	0.016	0.015	0.015
cfs	0.016	0.016	0.016	0.016	0.016	0.019	0.020	0.020	0.026	0.025	0.023	0.023
Ac-ft	1.0	1.0	0.9	1.0	0.9	1.1	1.2	1.1	1.6	1.5	1.5	1.4

Calendar year 1957 . Max 0.013 Min 0.009 Mean(mgd) 0.010 Mean(cfs) 0.016 Ac-ft 12
Fiscal year 1957-58 : Max 0.020 Min 0.005 Mean(mgd) 0.013 Mean(cfs) 0.020 Ac-ft 14

* Discharge measurement made on this day.
Note.--No gage-height record Oct. 13 to Nov. 6; discharge estimated on basis of recorded range in stage.

4140. Kaunakakai Stream at Kaunakakai

Location (revised).--Lat 21°06'21", long 157°00'34", on left bank 0.6 mile upstream from Molokai Ranch pipeline crossing, 1.3 miles northeast of Kaunakakai Post Office, and 1.7 miles upstream from mouth.

Drainage area.--6.57 sq mi (revised).

Records available.--December 1949 to June 1958.

Gage.--Water-stage recorder. Altitude of gage is 240 ft (from topographic map).

Average discharge.--8 years (1950-58), 1.31 mgd (2.03 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 245 mgd (379 cfs) Nov. 30 (gage height, 4.67 ft); no flow most of time.
1957-58: Maximum discharge during fiscal year, 190 mgd (294 cfs) Mar. 6 (gage height, 4.48 ft); no flow most of time.
1949-58: Maximum discharge, 1,120 mgd (1,730 cfs) Mar. 13, 1951 (gage height, 7.10 ft), from rating curve extended above 130 mgd; no flow most of time.

Remarks.--Records poor.

Revisions (fiscal years).--WSP 1289: 1950-51.

Rating table, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

1.7	0	2.7	9.5
1.9	.96	3.0	18
2.1	2.15	3.3	30
2.4	4.9	3.5	43

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1				0	0	16.6	0	0		0		
2				0	0	.17	0	0		0		
3				0	0	0	0	0		0		
4				0	0	0	0	0		9.6		
5				0	0	0	0	0		2.85		
6				0	0	0	0	2.5		0		
7				0	0	0	0	.88		0		
8				0	0	0	0	0		0		
9				0	0	0	0	0		0		
10				0	0	0	0	0		0		
11				0	0	0	0	0		0		
12				0	0	0	0	0		0		
13				0	0	0	0	0		0		
14				.16	0	0	0	0		0		
15				3.1	0	0	0	0		0		
16				0	0	0	0	0		0		
17				0	0	0	0	0		0		
18				0	0	0	0	0		0		
19				0	0	0	0	0		0		
20				0	0	0	0	0		0		
21				0	0	0	*6.7	0		0		
22				0	0	0	7.2	0		0		
23				0	0	0	3.25	0		0		
24				0	0	0	.06	0		0		
25				0	0	0	0	0		0		
26				0	0	0	0	0		0		
27				0	0	0	0	0		0		
28				0	0	0	0	0		0		
29				0	0	0	0	-		0		
30				0	25.5	0	0	-------		0		
31			-------	0	-------	0	0	-------		-------		
Total	0	0	0	3.26	25.5	16.77	17.21	3.38	0	12.45	0	0
Mean:												
mgd	0	0	0	0.105	0.850	0.541	0.555	0.121	0	0.415	0	0
cfs	0	0	0	0.162	1.32	0.837	0.859	0.187	0	0.642	0	0
Ac-ft	0	0	0	10	78	51	53	10	0	38	0	0

Calendar year 1956: Max 48 Min 0 Mean(mgd) 0.654 Mean(cfs) 1.01 Ac-ft 734
Fiscal year 1956-57: Max 25.5 Min 0 Mean(mgd) 0.215 Mean(cfs) 0.333 Ac-ft 240

Peak discharge (base, 500 mgd).--No peak above base.

* Discharge measurement made on this day.

4140. Kaunakakai Stream at Kaunakakai--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1		0			0	2.7	0	0.40	3.55		0	
2		0			0	.52	0	0	4.9		0	
3		0			0	7.5	0	0	2.15		0	
4		0			0	3.05	0	0	8.4		0	
5		0			0	0	0	0	12.4		0	
6		.66			0	4.0	0	0	39		0	
7		6.9			0	17.8	0	0	6.8		0	
8		.11			0	3.65	0	0	2.5		0	
9		0			0	.26	0	0	.02		0	
10		0			0	.14	0	0	12.8		0	
11		0			0	10.7	0	0	3.5		0	
12		0			0	4.3	0	0	.12		0	
13		0			0	.32	0	0	0		0	
14		0			0	.02	0	0	0		0	
15		0			0	0	0	0	0		1.23	
16		0			0	4.8	0	0	0		.01	
17		0			0	.41	0	0	0		0	
18		0			0	0	0	0	0		0	
19		0			0	0	0	0	0		0	
20		0			0	0	0	0	0		0	
21		0			8.1	0	0	0	0		0	
22		0			.22	0	0	0	0		0	
23		0			0	0	0	0	0		0	
24		0			0	0	0	0	0		0	
25		0			0	0	0	0	0		0	
26		0			1.18	0	0	0	0		0	
27		0			.37	0	0	0	0		0	
28		0			0	0	5.8	21.5	0		0	
29		0			0	0	18.3	-	0		0	
30		0			0	0	1.65	-------	0		0	
31		0	-------		-------	0	9.1	-------	0	-------	0	-------
Total	0	7.67	0	0	9.87	60.17	34.85	21.90	96.14	0	1.24	0
Mean:												
mgd	0	0.247	0	0	0.329	1.94	1.12	0.782	3.10	0	0.040	0
cfs	0	0.382	0	0	0.509	3.00	1.73	1.21	4.80	0	0.062	0
Ac-ft	0	24	0	0	30	185	107	67	295	0	3.8	0

Calendar year 1957 : Max 17.8 Min 0 Mean(mgd) 0.303 Mean(cfs) 0.469 Ac-ft 340
Fiscal year 1957-58 : Max 39 Min 0 Mean(mgd) 0.635 Mean(cfs) 0.982 Ac-ft 712

Peak discharge (base, 500 mgd).--No peak above base.

4150. Right Branch of East Fork Kawela Stream near Kamalo

Location (revised).--Lat 21°06'46", long 156°54'23", on left bank at Molokai Ranch pipeline intake, 4.7 miles northwest of Kamalo and 7.6 miles east of Kaunakakai.

Drainage area.--0.45 sq mi (revised).

Records available.--September 1946 to June 1958.

Gage.--Water-stage recorder and concrete control. Datum of gage is 3,624.86 ft above mean sea level (Territorial Survey bench mark).

Average discharge.--11 years (1947-58), 1.52 mgd (2.35 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 76 mgd (118 cfs) Nov. 30 (gage height, 4.00 ft), from rating curve extended above 2.5 mgd by test on model of station site; no flow for many days.

1957-58: Maximum discharge during fiscal year, 205 mgd (317 cfs) Feb. 28 (gage height, 4.88 ft), from rating curve extended above 2.5 mgd by test on model of station site; no flow for many days.

1946-48: Maximum discharge, 882 mgd (1,360 cfs) Jan. 26, 1948 (gage height, 7.97 ft), from rating curve extended above 2.5 mgd by test on model of station site; no flow for many days.

Remarks.--Records fair except those for period of no gage-height record, which are poor. Molokai Ranch diverts low flow from gage pool.

Rating table, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

2.3	0	2.9	2.15
2.4	.04	3.1	5.1
2.6	.46	3.3	12.5
2.8	1.43	3.5	25.5

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.30	0.04	0.02	0	0	4.3	0	0.63	0	0	2.75	0
2	.01	.02	0	0	0	.46	0	2.05	0	0	3.35	0
3	0	3.8	0	.05	0	.16	0	2.45	0	0	1.23	0
4	0	7.5	0	2.25	0	.16	0	2.45	0	6.6	.55	0
5	0	3.9	0	.91	0	0	0	9.7	.93	1.75	1.77	0
6	0	.32	0	.03	0	.15	0	9.0	1.17	.21	.34	0
7	0	.94	0	.02	0	2.47	.48	4.4	.21	0	.01	0
8	0	.55	0	2.8	0	.21	2.75	4.4	0	1.00	0	0
9	0	.02	0	1.34	0	0	3.1	1.79	0	.88	0	0
10	0	0	0	.29	0	0	4.6	.60	0	.07	0	0
11	0	0	0	0	0	0	4.6	6.3	1.21	.05	0	0
12	0	.40	0	0	0	0	.50	5.0	1.11	0	0	0
13	1.46	.58	0	.38	0	0	.02	.90	1.83	0	0	0
14	2.55	2.7	0	11.1	.39	0	0	.24	4.3	0	0	0
15	.85	1.40	0	2.45	.43	.91	3.1	.03	3.75	1.91	0	0
16	1.06	.82	0	3.25	0	4.1	1.48	0	1.94	.77	0	.44
17	.18	10.1	0	2.15	1.68	1.99	.56	0	5.3	.38	0	.70
18	.20	2.7	0	.54	a2.0	2.15	.13	4.5	3.55	0	0	2.5
19	.18	.76	0	.08	a.70	.24	3.0	.50	.72	2.25	0	3.5
20	.12	.18	0	0	a.30	.04	3.0	.71	.46	.89	0	1.95
21	.80	0	0	0	*a.10	0	8.7	1.52	.08	.16	0	.19
22	.40	0	0	0	0	0	8.1	.23	0	0	0	0
23	.02	0	0	0	0	0	2.8	.05	0	2.95	0	0
24	0	.70	0	0	0	0	3.2	.80	0	2.35	0	0
25	0	.08	0	0	0	0	2.0	.61	0	10.0	0	0
26	0	0	0	0	0	0	.39	.06	*0	3.45	.06	0
27	0	0	0	0	0	0	.10	0	0	2.3	0	0
28	2.95	0	0	.18	0	0	.02	0	0	2.05	0	0
29	2.55	.01	0	.69	5.9	0	.61	-	0	.98	0	.15
30	.27	4.1	0	1.27	23.5	0	1.26	-------	0	8.5	0	.02
31	.01	.31	-------	.18	-------	0	.14	-------	0	-------	0	-------
Total	13.91	41.93	0.02	29.96	35.00	17.34	54.64	58.92	26.56	49.50	10.06	9.45
Mean:												
mgd	0.449	1.35	0.001	0.966	1.17	0.559	1.76	2.10	0.857	1.65	0.325	0.315
cfs	0.695	2.09	0.002	1.49	1.81	0.865	2.72	3.25	1.33	2.55	0.503	0.487
Ac-ft	43	129	0.1	92	107	53	168	181	82	152	31	29

Calendar year 1956: Max 30 Min 0 Mean(mgd) 1.34 Mean(cfs) 2.07 Ac-ft 1,510
Fiscal year 1956-57: Max 23.5 Min 0 Mean(mgd) 0.951 Mean(cfs) 1.47 Ac-ft 1,070

Peak discharge (base, 100 mgd).--No peak above base.

* Discharge measurement or observation of no flow made on this day.
a No gage-height record; discharge estimated on basis of records for nearby stations.

4150. Right Branch of East Fork Kawela Stream near Kamalo--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0	0.91	0.23	0.24	0.63	7.2	1.06	0.72	5.7	0.03	0	2.9
2	2.1	.86	2.15	0	.01	2.6	.46	.17	8.1	0	2.3	2.0
3	1.50	6.3	1.61	0	.21	17.2	.13	0	1.92	.48	.76	.64
4	3.5	1.12	.15	0	0	2.55	.04	1.76	11.7	1.18	.09	.28
5	2.2	6.4	0	0	0	.81	.10	2.45	13.8	.31	0	1.33
6	.52	18.3	0	0	.07	5.5	.07	.37	22	.23	.06	.17
7	.05	13.2	0	0	5.4	7.8	0	0	3.1	.88	5.7	.88
8	*.20	5.4	0	0	*.22	2.05	0	0	.64	.03	9.3	.92
9	1.01	.76	0	0	2.4	3.0	0	0	.19	0	5.7	3.5
10	1.43	.17	0	0	2.6	3.55	0	0	14.0	0	5.9	3.2
11	.34	0	0	0	3.9	23	0	0	1.30	0	4.2	1.56
12	.01	0	0	0	1.27	2.8	0	0	.41	0	4.8	4.2
13	0	0	0	0	.16	3.4	0	0	1.36	0	2.6	.62
14	1.81	0	0	0	0	3.85	0	0	.26	.51	6.4	.08
15	.23	.86	0	0	0	5.1	0	0	0	.64	7.9	0
16	.26	.19	0	0	0	4.1	0	0	0	.46	4.2	0
17	.31	0	0	0	0	1.16	0	.03	0	.76	2.7	0
18	.31	.86	0	0	.22	1.89	0	.01	.67	.28	2.3	0
19	1.11	1.66	0	0	.28	3.3	0	0	1.55	0	3.5	0
20	1.18	.70	0	0	0	3.85	0	2.3	.11	.18	1.98	0
21	.17	.17	0	0	15.9	3.85	0	.88	0	.84	.46	0
22	0	.28	0	0	4.5	6.6	0	.26	0	.10	.12	0
23	0	0	0	0	3.0	3.4	.83	4.4	0	0	0	.18
24	0	15.8	0	0	5.1	1.24	2.05	2.35	0	0	.02	1.21
25	0	3.2	0	0	4.0	1.99	.14	.68	0	0	.07	3.25
26	0	1.92	0	0	5.7	4.2	0	.15	0	0	.37	5.1
27	.43	1.24	0	0	1.20	.96	.21	2.15	3.1	0	.02	3.25
28	1.43	2.35	.02	0	.68	4.1	14.7	21	.58	0	0	4.1
29	.52	6.3	.23	.10	.64	2.55	11.1	-	1.54	0	0	.41
30	3.7	2.6	2.9	.37	9.1	5.0	15.3	-------	2.9	0	0	.02
31	3.15	.93	-------	1.12	-------	2.4	4.4	-------	.49	-------	2.45	-------
Total	27.47	92.48	7.29	1.83	67.19	141.00	50.39	39.68	95.42	6.91	73.90	39.80
Mean:												
mgd	0.886	2.98	0.243	0.059	2.24	4.55	1.63	1.42	3.08	0.230	2.38	1.33
cfs	1.37	4.61	0.376	0.091	3.47	7.04	2.52	2.20	4.77	0.356	3.68	2.06
Ac-ft	84	284	22	5.6	206	433	155	122	293	21	227	122

Calendar year 1957: Max 23 Min 0 Mean(mgd) 1.50 Mean(cfs) 2.32 Ac-ft 1,680
Fiscal year 1957-58. Max 23 Min 0 Mean(mgd) 1.76 Mean(cfs) 2.72 Ac-ft 1,970

Peak discharge (base, 100 mgd).--Nov. 21 (4:30 a.m.) 189 mgd (292 cfs), 4.78 ft; Feb. 28 (10 a.m.) 205 mgd (317 cfs), 4.86 ft; Mar. 4 (7:30 p.m.) 128 mgd (198 cfs), 4.40 ft; Mar. 10 (11 a.m.) 121 mgd (187 cfs), 4.36 ft.

* Discharge measurement made on this day.

4160. Punaula Stream near Pukoo

Location (revised).--Lat 21°05'50", long 156°48'48", on right bank 2.8 miles northwest of Pukoo and 5.2 miles northeast of Kamalo.

Drainage area.--0.24 sq mi (revised).

Records available.--March 1947 to June 1958.

Gage.--Water-stage recorder. Altitude of gage is 1,200 ft (from topographic map).

Average discharge.--11 years, 0.802 mgd (1.24 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 284 mgd (439 cfs) Apr. 14 (gage height, 5.65 ft), from rating curve extended above 3.3 mgd by test on model of station site; minimum, 0.03 mgd (0.05 cfs) Dec. 28, 29, Jan. 3-7.

1957-58: Maximum discharge during fiscal year, 278 mgd (430 cfs) Nov. 21 (gage height, 5.52 ft), from rating curve extended above 3.3 mgd by test on model of station site; minimum, 0.03 mgd (0.05 cfs) Feb. 19, 22, 23.

1947-58: Maximum discharge, 330 mgd (511 cfs) Apr. 2, 1948 (gage height, 6.35 ft), from rating curve extended above 3.3 mgd by test on model of station site; minimum, 0.01 mgd (0.02 cfs) Mar. 13, 1947, Feb. 19, 1954.

Remarks.--Records fair except those for period of no gage-height record, which are poor.

Rating tables, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

July 1, 1956, to Feb. 27, 1957				Feb. 28, 1957, to June 30, 1958			
0.47	0.03	0.9	1.41	0.45	0.03	1.2	5.8
.5	.05	1.0	2.6	.6	.18	1.4	9.8
.6	.16	1.1	4.1	.8	.81	1.6	14.7
.7	.36	1.3	7.7	1.0	2.6	1.8	20.7
.8	.76	1.6	14.7				

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.26	0.35	0.30	0.12	2.15	1.29	0.05	0.27	2.15	0.08	1.06	0.05
2	.19	.23	.17	.12	.42	.19	.04	.28	.27	.06	3.1	.05
3	.13	1.53	.16	.23	.51	.12	.03	.40	.15	.15	1.37	.05
4	.12	4.6	.13	4.0	.17	.08	.03	3.85	.15	4.9	1.43	.06
5	.11	3.15	.26	1.56	.11	.07	.03	4.0	.69	.50	2.3	.06
6	.12	.36	.16	.24	.08	.07	.03	2.6	.35	.15	.41	.05
7	1.14	1.08	.12	.39	.07	.19	.03	.46	.13	.09	.23	.06
8	.38	1.12	.11	1.07	.05	.08	.14	.42	.09	.29	.18	.06
9	.16	.95	.24	1.31	.05	.05	.34	.21	.08	.27	.15	.06
10	*1.36	.28	*.12	.38	.05	.05	2.15	.13	.08	.13	.13	.06
11	2.1	.21	.12	.19	.05	.05	2.35	1.07	.15	.11	.57	.06
12	.48	.30	.11	.15	.05	.05	.19	3.3	.13	.07	1.10	.06
13	1.94	.51	.13	.72	.05	.05	.08	.58	.48	.08	.57	.06
14	2.55	1.33	12.0	14.2	.27	.04	.07	.68	.53	18.2	*.25	.06
15	.42	.49	8.8	4.7	.54	.21	.69	.39	1.00	2.15	.15	.06
16	.47	.36	3.85	2.75	a.13	.33	.24	.23	.38	.44	.12	.22
17	.23	1.45	.66	1.17	a.30	.60	.08	.13	3.4	.21	.11	.12
18	1.50	1.57	.33	.42	a4.0	.66	.05	2.1	1.40	.16	.11	.69
19	1.93	.33	.23	.68	a1.5	.57	*.38	.23	.23	.63	.10	.25
20	2.4	.21	.17	.39	*a1.0	.67	.88	.22	.15	.41	.09	.36
21	1.24	.17	.13	.30	.61	.17	.74	.30	.10	.19	.08	.12
22	.42	.15	.13	.16	.24	.12	.39	.12	.09	.13	.08	.09
23	.24	.36	.16	.13	.16	.07	.28	.09	.07	2.4	.07	.08
24	.21	.94	.12	.12	.12	.06	.52	.09	.06	.97	.08	.06
25	.35	.19	.11	.11	.20	.05	.38	.08	*.06	3.25	.08	.21
26	.21	.13	.12	1.84	.09	.05	.13	.06	.06	.95	.07	.11
27	.15	.12	.21	.40	.07	.04	.08	5.5	.06	.38	.06	.11
28	.85	.17	.12	.17	.06	.03	.10	3.3	.06	.35	.06	1.57
29	1.31	1.50	.09	.21	1.82	.03	1.00	-	.06	.23	.06	.70
30	.26	4.4	.09	.64	5.7	.05	.24	-------	.06	2.55	.06	.25
31	.50	1.06	-------	.17	-------	.08	.12	-------	.06	-------	.05	-------
Total	23.73	29.60	29.45	39.04	20.62	6.17	11.86	31.09	12.73	40.48	14.28	5.80
Mean:												
mgd	0.765	0.955	0.982	1.26	0.687	0.199	0.383	1.11	0.411	1.35	0.461	0.193
cfs	1.18	1.48	1.52	1.95	1.06	0.308	0.593	1.72	0.636	2.09	0.713	0.299
Ac-ft	73	91	90	120	63	19	36	95	39	124	44	18

Calendar year 1956. Max 14.2 Min 0.03 Mean(mgd) 0.864 Mean(cfs) 1.34 Ac-ft 971
Fiscal year 1956-57. Max 18.2 Min 0.03 Mean(mgd) 0.726 Mean(cfs) 1.12 Ac-ft 812

Peak discharge (base, 70 mgd).--Sept. 14 (2:30 a.m.) 184 mgd (285 cfs), 4.33 ft; Oct. 14 (11:30 p.m.) 242 mgd (3.74 cfs), 4.97 ft; Nov. 30 (10 p.m.) 102 mgd (158 cfs), 3.42 ft; Feb. 27 (9 p.m.) 118 mgd (183 cfs), 3.60 ft; Apr. 14 (6:30 p.m.) 284 mgd (439 cfs), 5.65 ft.

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for nearby streams.

4160. Punaula Stream near Pukoo--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.13	0.25	0.25	0.25	0.50	2.05	0.47	0.23	0.77	0.09	0.05	2.45
2	1.02	.23	.41	.12	.67	.87	.27	.12	1.33	.06	1.62	2.1
3	.70	.46	.46	.09	.41	3.2	.21	.08	.32	.07	.76	.41
4	.64	.21	.23	.07	.15	.82	.18	.07	1.47	.09	.66	.23
5	.79	2.05	.16	.06	.09	.54	.16	.11	3.2	.07	.18	.18
6	.30	6.5	.13	.05	*.59	1.50	.13	.08	10.3	.05	.09	.18
7	.15	8.5	.11	.05	4.8	3.45	*.12	.06	.96	.06	1.27	.54
8	.11	.99	.11	.05	.66	.54	.12	.06	.23	.05	1.37	.45
9	*.12	.35	.10	.05	2.45	1.16	.15	.05	.15	.05	.44	1.58
10	1.15	.23	.09	.05	1.33	2.3	.12	.04	.45	.04	1.77	2.45
11	.30	.18	*.09	.10	1.82	2.3	.10	.04	.31	.04	3.05	1.58
12	.15	.31	.10	.07	.61	.60	.09	.04	.32	.05	1.50	2.55
13	.21	.45	.10	.07	.30	1.52	.09	.04	.60	.20	1.18	.54
14	2.75	.23	.12	.06	.23	1.96	.08	.04	.13	.15	1.24	.25
15	.30	.35	.09	.05	.47	1.42	.08	.04	.09	.13	2.40	.19
16	.21	.30	.07	.04	.21	9.0	.07	.04	.09	.13	2.85	.15
17	.18	.19	.15	.05	.24	.35	.06	.04	.07	.15	1.78	.12
18	.16	.30	.50	.35	.85	.32	.06	.04	.14	.09	1.48	.11
19	.54	.93	.36	.36	.45	1.08	.06	.03	.26	.06	1.13	.09
20	.35	.36	.21	.07	.19	2.4	.06	.07	.09	.05	.87	.09
21	.16	.40	.11	.06	11.1	1.16	.06	.06	.07	.09	.35	.09
22	.12	.27	.08	.05	5.2	.77	.06	.03	.06	.05	.23	.15
23	.26	.18	.07	.13	4.2	.38	.08	.03	.06	.04	.19	1.43
24	1.08	5.3	.07	.86	4.6	.46	.12	.10	.06	.04	.18	*1.04
25	.21	.96	.07	.34	4.2	.62	.06	*.13	.06	.15	.15	.47
26	.37	1.02	.06	.11	2.3	1.71	.05	.15	.05	.08	.21	1.49
27	.46	.38	.08	.11	.58	.38	.06	4.6	.31	1.48	.21	.73
28	.62	.41	.10	.06	.35	.99	2.1	11.4	.18	.45	.19	.81
29	.25	4.2	.21	.94	.50	.69	2.05	-	.67	*.12	.15	.25
30	.59	1.71	3.25	.64	2.6	5.40	4.9	-------	.42	.06	.19	.18
31	1.18	.47	-------	2.3	-------	.97	1.63	-------	.15	-------	1.32	-------
Total	15.56	38.67	7.96	7.66	52.65	50.91	13.85	17.82	23.37	4.24	29.06	22.88
Mean:												
mgd	0.502	1.25	0.265	0.247	1.76	1.64	0.447	0.636	0.754	0.141	0.937	0.763
cfs	0.777	1.93	0.410	0.382	2.72	2.54	0.692	0.984	1.17	0.218	1.45	1.18
Ac-ft	48	119	24	24	162	156	43	55	72	13	89	70

Calendar year 1957. Max 18.2 Min 0.03 Mean(mgd) 0.794 Mean(cfs) 1.23 Ac-ft 889
Fiscal year 1957-58: Max 11.4 Min 0.03 Mean(mgd) 0.780 Mean(cfs) 1.21 Ac-ft 875

Peak discharge (base, 70 mgd).--Nov. 21 (4 a.m.) 278 mgd (430 cfs), 5.52 ft; Feb. 28 (8:30 a.m.) 210 mgd (325 cfs), 4.58 ft.

* Discharge measurement made on this day.

5010. Palikea Stream below diversion dam, near Kipahulu
(Formerly published as Oheo Stream below diversion dam, near Kipahulu)

Location.--Lat 20°41'05", long 156°04'10", on left bank just downstream from old diversion dam, 2 miles northwest of Kipahulu and 2.5 miles upstream from mouth.
Drainage area.--6.29 sq mi (revised).
Records available.--February 1927 to September 1929, December 1931 to June 1958. Published as Oheo Stream at elevation 1,550 ft, near Kipahulu, 1927-29. Published as Oheo Stream below diversion dam, near Kipahulu, 1930-56.
Gage.--Water-stage recorder. Datum of gage is 1,546 ft above mean sea level (by vertical angles). Prior to Sept. 6, 1929, at site 100 ft upstream at different datum.
Average discharge.--23 years (1927-29, 1932-35, 1940-58), 36.8 mgd (56.9 cfs).
Extremes.--1956-57: Maximum discharge during fiscal year, 3,550 mgd (5,490 cfs) Oct. 15 (gage height, 9.92 ft), from rating curve extended above 2,100 mgd by critical-depth measurement of peak flow and test on model of station site; minimum, 0.02 mgd (0.03 cfs) May 26 to June 2.
1957-58: Maximum discharge during fiscal year, 3,550 mgd (5,490 cfs) Aug. 24 (gage height, 9.87 ft), from rating curve extended above 2,100 mgd as explained above; minimum, 0.01 mgd (0.02 cfs) Jan. 24-26.
1927-29, 1931-58: Maximum discharge, 9,100 mgd (14,100 cfs) Dec. 20, 1955 (gage height, 17.5 ft, from floodmark), from rating curve extended above 2,100 mgd as explained above; no flow at times.
Remarks.--Records good except those for period of no gage-height record, which are poor. Small diversion below station for domestic water supply and livestock.
Revisions (fiscal years).--WSP 1155: 1932-35(M), 1937-40(M).

Rating table, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

0.0	0	1.3	17.0
.1	.05	1.6	28.5
.2	.23	2.0	48.5
.3	.60	2.5	86
.4	1.21	3.0	133
.5	2.1	4.0	255
.6	3.2	5.0	425
.8	5.9	6.0	710
1.0	9.7	8.0	1,240

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.93	20.5	5.2	3.3	183	106	0.16	152	9.7	8.2	94	0.02
2	.64	6.5	1.32	.46	16.7	.73	.12	77	1.42	21.5	*110	.02
3	.84	69	.75	2.3	9.1	.46	.10	100	1.0	.51	52	.03
4	.46	178	1.35	111	1.83	.35	.10	425	10	6.9	47	.07
5	.35	76	2.7	33	1.06	9.5	.16	340	.70	.96	10.3	.07
6	.46	6.7	.55	3.2	1.11	187	83	298	.40	.18	2.45	.04
7	.51	8.9	.35	1.64	.92	7.8	44	40	.25	.12	1.13	.03
8	.38	8.0	.43	.65	.51	1.61	205	25	.22	.08	.70	.03
9	4.5	4.2	.55	.42	.42	13.7	56	17	.18	.07	.51	.44
10	*2.15	1.43	.68	.28	.38	12.9	63	15	.18	.14	.42	.07
11	4.6	15.8	.35	.42	.42	5.9	112	60	7.0	.07	37.5	.04
12	1.94	26.5	.20	.20	68	13.7	12.1	70	15	.04	13.3	.03
13	18.7	54	.25	16.7	85	13.9	1.22	30	10	.04	.74	.04
14	47	121	12.1	162	196	9.4	30	100	62	75	.38	.04
15	12.3	20.5	31.5	461	23	54	15.6	10	118	146	.25	20.5
16	13.5	*43	2.35	314	2.45	102	3.85	1.7	8.3	.88	.28	12.0
17	1.46	235	.92	119	5.8	29	.99	.90	38.5	.32	.18	21
18	76	54	.60	93	264	14.7	.70	.60	39	.56	.14	*12.3
19	91	11.4	.46	15.5	219	*5.2	124	.50	2.25	269	.08	10.8
20	13.6	2.8	.32	8.1	96	6.4	148	6.0	*.73	30.5	.05	5.5
21	13.4	1.13	.25	19.0	32	2.1	4.9	.40	.51	11.7	.04	1.61
22	4.2	.75	.18	25.5	7.7	1.11	3.35	.30	8.9	3.25	.03	.35
23	1.39	1.02	.25	14.1	5.7	.55	2.25	.25	3.95	376	.04	.16
24	.70	3.45	.12	6.9	1.92	.42	51	.22	.81	144	.03	.08
25	2.7	4.6	.08	27.5	1.13	.32	80	.19	.35	500	.03	.24
26	.60	.75	.06	233	.80	.25	1.87	.18	.23	164	.02	.14
27	3.5	.55	.05	52	.55	.18	1.30	200	.18	40	.02	.08
28	34	2.1	.04	153	.46	.14	8.7	*750	.14	74	.02	9.7
29	54	.56	28.5	35.5	.94	.12	213	-	.10	29.5	.02	1.78
30	9.3	52	57	38.5	.97	.16	*106	-------	.08	130	.02	.16
31	51	134	-------	30	-------	.40	14.2	-------	.10	-------	.02	-------
Total	466.11	1,164.14	149.46	1,981.17	1,226.87	600.00	1,386.67	2,720.24	340.18	2,033.52	371.70	97.37
Mean:												
mgd	15.0	37.6	4.98	63.9	40.9	19.4	44.7	97.2	11.0	67.8	12.0	3.25
cfs	23.2	58.2	7.71	98.9	63.3	30.0	69.2	150	17.0	105	18.6	5.03
Ac-ft	1,430	3,570	459	6,080	3,770	1,840	4,260	8,350	1,040	6,240	1,140	299

Calendar year 1956: Max 926 Min 0.04 Mean(mgd) 48.6 Mean(cfs) 75.2 Ac-ft 54,650
Fiscal year 1956-57: Max 750 Min 0.02 Mean(mgd) 34.3 Mean(cfs) 53.1 Ac-ft 38,480

Peak discharge (base, 1,600 mgd).--Oct. 15 (1:30 p.m.) 3,550 mgd (5,490 cfs), 9.92 ft; Dec. 6 (10:30 a.m.) 1,800 mgd (2,790 cfs), 8.98 ft; Feb. 5 (1 p.m.) 1,700 mgd (2,630 cfs), 8.94 ft.

* Discharge measurement made on this day.
Note.--No gage-height record Feb. 7-28, Mar. 3-13; discharge estimated on basis of record for nearby stream.

5010. Palikea Stream below diversion dam, near Kipahulu--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.08	26	5.1	1.50	6.9	130	0.99	2.0	10.9	0.70	0.75	6.8
2	.48	12.3	79	.28	14.0	13	.70	.32	1.30	.38	40	3.3
3	15.3	72	42	.18	4.6	700	.51	.18	.75	.35	60	*.43
4	88	9.2	3.4	.52	.65	25	.38	.08	.53	7.2	13.8	.12
5	147	9.8	1.37	.14	.51	15	.32	.32	1.06	2.65	1.66	.20
6	10.6	306	.86	.06	2.15	30	.25	.14	439	3.7	22.5	.12
7	5.9	367	.60	.04	178	16	.20	2.25	42	6.1	60	.28
8	29.5	173	.93	.04	19.8	8.0	.18	38	2.5	6.4	65	.10
9	12.0	10.8	.46	.03	44	8.0	.14	1.23	4.9	4.4	40	5.4
10	13.7	3.7	.35	.03	120	35	.08	.51	24.5	15.3	23	22.5
11	1.74	4.2	.25	.30	119	250	.06	.32	7.8	3.15	72	30
12	.70	30	.23	.08	30	*20	.22	.18	1.37	.77	31.5	112
13	.83	10.7	.25	.12	9.0	13.2	.08	.10	.75	.46	7.2	5.1
14	114	76	.14	.08	40	14.0	.04	.05	.51	1.29	1.43	4.3
15	2.45	82	.08	.04	25	26.5	.03	.04	.38	.81	.75	1.08
16	1.06	14.2	.07	.04	13	80	.02	.03	.32	.32	.76	3.65
17	5.8	5.0	.03	.04	10	45	.02	.79	.25	6.6	.55	.60
18	6.2	13.9	.04	19.5	25	32.5	.03	.28	.18	.56	.38	.46
19	77	34	.03	21.5	150	72	.02	.06	.10	.16	.25	.32
20	49	8.1	.04	.56	11	94	.21	.60	.08	.10	.28	.20
21	17.9	8.5	.04	.20	35	119	*.07	.28	.06	.12	.16	.16
22	1.70	4.3	.04	.08	400	117	.03	.10	.05	.07	.10	.14
23	13.9	55	.04	6.1	30	193	.02	.04	.07	.04	.07	.23
24	21	866	.04	12.5	70	91	.01	.04	.20	.04	.14	.18
25	35	54	.04	18.6	80	96	.01	.03	.10	.03	.12	3.9
26	101	67	.04	1.53	35	126	.01	10.7	.06	.03	.16	21.5
27	52	23	.04	.45	12	38.5	.04	561	243	.82	.08	33
28	23	76	15.7	.16	10	37.5	.04	196	20	70	.20	20
29	16.3	268	13.5	44	8.0	25.5	11.7	-	140	39.5	.10	6.9
30	70	81	92	*16.6	70	3.25	155	-------	45	2.4	.06	8.3
31	80	19.7	-------	103	-------	1.92	52	-------	3.9	-------	.16	-------
Total	1,013.14	2,790.4	256.71	248.30	1,572.61	2,475.87	223.41	815.67	991.62	174.45	443.16	291.27
Mean:												
mgd	32.7	90.0	8.56	8.01	52.4	79.9	7.21	29.1	32.0	5.82	14.3	9.71
cfs	50.6	139	13.2	12.4	81.1	124	11.2	45.0	49.5	9.00	22.1	15.0
Ac-ft	3,110	8,560	788	762	4,830	7,600	686	2,500	3,040	535	1,360	894

Calendar year 1957: Max 866 Min 0.02 Mean(mgd) 41.9 Mean(cfs) 64.8 Ac-ft 46,980
Fiscal year 1957-58: Max 866 Min 0.01 Mean(mgd) 30.9 Mean(cfs) 47.8 Ac-ft 34,660

Peak discharge (base, 1,600 mgd)--Aug. 24 (7 a.m.) 3,550 mgd (5,490 cfs), 9.87 ft; Dec. 3 (time unknown) 2,600 mgd (4,020 cfs), 9.40 ft (from floodmark in well); Feb. 27 (4 p.m.) 3,200 mgd (4,950 cfs), 9.70 ft.

* Discharge measurement made on this day.
Note.--No gage-height record Nov. 12 to Dec. 12; discharge estimated on basis of records for nearby streams.

5020. Right Branch Hahalawe Stream near Kipahulu
(Formerly published as Right Branch Kahalawe Stream near Kipahulu)

Location (revised).--Lat 20°40'54", long 156°02'50", on left bank at old ditch intake, 0.7 mile above mouth and 1.8 miles northeast of Kipahulu.

Drainage area.--0.43 sq mi.

Records available.--February 1927 to April 1937, April 1938 to June 1958. Prior to July 1956, published as Right Branch Kahalowe Stream near Kipahulu.

Gage.--Water-stage recorder and concrete control. Datum of gage is 885 ft above mean sea level (by vertical angles). Prior to Apr. 21, 1938, at same site at datum 8 ft lower.

Average discharge.--28 years (1927-34, 1935-36, 1938-58), 3.53 mgd (5.46 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 500 mgd (774 cfs) Feb. 28 (gage height, 3.86 ft), from rating curve extended above 54 mgd by test on model of station site; minimum, 0.53 mgd (0.82 cfs) Apr. 12.

1957-58: Maximum discharge during fiscal year, 650 mgd (1,010 cfs) Dec. 3 (gage height, 4.16 ft), from rating curve extended above 54 mgd by test on model of station site; minimum, 0.42 mgd (0.65 cfs) Apr. 23.

1927-37, 1938-58: Maximum discharge, 2,300 mgd (3,560 cfs) Apr. 29, 1937 (gage height, 15.74 ft, datum then in use), from rating curve extended above 54 mgd by test on model of station site; minimum, 0.15 mgd (0.23 cfs) Dec. 18, 1929.

Remarks.--Records good except those for period of no gage-height record, which are fair.

Revisions (fiscal years).--WSP 1219: 1935(M), 1937(M).

Rating table, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

0.8	0.35	1.4	4.8
.9	.62	1.5	6.8
1.0	1.01	1.7	12.4
1.1	1.54	2.0	28.5
1.2	2.3	2.3	54
1.3	3.3		

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.87	3.35	2.1	1.80	13.1	7.6	1.20	5.9	8.7	1.31	6.5	0.62
2	1.73	2.4	1.73	1.41	2.95	1.54	1.05	3.4	2.3	2.1	*9.0	.58
3	2.7	5.0	1.47	1.38	4.1	1.35	1.05	3.6	1.73	1.36	5.6	.62
4	1.80	20.5	2.25	23	2.2	1.25	1.15	16.6	4.1	1.15	5.9	1.47
5	1.60	13.7	2.25	7.7	2.05	10.9	1.20	13.2	1.47	.79	3.6	.92
6	1.92	3.05	1.54	1.95	2.35	10.8	2.1	11.9	1.30	.71	2.2	.92
7	3.2	5.0	1.35	1.60	2.1	2.3	1.54	4.1	1.15	.65	1.73	.71
8	2.05	4.7	1.30	1.25	1.66	1.66	2.45	3.0	1.10	.62	1.54	.73
9	4.1	3.9	1.41	1.15	1.54	6.5	3.3	2.4	1.01	.71	1.41	4.3
10	*3.1	2.55	1.35	1.05	1.47	2.55	3.95	2.1	1.01	.75	1.71	.92
11	4.1	3.2	1.25	2.8	1.30	1.95	5.2	7.2	1.71	.62	4.9	.75
12	3.05	8.5	1.10	1.20	5.5	1.95	1.60	8.7	3.45	.55	2.25	.71
13	4.4	10.0	1.45	7.1	5.1	1.54	1.25	3.75	*2.1	.95	3.15	1.21
14	7.0	9.8	5.1	29	12.4	2.25	4.0	10.7	3.0	7.1	1.41	.71
15	4.2	3.4	7.8	28.5	2.6	3.3	3.3	2.75	4.3	1.51	1.25	2.2
16	4.2	*8.8	1.73	32	1.73	4.1	1.47	2.1	1.66	.92	1.20	2.05
17	2.1	11.0	1.41	9.5	2.25	5.6	1.15	1.80	3.35	.71	1.10	7.8
18	6.9	7.5	1.15	5.6	23	3.15	1.01	1.66	2.85	.71	1.10	2.7
19	4.5	4.1	1.05	6.2	12.0	*2.1	5.0	1.54	1.35	6.9	.97	2.25
20	3.8	2.75	.97	4.2	10.2	1.95	7.8	2.4	1.10	1.64	.92	1.63
21	4.1	2.3	.92	7.9	6.6	1.73	1.80	1.47	.92	1.35	.87	1.41
22	2.4	2.05	.92	6.0	4.3	1.66	3.95	1.30	2.3	1.01	.83	1.73
23	2.05	2.6	1.10	4.4	4.7	1.35	2.05	1.25	1.15	22	.79	1.05
24	1.80	2.95	.87	2.65	2.45	1.25	13.5	1.15	1.05	4.6	.83	.87
25	4.0	2.45	.87	7.6	2.05	1.15	3.8	1.05	.92	12.2	.97	1.15
26	1.80	1.87	*.83	16.6	1.87	1.10	1.66	1.01	.83	3.05	1.03	.83
27	2.95	1.73	.83	4.1	1.66	1.01	1.41	11.2	.75	2.5	.79	.87
28	5.5	2.0	.79	5.0	1.47	.92	4.1	42	.71	3.6	1.27	5.3
29	7.2	1.87	2.3	4.4	1.95	.92	6.6	-	.71	2.25	.79	1.81
30	3.35	6.9	5.6	3.25	2.4	1.10	2.95	-------	.75	9.0	.71	1.15
31	8.4	9.9	-------	2.55	-------	3.05	1.87	-------	.71	-------	.68	-------
Total	111.87	169.82	54.79	232.84	139.05	89.58	94.46	169.23	59.54	93.32	67.00	49.97
Mean:												
mgd	3.61	5.48	1.83	7.51	4.64	2.89	3.05	6.04	1.92	3.11	2.16	1.67
cfs	5.59	8.48	2.83	11.6	7.18	4.47	4.72	9.35	2.97	4.81	3.34	2.58
Ac-ft	343	521	168	715	427	275	290	519	183	286	206	153

Calendar year 1956. Max 32 Min 0.79 Mean(mgd) 4.34 Mean(cfs) 6.71 Ac-ft 4,880
Fiscal year 1956-57: Max 42 Min 0.55 Mean(mgd) 3.65 Mean(cfs) 5.65 Ac-ft 4,090

Peak discharge (base, 200 mgd).--Oct. 16 (7:30 a.m.) 382 mgd (591 cfs), 3.53 ft; Feb. 28 (10:30 a.m.) 500 mgd (774 cfs), 3.86 ft.

* Discharge measurement made on this day.

5020. Right Branch Hahalawe Stream near Kipahulu--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.71	3.45	3.2	1.41	2.05	11.5	1.95	1.25	1.63	0.75	1.10	5.7
2	2.25	2.85	6.1	1.10	2.9	2.55	1.73	.92	1.05	.68	6.7	3.9
3	2.35	2.9	3.7	.87	1.66	44	1.54	.75	.87	.62	9.9	1.61
4	5.2	2.45	2.65	1.10	1.25	4.1	1.41	.68	*.75	1.17	2.85	1.47
5	6.0	2.75	2.4	.79	1.10	2.75	1.30	1.34	4.5	.75	1.35	1.74
6	2.05	8.8	2.05	.75	2.95	4.5	1.20	.75	38	.82	3.7	1.41
7	1.54	12.3	1.87	.68	18.0	2.95	1.15	7.2	4.2	.87	3.55	2.75
8	3.0	6.6	1.95	.65	9.0	1.80	1.10	33	1.47	1.42	5.1	1.25
9	2.55	3.05	1.80	.62	8.4	1.73	1.10	1.47	1.80	.90	5.1	2.7
10	4.0	2.45	1.66	.58	8.4	4.9	.97	1.15	3.35	1.72	5.5	3.85
11	1.95	2.95	1.54	3.7	5.6	16.3	.92	.92	1.54	1.15	8.0	3.9
12	1.41	6.5	1.47	.87	4.6	3.85	1.30	.83	1.15	.71	3.4	7.7
13	2.9	4.6	1.66	1.10	2.1	3.7	.92	.75	.92	.68	1.87	1.95
14	7.8	9.4	1.47	.83	5.6	3.7	.83	.71	.87	1.20	2.05	1.66
15	1.60	4.3	1.30	.62	4.0	2.65	.79	.68	.79	*.90	1.47	1.81
16	1.54	2.65	1.20	.62	2.75	5.0	.75	.62	.75	.68	2.85	1.85
17	1.35	2.2	*1.15	1.29	2.3	2.45	.71	1.81	.68	.87	3.05	1.68
18	2.0	3.3	1.35	9.5	4.2	2.05	1.01	.93	.65	.65	2.1	1.66
19	7.3	6.7	1.10	2.85	12.4	3.05	.79	.62	.58	.55	1.47	1.30
20	6.0	2.75	1.15	1.15	2.45	8.5	2.15	1.20	.55	.55	2.05	1.10
21	4.6	2.45	1.10	.79	5.1	8.9	*.87	.92	.53	.62	1.35	1.05
22	1.80	2.1	1.05	.68	23	5.7	.75	.71	.58	.50	1.15	1.10
23	5.7	6.5	1.05	.79	4.3	4.3	.68	.58	.94	.47	1.10	1.54
24	3.35	37	.97	1.76	7.7	2.85	.62	.62	1.78	.81	1.30	1.35
25	2.35	3.7	.87	4.6	8.3	3.75	.58	.55	.75	.68	1.15	2.15
26	3.4	3.75	.87	3.2	5.1	2.55	.55	2.75	.62	.52	1.35	3.5
27	6.1	2.75	.87	1.66	2.55	2.4	1.81	19.8	3.95	4.5	1.15	4.1
28	2.95	6.0	3.5	.97	2.1	6.2	.65	8.0	1.10	13.9	2.15	2.35
29	4.6	17.6	2.25	a7.0	1.73	4.3	4.4	-	4.9	30	1.10	1.60
30	*7.2	10.0	9.4	*a1.7	8.0	3.05	11.7	-------	1.65	1.60	2.1	1.73
31	6.5	4.1	-------	9.3	-------	2.4	3.9	-------	.92	-------	2.2	-------
Total	112.05	188.90	62.70	63.53	170.59	178.43	50.13	91.51	83.82	71.24	89.26	71.46
Mean:												
mgd	3.61	6.09	2.09	2.05	5.69	5.76	1.62	3.27	2.70	2.37	2.88	2.38
cfs	5.59	9.42	3.23	3.17	8.80	8.91	2.51	5.06	4.18	3.67	4.46	3.68
Ac-ft	344	580	192	195	524	548	154	281	257	219	274	219

Calendar year 1957. Max 44 Min 0.55 Mean(mgd) 3.59 Mean(cfs) 5.55 Ac-ft 4,020
Fiscal year 1957-58: Max 44 Min 0.47 Mean(mgd) 3.38 Mean(cfs) 5.23 Ac-ft 3,790

Peak discharge (base, 200 mgd).--Aug. 24 (7 a.m.) 218 mgd (337 cfs) 3.04 ft; Nov. 22 (1:30 p.m.) 248 mgd (384 cfs), 3.13 ft; Dec. 3 (5:30 p.m.) 650 mgd (1,010 cfs), 4.16 ft; Feb. 27 (6:30 p.m.) 279 mgd (432 cfs), 3.23 ft; Mar. 6 (1 p.m.) 330 mgd (511 cfs), 3.40 ft.

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for Palikea Stream.

5060. Makapipi ditch near Nahiku

Location (revised).--Lat 20°48'17", long 156°06'25", on right bank at entrance to tunnel No. 1, 1.8 miles south of Nahiku and 4.7 miles southeast of Keanae.

Records available.--July 1948 to June 1958.

Gage.--Water-stage recorder and Parshall flume. Datum of gage is 1,300 ft above mean sea level (by vertical angles).

Average discharge.--10 years, 2.95 mgd (4.56 cfs).

Extremes.--1948-58: Maximum daily discharge, 7.8 mgd (12.1 cfs) Nov. 21, 1951; minimum daily, 0.42 mgd (0.65 cfs) Mar. 22, 23, 25, Apr. 13, 14, 1958.

Remarks.--Records good except those for periods of no gage-height record, which are fair.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.3	3.85	3.3	1.13	3.2	2.25	1.78	2.15	2.0	1.72	5.1	1.27
2	3.3	3.8	3.3	1.09	3.0	1.52	1.67	2.55	1.89	1.67	5.5	1.22
3	3.15	4.0	3.15	1.09	2.7	1.47	1.62	2.95	1.78	1.62	4.5	1.22
4	3.0	5.9	2.95	1.47	2.6	1.42	1.57	3.8	1.72	2.35	5.7	1.18
5	2.9	6.5	2.8	1.72	2.5	1.37	1.52	4.5	1.67	2.45	6.0	1.13
6	2.75	5.4	2.7	1.52	2.3	2.5	1.87	2.25	1.62	2.2	5.8	1.09
7	2.6	4.7	2.55	1.42	2.2	1.67	2.35	.91	1.57	2.05	5.4	1.09
8	2.5	4.3	2.45	1.62	2.2	1.52	2.3	.78	1.52	2.0	5.0	1.04
9	2.35	4.0	2.35	3.05	2.15	1.47	2.7	.71	1.47	1.89	4.4	1.00
10	2.25	3.8	2.25	3.1	2.0	1.42	2.4	.67	1.42	1.89	3.95	1.00
11	2.2	3.6	2.15	2.8	1.95	1.37	3.0	.67	1.37	1.84	3.8	.96
12	2.05	3.65	2.05	2.6	1.89	1.32	2.45	.67	1.37	1.78	3.6	.91
13	2.0	4.5	1.95	3.4	1.95	1.27	2.5	.64	1.32	3.0	3.35	.91
14	2.0	5.6	1.89	4.0	2.05	1.32	2.55	.64	2.0	3.65	3.25	.87
15	1.89	*5.0	1.84	4.5	2.15	1.43	2.6	.64	2.75	3.7	2.95	.87
16	1.89	5.1	1.78	4.8	2.05	3.3	2.55	.60	1.95	3.65	2.75	.82
17	1.89	6.5	1.72	5.0	1.95	2.35	2.5	.56	2.35	4.1	2.55	.82
18	3.35	6.5	1.62	5.5	2.0	2.55	2.45	.53	2.35	3.95	2.45	.82
19	3.5	6.0	1.62	5.0	2.05	2.3	3.2	.53	2.15	4.2	2.3	.82
20	3.0	5.4	1.57	4.6	2.15	*2.4	4.2	1.72	2.0	4.5	2.15	.82
21	3.0	4.8	1.52	4.0	1.2	2.45	3.8	3.0	*1.89	4.4	2.0	.78
22	2.95	4.2	1.47	3.5	.60	2.45	3.45	2.8	2.2	3.95	1.89	.78
23	2.95	3.85	1.42	3.2	1.4	2.3	3.35	2.6	2.15	4.4	1.78	.74
24	2.9	3.65	1.37	2.9	2.0	2.2	3.15	2.5	1.95	4.8	1.72	.74
25	2.75	3.45	1.32	2.8	1.89	2.05	3.3	2.35	1.95	5.0	1.67	.78
26	2.6	3.15	1.27	2.6	1.78	1.95	2.9	2.2	1.95	5.0	1.62	.74
27	2.55	2.95	*1.17	2.8	1.72	1.84	2.75	2.15	1.89	5.0	1.52	.74
28	2.55	2.7	1.13	3.2	1.67	1.72	2.55	2.05	1.89	5.0	1.47	.74
29	4.2	2.6	1.13	2.7	1.62	1.67	2.45	-	1.84	5.0	1.47	.74
30	3.65	3.15	1.13	2.3	1.57	1.62	2.3	-------	1.84	4.9	1.37	.74
31	3.85	3.15	-------	3.0	-------	2.1	2.2	-------	1.72	-------	1.32	-------
Total	85.82	135.75	58.92	92.41	60.49	58.57	79.98	48.12	57.54	101.66	98.33	27.38
Mean:												
mgd	2.77	4.38	1.96	2.98	2.02	1.89	2.58	1.72	1.86	3.39	3.17	0.913
cfs	4.29	6.78	3.03	4.61	3.13	2.92	3.99	2.66	2.88	5.25	4.90	1.41
Ac-ft	263	417	181	284	186	180	245	148	177	312	302	84

Calendar year 1956: Max 7.1 Min 0.60 Mean(mgd) 3.39 Mean(cfs) 5.25 Ac-ft 3,810
Fiscal year 1956-57: Max 6.5 Min 0.53 Mean(mgd) 2.48 Mean(cfs) 3.84 Ac-ft 2,780

* Discharge measurement made on this day.
Note.--No gage-height record Oct. 10 to Nov. 8; discharge estimated on basis of records for nearby stations.

5060. Makapipi ditch near Nahiku--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.74	5.4	5.8	1.89	3.15	0.91	0.74	2.6	3.25	0.64	2.5	4.1
2	.74	4.6	5.4	1.89	3.1	1.00	.71	2.5	3.15	.60	2.65	4.8
3	*.78	5.4	5.0	1.84	2.95	.94	2.9	2.45	3.0	.60	2.6	4.7
4	.91	5.2	4.6	1.78	2.8	.96	4.1	2.35	2.8	.56	2.5	4.3
5	1.47	5.0	4.2	1.78	2.6	.82	3.85	2.3	*2.7	.56	2.35	*4.0
6	1.72	5.6	4.0	1.72	2.65	.74	3.65	2.3	3.5	.53	2.85	3.85
7	1.67	6.0	3.8	1.72	4.3	.71	3.45	2.25	3.8	.49	3.45	3.8
8	1.62	6.5	3.5	1.67	4.8	.74	3.25	2.15	3.65	.49	3.5	3.65
9	1.62	6.5	3.3	1.62	5.6	.71	2.95	2.0	1.72	.49	3.7	3.65
10	1.72	6.5	3.0	1.62	5.2	.71	2.8	1.95	.64	.49	4.0	3.65
11	1.84	5.7	2.8	1.57	5.5	.82	2.6	1.84	.67	.46	4.5	3.6
12	1.95	5.1	2.6	1.52	5.4	.91	2.5	1.72	.67	.46	4.6	4.5
13	2.05	4.6	2.5	1.47	4.8	.96	2.35	1.67	.64	.42	4.6	4.3
14	2.3	4.2	2.3	1.42	4.3	.96	2.2	1.62	.64	.42	4.6	4.0
15	2.45	4.2	2.2	1.37	4.0	.91	2.05	1.57	.60	1.28	4.7	3.8
16	2.5	4.2	2.05	1.37	3.7	.87	2.0	1.52	.60	*2.05	5.1	3.6
17	2.6	3.95	2.0	1.32	3.6	.82	1.89	1.47	.56	2.0	5.4	3.35
18	2.6	3.8	*2.7	1.32	3.35	.78	1.78	1.42	.53	1.95	5.2	3.15
19	3.4	3.85	2.2	1.27	3.25	.74	1.72	1.37	.53	1.89	5.0	2.9
20	4.4	3.8	2.15	1.22	3.0	.78	*1.65	1.32	.49	1.84	5.0	2.75
21	4.6	3.65	2.05	3.05	2.9	1.04	1.57	1.27	.46	1.78	5.0	2.55
22	4.1	3.5	2.0	2.55	5.2	1.22	1.52	1.22	.42	1.72	4.4	2.35
23	4.2	3.65	2.0	3.9	5.9	1.27	1.47	1.18	.42	1.67	4.0	2.25
24	4.2	5.6	1.95	4.2	6.5	1.27	1.52	1.18	.52	1.67	3.8	2.15
25	4.3	6.5	1.89	3.5	4.0	1.22	1.42	1.22	.42	1.62	3.6	2.0
26	5.2	5.5	1.84	3.3	1.37	1.13	1.37	2.2	.44	2.4	3.35	1.95
27	4.5	5.2	1.78	3.25	1.22	1.00	1.52	3.6	.64	3.0	3.15	2.75
28	4.2	5.0	1.78	3.15	1.04	.87	1.57	3.35	.53	2.8	3.0	3.15
29	3.95	5.4	1.78	3.45	.87	.78	2.75	-	1.05	2.7	2.95	2.3
30	3.85	6.0	1.89	3.6	.78	.78	2.7	-------	.76	2.6	2.9	2.3
31	5.3	6.0	-------	3.25	-------	.78	2.7	-------	.64	-------	3.0	-------
Total	87.48	156.10	85.06	68.58	107.83	28.15	69.25	53.59	40.44	40.18	117.95	100.20
Mean:												
mgd	2.82	5.04	2.84	2.21	3.59	0.908	2.23	1.91	1.30	1.34	3.80	3.34
cfs	4.36	7.80	4.39	3.42	5.55	1.40	3.45	2.96	2.01	2.07	5.88	5.17
Ac-ft	268	479	261	210	331	86	213	164	124	123	362	308

Calendar year 1957: Max 6.5 Min 0.53 Mean(mgd) 2.59 Mean(cfs) 4.01 Ac-ft 2,900
Fiscal year 1957-58: Max 6.5 Min 0.42 Mean(mgd) 2.62 Mean(cfs) 4.05 Ac-ft 2,930

5080. Hanawi Stream near Nahiku

Location (revised).--Lat 20°48'35", long 156°07'00", on left bank 200 ft upstream from Koolau ditch intake and trail, 1.9 miles southwest of Nahiku, and 4.5 miles southeast of Keanae.

Drainage area.--3.49 sq mi (revised).

Records available.--January 1914 to January 1916, November 1921 to June 1958.

Gage.--Water-stage recorder. Datum of gage is 1,318 ft above mean sea level (by vertical angles). Jan. 9, 1914, to Jan. 6, 1916, at site 50 ft downstream in same pool at datum 0.12 ft lower.

Average discharge.--36 years (1922-58), 13.9 mgd (21.5 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 930 mgd (1,440 cfs) Oct. 14 (gage height, 5.86 ft), from rating curve extended above 260 mgd as explained below; minimum, 1.66 mgd (2.57 cfs) Dec. 11.

1957-58: Maximum discharge during fiscal year, 1,620 mgd (2,510 cfs) Nov. 22 (gage height, 7.90 ft), from rating curve extended above 260 mgd as explained below; minimum, 1.77 mgd (2.74 cfs) July 1.

1914-16, 1921-58: Maximum discharge, about 3,600 mgd (5,570 cfs) Jan. 18, 1916 (gage height, 11.6 ft at present site), by test on model of station site; minimum, 1.1 mgd (1.7 cfs) Feb. 19, 20, 1944.

Remarks.--Records good. Water used for irrigation in central Maui.

Revisions (fiscal years).--WSP 1045: 1922-43(M).

Rating table, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

0.2	1.38	2.0	34
.3	1.94	2.5	56
.4	2.6	3.0	85
.5	3.35	3.5	125
.7	5.3	4.0	176
1.0	10.1	4.5	250
1.3	15.3	5.0	370
1.6	21.5	5.5	600

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	6.7	5.0	5.1	2.9	10.3	54	8.6	4.4	3.0	2.25	*65	2.4
2	5.6	4.3	4.2	*2.6	3.6	2.05	2.05	8.2	2.8	2.15	40	2.4
3	5.1	22.5	3.8	2.8	3.05	1.88	1.94	9.6	2.7	2.95	28.5	2.25
4	4.5	46	3.95	7.0	2.8	1.83	1.83	*99	2.6	129	81	2.25
5	4.2	15.6	6.4	4.5	3.0	1.94	6.8	175	4.1	15.9	36.5	2.2
6	4.0	7.2	3.6	3.05	3.0	16.4	23.5	182	4.7	3.7	11.8	2.15
7	3.85	7.1	3.3	2.7	2.7	2.45	17.6	70	2.75	3.0	7.7	2.05
8	3.6	5.2	3.35	7.5	2.45	1.94	25	74	2.55	2.75	6.0	2.05
9	3.35	4.2	3.3	13.9	2.25	1.83	25	29	2.45	2.7	5.9	2.0
10	3.2	3.7	3.1	4.5	2.25	1.77	13.0	15.9	2.45	2.4	5.9	1.94
11	3.1	3.6	3.0	3.3	3.35	1.72	18.6	21	2.45	2.25	6.6	1.94
12	3.05	12.1	2.75	3.0	4.7	2.35	4.3	18.5	2.75	2.2	5.3	1.88
13	4.0	29.5	2.6	8.6	3.85	2.5	2.9	6.2	3.8	12.1	5.0	1.94
14	10.6	23.5	2.6	32.5	4.1	5.5	2.75	11.2	29.5	7.2	4.8	*1.77
15	6.6	10.9	2.55	150	2.75	15.9	2.4	6.4	58	4.8	4.5	2.15
16	6.6	51	2.45	126	2.6	39	2.2	4.6	6.4	11.8	4.5	2.15
17	4.4	109	2.4	73	2.45	7.9	2.05	3.8	14.0	11.7	4.4	2.3
18	22.5	19.4	2.25	9.9	5.8	6.7	2.0	5.9	10.7	5.7	4.2	2.8
19	6.4	8.0	2.25	5.4	4.6	3.2	66	4.1	12.1	44	3.95	2.75
20	6.7	5.9	2.25	4.2	3.0	2.7	77	3.6	5.2	9.7	3.8	3.3
21	7.8	4.4	2.15	3.5	2.6	2.4	4.2	3.35	3.35	5.6	3.6	2.15
22	5.1	*4.2	3.05	3.2	2.35	2.25	3.7	3.3	7.4	4.4	3.45	1.94
23	4.0	3.95	2.45	2.8	2.25	2.15	5.4	3.2	5.6	102	3.35	1.83
24	3.6	4.0	2.15	2.7	2.25	2.0	2.8	3.2	3.65	39.5	3.2	1.83
25	3.6	4.4	2.05	2.6	2.15	1.94	9.2	3.1	4.9	188	3.3	2.9
26	3.2	3.6	2.15	2.6	2.0	*1.88	2.6	3.1	3.0	82	3.1	2.15
27	3.75	3.95	1.94	2.45	1.94	1.83	2.4	3.1	2.6	34.5	2.8	1.88
28	27.5	5.0	2.05	4.2	1.94	1.77	2.35	3.25	2.45	46	2.75	1.88
29	28.5	6.1	3.6	9.1	1.88	1.83	2.45	-	2.35	40	2.6	2.0
30	9.5	13.7	4.5	10.6	2.0	1.83	2.6	-------	2.75	67	2.55	1.83
31	6.7	11.6	-------	7.1	-------	10.4	2.45	-------	2.45	-------	2.45	-------
Total	221.30	458.60	91.29	518.20	93.96	203.84	345.67	778.00	215.50	887.25	368.50	65.06
Mean:												
mgd	7.14	14.8	3.04	16.7	3.13	6.58	11.2	27.8	6.95	29.6	11.9	2.17
cfs	11.0	22.9	4.70	25.8	4.84	10.2	17.3	43.0	10.8	45.8	18.4	3.36
Ac-ft	679	1,410	280	1,590	288	626	1,060	2,390	661	2,720	1,130	200

Calendar year 1956: Max 618 Min 1.72 Mean(mgd) 18.7 Mean(cfs) 28.9 Ac-ft 21,000
Fiscal year 1956-57: Max 188 Min 1.72 Mean(mgd) 11.3 Mean(cfs) 17.5 Ac-ft 12,620

Peak discharge (base, 850 mgd).--Oct. 14 (11:30 p.m.) 930 mgd (1,440 cfs), 5.86 ft.

* Discharge measurement made on this day.

5080. Hanawi Stream near Nahiku--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.94	13.4	10.8	3.45	3.3	116	14.6	11.6	10.8	5.5	3.3	23.5
2	2.6	7.2	11.0	3.0	3.05	12.0	11.0	6.8	4.3	5.0	6.2	15.0
3	3.7	66	8.9	2.8	2.75	17.1	9.4	4.3	*3.2	3.85	3.6	8.0
4	11.1	12.5	6.7	2.7	2.55	9.8	8.3	3.7	2.9	5.7	3.1	*5.8
5	7.8	33	6.0	2.6	2.4	5.4	7.5	3.35	2.7	4.8	3.0	5.4
6	4.6	180	5.4	2.55	8.4	15.0	7.0	3.3	100	4.1	11.4	5.8
7	3.45	91	5.2	2.45	18.0	29	6.4	3.3	25.5	4.8	36	9.3
8	4.4	35.5	4.9	2.4	11.4	10.0	6.3	3.0	6.4	3.65	33.5	7.0
9	5.6	11.6	*4.8	2.35	13.1	13.6	5.9	2.75	10.8	3.2	27	6.6
10	6.4	6.9	4.6	2.25	11.7	84	5.3	2.6	40	2.8	16.0	4.8
11	3.6	5.1	4.3	2.45	9.7	246	5.1	2.55	9.7	2.9	39	4.6
12	3.05	18.8	4.2	2.15	8.9	64	4.8	2.45	5.0	3.55	26	18.2
13	3.75	4.8	4.1	2.05	4.8	31	4.5	2.35	15.1	3.05	9.8	6.4
14	4.2	6.7	3.85	2.0	3.95	21	4.2	2.25	3.9	4.5	31.5	4.8
15	2.75	13.7	3.7	2.8	3.35	30	4.0	2.2	3.1	3.8	25.5	4.3
16	2.55	6.3	3.7	7.3	3.0	99	3.85	2.15	2.8	*3.65	28	3.8
17	8.0	5.7	10.1	6.0	2.75	43	3.7	2.15	2.7	5.2	11.5	3.45
18	4.2	7.2	16.8	3.85	2.75	34.5	3.6	2.05	2.55	3.2	9.3	3.2
19	16.8	9.6	6.1	2.45	3.0	29.5	3.5	2.0	4.1	2.8	18.4	3.0
20	17.3	7.0	4.5	2.65	2.4	105	*3.3	2.0	2.45	2.75	25.5	2.9
21	14.0	7.8	3.8	27.5	3.65	102	3.05	2.0	2.35	2.75	7.0	2.75
22	4.9	6.3	3.5	11.5	422	102	3.0	1.94	2.4	2.6	5.1	2.7
23	8.2	36.5	3.8	32.5	97	37	3.1	1.94	4.4	2.55	4.3	2.7
24	5.8	302	3.6	*16.5	145	18.1	5.2	2.65	28	3.1	3.85	2.6
25	9.6	17.6	3.5	5.0	56	28.5	3.1	4.5	6.4	2.75	4.1	4.3
26	*15.2	10.6	3.1	3.6	46	59	2.9	47	4.1	16.6	5.5	5.0
27	4.9	9.4	3.45	3.2	14.0	20	4.5	87	34	10.1	4.7	20
28	4.3	56	4.3	2.8	6.8	35.5	10.3	107	12.1	6.4	5.9	12.0
29	4.8	221	4.3	17.6	4.6	37.5	86	-	132	4.7	4.4	4.0
30	11.5	98	5.6	7.1	91	58	156	-------	72	3.6	8.1	3.3
31	47	20	-------	4.1	-------	20	72	-------	11.0	-------	11.5	-------
Total	247.99	1,327.2	168.60	191.65	1,007.30	1,532.5	471.40	320.88	566.75	133.95	432.05	205.20
Mean:												
mgd	8.00	42.8	5.62	6.18	33.6	49.4	15.2	11.5	18.3	4.46	13.9	6.84
cfs	12.4	66.2	8.70	9.56	52.0	76.4	23.5	17.8	28.3	6.90	21.5	10.6
Ac-ft	761	4,070	517	588	3,090	4,700	1,450	985	1,740	411	1,330	630

Calendar year 1957: Max 422 Min 1.77 Mean(mgd) 19.5 Mean(cfs) 30.2 Ac-ft 21,890
Fiscal year 1957-58: Max 422 Min 1.94 Mean(mgd) 18.1 Mean(cfs) 28.0 Ac-ft 20,270

Peak discharge (base, 850 mgd).--Aug. 24 (8:30 a.m.) 1,070 mgd (1,660 cfs), 6.33 ft; Aug. 29 (8 a.m.) 1,310 mgd (2,030 cfs), 7.11 ft; Nov. 22 (1 p.m.) 1,620 mgd (2,510 cfs), 7.90 ft; Feb. 28 (2 p.m.) 1,130 mgd (1,750 cfs), 6.50 ft.

* Discharge measurement made on this day.

5100. Kapaula Stream near Nahiku

Location (revised).--Lat 20°48'45", long 156°07'05", on right bank 40 ft upstream from intake to Koolau ditch, 300 ft upstream from ditch trail, 1.9 miles southwest of Nahiku, and 4 miles southeast of Keanae.

Drainage area.--0.69 sq mi.

Records available.--November 1921 to June 1958.

Gage.--Water-stage recorder. Datum of gage is 1,346 ft above mean sea level (by vertical angles).

Average discharge.--36 years (1922-58), 10.7 mgd (16.6 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 476 mgd (736 cfs) Oct. 14 (gage height, 4.65 ft), from rating curve extended above 220 mgd; minimum, 0.59 mgd (0.91 cfs) June 14.

1957-58: Maximum discharge during fiscal year, 1,200 mgd (1,860 cfs) Nov. 22 (gage height, 6.82 ft, from floodmark), from rating curve extended above 220 mgd; minimum daily, 0.87 mgd (1.35 cfs) Oct. 13, 14.

1921-58: Maximum discharge, 1,780 mgd (2,750 cfs) Apr. 6, 1938 (gage height, 8.40 ft), from rating curve extended above 220 mgd; minimum, 0.2 mgd (0.3 cfs) Nov. 23-25, 1933, Oct. 2-5, 1938.

Remarks.--Records good except those for periods of doubtful or no gage-height record, which are fair. Water used for irrigation in central Maui.

Rating table, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

0.4	0.38	1.5	16.8
.5	1.08	2.0	44
.7	3.35	2.5	83
.9	6.5	3.0	140
1.2	13.4	3.5	218

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.9	3.35	3.65	2.45	9.3	29	2.2	3.4	1.01	0.94	51	0.80
2	3.35	2.8	2.65	*1.86	3.4	1.86	1.19	6.4	.87	.80	32	.73
3	3.0	16.7	2.3	1.86	2.3	1.08	.94	7.6	.73	1.75	21.5	.73
4	2.65	44	2.3	7.0	1.98	.94	.87	*65	.73	95	65	.73
5	2.3	13.6	4.9	3.85	1.86	1.08	1.42	108	2.85	13.3	29	.73
6	*2.1	4.7	2.55	1.98	1.98	18.1	16.4	101	4.8	2.8	8.2	.73
7	1.98	5.8	2.1	1.53	1.75	3.15	14.7	42	1.42	1.86	4.5	.66
8	1.86	4.1	2.3	7.8	1.30	1.42	19.8	35.5	1.01	1.42	3.85	.66
9	1.75	2.8	2.3	12.0	1.19	.94	22	19.6	.87	1.42	3.6	.66
10	1.64	2.3	2.2	3.85	1.08	.87	11.6	11.8	.80	1.08	3.25	.66
11	1.75	2.2	1.86	2.2	2.35	.80	13.0	17.2	1.01	1.01	4.3	.66
12	1.53	13.3	1.64	1.86	3.85	1.42	4.0	15.5	1.42	.94	2.8	.66
13	2.65	26	1.53	7.3	2.9	2.0	2.2	5.2	2.25	12.7	2.2	.66
14	10.3	21	1.42	11.7	3.65	7.6	1.98	8.6	24	6.8	1.86	*.59
15	6.8	9.7	1.30	107	1.86	23	1.42	5.2	47	5.1	1.75	1.01
16	6.0	40	1.30	90	1.42	d36.5	1.08	3.1	7.5	12.9	1.64	.94
17	3.55	78	1.19	60	1.30	d9.2	1.01	2.45	13.7	10.3	1.53	1.30
18	23	14.7	1.08	7.9	5.8	6.1	.94	4.9	11.1	5.7	1.42	1.98
19	6.1	5.1	1.08	3.35	3.55	2.65	31	2.8	*8.4	34.5	1.30	1.86
20	5.3	3.65	1.01	2.55	2.3	1.98	43	1.98	4.6	8.1	1.08	2.3
21	6.6	3.0	1.01	2.2	1.64	1.42	3.4	1.64	2.2	3.65	1.08	1.30
22	3.75	2.65	1.90	1.86	1.30	1.19	3.6	1.42	4.4	2.55	1.01	1.01
23	2.55	2.55	1.64	1.64	1.08	1.08	4.7	1.30	5.0	68	1.01	.87
24	2.1	2.8	1.08	1.42	1.01	.94	2.2	1.08	3.15	30	1.08	.94
25	1.98	3.1	1.08	1.42	.94	.87	5.5	1.01	3.85	95	1.08	2.3
26	1.86	2.45	1.19	1.53	.94	*.80	1.98	1.01	1.98	57	1.08	1.08
27	2.55	2.65	1.08	1.42	.87	.73	1.42	1.01	1.42	24.5	.94	.94
28	20	4.0	1.19	3.3	.80	.66	1.14	1.36	1.19	36	.94	.94
29	27.5	5.3	2.8	7.4	.80	.73	1.50	-	1.01	32	.87	1.01
30	8.8	11.6	4.1	12.6	.97	.80	1.75	-------	1.64	54	.80	.87
31	5.8	9.2	-------	8.7	-------	10.3	1.53	-------	1.30	-------	.80	-------
Total	176.00	363.10	57.73	381.53	65.47	169.21	219.47	477.06	163.21	621.12	252.47	30.31
Mean: mgd	5.68	11.7	1.92	12.3	2.18	5.46	7.08	17.0	5.26	20.7	8.14	1.01
cfs	8.79	18.1	2.97	19.0	3.37	8.45	11.0	26.3	8.14	32.0	12.6	1.56
Ac-ft	540	1,110	177	1,170	201	519	674	1,460	501	1,910	775	93

Calendar year 1956: Max 288 Min 0.29 Mean(mgd) 12.4 Mean(cfs) 19.2 Ac-ft 13,890
Fiscal year 1956-57: Max 108 Min 0.59 Mean(mgd) 8.16 Mean(cfs) 12.6 Ac-ft 9,130

Peak discharge (base, 450 mgd).--Oct. 14 (12 p.m.) 476 mgd (736 cfs), 4.65 ft.

* Discharge measurement made on this day.
d Doubtful gage-height record; discharge computed from reconstructed gage-height graph based on recorded graph.

5100. Kapaula Stream near Nahiku--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.94	12.2	5.6	2.3	2.65	80	10.0	7.0	7.0	4.2	1.86	22
2	1.98	6.1	8.2	1.64	2.2	10	6.3	4.0	3.0	3.7	5.4	14.7
3	3.5	51	5.4	1.42	1.86	15	5.3	2.4	*1.9	2.9	2.55	5.4
4	10.2	11.1	3.5	1.30	1.42	8.0	4.5	2.0	1.75	4.3	1.86	3.65
5	8.0	33	3.0	1.08	1.30	4.5	4.1	1.9	1.53	3.9	1.53	3.55
6	3.4	131	2.65	1.01	7.7	12	3.8	1.8	59	3.35	11.6	3.85
7	3.45	63	2.45	1.01	19.5	24	3.35	1.8	15.9	3.55	32	7.1
8	3.65	27.5	2.2	.94	13.5	8.0	3.65	1.7	4.4	2.8	30.5	5.3
9	4.8	8.6	1.98	.94	11.7	11	3.25	1.5	8.8	2.55	24	4.8
10	5.5	4.8	1.98	.94	9.8	72	3.0	1.4	24.5	2.2	13.6	3.1
11	2.55	3.5	1.86	1.19	8.2	152	2.8	1.4	8.4	2.1	30.5	3.15
12	1.98	6.2	1.75	.94	7.3	47	2.65	1.3	4.6	4.0	19.5	15.9
13	2.9	3.25	1.86	.87	3.1	22.5	2.55	1.3	12.5	2.65	9.2	4.7
14	3.75	4.8	1.53	.87	2.45	15.2	2.45	1.2	3.6	4.3	25.5	3.1
15	1.86	11.0	1.42	1.14	1.98	24.5	2.2	1.2	2.45	3.25	23.5	2.8
16	1.42	4.4	1.53	4.3	1.75	76	2.1	1.2	2.1	*2.85	28	2.3
17	8.0	3.5	7.0	4.6	1.53	34	1.98	1.2	1.98	3.8	10.3	1.98
18	3.7	4.5	13.9	2.75	1.64	26.5	1.98	1.1	1.85	2.3	7.3	1.75
19	16.7	6.8	5.3	1.64	2.1	20	1.98	1.0	4.0	1.75	16.6	1.53
20	15.8	4.2	3.2	1.76	1.42	79	*1.86	1.0	1.98	1.53	21.5	1.42
21	12.7	4.8	2.3	31.5	3.0	80	1.64	1.0	1.53	1.53	5.5	1.42
22	3.65	3.35	1.98	12.1	200	76	1.53	1.0	1.75	1.30	3.5	1.42
23	7.3	36.5	2.1	31	70	25.5	1.7	1.0	4.8	1.19	2.9	1.42
24	4.6	158	1.98	*16.2	90	10.8	2.9	1.5	21	2.1	2.65	1.30
25	9.2	9.2	1.98	3.55	44	20.5	1.7	2.5	5.9	1.53	3.0	2.95
26	*12.2	4.8	1.64	2.3	34	42	1.6	28	4.2	16.0	4.2	4.1
27	3.8	5.1	1.97	1.86	11	13.6	2.5	50	25.5	10.9	3.45	17.3
28	3.1	47	2.8	1.42	5.5	31	6.0	65	9.9	5.5	5.1	11.4
29	4.4	123	3.0	16.2	3.5	24	50	-	88	3.45	3.35	3.35
30	10.4	70	4.3	7.4	65	43	90	-------	47	2.2	7.7	2.45
31	43.0	11.6	-------	3.65	-------	13.8	44	-------	9.7	-------	9.1	-------
Total	217.43	873.80	100.36	159.82	629.10	1,121.4	273.37	187.4	390.52	107.68	367.25	159.19
Mean:												
mgd	7.01	28.2	3.35	5.16	21.0	36.2	8.82	6.69	12.6	3.59	11.8	6.31
cfs	10.8	43.6	5.18	7.98	32.5	56.0	13.6	10.4	19.5	5.55	18.3	8.22
Ac-ft	667	2,680	308	490	1,930	3,440	839	575	1,200	330	1,130	489

Calendar year 1957: Max 200 Min 0.59 Mean(mgd) 13.3 Mean(cfs) 20.6 Ac-ft 14,930
Fiscal year 1957-58: Max 200 Min 0.87 Mean(mgd) 12.6 Mean(cfs) 19.5 Ac-ft 14,080

Peak discharge (base, 450 mgd).--Aug. 24 (7:30 a.m.) 476 mgd (736 cfs), 4.61 ft; Aug. 29 (7:30 a.m.) 849 mgd (1,310 cfs), 5.75 ft; Nov. 22 (time unknown) 1,200 mgd (1,860 cfs), 6.82 ft.

* Discharge measurement made on this day.
Note.--No gage-height record Nov. 21 to Dec. 9, Jan. 23 to Mar. 3; discharge estimated on basis of records for nearby streams.

5120. Koolau ditch at Nahiku weir, near Nahiku

Location.--Lat 20°48'55", long 156°07'15", on right bank between Kapaula and Waiohue Stream, 1.8 miles southwest of Nahiku and 3.8 miles southeast of Keanae.

Records available.--February 1919 to June 1958. Gage-height records collected in this vicinity since 1904 are contained in files of East Maui Irrigation Co.

Gage.--Water-stage recorder and sharp-crested weir. Datum of gage is 1,289.14 ft above mean sea level, datum of 1929. Prior to Apr. 28, 1922, staff gage at same site and datum.

Average discharge.--39 years, 21.8 mgd (33.7 cfs).

Extremes.--1919-58: Maximum daily discharge, 60 mgd (93 cfs) Feb. 18, 24, 1956; no flow at times.

Remarks.--Records good except those for period of no gage-height record, which are fair. Flow regulated by spillways and gates. Ditch diverts water from nearly all streams from the Makapipi west to the Alo. Water used for irrigation in central Maui.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	27.5	26	23.5	11.8	31	27.5	12.4	16.8	11.8	9.6	54	9.0
2	23.5	22.5	20	10.4	19.4	9.6	9.9	26	10.5	9.0	52	8.5
3	22.5	36.5	18.0	10.5	16.1	8.8	9.3	30	10.2	11.0	38	8.5
4	20	50	18.0	26.5	14.7	8.2	8.8	*57	9.6	48	57	8.5
5	18.7	47	23.5	19.2	14.7	8.8	10.2	57	12.9	36	57	8.5
6	17.2	37	16.5	13.0	14.2	30	29	24	16.4	16.8	33.5	8.2
7	16.1	37	15.1	11.5	13.0	12.1	32	0	10.8	13.7	26.5	7.9
8	15.4	27.5	15.1	27.5	12.1	9.9	40	0	9.6	12.4	30.5	7.9
9	14.4	22.5	14.7	36	11.5	9.0	44	0	9.3	11.8	26.5	7.6
10	13.7	19.8	14.1	21	10.8	8.5	34	0	9.3	10.8	23.5	7.4
11	*13.0	18.3	13.0	15.8	12.7	8.2	37	0	9.6	10.2	26	7.4
12	13.0	38	12.4	14.1	16.8	9.6	19.4	0	10.5	9.3	21.5	6.8
13	15.4	47	11.8	28.5	16.1	9.9	14.4	0	12.4	44	19.4	7.1
14	31.5	47	11.5	32	19.8	14.8	14.4	0	39	37	18.3	6.8
15	24.5	42	11.2	52	13.7	29	12.7	0	52	29	17.2	7.6
16	23	44	10.8	52	12.1	50	11.8	0	23.5	32.5	16.1	7.9
17	19.1	50	10.5	52	11.5	29.5	11.2	0	37	37	15.4	8.2
18	41	47	10.2	37	22	24.5	10.2	0	33	28.5	14.7	9.9
19	34	42	9.9	29.5	18.0	17.2	32.5	0	28.5	54	14.4	9.9
20	28	34.5	9.3	24.5	14.4	14.1	49	6.6	19.1	42	13.4	10.8
21	31	26.5	9.0	21	11.5	12.7	21.5	14.4	14.1	26.5	12.7	8.2
22	23	*23.5	11.0	18.0	9.9	12.1	20.5	13.7	22	21.5	12.4	7.6
23	19.4	21.5	9.9	16.1	10.2	11.2	23.5	12.7	19.5	48	12.4	6.8
24	17.2	20.5	9.0	14.7	10.2	10.5	16.1	12.4	15.1	52	11.8	7.1
25	16.5	19.8	8.5	14.4	9.6	9.6	24.5	12.1	17.3	54	11.5	10.5
26	15.1	16.8	8.8	14.1	9.3	9.1	13.7	11.8	12.7	52	11.5	7.6
27	16.5	16.8	8.5	13.0	9.0	8.5	12.4	11.8	11.2	50	10.8	7.1
28	42	20	8.8	19.8	8.5	8.2	11.8	13.2	10.5	52	10.2	7.1
29	44	24.5	12.3	26.5	8.2	8.2	12.4	-	9.9	52	9.6	7.4
30	37	37	15.1	31.5	8.7	8.2	12.1	-------	11.2	52	9.6	6.8
31	34.5	37	-------	25	-------	30.5	11.2	-------	10.2	-------	9.3	-------
Total	727.7	999.5	390.0	738.9	409.8	468.0	621.9	319.5	528.7	962.6	696.7	240.6
Mean:												
mgd	23.5	32.2	13.0	23.8	13.7	15.1	20.1	11.4	17.1	32.1	22.5	8.02
cfs	36.4	49.8	20.1	36.8	21.2	23.4	31.1	17.6	26.5	49.7	34.8	12.4
Ac-ft	2,230	3,070	1,200	2,270	1,260	1,440	1,910	981	1,620	2,950	2,140	738

Calendar year 1956: Max 60 Min 8.2 Mean(mgd) 27.2 Mean(cfs) 42.1 Ac-ft 30,520
Fiscal year 1956-57: Max 57 Min 0 Mean(mgd) 19.5 Mean(cfs) 30.2 Ac-ft 21,810

* Discharge measurement made on this day.

5120. Koolau ditch at Nahiku weir, near Nahiku--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	*7.1	47	42	15.1	17.6	0	50	37	0	14.1	14.4	47
2	9.3	32	40	13.4	16.1	0	39.5	24.5	0	13.0	25.5	45
3	12.7	54	37	12.4	14.4	0	37	18.3	0	11.2	16.5	34.5
4	29.5	47	28	11.8	13.0	0	34.5	16.1	0	14.6	14.1	28
5	30	47	25	11.2	12.4	0	31	14.7	0	13.3	12.7	25.5
6	18.3	46	24	10.8	21.5	0	28	14.4	0	11.7	28	24
7	14.7	50	22	10.2	44	0	26.5	14.1	0	13.2	47	33.5
8	16.5	35.5	21	9.9	44	0	25.5	12.7	0	10.5	47	28
9	20	37.5	*20	9.6	44	0	24	11.8	0	9.9	47	27.5
10	22	37	18.7	9.6	42	0	22	11.2	0	8.8	42	22.5
11	15.4	30	18.0	10.2	39.5	0	21	10.5	0	9.0	47	22
12	13.7	34	17.2	9.3	39.5	0	19.8	9.9	0	11.1	47	44
13	16.8	25	16.8	8.8	26.5	0	18.7	9.3	0	9.3	31	30
14	18.7	32	15.4	8.5	22.5	0	18.0	9.3	0	12.4	44	23.5
15	14.1	50	14.7	9.7	19.1	0	16.8	9.0	0	12.4	47	21.5
16	12.7	27	14.4	17.3	16.8	0	16.1	8.8	0	*13.8	47	19.1
17	29	25	22	16.5	15.1	0	15.1	8.5	0	16.5	42	16.8
18	20.5	28	37	12.7	14.4	0	14.7	8.2	0	12.7	39.5	15.8
19	44	37	24	9.9	16.2	0	14.4	7.9	0	11.2	42	14.4
20	52	27	19.1	10.5	13.4	14.1	*13.8	7.6	1.79	10.8	44	13.7
21	42	28	16.1	48	17.7	42	12.7	7.4	5.6	10.5	34.5	13.0
22	25.5	23	15.1	42	14.4	42	12.1	7.4	7.1	9.9	26	12.7
23	34	37	15.1	50	0	42	12.7	7.1	12.9	9.6	22.5	12.1
24	19.4	55	14.4	*41	0	47	20.5	6.1	30	11.5	19.8	11.5
25	28	50	13.7	24	0	52	13.0	2.15	16.5	9.9	19.8	15.0
26	42	38	13.0	19.1	0	54	12.1	0	12.0	36	16.9	18.2
27	26	36	13.7	16.1	0	52	19.4	0	44	37.5	19.8	38.5
28	23.5	50	15.8	14.4	0	52	19.7	0	28	27.5	23.5	34
29	24	54	16.8	27	0	52	52	-	42	20	17.2	19.1
30	37	48	21	28	0	54	54	-------	47	15.8	28	16.1
31	54	50	-------	21.5	-------	52	52	-------	27	-------	34.5	-------
Total	772.4	1,217.0	631.0	558.5	524.1	555.1	766.6	293.95	273.89	427.7	987.2	726.5
Mean:												
mgd	24.9	39.3	21.0	18.0	17.5	17.9	24.7	10.5	8.84	14.3	31.8	24.2
cfs	38.5	60.8	32.5	27.9	27.1	27.7	38.2	16.2	13.7	22.1	49.2	37.4
Ac-ft	2,370	3,730	1,940	1,710	1,610	1,700	2,350	902	841	1,310	3,030	2,230

Calendar year 1957: Max 57 Min 0 Mean(mgd) 20.9 Mean(cfs) 32.3 Ac-ft 23,400
Fiscal year 1957-58: Max 55 Min 0 Mean(mgd) 21.2 Mean(cfs) 32.8 Ac-ft 23,720

* Discharge measurement made on this day.
Note.--No gage-height record Aug. 12 to Sept. 9; discharge estimated on basis of records for station at Keanae.

5150. Waiohue Stream near Nahiku

Location (revised).--Lat 20°49'05", long 156°07'45", on left bank 200 ft upstream from intake to Koolau ditch, 300 ft upstream from ditch trail, 2.4 miles southwest of Nahiku, and 3.5 miles southeast of Keanae.

Drainage area.--0.32 sq mi (revised).

Records available.--October 1921 to June 1958.

Gage.--Water-stage recorder.

Average discharge.--36 years (1922-58), 7.55 mgd (11.7 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 320 mgd (495 cfs) Oct. 15 (gage height, 4.57 ft), from rating curve extended above 95 mgd on basis of slope-area measurement of peak flow; minimum, 1.73 mgd (2.68 cfs) June 30.

1957-58: Maximum discharge during fiscal year, 520 mgd (805 cfs) Nov. 22 (gage height, 5.60 ft), from rating curve extended above 95 mgd as explained above; minimum, 1.80 mgd (2.79 cfs) July 1.

1921-58: Maximum discharge, 690 mgd (1,070 cfs) revised, Feb. 25, 1935, Apr. 7, 1938, from rating curve extended above 95 mgd on basis of slope-area measurements at gage heights 4.57 and 5.60 ft; maximum gage height, 6.24 ft Apr. 7, 1938; minimum discharge, 1.36 mgd (2.10 cfs) Oct. 9, 10, 1953.

Revisions.--The figures of maximum discharge for fiscal years 1923-55 have been revised, as shown in the following table. They supersede figures published in the water-supply papers indicated.

WSP	Year ending June 30	Date	Discharge (mgd)	Discharge (cfs)	Gage height (feet)
575	1923	Jan. 14, 1923	500	774	5.50
595	1924	Dec. 18, 1923	630	975	5.95
615	1925	Oct. 16, 1924	460	712	5.30
635	1926	Aug. 27, 1925	167	258	3.49
		Oct. 24, 1925			
655	1927	Apr. 17, 1927	520	805	5.63
675	1928	Dec. 9, 1927	420	650	5.10
695	1929	Feb. 17, 1929	380	588	4.87
710	1930	Dec. 18, 1929	600	928	5.94
725	1931	Nov. 18, 1930	570	882	5.75
740	1932	Feb. 13, 1932	360	557	4.80
755	1933	Dec. 31, 1932	420	650	5.11
770	1934	Apr. 25, 1934	305	472	4.51
795	1935	Feb. 25, 1935	690	1,070	6.16
815	1936	Nov. 14, 1935	400	619	5.00
835	1937	Jan. 1, 1937	480	743	5.42
865	1938	Apr. 7, 1938	690	1,070	6.24
885	1939	Feb. 27, 1939	480	743	5.37
905	1940	Sept. 3, 1939	217	336	3.94
935	1941	Aug. 12, 1940	540	836	5.68
965	1942	Mar. 8, 1942	540	836	5.71
985	1943	Dec. 13, 1942	480	743	5.40
1015	1944	Aug. 21, 1943	600	928	5.94
1045	1945	Dec. 26, 1944	179	277	3.60
1065	1946	Jan. 17, 1946	305	472	4.53
1095	1947	Dec. 17, 1946	380	588	4.87
1125	1948	Dec. 17, 1947	480	743	5.37
1155	1949	Sept. 27, 1948	380	588	4.92
1185	1950	Apr. 23, 1950	340	526	4.73
1219	1951	Feb. 19, 1951	245	379	4.12
1249	1952	Dec. 11, 1951	500	774	5.47
1289	1953	Mar. 4, 1953	400	619	4.99
1349	1954	Mar. 5, 1954	155	240	3.43
1399	1955	Feb. 7, 1955	440	681	5.18

Remarks.--Records good. Water used for irrigation in central Maui.

Revisions.--The figures of peak discharge for fiscal years 1948-50, 1952, 1953, have been revised as shown below, superseding those published in WSP 1125, 1155, 1185, 1249, and 1289.

Revised peak discharge.--1947-48: Dec. 17 (7 a.m.) 480 mgd (743 cfs); Jan. 25 (5 p.m.) 460 mgd (712 cfs); Apr. 1 (3:30 p.m.) 275 mgd (425 cfs).

1948-49: Aug. 16 (9 a.m.) 320 mgd (495 cfs); Sept. 27 (10 p.m.) 380 mgd (588 cfs).

1949-50: Apr. 23 (7 a.m.) 340 mgd (526 cfs), 4.73 ft; Apr. 27 (2 a.m.) 320 mgd (495 cfs), 4.60 ft.

1951-52: Dec. 11 (11 p.m.) 500 mgd (774 cfs), 5.47 ft; Feb. 19 (1:30 p.m.) 260 mgd (402 cfs), 4.24 ft.

1952-53: Mar. 4 (5 p.m.) 400 mgd (619 cfs), 4.99 ft; Mar. 9 (12 p.m.) 320 mgd (495 cfs), 4.62 ft.

5150. Waiohue Stream near Nahiku--Continued

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.5	4.5	3.9	2.8	5.7	9.2	2.5	3.55	2.5	2.05	*24.5	2.25
2	4.2	3.9	3.7	2.65	3.35	2.15	2.15	4.2	2.4	1.98	18.4	2.1
3	4.1	8.9	3.35	2.8	3.05	2.05	2.1	5.2	2.25	3.45	13.6	2.1
4	3.7	22.5	3.45	6.9	2.9	2.05	2.05	*34	2.25	40	31	2.05
5	3.55	8.3	4.4	3.65	2.9	2.15	2.4	48	3.4	5.9	15.9	2.05
6	*3.35	5.1	3.35	2.8	2.9	6.1	6.8	41	3.0	2.65	6.5	2.05
7	3.35	5.9	3.05	2.65	2.8	2.4	5.2	17.9	2.3	2.4	5.1	1.98
8	3.25	4.8	3.35	7.7	*2.55	2.05	8.0	13.5	2.25	2.25	4.5	1.92
9	3.05	4.1	3.25	8.9	2.5	1.98	12.1	8.7	2.15	2.25	4.4	1.92
10	3.25	3.9	3.05	3.35	2.4	1.92	5.2	6.4	2.15	2.1	4.1	1.92
11	3.15	*3.9	2.9	2.9	2.6	1.92	7.1	9.4	2.3	2.05	5.5	1.92
12	3.05	12.3	2.8	2.9	3.7	2.3	2.9	8.1	2.5	2.05	3.9	1.92
13	3.4	15.4	2.8	6.6	3.45	2.25	2.55	3.9	2.8	12.0	3.55	1.92
14	7.1	11.7	2.7	18.6	3.95	2.85	2.55	6.5	9.9	6.1	3.35	1.86
15	4.4	6.5	2.7	*43	2.8	7.0	2.4	4.1	17.2	5.5	3.25	2.3
16	4.5	25	2.65	*46	2.5	14.2	2.25	3.45	3.35	10.7	3.05	2.05
17	4.3	35.5	2.65	33.5	2.5	5.0	2.15	3.25	6.2	5.7	3.05	2.4
18	17.6	9.2	2.65	5.0	4.7	4.2	2.1	5.2	5.6	4.6	2.9	2.65
19	5.0	5.7	2.55	3.9	3.15	2.8	17.5	3.35	5.0	17.1	2.8	2.45
20	4.4	5.0	2.55	3.45	2.8	2.5	15.0	3.05	2.95	5.4	2.7	2.35
21	5.3	4.6	2.5	3.25	2.65	2.3	2.9	2.9	*2.4	3.7	2.65	*2.05
22	3.9	4.4	3.35	3.05	2.5	2.25	3.4	2.8	3.15	3.25	2.55	1.92
23	3.35	4.1	2.65	2.95	2.4	2.15	3.55	2.7	2.8	33.5	2.55	1.80
24	3.25	4.2	2.55	2.8	2.3	2.1	2.7	2.65	2.3	13.0	2.55	1.94
25	3.25	4.2	2.5	2.8	2.25	2.05	3.35	2.65	2.6	33.5	2.55	3.0
26	3.25	3.8	2.55	2.9	2.25	2.05	2.55	2.65	2.25	21	2.55	1.86
27	3.8	3.9	2.4	2.9	2.15	1.98	2.4	2.55	2.1	11.0	2.4	1.80
28	11.2	4.9	2.5	4.7	2.1	1.92	2.5	2.65	2.05	14.4	2.4	1.80
29	12.4	6.3	3.35	6.0	2.05	2.05	2.8	-	2.05	13.2	2.3	1.92
30	7.2	8.1	3.55	5.5	2.2	2.1	2.5	-------	2.25	22	2.25	1.73
31	6.0	7.6	-------	4.2	-------	9.6	2.4	-------	2.05	-------	2.25	-------
Total	156.10	258.2	89.70	251.10	86.05	107.62	136.05	254.30	108.45	304.78	189.05	61.98
Mean:												
mgd	5.04	8.33	2.99	8.10	2.87	3.47	4.39	9.08	3.50	10.2	6.10	2.07
cfs	7.80	12.9	4.63	12.5	4.44	5.37	6.79	14.0	5.42	15.8	9.44	3.20
Ac-ft	479	792	275	771	264	330	418	780	333	935	580	190

Calendar year 1956: Max 117 Min 1.92 Mean(mgd) 7.61 Mean(cfs) 11.8 Ac-ft 8,560
Fiscal year 1956-57: Max 48 Min 1.73 Mean(mgd) 5.49 Mean(cfs) 8.49 Ac-ft 6,150

Peak discharge (base, 300 mgd).--Oct. 15 (1 p.m.) 320 mgd (495 cfs), 4.57 ft.

* Discharge measurement made on this day.

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.92	7.2	5.7	2.7	3.05	26	6.5	4.9	4.1	3.35	2.9	15.6
2	2.4	5.0	8.3	2.5	3.05	5.4	5.4	3.55	2.95	3.05	5.8	*9.5
3	2.6	21	5.7	2.5	2.8	13.1	5.0	3.05	2.7	2.95	3.25	5.0
4	5.1	6.5	4.6	2.4	2.65	5.9	4.5	2.8	2.55	3.75	2.9	4.6
5	5.8	14.9	4.2	2.3	2.55	4.2	4.4	2.7	2.5	3.35	2.7	4.7
6	2.8	52	3.9	2.25	8.6	10.1	4.0	2.65	25.5	3.3	6.7	4.1
7	2.7	26	3.7	2.25	10.0	12.3	3.9	2.7	7.0	3.35	14.0	6.1
8	3.05	13.2	3.45	2.25	13.0	6.0	4.0	2.65	3.35	3.15	14.0	5.5
9	3.7	6.5	3.25	2.15	7.5	8.2	3.7	2.55	4.6	2.95	10.3	4.9
10	4.0	5.1	3.25	2.15	8.2	28.5	3.45	2.5	11.1	2.8	8.5	4.0
11	2.8	4.6	3.05	2.4	6.4	54	3.35	2.4	4.5	2.9	12.9	4.3
12	2.65	4.9	3.05	2.1	6.4	18.2	3.25	2.3	3.7	2.95	9.1	12.3
13	3.75	4.1	2.95	2.05	3.8	11.8	3.05	2.3	7.8	2.8	5.1	4.5
14	3.45	5.9	2.8	2.05	3.45	8.9	3.05	2.25	3.15	*2.95	12.4	4.0
15	2.55	7.1	2.8	2.25	3.15	11.3	2.95	2.25	2.8	2.8	12.2	3.7
16	2.4	4.4	2.8	2.4	2.95	27	2.9	2.25	2.7	2.8	14.8	3.35
17	8.3	4.1	7.0	3.2	2.9	14.3	2.8	2.15	2.65	3.25	6.0	3.15
18	4.2	4.6	*7.1	2.65	2.95	10.9	2.8	2.15	2.55	2.7	5.4	3.05
19	10.0	5.9	3.9	2.25	3.05	10.6	2.8	2.1	2.7	2.55	10.1	2.9
20	8.0	4.2	3.05	3.25	2.8	30.5	2.7	2.1	2.5	2.5	11.2	2.8
21	6.3	4.6	2.8	24	4.4	32.5	2.65	2.05	2.4	2.5	4.8	2.7
22	3.7	3.9	2.8	7.4	*118	28	2.55	2.05	2.5	2.4	4.1	2.65
23	6.1	20.5	2.8	15.7	32.5	14.7	*2.85	2.05	3.5	2.3	3.9	2.7
24	3.9	73	2.7	7.8	48	9.7	4.4	3.1	8.3	3.05	3.8	2.65
25	7.3	6.4	2.55	3.35	18.8	12.4	2.7	3.75	3.25	2.5	4.0	3.55
26	6.1	5.0	2.55	2.9	15.8	18.1	2.55	22.5	3.8	13.4	4.2	3.9
27	3.9	5.0	2.55	2.7	6.8	8.9	5.0	23.5	12.6	8.2	3.9	8.7
28	3.7	20	2.9	2.55	4.6	16.2	7.6	16.4	5.3	4.9	5.1	5.8
29	3.8	60	3.5	10.4	4.1	11.8	24.5	-	30.5	3.55	3.9	3.35
30	6.2	34	3.8	4.1	28.5	17.4	41	-------	17.1	2.95	6.6	2.95
31	18.4	7.6	-------	*3.85	-------	8.5	17.8	-------	4.8	-------	6.6	-------
Total	151.57	447.2	113.50	132.80	380.75	495.4	188.10	127.70	195.45	105.95	221.15	147.00
Mean:												
mgd	4.89	14.4	3.78	4.28	12.7	16.0	6.07	4.56	6.30	3.53	7.13	4.90
cfs	7.57	22.3	5.85	6.62	19.6	24.8	9.39	7.06	9.75	5.46	11.0	7.58
Ac-ft	465	1,370	348	408	1,170	1,520	577	392	600	325	679	451

Calendar year 1957: Max 118 Min 1.73 Mean(mgd) 7.60 Mean(cfs) 11.8 Ac-ft 8,520
Fiscal year 1957-58: Max 118 Min 1.92 Mean(mgd) 7.42 Mean(cfs) 11.5 Ac-ft 8,300

Peak discharge (base, 300 mgd).--Nov. 22 (1 p.m.) 520 mgd (805 cfs), 5.60 ft.

* Discharge measurement made on this day.

5160. Kopiliula Stream near Keanae
(Formerly published as West Kopiliula Stream near Keanae)

Location (revised).--Lat 20°49'05", long 156°08'12", on left bank 600 ft upstream from Koolau ditch crossing and highway bridge and 3 miles southeast of Keanae Post Office.

Drainage area.--4.31 sq mi (revised).

Records available.--January 1914 to September 1917, October 1921 to January 1958 (discontinued). Prior to July 1956, published as West Kopiliula Stream near Keanae.

Gage.--Water-stage recorder. Datum of gage is 1,292.30 ft above mean sea level, datum of 1929. Prior to Dec. 9, 1935, at several sites within 200 ft of present site at various datums.

Average discharge.--35 years (1915-17, 1922-34, 1936-57), 17.5 mgd (27.1 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 1,120 mgd (1,730 cfs) Apr. 4 (gage height, 5.30 ft), from rating curve extended above 75 mgd by logarithmic plotting; minimum, 1.08 mgd (1.67 cfs) June 12, 13, 14.

1957-58: Maximum discharge during period July to January, 1,480 mgd (2,290 cfs) Nov. 22 (gage height, 5.90 ft), from rating curve extended above 75 mgd by logarithmic plotting; minimum, 1.20 mgd (1.86 cfs) July 1.

1914-17, 1921-58: Maximum discharge, 5,050 mgd (7,810 cfs) Jan. 26, 1948 (gage height, about 9.5 ft), from rating curve extended above 75 mgd by logarithmic plotting; minimum, 0.6 mgd (0.9 cfs) Sept. 15-17, 1917.

Remarks.--Records good except those above 75 mgd and those for periods of no gage-height record, which are poor. Water used for irrigation in central Maui.

Revisions (fiscal years).--WSP 755: 1931-32.

Rating tables, July 1, 1956, to Jan. 15, 1958 (gage height, in feet, and discharge, in million gallons a day)

July 1, 1956, to Apr. 4, 1957

-0.1	0.60	1.7	66
0.0	1.20	1.9	86
.1	2.1	2.1	109
.3	4.8	2.5	165
.6	10.9	3.0	260
.9	19.2	4.0	550
1.3	36		

Apr. 5, 1957, to Jan. 15, 1958

0.6	10.9	1.6	60
.9	21.5	1.8	77
1.0	26	1.9	86
1.2	36		
1.4	47		

Note.--Same as preceding table below 0.6 ft and above 1.9 ft.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	5.2	4.4	4.4	2.4	8.4	39	2.65	4.1	2.2	1.90	49	1.65
2	4.4	3.6	3.3	2.3	3.95	3.1	1.63	7.6	2.0	1.72	31	1.56
3	3.75	16.7	3.05	2.4	3.05	2.2	1.45	9.8	1.90	3.05	*24	1.56
4	3.3	33	3.4	8.2	2.75	1.81	1.36	62	1.81	160	53	1.47
5	3.05	14.1	7.3	4.7	2.65	4.8	2.35	173	5.6	17.6	31	1.47
6	2.9	6.7	3.05	2.75	2.9	12.4	13.8	167	5.3	6.1	14.3	1.38
7	2.75	11.5	2.65	2.2	2.4	3.85	14.2	75	2.55	4.2	10.2	1.38
8	2.65	10.6	3.05	12.8	2.0	2.4	21.5	62	2.1	3.3	8.3	1.29
9	2.55	6.4	2.9	12.5	1.90	1.90	25	30.5	1.90	2.95	8.4	1.20
10	5.2	4.4	2.65	4.7	1.90	1.63	15.2	19.5	1.81	2.6	8.5	1.20
11	*3.75	4.0	2.3	3.05	4.2	1.45	14.1	21	2.1	2.35	8.8	1.20
12	2.65	15.7	2.2	2.65	4.7	3.1	6.1	17.4	2.2	2.35	6.3	1.20
13	4.6	23	2.1	10.4	3.15	2.9	3.75	9.4	3.25	14.2	5.2	1.20
14	12.7	19.6	2.0	24	3.7	6.3	3.3	11.9	21	6.2	4.4	1.08
15	8.1	*11.6	2.2	118	2.3	17.4	2.65	7.3	48	6.4	3.75	1.86
16	8.8	56	2.2	91	2.0	29.5	2.3	5.8	9.4	15.4	3.45	1.92
17	5.0	68	1.81	43	1.90	10.3	2.0	4.5	12.6	11.7	3.2	1.90
18	19.1	15.3	1.81	10.0	9.5	7.6	1.81	7.8	10.1	7.1	3.05	2.6
19	5.7	8.3	1.72	6.2	5.2	3.75	23.5	4.8	11.0	28	2.95	2.15
20	7.0	6.1	1.63	4.5	3.3	*2.9	60	3.75	6.5	8.4	2.7	2.45
21	8.7	4.8	1.63	3.6	2.4	2.4	7.1	3.3	3.9	5.4	2.45	1.56
22	4.8	4.0	4.7	3.05	2.1	2.1	6.5	3.05	8.2	4.0	2.35	1.38
23	3.45	3.9	2.0	2.65	1.90	1.81	8.1	2.9	8.0	67	2.35	1.20
24	3.05	4.4	1.63	2.3	1.81	1.72	3.9	2.65	5.6	27.5	2.35	1.48
25	2.9	4.7	1.54	2.1	1.63	1.54	9.9	2.4	7.3	93	2.35	3.45
26	2.75	3.3	1.81	2.1	1.54	1.45	3.75	2.4	4.0	60	2.35	1.47
27	3.5	3.75	1.54	2.0	1.45	1.36	3.05	2.4	3.3	30	2.1	1.29
28	20.5	5.4	1.81	4.3	1.36	1.28	2.6	2.4	2.65	37.5	1.92	1.20
29	22.5	6.0	4.8	7.6	1.36	1.36	3.15	-	2.4	37	1.83	1.38
30	9.7	12.3	4.4	11.5	3.75	1.45	3.5	-------	3.3	52	1.74	1.20
31	6.6	9.5	-------	7.8	-------	10.2	*2.55	-------	2.4	-------	1.65	-------
Total	201.60	401.05	81.58	416.75	91.15	184.96	272.75	725.65	204.37	718.92	304.94	47.33
Mean:												
mgd	6.5	12.9	2.72	13.4	3.04	5.97	8.80	25.9	6.59	24.0	9.84	1.58
cfs	10.1	20.0	4.21	20.7	4.70	9.24	13.6	40.1	10.2	37.1	15.2	2.44
Ac-ft	619	1,230	250	1,280	280	568	837	2,230	627	2,210	936	145

Calendar year 1956: Max 550 Min 1.28 Mean(mgd) 16.0 Mean(cfs) 24.8 Ac-ft 18,020
Fiscal year 1956-57: Max 173 Min 1.08 Mean(mgd) 10.0 Mean(cfs) 15.5 Ac-ft 11,210

Peak discharge (base, 1,000 mgd).--Apr. 4 (9 a.m.) 1,120 mgd (1,730 cfs), 5.30 ft.

* Discharge measurement made on this day.

5160. Kopiliula Stream near Keanae--Continued

Discharge, in million gallons a day, fiscal year July 1957 to January 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.56	15.1	10.2	2.95	4.2	66	13.3					
2	2.35	8.7	9.8	2.45	4.0	13.3	10.0					
3	3.7	54	7.1	2.35	3.6	20	8.3					
4	11.9	14.6	5.4	2.1	2.8	12.5	7.3					
5	6.7	35	4.6	2.1	2.45	7.7	6.5					
6	3.7	169	4.2	2.0	9.7	17.0	a5.8					
7	2.7	66	3.75	2.0	17.2	25.0	a5.0					
8	4.0	28	3.45	1.92	12.1	12.5	a5.4					
9	5.6	12.8	3.3	1.92	13.6	13.9	a6.1					
10	6.2	8.5	3.05	1.83	10.9	66	a4.8					
11	3.3	6.5	2.95	2.1	8.0	233	a4.4					
12	2.7	6.5	2.8	1.83	7.3	47	a3.9					
13	3.5	4.6	2.8	1.83	4.2	26	a3.6					
14	3.8	6.6	2.7	1.74	3.6	19.2	a3.2					
15	2.2	12.3	2.6	2.55	3.3	26.5	a2.95					
16	2.0	5.6	2.6	8.4	2.95	87	†3.04					
17	8.9	5.0	6.7	5.4	2.6	37	-					
18	3.7	6.1	*12.7	3.5	2.7	28.5	-					
19	17.4	7.9	8.4	2.35	2.8	22	-					
20	17.0	5.4	4.8	3.4	2.7	74	-					
21	13.8	5.8	3.05	31	6.7	74	-					
22	5.2	4.4	2.8	14.6	412	67	-					
23	7.6	39.5	2.95	33.5	83	26	-					
24	5.8	252	2.8	23	104	15.0	-					
25	8.8	14.5	2.7	7.3	42	20	-					
26	13.6	8.1	2.45	4.4	39.5	35	-					
27	5.0	7.7	2.85	3.3	15.8	15.8	-					
28	4.0	43	4.0	2.7	8.5	26	-					
29	6.4	226	4.1	17.0	5.9	26	-					
30	13.9	76	4.5	9.9	84	38	-					
31	42	17.0	-------	*4.8	-------	17.9	-					
Total	239.01	1,172.2	136.10	206.22	922.10	1,214.8	-					
Mean:												
mgd	7.71	37.8	4.54	6.65	30.7	39.2	-					
cfs	11.9	58.5	7.02	10.3	47.5	60.7	-					
Ac-ft	733	3,600	418	633	2,830	3,730	-					

Calendar year 1957: Max 412 Min 1.08 Mean(mgd) 16.9 Mean(cfs) 26.1 Ac-ft 18,930
Fiscal year 1957-58: Max - Min - Mean(mgd) - Mean(cfs) - Ac-ft -

Peak discharge (base, 1,000 mgd).--Aug. 24 (8 a.m.) 1,300 mgd (2,010 cfs), 5.64 ft; Aug. 29 (7:30 a.m.) 1,360 mgd (2,100 cfs), 5.67 ft; Nov. 22 (3:30 p.m.) 1,480 mgd (2,290 cfs), 5.90 ft.

* Discharge measurement made on this day.
† Result of discharge measurement.
a No gage-height record; discharge estimated on basis of records for nearby streams.

5170. East Wailuaiki Stream near Keanae

Location.--Lat 20°49'05", long 156°08'25", on left bank 950 ft (revised) upstream from Koolau ditch crossing and trail and 3 miles southeast of Keanae Post Office.

Drainage area.--3.7 sq mi, approximately.

Records available.--December 1913 to October 1917, July 1922 to January 1958 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 1,329 ft above mean sea level (by vertical angles). Dec. 21, 1913, to Oct. 23, 1917, at site 50 ft downstream.

Average discharge.--37 years (1915-17, 1922-57), 19.7 mgd (30.5 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 1,480 mgd (2,290 cfs) Oct. 15 (gage height, 7.45 ft), from rating curve extended above 310 mgd by logarithmic plotting; minimum, 1.46 mgd (2.25 cfs) June 30.

1957-58: Maximum discharge during period July to January, 2,250 mgd (3,480 cfs) Nov. 22 (gage height, 8.37 ft), from rating curve extended above 310 mgd by logarithmic plotting; minimum, 1.70 mgd (2.63 cfs) Oct. 14, 15.

1913-17, 1922-58: Maximum discharge, 3,060 mgd (4,730 cfs) Apr. 6, 1938 (gage height, 9.26 ft), from rating curve extended above 310 mgd by logarithmic plotting; minimum, 0.85 mgd (1.32 cfs) Oct. 10, 1953.

Remarks.--Records good. Water used for irrigation in central Maui.

Rating table, July 1, 1956, to Jan. 15, 1958 (gage height, in feet, and discharge, in million gallons a day)

0.5	1.46	2.5	51
.6	1.94	3.0	88
.7	2.5	3.5	138
.8	3.2	4.0	213
1.0	4.9	4.5	310
1.2	7.3	5.0	425
1.5	12.5	5.5	570
2.0	27		

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	6.5	5.6	5.0	3.35	10.4	44	3.5	5.2	2.7	2.4	88	2.3
2	5.6	4.7	4.4	3.35	4.0	2.95	2.15	8.7	2.5	2.2	49	2.2
3	5.1	35.5	4.1	3.4	3.5	2.1	2.0	10.2	2.45	4.5	40	2.2
4	4.6	71	4.8	11.7	3.15	1.89	1.89	107	2.35	165	105	2.15
5	4.4	20	9.1	5.0	3.0	6.0	3.25	229	8.4	22	48	2.05
6	4.2	8.0	3.95	3.0	*3.4	14.0	26	241	6.4	5.7	16.4	2.0
7	4.0	15.4	3.7	2.65	2.85	3.55	18.7	126	2.8	4.2	10.5	1.94
8	3.85	10.9	4.5	25	2.5	2.35	29.5	97	2.45	3.6	8.4	1.89
9	3.7	6.2	4.1	19.4	2.45	2.0	37.5	51	2.3	3.35	7.4	1.89
10	12.5	4.8	3.75	5.2	2.45	1.84	17.1	24.5	2.2	*2.9	7.4	1.84
11	*4.9	4.9	3.3	3.5	5.5	1.70	19.6	28	2.5	2.7	9.7	1.89
12	3.75	33.5	3.05	3.05	5.4	3.85	5.2	22.5	*2.8	3.0	6.8	1.80
13	6.9	53	2.9	16.7	3.85	3.2	3.6	9.7	4.1	24.5	5.6	1.89
14	25	34.5	2.85	18.7	4.0	7.4	3.35	14.4	37.5	7.4	4.9	1.70
15	9.9	13.5	3.15	198	2.65	24.5	2.8	7.4	68	10.1	4.5	2.6
16	9.8	69	2.85	152	2.4	52	2.5	5.6	9.2	26	4.4	2.4
17	6.0	133	2.55	88	2.4	11.2	2.3	4.8	14.5	10.6	4.1	*2.45
18	37	21	2.55	10.4	11.3	8.4	2.2	8.8	12.3	6.5	4.1	3.8
19	6.6	8.8	2.45	6.1	4.4	3.85	37	5.0	12.8	44	3.85	3.2
20	7.8	6.6	2.4	4.9	3.05	*3.05	62	4.2	6.1	9.1	3.6	3.5
21	11.5	5.7	2.35	4.3	2.5	2.55	6.1	3.9	3.9	5.7	3.35	2.4
22	5.5	5.1	9.2	3.75	2.4	2.4	6.2	3.7	9.4	4.5	3.2	1.94
23	4.4	5.1	2.85	3.45	2.2	2.2	7.7	3.5	7.3	108	3.2	1.70
24	4.0	5.2	2.2	3.15	2.1	2.15	3.6	3.3	4.8	45	3.2	2.1
25	4.0	6.1	*2.25	3.05	2.0	2.0	6.3	3.1	7.0	136	3.3	6.0
26	3.6	4.4	2.6	2.9	1.94	1.94	3.2	3.0	3.7	97	3.15	2.15
27	5.1	5.3	2.35	2.8	1.89	1.84	2.7	3.05	3.15	39	2.85	1.80
28	43	7.7	2.5	5.3	1.84	1.75	2.55	2.9	2.7	52	2.7	1.70
29	48	10.6	8.8	13.2	1.80	1.88	3.05	-	2.65	47	2.5	1.94
30	13.9	19.8	6.6	12.0	1.90	1.94	3.75	-------	4.0	88	2.45	1.65
31	8.2	14.0	-------	8.2	-------	20	2.8	-------	2.7	-------	2.35	-------
Total	323.30	648.9	117.15	645.50	103.22	240.48	330.09	1,036.45	255.65	981.95	463.90	69.07
Mean:												
mgd	10.4	20.9	3.90	20.8	3.44	7.76	10.6	37.0	8.25	32.7	15.0	2.30
cfs	16.1	32.3	6.03	32.2	5.32	12.0	16.4	57.2	12.8	50.6	23.2	3.56
Ac-ft	992	1,990	360	1,980	317	738	1,010	3,180	785	3,010	1,420	212

Calendar year 1956: Max 640 Min 1.70 Mean(mgd) 21.2 Mean(cfs) 32.8 Ac-ft 23,780
Fiscal year 1956-57: Max 241 Min 1.65 Mean(mgd) 14.3 Mean(cfs) 22.1 Ac-ft 15,990

Peak discharge (base, 600 mgd).--Oct. 15 (12:30 a.m.) 1,480 mgd (2,290 cfs), 7.45 ft; Feb. 5 (11:30 a.m.) 605 mgd (936 cfs), 5.58 ft; Apr. 4 (11 a.m.) 680 mgd (1,050 cfs), 5.83 ft.

* Discharge measurement made on this day.

5170. East Wailuaiki Stream near Keanae--Continued

Discharge, in million gallons a day, fiscal year July 1957 to January 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.15	19.5	10.8	3.15	3.85	86	14.5					
2	3.65	8.6	11.6	2.7	3.6	14.3	10.5					
3	6.0	83	7.8	2.5	3.05	42	9.1					
4	16.8	15.6	6.1	2.4	2.7	15.3	7.8					
5	7.4	52	5.4	2.35	2.55	7.6	6.9					
6	4.2	250	5.0	2.2	17.9	24.5	6.4					
7	3.55	101	4.6	2.2	28.5	39.5	6.0					
8	5.1	39.5	4.4	2.1	17.5	14.6	6.4					
9	6.7	13.8	4.0	2.1	20	18.0	5.8					
10	8.7	8.9	3.95	2.05	13.9	121	5.2					
11	3.85	6.8	3.75	2.5	9.2	346	5.0					
12	3.6	6.5	3.7	2.0	7.8	83	4.8					
13	5.1	5.3	3.5	1.84	4.4	38.5	4.5					
14	5.2	9.9	3.3	1.80	3.85	23	4.4					
15	2.85	14.3	3.15	3.3	3.35	34.5	4.2					
16	2.65	5.7	3.35	17.8	3.05	146	†4.42					
17	15.6	5.6	13.3	8.5	2.85	58	-					
18	5.4	6.4	22	4.2	2.85	42	-					
19	29.5	9.3	9.0	2.55	2.65	32	-					
20	24	5.7	4.6	4.1	2.4	130	-					
21	18.7	6.4	3.45	61	6.8	138	-					
22	5.7	4.9	3.15	19.6	455	123	-					
23	8.6	77	3.5	51	138	40	-					
24	6.0	259	3.35	28.5	174	21	-					
25	14.4	15.8	3.15	7.7	68	29	-					
26	14.1	8.2	2.9	4.3	60	53	-					
27	5.2	8.4	3.7	3.45	18.3	20	-					
28	4.7	87	4.3	3.05	8.8	41	-					
29	6.9	202	4.4	32.5	6.4	40	-					
30	16.1	127	5.6	11.0	126	68	-					
31	71	21	-------	4.9	-------	22	-					
Total	333.40	1,484.1	170.80	299.34	1,217.25	1,910.8	-					
Mean:												
mgd	10.8	47.9	5.69	9.66	40.6	61.6	-					
cfs	16.7	74.1	8.80	14.9	62.8	95.3	-					
Ac-ft	1,020	4,550	524	919	3,740	5,860	-					

Calendar year 1957: Max 455 Min 1.65 Mean(mgd) 23.4 Mean(cfs) 36.2 Ac-ft 26,230
Fiscal year 1957-58: Max - Min - Mean(mgd) - Mean(cfs) - Ac-ft -

Peak discharge (base, 600 mgd).--Aug. 6 (5:30 a.m.) 680 mgd (1,050 cfs),5.84 ft; Aug. 24 (7:30 a.m.) 1,030 mgd (1,590 cfs), 6.65 ft; Aug. 29 (8:30 a.m.) 1,180 mgd (1,830 cfs), 6.92 ft; Nov. 22 (1 p.m.) 2,250 mgd (3,480 cfs), 8.37 ft; Nov. 30 (6 p.m.) 840 mgd (1,300 cfs),6.17 ft; Dec. 11 (5:30 a.m.) 605 mgd (936 cfs),5.56 ft.

* Discharge measurement made on this day.
† Result of discharge measurement.

5180. West Wailuaiki Stream near Keanae

Location.--Lat 20°49'15", long 156°08'37" (revised), on left bank 500 ft upstream from Koolau ditch crossing and trail bridge and 2.8 miles south of Keanae Post Office.

Drainage area.--3.66 sq mi (revised).

Records available.--January 1914 to October 1917, November 1921 to June 1958.

Gage.--Water-stage recorder. Datum of gage is 1,344 ft above mean sea level (by vertical angles).

Average discharge.--36 years (1922-58), 23.9 mgd (37.0 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 1,660 mgd (2,570 cfs) Oct. 14 (gage height, 8.20 ft), from rating curve extended above 420 mgd by logarithmic plotting; minimum, 1.58 mgd (2.44 cfs) June 14.

1957-58: Maximum discharge during fiscal year, 2,020 mgd (3,130 cfs) Nov. 22 (gage height, 9.15), from rating curve extended above 420 mgd by logarithmic plotting; minimum, 1.20 mgd (1.86 cfs) Oct. 15.

1914-17, 1921-58: Maximum discharge, 4,500 mgd (6,960 cfs) Jan. 14, 1923 (gage height, about 13.5 ft, from floodmarks), from rating curve extended above 420 mgd by logarithmic plotting; minimum, 0.3 mgd (0.5 cfs) July 26, 1922.

Remarks.--Records good. Water used for irrigation in central Maui.

Rating tables, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

July 1, 1956, to Nov. 22, 1957

0.4	1.20	2.2	51
.6	2.4	2.6	81
.8	4.0	3.0	121
1.0	6.3	3.5	185
1.2	9.5	4.0	270
1.4	14.2	5.0	510
1.8	29.5	6.0	835

Nov. 23, 1957, to June 30, 1958

0.5	2.0	1.0	7.0
.6	2.7	1.2	10.4
.7	3.55	1.4	15.0
.8	4.5	1.6	21

Note.--Same as preceding table above 1.6 ft.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	7.0	6.6	5.7	3.75	9.4	55	4.6	5.1	3.4	3.25	99	2.45
2	5.9	5.7	5.0	3.65	5.0	4.0	3.0	8.1	3.15	3.0	58	2.3
3	6.3	32.5	4.5	3.65	4.5	2.85	2.75	9.4	3.0	4.3	48	2.55
4	5.7	73	5.3	12.0	4.0	2.55	2.55	104	2.85	222	110	2.7
5	4.8	23.5	8.7	6.6	4.0	10.7	3.65	300	8.9	29	61	2.25
6	4.5	9.5	4.3	3.95	4.0	17.9	20.5	298	7.1	8.0	21	2.1
7	4.3	19.6	4.0	3.3	3.5	5.2	20	132	3.65	6.0	13.1	2.0
8	4.0	13.0	4.8	23	*3.15	3.4	31.5	126	3.15	5.2	10.1	1.93
9	*3.95	7.6	4.2	17.5	3.0	2.85	44	68	3.0	4.8	9.6	1.93
10	24	5.9	3.85	6.4	3.0	2.55	21.5	31	2.9	4.3	8.8	1.87
11	7.1	5.8	3.4	4.6	6.2	2.3	19.5	31.5	3.15	3.95	11.2	1.93
12	4.3	29	3.15	4.0	5.6	4.4	7.0	28	*3.25	3.75	8.5	1.80
13	7.1	50	3.05	14.7	4.1	3.7	5.0	12.0	4.6	23	6.8	1.87
14	24.5	36.5	3.0	38.5	4.4	7.0	4.6	13.5	38	8.6	5.9	1.69
15	10.6	15.0	3.7	199	3.15	22.5	4.0	9.0	82	14.7	5.4	2.7
16	10.1	79	3.25	169	2.9	55	3.6	7.4	12.0	20.5	5.0	2.6
17	7.0	136	2.7	82	2.9	12.5	3.25	6.3	15.0	12.1	*4.6	*2.45
18	34	22.5	2.55	13.1	11.2	*9.6	3.05	9.8	12.7	8.1	4.6	4.5
19	8.0	10.5	2.45	8.1	5.6	5.4	25	6.3	12.2	39	4.1	4.0
20	8.2	8.0	2.4	6.4	4.0	4.4	63	5.3	7.4	10.1	3.85	4.1
21	11.6	6.8	2.3	5.4	3.3	3.85	7.6	5.0	5.3	7.2	3.65	2.9
22	6.8	5.9	9.8	4.8	3.05	3.5	8.4	4.5	10.9	5.8	3.5	2.45
23	5.2	5.8	3.05	4.3	2.9	3.25	9.3	4.3	9.1	111	3.6	1.95
24	4.6	5.7	2.4	3.95	2.7	3.0	5.2	4.0	6.3	50	3.5	2.35
25	4.5	6.4	*2.4	3.75	2.45	2.75	7.1	3.85	7.4	149	3.5	7.0
26	4.1	4.7	2.75	3.65	2.4	2.6	4.5	3.75	5.4	108	3.25	2.75
27	5.6	5.7	2.55	3.4	2.25	2.45	3.85	3.95	4.3	47	3.05	2.2
28	40	7.4	2.7	5.5	2.1	2.3	3.55	3.75	3.85	61	2.9	2.0
29	50	8.9	8.1	11.7	2.25	2.45	4.2	-	3.75	61	2.75	2.25
30	13.4	17.8	6.2	11.2	2.3	2.55	4.7	-------	5.0	99	2.7	1.87
31	9.0	12.9	-------	9.2	-------	19.1	3.65	-------	3.65	-------	2.55	-------
Total	346.15	677.2	122.25	690.05	119.30	281.60	354.10	1,243.80	296.35	1,132.65	533.50	77.44
Mean:												
mgd	11.2	21.8	4.08	22.3	3.98	9.08	11.4	44.4	9.56	37.8	17.2	2.58
cfs	17.3	33.7	6.31	34.5	6.16	14.0	17.6	68.7	14.8	58.5	26.6	3.99
Ac-ft	1,060	2,080	375	2,120	366	864	1,090	3,820	909	3,480	1,640	238

Calendar year 1956. Max 866 Min 2.1 Mean(mgd) 24.1 Mean(cfs) 37.3 Ac-ft 27,040
Fiscal year 1956-57: Max 300 Min 1.69 Mean(mgd) 16.1 Mean(cfs) 24.9 Ac-ft 18,040

Peak discharge (base, 1,200 mgd).--Oct. 14 (12 p.m.) 1,660 mgd (2,570 cfs), 8.20 ft.

* Discharge measurement made on this day.

5180. West Wailuaiki Stream near Keanae--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.4	22.5	12.5	3.25	4.0	88	16.4	19.3	14.9	9.7	4.5	32.5
2	4.0	9.9	11.3	2.75	3.6	15.8	12.3	10.6	6.4	9.3	7.8	19.5
3	6.9	91	8.5	2.4	3.05	57	10.4	7.2	5.0	6.7	4.4	8.7
4	16.6	22	6.8	2.0	2.7	19.1	8.6	5.9	4.2	8.9	3.9	7.0
5	7.5	59	5.8	1.87	2.55	10.0	7.5	5.6	*3.8	7.6	3.45	6.2
6	4.9	309	5.2	1.80	16.7	27	6.6	5.3	72	6.9	26	7.8
7	4.1	115	4.7	1.74	26	46	6.0	5.8	34.5	6.4	60	11.6
8	6.1	45	4.4	1.63	16.7	17.5	6.4	5.8	9.6	5.8	53	9.4
9	7.0	15.8	4.0	1.52	20	19.9	5.8	4.4	17.8	5.1	36.5	7.2
10	8.0	10.3	3.75	1.58	13.6	136	5.1	4.0	32	4.6	21.5	5.6
11	4.5	8.0	3.6	2.1	8.7	397	4.7	3.75	27	4.7	47	5.7
12	3.8	7.0	3.5	1.58	7.1	96	4.5	3.45	11.5	8.8	30	29
13	4.9	5.8	3.4	1.42	4.5	44	4.2	3.2	27.5	6.2	14.2	7.2
14	5.3	9.2	3.25	1.31	3.95	27	4.0	3.15	7.8	*7.0	47	5.8
15	3.25	13.8	3.0	2.65	3.3	41	3.85	2.95	5.6	5.6	41	5.1
16	3.05	6.3	*3.3	19.5	3.0	160	3.55	2.8	5.0	5.6	48	4.5
17	12.4	6.0	11.9	8.1	2.75	72	3.45	2.7	4.7	6.3	19.0	4.1
18	5.4	6.4	23.5	4.4	2.6	48	3.9	2.65	4.2	4.3	15.6	4.0
19	28	8.6	8.3	3.05	2.45	37	3.55	2.45	6.1	3.85	30	3.55
20	24.5	5.9	5.2	3.85	2.25	145	3.2	2.35	4.0	3.75	41	3.3
21	18.3	6.3	3.95	55	6.7	162	2.95	2.35	3.85	3.9	12.4	3.2
22	6.4	5.0	3.5	21.5	550	148	*2.8	2.3	5.1	3.3	8.7	3.15
23	8.3	50	3.75	58	123	44	3.5	2.15	9.1	3.2	7.2	3.15
24	6.4	368	3.6	37.5	197	23.5	12.6	5.2	27	5.3	6.3	2.9
25	14.5	19.3	3.25	9.2	73	30	4.2	11.2	9.2	3.55	6.7	6.8
26	13.4	9.6	3.0	5.0	65	50	3.15	77	6.0	24.5	9.1	6.1
27	5.9	8.8	4.1	3.85	20.5	21.5	6.0	60	25.5	12.6	6.1	30.5
28	5.2	86	4.2	3.15	10.7	43	29	86	16.3	12.5	9.7	18.0
29	*6.8	297	4.1	32	7.8	47	149	-	169	9.0	6.4	5.2
30	15.4	145	5.4	13.4	139	77	235	-------	100	5.1	10.5	4.2
31	84	29	-------	5.3	-------	25	108	-------	18.2	-------	14.2	-------
Total	347.20	1,800.5	174.75	312.40	1,342.20	2,174.3	680.20	349.55	692.85	210.05	651.15	270.95
Mean:												
mgd	11.2	58.1	5.82	10.1	44.7	70.1	21.9	12.5	22.4	7.00	21.0	9.03
cfs	17.3	89.9	9.00	15.6	69.2	108	33.9	19.3	34.7	10.8	32.5	14.0
Ac-ft	1,070	5,530	536	959	4,120	6,670	2,090	1,070	2,130	645	2,000	832

Calendar year 1957. Max 550 Min 1.31 Mean(mgd) 26.8 Mean(cfs) 41.5 Ac-ft 30,060
Fiscal year 1957-58: Max 550 Min 1.31 Mean(mgd) 24.7 Mean(cfs) 38.2 Ac-ft 27,650

Peak discharge (base, 1,200 mgd).--Aug. 24 (8:30 a.m.) 1,340 mgd (2,070 cfs), 7.45 ft; Aug. 29 (9:30 a.m.) 1,500 mgd (2,320 cfs), 7.79 ft; Nov. 22 (1:30 p.m.) 2,020 mgd (3,130 cfs), 9.15 ft.

* Discharge measurement made on this day.

5190. West Wailuanui Stream near Keanae

Location.--Lat 20°49'39" (revised), long 156°08'55", on left bank 150 ft upstream from Koolau ditch crossing and intake and 2.2 miles south of Keanae Post Office.

Drainage area.--1.93 sq mi (revised).

Records available.--December 1913 to May 1917, July 1922 to January 1958 (discontinued).

Gage.--Water-stage recorder and Columbus-type control. Datum of gage is 1,268 ft above mean sea level (by vertical angles). Dec. 19, 1913, to May 22, 1917, water-stage recorder at site 100 ft downstream at different datum. Apr. 27, 1922, to Sept. 27, 1938, at present site at datum 3.38 ft lower.

Average discharge.--35 years (1922-57), 8.92 mgd (13.8 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 405 mgd (627 cfs) Oct. 14 (gage height, 4.22 ft), from rating curve extended above 130 mgd; minimum, 0.58 mgd (0.90 cfs) June 14.

1957-58: Maximum discharge during period July to January, 890 mgd (1,380 cfs) Nov. 22 (gage height, 5.95 ft), from rating curve extended above 130 mgd; minimum, 0.78 mgd (1.21 cfs) July 1.

1913-17, 1922-58: Maximum discharge, 1,730 mgd (2,680 cfs) Jan. 25, 1948 (gage height, 7.32 ft), from rating curve extended above 130 mgd; minimum, 0.2 mgd (0.3 cfs) July 16-21, 1922.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Water used for irrigation of sugarcane in central Maui.

Rating table, July 1, 1956, to Jan. 21, 1958 (gage height, in feet, and discharge, in million gallons a day)

0.6	0.38	1.6	13.5
.7	.61	1.8	22.5
.8	.91	2.0	35.5
.9	1.28	2.3	60
1.0	1.77	2.6	93
1.1	2.6	3.0	151
1.2	3.9	3.5	245
1.4	7.7		

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.1	3.1	2.3	1.52	4.4	19.7	1.69	2.1	1.42	1.16	42	0.91
2	2.8	2.4	1.89	1.42	1.89	1.50	1.24	3.75	1.42	1.12	25.5	.87
3	2.6	13.1	1.72	1.42	1.77	1.20	1.16	4.9	1.37	1.34	20.5	.87
4	2.3	28	2.03	8.5	1.62	1.12	1.12	40	1.37	55	44	.87
5	2.1	9.5	3.9	2.65	1.52	3.15	1.52	109	3.75	10.8	23.5	.84
6	1.9	4.7	1.67	1.52	1.47	5.8	5.6	133	2.2	2.95	9.0	.81
7	1.8	7.7	1.57	1.64	1.37	1.62	4.7	58	1.42	2.05	6.1	.75
8	1.6	5.8	2.1	12.1	1.28	1.28	5.5	67	1.37	1.72	4.2	.72
9	*1.4	3.1	1.85	7.9	1.20	1.16	12.6	33	1.32	1.67	3.6	.72
10	8.7	2.5	1.52	2.3	1.20	1.08	6.9	14.3	1.32	1.47	3.35	.69
11	3.1	2.5	1.37	1.67	2.1	1.04	7.8	13.4	1.28	1.32	4.6	.75
12	1.72	17.4	1.28	1.62	2.65	2.05	2.6	10.6	1.28	1.28	3.6	.69
13	3.4	20.5	1.24	7.0	1.72	1.52	1.89	5.5	2.3	16.0	2.4	.69
14	9.3	13.3	1.20	22.5	2.3	2.0	1.72	6.0	10.1	5.8	2.1	.63
15	4.5	6.2	1.46	73	1.37	8.0	1.52	3.5	22	8.1	1.96	.97
16	3.3	27.5	1.28	71	1.20	18.6	1.42	2.7	5.0	7.0	1.89	1.00
17	3.55	60	1.16	54	1.20	6.6	1.28	2.3	7.0	5.3	1.72	*1.01
18	27.5	10.9	1.12	7.9	4.9	4.6	1.24	6.1	6.4	4.7	1.67	1.67
19	5.6	5.1	1.08	4.2	1.96	2.05	7.2	2.4	4.6	19.1	1.57	1.40
20	4.2	3.6	1.08	2.85	1.42	1.67	23.5	1.96	2.6	5.0	1.42	1.37
21	4.6	2.95	1.04	2.3	1.32	1.47	2.95	1.83	1.93	2.85	1.42	1.73
22	2.85	2.4	5.3	1.96	1.20	1.37	3.5	1.67	2.55	2.3	1.37	1.04
23	2.1	2.3	1.28	1.72	1.20	1.28	4.2	1.67	2.4	43	1.28	.75
24	1.89	2.2	1.04	1.62	1.16	1.20	1.83	1.57	1.77	16.5	1.32	.84
25	1.83	2.4	*1.00	1.62	1.08	1.16	1.96	1.52	1.77	49	1.37	2.95
26	1.67	1.83	1.08	1.47	1.04	1.12	1.57	1.62	1.57	35.5	1.20	.97
27	2.35	2.1	1.00	1.42	1.00	1.04	1.42	1.62	1.37	16.3	1.16	.81
28	15.7	3.35	1.12	3.05	.97	1.00	1.35	1.47	1.28	20.5	1.08	.81
29	15.8	4.9	4.1	5.5	1.00	1.16	*1.93	-	1.28	19.2	1.00	.91
30	7.8	8.0	3.2	4.5	1.04	1.28	1.62	-------	1.96	39.5	1.00	.72
31	5.7	6.3	-------	3.4	-------	12.8	1.28	-------	1.32	-------	.97	-------
Total	156.76	285.63	52.98	315.27	49.55	110.62	115.81	532.48	98.62	397.53	217.85	29.76
Mean:												
mgd	5.06	9.21	1.77	10.2	1.65	3.57	3.74	19.0	3.18	13.3	7.03	0.992
cfs	7.83	14.2	2.74	15.8	2.55	5.52	5.79	29.4	4.92	20.6	10.9	1.53
Ac-ft	481	877	163	968	152	339	355	1,630	303	1,220	669	91

Calendar year 1956: Max 300 Min 0.94 Mean(mgd) 9.68 Mean(cfs) 15.0 Ac-ft 10,870
Fiscal year 1956-57: Max 133 Min 0.63 Mean(mgd) 6.47 Mean(cfs) 10.0 Ac-ft 7,250

Peak discharge (base, 300 mgd).--Oct. 14 (11:30 p.m.) 405 mgd (627 cfs), 4.22 ft; Feb. 6 (4 p.m.) 330 mgd (511 cfs), 3.91 ft.

* Discharge measurement made on this day.
a No gage-height record July 1-9; discharge estimated on basis of records for East Wailuanui Stream.

5190. West Wailuanui Stream near Keanae--Continued

Discharge, in million gallons a day, fiscal year July 1957 to January 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.00	9.6	10.3	1.42	1.89	34.5	7.1					
2	1.67	4.9	10.6	1.28	1.72	7.4	5.3					
3	2.25	24	9.3	1.20	1.52	28	4.4					
4	6.4	8.4	7.5	1.16	1.37	9.2	3.6					
5	5.0	16.3	6.1	1.08	1.28	4.7	2.95					
6	1.83	119	4.7	1.04	9.0	14.7	2.4					
7	1.67	51	3.9	1.00	10.4	22	2.05					
8	2.9	18.7	3.1	.97	15.4	8.2	2.3					
9	3.5	8.0	2.6	.97	8.6	9.6	1.89					
10	4.7	5.1	2.2	.97	7.4	47	1.67					
11	1.89	3.6	2.1	1.20	4.9	159	1.57					
12	1.62	3.2	2.1	.94	4.3	47	1.47					
13	3.15	2.4	2.3	.87	2.1	*18.4	1.42					
14	2.8	4.6	1.89	.84	1.89	11.6	1.37					
15	1.47	6.7	1.52	1.89	1.62	12.4	1.32					
16	1.42	2.6	*1.48	7.6	1.52	54	1.28					
17	10.8	2.4	8.6	3.75	1.42	24	1.28					
18	3.5	3.1	8.7	2.15	1.47	18.2	1.28					
19	14.8	4.5	2.4	1.32	1.32	13.9	1.28					
20	10.1	2.5	1.72	2.8	1.20	47	1.24					
21	6.8	2.85	1.57	20.5	4.2	61	1.20					
22	3.1	2.05	1.47	9.1	216	55	†1.22					
23	4.9	23.5	1.57	17.4	56	20.5	-					
24	3.1	139	1.52	16.6	86	11.3	-					
25	6.4	11.0	1.37	4.8	28.5	12.9	-					
26	5.0	7.3	1.28	2.4	25.5	17.1	-					
27	2.6	6.5	1.58	1.89	9.8	9.0	-					
28	2.4	24	1.83	1.67	6.7	18.1	-					
29	3.1	107	2.5	11.2	5.5	17.1	-					
30	6.7	61	3.1	4.4	54	24.5	-					
31	26	15.4	-------	2.85	-------	10.9	-					
Total	152.57	700.20	110.90	127.26	572.52	848.2	-					
Mean:												
mgd	4.92	22.6	3.70	4.11	19.1	27.4	-					
cfs	7.61	35.0	5.72	6.36	29.6	42.4	-					
Ac-ft	468	2,150	340	391	1,760	2,600	-					

Calendar year 1957: Max 216 Min 0.63 Mean(mgd) 10.7 Mean(cfs) 16.6 Ac-ft 11,980
Fiscal year 1957-58: Max - Min - Mean(mgd) - Mean(cfs) - Ac-ft -

Peak discharge (base, 300 mgd).--Aug. 24 (8:30 a.m.) 580 mgd (897 cfs), 4.86 ft; Aug. 29 (9 a.m.) 505 mgd (781 cfs), 4.62 ft; Nov. 22 (2 p.m.) 890 mgd (1,380 cfs), 5.95 ft; Nov. 30 (6:30 p.m.) 355 mgd (349 cfs), 3.99 ft.

* Discharge measurement made on this day.
† Result of discharge measurement.
Note.--No gage-height record Sept. 5-16, Nov. 27-29, Dec. 2-6, 8, 9; Jan. 6-21; discharge estimated on basis of probable decrease in flow and records for East Wailuanui Stream.

5200. East Wailuanui Stream near Keanae

Location.--Lat 20°49'23", long 156°08'36" (revised), on left bank 125 ft upstream from Koolau ditch intake, 250 ft upstream from trail, and 2.5 miles south of Keanae.

Drainage area.--0.51 sq mi (revised).

Records available.--January 1914 to October 1917, November 1921 to January 1958 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 1,287 ft above mean sea level (by vertical angles). Jan. 1, 1914, to Oct. 23, 1917, at site 500 ft upstream at different datum.

Average discharge.--35 years (1922-57), 5.54 mgd (8.57 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 480 mgd (743 cfs) Oct. 14 (gage height, 4.39 ft), from rating curve extended above 50 mgd; minimum, 0.45 mgd (0.70 cfs) June 14, 15.

1957-58: Maximum discharge during period July to January, 605 mgd (936 cfs) Nov. 22 (gage height, 4.94 ft), from rating curve extended above 50 mgd; minimum, 0.49 mgd (0.76 cfs) Oct. 15.

1914-17, 1921-58: Maximum discharge, 1,050 mgd (1,620 cfs) Feb. 12, 1925 (gage height, 6.96 ft), from rating curve extended above 100 mgd; minimum, 0.1 mgd (0.2 cfs) Apr. 11, 1926.

Remarks.--Records good. Water used for irrigation in central Maui.

Rating table, July 1, 1956, to Jan. 21, 1958 (gage height, in feet, and discharge, in million gallons a day)

0.3	0.33	1.1	22
.4	.89	1.5	45
.5	2.05	2.0	86
.6	3.8	2.5	140
.8	9.1	3.0	210

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.7	2.55	2.35	1.27	4.3	3.5	1.63	2.25	1.07	0.89	29	0.67
2	2.35	2.2	1.77	1.17	1.77	.89	1.17	3.9	.97	.81	17.5	.67
3	2.2	12.5	1.63	1.27	1.77	.81	1.07	5.5	.89	1.26	15.6	.67
4	1.91	28	1.91	8.1	1.51	.73	.97	38	.89	29.5	32	.61
5	1.77	9.0	3.5	2.3	1.27	2.25	1.51	50	3.15	4.7	15.2	.55
6	1.63	3.6	1.51	1.39	1.27	3.9	5.9	28	1.64	1.63	4.7	.55
7	1.51	5.5	1.39	1.27	1.17	1.17	3.9	8.2	1.07	1.39	3.25	.55
8	1.39	2.85	1.85	11.7	1.07	.97	4.2	4.5	.89	1.17	2.7	.49
9	*1.27	2.2	1.77	9.1	1.07	.89	7.5	4.1	.89	1.17	2.55	.49
10	1.17	1.91	1.39	2.35	1.07	.81	4.4	3.25	.81	1.07	2.2	.49
11	1.17	1.91	1.17	1.63	1.76	.73	7.0	6.2	.97	.97	3.35	.55
12	1.07	18.6	1.17	1.63	2.35	1.85	2.35	5.9	1.05	.97	1.91	.49
13	2.6	21.5	1.07	6.8	1.77	1.35	1.63	2.55	1.79	15.5	1.77	.55
14	8.5	*12.9	1.07	28	2.15	1.68	1.63	4.6	8.9	4.9	1.63	.49
15	3.35	4.9	1.17	37	1.27	7.3	1.39	2.7	9.4	9.5	1.51	.73
16	2.35	26.5	1.07	36	1.17	15.1	1.17	2.2	2.2	9.4	1.39	.73
17	2.8	39.5	.89	39.5	1.17	5.3	1.07	1.77	5.6	4.5	1.27	*.82
18	24	7.4	.89	3.85	4.5	3.95	1.07	4.8	5.5	4.0	1.27	1.63
19	3.05	3.4	.89	2.55	1.77	1.91	6.6	2.05	4.2	20.5	1.17	1.40
20	3.25	2.7	.81	2.05	1.39	1.51	7.9	1.77	2.2	4.8	1.17	1.22
21	4.1	2.35	.73	1.77	1.17	1.27	1.77	1.63	1.63	2.7	1.07	1.24
22	2.35	1.91	5.3	1.63	1.17	1.17	2.45	1.51	1.95	2.35	1.07	.89
23	1.77	1.91	1.17	1.39	1.07	1.07	3.05	1.39	1.63	33	.97	.61
24	1.63	1.77	.89	1.27	1.07	1.07	1.51	1.17	1.27	14.4	.97	.75
25	1.63	2.2	*.73	1.17	.97	.97	1.63	1.17	1.27	24	1.07	3.15
26	1.51	1.63	.81	1.17	.89	.89	1.17	1.27	1.17	14.8	.97	.73
27	2.05	1.77	.73	1.17	.89	.81	1.17	1.17	1.07	7.3	.81	.67
28	15.8	3.0	.81	2.4	.89	.81	1.28	1.17	.97	10.4	.73	.61
29	17.1	5.2	3.4	5.6	.89	.89	*1.53	-	.89	8.4	.73	.67
30	7.0	6.9	2.65	3.6	.97	1.07	1.51	-------	1.63	19.2	.73	.55
31	4.7	6.6	-------	2.8	-------	11.6	1.17	-------	1.17	-------	.67	-------
Total	129.68	244.86	46.49	222.90	45.55	78.22	84.30	192.72	68.73	255.18	150.93	24.22
Mean:												
mgd	4.18	7.90	1.55	7.19	1.52	2.52	2.72	6.88	2.22	8.51	4.87	0.807
cfs	6.47	12.2	2.40	11.1	2.35	3.90	4.21	10.6	3.43	13.2	7.54	1.25
Ac-ft	398	751	143	684	140	240	259	591	211	783	463	74

Calendar year 1956: Max 150 Min 0.73 Mean(mgd) 6.75 Mean(cfs) 10.4 Ac-ft 7,580
Fiscal year 1956-57: Max 50 Min 0.49 Mean(mgd) 4.23 Mean(cfs) 6.54 Ac-ft 4,740

Peak discharge (base, 300 mgd).--Oct. 14 (11 p.m.) 480 mgd (743 cfs), 4.39 ft.

* Discharge measurement made on this day.

5200. East Wailuanui Stream near Keanae--Continued

Discharge, in million gallons a day, fiscal year July 1957 to January 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.81	8.2	3.8	1.07	1.77	13.3	4.0					
2	1.51	4.4	5.2	.97	1.63	3.4	3.05					
3	2.2	14.2	3.85	.89	1.27	19.7	2.55					
4	5.8	6.1	2.7	.89	1.17	4.4	2.2					
5	4.3	13.5	2.35	.81	1.17	2.55	2.05					
6	1.91	46	2.05	.73	8.9	8.7	1.77					
7	1.77	26	1.91	.73	11.1	10.4	1.63					
8	2.75	11.8	1.63	.67	15.9	3.8	1.77					
9	3.25	4.9	1.51	.67	9.1	6.2	1.63					
10	4.3	3.4	1.39	.67	7.4	30.5	1.39					
11	1.77	2.7	1.27	.73	5.0	38.5	1.27					
12	1.63	2.55	1.27	.67	4.2	15.2	1.17					
13	2.75	2.05	1.17	.55	2.35	*9.0	1.17					
14	2.75	3.9	1.07	.55	1.91	6.5	1.07					
15	1.39	6.0	1.07	1.72	1.63	5.4	1.07					
16	1.27	2.55	1.07	6.0	1.39	17.9	.97					
17	11.4	2.55	8.4	3.25	1.39	11.7	.89					
18	3.35	2.85	7.6	1.60	1.39	9.1	1.07					
19	14.8	4.5	2.05	.97	1.17	9.7	1.07					
20	9.6	2.7	1.27	2.45	1.07	30	.89					
21	6.0	3.05	1.17	20.5	3.25	31	.89					
22	2.7	2.35	1.07	7.6	121	30.5	†.93					
23	4.6	25	1.17	14.0	25.5	13.9	-					
24	2.85	72	1.07	5.5	42	8.0	-					
25	6.6	5.0	1.07	2.35	16.9	10.3	-					
26	4.0	3.25	.89	1.63	11.5	12.6	-					
27	2.35	3.25	1.17	1.39	4.4	6.4	-					
28	2.05	18.7	1.51	1.17	2.55	14.6	-					
29	2.8	47	1.86	*10.5	2.2	9.6	-					
30	7.1	32.5	2.65	2.6	23	19.2	-					
31	20.5	5.9	-------	2.05	-------	5.9	-					
Total	140.86	388.85	66.26	95.88	333.21	417.95	-					
Mean:												
mgd	4.54	12.5	2.21	3.09	11.1	13.5	-					
cfs	7.02	19.3	3.42	4.78	17.2	20.9	-					
Ac-ft	432	1,190	203	294	1,020	1,280	-					

Calendar year 1957: Max 121 Min 0.49 Mean(mgd) 6.08 Mean(cfs) 9.41 Ac-ft 6,800
Fiscal year 1957-58: Max - Min - Mean(mgd) - Mean(cfs) - Ac-ft -

Peak discharge (base, 300 mgd).--Aug. 29 (9:30 a.m.) 350 mgd (542 cfs), 3.78 ft; Nov. 22 (12:30 p.m.) 605 mgd (936 cfs), 4.94 ft.

* Discharge measurement made on this day.
† Result of discharge measurement.

5220. Taro patch feeder ditch at Keanae

Location.--Lat 20°51'40", long 156°09'00", on left bank 25 ft downstream from intake, 500 ft downstream from highway bridge over Palauhulu Stream at Keanae, 4.2 miles northwest of Nahiku, and 4.8 miles southeast of Kailua.

Records available.--September 1934 to June 1958.

Gage.--Water-stage recorder and Parshall flume. Altitude of gage is 51 ft (from topographic map).

Average discharge.--23 years (1935-58), 2.28 mgd (3.53 cfs).

Extremes.--1934-58: Maximum daily discharge, 7.9 mgd (12.2 cfs) June 30, 1941, Feb. 10, 1955; minimum daily, 0.05 mgd (0.08 cfs) Mar. 5, 1939.

Remarks.--Records excellent. Ditch diverts water from Palauhulu Stream, 80 ft above station, for irrigation of taro lands at Keanae.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.1	2.2	2.35	2.5	3.0	2.6	2.4	2.25	2.2	2.2	*4.1	1.90
2	2.1	2.15	2.3	2.4	2.9	2.3	2.3	2.3	2.15	2.15	3.55	1.90
3	2.05	2.55	2.25	2.35	2.8	2.3	2.3	2.45	2.1	2.15	3.4	1.85
4	1.99	3.25	2.25	2.65	2.75	2.3	2.3	4.4	2.1	3.65	4.7	1.85
5	1.99	2.6	2.35	2.65	2.75	2.5	2.25	5.9	2.2	2.75	3.6	1.85
6	1.95	2.3	2.25	2.5	2.7	2.75	2.5	5.2	2.3	2.25	3.1	1.85
7	1.90	2.45	2.2	2.45	2.65	2.4	2.8	3.4	2.05	2.1	3.05	1.85
8	1.90	2.3	2.2	3.0	2.6	2.35	2.65	3.2	1.99	2.05	3.0	1.85
9	1.85	2.2	2.2	2.9	2.6	2.3	3.15	2.95	1.99	2.05	2.95	1.80
10	1.95	2.2	2.15	2.65	2.6	2.3	2.75	2.55	1.99	2.05	2.9	1.80
11	1.90	2.2	2.1	2.55	2.65	2.25	2.95	2.8	1.99	1.99	3.0	1.75
12	1.95	2.75	2.1	2.5	2.6	2.25	2.5	2.9	2.05	1.99	2.7	1.75
13	2.15	3.0	2.1	2.9	2.55	2.25	2.35	*2.5	2.2	2.95	2.55	1.75
14	2.55	2.8	2.05	3.05	2.7	2.25	2.35	2.7	3.05	2.75	2.45	1.75
15	2.2	2.4	2.05	3.75	2.6	2.5	2.3	2.55	3.45	2.7	2.35	1.71
16	2.05	2.8	2.05	3.85	2.5	3.7	2.3	2.45	2.5	2.5	2.3	1.71
17	1.99	4.3	1.99	3.6	2.5	2.7	2.25	2.4	2.65	2.4	2.2	2.15
18	3.0	2.55	1.95	2.2	2.95	*2.75	2.25	2.7	2.7	2.45	2.15	2.35
19	2.35	2.35	1.95	2.05	2.7	2.55	2.7	2.5	2.5	3.2	2.15	2.35
20	2.2	2.35	1.95	1.99	2.55	2.4	3.0	2.45	2.5	2.55	2.1	2.35
21	2.3	*2.3	1.95	1.95	2.45	2.35	2.45	2.4	2.35	2.4	2.1	2.4
22	2.1	2.3	2.25	2.2	2.45	2.25	2.55	2.4	2.35	2.3	2.1	2.35
23	2.05	2.25	2.2	3.0	2.4	2.25	2.7	2.35	2.3	4.0	2.1	2.25
24	1.99	2.2	2.1	3.0	2.4	2.25	2.45	2.35	2.25	3.35	2.05	2.25
25	1.99	2.2	2.05	3.0	2.35	2.25	2.35	2.3	2.25	4.3	1.99	2.3
26	1.99	2.15	2.05	3.0	2.35	2.25	2.35	2.25	2.25	3.85	1.95	2.25
27	1.99	2.15	1.99	2.95	2.35	2.25	2.3	2.25	2.25	3.15	1.95	2.25
28	2.8	2.2	1.99	3.0	2.35	2.25	2.3	2.2	2.25	3.3	1.95	2.25
29	2.8	2.25	2.45	3.1	2.35	2.25	2.25	-	2.25	3.2	1.95	2.25
30	2.35	2.6	2.55	3.05	2.35	2.25	2.25	-------	2.25	3.7	1.90	2.25
31	2.3	2.45	-------	2.95	-------	2.9	2.25	-------	2.2	-------	1.90	-------
Total	66.78	76.75	64.37	85.69	77.45	75.20	76.55	79.05	71.61	82.43	80.24	60.92
Mean:												
mgd	2.15	2.48	2.15	2.76	2.58	2.43	2.47	2.82	2.31	2.75	2.59	2.03
cfs	3.33	3.84	3.33	4.27	3.99	3.76	3.82	4.36	3.57	4.25	4.01	3.14
Ac-ft	205	236	198	263	238	231	235	243	220	253	246	187

Calendar year 1956 : Max 7.8 Min 1.52 Mean(mgd) 2.48 Mean(cfs) 3.84 Ac-ft 2,790
Fiscal year 1956-57 : Max 5.9 Min 1.71 Mean(mgd) 2.46 Mean(cfs) 3.81 Ac-ft 2,760

* Discharge measurement made on this day.

5220. Taro patch feeder ditch at Keanae--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.2	3.15	1.99	2.45	2.35	3.45	2.65	1.95	2.8	2.3	2.05	3.05
2	2.2	2.7	2.1	2.35	2.3	2.5	2.55	1.80	2.55	2.25	2.2	2.8
3	2.2	3.55	2.05	2.3	2.25	3.5	2.45	1.75	2.45	2.25	2.15	2.35
4	2.7	3.05	2.2	2.3	2.2	2.6	2.4	*1.99	2.4	2.2	2.05	2.25
5	2.3	3.25	2.9	2.3	2.15	2.35	2.35	2.45	2.35	2.25	1.99	2.25
6	2.35	5.6	2.8	2.3	2.4	2.45	2.25	2.45	4.0	2.2	2.4	2.25
7	2.2	4.2	2.75	2.3	3.15	3.3	2.2	2.45	3.0	2.2	*2.95	2.4
8	2.2	3.45	2.75	2.25	3.1	2.4	2.2	2.45	2.3	2.2	3.3	2.35
9	2.2	3.0	2.7	2.25	3.1	2.45	2.15	2.4	2.55	2.15	3.05	2.3
10	2.3	2.9	2.65	2.25	2.9	4.7	2.1	2.35	3.1	2.05	2.45	2.15
11	2.2	2.8	2.65	2.25	2.7	6.3	2.05	2.35	3.0	1.99	2.9	2.1
12	2.2	2.75	2.65	2.25	2.55	3.9	1.99	2.35	2.65	1.99	2.65	2.95
13	2.2	2.75	2.6	2.25	2.45	3.15	1.95	2.35	3.15	1.95	2.35	2.25
14	2.2	*2.75	2.6	2.25	2.35	2.65	1.90	2.35	2.6	*1.95	3.15	2.15
15	2.15	3.1	2.6	2.25	2.35	2.75	1.85	2.3	2.5	1.95	3.1	2.1
16	2.15	2.75	2.6	2.95	2.3	4.4	1.80	2.25	2.45	1.95	3.15	2.1
17	2.55	2.7	2.7	2.5	2.25	3.15	1.75	2.2	2.4	1.95	2.55	2.05
18	2.25	2.7	3.15	2.3	2.25	3.25	1.75	2.2	2.35	1.95	2.4	2.05
19	3.1	2.8	2.65	2.2	2.2	3.15	1.75	2.2	2.55	1.95	2.7	1.99
20	3.2	2.7	2.6	2.2	2.2	5.0	1.75	2.15	2.3	1.95	2.9	1.99
21	2.95	2.7	2.55	3.55	2.45	5.3	1.71	2.1	2.25	1.95	2.4	1.95
22	2.4	2.65	2.5	3.0	5.0	5.3	1.71	2.1	2.15	1.95	2.35	1.95
23	2.45	3.1	2.5	3.25	2.7	3.45	1.71	2.05	2.15	1.95	2.35	1.95
24	2.45	5.7	2.5	3.0	4.7	2.9	1.99	2.15	2.3	1.95	2.3	1.90
25	2.4	1.61	2.45	2.5	2.65	3.15	1.71	2.75	2.5	1.95	2.3	1.90
26	2.7	1.67	2.45	2.4	2.05	3.6	1.71	4.3	2.55	2.6	2.35	1.99
27	2.45	2.9	2.45	2.35	1.17	3.0	1.75	4.1	2.65	2.6	2.35	2.65
28	2.35	4.2	2.45	2.25	1.90	3.45	2.05	3.65	2.5	2.45	2.4	2.35
29	2.4	4.3	2.45	2.6	2.4	3.4	4.3	-	4.3	2.2	2.3	1.99
30	2.7	2.9	2.5	2.65	4.1	4.1	5.3	-------	3.95	2.1	2.35	1.95
31	3.9	1.75	-------	2.45	-------	3.0	3.65	-------	2.45	-------	2.5	-------
Total	76.20	96.13	76.49	76.45	78.62	108.05	69.43	67.94	83.20	63.33	78.39	66.46
Mean:												
mgd	2.46	3.10	2.55	2.47	2.62	3.49	2.24	2.43	2.68	2.11	2.53	2.22
cfs	3.81	4.80	3.95	3.82	4.05	5.40	3.47	3.76	4.15	3.26	3.91	3.43
Ac-ft	234	295	235	235	241	332	213	208	255	194	241	204

Calendar year 1957: Max 6.3 Min 1.17 Mean(mgd) 2.64 Mean(cfs) 4.08 Ac-ft 2,960
Fiscal year 1957-58: Max 6.3 Min 1.17 Mean(mgd) 2.58 Mean(cfs) 3.99 Ac-ft 2,890

* Discharge measurement made on this day.

5230. Koolau ditch near Keanae

Location (revised).--Lat 20°49'53", long 156°10'30", on right bank on west side of Keanae Valley, 2.6 miles southwest of Keanae Post Office and 5.1 miles southeast of Kailua.

Records available.--January 1910 to December 1912, November 1917 to June 1958. Gage-height records collected in this vicinity since 1904 are contained in files of East Maui Irrigation Co.

Gage.--Water-stage recorder. Jan. 1, 1910, to Dec. 31, 1912, staff gage at same site and datum. Altitude of gage is 1,238 ft (from topographic map).

Average discharge.--40 years (1918-58), 66.8 mgd (103 cfs).

Extremes.--1910-12, 1917-58: Maximum daily discharge, 172 mgd (266 cfs) Apr. 19, 1935; no flow at times.

Remarks.--Records good. Flow regulated by gates and spillways. Ditch diverts water at altitude 1,200 ft from nearly all streams from the Makapipi west to the Alo for power and irrigation in central Maui. No diversion above station except from several spillways.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	75	71	63	37	86	90	39.5	49	31	27	125	23
2	63	58	49	33	49	31	28	81	29.5	24.5	127	23
3	*58	112	45	*33	43	24.5	26	92	28	36	128	23
4	51	136	49	92	39	23	24.5	137	26	108	125	23
5	47	133	79	65	37	44	33	118	45	114	127	21.5
6	43	98	43	37	39	93	75	79	57	53	128	21.5
7	41	114	39	33	35	37	99	68	29.5	43	105	20
8	39	103	43	99	31	28	116	95	28	37	91	20
9	39	67	43	99	29.5	24.5	*138	91	26	35	82	20
10	58	56	39	59	29.5	23	114	83	26	33	75	18.7
11	49	53	35	41	45	21.5	115	91	28	29.5	91	20
12	37	113	33	37	57	35.5	58	91	29.5	29.5	67	18.7
13	59	131	31	95	45	33	43	*48	43	29	56	18.7
14	116	137	31	96	52	52	41	66	131	107	*50	18.7
15	92	125	35	131	35	114	35	45	138	86	47	24
16	81	130	31	127	31	136	33	35	84	87	43	24.5
17	61	125	28	133	31	100	29.5	29.5	123	108	41	25.5
18	119	132	28	111	86	83	28	59	109	89	41	38.5
19	91	112	26	83	52	47	78	31	86	137	37	33
20	91	87	26	63	39	37	129	33	62	112	35	35.5
21	100	*70	24.5	51	31.5	33	66	41	43	75	33	27.5
22	66	58	53	45	28	31	66	39	60	58	33	24.5
23	51	56	31	41	28	29.5	86	37	66	114	33	20
24	45	56	26	39	26	28	45	35	44	137	31	21
25	45	61	24.5	37	26	26	67	33	56	125	31.5	35
26	41	45	26	35	24.5	24.5	39	33	37	125	31	23
27	53	51	24.5	33	24.5	23	35	33	33	131	28	20
28	132	70	26	62	23	23	33	35	29.5	127	28	20
29	127	72	63	76	23	23	40	-	29.5	131	26	21.5
30	122	115	62	104	24	24.5	41	-------	39	125	24.5	18.7
31	102	110	-------	81	-------	102	33	-------	29.5	-------	24.5	-------
Total	2,194	2,857	1,156.5	2,108	1,149.5	1,444.5	1,833.5	1,707.5	1,626.0	2,562.5	1,944.5	722.0
Mean: mgd	70.8	92.2	38.6	68.0	38.3	46.6	59.1	61.0	52.5	85.4	62.7	24.1
cfs	110	143	59.7	105	59.3	72.1	91.4	94.4	81.2	132	97.0	37.3
Ac-ft	6,730	8,770	3,550	6,470	3,530	4,430	5,630	5,240	4,990	7,860	5,970	2,220

Calendar year 1956: Max 142 Min 21.5 Mean(mgd) 76.1 Mean(cfs) 118 Ac-ft 85,510
Fiscal year 1956-57: Max 138 Min 18.7 Mean(mgd) 58.4 Mean(cfs) 90.4 Ac-ft 65,390

* Discharge measurement made on this day.

5230. Koolau ditch near Keanae--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	22.5	138	120	37	47	128	71	124	0.20	45	41	129
2	35	104	117	31	43	77	97	81	.30	45	91	125
3	50	132	104	29.5	39	84	98	53	.20	31	45	100
4	111	133	79	28	35	85	83	*46	.66	43	39	79
5	95	126	67	28	31	49	75	43	.70	36.5	35	75
6	50	125	58	26	54	49	67	41	4.4	33	93	80
7	41	127	53	26	123	121	63	45	3.95	34.5	132	111
8	56	126	49	24.5	114	75	67	41	2.35	28	129	93
9	70	120	47	24.5	121	89	58	33	1.56	29.5	127	85
10	82	107	43	24.5	115	127	51	31	2.35	35	121	63
11	43	83	41	28	110	125	49	29.5	1.33	35	132	83
12	37	90	41	23	102	125	45	28	.40	49	132	123
13	53	67	41	21.5	*83	134	43	26	.46	39	100	83
14	61	*77	37	21.5	53	108	41	26	.40	49	127	67
15	35	122	35	27	45	a116	39	26	.40	43	130	56
16	33	71	35	85	41	a127	37	24.5	.40	45	127	*49
17	98	67	63	67	37	a133	37	23	.40	55	127	45
18	63	75	110	47	37	a140	39	23	.46	37	120	43
19	132	98	77	29.5	38	a106	37	23	.58	33	123	39
20	140	67	49	41	33	a101	35	21.5	1.99	31	130	37
21	116	77	39	131	72	58	31	21.5	7.6	33	105	35
22	71	58	37	135	113	58	31	20	23.5	29.5	79	35
23	95	93	39	139	101	58	35.5	14.3	43	28	67	33
24	69	125	37	134	118	82	86	1.85	82	46	56	33
25	70	135	35	79	100	91	37	.40	34	31	63	64
26	111	111	31	53	104	91	31	.87	26	107	70	66
27	67	102	*37	43	58	91	69	.61	104	116	58	128
28	63	127	45	37	45	91	65	.40	68	90	89	108
29	72	126	47	70	39	64	127	-	104	67	58	51
30	118	118	65	91	103	77	125	-------	126	43	97	43
31	134	136	-------	63	-------	76	127	-------	77	-------	118	-------
Total	2,293.5	3,263	1,678	1,644.5	2,134	2,936	1,896.5	848.43	718.59	1,367.0	2,961	2,161
Mean: mgd	74.0	105	55.9	53.0	71.1	94.7	61.2	30.3	23.2	45.6	95.5	72.0
cfs	114	162	86.5	82.0	110	147	94.7	46.9	35.9	70.6	148	111
Ac-ft	7,040	10,010	5,150	5,050	6,550	9,010	5,820	2,600	2,210	4,200	9,090	6,630

Calendar year 1957 : Max 140 Min 18.7 Mean(mgd) 66.7 Mean(cfs) 103 Ac-ft 74,720
Fiscal year 1957-58 : Max 140 Min 0.20 Mean(mgd) 65.5 Mean(cfs) 101 Ac-ft 73,360

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for stations at Nahiku and Haipuaena.

5270. Honomanu Stream near Keanae

Location (revised).--Lat 20°50'05", long 156°11'20", on left bank at Spreckels ditch intake, 3.3 miles southwest of Keanae School and 4.5 miles southeast of Kailua.

Drainage area.--3.17 sq mi (revised).

Records available.--November 1913 to June 1958.

Gage.--Water-stage recorder, orifice and concrete control. November 1913 to Apr. 14, 1950, at site 500 ft upstream at different datum.

Average discharge.--42 years (1916-58), 14.9 mgd (23.1 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 420 mgd (650 cfs) July 18 (gage height, 7.57 ft), from rating curve extended above 13 mgd as explained below; minimum, 0.38 mgd (0.59 cfs) June 14.

1957-58: Maximum discharge during fiscal year, 830 mgd (1,280 cfs) Nov. 22 (gage height, 8.48 ft), from rating curve extended above 13 mgd as explained below; minimum, 0.65 mgd (1.01 cfs) July 1.

1913-58: Maximum discharge, 2,310 mgd (3,570 cfs) Feb. 25, 1956 (gage height, 10.73 ft), from rating curve extended above 13 mgd by computation of flow through orifice and over dam; minimum, 0.08 mgd (0.12 cfs) Mar. 24, 1928.

Remarks.--Records fair except those for period of no gage-height record and those above 15 mgd, which are poor. Water used for irrigation in central Maui.

Rating table, July 1, 1956 to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

0.6	0.25	3.0	13.4
.8	1.25	4.0	16.0
1.0	2.7	5.0	18.5
1.2	4.4	5.5	21
1.4	6.4	6.0	50
1.6	8.2	6.5	120
2.0	10.3	7.0	238
2.5	11.9		

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.9	5.4	3.5	2.15	5.2	6.4	3.05	1.91	1.44	1.19	56	0.91
2	4.0	4.0	2.7	2.1	3.25	1.51	1.44	4.3	1.32	.97	29.5	.86
3	4.0	26	2.2	1.64	2.6	1.08	1.14	8.4	1.25	1.73	27	2.25
4	3.1	55	2.85	21.5	2.45	.91	.97	65	1.14	87	63	2.25
5	3.1	19.2	5.7	4.7	1.90	5.3	1.44	136	3.25	12.1	37	1.32
6	2.7	5.8	2.35	2.15	1.84	4.5	7.4	146	3.45	3.1	9.5	1.03
7	3.1	19.4	1.84	1.64	1.90	1.90	9.6	58	1.77	2.15	5.4	.80
8	3.8	11.5	1.98	16.1	1.44	1.19	12.7	78	1.38	1.84	4.4	.65
9	3.0	4.9	1.90	5.9	1.25	.97	24.5	46	1.19	2.5	5.2	.69
10	7.8	3.5	1.64	*2.6	1.25	.86	9.1	17.6	1.14	2.05	4.9	.60
11	3.6	4.0	1.44	1.64	3.1	.75	10.0	14.2	1.14	1.51	15.1	.56
12	2.45	25.5	1.32	1.38	2.35	1.54	3.5	15.9	1.25	1.32	5.3	.56
13	5.9	34.5	2.25	8.0	2.05	1.38	2.3	6.0	2.8	29.5	3.5	.56
14	26	26	1.58	33.5	4.5	3.2	2.05	5.0	23	19.6	3.1	.47
15	9.1	11.1	1.99	68	2.7	10.5	1.70	4.0	48	15.8	2.7	.90
16	5.5	47	1.64	74	1.44	29.5	1.44	3.5	5.4	5.0	2.7	1.39
17	5.3	91	1.77	41	2.1	7.2	1.32	2.7	7.5	2.7	2.35	1.61
18	63	14.0	1.19	6.4	8.6	6.4	1.14	6.1	7.1	2.75	2.45	4.4
19	13.9	5.4	1.08	4.0	5.4	2.5	3.05	3.5	5.7	20	2.15	2.85
20	8.7	4.4	1.03	3.1	2.7	2.05	8.0	2.7	4.1	4.9	1.90	2.8
21	11.3	3.5	.86	2.3	2.3	1.70	2.5	2.5	2.3	3.5	1.77	8.9
22	5.4	3.1	11.5	1.98	1.9	1.44	4.6	2.15	2.05	2.5	1.64	3.15
23	3.5	3.1	2.3	1.77	1.77	1.19	6.4	1.90	1.64	62	1.58	1.32
24	3.5	3.1	1.25	1.70	1.38	1.08	2.45	1.84	1.44	28	1.51	1.63
25	3.5	4.0	1.03	1.90	1.19	.97	4.0	1.70	1.38	89	1.51	5.6
26	2.5	2.7	1.25	2.45	*1.14	.86	1.98	1.70	1.32	59	1.44	1.83
27	4.6	3.5	1.19	2.75	1.03	.75	1.58	1.77	1.14	24	1.25	1.14
28	32.5	4.7	1.40	3.9	.97	.69	1.44	1.58	*1.03	38	1.25	.97
29	35	6.7	5.2	8.8	1.74	.80	2.05	-	1.14	32.5	1.14	1.44
30	9.6	16.2	3.5	8.1	1.58	1.55	2.8	-------	3.25	55	1.08	1.14
31	8.8	8.8	-------	5.2	-------	12.5	1.77	-------	1.51	-------	1.03	-------
Total	303.15	477.0	71.43	342.55	73.02	113.17	137.41	639.95	141.52	611.21	298.35	54.58
Mean: mgd	9.78	15.4	2.38	11.0	2.43	3.65	4.43	22.9	4.57	20.4	9.62	1.82
cfs	15.1	23.8	3.68	17.0	3.76	5.65	6.85	35.4	7.07	31.6	14.9	2.82
Ac-ft	930	1,460	219	1,050	224	347	422	1,960	434	1,880	916	167

Calendar year 1956: Max 520 Min 0.51 Mean(mgd) 14.7 Mean(cfs) 22.7 Ac-ft 16,430
Fiscal year 1956-57: Max 146 Min 0.47 Mean(mgd) 8.94 Mean(cfs) 13.8 Ac-ft 10,010

Peak discharge (base, 700 mgd).--No peak above base.

* Discharge measurement made on this day.

5270. Honomanu Stream near Keanae--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.97	12.6	4.9	2.35	3.2	34	6.4	10.3	5.7	3.5	*2.4	24.5
2	2.3	6.4	5.4	2.15	2.15	8.1	6.4	4.9	2.35	5.0	7.2	13.3
3	4.7	46	4.9	1.64	1.84	21.5	4.9	*3.55	1.77	3.1	5.4	5.4
4	12.2	10.8	3.5	1.38	1.64	9.7	4.0	2.7	1.44	5.5	3.85	4.0
5	5.2	36	3.1	1.19	1.51	4.9	4.0	3.1	1.38	4.0	2.45	3.5
6	3.75	175	2.7	1.14	12.3	14.2	3.1	2.45	28	3.5	24	5.4
7	2.35	80	2.5	1.03	24.5	32	3.1	3.3	7.2	3.5	39	11.4
8	4.6	29	2.15	.97	16.8	11.0	3.5	3.1	2.6	3.5	33	9.3
9	4.9	7.4	1.90	.91	17.5	12.1	3.5	2.15	2.45	2.5	21	4.9
10	7.4	4.9	1.84	.91	8.9	82	2.7	1.90	6.0	3.0	12.7	4.0
11	5.35	5.4	1.70	1.39	6.2	212	2.45	1.77	3.5	3.5	24.5	3.5
12	2.05	4.4	1.70	1.32	4.0	52	2.2	1.70	2.95	6.1	20	24.5
13	3.0	3.5	1.90	.97	3.1	24	2.05	1.64	8.7	3.2	7.7	5.4
14	7.2	8.2	2.05	.80	2.5	12.1	1.90	1.58	2.6	3.2	29.5	4.4
15	2.3	13.9	1.58	1.71	2.2	19.7	1.90	1.51	1.90	2.5	25	3.5
16	1.77	4.4	2.1	13.0	1.98	83	1.77	1.44	1.70	2.8	30.5	3.1
17	6.5	4.4	8.8	5.9	1.77	31.5	1.70	1.38	1.77	3.5	10.2	4.0
18	2.9	4.4	17.0	3.4	1.77	21	1.90	1.38	*1.55	2.0	7.4	2.7
19	24.5	6.1	4.9	2.05	1.64	17.8	1.70	1.19	3.2	1.6	11.8	2.2
20	17.0	4.0	2.6	2.75	1.51	97	1.58	1.14	1.77	1.8	21	1.98
21	12.3	4.4	2.05	40	6.4	95	1.44	1.08	1.51	3.8	5.4	1.90
22	4.6	3.5	1.84	14.2	180	78	1.38	1.03	3.3	1.7	4.4	1.84
23	8.5	26	2.05	21.5	48	18.1	2.0	.97	9.7	1.5	4.0	2.05
24	6.2	206	1.98	18.3	80	10.0	13.0	2.1	6.7	5.5	3.5	1.77
25	8.7	11.7	*1.82	4.4	41	16.8	2.95	5.6	2.5	3.0	4.4	7.2
26	9.6	4.4	1.58	2.7	32.5	27.5	1.64	47	1.95	14	6.7	4.7
27	3.1	4.4	2.5	2.05	10.2	9.5	3.6	23.5	14.1	17	4.4	24
28	3.1	66	3.1	1.70	5.4	31	23.5	27	11.4	7.0	10.0	10.4
29	4.6	139	3.25	24.5	4.0	26.5	94	-	105	4.6	4.9	3.5
30	11.9	65	4.9	9.1	70	43	142	-------	36	2.7	8.2	2.6
31	63	14.8	-------	3.5	-------	14.9	76	-------	7.1	-------	12.5	-------
Total	254.54	1,012.0	102.29	188.91	594.51	1,169.9	422.26	160.46	307.79	128.1	407.00	200.94
Mean:												
mgd	8.21	32.6	3.41	6.09	19.8	37.7	13.6	5.73	9.93	4.27	13.1	6.70
cfs	12.7	50.4	5.28	9.42	30.6	58.3	21.0	8.87	15.4	6.61	20.3	10.4
Ac-ft	781	3,110	314	580	1,820	3,590	1,300	492	945	393	1,250	617

Calendar year 1957 : Max 212 Min 0.47 Mean(mgd) 14.3 Mean(cfs) 22.1 Ac-ft 15,970
Fiscal year 1957-58 : Max 212 Min 0.80 Mean(mgd) 13.6 Mean(cfs) 21.0 Ac-ft 15,190

Peak discharge (base, 700 mgd).--Aug. 24 (8:30 a.m.) 730 mgd (1,130 cfs), 8.30 ft; Nov. 22 (2:30 p.m.) 830 mgd (1,280 cfs), 8.48 ft.

* Discharge measurement made on this day.
Note.--No gage-height record Apr. 10 to May 1; discharge estimated on basis of records for stations on nearby streams.

5310. Kula diversion from Haipuaena Stream near Olinda

Location (revised).--Lat 20°48'24", long 156°13'27", on left bank 3.4 miles east of Olinda and 6.2 miles south of Kailua.

Records available.--July 1945 to June 1958.

Gage.--Water-stage recorder and Parshall flume. Altitude of gage is 4,320 ft (from topographic map).

Average discharge.--12 years (1946-58), 0.443 mgd (0.685 cfs).

Extremes.--1945-58: Maximum daily discharge, 2.05 mgd (3.17 cfs) Mar. 20, 1948; minimum daily, 0.01 mgd (0.02 cfs) for several days in 1953, 1954, and 1955.

Remarks.--Records good. Kula diversion flume diverts water from Haipuaena Stream at station for domestic use and irrigation of truck crops in the Olinda and Kula areas.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.35	0.76	0.26	0.19	0.78	0.70	0.11	0.10	0.05	0.05	1.77	0.02
2	.30	.40	.16	.17	.50	.34	.07	.14	.04	.04	1.50	.02
3	.22	.80	.10	.16	.27	.19	.05	.18	.04	.04	1.41	.04
4	.25	1.47	.11	.62	.26	.14	.04	.56	.03	.85	1.74	.22
5	.22	1.04	.51	.55	.18	.12	.04	.96	.04	.80	1.60	.33
6	.25	.57	.21	.23	.15	.18	.06	1.18	.24	.38	.90	.14
7	.27	.69	.11	.14	.14	.18	.70	.81	.16	.23	.59	.08
8	.26	.93	.09	.86	.10	.14	.98	.77	.10	.18	.36	.06
9	.22	.53	.09	.52	.09	.09	1.17	.65	.08	.22	.53	.04
10	.19	.28	.08	.30	.07	.08	1.03	.61	.06	.22	.62	.03
11	.30	.22	.06	.17	.05	.06	.95	.55	.06	.15	1.10	.03
12	*.17	.68	.06	.12	.04	.06	.42	1.04	.06	.10	.76	.02
13	.15	1.27	.05	.48	.04	.06	.28	.94	.12	.73	.36	.02
14	1.24	1.32	.04	1.29	.61	.19	.35	.52	.60	1.10	.25	.02
15	.81	.90	.05	1.43	.52	.76	.22	.38	1.14	.97	.18	.02
16	.66	.73	.46	.94	.21	.94	.15	.30	.68	.71	.15	.03
17	.53	1.28	.40	.70	.16	.68	.12	.23	.52	.28	.11	.08
18	.86	1.00	.16	.83	.82	.59	.10	.29	.38	.21	.09	.40
19	1.03	.46	.10	.57	1.13	.42	.41	.26	.53	.47	.08	.23
20	.82	.30	.08	.34	.67	.50	.99	.19	.70	.42	.07	.22
21	.90	.22	.06	.23	.36	.23	.40	.16	.28	.23	.06	.34
22	.64	.17	.06	.18	.23	.15	.26	.12	.18	.17	.05	.36
23	.53	.14	.08	.15	.17	.11	.71	.09	*.14	.93	.04	.16
24	.69	.15	.06	.12	.14	.09	.34	.08	.10	1.18	.04	*.14
25	.67	.14	.05	.17	.09	.08	.81	.08	.09	1.69	.03	.51
26	.35	.10	.05	.75	.08	.06	.30	.07	.08	1.74	.03	.23
27	.32	.09	.09	.57	.07	*.05	.17	.06	.07	1.38	.03	.14
28	.91	.15	.06	.28	.06	.04	.12	.05	.06	1.62	.03	.57
29	1.19	.39	.09	.62	.07	.04	.11	-	.06	1.58	.03	.60
30	.63	.96	.27	.95	.15	.03	.23	-------	.05	1.86	.03	.26
31	1.13	.40	-------	.68	-------	.12	.16	-------	.05	-------	.03	-------
Total	17.06	18.54	4.05	15.31	8.21	7.42	11.85	11.37	6.79	20.53	14.57	5.36
Mean:												
mgd	0.550	0.598	0.135	0.494	0.274	0.239	0.382	0.406	0.219	0.684	0.470	0.179
cfs	0.851	0.925	0.209	0.764	0.424	0.370	0.591	0.628	0.339	1.06	0.727	0.277
Ac-ft	52	57	12	47	25	23	36	35	21	63	45	16

Calendar year 1956 : Max 2.0 Min 0.02 Mean(mgd) 0.498 Mean(cfs) 0.771 Ac-ft 557
Fiscal year 1956-57 : Max 1.86 Min 0.02 Mean(mgd) 0.386 Mean(cfs) 0.597 Ac-ft 432

* Discharge measurement made on this day.

5310. Kula diversion from Haipuaena Stream near Olinda--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.16	1.08	0.50	0.23	0.63	0.90	0.70	1.03	0.74	0.46	0.09	0.99
2	.16	*.70	.44	.25	.26	.71	.46	.66	.36	.35	.55	.84
3	.35	1.37	.39	.10	.17	1.22	.36	.38	.25	.27	.64	.40
4	.69	.88	.22	.07	.12	.94	.26	.26	.18	.25	.46	.27
5	.51	1.36	.15	.05	.09	.44	.22	.34	.15	.34	.23	.30
6	.52	.68	.11	.04	.41	.59	.17	.25	1.03	.22	.86	*.22
7	.22	.44	.09	.03	1.14	1.18	.14	.19	*.99	.33	1.39	.58
8	.22	1.00	.08	.02	.85	1.00	.14	.16	.44	.44	1.24	.40
9	.73	.70	.06	.02	.96	1.08	.17	.14	.35	.42	1.24	.28
10	1.00	.42	.05	.02	.76	1.83	.12	.10	.34	.94	.98	.23
11	.47	.76	.04	.02	.56	1.51	.09	.09	.23	.69	1.47	.19
12	.23	.50	.04	.02	.28	1.22	.08	.08	.22	.98	1.20	1.00
13	.28	.28	.03	.02	.19	1.30	.07	.07	.96	.66	.88	.47
14	.95	.37	.03	.02	.14	1.08	.06	.06	.37	.44	1.09	.28
15	.37	.98	.02	.03	.11	1.29	.05	.05	.22	.32	1.32	.23
16	.18	.42	.02	.11	.09	1.71	.04	.04	.16	.23	1.50	.69
17	.12	.27	.03	.17	.09	1.38	.04	.04	.12	.18	1.10	.59
18	.10	.22	.42	.18	.07	1.20	.04	.04	.11	.16	.90	.26
19	.94	.23	.30	.10	.06	.79	.04	.04	.32	.16	.90	.17
20	1.06	.25	.12	.07	.05	1.63	.05	.03	.22	.16	1.19	.12
21	.80	.23	.07	1.20	.87	1.29	.05	.03	.17	.30	.60	.10
22	.32	.22	.05	.83	.97	1.19	.04	.02	.42	.19	.36	.09
23	.69	.43	.04	1.26	.44	.88	.04	.02	.94	.15	.26	.09
24	.98	.72	.03	.97	.46	.59	*.81	.03	.77	.16	.19	.08
25	.82	.65	.03	.42	1.17	.95	.33	.17	.35	.21	.17	.07
26	.96	.48	.02	.21	1.47	1.09	.16	1.36	.21	.16	.23	.14
27	.48	.32	.03	.12	.77	.62	.13	1.27	.54	.21	.22	1.23
28	.34	1.08	.04	.08	.40	.69	.59	1.16	.82	.28	.54	.82
29	.42	.91	.12	.60	.28	.97	.80	-	1.41	.17	.48	.30
30	1.05	.95	.23	.79	1.01	.95	.91	-------	1.00	.11	.30	.17
31	1.50	.65	-------	.89	-------	.88	1.36	-------	.80	-------	.51	-------
Total	17.62	19.55	3.80	8.94	14.87	33.10	8.52	8.11	15.19	9.94	23.09	11.60
Mean:												
mgd	0.568	0.631	0.127	0.288	0.496	1.07	0.275	0.290	0.490	0.331	0.745	0.387
cfs	0.879	0.976	0.196	0.446	0.767	1.66	0.425	0.449	0.758	0.512	1.15	0.599
Ac-ft	54	60	12	27	46	102	26	25	47	31	71	36

Calendar year 1957 : Max 1.86 Min 0.02 Mean(mgd) 0.461 Mean(cfs) 0.713 Ac-ft 517
Fiscal year 1957-58 : Max 1.83 Min 0.02 Mean(mgd) 0.478 Mean(cfs) 0.740 Ac-ft 537

* Discharge measurement made on this day.

5311. Haipuaena Stream at Kula pipeline intake, near Olinda

Location (revised).--Lat 20°48'24", long 156°13'27", on left bank, at Kula pipeline intake, 3.4 miles east of Maui County Olinda Reservoir and 6.2 miles south of Kailua.

Drainage area.--0.26 sq mi (revised).

Records available.--January to April 1946 (fragmentary), May 1946 to June 1958.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 4,320 ft (from topographic map).

Average discharge.--12 years, 0.517 mgd (0.800 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 57 mgd (88 cfs) July 18 (gage height, 3.20 ft), from rating curve extended above 1.3 mgd; no flow for many days.
1957-58: Maximum discharge during fiscal year, 60 mgd (93 cfs) Nov. 22 (gage height, 3.26 ft), from rating curve extended above 1.3 mgd; no flow for many days.
1946-58: Maximum discharge, 87 mgd (135 cfs) between Jan. 23 and Feb. 9, 1948 (gage height, 3.72 ft), from rating curve extended above 1.3 mgd; no flow at times each year.

Remarks.--Records fair. Kula pipeline diverts all water from Haipuaena Stream at low stages.

Rating table, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

0.85	0	1.5	3.5
.9	.03	1.6	4.7
1.0	.18	1.7	6.0
1.1	.52	1.8	7.6
1.2	.98	2.0	11.2
1.3	1.60	2.2	15.4
1.4	2.45	2.4	21

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0	0.08	0	0	0.16	0.97	0	0	0	0	2.1	0
2	0	0	0	0	0	0	0	0	0	0	1.07	0
3	0	.16	0	0	0	0	0	0	0	0	.61	0
4	0	2.75	0	1.52	0	0	0	2.3	0	5.6	1.79	0
5	0	.67	0	.11	0	0	0	9.8	0	.58	1.67	0
6	0	.01	0	0	0	0	0	13.2	0	0	.08	0
7	0	.12	0	0	0	0	.03	6.9	0	0	0	0
8	0	.14	0	.26	0	0	1.81	7.0	0	0	0	0
9	0	0	0	0	0	0	2.0	3.6	0	0	.02	0
10	0	0	0	0	0	0	.46	2.3	0	0	0	0
11	0	0	0	0	0	0	.19	1.17	0	0	1.24	0
12	0	.22	0	0	0	0	0	1.08	0	0	.11	0
13	0	.53	0	0	0	0	0	.12	0	1.30	0	0
14	1.45	.58	0	2.65	.42	0	0	0	1.10	.42	0	0
15	.02	.16	0	5.2	.03	.02	0	0	4.9	.91	0	0
16	.01	3.25	.33	4.4	0	1.23	0	0	.29	.09	0	0
17	.01	4.0	.01	1.39	0	.07	0	0	.01	0	0	0
18	5.4	.15	0	.17	.42	.02	0	0	0	0	0	0
19	2.5	0	0	0	.40	.02	.13	0	.12	.0	0	0
20	.26	0	0	0	.02	0	1.06	0	.07	0	0	0
21	.52	0	0	0	0	0	0	0	0	0	0	0
22	.06	0	0	0	0	0	0	0	0	0	0	0
23	.04	0	0	0	0	0	.05	0	0	4.2	0	0
24	.35	0	0	0	0	0	0	0	0	.73	0	0
25	.12	0	0	0	0	0	.24	0	0	7.0	0	0
26	0	0	0	.67	0	0	0	0	0	3.5	0	0
27	0	0	0	.03	0	0	0	0	0	.69	0	0
28	.27	0	0	0	0	0	0	0	0	1.56	0	.08
29	1.57	.12	0	.13	0	0	0	-	0	2.3	0	.01
30	0	.70	0	.10	0	0	0	-------	0	3.05	0	0
31	.64	0	-------	.04	-------	0	0	-------	0	-------	0	-------
Total	13.22	13.64	0.34	16.67	1.45	2.33	5.97	47.47	6.49	31.93	8.69	0.09
Mean:												
mgd	0.426	0.440	0.011	0.538	0.048	0.075	0.193	1.70	0.209	1.06	0.280	0.003
cfs	0.659	0.681	0.017	0.832	0.074	0.116	0.299	2.63	0.323	1.64	0.433	0.005
Ac-ft	41	42	1.0	51	4.4	7.2	18	146	20	98	27	0.3

Calendar year 1956: Max 23 Min 0 Mean(mgd) 0.617 Mean(cfs) 0.955 Ac-ft 694
Fiscal year 1956-57: Max 13.2 Min 0 Mean(mgd) 0.406 Mean(cfs) 0.628 Ac-ft 456

Peak discharge (base, 44 mgd).--July 18 (2 p.m.) 57 mgd (88 cfs), 3.20 ft; Aug. 16 (10 p.m.) 44 mgd (68 cfs), 2.96 ft; Feb. 6 (3:30 p.m.) 47 mgd (73 cfs), 3.00 ft.

5311. Haipuaena Stream at Kula pipeline intake, near Olinda--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0	0.15	0.04	0	0.03	2.65	0.13	0.13	0.28	0	0	0.65
2	0	*.02	.04	0	0	.23	0	0	0	0	.32	.24
3	0	2.7	.02	0	0	.43	0	0	0	0	.03	0
4	0	.21	0	0	0	.14	0	0	0	0	0	0
5	.01	2.35	0	0	0	0	0	0	0	0	0	0
6	0	19.4	0	0	.51	1.67	0	0	2.3	0	1.60	0
7	0	5.7	0	0	1.12	2.6	0	0	.39	0	2.45	0
8	0	1.67	0	0	.59	1.17	0	0	0	0	.52	0
9	.16	0	0	0	.82	.47	0	0	0	.02	.34	0
10	.24	0	0	0	.17	4.7	0	0	0	.11	.20	0
11	0	.15	0	0	.01	15.6	0	0	0	.01	1.15	0
12	0	0	0	0	0	2.85	0	0	0	.21	.65	.22
13	.01	0	0	0	0	.67	0	0	.14	0	.16	0
14	.18	.06	0	0	0	.17	0	0	0	0	.29	0
15	0	.14	0	0	0	1.06	0	0	0	0	.45	0
16	0	0	0	0	0	6.7	0	0	0	0	.90	.30
17	0	0	0	0	0	1.16	0	0	0	0	.19	.02
18	0	0	0	0	0	.48	0	0	0	0	.05	0
19	.34	0	0	0	0	.01	0	0	0	0	.07	0
20	.25	0	0	0	0	5.3	0	0	0	0	.42	0
21	.19	0	0	.92	.34	6.0	0	0	0	0	0	0
22	0	0	0	.07	11.8	4.1	0	0	0	0	0	0
23	.62	1.65	0	.74	2.45	.28	0	0	.32	0	0	0
24	.47	15.0	0	.23	4.2	0	.35		.11	0	0	0
25	.72	.49	0	0	1.62	.19	0	0	0	0	0	0
26	.42	0	0	0	1.36	.82	0	1.79	0	0	0	0
27	0	0	0	0	.04	.03	0	1.82	0	0	0	.51
28	0	3.6	0	0	0	1.05	3.0	3.15	.15	0	.02	.11
29	0	9.7	0	1.60	0	1.25	6.8	-	7.9	0	0	0
30	.12	4.2	0	.35	5.3	1.98	11.4	-------	3.95	0	0	0
31	3.9	.50	-------	.43	-------	.59	4.0	-------	2.45	-------	0	-------
Total	7.63	67.69	0.10	4.34	30.36	64.35	25.68	6.69	17.99	0.35	9.81	2.05
Mean:												
mgd	0.246	2.18	0.003	0.140	1.01	2.08	0.828	0.239	0.580	0.012	0.316	0.068
cfs	0.381	3.37	0.005	0.217	1.56	3.22	1.28	0.370	0.897	0.019	0.489	0.105
Ac-ft	23	208	0.3	13	93	197	79	21	55	1.1	30	6.3

Calendar year 1957: Max 19.4 Min 0 Mean(mgd) 0.754 Mean(cfs) 1.17 Ac-ft 844
Fiscal year 1957-58. Max 19.4 Min 0 Mean(mgd) 0.649 Mean(cfs) 1.00 Ac-ft 727

Peak discharge (base, 44 mgd).--Aug. 6 (12:30 a.m.) 44 mgd (68 cfs), 2.97 ft; Aug. 24 (7:30 a.m.) 52 mgd (80 cfs), 3.10 ft; Aug. 29 (9 a.m.) 57 mgd (88 cfs), 3.19 ft; Nov. 22 (1:30 p.m.) 60 mgd (93 cfs), 3.26 ft.

* Discharge measurement made on this day.

5350. Haipuaena diversion ditch at Kolea Gulch, near Keanae

Location (revised).--Lat 20°50'37", long 156°11'46", on right bank 15 ft downstream from end of tunnel in Kolea Gulch, 3.3 miles southwest of Keanae, and 3.7 miles southeast of Kailua.

Records available.--March 1938 to June 1958.

Gage.--Water-stage recorder and Parshall flume. Datum of gage is 1,866 ft (from plane-table survey).

Average discharge.--20 years, 1.99 mgd (3.08 cfs).

Extremes.--1938-58: Maximum daily discharge, 11.4 mgd (17.6 cfs) Aug. 14, 1950; minimum daily, 0.02 mgd (0.03 cfs) Feb. 27 to Mar. 2, Apr. 3, 4, 1956.

Remarks.--Records good. Ditch diverts water from Haipuaena Stream for East Maui Irrigation Co.'s hydroelectric plant about 1 mile downstream from where it discharges into Koolau ditch for irrigation in central Maui.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.83	1.90	1.62	1.36	1.83	1.86	1.56	1.36	1.31	1.31	3.3	0.90
2	1.76	1.69	1.56	1.36	1.62	1.31	1.31	1.62	1.25	1.19	2.6	.85
3	1.69	2.6	1.56	1.31	1.56	1.19	1.19	1.86	1.19	1.31	2.55	1.02
4	1.62	3.55	1.56	2.2	1.49	1.07	1.13	2.8	1.07	3.5	3.45	1.36
5	1.56	2.55	1.76	1.76	1.42	1.46	1.31	4.5	1.34	2.2	2.7	1.07
6	1.49	1.96	1.49	1.42	1.42	1.69	1.55	4.4	1.56	1.62	2.05	.90
7	1.49	2.35	1.42	1.31	1.36	1.36	2.35	3.15	1.31	1.56	1.76	.75
8	1.56	2.2	1.42	2.35	1.31	1.25	*2.15	3.15	1.19	1.49	1.69	.75
9	1.49	1.90	1.42	1.90	1.31	1.13	2.5	2.65	1.13	1.49	1.74	.75
10	1.73	1.62	1.36	1.57	1.31	1.02	2.05	2.3	1.13	1.42	1.83	.75
11	1.62	1.62	1.31	1.42	1.56	.96	2.05	2.3	1.19	1.36	2.1	.70
12	1.42	2.65	1.31	1.36	1.49	1.31	1.62	2.4	1.25	1.31	1.83	.70
13	1.86	2.95	1.31	1.97	1.42	1.25	1.49	1.96	1.56	2.65	1.62	.70
14	2.7	2.8	1.31	2.55	1.67	1.31	1.49	1.83	2.55	2.5	1.62	.64
15	2.1	2.25	1.31	3.45	1.56	2.05	1.42	1.76	2.95	2.35	1.56	1.13
16	1.85	2.9	1.31	3.6	1.31	2.8	1.36	1.69	1.90	1.90	1.56	1.25
17	1.90	4.1	1.31	3.95	1.36	1.96	1.36	1.62	2.05	1.69	1.49	1.14
18	3.5	2.3	1.07	1.96	1.97	1.96	1.31	1.96	2.1	1.69	1.49	1.76
19	2.4	1.96	1.02	1.76	1.90	1.56	1.56	1.69	1.90	2.6	1.42	1.56
20	2.05	1.83	1.02	1.62	1.56	1.49	1.96	1.62	1.90	1.90	1.42	1.56
21	2.2	1.76	.96	1.56	1.42	1.42	1.49	1.56	1.62	1.76	1.36	1.58
22	1.90	1.69	1.69	1.56	1.36	1.36	1.49	1.42	1.62	*1.62	1.31	1.56
23	1.69	1.69	1.42	1.49	1.36	1.31	1.76	1.36	1.56	3.25	1.31	1.13
24	1.62	1.69	1.13	1.42	1.31	1.31	1.49	1.36	1.49	2.7	1.31	1.19
25	1.69	1.76	1.07	1.49	1.25	1.19	1.62	1.36	1.49	3.9	1.31	1.83
26	1.56	1.62	1.19	1.56	*1.25	1.13	1.36	1.31	1.42	3.25	1.31	1.31
27	1.76	1.69	1.07	1.56	1.19	1.07	1.31	1.36	1.36	2.55	1.13	1.07
28	2.9	1.85	1.13	1.62	1.13	1.02	1.25	1.31	*1.31	2.8	1.13	*1.05
29	2.85	*1.87	1.71	1.87	1.31	1.07	1.42	-	1.31	2.55	1.02	1.25
30	2.3	2.25	1.56	1.96	1.36	1.25	1.49	-------	1.62	3.1	1.02	1.02
31	2.25	2.05	-------	1.83	-------	2.1	1.31	-------	1.36	-------	.96	-------
Total	60.34	67.60	40.38	58.10	43.37	44.22	48.71	57.66	47.99	64.52	52.95	33.23
Mean:												
mgd	1.95	2.18	1.35	1.87	1.45	1.43	1.57	2.06	1.55	2.15	1.71	1.11
cfs	3.02	3.37	2.09	2.89	2.24	2.21	2.43	3.19	2.40	3.33	2.65	1.72
Ac-ft	185	207	124	178	133	136	149	177	147	198	162	102

Calendar year 1956: Max 5.8 Min 0.02 Mean(mgd) 1.59 Mean(cfs) 2.46 Ac-ft 1,790
Fiscal year 1956-57: Max 4.5 Min 0.64 Mean(mgd) 1.70 Mean(cfs) 2.63 Ac-ft 1,900

* Discharge measurement made on this day.

5350. Haipuaena diversion ditch at Kolea Gulch, near Keanae--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.13	2.3	1.90	1.42	1.62	2.55	1.83	1.96	1.62	1.76	1.56	2.8
2	1.49	2.05	1.90	1.36	1.49	1.96	1.76	1.69	1.36	1.83	1.96	2.5
3	1.76	3.05	1.83	1.31	1.42	2.25	1.69	1.56	1.31	1.69	1.76	2.05
4	2.25	2.2	1.69	1.31	1.36	1.96	1.56	1.49	1.31	1.83	1.62	1.90
5	1.83	2.7	1.62	1.25	1.36	1.76	1.56	1.56	1.31	1.83	1.56	1.90
6	1.69	4.6	1.62	1.19	1.80	1.91	1.49	1.42	2.05	1.69	2.3	1.96
7	1.62	3.7	1.56	1.13	*2.4	2.6	1.49	1.42	1.62	1.69	2.7	2.3
8	1.76	*2.7	1.56	1.07	2.4	2.1	1.49	1.42	1.36	1.69	2.7	2.2
9	1.90	2.1	1.49	1.02	2.3	2.2	1.49	1.36	1.36	1.62	2.5	2.05
10	2.05	1.90	1.49	1.02	1.96	3.35	1.42	1.36	1.52	1.62	2.2	1.90
11	1.69	1.90	1.42	1.25	1.96	4.5	1.36	1.31	1.42	1.69	2.4	1.90
12	1.56	1.83	1.42	1.13	1.83	2.95	1.36	1.31	1.42	1.83	2.3	2.7
13	1.62	1.69	1.49	.96	1.69	2.5	1.36	1.25	1.76	1.69	1.96	1.96
14	1.96	2.05	1.42	.90	1.62	2.2	1.31	1.25	1.36	1.69	2.55	1.83
15	1.56	2.3	1.36	1.04	1.56	2.25	1.31	1.19	1.31	1.62	2.5	1.76
16	1.49	1.90	1.42	2.0	1.56	3.35	1.31	1.13	1.31	1.62	2.55	1.69
17	2.1	1.83	1.82	1.76	1.49	2.5	1.31	1.13	1.31	1.62	2.1	1.69
18	1.76	1.90	2.2	1.56	1.49	2.3	1.31	1.13	*1.31	1.56	1.96	1.56
19	2.7	1.96	1.69	1.36	1.42	*2.2	1.31	1.02	1.49	1.49	2.1	1.56
20	2.5	1.83	1.56	1.42	1.42	3.4	1.25	1.02	1.36	1.56	2.3	1.49
21	2.2	1.83	1.42	2.9	1.92	3.4	1.25	.96	1.31	1.69	1.90	1.49
22	1.83	1.76	1.42	2.25	4.7	3.5	1.19	.90	1.42	1.49	1.76	1.42
23	1.96	2.35	1.42	2.3	2.7	2.25	1.31	.85	1.83	1.49	1.69	1.49
24	1.96	4.7	1.42	2.25	3.3	2.05	2.05	1.25	1.69	1.83	1.69	1.42
25	1.93	2.1	1.36	1.69	2.6	2.2	1.49	1.62	1.42	1.62	1.76	1.99
26	2.0	1.83	1.31	1.56	2.5	2.3	1.31	2.6	1.36	2.05	1.90	1.83
27	1.62	1.76	1.42	1.49	1.96	1.96	1.53	2.2	2.1	2.25	1.76	2.6
28	1.62	3.05	1.56	1.42	1.76	2.3	1.80	2.1	1.90	1.96	1.96	2.2
29	1.69	3.6	1.56	2.15	1.62	2.3	3.3	-	3.1	1.76	1.83	1.76
30	2.1	2.95	1.69	1.86	2.95	2.6	3.85	-------	3.1	1.62	1.96	1.62
31	3.3	2.2	-------	1.69	-------	2.05	2.95	-------	2.05	-------	2.25	-------
Total	58.63	74.62	47.04	47.02	60.16	77.70	51.00	39.46	50.15	51.38	64.04	57.52
Mean:												
mgd	1.89	2.41	1.57	1.52	2.01	2.51	1.65	1.41	1.62	1.71	2.07	1.92
cfs	2.92	3.73	2.43	2.35	3.11	3.88	2.55	2.18	2.51	2.65	3.20	2.97
Ac-ft	180	229	144	144	185	238	157	121	154	158	197	177

Calendar year 1957: Max 4.7 Min 0.64 Mean(mgd) 1.84 Mean(cfs) 2.85 Ac-ft 2,060
Fiscal year 1957-58: Max 4.7 Min 0.85 Mean(mgd) 1.86 Mean(cfs) 2.88 Ac-ft 2,080

* Discharge measurement made on this day.

5360. Haipuaena Stream above Spreckels ditch, near Huelo

Location.--Lat 20°51'04", long 156°11'28" (revised), on left bank 200 ft upstream from Spreckels ditch, 2.8 miles west of Keanae, 3.3 miles southeast of Kailua, and 4.7 miles southeast of Huelo.

Drainage area.--1.19 sq mi (revised).

Records available.--October 1913 to June 1958. Prior to July 1954, published as Haipuaena Stream near Huelo. December 1910 to September 1913 at site 600 ft downstream; records not equivalent owing to inflow from Spreckels ditch.

Gage.--Water-stage recorder. Datum of gage is 1,512.22 ft above mean sea level (East Maui Irrigation Co. bench mark).

Average discharge.--42 years (1916-58), 9.66 mgd (14.9 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 420 mgd (650 cfs) Oct. 17 (gage height, 4.90 ft), from rating curve extended above 150 mgd; minimum daily, 0.24 mgd (0.37 cfs) Nov. 28, Dec. 4, 11, Apr. 2.

1957-58: Maximum discharge during fiscal year, 620 mgd (959 cfs) Aug. 24 (gage height, 5.48 ft), from rating curve extended above 150 mgd; minimum, 0.18 mgd (0.28 cfs) Jan. 23.

1913-58: Maximum discharge, 6,100 mgd (9,440 cfs) Aug. 12, 1940 (gage height, 6.91 ft), from rating curve extended above 150 mgd; minimum, slightly less than 0.1 mgd (about 0.2 cfs) several days during January, February, May, June, 1945 and October 1953.

Remarks.--Records good except those for periods of indefinite stage-discharge relation, which are fair. Haipuaena diversion ditch and Kula pipeline divert water above station.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.9	4.9	2.65	0.94	3.8	3.15	1.90	0.56	0.53	0.32	50	0.33
2	2.85	3.0	1.84	.82	2.05	.47	.57	2.1	.38	.24	24	.33
3	2.7	18.8	1.43	.78	1.47	.26	.41	5.0	.30	.59	20	.40
4	1.84	42	1.76	16.3	1.26	.24	.38	69	.30	66	59	.83
5	1.59	15.5	3.8	3.85	.95	2.2	.61	*100	1.38	10.4	26.5	.34
6	1.35	5.2	1.35	1.28	.85	3.1	3.15	93	2.05	2.15	8.1	.31
7	1.35	12.1	1.00	.88	.80	.78	6.5	31	.47	1.46	5.0	.31
8	1.34	7.2	1.14	16.5	.57	.35	8.0	29	.32	1.08	3.65	.30
9	1.29	4.1	1.07	5.5	.44	.28	16.1	18.3	.26	1.13	3.3	.30
10	4.8	2.75	.83	2.05	.44	.26	7.3	9.2	.26	.98	3.15	.30
11	1.98	2.65	.63	1.21	1.44	.24	8.5	10.4	.35	.66	7.7	.31
12	1.07	18.7	.53	.97	1.56	.61	2.4	12.3	.50	.57	3.35	.31
13	4.1	24	.52	6.6	1.06	.47	1.40	4.9	2.35	24	1.92	.31
14	19.7	20.5	.58	28.5	2.7	.74	1.26	3.95	15.8	16.7	1.53	.29
15	6.4	8.5	.49	50	1.66	5.7	.95	2.9	26	15.3	1.32	.43
16	4.4	39	.58	55	.53	24	.75	2.25	3.8	4.8	1.19	.51
17	*4.4	*75	.75	64	1.08	5.7	.61	1.71	6.2	2.2	1.08	.81
18	53	11.2	.35	6.6	5.9	5.9	.50	5.8	6.5	2.75	1.08	2.65
19	10.0	5.1	.32	3.6	4.0	1.87	1.93	2.15	4.7	18.8	.88	.91
20	5.5	3.5	.29	2.45	*1.63	1.26	5.8	1.63	3.35	5.0	.70	1.30
21	7.2	2.65	.26	1.87	.95	.95	1.26	1.47	1.55	2.8	*.57	2.55
22	3.9	2.0	4.3	1.55	.70	.75	1.06	1.12	1.26	2.0	.51	1.43
23	2.3	1.84	1.19	1.26	.65	.57	3.4	.95	.95	53	.48	.40
24	1.93	1.84	.38	1.12	.44	.50	1.06	.75	.75	20	.51	.35
25	2.35	2.35	.29	1.40	.35	.38	2.4	.65	*.57	67	.43	2.3
26	1.43	1.35	.32	1.74	.30	.35	.80	.53	.57	39.5	.48	.55
27	2.65	1.88	.35	1.73	.26	.32	.50	.70	.38	16.3	.39	.39
28	21.5	3.1	.32	2.8	.24	*.28	.42	.53	.30	25.5	.37	.38
29	22.5	5.3	2.7	5.8	.44	.31	1.16	-	.32	19.3	.36	.42
30	12.3	12.8	2.1	5.2	.48	.58	1.15	-------	1.72	38.5	.34	.35
31	9.0	7.9	-------	3.75	-------	8.4	.57	-------	.66	-------	.34	-------
Total	220.62	366.71	34.12	296.05	39.00	70.97	82.80	411.85	86.83	459.03	228.23	20.70
Mean:												
mgd	7.12	11.8	1.14	9.55	1.30	2.29	2.67	14.7	2.80	15.3	7.36	0.690
cfs	11.0	18.3	1.76	14.8	2.01	3.54	4.13	22.7	4.33	23.7	11.4	1.07
Ac-ft	677	1,130	105	909	120	218	254	1,260	266	1,410	700	64

Calendar year 1956: Max 292 Min 0.18 Mean(mgd) 9.75 Mean(cfs) 15.1 Ac-ft 10,960
Fiscal year 1956-57: Max 100 Min 0.24 Mean(mgd) 6.35 Mean(cfs) 9.82 Ac-ft 7,110

Peak discharge (base, 750 mgd).--No peak above base.

* Discharge measurement made on this day.

5360. Haipuaena Stream above Spreckels ditch, near Huelo--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	e1.5	11.4	4.7	1.08	2.6	19.9	5.6	7.5	4.5	3.0	1.51	23.5
2	e1.9	5.8	5.4	.66	1.59	5.8	4.3	4.0	1.75	4.0	7.2	13.6
3	2.8	33	4.6	.51	1.22	13.7	3.45	2.45	1.21	2.45	3.4	5.2
4	8.2	9.2	2.8	.41	*.96	7.0	2.55	1.93	.94	3.8	2.2	3.25
5	4.6	29	2.2	.36	.71	3.4	2.1	2.3	.83	3.4	1.43	3.0
6	2.7	129	1.92	.30	12.4	16.0	1.75	1.51	19.2	2.55	12.3	3.95
7	1.51	64	1.60	*e.28	20	22	1.51	1.84	5.4	2.45	25	8.9
8	3.05	*22	1.39	e.27	17.8	8.0	1.94	1.68	1.84	2.3	28.5	6.5
9	3.9	7.4	1.13	*.26	16.4	9.4	1.72	1.14	1.84	1.59	18.1	4.6
10	6.6	4.6	.93	.40	7.4	65	1.14	.94	4.8	1.85	9.9	2.9
11	2.6	3.9	.83	.57	5.4	150	.94	.83	2.55	2.1	17.8	*2.85
12	1.46	3.25	.83	.46	3.45	32.5	.83	.68	2.05	3.8	14.8	20.5
13	2.2	2.2	.88	.40	2.1	16.0	.68	.58	7.2	2.0	7.1	4.5
14	4.9	4.8	.83	.43	1.67	9.3	.58	.45	1.75	2.0	25.5	3.15
15	1.39	10.3	.51	.57	1.43	11.8	.53	.41	1.21	1.59	19.1	2.5
16	1.08	3.0	.77	7.8	1.22	*55	.45	.38	1.14	1.75	20.5	1.75
17	9.4	2.95	7.2	*3.3	.96	20.5	.38	.38	1.14	2.1	8.6	2.2
18	2.8	3.4	11.2	2.25	.91	15.4	.63	.38	.88	1.21	6.2	1.28
19	20.5	4.5	2.55	.91	.66	12.5	.45	.29	1.84	.94	9.7	1.00
20	14.9	2.7	*1.13	1.88	.53	74	.38	.26	.83	1.10	14.4	.88
21	10.0	3.0	.88	39.5	4.6	70	.26	.26	.63	2.35	5.1	.73
22	3.5	2.0	.66	11.3	160	61	.23	.26	1.50	.88	3.65	.73
23	6.6	22.5	.83	15.5	35.5	13.4	.71	.26	5.1	.78	2.75	.88
24	5.6	188	.98	14.3	69	9.3	8.4	.93	4.6	3.6	2.45	.58
25	6.3	9.4	.66	3.55	23.5	13.0	1.28	4.0	1.35	1.85	3.25	4.5
26	7.9	4.0	.45	2.0	18.1	19.4	.41	44	1.06	9.4	4.8	3.15
27	2.25	3.5	.66	1.51	6.8	8.0	*3.15	22.5	11.5	12.6	3.0	17.4
28	2.2	51	1.60	1.22	3.75	19.6	9.6	19.5	7.4	5.3	6.4	7.7
29	3.6	99	2.1	22.5	2.65	18.3	72	-	65	*2.7	3.75	2.1
30	7.9	60	3.65	6.9	55	30	97	-------	36.5	1.67	6.1	1.51
31	55	9.8	-------	3.3	-------	9.4	45	-------	6.5	-------	10.1	-------
Total	208.84	808.60	65.87	144.68	478.31	838.6	269.95	121.64	204.04	87.11	304.59	155.29
Mean:												
mgd	6.74	26.1	2.20	4.67	15.9	27.1	8.71	4.34	6.58	2.90	9.83	5.18
cfs	10.4	40.4	3.40	7.23	24.6	41.9	13.5	6.71	10.2	4.49	15.2	8.01
Ac-ft	641	2,480	202	444	1,470	2,570	828	373	626	267	935	477

Calendar year 1957: Max 188 Min 0.24 Mean(mgd) 10.5 Mean(cfs) 16.2 Ac-ft 11,760
Fiscal year 1957-58: Max 188 Min 0.23 Mean(mgd) 10.1 Mean(cfs) 15.6 Ac-ft 11,310

Peak discharge (base, 750 mgd).--No peak above base.

* Discharge measurement made on this day.
e Stage-discharge relation indefinite; discharge estimated on basis of records for Puohokamoa Stream.

5380. Spreckels ditch at Haipuaena weir, near Huelo

Location (revised).--Lat 20°51'15", long 156°11'25", on left bank near Spreckels ditch trail between Haipuaena and Puohokamoa Streams, 2.7 miles west of Keanae, 3.3 miles southeast of Kailua, and 4.5 miles southeast of Huelo.

Records available.--April 1922 to June 1958. May 1919 to April 1922 in files of East Maui Irrigation Co.

Gage.--Water-stage recorder and sharp-crested weir. Datum of gage is 1,470.96 ft above mean sea level (East Maui Irrigation Co. bench mark). Apr. 29, 1922, to Feb. 19, 1930, at same site at different datum. Feb. 20, 1930, to Oct. 25, 1935, at site 100 ft upstream at different datum.

Average discharge.--35 years (1922-29, 1930-58), 13.3 mgd (20.6 cfs).

Extremes.--1922-58: Maximum daily discharge, 97 mgd (150 cfs) Feb. 10, 1955, Feb. 18, 1956; no flow at times.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Flow regulated by gates and spillways. Spreckels ditch diverts water from all streams between Nuaailua and Kailua Streams, above Koolau ditch east of Puohokamoa and below Koolau ditch west of Puohokamoa. About 4 mgd is diverted from Spreckels ditch to East Maui Irrigation Co.'s hydroelectric plant at Kolea Gulch. Water used for irrigation is central Maui.

Revisions (fiscal years).--WSP 770: 1932-33.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	14.3	15.9	9.2	4.2	11.4	10.0	6.9	2.7	1.66	0.98	50	0.26
2	11.0	10.7	6.4	3.7	8.1	2.15	2.3	9.0	.92	.46	32.5	.23
3	*10.4	32	a5.3	3.35	6.0	.98	1.55	14.2	.61	3.85	27	2.4
4	6.9	56	a6.5	28	5.4	.61	1.20	46	.38	47	60	3.55
5	6.3	32	13.4	12.7	3.9	5.4	2.65	55	3.45	22.5	35.5	.46
6	4.7	17.3	4.7	a5.3	3.5	11.1	8.5	57	7.1	7.5	14.2	.26
7	5.3	27	3.5	a4.0	3.4	4.0	17.9	26	1.75	4.7	13.8	.23
8	6.0	19.7	3.9	30.5	2.15	2.05	21	37	.92	3.35	12.3	.23
9	5.3	13.8	3.3	*19.3	1.65	1.20	31.5	34	.42	4.3	*12.0	.20
10	10.8	9.1	2.4	7.8	1.55	.78	20	24.5	.38	3.7	11.2	.20
11	7.1	9.4	2.05	4.4	7.4	.46	22	*27	.80	1.85	18.6	.23
12	3.6	34.5	1.65	3.3	8.2	3.65	8.7	29.5	1.78	1.28	11.9	.26
13	14.1	43	2.6	21	5.0	2.8	5.1	16.9	10.1	37.5	7.1	.26
14	36.5	38.5	1.78	28	9.5	4.0	4.4	14.9	27.5	36	5.3	.23
15	21.5	23	1.94	46	5.6	13.6	3.2	11.0	36.5	27.5	4.6	.99
16	15.6	36	1.81	50	2.3	31	2.4	8.5	11.6	14.3	4.2	1.81
17	14.9	61	1.70	47	4.4	12.0	1.95	6.4	14.9	7.2	3.5	3.6
18	48	26.5	.66	20.5	14.0	13.6	1.55	18.2	15.5	11.8	3.6	12.5
19	17.3	16.6	.38	12.3	10.4	6.9	7.9	8.3	15.8	38.5	2.8	4.8
20	14.7	11.7	a.34	8.5	6.6	4.7	17.1	6.1	11.6	18.2	2.05	6.0
21	20.5	9.4	a.30	6.6	4.1	3.5	5.8	5.4	5.6	10.2	1.85	8.2
22	13.8	7.6	13.4	5.1	3.05	2.65	8.2	3.9	5.0	7.1	1.55	6.0
23	8.5	6.9	4.2	4.2	2.8	1.85	14.8	3.3	3.6	50	1.45	.84
24	7.1	6.9	1.28	3.75	1.85	1.45	4.6	2.65	2.3	31	1.49	.79
25	7.5	9.1	.61	4.8	1.45	1.12	8.6	2.3	1.80	64	1.08	11.3
26	4.9	5.1	.97	5.2	1.12	.84	3.2	1.95	1.75	49	1.28	2.2
27	10.3	7.9	.79	5.8	.84	.51	2.15	2.5	1.05	26.5	.46	.46
28	38	11.1	1.09	11.6	.51	.30	1.65	1.76	.72	35.5	.38	.38
29	38.5	13.7	12.5	14.0	2.2	.70	5.9	-	.78	28	.26	1.25
30	28	28.5	9.3	14.7	2.6	2.8	5.2	-------	7.9	46	.26	.53
31	23.5	21	-------	12.2	-------	19.8	2.6	-------	2.65	-------	.26	-------
Total	474.9	660.9	117.95	447.80	140.97	166.50	250.50	475.96	196.82	639.77	342.47	70.65
Mean:												
mgd	15.3	21.3	3.93	14.4	4.70	5.37	8.08	17.0	6.35	21.3	11.0	2.36
cfs	23.7	33.0	6.08	22.3	7.27	8.31	12.5	26.3	9.82	33.0	17.0	3.65
Ac-ft	1,460	2,030	362	1,370	433	511	769	1,460	604	1,960	1,050	217

Calendar year 1956: Max 97 Min 0 Mean(mgd) 15.0 Mean(cfs) 23.2 Ac-ft 16,870
Fiscal year 1956-57: Max 64 Min 0.20 Mean(mgd) 10.9 Mean(cfs) 16.9 Ac-ft 12,230

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for nearby stations.

5380. Spreckels ditch at Haipuaena weir, near Huelo--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.60	28	15.8	4.0	8.5	33	16.6	23	12.7	10.4	5.0	42
2	*6.4	19.8	16.6	2.65	4.9	16.1	14.3	13.4	5.4	13.9	23	31.5
3	11.6	44	15.4	1.55	3.6	25	12.6	8.0	3.5	8.2	13.4	18.0
4	26.5	23.5	10.7	.98	2.5	16.5	9.4	5.8	2.4	12.6	8.8	12.7
5	19.0	34.5	8.5	.56	1.95	10.7	8.0	7.3	1.95	12.1	4.7	11.9
6	10.7	82	7.3	.38	12.2	13.9	6.4	4.6	28	8.4	26	14.0
7	7.0	*62	6.2	.26	*36	33	5.5	6.7	15.2	9.1	42	24.5
8	12.8	40	5.1	.26	35	17.7	7.3	6.9	6.3	8.5	46	18.4
9	17.2	25.5	4.4	.26	32.5	19.2	6.9	3.5	5.6	5.8	37	16.8
10	23	16.6	3.75	.26	22.5	50	4.4	2.5	13.8	6.7	26	10.7
11	10.0	14.3	3.2	1.38	18.4	56	3.6	2.05	*10.8	7.5	36.5	*11.1
12	6.5	12.2	3.2	.74	13.8	41	2.9	1.65	7.5	11.3	30.5	36.5
13	10.9	8.8	3.75	.26	7.6	26	2.5	1.28	20.5	7.1	22	16.8
14	18.4	14.7	3.95	.26	5.8	17.7	2.15	.98	6.2	7.6	41	12.0
15	6.1	29	2.4	1.63	4.7	19.8	1.75	.78	3.9	5.8	37	10.0
16	4.4	12.2	3.95	20	3.6	*42	1.45	.61	3.1	6.9	39	6.9
17	26	12.5	16.6	14.6	2.65	26.5	1.20	.56	3.5	9.0	25	7.6
18	12.0	14.5	31	8.8	2.65	25	1.99	.56	2.7	3.95	21	5.4
19	41	18.2	11.8	3.1	1.75	20.5	1.45	.42	7.9	2.8	25	3.9
20	35	11.5	5.5	7.7	1.36	50	1.28	.38	2.8	3.45	31	3.05
21	27.5	12.7	3.9	47	14.7	50	.72	.38	1.85	8.1	17.7	2.5
22	13.3	9.1	3.05	28.5	37.5	53	.51	.38	5.2	2.95	12.0	2.4
23	20.5	23	4.1	32	23.5	28	2.8	.38	15.9	2.15	9.6	3.15
24	18.3	63	3.9	28	31	23	22.5	3.8	15.2	14.7	7.8	1.95
25	15.5	15.9	*2.45	12.2	26	27	5.0	15.4	5.2	7.2	12.5	15.0
26	21	9.9	1.24	6.8	21.5	33.5	1.80	48	3.0	24	16.1	12.5
27	9.4	9.4	3.6	4.6	9.4	20.5	10.4	32.5	26	32.5	11.5	32.5
28	9.0	38.5	7.0	3.2	8.5	33.5	13.5	28	21	19.8	18.0	21.5
29	15.3	50	7.8	20.5	9.1	32	56	-	54	10.4	13.7	8.5
30	25	37.5	14.5	17.4	38	39	75	-------	52	6.2	20.5	5.8
31	53	22	-------	10.6	-------	22	53	-------	20.5	-------	28	-------
Total	533.90	814.8	230.64	280.43	441.16	921.1	352.90	219.81	383.60	289.10	707.3	419.55
Mean:												
mgd	17.2	26.3	7.69	9.05	14.7	29.7	11.4	7.85	12.4	9.64	22.8	14.0
cfs	26.6	40.7	11.9	14.0	22.7	46.0	17.6	12.1	19.2	14.9	35.3	21.7
Ac-ft	1,640	2,500	708	861	1,350	2,830	1,080	675	1,180	887	2,170	1,290

Calendar year 1957: Max 82 Min 0.20 Mean(mgd) 14.2 Mean(cfs) 22.0 Ac-ft 15,950
Fiscal year 1957-58: Max 82 Min 0.26 Mean(mgd) 15.3 Mean(cfs) 23.7 Ac-ft 17,170

* Discharge measurement made on this day.

5410. Koolau ditch at Haipuaena, near Huelo

Location (revised).--Lat 20°51'17", long 156°11'19", on right bank 1,000 ft upstream from intake at Puohokamoa Stream, 3.3 miles southeast of Kailua, and 4.5 miles southeast of Huelo Church.

Records available.--April 1932 to June 1958.

Gage.--Water-stage recorder and Parshall flume. Prior to Mar. 21, 1933, at datum 1.94 ft lower and Mar. 21, 1933, to Mar. 20, 1935, at datum 0.25 ft lower than present datum. Altitude of gage is 1,240 ft (from topographic map).

Average discharge.--26 years, 79.4 mgd (123 cfs).

Extremes.--1932-58: Maximum daily discharge, 193 mgd (299 cfs) Jan. 17, 1946; no flow Feb. 14-28, Mar. 7-18, 1933, Feb. 26 to Mar. 22, 1935.

Remarks.--Records excellent. Flow regulated by floodgates. Water used for domestic supply and irrigation in central Maui.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	80	76	67	41	95	96	44	45	35.5	31	190	26.5
2	67	63	55	37	55	34	31	81	32.5	29.5	183	25
3	67	142	52	37	48	28	29.5	100	31	39	176	26.5
4	59	183	55	112	42	26.5	28	169	31	159	190	28
5	52	158	86	71	41	58	37	128	51	132	183	25
6	50	104	48	41	42	101	82	94	67	59	149	25
7	48	133	44	37	37	42	107	78	34	48	*110	23.5
8	44	114	50	119	34	32.5	121	103	31	41	94	22
9	44	76	48	110	32.5	28	155	99	29.5	41	85	22
10	65	59	42	61	32.5	26.5	123	89	29.5	35.5	80	22
11	54	59	41	49	49	25	127	*96	32.5	32.5	103	22
12	42	150	37	42	59	39	64	97	34	32.5	72	20.5
13	66	176	35.5	106	48	37	46	59	50	153	59	21
14	145	176	35.5	119	61	53	44	72	159	138	55	19.4
15	97	134	40	180	39	129	39	52	176	108	52	26.5
16	84	166	35.5	186	34	176	34	41	92	93	50	29.5
17	72	183	32.5	159	35	114	32.5	34	137	110	46	28
18	171	162	31	108	101	99	31	74	129	89	46	46
19	110	113	31	85	64	52	77	35.5	89	175	42	36.5
20	100	89	*29.5	67	43	42	136	37	71	116	41	42
21	111	76	28	55	35.5	37	67	48	48	76	39	35.5
22	72	67	66	50	32.5	35.5	71	44	62	63	37	29
23	55	63	36.5	44	31	32.5	93	41	74	166	35.5	23.5
24	50	59	29.5	42	31	31	50	39	50	176	35.5	24
25	50	66	28	41	29.5	29.5	70	37	60	190	35.5	58
26	46	52	31	39	28	28	42	35.5	41	183	35.5	26.5
27	58	59	28	37	28	26.5	37	37	37	176	32.5	23.5
28	169	77	31	67	26.5	26	35.5	38	34	176	31	23.5
29	163	82	67	90	28	26.5	44	-	32.5	176	29.5	25
30	145	139	66	112	28	28	46	-------	46	190	28	22
31	118	122	-------	90	-------	123	35.5	-------	34	-------	28	-------
Total	2,554	3,378	1,306.5	2,434	1,292.0	1,662.0	1,979.0	1,903.0	1,860.0	3,234.0	2,373.0	827.4
Mean:												
mgd	82.4	109	43.6	78.5	43.1	53.6	63.8	68.0	60.0	108	76.5	27.6
cfs	127	169	67.5	121	66.7	82.9	98.7	105	92.8	167	118	42.7
Ac-ft	7,840	10,370	4,010	7,470	3,960	5,100	6,070	5,840	5,710	9,920	7,280	2,540

Calendar year 1956: Max 190 Min 25 Mean(mgd) 89.8 Mean(cfs) 139 Ac-ft 100,900
Fiscal year 1956-57: Max 190 Min 19.4 Mean(mgd) 68.0 Mean(cfs) 105 Ac-ft 76,110

* Discharge measurement made on this day.

5410. Koolau ditch at Haipuaena, near Huelo--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	25	162	131	41	55	162	85	131	10.0	50	46	169
2	40	106	126	37	50	88	101	88	5.7	49	101	150
3	55	174	114	34	44	109	103	59	5.2	35.5	52	104
4	121	149	85	32.5	*40	97	89	52	5.3	48	44	80
5	98	155	72	31	37	59	80	50	5.0	42	39	78
6	56	190	67	31	72	63	76	46	41	37	115	84
7	44	183	59	29.5	148	156	67	52	16.7	38.5	169	126
8	62	161	55	28	156	94	72	48	6.7	32.5	176	101
9	72	130	52	28	141	111	67	39	5.8	34.5	168	*92
10	88	113	50	28	129	176	59	35.5	14.4	39	132	67
11	48	89	48	31	118	183	55	34	6.6	39	166	65
12	42	94	46	28	103	176	52	32.5	*6.1	53	153	165
13	58	72	46	25	67	169	50	31	12.7	44	109	85
14	69	88	42	23.5	59	132	48	31	5.0	55	165	67
15	41	143	39	32.5	52	131	44	29.5	4.9	48	176	63
16	37	76	41	104	46	174	42	28	4.7	50	176	55
17	122	72	74	75	42	158	41	28	4.7	59	137	52
18	68	80	130	50	42	156	42	28	4.7	41	119	48
19	166	105	79	34	43	133	41	26.5	5.3	37	142	44
20	162	76	56	49	37	169	41	25	5.5	35.5	162	41
21	134	81	44	180	80	119	35.5	25	9.8	37	106	39
22	76	67	41	157	151	119	35.5	23.5	26	32.5	80	39
23	105	105	42	169	128	99	40	17.5	50	31	67	39
24	74	182	42	153	144	103	100	5.8	87	51	63	35.5
25	75	162	39	85	118	118	42	7.9	39.5	35.5	66	74
26	119	119	35.5	59	119	137	35.5	55	25.5	126	81	69
27	72	113	42	50	72	108	73	43	129	142	63	156
28	67	162	50	44	55	127	71	17.8	75	97	103	123
29	76	176	57	91	46	104	176	-	142	73	63	59
30	126	152	70	101	138	120	183	-------	169	50	103	50
31	165	162	-------	67	-------	103	176	-------	88	-------	131	-------
Total	2,563	3,899	1,874.5	1,928.0	2,532	3,953	2,222.5	1,089.5	1,016.8	1,542.5	3,473	2,419.5
Mean:												
mgd	82.7	126	62.5	62.2	84.4	128	71.7	38.9	32.8	51.4	112	80.6
cfs	128	195	96.7	96.2	131	198	111	60.2	50.7	79.5	173	125
Ac-ft	7,870	11,970	5,750	5,920	7,770	12,130	6,820	3,340	3,120	4,730	10,660	7,430

Calendar year 1957: Max 190 Min 19.4 Mean(mgd) 79.2 Mean(cfs) 123 Ac-ft 88,770
Fiscal year 1957-58: Max 190 Min 4.7 Mean(mgd) 78.1 Mean(cfs) 121 Ac-ft 87,510

* Discharge measurement made on this day.

5450. Puohokamoa Stream above Spreckels ditch, near Huelo

Location (revised).--Lat 20°51'21", long 156°11'29", on right bank 650 ft upstream from Spreckels ditch inflow and trail crossing, 3.2 miles southeast of Kailua, and 4.4 miles southeast of Huelo.

Drainage area.--2.6 sq mi, approximately.

Records available.--June 1913 to June 1958. Prior to July 1954, published as Puohokamoa Stream near Huelo. December 1910 to May 1913 at site 700 ft downstream; records not equivalent due to inflow of Spreckels ditch.

Gage.--Water-stage recorder and masonry control. Datum of gage is 1,322.04 ft above mean sea level (East Maui Irrigation Co. bench mark). Prior to May 31, 1934, water-stage recorder at site 130 ft downstream at different datum.

Average discharge.--41 years (1917-58), 20.9 mgd (32.3 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 850 mgd (1,320 cfs) Oct. 17 (gage height, 5.60 ft), from rating curve extended above 400 mgd by logarithmic plotting; minimum, 1.19 mgd (1.84 cfs) June 14.

1957-58: Maximum discharge during fiscal year, 940 mgd (1,450 cfs) Nov. 22 (gage height, 5.92 ft), from rating curve extended as explained above; minimum daily, 1.5 mgd (2.3 cfs) Oct. 9.

1913-58: Maximum discharge, 1,600 mgd (2,480 cfs) Aug. 12, 1940 (gage height, 7.81 ft), from rating curve extended as explained above; minimum, 0.1 mgd (0.2 cfs) Nov. 17, 1929.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Kula pipeline diverts small amount of water above station, at altitude 4,300 ft, for domestic supply.

Rating table, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

0.6	0.75	1.4	28
.7	1.75	1.8	63
.8	3.1	2.2	115
.9	5.1	2.5	165
1.0	7.9	3.0	252
1.2	15.5	3.5	340

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	10.6	12.9	8.0	3.25	10.0	5.8	5.4	3.15	2.8	2.55	111	1.94
2	8.2	8.8	7.2	2.8	6.7	2.55	2.8	6.4	2.55	2.15	53	1.94
3	7.6	51	6.0	2.95	5.1	2.0	2.4	11.1	2.4	2.5	45	1.94
4	5.8	98	7.0	35.5	4.4	1.88	2.25	157	2.25	131	140	2.6
5	5.6	40	12	8.7	3.8	4.8	3.0	199	4.3	24	60	1.94
6	4.8	14.9	5.5	4.0	3.45	8.1	10.7	170	6.0	6.6	22	1.69
7	5.1	34	4.6	3.1	3.25	3.45	17.3	55	2.65	4.8	15.0	1.58
8	4.6	19.0	5.3	45	2.95	2.4	18.7	50	2.15	4.0	12.0	1.58
9	4.4	11.6	5.0	14.4	2.65	2.0	36.5	35	2.15	3.8	10.4	1.58
10	10.3	8.2	4.3	6.2	2.65	2.0	18.1	21	2.15	*3.6	9.4	1.47
11	6.7	7.9	3.5	4.2	4.9	1.75	22	24	2.5	2.95	16.6	1.58
12	4.2	48	3.1	3.5	5.1	2.55	6.8	30.5	3.0	2.65	10.4	1.47
13	11.4	63	3.0	17.1	4.0	2.55	4.4	13.4	7.0	51	6.9	*1.47
14	49	52	3.3	47	6.4	2.55	4.0	10.2	22	44	6.0	1.37
15	17.7	24	2.8	117	5.0	14.2	3.45	8.5	41	42	5.3	2.05
16	12.6	77	3.3	115	2.95	57	3.1	6.7	6.0	12.6	5.0	2.45
17	*11.8	189	4.0	143	3.8	13.8	2.8	5.8	10	6.1	4.6	2.75
18	117	33.5	2.4	17.8	13.3	16.0	2.65	15.7	11	7.3	4.4	7.4
19	20.5	16.0	2.2	11.4	9.4	5.4	6.7	6.8	7.5	50	3.8	3.45
20	13.5	12.2	*2.1	7.9	*5.3	4.2	11.8	5.6	4.8	12.2	3.65	4.2
21	17.7	9.9	1.88	6.4	3.6	3.45	4.4	5.1	4.3	7.0	*3.3	4.1
22	10.9	7.6	13.6	5.6	3.1	2.95	4.1	4.0	3.9	*5.8	3.0	4.6
23	7.3	7.0	4.5	4.8	2.95	2.65	8.2	3.6	3.6	113	2.85	1.94
24	6.4	6.7	2.4	4.2	2.55	2.55	3.85	3.45	3.3	52	2.85	1.69
25	7.0	7.7	2.15	4.8	2.4	2.25	6.9	3.25	3.0	144	2.85	*5.2
26	5.6	5.6	2.25	4.4	2.25	2.15	3.45	2.95	2.95	84	2.85	2.45
27	7.6	6.7	2.15	5.1	2.15	2.0	2.8	3.25	2.55	41	2.45	1.81
28	57	10	2.15	8.4	2.0	*1.94	2.65	2.95	*2.4	60	2.35	1.81
29	57	17	6.7	15.2	2.6	2.1	4.4	-	2.55	41	2.2	2.05
30	33	31	5.7	13.9	2.55	2.85	3.85	-------	5.9	83	2.05	1.69
31	23.5	20	-------	10.6	-------	20.5	2.8	-------	3.25	-------	1.94	-------
Total	564.4	950.2	138.08	693.20	131.25	200.37	232.25	863.40	181.90	1,046.60	573.14	73.79
Mean:												
mgd	18.2	30.7	4.60	22.4	4.38	6.46	7.49	30.8	5.87	34.9	18.5	2.46
cfs	28.2	47.5	7.12	34.7	6.78	10.0	11.6	47.7	9.08	54.0	28.6	3.81
Ac-ft	1,730	2,920	424	2,130	403	615	713	2,650	558	3,210	1,760	226

Calendar year 1956: Max 542 Min 1.50 Mean(mgd) 23.7 Mean(cfs) 36.7 Ac-ft 26,620
Fiscal year 1956-57: Max 199 Min 1.37 Mean(mgd) 15.5 Mean(cfs) 24.0 Ac-ft 17,340

Peak discharge (base, 750 mgd).--Oct. 17 (9:30 a.m.) 850 mgd (1,320 cfs), 5.60 ft.

* Discharge measurement made on this day.

Note.--No gage-height record Aug. 28 to Sept. 20, Feb. 6-11, Mar. 11-25; discharge estimated on basis of records for Haipuaena Stream.

5450. Puohokamoa Stream above Spreckels ditch, near Huelo--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.2	30	15.1	3.5	7.0	45	17.7	20.5	11.9	9.9	4.4	57
2	4.0	15.7	16.3	3.0	5.4	16.2	14.3	12.6	5.8	11.4	18.5	33
3	6.6	71	14.7	2.5	4.0	33.5	12.2	8.2	4.6	7.0	8.8	13.4
4	22	24	9.6	2.1	*3.3	18.6	9.6	6.4	3.8	10.2	5.6	9.9
5	11.1	56	7.3	2.0	3.1	9.9	8.5	7.3	3.45	9.6	4.4	8.8
6	7.3	233	6.1	1.8	28.5	25.5	7.3	5.4	39	7.0	31	9.8
7	4.6	138	5.6	1.7	46	60	6.7	5.6	12.8	6.4	53	24
8	8.2	54	4.8	1.6	42	19.9	7.6	4.6	5.1	6.7	69	16.3
9	11.6	21	4.6	1.5	39.5	24	7.0	4.0	4.6	5.1	45	12.2
10	16.2	14.3	4.2	1.8	19.0	131	5.6	3.6	8.3	5.6	25.5	7.9
11	6.6	11.4	4.0	2.2	14.8	273	5.1	3.45	*6.1	6.1	43	7.9
12	4.4	10.2	3.8	2.0	9.9	77	4.8	3.25	5.0	9.5	36	54
13	5.4	7.3	4.0	1.8	6.1	44	4.4	2.95	21	5.8	18.6	12.6
14	11.2	13.0	3.6	1.9	5.1	26	3.8	2.8	5.1	5.8	57	9.2
15	4.2	28.5	3.1	3.0	4.4	27.5	3.6	2.8	4.0	5.1	47	7.9
16	3.45	9.2	4.0	20	4.0	124	3.45	2.65	3.6	5.6	47	6.1
17	23	8.5	16.5	11	3.6	48	3.25	2.8	3.6	5.8	21	5.8
18	7.5	10.2	27.5	7.0	3.6	47	3.6	2.65	3.6	4.0	15.5	5.1
19	49	12.3	7.0	5.0	3.1	33.5	3.25	2.4	5.6	3.45	23.5	4.6
20	37.5	7.9	*4.4	9.0	2.95	155	3.1	2.15	3.45	4.5	35	4.0
21	26	8.5	3.6	100	11.7	169	2.65	2.15	2.95	8.3	13.9	3.8
22	9.0	6.4	3.45	20	288	169	2.55	2.0	4.4	3.6	10.2	3.6
23	13.4	40	3.6	38	79	42	3.5	2.0	12.6	3.25	8.2	4.4
24	12.8	309	4.0	34	154	28.5	22	3.95	10.6	9.3	7.0	3.45
25	12.2	24	3.25	12	58	38	5.4	10.3	4.4	5.6	8.8	14.0
26	18.9	12.6	2.8	6.4	46	54	3.1	100	3.95	18.0	13.1	10.0
27	6.6	11.4	3.5	5.0	20	26	*9.4	57	32	28	8.5	47
28	6.0	96	5.0	4.2	11.4	54	12.4	43	17.8	12.1	17.0	21.5
29	9.7	179	7.0	55	8.5	56	145	-	143	*6.4	9.6	7.0
30	19.8	112	12	20	110	75	201	-------	73	4.6	16.3	5.4
31	117	28	-------	10	-------	29	95	-------	16.8	-------	26.5	-------
Total	497.45	1,602.4	214.40	389.0	1,041.95	1,979.1	636.85	326.50	481.90	233.70	747.9	429.65
Mean:												
mgd	16.0	51.7	7.15	12.5	34.7	63.8	20.5	11.7	15.5	7.79	24.1	14.3
cfs	24.8	80.0	11.1	19.3	53.7	98.7	31.7	18.1	24.0	12.1	37.3	22.1
Ac-ft	1,530	4,920	658	1,190	3,200	6,070	1,950	1,000	1,480	717	2,300	1,320

Calendar year 1957: Max 309 Min 1.37 Mean(mgd) 23.8 Mean(cfs) 36.8 Ac-ft 26,680
Fiscal year 1957-58: Max 309 Min 1.5 Mean(mgd) 23.5 Mean(cfs) 36.4 Ac-ft 26,340

Peak discharge (base, 750 mgd).--Aug. 24 (9 a.m.) 910 mgd (1,410 cfs), 5.82 ft; Nov. 22 (2:30 p.m.) 940 mgd (1,450 cfs), 5.92 ft.

* Discharge measurement made on this day.
Note.--No gage-height record Sept. 27 to Nov. 4; discharge estimated on basis of records for Haipuaena Stream.

5480. Manuel Luis ditch at Puohokamoa Gulch, near Huelo

Location (revised).--Lat 20°51'48", long 156°11'00", on right bank at lower portal of tunnel between Haipuaena and Puohokamoa Streams, 2.2 miles west of Keanae, 3 miles southeast of Kailua, and 4.4 miles southeast of Huelo.

Records available.--December 1917 to June 1958.

Gage.--Water-stage recorder and sharp-crested weir. Altitude of gage is 920 ft (from topographic map).

Average discharge.--39 years (1918-24, 1925-58), 5.66 mgd (8.76 cfs).

Extremes.--1917-58: Maximum daily discharge, 68 mgd (105 cfs) for one or more days in 1938, 1941, 1942, 1947, 1948, 1950, 1956; no flow at times.

Remarks.--Records good. Ditch is extension of Center ditch and picks up water at altitude of 500 ft from streams between the Kolea and Waiakamoi Streams. Flow regulated by gates. Water used for irrigation in central Maui.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.61	1.89	1.34	0.56	2.0	0.92	1.17	0.74	0.62	0.39	35	0.28
2	1.31	1.31	.93	.45	.93	.39	.68	1.15	.56	.34	18.9	.28
3	1.27	10.4	.85	.45	.62	.39	.62	2.6	.51	.39	16.3	.28
4	.93	31.5	.93	12.2	.62	.39	.62	41	.45	28.5	42	.34
5	.85	10.0	2.15	2.8	.56	2.7	.56	59	.75	4.0	23.5	.28
6	.79	2.7	.79	.79	.56	3.3	1.34	60	.91	.74	6.2	.28
7	.74	7.1	.68	.56	.51	.79	2.9	36.5	.45	.56	3.5	.25
8	.68	2.4	.79	10.3	.45	.56	2.15	32.5	.39	.45	2.25	.25
9	.62	1.70	.79	*4.6	.39	.51	*7.1	20.5	.34	.56	1.89	.25
10	.73	1.31	.56	1.51	.51	.45	3.6	13.6	.34	.45	*1.59	.25
11	.76	1.23	.56	.85	1.19	.39	6.7	*18.9	.51	.39	4.4	.25
12	.56	15.1	.51	.85	1.31	.45	1.23	22.5	.74	.39	1.78	.25
13	1.07	15.0	.56	6.5	.79	.45	.79	3.6	1.56	23	1.23	*.25
14	4.8	12.5	.51	12.1	2.1	.56	.68	5.8	5.5	16.2	1.08	.22
15	1.80	3.65	.51	37	.85	4.1	.62	2.1	5.6	13.2	.93	.25
16	1.32	17.8	.45	40	.62	15.2	.56	1.38	1.15	3.55	.93	.28
17	1.62	49	.39	39	1.00	4.6	.56	1.15	2.25	2.5	.79	.34
18	29.5	10.1	.34	3.85	5.4	3.95	.56	5.0	3.95	3.55	.74	.79
19	2.85	3.65	.34	2.55	1.67	1.23	2.55	1.45	1.43	12.1	.62	.34
20	1.90	2.45	.34	2.1	1.00	.93	3.7	1.15	1.25	3.0	.56	.39
21	2.55	*1.85	.28	1.70	.76	.74	1.08	1.00	.68	1.89	.56	.65
22	1.53	1.53	1.48	1.31	.74	.68	3.15	.79	.56	1.53	.51	.52
23	1.08	1.31	.52	1.08	.68	.62	5.2	.79	.56	32.5	.51	.28
24	.85	1.15	.34	.93	.62	.62	1.61	.74	.51	10.7	.51	.22
25	1.15	1.08	.28	1.36	.56	.56	1.64	.68	.45	34.5	.51	.58
26	.85	.85	.28	1.00	.51	.51	1.08	.56	.51	12.4	.45	.34
27	.93	.99	.28	.79	.51	.51	.93	.74	.39	7.1	.34	.25
28	9.7	1.38	.28	1.62	.45	.45	.85	.62	.39	12.5	.28	.25
29	9.9	1.78	1.63	3.35	.51	.51	1.65	-	.34	6.8	.28	.28
30	7.5	8.7	1.36	1.96	.51	.68	.85	-------	.51	20.5	.28	.25
31	5.9	4.3	-------	1.30	-------	10.4	.74	-------	.51	-------	.28	-------
Total	97.65	225.71	21.05	195.42	28.93	58.54	57.47	336.54	34.67	254.68	168.70	9.72
Mean:												
mgd	3.15	7.28	0.702	6.30	0.964	1.89	1.85	12.0	1.12	8.49	5.44	0.324
cfs	4.87	11.3	1.09	9.75	1.49	2.92	2.86	18.6	1.73	13.1	8.42	0.501
Ac-ft	300	693	65	600	89	180	176	1,030	106	782	518	30

Calendar year 1956. Max 68 Min 0.28 Mean(mgd) 5.66 Mean(cfs) 8.76 Ac-ft 6,360
Fiscal year 1956-57: Max 60 Min 0.22 Mean(mgd) 4.08 Mean(cfs) 6.31 Ac-ft 4,570

* Discharge measurement made on this day.

5480. Manuel Luis ditch at Puohokamoa Gulch, near Huelo--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.28	7.1	4.2	0.74	1.61	15.9	3.1	3.9	2.9	1.23	1.61	20
2	.56	3.0	6.8	.56	1.31	4.7	2.25	2.15	1.70	1.48	6.7	10.4
3	.74	16.4	4.7	.51	1.15	16.0	1.99	1.61	1.46	1.08	2.85	3.9
4	3.1	4.8	2.65	.45	.93	7.8	1.61	1.38	1.23	1.60	1.99	2.65
5	3.1	*11.7	2.1	.39	.85	3.65	1.53	1.46	1.15	1.48	1.61	2.9
6	1.12	54	1.70	.39	7.5	8.7	1.31	1.15	13.0	1.08	6.5	2.85
7	.56	38.5	1.46	.34	15.1	25	1.23	1.31	4.5	1.15	9.8	6.5
8	.91	13.0	1.31	.28	17.9	6.6	1.38	1.23	2.1	.93	17.5	3.7
9	1.31	6.3	1.08	.28	14.8	7.0	1.31	.93	1.80	.93	11.5	*3.2
10	3.35	3.55	.93	.34	7.1	37	1.08	.85	6.4	.94	7.1	2.15
11	1.00	2.55	.85	.39	5.6	64	1.00	.79	2.85	.93	10.2	1.99
12	.62	2.15	.85	.34	3.9	23	.93	.74	*2.2	1.14	7.3	18.8
13	.85	1.61	.93	.28	2.25	13.6	.85	.68	3.9	.85	9.0	3.85
14	2.05	2.8	.74	.28	1.89	7.2	.85	.62	1.70	.93	16.6	2.6
15	.62	6.7	.62	.28	1.53	6.4	.79	.62	1.38	.85	14.0	2.15
16	.51	1.70	.80	2.55	1.31	31.5	.74	.56	1.23	1.18	16.9	1.80
17	5.9	1.48	5.5	1.20	1.15	10.5	.68	.56	1.15	1.53	6.8	1.61
18	1.12	1.80	7.0	.83	1.23	10.7	.85	.56	1.23	1.00	5.0	1.53
19	10.3	2.75	1.01	.39	.85	8.1	.85	.45	1.46	.85	10.7	1.31
20	6.4	1.46	.62	.74	.85	36	.85	.39	.93	1.06	11.9	1.23
21	3.9	1.60	.56	33.5	2.5	47	.68	.34	.85	1.57	4.8	1.15
22	1.15	1.31	.56	6.8	46	51	.56	.28	1.00	.85	3.2	1.15
23	3.1	9.4	1.12	10.6	40	14.5	.79	.28	2.1	.79	2.55	1.23
24	1.97	59	.81	9.3	55	9.3	5.4	.76	2.85	2.45	2.25	1.00
25	3.15	10.5	.62	2.25	36	10.6	1.08	3.1	1.00	1.24	2.4	3.0
26	3.85	4.0	.45	1.61	31	17.0	.74	20	.85	8.8	3.25	2.9
27	1.15	3.2	.51	1.31	14.9	5.9	3.3	18.8	7.2	16.2	2.1	10.4
28	1.08	25	.68	1.08	4.8	12.3	*2.1	7.3	2.8	6.1	3.9	5.1
29	1.93	43	1.82	14.3	2.35	11.1	28.5	-------	29.5	2.8	2.35	1.80
30	3.35	28.5	2.05	4.2	29.5	15.2	48	-------	11.3	1.80	3.95	1.31
31	30.5	10.7	-------	1.99	-------	5.8	21.5	-------	2.5	-------	6.6	-------
Total	99.53	379.56	55.03	98.5	350.86	543.05	137.83	72.80	116.22	64.82	212.91	124.16
Mean:												
mgd	3.21	12.2	1.83	3.18	11.7	17.5	4.45	2.60	3.75	2.16	6.87	4.14
cfs	4.97	18.9	2.83	4.92	18.1	27.1	6.89	4.02	5.80	3.34	10.6	6.41
Ac-ft	305	1,160	169	302	1,080	1,670	423	223	357	199	653	381

Calendar year 1957. Max 64 Min 0.22 Mean(mgd) 6.54 Mean(cfs) 10.1 Ac-ft 7,330
Fiscal year 1957-58: Max 64 Min 0.28 Mean(mgd) 6.18 Mean(cfs) 9.56 Ac-ft 6,920

* Discharge measurement made on this day.

5528. Waikamoi Stream above reservoir at Kula pipeline intake, near Olinda
(Formerly published as Waiakamoi Stream above reservoir at Kula pipeline intake, near Olinda)

Location.--Lat 20°48'25" (revised), long 156°14'00", on left bank 1,500 ft upstream from Kula pipeline at Waikamoi intake and 3.0 miles east of Olinda.

Drainage area.--2.49 sq mi (revised).

Records available.--July 1954 to June 1958. Prior to July 1956 published as Waiakamoi Stream above reservoir at Kula pipeline intake.

Gage.--Water-stage recorder and concrete control. Datum of gage is 4,487 ft above mean sea level (levels by Maui County Waterworks).

Extremes.--1956-57: Maximum discharge during fiscal year, 235 mgd (364 cfs) Feb. 6 (gage height, 3.53 ft), from rating curve extended above 6.4 mgd as explained below; minimum, 0.01 mgd (0.02 cfs) Dec. 12, 27, 28.

1957-58: Maximum discharge during fiscal year, 325 mgd (503 cfs) Aug. 24 (gage height, 4.05 ft), from rating curve extended above 6.4 mgd as explained below; no flow Oct 8-11.

1953-58: Maximum discharge, 1,680 mgd (2,600 cfs) Dec. 10, 1954 (gage height, 8.16 ft), from rating curve extended above 6.4 mgd on basis of computation of flow over dam; no flow at times.

Remarks.--Records good except those above 10 mgd, which are fair.

Rating table, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

0.0	0	0.8	1.70
.1	.01	1.0	6.2
.2	.05	1.2	12.5
.3	.14	1.5	25
.4	.28	2.0	56
.6	.74		

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.10	0.56	0.08	0.04	0.29	0.24	0.03	0.03	0.05	0.02	4.4	0.02
2	.07	.19	.04	.04	.23	.08	.03	.04	.05	.02	2.05	.02
3	.05	.32	.03	.03	.10	.04	.02	.04	.04	.02	1.47	.03
4	.05	3.55	.04	.52	.07	.03	.02	2.15	.03	6.3	3.1	.05
5	.05	1.18	.12	.14	.04	.03	.03	13.2	.05	1.23	3.6	.07
6	.05	.35	.05	.07	.04	.03	.04	44	.08	.23	*.78	.04
7	.05	.22	.04	.04	.04	.04	.22	12.5	.05	.10	.39	.02
8	.05	.31	.03	.36	.03	.03	.87	25.5	.04	.05	.22	.02
9	.04	.20	.03	.14	.02	.02	3.0	14.3	.03	.05	.14	.02
10	.04	.09	.02	.08	.02	.02	.92	3.55	.02	.04	.14	.02
11	.04	.06	.02	.05	.02	.02	.55	1.40	.02	.04	1.55	.02
12	.03	.18	.02	.04	.02	.02	.19	1.34	.02	.03	.59	.03
13	.02	.73	.02	.12	.02	.02	.10	.80	.03	.64	.19	.03
14	1.01	1.05	.02	1.01	.16	.03	.09	.37	.54	.93	.09	.02
15	.33	.58	.02	8.0	.11	.16	.07	.22	5.7	1.28	.05	.03
16	.23	4.5	.14	8.3	.04	.93	.05	.15	.66	.62	.04	.02
17	.14	6.2	.09	2.1	.04	.33	.04	.08	.25	.15	.04	.03
18	6.3	.80	.04	.72	.24	.25	.03	.09	.14	.08	.04	.11
19	3.65	.31	.03	.37	.48	.12	.09	.09	.20	.12	.03	.07
20	.84	.13	.03	.16	.33	.18	1.8	.05	.34	.12	.03	.08
21	.82	.08	.03	.08	.12	.08	.25	.04	.10	.08	.02	.05
22	.43	.05	.03	.05	.07	.05	.11	.03	*.05	.05	.02	.06
23	.23	*.04	.03	.04	.04	.04	.33	.03	.04	5.6	.02	.04
24	.41	.04	.03	.04	.03	.03	.18	.03	.04	1.54	.02	*.03
25	.52	.04	.04	.04	.03	.02	.60	.03	.03	11.6	.02	.12
26	.25	.03	.04	.44	.02	.02	.14	.05	.03	6.7	.02	.05
27	.20	.03	.02	.36	.02	.02	.07	.06	.03	1.70	.02	.03
28	.56	.04	.02	.11	.02	.02	.04	.06	.02	2.9	.02	.05
29	2.1	.10	.03	.18	.02	.02	.04	-	.02	4.0	.02	.11
30	.35	.56	.05	.35	.03	.02	.05	-------	.02	6.3	.02	.05
31	.90	.16	-------	.31	-------	.04	.04	-------	.02	-------	.02	-------
Total	19.91	22.68	1.23	24.33	2.74	2.98	10.04	120.23	8.74	52.54	19.16	1.34
Mean:												
mgd	0.642	0.732	0.041	0.785	0.091	0.096	0.324	4.29	0.282	1.75	0.618	0.045
cfs	0.993	1.13	0.063	1.21	0.141	0.149	0.501	6.64	0.436	2.71	0.956	0.070
Ac-ft	61	70	3.8	75	8.4	9.1	31	369	27	161	59	4.1

Calendar year 1956. Max 83 Min 0 Mean(mgd) 1.63 Mean(cfs) 2.52 Ac-ft 1,830
Fiscal year 1956-57: Max 44 Min 0.02 Mean(mgd) 0.783 Mean(cfs) 1.21 Ac-ft 878

Peak discharge (base, 130 mgd).--Feb. 6 (4:30 a.m.) 235 mgd (364 cfs), 3.53 ft.

* Discharge measurement made on this day.

5528. Waikamoi Stream above reservoir at Kula pipeline intake, near Olinda--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.03	0.74	0.48	0.09	0.40	4.8	0.50	1.02	1.38	0.35	0.02	0.52
2	.04	*.43	.31	.07	.11	.81	.28	.50	.28	.18	.18	.55
3	.09	4.3	.23	.03	.07	.98	.16	.25	.12	.11	.16	.16
4	.19	.68	.09	.02	.05	.71	.10	.13	.07	.09	.11	.09
5	.15	3.3	.09	.02	.04	.28	.08	.15	.05	.10	.06	.08
6	.14	26	.07	.01	.24	2.3	.05	.10	5.8	.07	1.36	.06
7	.07	9.9	.05	.01	1.59	5.5	.04	.07	*2.05	.10	4.2	.13
8	.07	3.1	.05	0	.53	1.90	.04	.05	.35	.13	1.06	.10
9	.22	.65	.04	0	1.43	1.05	.05	.04	.20	.11	.80	.08
10	.33	.31	.04	0	.37	*6.5	.04	.04	.14	.29	.55	.06
11	.14	.20	.05	.01	.26	36	.03	.03	.08	.35	1.70	.05
12	.07	.15	.04	.01	.12	7.3	.03	.03	.08	.54	1.25	.35
13	.08	.08	.04	.01	.07	1.47	.02	.03	.58	.36	.67	.13
14	.28	.08	.04	.01	.05	.80	.02	.03	.22	.19	.60	.08
15	.11	.37	.03	.01	.04	1.95	.02	.04	.09	.13	.89	.05
16	.07	.18	.03	.04	.04	10.4	.02	.02	.05	.08	1.54	.14
17	.05	.09	.04	.03	.03	2.25	.02	.02	.04	.06	.68	.21
18	.04	.07	.13	.03	.03	1.40	.03	.02	.04	.05	.41	.09
19	.40	.05	*.08	.02	.02	.60	.03	.02	.14	.05	.36	.05
20	.45	.05	.03	.02	.02	7.2	.02	.02	.08	.06	.68	.04
21	.50	.07	.02	.50	.32	9.2	.02	.01	.06	.16	.28	.03
22	.14	.05	.02	.20	17.6	6.1	.02	.01	.11	.08	.13	.03
23	.28	.67	.02	.47	2.8	.92	.02	.01	.26	.06	.08	.03
24	.77	45	.02	.41	5.1	.45	*.29	.03	.35	.05	.06	.03
25	1.00	1.82	.02	.19	1.90	.64	.09	.07	.16	.05	.07	.03
26	1.06	.41	.02	.09	2.5	1.32	.05	1.89	.08	.04	.07	.05
27	.22	.23	.03	.05	.63	.39	.05	2.8	.19	.04	.06	.52
28	.12	4.1	.04	.04	.28	1.37	1.99	10.4	.33	.04	.11	.27
29	.12	24.5	.07	1.46	.14	2.15	9.8	-------	10.5	.03	.11	.09
30	.44	8.4	.11	.93	7.4	2.65	15.1	-------	7.0	.02	.08	.06
31	5.8	1.61	-------	.64	-------	1.04	11.5	-------	.88	-------	.14	-------
Total	13.47	137.59	2.33	5.42	44.18	120.43	40.51	17.83	31.76	3.97	18.47	4.16
Mean:												
mgd	0.435	4.44	0.078	0.175	1.47	3.88	1.31	0.637	1.02	0.132	0.596	0.139
cfs	0.673	6.87	0.121	0.271	2.27	6.00	2.03	0.986	1.58	0.204	0.922	0.215
Ac-ft	41	422	7.2	17	136	370	124	55	97	12	57	13

Calendar year 1957. Max 45 Min 0 Mean(mgd) 1.47 Mean(cfs) 2.27 Ac-ft 1,640
Fiscal year 1957-58: Max 45 Min 0 Mean(mgd) 1.21 Mean(cfs) 1.87 Ac-ft 1,350

Peak discharge (base, 130 mgd).--Aug. 24 (8:30 a.m.) 325 mgd (503 cfs), 4.05 ft; Aug. 29 (10:30 a.m.) 174 mgd (269 cfs), 3.14 ft.

* Discharge measurement made on this day.

5560. Waikamoi Stream above Wailoa ditch, near Huelo
(Formerly published as Waiakamoi Stream above Wailoa ditch, near Huelo)

Location.--Lat 20°51'40", long 156°11'60" (revised), on left bank 500 ft upstream from intake of Wailoa ditch, 0.2 mile upstream from Spreckels ditch trail, 2.5 miles southeast of Kailua, and 3.8 miles southeast of Huelo.

Drainage area.--3.93 sq mi (revised).

Records available.--January 1922 to December 1957 (discontinued). Prior to July 1956 published as Waiakamoi Stream above Wailoa ditch.

Gage.--Water-stage recorder. Datum of gage is 1,293.59 ft above mean sea level, datum of 1929.

Average discharge.--35 years, 16.3 mgd (25.2 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 720 mgd (1,110 cfs) July 18 (gage height, 5.41 ft), from rating curve extended above 470 mgd as explained below; minimum, 0.32 mgd (0.50 cfs) June 15.

1957: Maximum discharge during period July to December, 1,690 mgd (2,610 cfs) Aug. 24 (gage height, 7.15 ft), from rating curve extended above 470 mgd as explained below; minimum, 0.45 mgd (0.70 cfs) Oct. 15.

1922-57: Maximum discharge, 7,040 mgd (10,900 cfs) Jan. 26, 1948 (gage height, 12.76 ft), from rating curve extended above 470 mgd on basis of area-mean-depth study; minimum, 0.10 mgd (0.16 cfs) Oct. 10, 1953.

Remarks.--Records good. Haleakala Ranch and Kula pipelines divert small quantities of water above station. Water used for irrigation in central Maui.

Revisions (fiscal years).--WSP 615: 1922-24. WSP 740: 1922-31(M). WSP 1155: 1948(M).

Rating table, July 1, 1956, to Dec. 22, 1957 (gage height, in feet, and discharge, in million gallons a day)

0.6	0.27	1.8	14.4
.7	.45	2.1	27
.8	.70	2.5	52
.9	1.00	3.0	102
1.1	1.70	3.5	175
1.3	3.2	4.0	274
1.5	6.3	4.5	400

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	6.6	11.2	5.1	2.2	6.4	5.9	4.2	2.4	2.0	2.0	82	0.56
2	5.1	6.1	4.0	1.66	5.1	2.6	2.25	4.2	1.75	1.08	38	.52
3	4.5	28	3.45	1.90	3.7	1.85	1.20	7.6	1.62	1.15	29	.50
4	3.7	75	3.75	24	3.45	1.50	1.00	105	1.50	112	88	1.04
5	3.45	30	6.5	6.2	2.85	2.15	1.08	162	1.54	21.5	49	1.22
6	2.85	10.1	3.85	2.85	2.85	4.1	4.0	208	4.3	4.8	14.8	.92
7	2.8	15.6	2.95	2.2	2.65	2.55	14.8	70	1.78	3.45	9.2	.62
8	2.95	12.5	3.2	26	2.4	1.95	15.5	95	2.05	2.75	6.5	.45
9	2.7	8.4	2.95	8.1	2.25	1.50	33	64	1.80	2.65	5.8	.39
10	5.0	5.6	2.45	4.3	2.25	1.29	*14.3	23	1.80	2.4	5.6	.35
11	4.7	5.2	1.62	*2.95	3.95	1.29	16.2	22	1.85	2.25	13.2	.35
12	2.1	23.5	1.32	2.85	3.85	1.80	6.0	23.5	2.0	2.05	8.6	.39
13	4.8	37.5	1.25	10.3	3.2	1.80	4.1	11.4	3.05	30.5	4.5	.39
14	38	34.5	1.19	39	6.9	1.72	3.7	*7.2	26	42	3.85	.35
15	12.1	18.0	1.46	87	5.0	8.7	3.2	5.4	57	33.5	3.3	.49
16	9.2	53	1.80	102	2.65	41	2.65	4.5	9.0	10.2	3.2	.84
17	6.4	140	1.25	96	2.65	9.7	2.55	3.85	9.5	4.7	2.85	.86
18	*84	21.5	1.16	12.2	7.8	10.5	2.3	9.0	10.5	5.1	3.05	4.2
19	22	9.5	.96	6.9	7.9	4.1	5.0	5.1	7.8	27	2.75	2.3
20	11	6.3	.84	4.7	5.0	3.3	10.0	3.7	7.7	8.2	2.3	3.2
21	13.9	5.2	.72	3.85	3.6	2.65	4.0	3.6	3.6	5.1	1.89	1.52
22	8.8	4.9	5.7	3.2	2.85	2.25	3.65	3.2	3.3	4.1	1.40	2.6
23	5.2	4.5	3.0	2.85	2.65	1.95	6.1	2.85	3.05	90	1.32	1.16
24	4.5	4.5	1.37	3.05	2.4	1.80	3.9	2.55	2.75	39.5	1.32	.80
25	5.1	4.9	.96	3.9	2.05	1.66	6.1	2.45	2.45	135	1.16	2.8
26	4.1	3.85	.86	3.6	1.95	1.50	3.3	2.3	2.3	83	1.19	1.82
27	5.0	3.85	.96	4.8	1.75	1.40	2.55	2.45	2.1	34	.92	.89
28	32.5	4.8	.86	5.1	*.98	1.43	2.25	2.1	1.90	45	1.00	.72
29	48	5.8	2.75	10.1	.94	1.60	3.25	-	1.16	42	.84	.76
30	16.0	22.5	3.6	10.1	1.32	1.99	3.2	-------	3.2	83	.72	1.70
31	14.5	9.9	-------	7.7	-------	9.7	2.75	-------	2.55	-------	.67	-------
Total	391.55	626.20	71.83	501.56	103.29	137.23	188.08	858.35	182.90	879.98	387.93	34.71
Mean:												
mgd	12.6	20.2	2.39	16.2	3.44	4.43	6.07	30.7	5.90	29.3	12.5	1.16
cfs	19.5	31.3	3.70	25.1	5.32	6.85	9.39	47.5	9.13	45.3	19.3	1.79
Ac-ft	1,200	1,920	220	1,540	317	421	577	2,630	561	2,700	1,190	107

Calendar year 1956: Max 720 Min 0.54 Mean(mgd) 20.0 Mean(cfs) 30.9 Ac-ft 22,520
Fiscal year 1956-57: Max 208 Min 0.35 Mean(mgd) 12.0 Mean(cfs) 18.6 Ac-ft 13,380

Peak discharge (base, 900 mgd).--No peak above base.

* Discharge measurement made on this day.

5560. Waikamoi Stream above Wailoa ditch, near Huelo--Continued

Discharge, in million gallons a day, July to December 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.62	18.9	8.8	2.8	6.0	46						
2	1.75	10.7	8.5	1.70	3.85	13.1						
3	4.3	69	7.9	1.43	2.95	22						
4	13.2	14.6	5.2	1.16	2.55	15.6						
5	6.4	*50	4.9	.96	*2.4	6.8						
6	5.6	255	4.4	.80	16.5	17.3						
7	3.45	124	4.1	.72	39.5	66						
8	4.1	46	3.6	.64	25.5	19.6						
9	7.3	12.8	3.15	.62	30.5	17.9						
10	10.9	7.9	2.75	.64	11.7	106						
11	5.7	6.3	2.85	.78	9.8	323						
12	3.7	5.8	2.55	.84	6.3	78						
13	3.8	5.1	2.05	.62	4.5	35						
14	8.5	7.3	1.85	.50	4.1	19.4						
15	4.1	17.8	1.50	.47	2.85	23.5						
16	3.2	6.3	1.66	5.3	2.3	126						
17	10.2	5.4	5.1	3.75	1.95	42						
18	3.85	5.8	14.5	2.9	1.85	33.5						
19	27	7.0	4.5	1.62	1.58	19.9						
20	22	5.4	2.45	1.70	1.32	150						
21	16.8	5.4	1.95	51	8.7	144						
22	6.0	4.9	1.58	16.2	266	121						
23	7.6	21.5	*1.62	21.5	51	-						
24	9.1	346	1.85	15.8	109	-						
25	8.2	19.7	1.62	6.2	40	-						
26	15.3	7.6	1.22	4.0	41	-						
27	4.9	6.0	1.47	2.85	12.9	-						
28	4.4	81	2.5	1.90	7.9	-						
29	6.5	191	3.05	30.5	5.8	-						
30	13.6	79	5.8	14.3	95	-						
31	92	21	-------	5.5	-------	-						
Total	335.07	1,464.2	114.97	199.70	815.30	-						
Mean:												
mgd	10.8	47.2	3.83	6.44	27.2	-						
cfs	16.7	73.0	5.93	9.96	42.1	-						
Ac-ft	1,030	4,490	353	613	2,500	-						

Calendar year	Max	Min	Mean(mgd)	Mean(cfs)	Ac-ft
Fiscal year	Max	Min	Mean(mgd)	Mean(cfs)	Ac-ft

Peak discharge (base, 900 mgd).--Aug. 24, (9 a.m.) 1,690 mgd (2,610 cfs), 7.15 ft; Nov. 22 (2 p.m.) 1,270 mgd (1,960 cfs), 6.49 ft.

* Discharge measurement made on this day.

5570. Alo Stream near Huelo

Location.--Lat 20°51'45", long 156°11'49" (revised), on right bank just upstream from Spreckels ditch inflow, trail crossing, and Wailoa ditch intake, 2.5 miles southeast of Kailua and 3.8 miles southeast of Huelo.

Drainage area.--0.47 sq mi (revised).

Records available.--December 1910 to December 1957 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 1,248.38 ft above mean sea level, datum of 1929. Prior to June 18, 1914, staff gage at site 300 ft downstream at different datum.

Average discharge.--46 years (1911-57), 4.78 mgd (7.40 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 780 mgd (1,210 cfs) Oct. 17 (gage height, 4.97 ft), from rating curve extended above 130 mgd; minimum, 0.34 mgd (0.53 cfs) June 14.

1957: Maximum discharge during period July to December, 445 mgd (689 cfs) Nov. 22 (gage height, 4.02 ft), from rating curve extended above 130 mgd; minimum, 0.47 mgd (0.73 cfs) Oct. 15.

1910-57: Maximum discharge, 1,600 mgd (2,480 cfs) Nov. 18, 1930 (gage height, 6.90 ft), from rating curve extended above 130 mgd; minimum, 0.2 mgd (0.3 cfs) Nov. 22, 23, 1932.

Remarks.--Records good. Water used for irrigation in central Maui.

Rating table, July 1, 1956, to Dec. 16, 1957 (gage height, in feet, and discharge, in million gallons a day)

0.4	0.19	1.1	4.5
.5	.41	1.3	10.5
.6	.73	1.6	26
.7	1.12	2.0	55
.8	1.58	2.5	113
.9	2.15	3.0	197
1.0	2.9		

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.98	2.4	1.64	0.92	4.3	1.34	1.31	1.28	0.89	0.73	26	0.51
2	1.69	1.86	1.30	.77	1.49	.67	.92	2.45	.70	.63	13.0	.47
3	1.69	8.0	1.21	.96	1.26	.63	.81	6.0	.67	.83	9.6	.47
4	1.30	20.5	1.48	12.8	1.12	.57	.81	38	.63	22	29	.47
5	1.17	9.0	2.6	1.92	1.00	2.3	1.09	46	1.47	3.5	13.2	.47
6	1.04	3.2	1.04	1.04	1.00	3.8	1.78	28	1.09	1.26	3.55	.44
7	1.00	5.9	.96	.92	.92	.96	2.35	4.0	.63	1.00	2.45	.41
8	.92	2.4	1.29	11.4	.85	.73	2.35	3.15	.57	.89	2.05	.41
9	.89	1.86	1.21	6.6	.81	.67	5.6	2.3	57	.92	1.75	.41
10	.81	1.53	.89	1.62	.85	.60	2.95	2.4	.57	.81	1.52	.39
11	.81	1.44	.81	1.18	2.9	.57	7.1	5.6	.81	.73	3.2	.41
12	.77	13.0	.77	1.11	2.65	.90	1.69	5.6	1.28	.67	1.56	.41
13	2.05	11.0	.73	8.7	1.41	.81	1.26	2.1	4.6	21.5	1.26	.41
14	6.0	9.7	.70	21	2.85	1.12	1.21	2.25	7.7	19.5	1.08	.39
15	2.3	3.45	.95	32	1.12	6.0	1.04	1.81	2.35	16.8	1.04	.67
16	1.81	20	.73	28	.92	10.8	.96	1.44	1.31	2.6	1.00	.77
17	5.4	38	.63	77	1.53	5.2	.89	1.26	5.1	1.78	.92	1.43
18	*41	7.5	.60	3.35	5.1	3.0	.81	8.1	5.8	3.75	.92	2.55
19	2.85	2.75	.57	2.15	1.90	1.53	4.8	1.64	3.25	12.4	.81	.87
20	2.35	2.15	.57	1.75	1.26	1.21	3.25	1.30	1.71	3.5	.77	.88
21	2.8	1.75	.54	1.44	1.08	1.04	1.47	1.21	1.21	2.05	.73	.63
22	1.75	1.53	1.60	1.26	.96	.96	3.0	1.08	1.08	1.69	.70	.54
23	1.35	1.40	.77	1.12	.96	.85	3.95	.96	.96	32.5	.73	.47
24	1.21	1.26	.60	1.00	.85	.81	1.57	.92	.89	6.3	.81	.47
25	1.54	1.26	.54	1.86	.77	.77	2.1	.85	.81	18.8	.70	*1.04
26	1.04	1.04	.57	1.21	.73	.70	1.12	.85	.81	6.9	.67	.51
27	1.64	1.50	.51	1.00	.70	.67	1.00	.89	.73	5.1	.60	.47
28	7.4	2.45	.54	2.9	*.67	.63	1.01	.81	.70	7.8	.57	.47
29	6.7	4.2	2.5	4.1	84	.90	2.1	-	*.67	4.8	.54	.63
30	11.1	*8.7	2.1	2.05	.77	1.19	1.30	-------	1.47	12.6	.51	.51
31	8.1	5.8	-------	1.86	-------	11.6	.96	-------	.99	-------	.51	-------
Total	122.46	196.53	30.95	234.99	43.57	63.53	62.56	172.25	52.02	214.34	121.75	18.98
Mean:												
mgd	3.95	6.34	1.03	7.58	1.45	2.05	2.02	6.15	1.68	7.14	3.93	0.63
cfs	6.11	9.81	1.59	11.7	2.24	3.17	3.13	9.52	2.60	11.0	6.08	0.98
Ac-ft	376	603	95	721	134	195	192	529	160	658	374	58

Calendar year 1956: Max 115 Min 0.51 Mean(mgd) 5.22 Mean(cfs) 8.08 Ac-ft 5,860
Fiscal year 1956-57: Max 77 Min 0.39 Mean(mgd) 3.65 Mean(cfs) 5.65 Ac-ft 4,100

Peak discharge (base, 250 mgd).--Oct. 15 (12:30 a.m.) 385 mgd (596 cfs), 3.75 ft; Oct. 17 (9 a.m.) 780 mgd (1,210 cfs), 4.97 ft; Feb. 4 (2:30 p.m.) 283 mgd (438 cfs), 3.40 ft.

* Discharge measurement made on this day.

5570. Alo Stream near Huelo--Continued

Discharge, in million gallons a day, July to December 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.93	10.2	3.7	1.04	1.69	10.4						
2	1.96	3.4	7.6	.89	1.58	2.75						
3	2.0	14.7	3.95	.81	1.30	13.7						
4	5.5	4.6	2.4	.77	1.08	3.6						
5	7.0	6.7	1.98	.73	*1.00	2.2						
6	1.92	37	1.64	.70	8.1	12.2						
7	1.26	31.5	1.44	.67	11.4	14.9						
8	1.82	12.4	1.30	.63	24	3.2						
9	2.9	6.1	1.12	.60	10.8	5.1						
10	6.8	2.9	1.08	.63	7.4	20.5						
11	1.98	2.4	.96	.81	5.2	37.5						
12	1.67	2.1	1.00	.63	3.9	13.6						
13	2.5	1.75	1.12	.57	2.05	9.9						
14	3.05	3.5	.89	.54	1.69	6.2						
15	1.30	7.3	.81	.54	1.44	4.3						
16	1.21	2.05	1.16	3.45	1.30	12.7						
17	13.5	1.92	9.4	1.70	1.17	†3.23						
18	2.9	2.7	6.2	1.33	1.26	-						
19	14.3	3.9	1.35	.77	1.00	-						
20	9.0	1.92	1.04	4.7	.96	-						
21	4.9	2.35	.92	34.5	3.55	-						
22	2.4	1.75	.92	8.0	118	-						
23	4.4	23	*.92	10.9	24	-						
24	2.4	83	1.52	6.3	50	-						
25	5.4	4.9	1.04	2.1	13.8	-						
26	3.65	2.6	.81	1.58	10.6	-						
27	1.92	3.05	.81	1.35	3.55	-						
28	1.98	11.5	1.25	1.12	2.45	-						
29	3.7	37	3.9	13.7	1.98	-						
30	4.6	28	2.75	2.85	24	-						
31	24	4.9	-------	2.45	-------	-						
Total	142.85	361.09	64.98	107.36	340.25	-						
Mean:												
mgd	4.61	11.6	2.17	3.46	11.3	-						
cfs	7.13	17.9	3.36	5.35	17.5	-						
Ac-ft	438	1,110	199	329	1,040	-						

Calendar year	. Max	Min	Mean(mgd)	Mean(cfs)	Ac-ft
Fiscal year	: Max	Min	Mean(mgd)	Mean(cfs)	Ac-ft

Peak discharge (base, 250 mgd).--Nov. 22 (12:30 p.m.) 445 mgd (689 cfs), 4.02 ft.

* Discharge measurement made on this day.
† Result of discharge measurement.

5650. Kaaiea Stream near Huelo

Location (revised).--Lat 20°52'02", long 156°12'17", on left bank 700 ft upstream from Hamakua ditch trail crossing, 2 miles southeast of Kailua, 3.2 miles southeast of Huelo, and 3.5 miles west of Keanae.

Drainage area.--0.58 sq mi (revised).

Records available.--December 1921 to June 1958.

Gage.--Water-stage recorder and concrete weir. Altitude of gage is 1,310 ft (from topographic map). Prior to Aug. 1, 1934, water-stage recorder at site 40 ft downstream at different datum.

Average discharge.--36 years (1922-58), 4.58 mgd (7.09 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 495 mgd (766 cfs) Oct. 17 (gage height, 4.16 ft), from rating curve extended above 130 mgd; minimum daily, 0.35 mgd (0.54 cfs) June 9, 10.

1957-58: Maximum discharge during fiscal year, 354 mgd (548 cfs) Nov. 22 (gage height, 3.75 ft), from rating curve extended above 130 mgd; minimum, 0.36 mgd (0.56 cfs) Feb. 23.

1921-58: Maximum discharge, 2,300 mgd (3,560 cfs) Nov. 18, 1930 (gage height, 7.93 ft, site and datum then in use), from rating curve extended above 50 mgd; minimum, 0.22 mgd (0.34 cfs) June 1, 1945.

Remarks.--Records good. Water used for irrigation in central Maui.

Rating tables, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

July 1, 1956, to June 30, 1957				July 1, 1957, to June 30, 1958			
0.2	0.27	0.9	12.5	0.2	0.27	1.0	15.3
.3	.63	1.0	16.5	.3	.63	1.2	24.5
.4	1.34	1.2	26.5	.4	1.34	1.5	42
.5	2.45	1.4	37	.5	2.45	2.0	79
.6	4.1	1.7	56	.6	4.0	2.5	126
.7	6.3	2.0	79	.8	8.6		
.8	9.0						

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.45	2.75	1.84	1.01	4.2	1.60	1.45	0.96	0.74	0.63	26	0.44
2	1.95	1.95	1.43	.87	1.63	.68	.94	2.35	.58	.54	13.2	.44
3	1.73	9.7	1.25	1.01	1.34	.58	.80	6.1	.54	.81	8.8	.44
4	1.34	23	1.50	10.1	1.17	.54	*.74	42	.50	21.5	31.5	.44
5	1.25	11.1	2.7	1.90	1.01	1.50	1.09	47	1.32	4.3	13.9	.41
6	1.09	3.1	1.17	1.09	.94	3.4	2.0	28	1.15	1.34	4.2	.41
7	1.09	6.2	1.01	1.01	.87	1.09	3.2	*4.8	.58	1.01	2.5	.38
8	1.01	2.7	1.17	11.7	.74	.74	2.3	3.85	.50	.87	*2.0	.38
9	.94	1.84	1.17	6.0	.74	.63	6.1	2.45	.50	.87	1.68	.35
10	.87	1.53	.94	1.73	.74	.58	3.95	2.3	.50	.74	1.48	.35
11	.87	1.43	.80	1.34	2.6	.54	7.3	5.3	.58	.63	2.7	.38
12	.74	14.1	.74	1.17	2.65	.94	1.84	6.0	.87	.63	1.58	.41
13	2.5	13.4	.74	8.1	1.43	.87	1.34	2.2	4.3	18.8	1.22	.41
14	7.8	11.4	.68	25	2.45	1.12	1.25	1.95	8.1	17.4	1.06	.38
15	2.75	4.2	.93	31	*1.17	6.0	1.01	1.63	3.4	16.4	.99	.59
16	2.05	18.9	.80	29.5	.94	13.2	.94	1.34	1.53	3.2	.92	.79
17	4.5	42	.63	68	1.31	5.4	.80	1.17	5.0	1.63	.85	1.15
18	44	8.3	.58	3.9	5.0	3.8	.74	7.8	6.3	2.9	.85	2.8
19	3.75	3.25	.58	2.2	2.25	1.73	5.1	1.63	3.6	15.5	.79	.92
20	2.55	2.2	.54	1.63	1.53	1.34	3.9	1.25	1.91	3.85	.68	.92
21	2.9	1.63	.54	1.34	1.25	1.17	1.43	1.17	1.25	2.05	.68	.63
22	1.84	1.43	3.15	1.17	1.09	1.01	1.93	1.01	1.09	1.53	.63	.55
23	1.43	1.34	1.02	1.09	1.01	.87	4.3	.87	.94	34.5	.68	.47
24	1.25	*1.25	.63	.94	.87	.80	1.43	.80	.80	7.3	.73	.44
25	1.43	1.34	.54	1.76	.80	.74	2.35	.74	.74	21	.63	.77
26	1.09	1.09	.58	1.09	.74	.63	1.17	.68	*.68	9.0	.63	.51
27	1.69	1.66	.54	.94	.63	.63	.94	.74	.63	5.9	.55	.44
28	9.6	2.55	.54	3.05	.63	.58	.94	.68	.58	8.5	.51	.44
29	8.0	3.5	2.45	4.2	.80	.72	1.99	-	.63	5.2	.47	.55
30	10.7	9.7	2.1	2.35	.80	1.09	1.34	-------	1.49	13.9	.47	.47
31	8.3	6.4	-------	1.95	-------	10.0	.94	-------	1.01	-------	.47	-------
Total	133.46	214.94	33.29	228.14	43.33	64.52	65.55	176.77	52.34	222.43	123.35	18.06
Mean:												
mgd	4.31	6.93	1.11	7.36	1.44	2.08	2.11	6.31	1.69	7.41	3.98	0.602
cfs	6.67	10.7	1.72	11.4	2.23	3.22	3.26	9.76	2.61	11.5	6.16	0.931
Ac-ft	410	660	102	700	133	198	201	542	161	683	378	55

Calendar year 1956 :	Max	130	Min	0.46	Mean(mgd)	5.47	Mean(cfs)	8.46	Ac-ft	6,140
Fiscal year 1956-57 :	Max	68	Min	0.35	Mean(mgd)	3.77	Mean(cfs)	5.83	Ac-ft	4,220

Peak discharge (base, 250 mgd).--Oct. 15 (11:30 a.m.) 428 mgd (662 cfs), 3.95 ft; Oct. 17 (9 a.m.) 495 mgd (766 cfs), 4.16 ft; Feb. 4 (5:30 p.m.) 340 mgd (526 cfs), 3.70 ft.

* Discharge measurement made on this day.

5650. Kaaiea Stream near Huelo--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	*0.68	8.0	3.5	1.09	1.73	8.6	3.2	3.2	2.3	1.73	1.34	17.1
2	1.95	3.55	5.3	.87	1.43	3.05	2.45	2.2	1.53	2.3	9.0	10.1
3	2.0	13.0	4.0	.80	1.17	9.1	2.05	1.53	1.17	1.53	2.7	3.7
4	5.5	4.5	2.3	.68	1.01	3.7	1.73	1.25	.94	2.7	1.63	2.6
5	5.7	6.7	1.84	.63	.94	2.05	1.53	*1.84	.87	1.84	1.34	2.6
6	2.1	33.5	1.63	.63	5.9	10.0	1.34	1.09	11.1	1.53	4.9	2.6
7	1.30	28	1.34	.58	11.5	12.5	1.25	1.43	2.75	1.84	8.1	5.9
8	2.15	10.9	1.17	.54	17.6	3.5	1.34	1.09	1.43	1.53	*16.5	2.95
9	2.95	4.9	1.01	.54	10.6	4.9	1.25	.87	1.17	1.34	10.5	2.9
10	5.8	2.95	.94	.54	6.2	19.2	1.01	.80	1.84	1.25	6.2	1.95
11	1.89	2.25	.87	.74	5.0	37	.94	.74	1.84	1.17	8.4	2.3
12	1.39	1.89	.94	.54	3.35	12.6	.87	.63	1.34	.94	5.9	15.2
13	2.0	1.58	1.01	.50	1.84	8.6	.80	.58	3.15	.87	3.5	2.9
14	2.9	3.35	.80	.46	1.53	5.5	.74	.54	1.09	1.17	13.2	2.05
15	1.30	6.4	.74	.46	1.25	4.3	.68	.58	.94	1.09	12.0	2.05
16	1.14	2.1	7.4	3.6	1.17	12.9	.63	.50	.80	1.95	11.8	1.63
17	12.9	2.1	7.2	1.73	1.01	6.8	.63	.54	.80	2.6	4.5	1.34
18	2.95	3.1	6.7	1.34	1.01	7.1	.80	.50	.80	1.17	3.35	1.17
19	13.1	3.75	1.43	.74	.87	6.0	.74	.46	*1.43	.94	7.8	1.01
20	8.8	2.1	1.09	1.78	.80	*29	.80	.42	.80	1.69	7.6	.94
21	5.8	2.35	.87	26.5	3.25	23	.58	.42	.68	3.0	2.9	.87
22	2.35	1.78	.80	7.5	101	25	.54	.42	.80	1.09	2.05	.87
23	3.45	20.5	.80	8.4	21.5	9.3	.99	.39	1.84	.94	1.73	1.01
24	2.35	76	1.25	6.1	40	7.9	6.6	1.09	2.25	2.8	1.43	.80
25	3.7	5.3	.94	2.2	12.1	7.8	1.09	2.3	.87	1.34	1.95	4.1
26	3.8	2.9	.74	1.53	8.3	13.4	.74	25	.94	5.4	3.2	3.2
27	1.78	2.75	.74	1.25	3.5	5.1	4.6	14.0	9.2	14.7	1.73	10.0
28	1.68	10.4	1.25	1.09	2.3	10.3	2.35	8.6	2.45	4.3	3.75	4.6
29	3.2	34	2.85	12.3	1.73	7.3	23	-	14.2	2.2	1.73	1.84
30	4.1	25	*2.75	3.25	19.6	8.0	23	-------	10.0	1.53	4.0	1.34
31	24.5	5.1	-------	2.3	-------	4.7	9.4	-------	2.9	-------	6.1	-------
Total	135.21	330.70	57.54	91.21	289.19	328.20	97.67	73.01	84.22	68.48	170.83	111.62
Mean:												
mgd	4.36	10.7	1.92	2.94	9.64	10.6	3.15	2.61	2.72	2.28	5.51	3.72
cfs	6.75	16.6	2.97	4.55	14.9	16.4	4.87	4.04	4.21	3.53	8.53	5.76
Ac-ft	415	1,010	177	280	887	1,010	300	224	258	210	524	343

Calendar year 1957. Max 101 Min 0.35 Mean(mgd) 5.18 Mean(cfs) 8.01 Ac-ft 5,800
Fiscal year 1957-58: Max 101 Min 0.39 Mean(mgd) 5.04 Mean(cfs) 7.80 Ac-ft 5,640

Peak discharge (base, 250 mgd).--Aug. 24 (8 a.m.) 251 mgd (388 cfs), 3.37 ft; Nov. 22 (10:30 a.m.) 354 mgd (548 cfs), 3.75 ft.

* Discharge measurement made on this day.

5660. Oopuola Stream near Huelo

Location.--Lat 20°52'15", long 156°12'30", on left bank 100 ft upstream from Wailoa ditch intake, 300 ft upstream from ditch trail, 1.8 miles southeast of Kailua, 3 miles southeast of Huelo, and 3.8 miles west of Keanae.

Drainage area.--0.2 sq mi, approximately.

Records available.--August 1930 to December 1957 (discontinued). December 1910 to June 1915, at site half a mile downstream; records not equivalent.

Gage.--Water-stage recorder and concrete control.

Average discharge.--26 years (1931-57), 1.75 mgd (2.71 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 338 mgd (523 cfs) Oct. 17 (gage height, 5.51 ft), from rating curve extended above 20 mgd by test on model of station site; minimum, 0.14 mgd (0.22 cfs) June 7-14, 23-30.

1957: Maximum discharge during period July to December, 305 mgd (472 cfs) Nov. 22 (gage height, 4.85 ft), from rating curve extended above 20 mgd by test on model of station site; minimum, 0.18 mgd (0.28 cfs) Oct. 14.

1930-57: Maximum discharge, 340 mgd (526 cfs) Jan. 22, 1946 (gage height, 5.54 ft), from rating curve extended above 20 mgd by test on model of station site; minimum, 0.04 mgd (0.06 cfs) Oct. 29, 30, 1943, June 1, 1945.

Remarks.--Records good. Water used for irrigation in central Maui.

Rating table, July 1, 1956, to Dec. 19, 1957 (gage height, in feet, and discharge, in million gallons a day)

1.6	0.05	2.2	5.7
1.7	.23	2.3	8.2
1.8	.65	2.5	14.7
1.9	1.32	2.8	30
2.0	2.35	3.2	63
2.1	3.75	3.6	112

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.87	1.02	0.75	0.50	1.80	0.70	0.55	0.36	0.36	0.23	8.2	0.18
2	.70	.81	.50	.32	.65	.28	.32	.90	.23	.19	4.7	.18
3	.65	2.6	.50	.45	.50	.23	.28	3.35	.23	.43	3.45	.18
4	.50	7.9	.84	5.6	.45	.21	*.28	17.7	.21	8.1	9.3	.18
5	.45	4.3	1.45	.94	.36	.64	.36	23.5	.56	1.50	5.7	.16
6	.40	1.25	.50	.40	.32	2.25	.71	15.0	.50	.45	1.32	.16
7	.40	2.2	.40	.40	.32	.55	.72	1.76	.23	.32	.87	.14
8	.36	1.02	.67	3.75	.28	.32	1.30	1.44	.21	.28	*.65	.14
9	.32	.70	.60	2.85	.28	.23	2.25	.81	.19	.32	.55	.14
10	.32	.55	.36	.75	.32	.23	1.61	.81	.21	.25	.50	.14
11	.32	.50	.32	.50	1.56	.21	3.5	2.75	.32	.23	2.1	.16
12	*.28	5.1	.28	.40	1.46	.25	.75	2.4	.60	.21	.65	.14
13	.50	4.0	.28	3.35	.70	.28	.50	.75	1.93	10.0	.50	.16
14	2.45	3.4	.28	14.8	2.0	.37	.45	.75	2.6	13.5	.40	.14
15	1.10	1.40	.36	23	.56	1.52	.36	.70	1.64	10.0	.36	.21
16	.81	7.6	.28	11.8	.36	4.9	.32	.50	.70	1.51	.32	.23
17	1.55	14.4	.23	53	.70	2.6	.28	.45	2.35	.75	.32	.41
18	23.5	3.25	.23	1.58	2.35	1.96	.28	4.1	2.8	1.55	.28	1.13
19	1.52	1.25	.23	.94	1.00	.70	4.8	.70	1.43	3.65	.28	.36
20	.94	.81	.21	.70	.60	.55	2.2	.55	.81	1.50	.25	.36
21	1.23	.70	.21	.55	.45	.40	.75	.45	.50	.75	.23	.21
22	.75	.60	.23	.45	.36	.32	1.77	.40	.40	.55	.23	.18
23	.55	.55	.23	.40	.32	.28	2.85	.32	.36	15.1	.23	.16
24	.45	*.45	.19	.36	.28	.28	.75	.32	.32	2.8	.25	.14
25	.73	.45	.19	1.20	.28	.23	.86	.32	.28	5.5	.23	.27
26	.45	.40	.19	.60	.25	.23	.50	.32	*.28	3.2	.21	.18
27	.60	.50	.18	.40	.23	.21	.40	.32	.25	2.5	.19	.14
28	2.2	.83	.19	1.26	.23	.21	.36	.34	.23	2.4	.19	.14
29	2.75	1.27	1.15	1.62	.39	.34	1.16	-	.21	1.49	.18	.19
30	3.55	4.4	1.18	1.10	.32	.48	.50	-------	.53	5.6	.18	.18
31	3.85	2.25	-------	.70	-------	5.0	.36	-------	.36	-------	.18	-------
Total	55.05	76.46	13.21	134.67	19.68	26.96	32.08	82.07	21.83	94.86	43.00	6.69
Mean:												
mgd	1.78	2.47	0.440	4.34	0.656	0.870	1.03	2.93	0.704	3.16	1.39	0.223
cfs	2.75	3.82	0.681	6.71	1.01	1.35	1.59	4.53	1.09	4.89	2.15	0.345
Ac-ft	169	235	41	413	60	83	98	252	67	291	132	21

Calendar year 1956. Max 63 Min 0.18 Mean(mgd) 2.33 Mean(cfs) 3.61 Ac-ft 2,620
Fiscal year 1956-57: Max 53 Min 0.14 Mean(mgd) 1.66 Mean(cfs) 2.57 Ac-ft 1,860

Peak discharge (base, 130 mgd).--July 18 (8 a.m.) 181 mgd (280 cfs), 4.02 ft; Oct. 17 (9 a.m.) 338 mgd (523 cfs), 5.51 ft; Feb. 5 (3 p.m.) 262 mgd (405 cfs), 4.44 ft; Apr. 15 (4 p.m.) 172 mgd (266 cfs), 3.95 ft.

* Discharge measurement made on this day.

5660. Oopuola Stream near Huelo--Continued

Discharge, in million gallons a day, July to December 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.38	2.85	1.32	0.45	0.81	4.3						
2	.94	1.18	3.3	.32	.65	1.32						
3	1.10	4.5	1.96	.28	.50	5.7						
4	2.0	1.61	.94	.23	.40	1.71						
5	3.0	1.86	.70	.23	.36	1.02						
6	.75	12.4	.60	.23	2.75	5.1						
7	.36	13.1	.50	.21	6.6	6.2						
8	.55	4.5	.40	.19	9.3	1.61						
9	1.25	2.15	.40	.19	5.2	2.2						
10	3.0	1.10	.36	.21	3.3	5.4						
11	.75	.75	.32	.25	2.4	11.7						
12	.55	.70	.36	.21	*1.87	4.4						
13	.87	*.55	.50	.19	.87	3.15						
14	1.18	.71	.28	.18	.70	2.1						
15	.40	2.55	.25	.19	.60	1.80						
16	.36	.75	.32	.55	.50	2.85						
17	3.55	.55	2.1	.60	.45	2.35						
18	1.18	.94	2.05	.55	.60	1.80						
19	4.3	1.67	.40	.23	.40	2.0						
20	2.8	.70	.28	.94	.32	†2.53						
21	1.61	.87	.25	14.7	2.1	-						
22	.75	.65	.23	3.15	82	-						
23	1.62	8.6	.23	3.8	12.6	-						
24	.94	40	.45	2.35	25.5	-						
25	1.54	2.15	.40	.87	5.7	-						
26	1.64	1.10	.25	.60	3.6	-						
27	.70	1.25	.25	.45	1.51	-						
28	.70	3.75	.50	.36	1.02	-						
29	1.36	18.1	1.73	8.0	.81	-						
30	1.92	11.9	1.26	3.25	9.0	-						
31	7.8	2.05	-------	1.18	-------	-						
Total	49.85	145.54	22.89	45.14	182.42	-						
Mean:												
mgd	1.61	4.69	0.763	1.46	6.08	-						
cfs	2.49	7.25	1.18	2.26	9.41	-						
Ac-ft	153	447	70	139	560	-						

Calendar year	. Max	Min	Mean(mgd)	Mean(cfs)	Ac-ft
Fiscal year	. Max	Min	Mean(mgd)	Mean(cfs)	Ac-ft

Peak discharge (base, 130 mgd).--Aug. 24 (9 a.m.) 172 mgd (266 cfs), 3.96 ft; Aug. 29 (10 a.m.) 153 mgd (237 cfs), 3.86 ft; Nov. 22 (12 m.) 305 mgd (472 cfs), 4.85 ft.

* Discharge measurement made on this day.
† Result of discharge measurement.

5700. Nailiilihaele Stream near Huelo

Location (revised).--Lat 20°52'28", long 156°13'06", on left bank 200 ft upstream from Wailoa ditch intake, 1,000 ft upstream from New Hamakua ditch trail, 1.5 miles south of Kailua, and 2.4 miles southeast of Huelo Church.

Drainage area.--2.8 sq mi.

Records available.--December 1910 to December 1911, October 1913 to June 1918, August 1919 to June 1958. July to December 1912, at site 700 ft downstream; records not equivalent due to diversion.

Gage.--Water-stage recorder and masonry control. Datum of gage is 1,205 ft above mean sea level (by vertical angles). Dec. 9, 1910, to Dec. 31, 1911, staff gage at site 300 ft downstream at different datum. Oct. 8, 1913, to Mar. 20, 1922, at present site at datum 0.50 ft higher.

Average discharge.--37 years (1920-24, 1925-58), 23.5 mgd (36.4 cfs).

Extremes.--Maximum and minimum discharges for the fiscal years 1925-58, some of which have been revised, are contained in the following table. They supersede figures published in the water-supply papers indicated.

WSP	Fiscal year	Maximum				Minimum			
		Date	Discharge*		Gage height	Date	Discharge		Gage height
			(mgd)	(cfs)	(feet)		(mgd)	(cfs)	(feet)
615	1925†	Mar. 29, 1925	790	1,220	5.50	Feb. 9, 1925	3.1	4.8	0.17
635	1926	Aug. 27, 1925	610	944	4.90	Mar. 21,22, 1926	1.9	2.9	.06
655	1927	Jan. 3, 1927	1,100	1,700	6.33	Dec. 18, 1926	2.0	3.1	.07
675	1928	Apr. 6, 1928	670	1,040	‡5.06	Mar. 24, 1928	2.4	3.7	.11
695	1929	Oct. 27, 1928	640	990	5.00	Oct. 26, 1928	3.8	5.9	.22
710	1930	Apr. 8, 1930	730	1,130	5.50	Sept.23,25, 1929	1.8	2.8	.05
725	1931	Nov. 18, 1930	4,140	6,410	10.74	Feb. 4-6, 1931	4.3	6.6	1.71
740	1932	Jan. 18, 1932	1,400	2,170	‡7.50	June 24,25, 1932	4.9	7.6	1.41
755	1933	Dec. 31, 1932	2,830	4,380	9.90	Nov. 15,16, 1932	2.2	3.4	1.17
770	1934	Apr. 25, 1934	910	1,410	6.45	Nov. 25, 1933	1.4	2.2	1.00
795	1935	Nov. 12, 1934	910	1,410	6.36	Feb. 10-13, 1935	2.9	4.5	1.88
815	1936	Jan. 17, 1936	710	1,110	5.90	Feb. 19, 1936	2.1	3.2	1.87
835	1937	Dec. 29, 1936	1,250	1,930	7.25	Oct. 23, 1936	4.2	6.5	1.99
865	1938	Apr. 7, 1938	1,710	2,650	8.07	Feb. 28, Mar. 1, 1938	3.6	5.6	1.96
885	1939	Feb. 27, 1939	1,500	2,320	7.70	Oct. 4, 1938	††4.2	6.5	-
905	1940	Sept. 3, 1939	830	1,280	6.23	Feb. 3, 4, 1940	2.4	3.7	1.85
935	1941	Aug. 12, 1940	2,010	3,110	8.64	Feb. 22,23, 1941	2.7	4.2	1.87
965	1942	Mar. 8, 1942	1,300	2,010	7.29	Feb. 10,11, 1942	2.3	3.6	1.87
985	1943	Mar. 18, 1943	1,400	2,170	7.53	Dec. 13, 1942, Jan. 31, 1943	2.4	3.7	1.88
1015	1944	July 13, 1943	750	1,160	‡6.01	Nov. 8, 1943	1.16	1.79	1.78
1045	1945	Mar. 16, 1945	1,070	1,660	6.75	May 31, June 1,2, 1945	1.30	2.01	1.80
1065	1946	Jan. 22, 1946	1,450	2,240	7.56	Jan. 10,11, 1946	1.72	2.66	1.83
1095	1947	Dec. 21, 1946	1,550	2,400	7.85	Sept.13, 1946 a/	1.72	2.66	1.83
1125	1948	Jan. 25, 1948	1,250	1,930	7.22	Sept.27, Oct.24, 25, 1947	4.4	6.8	1.97
1155	1949	Sept.27, 1948	1,830	2,830	8.32	Mar. 7, 8, 1949	2.6	4.0	1.88
1185	1950	Apr. 27, 1950	3,220	4,980	10.36	Oct. 4, 5, 1949	2.1	3.25	1.85
1219	1951	Feb. 18, 1951	910	1,410	6.41	June 4, 1951	2.1	3.25	1.85
1249	1952	Feb. 19, 1952	910	1,410	6.38	Oct. 18,19, 1952	2.1	3.25	1.85
1289	1953	Mar. 7, 1953	790	1,220	6.10	Feb. 11,12, 1953	1.50	2.32	1.80
1349	1954	Feb. 26, 1954	680	1,050	5.84	Oct.7,8,10, 1953	1.50	2.32	1.80
1399	1955	Feb. 26, 1955	990	1,530	6.62	Nov.25,26,27,28, 1954	2.5	3.9	1.87
1449	1956	Feb. 25, 1956	2,490	3,850	9.43	Nov.7-9, Dec.18, 1955	2.5	3.87	1.87
-	1957	Oct. 15, 1956	1,770	2,740	8.22	June 14, 1957	2.0	3.1	-
-	1958	Nov. 22, 1957	1,450	2,240	7.64	July 1, Oct. 15, 1957	2.75	4.25	-

* From rating curve extended above 400 mgd.
† Period January to June.
‡ Maximum recorded.
†† Minimum daily.
a Probably.

1910-18, 1919-58: Maximum discharge, 4,140 mgd (6,410 cfs), revised, Nov. 18, 1930 (gage height, 10.74 ft), from rating curve extended above 400 mgd; minimum, 0.45 mgd (0.70 cfs) July 14, 1920.

Remarks.--Records good except those above 400 mgd and those for period of no gage-height record, which are fair. Water used for irrigation in central Maui.

Revisions.--Revised figures of discharge, in million gallons a day, for fiscal years 1925-56, superseding those published in WSP 615, 635, 655, 675, 695, 710, 725, 740, 755, 770, 795, 815, 835, 865, 885, 905, 935, 965, 985, 1015, 1045, 1065, 1095, 1125, 1155, 1185, 1219, 1249, 1289, 1349, 1399 and 1449 are given herein.

5700. Nailiilihaele Stream near Huelo--Continued

Discharge, in million gallons a day, fiscal year January to June 1925

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1							a7	4.2	3.6	51	30	12.0
2							a7	4.1	3.6	44	24	13.2
3							a7	3.8	12.5	30	15.0	65
4							a7	3.6	10.0	32.5	13.3	113
5							6.8	3.5	5.4	55	21	48
6							12.8	3.4	4.1	32	15.0	34
7							9.6	3.4	4.1	93	13.9	21
8							59	3.4	4.1	33	13.0	17.6
9							56	29.5	4.1	34.5	14.8	15.8
10							44	94	8.6	49	22	13.4
11							24	13.0	26	58	14.2	11.7
12							13.9	9.0	8.0	34	14.1	22
13							11.0	17.2	5.7	32	13.7	20
14							9.5	27	4.6	21	11.0	47
15							8.4	13.8	4.2	49	12.4	83
16							7.6	10.1	4.0	82	11.2	21
17							7.2	8.2	3.8	170	20	18.3
18							6.3	7.0	72	59	47	22
19							8.8	6.1	33	35	30	26
20							9.8	5.7	62	23	15.0	15.0
21							7.2	5.4	170	19.2	14.2	13.2
22							6.5	5.0	62	15.8	74	11.7
23							10.8	4.8	24	13.4	28	10.8
24							9.0	4.7	16.7	12.2	17.0	9.5
25							6.3	4.4	14.2	10.8	13.9	8.6
26							5.7	4.1	67	19.5	12.4	15.3
27							5.2	4.1	177	11.0	12.2	26
28							5.7	4.0	63	9.7	20	114
29							5.5	-	213	30	13.4	23
30							4.8	-------	120	12.9	15.6	124
31							4.4	-------	36	-------	15.0	-------
Total							393.8	306.5	1,246.3	1,171.5	606.3	995.1
Mean:												
mgd							12.7	10.9	40.2	39.0	19.6	33.2
cfs							19.6	16.9	62.2	60.3	30.3	51.4
Ac-ft							1,210	941	3,820	3,600	1,860	3,050

Calendar year . Max Min Mean(mgd) Mean(cfs) Ac-ft
Fiscal year . Max Min Mean(mgd) Mean(cfs) Ac-ft

Discharge, in million gallons a day, fiscal year July 1925 to June 1926

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	24	16.8	62	12.2	4.7	7.8	27	7.9	4.1	53	5.0	6.1
2	16.4	34.5	34	9.0	5.0	6.8	5.2	4.6	4.0	6.4	4.8	4.8
3	13.4	13.7	24	19.0	7.1	6.3	3.8	4.0	3.6	4.1	4.7	4.4
4	11.7	24.5	18.9	9.5	9.4	5.9	12.0	3.6	3.5	3.4	4.4	4.0
5	10.3	118	16.4	12.8	21	5.5	5.9	3.4	3.4	2.9	4.4	3.8
6	9.9	73	13.9	14.6	13.4	5.0	4.1	3.5	3.1	6.5	6.0	3.6
7	18.2	36	12.2	12.7	118	4.7	3.5	3.3	3.0	6.4	28	3.6
8	11.6	21	10.6	18.5	67	4.7	3.3	3.1	2.9	4.1	37.5	3.3
9	8.6	16.1	11.2	12.0	53	4.4	3.1	4.7	2.9	3.4	11.9	3.0
10	7.8	13.4	11.0	19.1	21	4.1	3.7	16.4	2.8	3.0	7.8	4.9
11	17.3	11.7	37	10.1	15.6	4.0	12.9	13.5	2.9	2.9	14.6	26.5
12	9.5	10.6	50	8.8	12.9	3.8	4.1	5.2	2.5	27.5	28	96
13	7.8	9.0	23	8.0	27	3.5	3.3	4.1	2.4	15.0	9.5	88
14	6.8	9.5	17.4	7.2	31	3.4	3.0	3.6	2.3	6.4	7.6	42
15	6.4	8.0	12.0	6.7	57	3.6	3.3	4.5	2.2	5.7	6.4	13.2
16	6.3	12.2	10.1	6.3	54	3.6	4.6	3.4	2.3	6.8	5.9	11.2
17	8.4	8.2	9.7	6.1	79	3.1	3.3	97	2.1	44	5.4	9.9
18	9.4	7.0	14.3	5.5	36	3.3	2.9	54	2.1	14.2	4.9	8.3
19	5.9	8.6	18.3	5.7	38	13.1	2.8	12.9	2.4	13.9	4.6	7.8
20	7.4	9.6	12.4	5.3	20	4.6	2.7	9.2	2.1	18.7	4.4	6.8
21	14.2	10.2	17.8	5.0	15.8	3.3	130	9.2	1.9	9.2	4.2	5.9
22	7.4	47	10.1	5.2	13.4	3.0	16.5	6.6	19.6	7.6	4.0	5.4
23	6.3	34	9.7	4.6	11.7	2.9	8.4	6.0	7.2	6.8	4.0	5.0
24	6.3	12.4	8.8	47	37.5	2.8	6.4	6.4	3.1	27	3.6	4.6
25	8.8	17.5	8.0	12.6	17.8	3.1	5.4	5.4	2.5	13.6	5.2	4.5
26	5.9	112	7.4	9.7	11.7	2.9	4.7	4.8	2.3	8.8	4.7	4.2
27	42	254	6.8	7.2	11.0	2.7	4.4	4.8	2.9	7.2	4.0	4.1
28	16.7	54	6.8	5.9	9.0	2.5	4.2	4.4	2.8	6.4	3.6	3.9
29	51	71	8.1	5.4	8.6	2.4	6.6	-	2.3	5.7	8.5	3.5
30	12.2	57	80	5.2	9.5	2.3	8.7	-------	2.1	5.2	37	3.5
31	20	85	-------	4.8	-------	21	7.8	-------	3.0	-------	11.6	-------
Total	407.9	1,215.5	581.9	321.7	836.1	150.1	317.6	309.5	106.3	345.8	296.2	395.8
Mean:												
mgd	13.2	39.2	19.4	10.4	27.9	4.84	10.2	11.1	3.43	11.5	9.55	13.2
cfs	20.4	60.7	30.0	16.1	43.2	7.49	15.8	17.2	5.31	17.8	14.8	20.4
Ac-ft	1,250	3,730	1,790	987	2,570	461	975	950	326	1,060	909	1,210

Calendar year 1925: Max 254 Min 2.3 Mean(mgd) 22.6 Mean(cfs) 35.0 Ac-ft 25,270
Fiscal year 1925-26: Max 254 Min 1.90 Mean(mgd) 14.5 Mean(cfs) 22.4 Ac-ft 16,220

5700. Nailiilihaele Stream near Huelo--Continued

Discharge, in million gallons a day, fiscal year July 1926 to June 1927

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.5	15.8	9.7	7.8	5.2	3.6	4.2	8.4	44	51	19.4	10.3
2	3.5	40	8.6	6.8	4.7	3.5	25.5	8.1	20	15.3	12.7	12.0
3	3.3	79	7.8	6.1	4.4	3.4	481	7.0	56	15.0	10.6	18.0
4	3.0	14.2	7.2	6.1	4.2	3.4	82	6.4	60	11.2	12.2	9.9
5	2.9	122	6.8	49	4.4	3.1	26	5.9	23	9.5	18.2	10.8
6	3.3	17.0	6.3	59	4.1	3.4	24	5.5	33.5	7.6	23	36
7	5.5	12.0	7.4	18.3	3.8	3.3	60	5.2	41	6.8	59	29
8	3.3	11.0	7.0	11.0	3.5	2.9	57	5.5	23	6.3	35	12.2
9	9.1	9.5	5.7	15.6	3.4	2.7	18.9	5.0	15.3	6.1	24	12.9
10	4.4	9.5	5.2	12.2	3.3	2.5	14.2	4.6	12.4	5.9	40	11.5
11	3.8	7.6	5.0	9.2	3.4	2.5	13.7	4.2	10.8	33.5	16.7	9.0
12	3.5	6.6	5.0	8.0	4.2	2.8	167	4.2	9.2	7.4	18.0	8.0
13	3.6	16.5	16.4	7.4	3.5	2.8	38	4.0	10.1	9.5	13.7	7.4
14	3.0	52	7.6	6.8	244	2.3	17.6	3.6	8.4	68	12.0	6.8
15	4.0	12.7	5.4	6.4	18.1	2.2	13.7	3.4	7.4	48	115	6.8
16	3.3	13.4	4.8	6.3	10.3	2.2	11.5	7.9	7.0	83	83	17.2
17	3.3	36	4.4	8.4	10.3	2.3	10.1	4.7	15.1	116	36	16.3
18	2.8	14.5	4.4	8.8	7.4	2.9	9.2	3.5	16.3	77	20	8.2
19	2.9	11.0	26.5	10.3	8.6	a3.1	8.2	3.1	8.0	130	15.3	7.0
20	2.8	33.5	9.2	6.8	8.4	a3.1	7.8	3.0	6.8	186	12.7	6.8
21	2.8	140	5.7	5.7	8.6	a3.1	24	3.1	6.1	70	11.5	5.9
22	15.2	50	5.2	7.0	6.1	a3.1	23	2.9	6.2	52	10.6	5.4
23	5.4	18.6	5.2	10.7	5.4	a3.1	9.6	2.8	6.8	29	9.5	5.2
24	5.7	14.8	6.4	9.0	5.2	a3.1	11.2	18.1	10.7	52	8.2	5.4
25	8.5	21	15.5	5.9	8.6	26.5	37	106	7.8	27	7.4	4.8
26	4.2	12.0	7.2	5.2	7.4	32	34	37	7.4	30	7.0	4.4
27	6.2	27	10.9	5.0	5.0	13.7	13.4	16.7	6.4	25	8.0	4.2
28	7.8	15.8	31	17.4	4.4	7.4	11.7	25	5.7	18.0	13.4	4.2
29	4.7	11.7	11.0	8.4	4.1	5.9	11.7	-	7.2	16.7	12.7	5.0
30	4.8	15.0	8.4	5.9	3.8	5.0	10.3	-------	7.2	15.0	13.8	5.5
31	8.6	12.4	-------	5.5	-------	4.6	8.8	-------	22	-------	9.0	-------
Total	148.7	872.1	266.9	356.0	417.8	165.5	1,284.2	314.8	522.8	1,227.8	707.6	306.1
Mean:												
mgd	4.80	28.1	8.90	11.5	13.9	5.34	41.4	11.2	16.9	40.9	22.8	10.2
cfs	7.43	43.5	13.8	17.8	21.5	8.26	64.1	17.3	26.1	63.3	35.3	15.8
Ac-ft	456	2,680	819	1,090	1,280	508	3,940	966	1,600	3,770	2,170	939

Calendar year 1926 . Max 244 Min 1.90 Mean(mgd) 11.0 Mean(cfs) 17.0 Ac-ft 12,260
Fiscal year 1926-27 : Max 481 Min 2.2 Mean(mgd) 18.1 Mean(cfs) 28.0 Ac-ft 20,220

a No gage-height record; discharge estimated on basis of records for stations on nearby streams.

Discharge, in million gallons a day, fiscal year July 1927 to June 1928

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.0	12.9	8.5	8.6	5.5	20	10	34	4.6	15.9	15.6	8.6
2	3.8	28	8.5	9.0	5.0	35.5	10	46	4.7	17.8	12.7	8.0
3	3.8	17.9	8.5	7.4	4.8	22	10	34	4.4	9.7	54	7.4
4	3.6	13.9	8.5	7.0	4.6	16	10	22	4.1	8.4	37	7.2
5	5.9	11.0	8.5	6.8	4.4	16	10	16.4	4.0	7.8	44	7.6
6	4.7	10.6	70	6.3	4.2	16	10	13.4	4.0	106	35	20
7	4.0	16.8	70	6.3	4.2	55	10	11.5	3.6	149	17.3	9.0
8	38.5	67	70	28.5	15.1	55	10	10.3	3.6	42	13.9	6.8
9	53	31	28	16.3	6.5	55	6.3	9.7	3.6	18.3	12.0	6.1
10	77	27	28	7.8	4.1	19	5.7	9.2	3.5	14.2	30.5	6.3
11	51	69	28	7.0	25	19	8.6	7.8	3.5	12.0	80	11.3
12	61	38.5	28	16.4	9.0	19	37.5	14.7	4.1	10.3	115	18.7
13	24	27	28	7.8	5.5	19	70	34.5	3.4	15.2	305	7.2
14	21	21	28	7.4	4.8	19	53	45	3.3	131	55	7.6
15	12.9	16.4	28	6.3	4.1	19	18.3	11.0	3.3	25	25	11.8
16	11.2	26	9.5	6.1	4.6	19	164	9.0	3.0	15.8	18.6	8.0
17	9.7	26	9.5	5.7	164	19	32.5	7.8	2.9	13.2	15.3	6.4
18	9.5	26	9.5	5.2	219	19	38	7.6	2.8	12.7	13.2	46
19	8.6	26	9.5	5.6	40	19	42	7.0	2.8	12.2	11.2	14.4
20	8.4	26	9.5	13.7	19.0	19	32	6.3	2.8	10.1	11.7	9.5
21	11.0	26	9.5	8.2	17.6	19	49	5.7	2.8	9.2	9.7	9.7
22	10.7	26	9.5	9.5	17.0	46	21	5.7	2.7	8.4	9.0	9.7
23	17.3	26	9.5	7.4	16.6	46	31	5.4	2.5	8.0	8.2	8.0
24	10.3	26	20	10.3	30	46	21	15.8	8.2	7.4	7.4	14.4
25	10.1	26	20	20	58	46	14.2	10.1	13.5	6.8	21	28
26	71	26	20	8.6	74	46	12.2	5.7	59	6.4	61	59
27	43	26	20	7.0	30	46	40	5.2	48	7.2	41	31
28	33.5	26	20	6.3	18.0	46	23	4.8	21	6.1	19.6	23
29	41	26	20	5.9	13.9	46	35	4.7	8.4	17.1	12.9	27
30	16.1	26	20	5.5	12.0	46	32	-	29	86	10.3	50
31	12.9	26	-------	5.2	-------	46	27	-------	30	-------	9.2	-------
Total	692.5	824.0	664.5	279.1	840.5	978.5	893.3	422.3	297.1	809.2	1,131.3	487.7
Mean:												
mgd	22.3	26.6	22.2	9.00	28.0	31.6	28.8	14.6	9.58	27.0	36.5	16.3
cfs	34.5	41.2	34.3	13.9	43.3	48.9	44.6	22.6	14.8	41.8	56.5	25.2
Ac-ft	2,130	2,530	2,040	857	2,580	3,000	2,740	1,300	912	2,480	3,470	1,500

Calendar year 1927: Max 481 Min 2.8 Mean(mgd) 23.7 Mean(cfs) 36.7 Ac-ft 26,520
Fiscal year 1927-28: Max 305 Min 2.5 Mean(mgd) 22.7 Mean(cfs) 35.1 Ac-ft 25,540

Note.--No gage-height record Aug. 16 to Sept. 30, Dec. 4 to Jan. 8; discharge estimated on basis of records for stations on nearby streams.

5700. Nailiilihaele Stream near Huelo--Continued

Discharge, in million gallons a day, fiscal year July 1928 to June 1929

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	59	40	9.5	13.3	9.7	6.5	40	7.8	50	5.4	7.8	5.9
2	25	19.0	80	12.2	7.6	6.5	14.2	7.2	50	6.4	5.5	5.5
3	19.2	31	39	7.2	6.1	6.5	35	6.8	50	9.0	5.0	5.4
4	15.3	23	32	8.8	19.3	6.5	20	6.4	50	8.0	4.7	11.1
5	12.4	30	17.3	18.6	21	60	15.8	5.9	70	5.5	5.4	25
6	10.8	16.1	13.7	9.8	8.2	60	40	24	70	7.0	36	12.2
7	17.8	15.8	32	8.2	111	60	20	32	70	10.7	24	7.8
8	45	13.4	15.3	7.0	26	27	67	10.6	70	38	18.1	6.1
9	18.9	11.5	34	5.9	24	46	19.6	7.2	70	9.5	8.6	5.4
10	35	29	116	5.5	38.5	57	14.8	6.4	70	98	15.0	5.5
11	28	25	49	5.0	68	47	12.7	8.0	70	151	36	11.8
12	17.3	27	20	4.8	34	64	10.8	56	28	164	23	9.9
13	17.3	25	15.6	4.6	34	114	10.3	13.1	28	45	44	15.1
14	19.2	20	13.2	8.2	34	134	54	40	28	26	51	10.4
15	14.8	17.6	11.7	13.8	34	51	24	113	28	24	23	46
16	87	77	13.2	7.0	34	63	14.5	182	23	16.1	14.5	14.7
17	50	121	9.9	5.5	34	25	11.0	222	17.0	19.4	12.0	9.7
18	30	54	11.3	5.2	34	38.5	11.2	119	14.5	80	9.9	8.4
19	34	23	122	5.0	34	22	16.7	68	14.8	21	8.8	7.2
20	22	30	15.8	4.6	34	18.9	12.0	143	13.5	14.8	8.0	6.6
21	17.0	21	11.7	5.2	22	20	19.8	69	12.4	12.4	7.2	6.1
22	48	21	10.1	9.9	22	16.7	193	116	9.2	11.2	7.4	5.7
23	26	21	9.0	5.2	22	13.7	49	38	8.4	10.3	18.4	5.2
24	87	32	8.2	4.6	11	22	20	46	7.8	11.0	13.0	5.9
25	113	16.4	7.6	4.2	11	105	15.0	21	7.2	10.8	8.0	6.3
26	160	14.5	6.8	3.8	11	42	12.9	19.5	6.8	8.0	6.8	6.1
27	88	13.8	6.4	108	11	19.2	11.0	20	6.3	7.8	11.6	4.6
28	30	22	8.2	23	11	28.5	23	100	6.1	6.7	30.5	4.2
29	23	11.5	14.2	9.0	11	35.5	12.2	-	5.5	7.0	11.0	4.1
30	18.6	10.1	7.2	7.2	11	16.1	9.7	-------	5.2	7.0	7.2	4.4
31	17.0	9.5	-------	6.4	-------	13.9	8.6	-------	5.0	-------	6.6	-------
Total	1,205.6	841.2	759.9	346.7	788.4	1,246.0	837.8	1,507.9	964.7	851.0	488.0	282.3
Mean:												
mgd	38.9	27.1	25.3	11.2	26.3	40.2	27.0	53.9	31.1	28.4	15.7	9.41
cfs	60.2	41.9	39.1	17.3	40.7	62.2	41.8	83.4	48.1	43.9	24.3	14.6
Ac-ft	3,700	2,580	2,330	1,060	2,420	3,820	2,570	4,630	2,960	2,610	1,500	866

Calendar year 1928: Max 305 Min 2.5 Mean(mgd) 25.2 Mean(cfs) 39.0 Ac-ft 28,310
Fiscal year 1928-29: Max 222 Min 3.8 Mean(mgd) 27.7 Mean(cfs) 42.9 Ac-ft 31,050

Note.--No gage-height record Nov. 12 to Dec. 7, Feb. 28 to Mar. 15; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Discharge, in million gallons a day, fiscal year July 1929 to June 1930

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.6	6.6	4.2	5.0	2.5	28	20	10.6	27	29	23	17
2	4.7	6.1	4.1	22	2.4	28	28.5	8.4	33	57	16.4	17
3	4.0	12.5	4.1	6.1	2.5	28	101	7.2	52	25	12.4	17
4	3.6	29	3.6	4.4	2.2	28	35	6.4	64	13.2	12.0	17
5	3.5	20	3.4	3.8	2.2	28	27	6.1	55	16.3	25	17
6	3.3	16.0	3.4	3.5	2.2	28	29	8.9	82	92	33.5	10.3
7	3.4	10.1	3.3	4.0	2.2	28	22	9.6	73	182	22	8.4
8	3.4	7.8	3.3	33	2.2	28	17.0	5.9	29	247	36	7.6
9	3.1	7.4	3.3	150	2.2	28	13.2	5.7	57	116	14.8	7.6
10	20	85	2.9	36.5	2.2	28	12.9	5.2	93	74	12.0	11.0
11	8.7	64	3.4	12.2	2.2	9.9	11.5	4.6	113	124	10.3	13.0
12	4.0	13.4	2.9	9.2	2.2	8.8	9.9	4.7	30	55	19.4	29
13	3.4	10.3	2.8	8.2	2.2	7.8	16.5	4.2	20	55	14.5	18.2
14	3.1	8.8	2.5	7.4	2.2	7.0	9.2	3.6	26.5	55	28.5	16.7
15	8.2	8.2	2.4	6.3	2.2	6.4	7.4	3.4	29	55	33	10.1
16	118	7.8	2.3	5.4	2.2	83	6.6	3.8	18.9	55	24	23
17	10.8	9.5	2.3	4.8	50	18.3	6.1	4.1	14.5	55	36.5	13.9
18	6.4	6.8	2.3	4.6	50	181	18.0	3.5	12.2	55	26	9.7
19	5.4	6.4	2.1	7.0	12	164	24	3.0	10.6	55	30	8.0
20	5.0	6.1	2.0	4.6	12	102	29	2.9	9.5	45	15.0	7.0
21	6.4	17.3	2.2	4.1	12	32	12.4	10.4	8.0	42	14.2	8.0
22	21	9.7	2.0	3.8	12	17.3	22	f205	7.2	48	23	10.1
23	7.2	6.4	2.0	f3.5	30	37.5	18.6	f155	6.6	42	15.6	30
24	12.0	5.9	2.2	f3.4	30	112	9.9	f32	5.9	20	11.0	84
25	64	6.1	2.1	f3.3	30	39	57	f43	7.8	27	9	78
26	34	5.5	8.4	f3.3	30	50	15.3	f62	17.8	16.1	9	82
27	18.6	5.4	10.8	f3.1	30	113	f11.2	72	22	13.7	9	28
28	10.8	4.7	21	f2.9	30	25	f9.5	38	10.1	19.2	9	19.9
29	8.8	4.4	13.7	2.9	30	117	f8.0	-	7.2	13.9	9	125
30	8.0	4.4	4.8	2.8	30	125	f58	-------	5.9	32	9	115
31	7.6	4.4	-------	2.7	-------	34	20	-------	5.2	-------	9	-------
Total	425.0	416.0	129.8	373.8	424.0	1,570.0	685.7	729.2	952.9	1,734.4	571.1	858.5
Mean:												
mgd	13.7	13.4	4.33	12.1	14.1	50.6	22.1	26.0	30.7	57.8	18.4	28.6
cfs	21.2	20.7	6.70	18.7	21.8	78.3	34.2	40.2	47.5	89.4	28.5	44.3
Ac-ft	1,300	1,280	398	1,150	1,300	4,820	2,100	2,240	2,920	5,320	1,750	2,630

Calendar year 1929: Max 222 Min 2.0 Mean(mgd) 22.7 Mean(cfs) 35.1 Ac-ft 25,380
Fiscal year 1929-30: Max 247 Min 2.0 Mean(mgd) 24.3 Mean(cfs) 37.6 Ac-ft 27,210

f Fragmentary gage-height record; discharge computed from partly estimated gage heights.
Note.--No gage-height record Nov. 4 to Dec. 10, Apr. 11-19, May 25 to June 5; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

5700. Nailiilihaele Stream near Huelo--Continued

Discharge, in million gallons a day, fiscal year July 1930 to June 1931

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	57	24	9.0	33.5	6.8	7.3	9.8	6.4	13.0	92	8.5	7.5
2	32	18.5	8.4	27	8.2	7.3	9.2	5.8	22.5	47	8.5	7.5
3	26	19.0	7.8	17.5	8.0	8.0	8.8	4.9	46	37	8.5	7.5
4	21	15.0	7.4	32	5.7	7.1	8.8	4.6	16.0	14.0	26	7.5
5	18	44	9.0	51	5.4	6.7	9.0	4.6	43	77	8.5	6.7
6	27	24	21	47	44	6.4	11.5	6.1	17.0	104	8.5	6.6
7	17.5	14.0	16.0	26	16.5	6.4	9.8	30	12.5	17.5	14	6.6
8	14.0	12.0	11.0	33	22	7.3	8.8	7.5	11.0	11.0	9	6.4
9	12.0	39.5	8.2	19.5	13.0	6.0	8.2	18.5	11.5	9.2	9	6.2
10	11.0	107	18.5	16.0	9.2	7.4	7.3	15.5	41	8.5	9	6.2
11	9.9	91	17.5	13.5	7.2	6.4	8.5	7.5	20	8.0	22	6.2
12	12.5	38	20	12.5	6.4	7.1	11.5	6.4	12.0	7.5	25	5.8
13	65	24	45	11.0	15.0	7.8	7.5	5.8	10.0	6.9	30	6.7
14	24	43	34	9.9	25	9.2	6.9	8.0	9.2	7.5	102	6.2
15	13.5	46	42	8.8	24	8.2	6.6	21	9.0	13.5	47	5.6
16	11.0	74	24	8.2	76	19.0	6.2	25	8.5	24	14.0	5.8
17	9.9	52	18.5	7.4	120	51	6.2	11.0	8.2	8.8	9	34
18	11.5	40	18.5	6.6	351	42	32	11.5	7.8	7.5	9	14.0
19	43	25	15.0	6.3	120	14.5	10.5	8.8	7.5	6.9	9	24
20	24	19.0	28	5.9	26	12.0	7.5	9.5	7.3	137	9	34
21	18.0	24	15.0	5.5	17.0	23	6.9	10.5	6.9	177	9	67
22	14.0	18.5	23	7.2	12.0	12.5	6.6	14.0	6.7	231	18.5	35
23	12.5	15.5	35	19.0	75	12.5	6.4	12.0	6.7	84	15.5	15.5
24	14.0	14.5	110	10.5	37	15.0	6.2	54	6.4	30	8.5	10.0
25	11.0	18.5	62	7.4	20	12.0	6.0	56	6.4	30	8.5	48
26	26	14.5	24	5.5	14.0	32	5.6	30	6.2	13.5	8.5	30
27	39.5	15.5	21	5.0	9.8	12.5	5.6	38	6.0	10	8.5	17.0
28	116	11.5	18.0	18.5	9.0	10.0	5.5	17.0	5.8	9	8.5	10.5
29	93	10.5	19.0	45	8.2	107	5.3	-	6.4	9	67	9.8
30	55	16.0	24	13.0	7.5	15.0	5.2	-------	5.8	9	12	9.0
31	32	11.5	-------	7.6	-------	11.0	4.9	-------	52	-------	12	-------
Total	890.8	939.5	729.8	536.8	1,118.9	509.6	258.8	449.9	448.3	1,247.3	562.0	462.8
Mean:												
mgd	28.7	30.3	24.3	17.3	37.3	16.4	8.35	16.1	14.5	41.6	18.1	15.4
cfs	44.4	46.9	37.6	26.8	57.7	25.4	12.9	24.9	22.4	64.4	28.0	23.8
Ac-ft	2,730	2,880	2,240	1,650	3,430	1,560	794	1,380	1,380	3,830	1,720	1,420

Calendar year 1930: Max 351 Min 2.9 Mean(mgd) 28.1 Mean(cfs) 43.5 Ac-ft 31,450
Fiscal year 1930-31: Max 351 Min 4.6 Mean(mgd) 22.3 Mean(cfs) 34.5 Ac-ft 25,010

Note.--No gage-height record Apr. 27 to May 10, May 12, 13, May 17 to June 5; discharge estimated on basis of records for stations on nearby streams.

Discharge, in million gallons a day, fiscal year July 1931 to June 1932

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	8.5	11.5	17.0	35	14.0	9.0	34.5	130	22	74	86	40
2	8.0	50	14.0	25	13.0	8.5	54	130	22	32	24	16.5
3	7.5	25	29	32	186	12.5	20	130	20	25	32	12.0
4	7.5	14.0	15.5	30	117	30	17.0	130	20	17.5	20	11.5
5	32	53	36	18.0	26	9.5	15.0	85	20	19.5	22	12.0
6	32	43	65	16.0	20	86	12.5	85	20	32	24	10.0
7	17.0	47	84	15.0	20	15.0	11.0	85	14	18.5	19.0	10.0
8	10.5	25	48	13.0	32	11.0	10.0	95	14	19.5	16.0	9.5
9	10.0	21	61	11.0	36	9.5	9.5	95	15.0	70	42	11.0
10	13.5	87	54	10.0	25	8.8	9.2	95	11.5	38	21	14.0
11	46	32	149	9.5	51	8.5	8.8	95	10.5	103	17.5	9.8
12	34	28	44	13.0	106	8.0	9.0	110	10.0	108	59	15.5
13	24	32	35	9.5	26	7.5	53	110	9.8	136	29	13.5
14	18.5	21	38	8.8	36	7.1	12.5	110	9.2	32	28	16.5
15	12.0	72	56	8.2	60	74	18.0	32	8.7	34	66	11.0
16	10.0	27	118	8.0	25	27	13.5	32	8.2	36	23	9.5
17	9.2	19.0	35	8.5	49	28	9.2	32	9.0	20	21	9.8
18	28	216	47	17.0	25	51	112	15	12.5	17.0	21	8.7
19	20	106	25	9.2	20	177	42	15	20	15.5	16.0	11.0
20	66	29	22	8.5	17.5	76	37	15	25	16.5	15.0	9.2
21	278	22	21	65	23	66	19.0	15	19.0	13.5	13.5	6.7
22	101	30	25	117	94	45	16.0	22	14.5	14.5	13.0	6.1
23	26	42	19.0	19.0	22	38	45	22	11.5	24	11.5	6.5
24	18.0	20	35	45	17.0	41	36	22	10.5	35	11.5	5.5
25	35	18	76	80	14.5	24	48	22	9.8	26	11.5	5.1
26	19.0	20	52	25	13.5	18.5	44	85	9.0	80	12.5	17.5
27	14	14.0	66	17.0	12.5	16.0	44	85	10.0	28	21	10.5
28	14	14.5	50	14.0	11.5	14.0	44	44	14.5	80	11.0	10.0
29	48	31.5	136	14.5	9.8	12.5	44	44	11.5	91	13.0	6.5
30	48	43	149	11.0	9.2	36.5	44	-	30	152	20	5.7
31	14.0	30	-------	19.0	-------	59	44	-------	42	-------	15.0	-------
Total	1,029.2	1,243.5	1,621.5	731.7	1,131.5	1,034.4	935.7	1,987	483.7	1,408.0	755.0	341.1
Mean:												
mgd	33.2	40.1	54.0	23.6	37.7	33.4	30.2	68.5	15.6	46.9	24.4	11.4
cfs	51.4	62.0	83.6	36.5	58.3	51.7	46.7	106	24.1	72.5	37.8	17.6
Ac-ft	3,160	3,820	4,980	2,250	3,470	3,170	2,870	6,100	1,480	4,320	2,320	1,050

Calendar year 1931: Max 278 Min 4.6 Mean(mgd) 28.0 Mean(cfs) 43.3 Ac-ft 31,370
Fiscal year 1931-32: Max 278 Min 5.1 Mean(mgd) 34.7 Mean(cfs) 53.7 Ac-ft 38,990

Note.--No gage-height record July 27-30, Jan. 26 to Mar. 8; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

5700. Nailiilihaele Stream near Huelo--Continued

Discharge, in million gallons a day, fiscal year July 1932 to June 1933

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	5.9	24	9.2	3.4	3.3	20	33	13.5	7.7	37	11.0	5.5
2	6.3	20	9.2	3.1	3.2	14.5	13.0	11.5	6.7	39.5	8.6	11.5
3	13.0	18.0	26	3.1	3.1	12.5	10.5	10.0	5.3	87	13.0	9.2
4	5.1	16.5	40	3.1	3.1	13.0	10.5	18.0	5.9	14.0	7.2	6.1
5	4.6	15.5	28	3.0	3.1	11.0	8.4	9.8	59	11.0	6.7	5.9
6	4.1	17.0	15.0	3.0	3.1	9.8	7.2	8.7	90	9.8	8.4	4.9
7	4.1	14.5	13.0	2.9	3.0	9.0	a6.7	8.0	177	9.2	6.7	4.3
8	4.3	17.5	22	2.9	2.9	8.7	a6.1	7.2	98	8.4	5.5	4.1
9	5.3	19.0	138	3.0	2.8	8.0	a5.3	38	24	7.7	4.9	4.1
10	6.7	14.5	19.0	3.0	3.0	7.4	a4.9	22	47	8.4	4.6	4.7
11	13.0	16.0	14.0	2.9	4.1	8.0	5.7	10.0	19.5	7.7	4.1	4.0
12	13.0	14.0	12.5	2.8	3.7	27	f7.7	10.5	14.0	6.5	4.0	3.7
13	72	14.0	11.5	2.8	2.9	38	7.0	10.0	21	6.1	3.7	3.4
14	15.0	12.5	11.0	2.8	2.7	13.0	5.7	21	17.5	5.5	4.1	3.3
15	83	12.0	10.0	2.8	2.3	55	33	11.5	12.5	6.3	8.2	3.4
16	17.0	11.5	9.2	2.8	3.0	14.0	36	9.5	11.0	5.5	7.7	3.4
17	14.5	16.5	9.0	2.8	3.4	14.0	30	8.2	9.8	8.7	7.4	3.6
18	36	11.5	8.7	2.8	2.8	12.5	26	11.5	9.0	8.4	8.2	3.1
19	23	11.0	8.7	6.9	2.8	13.0	13.5	24	8.4	5.1	4.6	3.0
20	30	11.5	7.7	5.7	2.8	10.5	12.5	26	7.7	4.4	20	2.9
21	25	11.0	6.5	4.0	2.6	9.5	16.0	46	7.7	4.0	26	3.7
22	123	10.5	6.1	9.8	2.5	9.2	26	18.0	14.5	4.0	8.7	9.1
23	116	17.5	5.9	8.7	2.6	8.7	22	12.5	18.0	4.0	7.2	21
24	f81	17.0	4.7	5.1	105	18.5	23	11.0	16.5	4.0	6.7	13.5
25	35	12.5	5.7	3.6	28	30	20	14.0	9.6	3.3	6.3	15.5
26	28	11.0	7.2	3.4	15.5	13.5	21	9.5	25	3.3	5.5	9.2
27	23	11.0	4.6	3.4	31	12.5	22	8.4	10.0	4.1	4.9	5.7
28	21	11.0	3.9	3.3	60	31.5	27	8.0	8.2	21	4.9	5.9
29	34	13.0	6.3	3.3	27	35.5	19.5	-	8.0	17.5	5.1	18.0
30	42	10.5	6.2	4.1	34	13.5	15.5	-------	7.2	17.0	5.3	32
31	44	9.5	-------	3.3	-------	221	14.5	-------	7.0	-------	4.7	-------
Total	947.9	441.5	478.8	117.6	367.3	722.3	509.2	416.3	783.7	378.4	233.9	227.7
Mean:												
mgd	30.6	14.2	16.0	3.79	12.2	23.3	16.4	14.9	25.3	12.6	7.55	7.59
cfs	47.3	22.0	24.8	5.86	18.9	36.1	25.4	23.1	39.1	19.5	11.7	11.7
Ac-ft	2,910	1,350	1,470	361	1,130	2,220	1,560	1,280	2,410	1,160	718	699

Calendar year 1932: Max 221 Min 2.3 Mean(mgd) 24.6 Mean(cfs) 38.1 Ac-ft 27,580
Fiscal year 1932-33: Max 221 Min 2.3 Mean(mgd) 15.4 Mean(cfs) 23.8 Ac-ft 17,270

a No gage-height record; discharge estimated on basis of records for stations on nearby streams.
f Fragmentary gage-height record; discharge computed from partly estimated gage heights.

Discharge, in million gallons a day, fiscal year July 1933 to June 1934

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	18.8	8.4	3.1	2.3	33.5	121	2.2	88	4.0	12.0	16.7	38.5
2	32	9.2	3.0	2.2	23	12.2	13.8	15.4	3.8	9.5	15.0	54
3	15.5	11.0	2.8	2.1	4.7	18.0	7.0	9.8	3.8	109	56	23.5
4	12.5	29	2.7	2.2	3.1	8.0	4.0	8.8	11.0	39.5	59	108
5	15.5	10.5	3.6	2.5	3.1	a4.6	3.0	9.2	8.1	19.6	95	21.5
6	20	14.5	8.7	2.3	3.2	a4.6	2.8	7.0	4.5	11.6	63	15.8
7	12.0	9.8	5.7	2.3	2.8	a4.6	2.6	6.4	3.8	10.6	108	13.3
8	21	8.2	3.4	2.8	2.7	a4.6	2.4	5.9	3.4	117	146	11.6
9	12.0	8.7	2.8	2.2	2.5	a4.6	2.4	5.3	3.2	18.2	164	10.6
10	12.0	11.0	2.6	2.0	2.8	a4.6	27	5.6	4.2	11.6	123	10.6
11	12.0	7.2	2.5	2.0	2.6	a4.6	25	5.1	3.6	62	37	11.2
12	9.0	6.5	5.0	2.0	2.3	a3.2	10.6	4.9	3.0	27	43	9.5
13	14.0	5.9	19.0	1.90	2.2	a3.2	5.9	5.9	2.8	14.1	23.5	15.2
14	11.5	5.7	8.0	1.90	2.2	a3.2	7.5	4.5	2.8	62	35	20.5
15	9.2	7.0	3.9	1.90	2.0	a3.2	7.0	4.0	2.6	28	42	11.2
16	9.2	5.5	6.3	1.80	2.0	a3.2	7.3	4.0	3.0	15.4	24.5	10.6
17	8.4	4.9	11.0	1.80	1.90	a3.2	5.6	3.8	3.4	12.9	17.2	27
18	7.2	5.5	4.4	1.80	1.80	a3.2	5.1	3.6	3.4	11.2	15.4	41
19	7.0	4.6	3.4	1.80	1.80	a3.2	23	14.2	3.0	11.6	22	51
20	9.2	4.6	3.1	1.70	1.80	2.3	32.5	100	2.6	95	15.0	87
21	6.5	4.0	3.9	1.70	1.60	2.3	12.0	20	2.4	83	12.0	17.7
22	6.3	3.7	4.7	2.7	1.60	3.2	8.1	8.1	2.4	55	10.6	20.5
23	9.0	3.6	5.8	2.2	1.60	3.2	28	6.4	7.1	20	20	23.5
24	8.4	3.3	4.0	1.90	1.50	2.6	17.3	5.6	9.5	125	20	23
25	6.3	3.2	3.0	1.80	117	2.6	12.9	5.1	4.7	489	12.9	42
26	9.5	3.1	2.8	1.60	76	2.3	9.2	4.9	3.2	48	11.2	101
27	8.2	3.0	2.6	1.60	6.7	3.5	7.5	4.5	30.5	30.5	9.8	30.5
28	6.1	2.9	2.5	1.80	4.4	8.0	6.7	4.2	39	21.5	17.7	42
29	27.5	2.9	2.4	1.80	3.6	3.0	6.1	-	37.5	26	12.0	40
30	19.5	3.1	2.4	2.1	3.1	2.4	5.6	-------	16.7	20.5	10.6	20.5
31	9.5	3.0	-------	1.90	-------	2.3	81	-------	28	-------	37	-------
Total	384.8	213.5	139.1	62.60	319.10	254.7	391.1	370.2	261.0	1,596.3	1,294.1	952.3
Mean:												
mgd	12.4	6.89	4.64	2.02	10.6	8.22	12.6	13.2	8.42	53.2	41.7	31.7
cfs	19.2	10.7	7.18	3.13	16.4	12.7	19.5	20.4	13.0	82.3	64.5	49.0
Ac-ft	1,180	655	427	192	979	782	1,200	1,140	801	4,900	3,970	2,920

Calendar year 1933: Max 177 Min 1.5 Mean(mgd) 10.7 Mean(cfs) 16.6 Ac-ft 12,040
Fiscal year 1933-34: Max 489 Min 1.5 Mean(mgd) 17.1 Mean(cfs) 28.5 Ac-ft 19,150

a No gage-height record; discharge estimated on basis of records for stations on nearby streams.

5700. Nailiilihaele Stream near Huelo--Continued

Discharge, in million gallons a day, fiscal year July 1934 to June 1935

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	18.2	29	11.6	9.1	21	9.5	39	5.3	26.5	7.5	9.5	6.7
2	15.0	48	6.1	6.1	12.4	8.8	40	4.5	17.2	4.9	9.2	5.9
3	12.4	45	6.7	7.0	10.9	7.8	38	4.2	19.6	4.5	8.8	5.3
4	10.9	42	9.7	6.7	9.5	7.3	19.6	3.8	14.1	12.9	8.4	5.3
5	87	19.1	6.8	6.7	88	6.7	15.8	3.8	11.6	39	67	65
6	35.5	14.5	53	5.6	53	6.1	13.7	3.8	12.9	14.1	43	78
7	55	12.4	96	5.3	14.5	5.9	162	3.6	10.2	8.4	15.8	22
8	34.5	12.0	13.8	5.9	11.2	5.6	73	3.6	9.2	11.2	13.7	12.4
9	17.7	9.8	15.8	6.6	9.8	5.1	83	3.6	9.2	25.5	11.6	10.6
10	15.0	10.6	15.0	23	8.8	5.3	20.5	3.2	7.5	39	10.2	8.4
11	10.2	8.8	11.6	12.1	11.8	4.7	46	3.0	7.0	19.4	9.2	7.5
12	17.2	7.8	12.9	7.0	174	4.5	17.2	2.9	245	120	33.5	7.0
13	13.7	7.3	8.4	12.1	224	4.0	14.1	27.5	23.5	28.5	21.5	6.7
14	29	6.7	7.8	7.8	28.5	3.8	12.9	8.6	12.4	23.5	24.5	7.0
15	26	6.1	7.0	6.4	17.7	3.8	11.2	4.5	16.1	78	13.7	10.5
16	12.4	5.9	6.1	5.9	77	3.6	9.8	20.5	26	51	12.9	10.2
17	10.9	5.6	7.5	5.1	56	3.4	8.4	7.6	11.2	260	10.9	34.5
18	14.5	5.6	7.0	7.1	36.5	3.2	12.9	4.7	9.5	47	11.2	13.3
19	13.3	7.4	5.9	28.5	17.7	3.4	8.4	4.2	8.1	94	9.5	10.6
20	9.5	7.3	5.3	19.9	16.3	3.6	7.5	7.0	7.5	64	8.4	10.2
21	21.5	5.1	4.9	52	110	13.6	6.7	46	7.3	31	8.4	7.5
22	38.5	5.1	4.7	54	76	36	6.1	83	6.4	33	7.5	7.3
23	47	4.5	4.7	33.5	163	45	14.3	68	5.9	23.5	7.0	8.1
24	19.1	4.5	4.5	33.5	51	21	7.3	74	8.1	17.2	6.4	12
25	20.5	4.2	4.5	28.5	24.5	26.5	6.1	277	a7.5	34	6.1	16.3
26	18.3	4.0	124	19.4	18.6	103	5.3	240	a7.0	41	5.9	16.3
27	12.4	3.8	15.2	13.7	16.3	68	4.9	268	a6.5	16.7	6.1	30.5
28	10.9	3.6	8.1	23	13.3	50	4.9	62	a6.0	13.3	16.8	23
29	12.0	3.4	7.0	17.9	11.6	19.1	4.7	-	a4.9	11.6	18.8	17.2
30	13.7	3.4	16.0	28.5	10.6	13.3	5.6	-------	5.6	10.6	12.4	16.3
31	23	7.5	-------	16.7	-------	18.0	10.1	-------	10.6	-------	7.5	-------
Total	694.8	360.0	507.6	514.6	1,393.5	519.6	729.0	1,247.9	580.1	1,184.3	455.4	491.6
Mean:												
mgd	22.4	11.6	16.9	16.6	46.4	16.8	23.5	44.6	18.7	39.5	14.7	16.4
cfs	34.7	17.9	26.1	25.7	71.8	26.0	36.4	69.0	28.9	61.1	22.7	25.4
Ac-ft	2,130	1,100	1,560	1,580	4,280	1,590	2,240	3,830	1,780	3,630	1,400	1,510

Calendar year 1934: Max 469 Min 2.2 Mean(mgd) 24.3 Mean(cfs) 37.6 Ac-ft 27,170
Fiscal year 1934-35: Max 277 Min 2.9 Mean(mgd) 23.8 Mean(cfs) 36.8 Ac-ft 26,630

a No gage-height record; discharge estimated on basis of record for nearby station.

Discharge, in million gallons a day, fiscal year July 1935 to June 1936

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	10.0	16.8	8.7	4.4	6.6	5.8	3.1	5.1	25	16.5	124	12.0
2	8.7	10.0	10.2	3.6	3.3	4.9	2.9	3.8	24.5	20	70	10.4
3	9.4	10.4	7.4	23	2.9	4.6	2.9	9.0	14.6	15.8	24.5	10.0
4	8.1	8.7	15.3	47	7.9	4.4	2.9	33	36	24.5	44	16.0
5	23	7.8	43	13.2	7.4	4.2	2.9	6.1	38	9.7	29.5	20.5
6	18.0	6.8	51	25.5	7.4	3.8	4.0	4.0	36.5	110	68	10.8
7	10.0	6.6	16.4	9.0	4.9	3.4	3.4	3.4	13.1	77	81	9.0
8	12.9	12.3	9.4	6.1	3.6	3.4	3.3	3.3	70	37	76	9.0
9	14.9	7.1	9.4	5.4	3.3	3.8	2.9	3.1	35	54	54	8.1
10	12.3	8.4	9.4	4.6	2.9	3.8	4.0	3.1	22	16.7	62	7.4
11	10.4	6.8	31.5	5.6	2.7	3.6	2.9	2.9	24	13.5	29.5	6.8
12	12.2	10.4	25	5.1	2.5	3.3	2.5	2.9	73	11.6	22.5	12.1
13	11.8	13.7	11.2	7.1	2.5	5.6	2.5	2.9	27.5	39	18.6	10.9
14	8.4	12.6	13.1	6.1	6.5	12.3	5.3	2.5	14.8	48	50	7.4
15	7.8	6.8	9.0	4.6	4.9	7.3	35	2.5	12.0	16.2	53	10.8
16	7.8	6.6	7.8	4.0	3.8	3.8	49	2.4	47	47	87	12.5
17	8.4	5.6	8.1	68	56	3.3	102	2.2	109	68	108	24
18	10.2	5.4	6.6	22	63	3.1	9.0	2.2	47	89	94	10.0
19	16.5	5.1	6.1	7.8	46	5.2	6.3	9.0	57	22	60	8.4
20	8.1	4.9	5.8	5.8	67	12.3	5.4	8.1	27.5	15.3	80	8.1
21	6.6	13.3	5.4	5.4	12.3	5.4	4.6	43	20	12.7	59	64
22	5.8	15.8	5.1	4.6	8.7	6.7	4.2	5.8	16.2	11.2	38	34
23	7.4	15.4	4.9	4.4	7.1	f9.6	4.0	9.7	32.5	10.4	45	12.3
24	45	10.4	4.4	4.2	9.4	a5.0	3.6	7.7	23	9.7	28	11.2
25	80	6.6	4.2	3.8	6.6	a3.8	3.4	6.8	38.5	9.0	30.5	44
26	20.5	5.8	4.0	3.6	5.6	a3.5	3.4	4.2	21	9.0	22	82
27	19.4	5.4	4.0	3.4	5.4	f3.4	3.3	3.6	17.2	7.8	21	68
28	12.7	4.9	3.8	3.3	11.1	3.4	3.1	3.4	13.1	6.8	16.2	36
29	13.1	4.6	3.6	3.3	9.7	3.3	2.9	3.4	10.8	14.0	13.5	23
30	10.8	4.6	5.7	3.1	6.3	3.3	2.9	-------	9.7	116	12.7	13.5
31	12.7	29.5	-------	6.2	-------	3.1	3.1	-------	8.7	-------	16.7	-------
Total	462.9	289.1	349.5	323.2	387.3	152.4	290.7	199.1	964.2	957.4	1,536.2	612.2
Mean:												
mgd	14.9	9.33	11.6	10.4	12.9	4.92	9.38	6.87	31.1	31.9	49.6	20.4
cfs	23.1	14.4	17.9	16.1	20.0	7.61	14.5	10.6	48.1	49.4	76.7	31.6
Ac-ft	1,420	887	1,070	992	1,190	468	892	611	2,960	2,940	4,710	1,880

Calendar year 1935: Max 277 Min 2.5 Mean(mgd) 18.2 Mean(cfs) 28.2 Ac-ft 20,420
Fiscal year 1935-36: Max 124 Min 2.2 Mean(mgd) 17.8 Mean(cfs) 27.5 Ac-ft 20,020

a No gage-height record; discharge computed on basis of records for stations on nearby streams.
f Discharge computed from partly estimated gage heights.

5700. Nailiilihaele Stream near Huelo--Continued

Discharge, in million gallons a day, fiscal year July 1936 to June 1937

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	11.6	17.2	23.5	12.0	6.8	6.6	198	17.7	18.6	25	49	12.0
2	10.4	18.4	18.6	11.2	6.6	6.6	38	13.5	15.3	17.9	183	10.0
3	14.4	24.5	43	23	6.1	19.4	25.5	12.3	13.1	30	17.7	22
4	22	46	17.2	21	14.1	27	60	12.3	26.5	16.2	13.5	13.1
5	15.6	14.8	38	11.6	60	12.0	22	11.2	86	15.8	50	45
6	12.0	13.1	13.5	11.6	37	9.7	17.7	13.9	156	25	273	20.5
7	15.3	20.5	12.7	10.8	27.5	22	15.3	51	133	37.5	60	33.5
8	74	28	11.2	9.0	20	15.1	13.5	19.4	60	25	31.5	76
9	25.5	39	11.6	8.1	24	35.5	123	13.9	122	14.8	21	80
10	53	16.7	19.0	11.6	34	28	58	14.8	76	14.8	28	23.5
11	29.5	108	10.0	10.8	26.5	61	17.2	14.8	74	14.4	15.8	14.8
12	14.8	38	36.5	7.4	13.1	36	50	35	128	40	15.0	12.7
13	12.7	62	15.6	6.8	11.2	16.7	97	60	34.5	14.8	14.4	11.2
14	15.8	32	17.5	6.3	23	34.5	84	107	39.5	25.5	22	11.2
15	52	21	98	6.1	56	71	95	59	67	12.7	50	9.7
16	43	14.8	77	6.1	19.3	46	135	168	49	11.6	51	10.0
17	15.3	12.7	19.7	5.8	75	43	155	148	72	12.0	18.6	11.6
18	12.3	11.6	13.9	5.4	54	35	120	296	147	10.8	26.5	8.4
19	10.8	10.0	12.0	5.1	18.1	27	74	35	157	12.0	66	7.8
20	44	46	10.4	4.9	17.7	82	88	23	132	8.7	161	7.1
21	31.5	21	9.7	4.6	16.2	152	35	17.7	120	8.4	70	6.8
22	24.5	11.6	9.4	4.4	12.0	138	61	70	37.5	23	29.5	6.6
23	36.5	57	8.4	4.2	10.8	216	34.5	175	82	119	48	6.1
24	20.5	65	8.4	10.6	11.2	81	32	25.5	33.5	114	37.5	5.8
25	46	28.5	15.2	62	13.1	128	31.5	17.7	24	31.5	19.1	11.1
26	76	34	182	116	11.2	41	21	14.8	19.1	50	23	30.5
27	24.5	18.8	44	22	8.7	138	17.7	65	15.8	22	14.8	23
28	28.5	54	16.2	10.8	7.8	129	16.2	56	13.9	13.1	60	10.8
29	36.5	36.5	18.2	9.7	7.1	423	53	-	13.1	52	17.7	9.7
30	20	35	23	10	6.8	289	23	-------	14.4	18.1	13.5	8.1
31	22.5	41	-------	9.0	-------	211	29.5	-------	20.5	-------	12.0	-------
Total	871.0	996.7	853.4	458.1	654.9	2,580.1	1,840.6	1,567.5	2,000.3	835.6	1,512.1	558.6
Mean:												
mgd	28.1	32.2	28.4	14.8	21.8	83.2	59.4	56.0	64.5	27.9	48.8	18.6
cfs	43.5	49.8	43.9	22.9	33.7	129	91.9	86.6	99.8	43.2	75.5	28.8
Ac-ft	2,670	3,060	2,620	1,410	2,010	7,920	5,650	4,810	6,140	2,560	4,640	1,710

Calendar year 1936: Max 423 Min 2.2 Mean(mgd) 30.0 Mean(cfs) 46.4 Ac-ft 33,680
Fiscal year 1936-37: Max 423 Min 4.2 Mean(mgd) 40.4 Mean(cfs) 62.5 Ac-ft 45,200

Discharge, in million gallons a day, fiscal year July 1937 to June 1938

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	11.3	232	9.7	11.3	32.5	7.8	19.7	11.6	4.0	6.8	38	40
2	18.3	224	12.0	20.5	16.1	7.1	15.3	10.4	4.9	11.9	91	70
3	37	125	17.6	53	8.4	6.6	18.0	58	12.5	30.5	50	21
4	52	30.5	27	50	8.4	6.1	12.0	11.6	44	8.1	33	15.3
5	45	21.5	13.9	30.5	26	5.8	12.7	38.5	14.5	6.6	16.2	12.7
6	98	18.7	12.7	12.0	11.2	5.6	10.0	12.0	7.4	307	18.5	11.2
7	37	15.8	26	25.5	41	5.4	19.0	9.4	5.6	499	13.1	19.0
8	18.2	26	23.5	33	93	4.9	46	9.0	164	124	16.5	40
9	12.7	49	12.3	10.8	35.5	4.6	32	8.7	54	267	104	189
10	10.8	110	11.2	9.4	34.5	4.6	11.6	7.4	20.5	309	137	111
11	13.8	49	41	8.4	112	4.4	9.7	7.8	13.1	72	67	18.6
12	33.5	40	17.8	7.8	18.8	4.4	9.0	8.4	33	166	97	15.8
13	11.2	23.5	10.8	16.1	13.1	41	8.4	10.7	90	32	22	13.1
14	22	63	9.7	13.1	11.2	119	7.8	9.9	72	97	14.8	63
15	20.5	172	11.2	8.1	9.7	39.5	7.1	6.6	54	46	17.5	25
16	17.8	74	11.2	6.8	8.7	13.9	6.6	6.1	89	97	12.7	34
17	47	33.5	8.4	6.6	7.8	8.4	43	10.2	194	26	10.4	20
18	16.2	28.5	7.4	6.6	7.1	7.4	15.6	15.7	239	17.2	9.4	35
19	12.0	17.7	8.1	6.1	6.6	6.6	8.4	6.6	163	13.5	74	30.5
20	32	15.3	6.8	8.9	6.1	5.8	6.8	5.8	41	11.6	128	15.8
21	133	13.1	6.3	6.6	81	5.4	6.6	5.4	53	10.0	211	12.3
22	43	11.2	6.3	5.6	69	5.6	6.3	5.1	37	9.7	36	10.8
23	27.5	48	29	5.6	93	110	6.1	4.9	42	9.7	92	9.7
24	54	13.9	8.7	34	66	57	64	4.6	25.5	8.1	79	8.7
25	52	19.6	15.8	26.5	63	23.5	19.4	4.4	15.8	10.8	36.5	8.1
26	25	21	14.6	8.4	15.3	70	217	4.2	12.7	8.7	146	7.4
27	23.5	21.5	9.4	6.6	11.6	35	272	4.2	11.2	41	24	29
28	15.3	22	7.1	6.3	10.0	21.5	74	3.8	9.7	21	28.5	43
29	60	17.4	11.3	17.4	12.7	277	19.6	-	8.7	9.0	102	10.4
30	34	15.3	8.4	16.4	9.0	264	23.5	-------	7.8	8.1	52	8.4
31	175	11.2	-------	9.5	-------	56	16.4	-------	7.1	-------	42	-------
Total	1,208.6	1,583.2	415.2	487.4	938.3	1,233.9	1,043.6	301.0	1,550.0	2,284.3	1,819.1	947.8
Mean:												
mgd	39.0	51.1	13.8	15.7	31.3	39.8	33.7	10.8	50.0	76.1	58.7	31.6
cfs	60.3	79.1	21.4	24.3	48.4	61.6	52.1	16.7	77.4	118	90.8	48.9
Ac-ft	3,710	4,860	1,270	1,500	2,880	3,790	3,200	924	4,760	7,010	5,580	2,910

Calendar year 1937: Max 296 Min 4.4 Mean(mgd) 38.9 Mean(cfs) 60.2 Ac-ft 43,520
Fiscal year 1937-38: Max 499 Min 3.8 Mean(mgd) 37.8 Mean(cfs) 58.5 Ac-ft 42,390

5700. Nailiilihaele Stream near Huelo--Continued

Discharge, in million gallons a day, fiscal year July 1938 to June 1939

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	12.0	6.9	8.0	4.6	20	6.6	12.8	14.4	64	9.0	96	15.3
2	8.1	6.0	9.7	4.4	15.3	10.9	8.7	14.2	61	8.0	40	19.2
3	7.4	29.5	22.5	4.3	8.0	6.0	7.7	10.7	29.5	7.4	89	96
4	6.6	19.8	21.5	4.2	8.8	5.2	7.2	9.4	186	19.7	42	20.5
5	6.6	8.0	9.4	9.0	6.6	5.0	6.6	9.0	69	35.5	21	23.5
6	6.6	13.0	7.7	16	6.0	5.0	6.3	8.3	35.5	23	16.4	37
7	10.1	10.7	7.4	7.0	6.0	28	125	136	27	24	13.4	33.5
8	6.6	9.3	6.6	10	5.7	78	21	16.4	45	27	11.4	13.8
9	5.6	50	6.0	8.0	9.6	138	43	11.1	29.5	11.1	10.7	15.9
10	5.4	12.5	12.9	35	6.3	44	52	17.2	21	93	10.0	12.2
11	6.6	27	74	17	25	20	33	11.8	21.5	15.0	9.0	17.2
12	8.1	12.3	10.0	56	47	21	45	9.7	34	12.6	8.0	46
13	15.6	18.1	7.7	14.6	32	15.4	48	8.7	19.6	11.1	7.7	31.5
14	9.0	15.9	6.9	9.7	23	11.1	51	8.0	13.8	16.5	7.2	18.0
15	30.5	13.5	6.3	133	51	9.7	97	12.1	12.2	86.0	21.5	30.5
16	10.0	16.4	6.0	16.9	29	34.5	220	19.2	11.1	44	105	120
17	17.8	23	6.0	48	14.6	16.3	56	67	10.4	118	39.5	46
18	11.2	122	6.4	23	11.1	13.0	57	13.0	9.4	192	57	20
19	7.4	119	35	11.8	9.7	52	25.5	10.0	8.7	52	74	16.4
20	60	27	15	10.0	8.7	86	68	11.5	9.4	78	26.5	14.2
21	73	29.5	8.0	9.0	7.7	21.5	19.0	19.4	9.7	69	33	11.8
22	15.4	16.9	7.4	8.3	7.2	19.1	58	9.0	7.7	95	19.2	22.5
23	10.7	21	8.0	7.4	6.6	12.6	21	8.0	7.4	79	12.6	24.5
24	9.4	127	6.4	6.9	6.0	11.1	38	41	7.7	135	10.7	12.2
25	8.0	29	5.6	6.6	5.8	14.2	15.4	65	32.5	25	18.8	10.4
26	7.4	15.9	5.2	6.6	5.8	10.7	57	46	11.1	18.0	12.2	9.7
27	6.9	13.0	5.0	5.8	5.2	9.4	76	289	9.5	14.6	9.7	8.7
28	8.3	11.8	4.9	8.2	5.4	9.7	22	131	24	12.6	8.7	8.0
29	7.4	10.4	4.8	26.5	38.5	39.5	15.9	-	34	29	15.7	17.6
30	14.4	9.4	4.7	29.5	9.4	11.9	16.4	-------	15.0	46	29.5	13.4
31	11.3	8.7	-------	8.7	-------	15.8	14.2	-------	10.0	-------	36.5	-------
Total	423.4	852.5	345.0	566.0	441.0	780.3	1,343.7	1,026.1	886.2	1,406.1	911.9	785.5
Mean:												
mgd	13.7	27.5	11.5	18.3	14.7	25.2	43.3	36.6	28.6	46.9	29.4	26.2
cfs	21.2	42.5	17.8	28.3	22.7	39.0	67.0	56.6	44.3	72.5	45.5	40.5
Ac-ft	1,300	2,620	1,060	1,740	1,350	2,390	4,120	3,150	2,720	4,320	2,800	2,410

Calendar year 1938: Max 499 Min 3.8 Mean(mgd) 31.1 Mean(cfs) 48.1 Ac-ft 34,840
Fiscal year 1938-39: Max 289 Min 4.2 Mean(mgd) 26.8 Mean(cfs) 41.5 Ac-ft 29,980

Note.--No gage-height record Sept. 16 to Oct. 11; discharge estimated on basis of record for stations on nearby streams.

Discharge, in million gallons a day, fiscal year July 1939 to June 1940

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	10.5	10.0	14.6	6.0	12.8	43	5.2	2.7	5.0	18.1	14.7	9.4
2	76	8.3	11.9	5.5	6.3	16.4	5.0	2.7	4.8	10.0	29.5	8.1
3	64	6.9	123	5.2	6.0	16.7	4.8	2.7	4.6	8.3	181	26
4	71	6.6	29	5.0	19.0	75	4.8	2.7	4.6	7.2	106	a9.0
5	105	6.0	14.6	35.5	53	35.5	4.6	4.7	4.2	6.6	145	a8.0
6	17.4	6.7	11.8	98	85	14.2	4.6	14.0	4.2	5.8	41	a7.0
7	13.0	11.8	10.4	14.2	31.5	12.2	4.8	8.7	3.95	5.2	27.5	a15
8	11.4	11.3	9.4	9.0	36.5	11.2	67	9.7	3.75	5.0	16.9	a19
9	60	8.8	9.0	7.2	46	66	8.5	27	8.8	4.8	17.2	a17
10	20	51	18.5	10.4	16.4	21.5	5.8	31	23.5	4.8	30	a10
11	12.6	74	14.7	7.8	17.4	12.6	5.0	47	5.5	10.6	11.8	a8.0
12	16.8	35	16.3	9.6	98	27.5	4.6	106	4.2	23	10.7	7.4
13	17.6	25.5	16.6	11.4	102	18.3	4.4	12.2	3.75	24	16.9	6.9
14	24	46	13.9	13.4	69	21.5	4.2	8.7	5.6	7.2	9.4	6.6
15	33	41	28	25.5	25.5	13.4	4.2	7.7	4.6	5.5	8.3	6.0
16	22.5	81	94	11.2	21.5	11.4	3.95	7.4	3.5	5.0	7.7	5.8
17	12.2	55	15.4	11.4	35	10.0	3.75	6.3	15.5	7.0	7.9	5.2
18	11.1	37.5	12.6	8.0	40	9.0	3.75	6.3	6.8	8.0	7.4	5.0
19	23	27	10.7	7.4	15.0	8.7	3.75	13.1	4.2	5.0	6.6	5.2
20	45	18.9	9.7	7.2	13.4	8.7	3.75	11.0	3.5	21.5	6.0	5.5
21	72	20.5	14.0	6.3	27	7.7	3.5	40	3.3	18.6	6.3	6.6
22	19.7	22	12.5	6.0	13.8	7.2	3.3	106	14.4	7.6	7.2	18.2
23	13.4	13.8	12.4	17.1	145	6.6	3.1	11.1	10.4	6.3	29	8.3
24	11.1	11.4	12.7	9.7	241	25.5	3.5	8.7	26	9.4	23	10.0
25	10.0	11.2	8.3	6.6	69	17.4	3.1	7.4	10.4	8.7	11.4	8.2
26	10.9	10.0	7.4	5.8	23	8.3	2.8	6.6	8.0	16.0	8.3	11.1
27	21.5	19.1	7.2	5.2	15.9	7.2	2.8	6.0	5.5	8.7	6.9	8.0
28	9.7	22	6.9	5.5	13.4	6.3	2.7	5.5	4.8	9.0	6.3	8.3
29	8.3	29	7.4	10.5	14.0	6.0	2.7	5.2	46	7.2	11.0	7.2
30	8.0	55	6.6	10.2	21.5	5.8	2.7	-	112	6.9	12.2	16.7
31	12.1	21.5	-------	8.0	-------	5.5	2.7	-------	34	-------	10.2	-------
Total	862.8	803.8	579.5	399.8	1,332.9	556.3	189.35	528.1	399.35	291.9	832.6	292.7
Mean:												
mgd	27.8	25.9	19.3	12.9	44.4	17.9	6.11	18.2	12.9	9.73	26.9	9.76
cfs	43.0	40.1	29.9	20.0	68.7	27.7	9.45	28.2	20.0	15.1	41.6	15.1
Ac-ft	2,650	2,470	1,780	1,230	4,090	1,710	581	1,620	1,230	896	2,560	898

Calendar year 1939: Max 289 Min 5.0 Mean(mgd) 29.8 Mean(cfs) 46.1 Ac-ft 33,450
Fiscal year 1939-40: Max 241 Min 2.7 Mean(mgd) 19.3 Mean(cfs) 29.9 Ac-ft 21,720

a No gage-height record; discharge estimated on basis of record for stations on nearby streams.

5700. Naililihaele Stream near Huelo--Continued

Discharge, in million gallons a day, fiscal year July 1940 to June 1941

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	7.2	56	151	19.5	19.5	5.8	305	5.0	3.5	15.0	11.0	12.2
2	6.0	10.0	81	11.1	52	6.0	123	4.2	3.1	28	8.0	10.7
3	5.2	8.7	34	10.0	27	5.0	48	3.75	3.75	78	7.0	10.0
4	6.3	24	57	9.0	50	4.6	17.4	6.9	39.5	68	31.5	9.4
5	5.8	19.4	26	8.7	41	4.6	15.0	10.9	11.8	26.5	9.0	8.7
6	18.7	15.9	19.5	9.7	16.4	5.0	11.4	5.2	8.0	21	18.9	8.0
7	32.5	25	28	8.0	13.0	52	10.0	32	5.2	82	32	9.4
8	50	34.5	19.0	7.2	11.1	21	9.7	12.7	4.6	39	59	7.7
9	71	37.5	14.6	6.6	10.0	8.0	9.0	6.0	4.2	21	38	7.2
10	26	14.6	12.6	5.3	9.4	6.0	16.8	4.6	13.0	16.4	19.3	6.6
11	13.4	65	11.4	9.2	20.5	77	30.5	4.4	14.0	14.2	25	6.3
12	10.7	247	11.1	44	16.4	26	11.4	4.2	42	30	89	6.3
13	9.4	34	10.7	9.4	11.8	9.4	9.0	4.2	9.7	66	95	5.8
14	10.1	17.4	9.7	7.5	33	7.4	8.0	4.6	29	15.9	51	5.2
15	17.7	42	21.5	6.6	93	6.6	7.4	4.8	247	14.6	34	5.2
16	9.4	63	12.8	6.0	13.4	7.2	6.9	3.95	207	11.8	79	5.0
17	34.5	75	10.0	5.8	11.4	6.0	6.6	3.5	152	10.0	37.5	4.8
18	23	37.5	18.2	16.7	9.7	5.2	6.0	3.3	140	9.4	108	7.3
19	10.7	19.5	11.1	33	8.7	5.0	5.5	3.1	30	10.4	43	56
20	8.7	15.0	8.7	17.6	8.7	4.8	5.2	3.1	17.4	8.7	27.5	31
21	77	12.6	8.3	70	9.7	4.6	5.2	2.95	14.6	7.8	25	33.5
22	35	11.4	8.7	26	14.6	4.4	5.0	2.8	12.2	7.4	15.9	45
23	13.2	14.4	7.2	11.8	11.1	8.1	4.6	2.8	16.6	10.8	13.4	39
24	10.4	267	11.3	10.0	8.7	44	4.4	2.95	28.5	8.3	49	102
25	9.0	335	109	9.7	7.2	20.5	4.2	37.5	18.4	6.6	107	172
26	8.0	115	25	13.8	6.6	21	4.2	9.4	15.0	6.0	38	30
27	7.2	22.5	12.6	14.2	6.3	9.0	3.95	4.8	31	5.8	29	22.5
28	6.6	32.5	16.6	16.2	5.8	7.2	3.75	3.95	87	5.2	32.5	15.4
29	6.3	170	10.4	105	5.5	6.0	3.75	-	59	5.0	23	80
30	21.5	130	43	14.3	5.8	91	21.5	-------	26	7.3	23	357
31	39	41	-------	114	-------	15.9	10.9	-------	15.9	-------	14.2	-------
Total	609.5	2,012.4	820.0	656.9	557.3	504.3	733.25	197.55	1,308.95	656.1	1,192.7	1,119.2
Mean:												
mgd	19.7	64.9	27.3	21.2	18.6	16.3	23.7	7.06	42.2	21.9	38.5	37.3
cfs	30.5	100	42.2	32.8	28.8	25.1	36.7	10.9	65.3	33.9	59.6	57.7
Ac-ft	1,870	6,180	2,520	2,020	1,710	1,550	2,250	606	4,020	2,010	3,660	3,430

Calendar year 1940: Max 335 Min 2.7 Mean(mgd) 21.0 Mean(cfs) 32.5 Ac-ft 23,640
Fiscal year 1940-41: Max 357 Min 2.8 Mean(mgd) 28.4 Mean(cfs) 43.9 Ac-ft 31,830

Discharge, in million gallons a day, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	64	7.7	37	53	11.8	14.2	8.0	3.45	34.5	16.8	52	4.0
2	25.5	6.9	66	21	10.7	12.2	18.3	3.25	14.0	14.0	f22	3.85
3	40	28.5	76	17.4	10.0	25.5	9.0	3.25	12.0	14.0	a22	3.65
4	61	22.5	19.0	21	9.4	71	7.4	3.1	155	23	f19	3.45
5	42	13.3	64	13.8	8.7	56	12.1	4.3	66	15.8	74	4.0
6	41	30	160	15.6	44	101	9.3	6.8	17.2	80	181	3.45
7	30	169	79	62	18.5	81	7.1	3.1	12.1	16.3	202	3.65
8	20.5	119	22	197	13.0	48	6.4	2.9	237	13.2	25.5	11.8
9	42	70	15.9	113	22.5	94	6.1	2.55	343	11.7	27.5	30.5
10	24	136	13.4	74	12.6	59	5.8	2.4	461	21	16.8	20.5
11	15.4	50	20	66	17.7	102	5.4	2.4	192	226	13.2	6.8
12	13.4	19.5	11.8	77	10.2	50	5.4	3.25	278	132	11.3	17.2
13	11.4	15.0	10.4	70	9.0	22.5	5.1	2.7	290	135	10.2	17.4
14	11.4	15.4	10.0	85	9.4	16.8	65	7.2	215	65	13.4	31.5
15	11.1	12.6	9.7	65	34	14.0	29	3.25	194	36	14.0	23.5
16	9.4	10.0	8.7	43	17.0	35	8.6	6.1	132	24.5	10.2	46
17	10.4	9.4	8.0	26	10.4	30	7.1	15.7	123	53	8.3	13.6
18	17.7	8.7	10.2	123	9.7	14.5	6.4	108	100	31	7.4	9.6
19	24	10.7	62	34	28.5	12.1	6.1	126	56	19.7	6.8	8.3
20	17.6	55	74	21	13.8	11.0	5.6	18.6	58	51	6.4	7.1
21	10.0	44	13.8	16.9	12.2	11.0	5.4	10.2	135	51	6.1	6.6
22	27	61	11.4	22.5	43	9.3	5.1	7.1	100	20	5.6	6.1
23	14.9	19.2	16.6	220	24.5	8.6	4.8	6.1	27	15.8	5.4	10.9
24	16.4	13.0	11.4	198	71	18.4	4.6	5.6	99	13.2	5.1	15.3
25	11.8	12.8	21.5	53	13.4	13.9	4.4	16.0	110	11.7	5.1	7.1
26	9.0	56	19.7	117	11.1	10.2	4.6	51	88	10.2	6.8	10.4
27	8.3	15.0	29.5	232	10.0	8.6	4.4	80	120	13.6	4.8	20
28	10.2	11.1	17.4	26	25.5	8.0	4.2	64	64	21.5	4.4	16.9
29	25	13.0	17.2	19.5	10.7	7.4	4.0	-	38	128	6.1	9.3
30	13.0	18.2	22.5	15.9	33	24.5	3.65	-------	39	62	4.6	9.3
31	8.7	47	-------	13.8	-------	11.3	3.45	-------	20	-------	4.2	-------
Total	686.1	1,119.5	958.1	2,132.4	575.3	1,001.0	281.80	568.30	3,829.8	1,346.0	801.2	381.75
Mean:												
mgd	22.1	36.1	31.9	68.8	19.2	32.3	9.09	20.3	124	44.9	25.8	12.7
cfs	34.2	55.9	49.4	106	29.7	50.0	14.1	31.4	192	69.5	39.9	19.6
Ac-ft	2,110	3,440	2,940	6,540	1,770	3,070	865	1,740	11,750	4,130	2,460	1,170

Calendar year 1941: Max 357 Min 2.8 Mean(mgd) 32.0 Mean(cfs) 49.5 Ac-ft 35,850
Fiscal year 1941-42: Max 461 Min 2.4 Mean(mgd) 37.5 Mean(cfs) 58.0 Ac-ft 41,980

a No gage-height record; discharge estimated on basis of records for nearby streams.
f Fragmentary gage-height record; discharge computed from partly estimated gage heights and on basis of record for Kailua Stream.

5700. Nailiilihaele Stream near Huelo--Continued

Discharge, in million gallons a day, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	8.5	26	51	38.5	3.65	5.2	9.0	4.5	4.6	116	95	18.1
2	6.6	8.0	30.5	9.7	3.65	4.8	60	21	4.2	88	14.9	8.3
3	5.8	6.8	13.2	12.5	3.25	3.65	35	39.5	30	24.5	36	6.8
4	5.4	5.8	11.0	19	3.1	3.25	100	9.3	11.2	155	14.9	9.8
5	5.1	5.4	9.3	22	5.9	3.1	78	32	9.8	25	10.2	9.6
6	22	8.2	9.0	19	6.0	2.9	20	81	5.8	19.8	132	8.6
7	41	33	19.2	10	3.45	2.7	15	33	4.8	56	17.5	6.4
8	12.5	22	13.5	47	2.9	8.2	11	11.3	84	39.5	13.5	5.8
9	10.2	9.0	11.3	13	2.7	6.4	9.0	8.6	203	14.9	11.0	5.4
10	39.5	9.0	15.4	12	2.9	3.45	9.3	7.1	70	67	8.6	5.1
11	155	43	9.3	8.6	4.8	2.9	7.4	10	29.5	51	9.6	5.1
12	87	12.9	15.2	6.9	5.4	2.55	6.8	7.0	24.5	25	11.3	7.6
13	18.2	66	29	6.4	4.0	38	7.1	6.4	17.7	63	10.5	13.2
14	12.1	12.5	16.5	5.8	97	165	9.9	24	12.9	146	9.6	6.4
15	9.9	9.6	12.3	5.5	108	8.6	6.4	7.0	9.6	79	7.4	4.8
16	9.0	8.6	13.9	5.0	27.5	6.6	5.4	5.2	8.3	24	6.8	20.5
17	8.3	8.6	9.0	4.6	11.2	5.2	5.1	4.7	8.2	16.8	6.4	13.2
18	7.4	17.0	8.3	4.4	12.8	4.8	4.8	4.7	90	14.0	6.1	11.5
19	6.6	8.6	10.0	4.2	9.9	4.5	4.4	4.2	37	15.8	13.3	28
20	6.8	7.1	15.4	4.0	6.8	4.2	4.2	4.2	42	12.9	9.8	9.0
21	7.4	6.9	8.3	74	6.1	4.2	4.0	4.2	42	11.3	6.4	7.1
22	11.2	17.4	15.6	20	5.4	3.8	3.85	4.2	13.2	40	5.6	6.1
23	9.9	18.2	10.0	11	5.1	4.5	3.65	3.65	9.9	14.0	5.4	24.5
24	8.6	24	7.7	7.7	4.6	3.8	3.45	63	8.6	10.6	63	20.5
25	7.1	17.2	6.8	7.2	4.4	3.7	3.25	34.5	40	9.3	30	17.5
26	9.6	9.3	6.6	6.6	4.2	3.7	3.25	7.1	46	8.3	132	15.2
27	8.0	8.3	5.8	5.8	4.0	3.7	3.1	5.6	11.0	7.7	32.5	11.4
28	5.8	11.3	6.4	6.1	3.85	100	2.9	5.4	14.8	7.1	12.1	66
29	5.8	9.4	15.1	4.6	3.65	365	2.7	-	10.2	7.4	9.6	26
30	5.8	79	12.1	3.85	4.2	43	2.7	-------	67	48	8.6	35.5
31	12.2	84	-------	3.65	-------	18	2.55	-------	22	-------	8.0	-------
Total	568.3	612.1	416.7	408.60	370.40	839.40	443.20	452.35	991.8	1,216.9	757.6	433.0
Mean:												
mgd	18.3	19.7	13.9	13.2	12.3	27.1	14.3	16.2	32.0	40.6	24.4	14.4
cfs	28.3	30.5	21.5	20.4	19.0	41.9	22.1	25.1	49.5	62.8	37.8	22.3
Ac-ft	1,740	1,880	1,280	1,250	1,140	2,580	1,360	1,390	3,040	3,730	2,320	1,330

Calendar year 1942: Max 461 Min 2.4 Mean(mgd) 28.6 Mean(cfs) 44.3 Ac-ft 31,980
Fiscal year 1942-43: Max 365 Min 2.55 Mean(mgd) 20.6 Mean(cfs) 31.9 Ac-ft 23,040

Note.--No gage-height record Oct. 4-29, Dec. 16 to Jan. 8, Feb. 11-22; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Discharge, in million gallons a day, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	17.1	9.6	13	15.3	1.72	3.25	8.3	2.55	6.4	6.8	6.4	17.0
2	12.5	7.4	11	7.8	1.58	3.35	10.0	2.55	5.4	199	5.8	11.0
3	9.6	14.7	13	5.4	1.44	27	16.1	2.15	4.6	128	5.4	14.5
4	43	46	9.0	4.5	1.30	67	10.6	2.0	4.4	18.4	5.1	11.3
5	33	20.5	8.2	4.2	1.44	36	9.6	2.0	5.8	13.3	4.8	12.6
6	87	9.9	7.4	4.2	1.30	8.6	18.0	2.0	4.4	10.0	4.6	9.6
7	207	9.8	6.6	4.0	1.30	11.8	8.6	4.3	21	10.4	4.4	8.6
8	53	7.7	6.4	4.0	1.23	7.4	7.7	2.55	6.4	26.5	4.4	7.8
9	100	6.8	6.0	3.85	2.35	6.8	6.6	2.0	4.6	24.5	6.4	7.1
10	91	6.6	6.4	3.65	2.15	5.6	6.1	1.86	4.2	17.0	8.2	8.7
11	18.6	9.4	10	3.65	1.44	4.8	5.4	1.72	4.0	17.9	4.8	9.6
12	49	7.1	5.9	3.45	15.6	4.4	17.0	1.58	3.65	12.4	6.9	6.6
13	104	6.6	5.2	3.25	9.0	4.0	8.0	1.86	3.25	9.6	52	5.8
14	16.9	7.6	4.8	3.25	3.6	49	6.4	2.15	3.1	9.9	49	5.4
15	16.1	11	4.4	3.85	3.25	116	5.4	2.0	3.1	13.0	10.5	7.5
16	12.1	7.0	4.2	3.45	2.55	13.8	4.8	1.58	2.9	20.5	55	6.1
17	92	5.6	4.0	3.1	2.35	9.9	4.6	1.44	2.7	30	37	5.4
18	58	4.9	4.4	2.9	2.3	7.7	4.2	1.30	3.45	60	179	4.8
19	16.3	4.9	8.4	2.7	56	6.6	4.2	1.30	4.2	60	123	5.1
20	18.2	4.5	5.8	2.55	19.6	5.8	4.0	1.23	3.1	19.6	26.5	14.7
21	12.1	190	4.0	2.4	6.4	5.1	3.65	80	30.5	21.5	21	95
22	12.6	22	3.85	2.4	4.5	4.8	3.25	27	9.6	26	12.9	74
23	11.2	13	3.65	2.3	3.85	4.5	3.1	7.5	68	29.5	10.9	15.0
24	9.3	20	3.45	2.3	3.45	4.2	3.1	4.8	7.4	15.6	9.3	10.2
25	8.6	50	4.0	2.3	3.1	4.0	3.1	7.6	5.4	12.1	8.6	9.3
26	8.6	11	3.25	2.3	2.9	5.2	2.9	7.4	4.6	10.2	8.0	8.0
27	17.8	10	8.5	2.15	2.7	39.5	2.55	8.0	4.2	9.3	8.0	9.3
28	8.3	11	11.6	2.0	2.65	204	2.55	26	16.6	9.0	17.7	12.1
29	7.1	90	8.4	1.86	6.3	68	2.4	8.6	88	7.7	31.5	11.4
30	6.6	110	9.0	1.86	3.65	13.8	2.3	-	22	6.8	13.2	27
31	11.0	18	-------	2.0	-------	9.6	2.3	-------	8.6	-------	49	-------
Total	1,157.6	752.6	203.80	112.92	171.00	761.50	196.80	217.02	365.55	854.5	789.3	450.5
Mean:												
mgd	37.3	24.3	6.79	3.64	5.70	24.6	6.35	7.48	11.8	28.5	25.5	15.0
cfs	57.7	37.6	10.5	5.63	8.82	38.1	9.82	11.6	18.3	44.1	39.5	23.2
Ac-ft	3,550	2,310	625	347	525	2,340	604	666	1,120	2,620	2,420	1,380

Calendar year 1943: Max 207 Min 1.23 Mean(mgd) 20.4 Mean(cfs) 31.6 Ac-ft 22,870
Fiscal year 1943-44: Max 207 Min 1.23 Mean(mgd) 16.5 Mean(cfs) 25.5 Ac-ft 18,510

Note.--No gage-height record Aug. 14 to Sept. 13; discharge estimated on basis of recorded range in stage and records for station on nearby stream.

5700. Nailiilihaele Stream near Huelo--Continued

Discharge, in million gallons a day, fiscal year July 1944 to June 1945

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	55	8.6	9.3	4.0	16	13.6	6.8	2.0	15.6	5.8	4.6	1.30
2	13.2	6.8	26	4.0	14	39	6.4	2.0	66	5.6	13.9	1.58
3	85	6.1	9.4	4.6	14	19.4	5.8	2.0	62	5.4	10.0	1.72
4	45	5.8	7.7	5.1	16	11.0	5.4	1.86	143	4.8	4.6	2.3
5	17.2	5.8	6.8	14.0	14	10.2	5.1	1.86	141	4.6	4.0	13.4
6	13.2	5.6	6.8	7.5	21	16.8	5.1	1.72	98	4.6	3.85	9.5
7	11.0	6.9	13.3	4.2	16	65	4.6	1.72	54	6.6	4.0	5.8
8	9.6	35	7.1	3.65	30	79	4.2	1.72	80	20.5	3.45	11.9
9	8.9	16.0	5.8	3.45	13	14.9	4.2	1.72	60	10.9	3.25	9.6
10	23	60	5.4	3.1	60	12.1	4.0	1.58	30	5.8	3.1	4.2
11	10.5	12.1	5.1	3.25	40	11.3	3.65	1.58	28.5	4.8	2.7	3.85
12	8.3	9.6	4.8	3.45	20	9.6	3.45	1.58	32.5	4.6	2.7	3.45
13	8.0	8.3	4.6	3.1	14	8.6	3.25	1.58	174	12.9	2.55	3.1
14	61	7.4	5.4	2.9	25	8.0	3.25	2.6	31	78	2.4	3.1
15	23	6.6	5.1	2.9	90	29.5	3.1	2.4	19.7	35.5	2.4	2.4
16	11.3	6.4	5.8	2.7	35	16.5	3.1	30	189	18.6	2.55	2.3
17	9.6	6.4	23.5	50	43	8.6	3.1	14.7	58	14.7	2.4	2.6
18	9.6	5.4	29	38	49	7.7	3.1	7.9	33.5	9.6	2.3	3.45
19	8.0	5.1	9.0	9.9	21.5	8.3	2.7	4.0	21.5	7.7	2.3	9.6
20	24	4.6	35	7.1	24	17.7	2.55	3.1	23.5	6.8	3.1	26
21	12.3	4.4	11.0	6.4	65	9.3	2.5	5.8	15.4	6.4	3.1	17.1
22	10.6	11.4	8.6	6.6	84	9.3	25	18.4	12.9	5.8	2.3	17.8
23	9.9	90	6.8	6.6	17.7	44	4.2	5.6	11.0	5.6	2.0	96
24	19.8	9.1	6.4	5.6	14.9	23.5	3.25	6.3	11.3	5.1	1.86	11.3
25	11.3	15.6	5.6	79	12.1	10.2	2.9	20.5	10.6	4.8	1.72	15.8
26	9.7	21.5	5.1	131	10.2	77	2.55	62	9.0	4.4	1.72	21
27	20.5	19.4	4.6	68	11.0	14.5	2.4	72	8.0	4.2	1.72	13.2
28	13.4	19.9	4.6	45	19.2	11.0	2.4	16.3	7.7	4.0	1.58	9.6
29	9.9	22	4.2	56	17.4	9.6	2.3	-	10.5	4.8	1.58	7.7
30	8.0	10.2	4.0	39.5	9.9	8.6	2.15	-------	7.1	5.4	1.58	7.8
31	8.0	9.0	-------	24	-------	7.7	2.0	-------	6.6	-------	1.44	-------
Total	587.8	461.0	285.8	644.60	836.9	631.5	134.50	294.52	1,470.9	318.3	100.75	338.45
Mean:												
mgd	19.0	14.9	9.53	20.8	27.9	20.4	4.34	10.5	47.4	10.6	3.25	11.3
cfs	29.4	23.1	14.7	32.2	43.2	31.6	6.71	16.2	73.3	16.4	5.03	17.5
Ac-ft	1,800	1,410	877	1,980	2,570	1,940	413	904	4,510	977	309	1,040

Calendar year 1944: Max 199 Min 1.23 Mean(mgd) 17.3 Mean(cfs) 26.8 Ac-ft 19,390
Fiscal year 1944-45: Max 189 Min 1.30 Mean(mgd) 16.7 Mean(cfs) 25.8 Ac-ft 18,730

Note.--No gage-height record Oct. 31 to Nov. 17; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Discharge, in million gallons a day, fiscal year July 1945 to June 1946

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	24.5	6.8	10.6	3.45	14.6	4.2	2.4	14.0	4.4	54	15.4	a2.9
2	17.8	5.6	9.0	3.45	11.3	68	2.3	11.0	4.2	44	14.0	a2.7
3	8.6	4.4	12.1	3.25	8.3	118	2.3	9.0	4.0	148	34.5	a2.6
4	7.1	4.0	12.1	3.1	6.8	74	2.3	8.0	5.6	46	17.3	a2.6
5	6.4	110	16.3	3.1	12.4	29.5	2.15	7.4	4.6	32.5	a12	a4.0
6	5.8	119	13.3	3.45	16.2	17.4	3.6	7.1	20.5	32	a9.9	2.9
7	5.4	40	14.9	3.45	22	11.3	3.25	9.5	25	23	a9.3	2.55
8	4.8	39.5	9.9	2.9	20	9.3	2.3	6.8	44	19.7	a8.6	2.4
9	4.4	43	8.6	3.1	77	8.0	2.0	6.6	23	22	a8.3	3.45
10	4.5	18.6	8.9	3.1	21	7.1	1.86	13.6	13.9	22	a7.4	4.7
11	15.5	28	14.4	2.4	11.7	6.6	3.05	10.3	70	17.2	a7.1	2.7
12	5.1	31	8.3	2.3	9.6	9.4	5.1	7.1	12.1	21	a6.6	2.4
13	4.4	16.9	7.7	2.15	9.3	7.1	4.8	8.0	22.5	21	a6.4	2.15
14	3.85	12.9	34	2.3	8.3	5.6	2.55	7.1	107	30	a6.1	35.5
15	3.85	35.5	11.7	3.25	8.0	4.8	2.15	6.1	70	30	5.8	19.0
16	25.5	29	9.0	10.3	7.1	4.6	23.5	20.5	29.5	71	5.8	3.85
17	6.4	12.5	8.3	5.1	6.1	4.4	230	270	40	148	5.4	3.1
18	5.1	58	7.4	5.9	5.6	4.2	37	18.4	92	100	4.8	2.7
19	4.6	37	6.8	5.8	5.4	4.0	10.4	11.3	143	39	4.8	2.7
20	5.4	33.5	6.4	4.0	4.8	4.0	7.1	9.3	35	34.5	5.6	3.75
21	4.2	19.8	5.8	3.45	4.6	4.0	6.4	8.0	49	26	4.8	8.6
22	4.2	15.8	5.6	2.7	4.6	3.65	122	7.4	32	32.5	4.4	6.4
23	4.2	137	5.1	2.55	37.5	3.45	132	7.1	54	39.5	4.2	4.2
24	4.2	95	4.8	2.3	20.5	3.25	222	6.6	37	88	4.0	5.9
25	4.0	29	4.6	2.3	8.3	3.1	30	5.8	23.5	130	3.85	5.1
26	3.45	18.1	4.4	3.1	6.6	2.9	39.5	5.4	20	94	3.65	7.6
27	3.45	14.9	4.2	7.8	5.6	2.9	32.5	5.1	160	29.5	3.45	11.3
28	4.2	12.1	4.2	12.7	5.1	2.7	14.9	4.6	130	22	3.25	5.1
29	4.0	11.3	3.85	29.5	4.6	2.55	23.5	-	50	19.6	3.25	12.4
30	15.7	9.9	3.65	65	4.4	2.4	13.2	-------	115	27	3.1	33.5
31	11.0	11.8	-------	47	-------	2.4	23	-------	71	-------	a3.1	-------
Total	231.60	1,059.9	275.90	254.25	387.3	434.80	1,009.11	511.1	1,511.8	1,463.0	236.15	208.75
Mean:												
mgd	7.47	34.2	9.20	8.20	12.9	14.0	32.6	18.3	48.8	48.8	7.62	6.96
cfs	11.6	52.9	14.2	12.7	20.0	21.7	50.4	28.3	75.5	75.5	11.8	10.8
Ac-ft	711	3,250	847	780	1,190	1,330	3,100	1,570	4,640	4,490	725	641

Calendar year 1945: Max 189 Min 1.30 Mean(mgd) 14.5 Mean(cfs) 22.4 Ac-ft 16,260
Fiscal year 1945-46: Max 270 Min 1.86 Mean(mgd) 20.8 Mean(cfs) 32.2 Ac-ft 23,270

a No gage-height record; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

5700. Naililihaele Stream near Huelo--Continued

Discharge, in million gallons a day, fiscal year July 1946 to June 1947

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	7.7	10.6	6.0	17.5	11.4	36.5	9.9	4.6	111	14.1	6.9	9.3
2	6.6	9.9	8.8	21.5	22.5	27	140	4.2	66	45	15.9	9.0
3	6.4	12.4	5.4	10.2	11.0	125	30	4.0	18.3	22.5	132	7.4
4	4.8	9.3	4.5	11.8	21.5	41	14.9	3.85	10.2	12.1	164	7.4
5	5.4	7.4	5.0	8.3	260	20.5	14.0	3.65	8.0	12.9	31.5	6.4
6	13.8	6.8	4.5	7.1	38.5	140	13.5	3.65	28	74	35.5	6.1
7	33.5	6.6	5.8	10.2	16.3	21.5	11.7	3.25	23.5	64	14.0	5.8
8	12.9	5.8	5.6	13.3	17.4	16.3	36.5	3.25	47	31.5	12.5	5.1
9	23.5	5.8	4.3	7.1	17.2	12.9	16.8	3.1	12.1	16.3	9.3	4.6
10	72	5.6	3.8	6.4	11.7	11.7	12.1	3.25	11.7	26.5	22	4.6
11	54	5.1	3.5	5.8	17.1	10.2	27.5	2.9	8.6	35.5	58	5.0
12	20.5	4.6	3.0	5.6	11.3	9.0	193	2.7	7.1	110	93	6.8
13	29.5	11.0	2.9	5.4	9.9	8.3	41	2.7	61	21.5	27	6.8
14	16.3	25	6.0	4.8	8.6	35	18.7	3.25	211	14.9	13.2	5.1
15	64	9.2	25	4.6	10.7	129	12.5	2.7	21.5	12.1	11.0	4.0
16	87	6.1	10	4.2	8.0	131	8.6	2.55	12.5	10.2	10.6	3.65
17	96	5.4	7.0	4.0	7.1	306	8.0	2.55	10.2	9.3	8.3	3.65
18	38.5	5.0	20	4.6	6.6	163	7.6	2.55	8.6	8.3	7.4	3.85
19	24.5	12	18	7.4	6.1	140	7.4	2.4	7.4	7.4	7.1	3.45
20	51	6.6	8.2	8.2	5.8	307	7.4	2.4	6.8	6.8	6.6	3.85
21	28.5	5.0	6.4	4.8	5.6	565	6.8	2.4	6.4	6.4	19.3	3.25
22	17.2	4.5	6.4	11.1	7.4	136	6.4	2.4	6.4	5.8	103	3.1
23	13.2	5.2	6.4	19.6	9.3	48	6.2	2.3	6.1	5.4	12.9	3.45
24	11.7	5.8	6.1	11.3	6.6	27.5	6.0	2.3	62	5.4	25	3.1
25	9.9	4.5	4.8	6.6	5.4	54	5.6	10.2	45	4.8	24	3.65
26	79	9.5	4.4	11.9	4.8	21	5.6	49	11.0	4.6	106	6.9
27	332	8.7	12.7	8.6	4.6	16.3	5.6	36	13.2	4.8	28	21.5
28	55	10	14.4	8.0	12.8	13.6	5.8	18.5	246	4.6	39.5	31.5
29	21.5	7.6	13.0	10.3	78	11.7	6.1		247	4.0	17.2	13.0
30	15.8	7.2	9.9	19.3	114	12.8	6.3	-------	25.5	4.6	12.9	31
31	12.5	5.6	-------	10.6	-------	15.5	5.4	-------	16.3	-------	11.0	-------
Total	1,264.2	243.8	241.8	290.1	767.2	2,612.3	696.9	186.60	1,375.4	605.3	1,084.6	232.30
Mean:												
mgd	40.8	7.86	8.06	9.36	25.6	84.3	22.5	6.66	44.4	20.2	35.0	7.74
cfs	63.1	12.2	12.5	14.5	39.6	130	34.8	10.3	68.7	31.3	54.2	12.0
Ac-ft	3,880	748	742	890	2,350	8,020	2,140	573	4,220	1,860	3,330	713

Calendar year 1946: Max 565 Min 1.86 Mean(mgd) 28.4 Mean(cfs) 43.9 Ac-ft 31,800
Fiscal year 1946-47: Max 565 Min 2.3 Mean(mgd) 26.3 Mean(cfs) 40.7 Ac-ft 29,470

Note.--No gage-height record Aug. 18 to Sept. 20, Jan. 17-28; discharge estimated on basis of records for Kailua and Puohokamoa Streams.

Discharge, in million gallons a day, fiscal year July 1947 to June 1948

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	11.1	7.7	19.6	10.6	10.4	10.4	12.0	11.9	5.8	196	15.5	51
2	44	7.2	26.5	8.9	8.0	8.8	12.4	10.8	13.0	193	13.5	22
3	34	6.4	206	8.3	10.9	6.8	66	11.9	42	178	11.6	16.8
4	13.8	6.1	90	8.7	8.0	23.5	18.0	10.8	14.4	f147	10.2	13.8
5	24	63	27	f136	6.9	10.8	11.9	13.1	8.3	46	9.6	11.9
6	49	9.2	19.5	13.5	6.4	19.4	12.5	10.0	6.9	23.5	8.6	10.8
7	21.5	7.7	15.5	11.8	6.4	91	18.4	14.5	25.5	18.1	8.3	9.9
8	15.0	7.2	12.7	9.2	6.1	19.4	33.5	33	19.8	15.5	7.4	8.9
9	11.9	7.2	11.2	8.3	9.1	16.2	11.9	11.8	23.5	13.5	13.1	8.3
10	14.9	9.7	9.9	7.2	14.3	22	10.2	10.1	29	11.6	16.8	7.4
11	43	8.6	8.9	6.9	f91	11.6	9.9	21	41	16.8	8.6	7.2
12	20.5	35.5	8.0	6.4	f81	49	11.4	69	46	76	8.3	6.9
13	11.9	30	7.4	5.8	f139	37	15.1	12.7	80	37	19.7	6.9
14	21.5	17.6	7.2	13.4	30.5	19.5	8.6	10.2	24.5	71	11.7	7.2
15	20	11.2	6.9	10.8	f63	13.8	7.4	9.2	44	f203	8.0	7.7
16	11.9	52	6.9	7.4	15.5	38.5	7.2	8.3	f162	42	7.4	8.6
17	10.2	79	6.4	6.4	11.9	f85	6.9	7.2	f102	20.5	23	9.6
18	8.9	21.5	5.8	5.8	10.2	f245	6.4	6.9	98	17.2	17.4	8.8
19	8.6	13.8	5.5	5.0	9.2	84	6.1	6.6	81	31	11.9	5.8
20	8.6	11.6	5.0	4.8	8.3	76	5.5	6.4	183	21	25.5	6.9
21	8.0	10.5	4.6	8.8	7.4	35	5.3	13.2	35	42	15.0	5.8
22	9.2	14.2	12.5	10.0	6.9	18.6	5.0	36.5	57	16.8	12.3	5.0
23	10.4	11.6	14.1	5.5	6.4	15.5	47	8.9	119	13.8	12.4	6.4
24	8.0	34.5	7.5	4.6	6.9	15.5	110	6.9	74	11.9	15.6	5.5
25	27	136	5.5	159	5.8	11.9	488	6.9	84	11.6	17.4	5.0
26	15.5	34	4.6	f236	5.3	16.8	536	9.6	44	13.1	66	6.5
27	26	16.8	4.4	28.5	4.6	23	44	16.2	41	25.5	109	7.9
28	13.8	20	5.5	16.4	5.9	13.1	19.0	7.7	100	27.5	f81	7.2
29	10.8	13.1	34	10.8	8.6	11.2	14.6	6.4	237	f133	f76	5.8
30	9.9	16.6	37	9.2	5.0	11.2	12.7	-------	142	33.5	29.5	12.2
31	8.6	15.5	-------	15.9	-------	10.2	25.5	-------	58	-------	55	-------
Total	551.5	735.0	635.6	799.9	608.9	1,069.7	1,598.4	407.7	2,040.7	1,706.4	745.3	303.7
Mean:												
mgd	17.8	23.7	21.2	25.8	20.3	34.5	51.6	14.1	65.8	56.9	24.0	10.1
cfs	27.5	36.7	32.8	39.9	31.4	53.4	79.8	21.8	102	88.0	37.1	15.6
Ac-ft	1,690	2,260	1,950	2,450	1,870	3,280	4,910	1,250	6,260	5,240	2,290	932

Calendar year 1947: Max 247 Min 2.3 Mean(mgd) 23.5 Mean(cfs) 36.4 Ac-ft 26,340
Fiscal year 1947-48: Max 536 Min 4.4 Mean(mgd) 30.6 Mean(cfs) 47.3 Ac-ft 34,380

Peak discharge (base, 750 mgd).--Sept. 3 (8 p.m.) 950 mgd (1,470 cfs); Oct. 5 (2 a.m.) 704 mgd (1,090 cfs); Oct. 25 (6 p.m.) 1,110 mgd (1,720 cfs); Jan. 25 (9 p.m.) 1,250 mgd (1,930 cfs).

f Fragmentary gage-height record; discharge computed from partly estimated gage heights and on basis of records for Kailua and Puohokamoa Streams.

ISLAND OF MAUI

5700. Nailiilihaele Stream near Huelo--Continued

Discharge, in million gallons a day, fiscal year July 1948 to June 1949

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	10.9	15.0	8.6	37.5	29	49	28	4.4	3.55	25.5	9.6	5.6
2	14.5	12.3	12.2	15.8	17.2	27	59	4.4	3.3	22	9.2	9.3
3	18.9	11.2	8.0	15.2	14.2	20.5	35	8.3	3.3	15.0	8.3	10.4
4	22	11.2	6.6	10.2	11.9	15.5	20	4.6	3.1	11.6	9.7	9.2
5	41	9.6	6.1	9.9	11.2	13.5	16.8	4.2	2.9	19.8	9.1	13.3
6	42	18.3	5.8	8.0	9.9	16.4	14.2	3.95	2.9	11.9	14.0	8.3
7	39.5	12.2	6.6	7.4	8.9	12.3	12.7	3.75	2.75	13.5	8.0	6.4
8	24.5	9.2	5.3	6.6	33.5	22	17.1	54	4.5	17.0	6.9	5.8
9	14.6	8.9	7.7	6.1	15.1	58	22	10.7	4.8	10.8	6.1	5.3
10	12.3	8.0	6.1	6.1	17.7	66	13.1	6.6	4.2	9.6	5.8	4.8
11	61	8.6	7.2	15.0	46	26	43	5.3	7.1	21.5	5.8	13.8
12	16.0	7.7	7.0	*11.1	23.5	52	14.6	4.8	8.3	40	5.0	16.3
13	14.6	8.6	5.3	9.7	13.8	50	11.6	6.9	168	13.8	6.1	7.2
14	*12.9	6.9	4.6	9.0	12.7	40	10.5	13.9	12.6	10.8	5.5	5.8
15	13.7	97	4.4	6.9	10.8	30	9.6	13.4	8.9	12.4	6.0	5.0
16	11.2	46	4.2	6.1	29	44	9.2	21	7.2	19.6	7.5	4.8
17	45	12.3	3.95	6.1	23.5	35	54	8.6	5.8	10.2	5.0	4.6
18	62	10.8	3.95	5.5	15.1	41	11.6	6.9	4.8	8.9	4.4	4.6
19	32.5	9.2	6.7	13.4	11.6	30.5	9.6	6.1	4.6	8.0	4.2	4.2
20	20.5	24	4.2	26.5	10.2	38	8.6	5.5	4.2	7.4	3.95	3.95
21	18.6	10.5	4.8	16.6	9.6	94	7.7	5.0	3.75	7.4	3.95	3.75
22	17.7	30.5	3.75	17.3	9.4	122	7.2	4.8	12.8	15.1	3.75	5.9
23	13.1	33.5	36.5	16.2	15.5	68	6.9	4.6	21	28	3.55	16.4
24	30	14.3	8.6	13.1	18.3	274	6.6	4.4	16.5	98	3.55	10.5
25	15.0	11.2	5.8	17.6	90	52	6.1	4.2	45	20	5.9	5.3
26	17.7	9.9	4.8	31	*44	41	5.8	3.95	23.5	49	6.0	4.4
27	30.5	9.2	134	44	66	29.5	5.8	3.95	18.0	22.5	24.5	4.2
28	63	8.6	28.5	61	38	49	5.8	3.95	31.5	18.5	14.9	3.95
29	21.5	8.3	10.2	55	37.5	68	5.0	-	54	12.3	20.5	3.75
30	16.4	10.9	84	32	19.0	53	4.8	-------	83	11.2	8.6	3.75
31	24	15.8	-------	26	-------	39	4.6	-------	34	-------	6.6	-------
Total	797.1	509.7	445.45	561.9	712.1	1,576.2	486.5	232.15	609.85	591.3	241.95	210.55
Mean:												
mgd	25.7	16.4	14.8	18.1	23.7	50.8	15.7	8.29	19.7	19.7	7.80	7.02
cfs	39.8	25.4	22.9	28.0	36.7	78.6	24.3	12.8	30.5	30.5	12.1	10.9
Ac-ft	2,450	1,560	1,370	1,720	2,190	4,840	1,490	712	1,870	1,810	743	646

Calendar year 1948: Max 536 Min 3.75 Mean(mgd) 31.2 Mean(cfs) 48.3 Ac-ft 35,010
Fiscal year 1948-49: Max 274 Min 2.75 Mean(mgd) 19.1 Mean(cfs) 29.6 Ac-ft 21,400

Peak discharge (base, 750 mgd).--Aug. 15 (5:30 p.m.) 950 mgd (1,470 cfs), 6.47 ft; Sept. 27 (9 p.m.) 1,830 mgd (2,830 cfs), 8.32 ft; Dec. 24 (1 a.m.) 870 mgd (1,350 cfs), 6.27 ft.

* Discharge measurement made on this day.

Discharge, in million gallons a day, fiscal year July 1949 to June 1950

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.6	25	7.2	2.6	9.4	75	10	12.8	8.9	40	71	11.2
2	14.3	15.5	6.6	2.6	9.5	70	60	12.9	7.7	18.6	46	10.8
3	8.7	11.6	6.1	2.45	6.9	74	25	8.1	6.9	14.2	35	9.9
4	5.0	10.5	5.8	2.3	4.2	42	12	6.1	6.4	12.3	63	9.2
5	7.2	9.6	5.5	2.7	80	22	9.5	5.0	6.5	11.9	56	8.3
6	13.0	9.6	5.3	8.1	20	15	8.0	4.6	25	16.5	45	8.6
7	13.6	8.3	4.8	12.9	13	13	7.3	4.6	7.7	16.3	63	7.7
8	7.9	9.9	4.4	6.5	11	11	6.6	4.4	6.4	10.6	132	40
9	8.2	13.4	4.2	7.1	10	10	6.3	3.95	6.1	14.3	48	17.1
10	6.1	38	6.2	11.5	9.0	9.0	6.0	3.55	53	27.5	76	17.4
11	15.8	24	4.6	6.6	13	8.0	64	4.6	29.5	100	57	21.5
12	17.0	14.6	4.2	12.7	80	8.5	61	7.0	12.3	46	24.5	11.2
13	17.9	12.3	6.7	8.8	54	26	35	25.5	12.8	58	38	9.6
14	13.2	10.5	6.0	7.4	30	27	15	7.4	8.9	22	22	8.6
15	33	14.6	10.2	6.6	16	10	9.0	6.1	7.4	16.8	18.8	8.0
16	19.2	12.4	6.2	6.9	30	22	7.2	12.1	6.9	17.2	44	7.4
17	15.0	14.2	4.6	4.8	34	10	6.9	76	6.6	59	49	7.4
18	14.5	21.5	4.2	5.0	22	8.0	6.1	102	6.1	78	194	6.9
19	10.5	18.8	3.75	5.3	15	7.2	5.6	21	5.5	244	33.5	7.2
20	8.9	24	3.55	4.6	12	8.0	5.1	17.7	124	90	64	8.1
21	8.9	16.8	3.1	3.95	10	7.0	4.8	38.5	178	29.5	37.5	9.6
22	8.0	22	8.6	3.95	8.8	6.5	4.6	51	24.5	100	21.5	7.1
23	7.4	15.5	4.8	3.55	8.0	6.1	4.7	30.5	24	237	36.5	10.6
24	7.7	18.1	3.55	3.75	7.2	5.6	4.4	15.9	73	234	54	10.5
25	10.8	19.5	5.6	3.75	6.8	5.5	3.95	12.3	36.5	67	37	14.7
26	85	12.7	3.75	3.55	23	7.0	3.55	10.2	15.5	86	49	20.5
27	29	11.6	4.2	3.3	41	24	3.55	8.9	14.5	384	46	11.2
28	11.6	10.5	3.55	3.3	21	23	3.3	13.9	18.8	246	20.5	9.9
29	18.8	9.6	2.9	2.9	35	23	23.5	-	169	54	16.8	8.6
30	22	8.3	2.75	2.75	90	29	26.5	-------	46	60	13.8	7.2
31	15.4	7.7	-------	2.75	-------	15	9.1	-------	34.5	-------	11.9	-------
Total	478.2	470.6	152.90	164.95	729.8	627.4	457.55	526.60	988.9	2,410.7	1,524.3	346.0
Mean:												
mgd	15.4	15.2	5.10	5.32	24.3	20.2	14.8	18.8	31.9	80.4	49.2	11.5
cfs	23.8	23.5	7.89	8.23	37.6	31.3	22.9	29.1	49.4	124	76.1	17.8
Ac-ft	1,470	1,440	469	506	2,240	1,930	1,400	1,620	3,030	7,400	4,680	1,060

Calendar year 1949: Max 168 Min 2.3 Mean(mgd) 13.7 Mean(cfs) 21.2 Ac-ft 15,330
Fiscal year 1949-50: Max 384 Min 2.3 Mean(mgd) 24.3 Mean(cfs) 37.6 Ac-ft 27,240

Peak discharge (base, 750 mgd),--Mar. 21 (2:30 a.m.) 870 mgd (1,350 cfs), 6.30 ft; Apr. 23 (5:30 a.m.) 870 mgd (1,350 cfs), 6.26 ft; Apr. 27 (3 a.m.) 3,220 mgd (4,980 cfs), 10.36 ft; May 18 (5 a.m.) 910 mgd (1,410 cfs), 6.38 ft.

* Discharge measurement made on this day.

Note.--No gage-height record Nov. 5-25, Nov. 29 to Jan. 23, Apr. 11-13; discharge estimated on basis of records for stations on nearby streams.

5700. Nailiilihaele Stream near Huelo--Continued

Discharge, in million gallons a day, fiscal year July 1950 to June 1951

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	10.0	14.9	6.6	3.55	6.9	32.5	15.0	a5.5	66	41	4.8	2.6
2	9.4	19.6	6.1	*3.75	5.8	60	17.5	a5.5	28	25	4.4	2.6
3	7.2	11.4	5.0	4.2	5.5	30	14.2	a5.0	23	9.9	6.8	2.45
4	6.6	15.4	4.6	3.55	12.5	50	10.5	a5.0	13.5	11.1	4.8	2.3
5	10.8	9.9	5.0	11.8	7.4	53	10.3	a6.0	30.5	11.3	4.8	2.45
6	10.8	22.5	5.3	14.0	5.3	194	11.1	a5.0	22.5	11.2	4.4	2.6
7	7.4	29.5	4.8	5.8	4.8	106	9.6	a4.7	12.3	17.8	4.8	4.8
8	7.2	12.3	20.5	10.2	4.6	48	14.2	a4.3	10.2	10.0	5.0	2.6
9	10.7	10.5	69	23	19.9	22.5	12.7	a4.0	9.2	8.0	4.2	2.6
10	a97	9.6	40	6.6	45	75	9.9	a3.9	8.6	7.2	8.4	36.5
11	26	12.9	32	5.0	48	52	11.2	a3.8	8.0	6.9	*5.0	12.5
12	10.8	12.7	10.8	4.6	29.5	116	14.5	a5.5	7.4	8.9	3.75	71
13	10.5	33	11.5	3.95	12.4	69	9.6	a80	8.7	7.2	3.3	27
14	8.3	200	16.8	3.75	9.2	22.5	125	a55	56	5.8	3.1	9.9
15	7.7	55	8.6	6.3	10.2	17.2	141	a65	9.2	5.3	3.1	7.7
16	9.8	15.0	8.0	5.5	19.4	14.6	107	57	22.5	5.5	3.1	6.1
17	13.9	13.5	7.2	3.95	14.3	12.3	19.0	68	13.8	5.8	12.8	5.8
18	8.0	11.9	6.6	3.55	12.5	10.5	14.6	209	102	10.2	17.4	6.1
19	24	9.9	6.1	3.55	23.5	9.6	11.6	111	41	5.5	6.4	5.3
20	a75	10.5	5.8	3.1	18.1	8.9	10.2	65	13.1	4.8	6.8	4.6
21	23.5	8.9	5.5	3.3	11.8	8.0	9.2	36	10.2	4.8	8.2	3.95
22	22	8.0	5.0	4.9	8.9	7.4	14.7	32	38	5.0	4.8	3.75
23	26.5	7.4	4.8	6.3	8.0	7.2	38	15.0	*10.5	6.5	4.2	3.75
24	51	6.9	4.6	42	7.2	6.6	a19	12.3	12.7	8.6	3.95	18.4
25	39	6.6	4.4	16.1	239	27	a10	10.2	27.5	10.6	3.75	6.8
26	19.0	6.1	4.2	16.8	277	22.5	a9.0	16.4	9.9	6.6	3.75	4.4
27	19.5	7.4	3.95	11.7	70	86	a8.0	22.5	8.9	5.3	3.75	3.75
28	20.5	6.4	3.75	7.2	26.5	81	a7.5	46	7.7	6.4	3.3	3.75
29	21	6.1	3.75	9.4	16.4	151	a7.0	-	6.9	9.9	3.1	3.75
30	28.5	10.1	4.2	23	27	49	a6.5	-------	6.9	5.5	3.1	3.75
31	13.8	6.1	-------	9.5	-------	32.5	a6.0	-------	11.7	-------	2.75	-------
Total	655.4	610.0	324.45	279.90	1,006.6	1,481.8	723.6	958.6	656.4	287.6	161.80	273.55
Mean:												
mgd	21.1	19.7	10.8	9.03	33.6	47.8	23.3	34.2	21.2	9.59	5.22	9.12
cfs	32.6	30.5	16.7	14.0	52.0	74.0	36.1	52.9	32.8	14.8	8.08	14.1
Ac-ft	2,010	1,870	996	859	3,090	4,550	2,220	2,940	2,010	883	497	839

Calendar year 1950: Max 384 Min 3.1 Mean(mgd) 29.1 Mean(cfs) 45.0 Ac-ft 32,560
Fiscal year 1950-51: Max 277 Min 2.3 Mean(mgd) 20.3 Mean(cfs) 31.4 Ac-ft 22,760

Peak discharge (base, 750 mgd).--Feb. 18 (7:30 p.m.) 910 mgd (1,410 cfs), 6.41 ft; Mar. 18 (7:30 p.m.) 707 mgd (1,090 cfs), 5.89 ft.

* Discharge measurement made on this day. a Doubtful or no gage-height record; discharge estimated on basis of reconstructed graph and records for stations on nearby streams.

Discharge, in million gallons a day, fiscal year July 1951 to June 1952

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.55	15.0	14.2	4.2	8.6	13.5	17.6	109	8.3	10.2	67	17.4
2	3.3	10.8	8.0	4.4	6.9	10.8	11.6	21	8.3	10.2	16.8	10.2
3	3.75	8.9	7.2	3.3	5.8	9.9	53	8.9	25	10.8	34	8.9
4	4.4	14.4	6.4	2.6	5.3	10.2	51	7.4	87	10.2	42	8.3
5	6.0	66	13.4	2.6	9.0	10.8	19.4	10.2	71	19.7	36.5	63
6	51	131	36	2.6	9.3	8.6	12.7	8.3	20.5	14.6	67	30
7	14.2	185	47	3.1	19.7	7.4	10.8	7.7	31	17.3	23.5	12.3
8	6.4	44	14.6	2.6	31	7.2	8.9	6.1	78	22.5	15.5	19.9
9	4.8	28	9.2	3.3	15.9	6.9	14.1	10.3	103	15.9	12.7	44
10	12.4	18.1	8.3	2.6	8.6	6.1	13.1	15.0	100	15.9	11.2	40
11	18.1	13.8	7.4	2.45	7.4	205	27.5	8.9	96	11.2	11.9	25.5
12	7.2	11.6	6.9	3.4	6.9	119	20.5	6.9	61	9.9	10.8	31.5
13	11.5	*10.2	5.8	13.4	9.0	17.2	18.6	25.5	90	63	10.0	30
14	10.2	9.2	5.5	4.2	*12.3	12.7	26.5	14.6	90	31.5	11.6	35.5
15	6.9	8.3	5.0	3.3	15.2	10.2	20.5	*8.6	41	12.7	10.8	60
16	5.8	9.2	4.8	2.6	10.7	9.6	15.0	7.2	24	10.2	9.9	27
17	8.3	7.7	4.6	2.45	8.9	8.3	10.8	6.6	22	9.2	8.6	18.7
18	5.5	6.9	4.4	2.3	20	7.7	9.9	7.5	16.4	9.9	19.2	65
19	7.4	6.4	4.2	2.6	143	7.2	77	135	13.5	10.8	43	a30
20	9.2	21	3.75	48	197	8.3	79	57	11.6	33.5	13.3	a38
21	5.8	8.6	3.55	16.6	57	6.9	14.6	13.1	10.2	38	9.2	a48
22	6.1	6.6	3.55	8.6	35	5.8	11.2	10.2	10.8	10.5	25.5	a26
23	6.4	7.2	3.3	38.5	20.5	8.1	9.6	48	17.6	14.6	17.4	a22
24	8.3	18.3	3.3	8.2	19.1	7.7	8.6	27	10.2	9.6	9.9	a24
25	6.1	65	3.3	5.8	14.2	6.9	8.0	13.5	9.2	14.4	15.3	a22
26	6.6	9.2	3.3	5.0	97	5.5	7.4	11.2	9.2	9.9	8.3	a17
27	5.5	7.4	3.3	4.6	50	9.2	6.9	9.2	116	99	9.9	54
28	17.1	9.8	3.75	5.7	38.5	13.8	6.4	8.6	27.5	16.4	14.6	28
29	25	7.2	6.4	17.0	19.0	69	5.8	9.3	11.9	13.8	11.9	82
30	57	8.6	4.6	70	14.6	60	5.3	-	10.2	76	11.6	44
31	28	18.2	-------	17.0	-------	63	9.8	-------	9.9	-------	9.9	-------
Total	371.80	791.6	255.00	313.00	915.4	752.5	611.1	631.8	1,240.3	651.4	678.8	982.2
Mean:												
mgd	12.0	25.5	8.50	10.1	30.5	24.3	19.7	21.8	40.0	21.7	21.9	32.7
cfs	18.6	39.5	13.2	15.6	47.2	37.6	30.5	33.7	61.9	33.6	33.9	50.6
Ac-ft	1,140	2,430	783	961	2,810	2,310	1,880	1,940	3,810	2,000	2,080	3,010

Calendar year 1951: Max 209 Min 2.3 Mean(mgd) 17.7 Mean(cfs) 27.4 Ac-ft 19,820
Fiscal year 1951-52: Max 205 Min 2.3 Mean(mgd) 22.4 Mean(cfs) 34.7 Ac-ft 25,150

Peak discharge (base, 750 mgd).--Dec. 11 (9 a.m.) 718 mgd (1,110 cfs), 5.92 ft; Feb. 19 (8:30 p.m.) 910 mgd (1,410 cfs), 6.38 ft

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for Kailua Stream.

ISLAND OF MAUI

5700. Nailiilihaele Stream near Huelo--Continued

Discharge, in million gallons a day, fiscal year July 1952 to June 1953

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	19.5	27	10.5	4.2	71	39	5.3	2.05	11.9	*4.6	5.4	8.6
2	15.5	12.3	7.2	3.95	104	56	5.0	1.92	9.4	4.4	6.1	7.7
3	13.5	a10.2	9.7	6.3	108	20	4.8	1.92	6.9	4.2	141	6.9
4	13.2	a9.9	8.0	127	28	70	4.6	1.92	74	4.2	247	6.4
5	44	a9.6	6.9	13.5	18.1	116	4.4	1.92	29.5	3.75	24	5.8
6	15.0	a10.8	63	7.2	14.2	100	4.2	1.92	10.5	3.55	80	5.3
7	11.9	f13.5	14.8	5.8	11.9	154	4.6	2.6	61	3.3	65	5.0
8	34	f12.3	11.0	5.0	10.5	45	4.2	2.05	25.5	3.1	30	5.5
9	66	86	53	5.3	15.7	59	3.75	2.2	16.1	3.1	15.9	11.6
10	18.9	16.0	21.5	4.8	79	46	3.55	1.92	66	4.2	12.3	13.9
11	13.8	*10.8	11.2	7.5	139	19.5	3.55	*1.70	15.0	12.0	10.5	14.6
12	11.6	9.2	16.5	16.0	48	15.5	3.3	1.64	10.5	4.6	9.6	22.5
13	9.9	8.3	76	6.6	72	13.1	3.3	3.5	9.6	3.55	8.6	10.8
14	125	7.7	21	5.3	48	11.6	3.1	5.0	14.6	3.55	7.7	11.6
15	115	15.4	12.3	4.8	46	10.5	3.1	4.8	34.5	3.3	7.7	23.5
16	27	9.2	10.2	4.4	61	9.6	2.9	12.5	14.4	5.3	7.2	19.0
17	61	7.2	22	4.8	18.6	19.6	2.9	6.1	10.5	9.0	6.1	13.6
18	58	6.6	15.8	48	14.5	73	2.9	12.5	25.5	13.1	5.5	40
19	16.4	6.1	9.2	109	54	12.7	2.75	41	11.9	7.2	8.0	22.5
20	13.5	5.8	8.3	37.5	22.5	9.9	2.75	8.6	9.2	4.8	16.6	12.3
21	11.2	5.5	7.4	64	19.2	8.9	2.6	12.9	8.3	5.0	9.6	10.2
22	20	5.0	6.9	36	13.8	8.9	2.6	13.3	7.4	4.2	6.6	9.2
23	11.9	4.8	6.4	73	14.2	8.0	2.75	9.0	6.9	3.75	7.5	8.6
24	12.0	4.8	5.8	82	11.2	15.5	2.75	6.1	6.1	3.55	5.8	7.7
25	11.1	6.8	5.5	31.5	9.9	8.9	2.5	6.9	5.8	3.3	9.3	7.2
26	30	64	5.8	55	9.2	9.2	2.35	5.8	9.5	3.1	13.7	7.7
27	16.4	39	5.0	16.8	10.5	7.4	2.35	11.8	12.8	3.1	23	6.9
28	11.8	8.6	4.8	12.7	26	6.9	2.2	31.5	8.8	11.8	20.5	6.1
29	10.5	6.9	4.6	34	27.5	6.6	2.2	-	6.1	5.8	18.5	6.9
30	10.2	7.3	*4.2	100	130	*5.8	2.2	-------	5.5	6.4	10.2	7.3
31	f17.4	9.6	-------	147	-------	5.5	2.05	-------	5.0	-------	10.5	-------
Total	865.2	456.2	464.5	1,088.95	1,255.5	991.6	101.50	215.06	548.7	154.80	849.4	344.9
Mean:												
mgd	27.9	14.7	15.5	35.1	41.8	32.0	3.27	7.68	17.7	5.16	27.4	11.5
cfs	43.2	22.7	24.0	54.3	64.7	49.5	5.06	11.9	27.4	7.98	42.4	17.8
Ac-ft	2,660	1,400	1,430	3,340	3,850	3,040	311	660	1,680	475	2,610	1,060

Calendar year 1952: Max 154 Min 3.95 Mean(mgd) 27.1 Mean(cfs) 41.9 Ac-ft 30,440
Fiscal year 1952-53: Max 247 Min 1.64 Mean(mgd) 20.1 Mean(cfs) 31.1 Ac-ft 22,520

Peak discharge (base, 750 mgd).--Mar. 7 (8 p.m.) 790 mgd (1,220 cfs), 6.10 ft.

* Discharge measurement made on this day. a No gage-height record; discharge estimated on basis of probable decrease in flow and records for stations on nearby streams. f Computed on basis of partly estimated gage-height record.

Discharge, in million gallons a day, fiscal year July 1953 to June 1954

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	5.5	22.5	4.2	2.6	3.95	16.5	14.5	2.9	6.8	6.3	16.8	44
2	6.0	152	3.95	2.05	4.6	26.5	7.7	2.75	38.5	20.5	22	22.5
3	34.5	33.5	4.4	1.92	5.8	53	6.9	2.75	81	53	71	20.5
4	63	19.7	4.4	1.78	4.4	20	6.4	2.6	68	16.6	169	16.8
5	11.6	13.8	3.95	2.05	33.5	34	64	2.75	125	8.9	31	14.2
6	8.9	14.9	3.55	1.92	7.4	79	12.0	3.1	21.5	7.4	114	13.5
7	7.4	15.5	3.3	1.64	5.5	26.5	9.8	2.6	23	6.6	*31	33
8	6.9	11.2	3.55	1.78	6.5	18.1	10.2	2.35	32.5	6.1	33.5	31.5
9	6.1	13.6	3.3	1.92	14.5	23	8.6	2.2	36.5	5.5	17.7	22.5
10	5.5	10.2	3.55	1.64	*7.8	15.0	7.4	2.2	91	5.0	13.8	20
11	5.3	8.9	3.1	2.75	12.0	12.7	6.6	2.95	38.5	4.8	11.9	14.2
12	6.9	*11.0	2.75	6.8	6.1	11.2	7.8	22.5	50	4.6	11.9	13.1
13	5.0	22.5	2.6	3.75	5.0	9.9	9.2	4.3	19.8	4.8	15.3	11.6
14	21	15.0	2.5	2.5	4.6	8.9	24.5	2.75	14.2	4.8	15.6	15.1
15	9.2	10.5	2.5	2.05	4.6	8.0	12.3	2.5	12.3	4.8	10.5	10.5
16	6.1	9.2	2.5	65	7.7	7.2	7.7	2.35	10.5	4.7	10.5	9.2
17	5.3	8.3	2.5	27.5	47	6.9	6.9	2.2	15.0	112	72	8.9
18	4.8	7.4	2.35	7.9	10.1	7.2	6.1	2.05	21.5	128	116	11.4
19	8.3	7.2	2.35	4.8	63	6.6	5.8	2.05	27	14.2	161	10.5
20	6.1	6.6	2.35	3.95	16.5	5.5	5.3	3.85	11.2	9.2	175	21
21	5.3	5.8	2.5	3.55	9.2	28.5	5.0	5.7	10.2	8.0	27.5	16.7
22	7.5	9.7	2.2	3.3	7.7	17.0	4.6	14.9	9.6	7.2	55	10.5
23	6.4	8.6	2.05	3.55	6.9	7.7	4.4	22	10.2	6.6	72	9.6
24	5.5	11.5	2.05	3.1	42	6.6	4.2	7.8	*8.3	5.8	60	17.3
25	5.3	9.6	1.92	2.75	119	5.8	3.95	21.5	7.4	5.6	33.5	16.6
26	7.2	6.4	2.05	3.1	22.5	5.5	4.4	58	7.4	29.5	29.5	10.2
27	10.8	5.5	1.92	8.2	11.9	29	3.75	11.8	6.9	11.6	52	11.8
28	12.7	5.3	*2.35	4.5	9.9	14.2	3.55	6.9	6.1	6.9	91	28.5
29	13.8	4.8	3.0	3.1	8.9	12.3	3.3	-	5.8	6.4	33	62
30	13.8	4.4	4.0	3.75	8.3	8.0	3.1	-------	5.3	10.8	23	22
31	20.5	4.2	-------	3.95	-------	12.9	2.9	-------	5.0	-------	24	-------
Total	342.2	489.3	87.69	189.15	516.85	543.2	282.85	222.30	826.0	526.2	1,620.0	569.2
Mean:												
mgd	11.0	15.8	2.92	6.10	17.2	17.5	9.12	7.94	26.6	17.5	52.3	19.0
cfs	17.0	24.4	4.52	9.44	26.6	27.1	14.1	12.3	41.2	27.1	80.9	29.4
Ac-ft	1,050	1,500	269	580	1,590	1,670	868	682	2,530	1,610	4,970	1,750

Calendar year 1953: Max 247 Min 1.64 Mean(mgd) 12.0 Mean(cfs) 18.6 Ac-ft 13,460
Fiscal year 1954-55: Max 175 Min 1.64 Mean(mgd) 17.0 Mean(cfs) 26.3 Ac-ft 19,070

Peak discharge (base, 750 mgd).--No peak above base.

* Discharge measurement made on this day.

5700. Naililihaele Stream near Huelo--Continued

Discharge, in million gallons a day, fiscal year July 1954 to June 1955

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	24.5	33.5	12.7	5.5	3.3	11.2	77	8.6	15.9	36	22	12.7
2	94	16.8	10.8	5.3	3.1	41	57	10.8	13.1	35.5	20.5	12.7
3	54	17.4	10.2	5.3	2.9	77	98	19.9	11.2	35	37.5	10.2
4	74	73	9.6	6.4	2.75	11.6	62	11.6	10.2	13.8	39	10.8
5	48	17.7	9.2	5.3	2.75	26.5	21	8.3	13.8	11.2	19.5	10.5
6	33	16.4	58	4.6	9.1	51	16.4	7.7	14.6	9.9	16.8	8.6
7	19.0	14.2	20.5	4.2	95	96	13.8	179	14.2	8.9	62	7.7
8	15.0	14.9	13.7	4.4	*9.1	148	11.9	139	14.5	9.6	21.5	7.7
9	13.8	25.5	10.2	13.3	6.1	130	10.5	60	14.6	9.2	35	7.7
10	17.0	15.5	9.2	25.5	6.9	247	9.6	254	172	8.0	23	9.6
11	27.5	58	8.3	7.2	5.0	111	8.9	207	88	6.9	17.2	8.3
12	53	118	7.4	5.3	4.4	188	8.3	73	85	6.6	20	6.9
13	20.5	81	7.2	4.6	4.2	208	8.9	110	32	7.7	32.5	7.7
14	14.6	67	13.5	4.4	3.95	213	13.9	53	17.7	10.2	22.5	6.6
15	13.5	43	7.7	4.8	3.95	38.5	10.5	40	56	9.6	20	8.3
16	24	*68	7.4	4.6	3.75	133	7.7	23	242	8.3	44	5.8
17	70	40	71	3.95	3.3	33.5	6.9	21	24	93	17.7	5.8
18	65	29	55	4.4	3.1	19.0	6.6	69	16.8	88	29.5	5.3
19	22	58	26.5	4.2	2.9	15.5	6.1	103	13.8	86	67	19.4
20	25.5	25	11.9	7.2	2.9	24.5	5.5	44	14.7	17.2	25	10.2
21	14.2	50	10.2	9.7	2.75	190	130	21	11.9	14.6	19.6	8.9
22	30.5	38	8.9	4.6	2.75	80	18.9	16.8	*11.3	15.5	20	11.1
23	29	97	8.0	3.95	2.6	19.6	9.9	18.7	26	60	42	33.5
24	46	27	8.6	3.75	2.6	15.0	8.3	22	30.5	65	67	11.2
25	40	20	20.5	3.95	2.6	13.1	7.9	14.2	13.1	138	82	9.2
26	77	32	11.2	20	2.9	25	173	61	10.2	235	34.5	11.2
27	98	21.5	8.0	5.5	2.6	40	53	135	8.9	42	20.5	13.7
28	110	27	7.2	4.4	2.5	35.5	21	24	8.3	36	16.4	9.6
29	29.5	30	6.6	3.95	56	18.6	11.9	-	8.6	159	13.8	26.5
30	20.5	19.9	6.1	3.55	6.9	77	10.5	-------	7.7	52	12.3	12.7
31	18.6	14.6	-------	3.55	-------	47	9.9	-------	23.5	-------	12.3	-------
Total	1,241.2	1,208.9	475.3	197.35	262.65	2,384.1	914.8	1,754.6	1,044.1	1,327.7	932.6	330.1
Mean:												
mgd	40.0	39.0	15.8	6.37	8.76	76.9	29.5	62.7	33.7	44.3	30.1	11.0
cfs	61.9	60.3	24.4	9.86	13.6	119	45.6	97.0	52.1	68.5	46.6	17.0
Ac-ft	3,810	3,710	1,460	606	806	7,320	2,810	5,380	3,200	4,070	2,860	1,010

Calendar year 1954: Max 247 Min 2.05 Mean(mgd) 26.9 Mean(cfs) 41.6 Ac-ft 30,120
Fiscal year 1954-55: Max 254 Min 2.5 Mean(mgd) 33.1 Mean(cfs) 51.2 Ac-ft 37,040

Peak discharge (base, 750 mgd).--Dec. 10 (8:30 a.m.) 910 mgd (1,410 cfs), 6.41 ft; Jan. 21 (2:30 p.m.) 701 mgd (1,100 cfs), 5.87 ft; Feb. 7 (9:30 p.m.) 950 mgd (1,470 cfs), 6.47 ft; Feb. 26 (11:30 p.m.) 990 mgd (1,530 cfs), 6.62 ft; Mar. 16 (2 a.m.) 830 mgd (1,280 cfs), 6.20 ft; Apr. 26 (1 p.m.) 910 mgd (1,410 cfs), 6.40 ft.

* Discharge measurement made on this day.

Discharge, in million gallons a day, fiscal year July 1955 to June 1956

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	10.8	19.5	63	8.0	2.9	5.0	5.5	10.2	23	45	17.8	28.5
2	8.9	34	25	13.1	2.9	4.6	3.75	22.5	17.7	328	15.5	58
3	8.7	57	17.7	14.2	2.9	4.4	3.3	36	13.8	77	24	89
4	24.5	*20.5	16.8	66	2.75	3.95	3.1	30.5	11.9	25.5	14.6	66
5	11.4	18.6	11.9	41	2.6	3.95	3.1	11.2	10.8	15.0	18.2	52
6	11.1	14.6	10.5	35.5	2.6	3.75	2.9	9.2	9.9	46	54	67
7	9.2	11.9	9.9	15.0	2.5	3.75	2.75	28	8.9	28.5	153	36
8	7.7	24	8.9	11.2	2.5	3.75	4.4	46	8.0	20	72	29
9	8.4	63	8.0	10.5	2.5	3.3	76	11.8	7.7	49	58	36
10	12.7	64	7.4	9.6	13.7	3.3	25	8.6	6.9	90	61	66
11	8.0	72	6.9	8.3	5.3	4.4	8.3	7.7	7.4	54	59	46
12	19.0	37.5	6.4	7.7	3.55	4.4	54	11.2	*6.6	88	109	90
13	68	17.7	8.0	6.9	2.9	3.3	47	8.3	6.7	37.5	92	89
14	20	14.2	8.3	6.4	5.0	2.9	11.3	22.5	13.9	18.1	80	63
15	29	22.5	20	5.8	5.8	2.75	8.0	31	7.2	35.5	29	37
16	26	15.0	9.5	5.5	5.5	2.6	6.9	28.5	6.1	34.5	20	22.5
17	20.5	42	7.2	5.3	10.6	2.75	5.8	64	7.4	30	17.7	23
18	36	20	8.9	4.8	9.1	2.5	5.3	288	19.5	15.0	34	22.5
19	19.5	34	6.9	4.6	15.2	2.6	4.8	67	11.2	13.1	43	18.1
20	16.5	31	5.8	4.4	24	35.5	4.6	130	6.9	55	42	16.8
21	11.9	14.6	5.5	4.2	51	96	4.2	31	5.8	66	18.1	13.5
22	10.2	12.7	5.0	4.2	29	10.4	4.2	33	23.5	23.5	14.2	17.0
23	9.6	20.5	4.8	7.2	14.2	6.4	3.95	51	22.5	19.3	13.1	32.5
24	10.2	48	4.6	6.1	19.3	5.5	3.75	226	28.5	13.5	21.5	59
25	31.5	19.8	4.4	5.0	10.8	4.8	5.3	676	57	11.6	28	17.7
26	17.6	29.5	5.0	4.4	8.3	4.4	95	522	13.5	18.9	19.1	13.8
27	112	15.9	5.5	*3.75	7.4	4.2	13.4	217	10.2	13.1	13.1	13.1
28	61	12.3	10.9	3.55	6.6	3.75	13.3	84	9.6	9.9	12.5	13.5
29	30.5	10.8	15.9	3.3	6.4	3.75	53	49	44	9.2	27	11.2
30	30	11.6	8.3	3.3	5.5	5.7	10.2	-	19.2	21.5	36	56
31	104	13.1	-------	3.1	-------	12.0	21.5	-------	10.2	-------	32.5	-------
Total	804.4	841.8	336.9	331.90	283.30	260.35	513.60	2,761.2	455.5	1,311.2	1,248.9	1,202.7
Mean:												
mgd	25.9	27.2	11.2	10.7	9.44	8.40	16.6	95.2	14.7	43.7	40.3	40.1
cfs	40.1	42.1	17.3	16.6	14.6	13.0	25.7	147	22.7	67.6	62.4	62.0
Ac-ft	2,470	2,580	1,030	1,020	869	799	1,580	8,470	1,400	4,020	3,830	3,690

Calendar year 1955: Max 254 Min 2.5 Mean(mgd) 25.1 Mean(cfs) 38.8 Ac-ft 28,100
Fiscal year 1955-56: Max 676 Min 2.5 Mean(mgd) 28.3 Mean(cfs) 43.8 Ac-ft 31,760

Peak discharge (base, 750 mgd).--Jan. 26 (6 p.m.) 950 mgd (1,470 cfs), 2.51 ft; Feb. 18 (12:30 p.m.) 701 mgd (1,100 cfs), 5.87 ft; Feb. 25 (9:30 p.m.) 2,490 mgd (3,850 cfs), 9.43 ft.

* Discharge measurement made on this day.

5700. Naililihaele Stream near Huelo--Continued

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	14.2	15.4	10.6	5.6	17.2	10.7	7.9	5.8	5.2	4.5	138	3.1
2	11.9	11.8	8.7	4.7	9.0	4.5	4.9	11.5	4.5	3.9	63	3.1
3	11.2	52	8.0	5.2	7.7	3.9	4.5	24.5	4.3	4.8	47	2.9
4	9.6	91	8.7	*41	7.2	3.5	4.3	217	4.1	119	158	2.9
5	8.9	50	14.0	9.8	6.4	4.9	5.7	254	7.2	24	67	2.75
6	8.3	18.8	7.4	5.9	6.2	11.0	11.9	150	8.1	8.0	26	2.6
7	7.7	32	6.6	5.4	5.6	7.5	22	*36	4.3	6.6	17.8	2.6
8	7.2	18.3	7.2	50	5.4	4.3	16.1	35	3.9	5.6	14.3	2.45
9	6.9	13.3	6.9	21.5	4.9	3.7	33	23	3.7	5.6	12.2	2.45
10	7.9	11.0	5.9	8.6	5.2	3.5	22	18.3	3.5	4.9	11.0	2.3
11	7.7	10.6	5.4	6.6	11.7	3.3	31	32	4.3	4.5	16.4	2.45
12	*6.1	55	5.2	5.9	10.8	4.7	10.9	35.5	5.2	4.3	10.6	2.45
13	13.6	63	4.9	27	a5.5	4.5	8.4	15.0	15.4	58	8.7	2.45
14	44	54	4.7	87	a7.0	4.9	7.7	12.9	38	74	7.7	2.3
15	18.4	26	7.9	176	a8.6	18.5	6.9	11.4	30.5	70	7.2	3.1
16	12.7	90	5.6	147	a5.3	54	6.4	10.0	10.8	16.0	6.9	3.7
17	18.3	248	4.5	255	a6.1	22	5.9	8.7	26	9.6	6.2	3.85
18	201	44	4.3	23.5	a12	20.5	5.4	32	31	14.1	6.2	11.2
19	20.5	20.5	4.1	15.0	a14	9.0	23.5	10.3	19.9	69	5.6	4.5
20	13.7	15.4	3.9	11.8	a9.4	7.2	21	8.4	12.6	18.3	5.2	5.2
21	17.2	12.6	3.7	10.0	a6.4	6.4	8.0	7.7	8.4	11.4	4.9	3.5
22	12.6	11.0	19.2	8.7	a5.6	5.6	9.3	6.9	7.2	9.6	4.5	3.3
23	9.6	10.0	7.6	7.7	a5.0	5.4	21	6.6	6.6	164	4.7	2.6
24	8.7	9.6	4.5	7.2	a4.6	4.9	8.0	5.9	5.9	51	4.7	2.45
25	9.0	10.0	4.1	10.6	a4.3	4.5	10.5	5.6	5.4	121	4.3	3.7
26	7.4	8.4	3.9	7.4	a4.2	4.3	6.9	5.4	5.2	70	4.3	2.9
27	10.3	9.8	3.7	6.6	*a4.1	4.1	5.9	5.6	4.5	42	3.9	2.45
28	58	12.7	3.7	13.9	4.1	3.9	5.6	5.2	4.5	54	3.7	*2.45
29	51	14.7	9.8	20.5	5.5	4.6	10.2	-	4.5	36	3.5	2.75
30	42	37.5	9.5	14.5	4.7	5.5	8.0	-------	9.0	81	3.5	2.6
31	36.5	26	-------	11.5	-------	31	5.9	-------	6.2	-------	3.3	-------
Total	712.1	1,102.4	204.2	1,031.1	213.7	286.3	358.7	1,000.2	309.9	1,164.7	680.3	97.05
Mean:												
mgd	23.0	35.6	6.81	33.3	7.12	9.24	11.6	35.7	10.0	38.8	21.9	3.24
cfs	35.6	55.1	10.5	51.5	11.0	14.3	17.9	55.2	15.5	60.0	33.9	5.01
Ac-ft	2,190	3,380	627	3,160	656	879	1,100	3,070	951	3,570	2,090	298

Calendar year 1956: Max 676 Min 2.75 Mean(mgd) 30.2 Mean(cfs) 46.7 Ac-ft 33,880
Fiscal year 1956-57: Max 255 Min 2.3 Mean(mgd) 19.6 Mean(cfs) 30.3 Ac-ft 21,970

Peak discharge (base, 1,250 mgd).--Oct. 15 (12:30 p.m.) 1,770 mgd (2,740 cfs), 8.22 ft; Feb. 4 (3:30 p.m.) 1,350 mgd (2,090 cfs), 7.38 ft.

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for Kailua Stream.

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.3	39.5	20.5	6.6	9.8	53	23.5	19.8	15.2	11.0	7.4	98
2	7.6	19.8	27.5	4.9	8.0	17.8	17.8	14.1	9.0	15.5	46	56
3	8.7	56	20.5	4.5	6.9	44	15.0	10.3	7.4	10.0	13.9	22.5
4	25	27	13.7	4.3	6.2	20.5	12.6	8.7	6.6	15.0	8.7	15.4
5	20	34.5	11.8	4.1	5.9	13.3	11.0	*13.6	5.9	11.7	7.7	15.0
6	10.2	194	10.3	3.7	41	57	10.0	8.4	73	9.6	27.5	15.9
7	6.4	139	9.3	3.5	68	75	9.0	8.7	18.4	10.7	62	37.5
8	10.0	59	8.4	3.5	93	19.8	9.0	7.4	8.7	8.4	105	20.5
9	14.1	29.5	7.7	3.5	57	31.5	9.3	6.6	7.4	8.0	68	19.9
10	24	18.7	7.2	3.3	32	146	7.4	5.9	8.5	13.0	34	13.3
11	9.3	15.4	6.6	3.9	25.5	264	6.9	5.6	10.0	9.0	54	13.8
12	7.4	13.3	6.6	3.5	17.8	90	6.4	5.2	6.9	7.7	41	98
13	8.5	11.0	6.6	3.1	11.4	57	5.9	4.7	16.4	6.9	22	17.3
14	13.7	15.0	5.6	2.9	9.6	35.5	5.6	4.5	6.9	8.0	85	13.7
15	6.9	35	5.4	3.1	8.7	33	5.4	4.5	5.9	7.2	70	12.2
16	6.4	12.3	6.1	16.9	7.7	119	5.2	4.1	5.2	10.7	65	10.0
17	43	11.5	21.5	8.6	6.9	60	4.7	4.5	5.2	11.1	24	9.0
18	13.7	14.5	28.5	7.0	6.9	51	5.6	4.5	5.5	6.9	18.7	*8.0
19	55	19.2	8.4	4.3	5.9	48	5.2	3.7	*8.6	5.9	39.5	7.2
20	46	11.8	6.6	10.5	5.4	*209	5.6	3.5	4.7	12.9	47	6.6
21	31.5	12.2	5.6	153	20.5	178	4.5	3.5	4.3	17.6	17.3	6.2
22	13.3	10.0	5.4	36	458	186	4.1	3.3	5.2	6.9	13.7	5.6
23	17.5	72	5.4	43	119	61	5.3	3.1	9.0	6.2	11.8	6.4
24	13.7	336	6.4	27	216	47	39.5	7.1	10.9	14.8	10.3	5.2
25	13.9	29	5.4	11.8	74	54	8.0	12.2	5.2	7.8	12.6	24
26	22	16.9	4.5	9.0	54	90	5.2	143	6.5	18.9	17.8	18.1
27	10.0	15.4	4.9	7.7	24	35.5	21.5	108	58	55	11.9	70
28	9.6	61	7.4	6.6	15.4	72	19.2	56	16.1	18.0	19.9	27
29	14.5	212	14.1	72	12.6	62	163	-	111	10.0	11.8	10.0
30	23	131	*16.2	19.5	134	73	201	-------	80	8.0	24	8.4
31	114	31.5	-------	11.8	-------	35.5	80	-------	17.8	-------	38	-------
Total	622.2	1,703.0	314.1	503.1	1,561.1	2,338.4	732.4	484.5	559.4	362.4	1,035.5	690.7
Mean:												
mgd	20.1	54.9	10.5	16.2	52.0	75.4	23.6	17.3	18.0	12.1	33.4	23.0
cfs	31.1	84.9	16.2	25.1	80.5	117	36.5	26.8	27.9	18.7	51.7	35.6
Ac-ft	1,910	5,230	964	1,540	4,790	7,180	2,250	1,490	1,720	1,110	3,180	2,120

Calendar year 1957: Max 458 Min 2.3 Mean(mgd) 29.2 Mean(cfs) 45.2 Ac-ft 32,690
Fiscal year 1957-58: Max 458 Min 2.9 Mean(mgd) 29.9 Mean(cfs) 46.3 Ac-ft 33,480

Peak discharge (base, 1,250 mgd).--Nov. 22 (11 a.m.) 1,450 mgd (2,240 cfs), 7.64 ft.

* Discharge measurement made on this day.

5770. Kailua Stream near Huelo

Location.--Lat 20°52'36" (revised), long 156°13'25", on left bank just upstream from Wailoa ditch intake, 1.2 miles southwest of Kailua, and 2.5 miles south of Huelo.

Drainage area.--2.41 sq mi (revised).

Records available.--December 1910 to December 1911, June 1913 to June 1918, July 1919 to March 1958 (discontinued). July 1912 to May 1913 at site 1 mile downstream, records not equivalent.

Gage.--Water-stage recorder and masonry control. Datum of gage is 1,252.99 ft above mean sea level, datum of 1929. Prior to Dec. 31, 1911, staff gage 400 ft downstream at different datum. June 17 to Sept. 30, 1913, staff gage at present site and datum.

Average discharge.--38 years (1919-57), 18.9 mgd (29.2 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 1,860 mgd (2,880 cfs) July 18 (gage height, 7.30 ft), from rating curve extended above 650 mgd; minimum, 1.20 mgd (1.86 cfs) June 29, 30.

1957-58: Maximum discharge during period July to March, 2,170 mgd (3,360 cfs) Aug. 24 (gage height, 7.60 ft), from rating curve extended above 650 mgd; minimum, 1.20 mgd (1.86 cfs) July 1.

1910-11, 1913-18, 1919-57: Maximum discharge, 5,470 mgd (8,460 cfs) Feb. 25, 1956 (gage height, 10.22 ft), from rating curve extended above 650 mgd; minimum, 0.07 mgd (0.11 cfs) June 27, 1921.

Remarks.--Records good. Water used for irrigation in central Maui.

Rating table, July 1, 1956, to Mar. 19, 1958 (gage height, in feet, and discharge, in million gallons a day)

1.7	1.00	3.0	48
1.8	2.05	3.5	97
1.9	3.4	4.0	163
2.1	7.4	4.5	253
2.4	16.4	5.0	370
2.7	29	5.5	525

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	8.2	9.5	5.4	2.3	6.1	5.9	3.4	2.55	2.45	2.2	107	2.05
2	6.3	6.7	4.3	1.94	4.5	2.7	2.2	4.1	2.3	1.83	46	1.94
3	5.9	34	3.75	1.94	3.75	2.05	1.94	10.6	2.05	*2.3	30.5	1.94
4	5.0	69	3.95	22.5	3.4	1.83	1.74	147	1.94	137	108	1.94
5	4.5	34.5	5.4	6.5	3.1	1.83	1.94	212	2.4	29	56	1.94
6	4.3	11.5	3.75	3.0	2.85	2.7	5.2	196	4.0	6.5	20	1.83
7	3.95	12.2	3.25	2.55	2.7	3.6	18.6	61	2.45	4.7	13.0	1.72
8	3.6	10.9	3.1	32.5	2.45	2.45	12.4	86	2.05	3.75	9.7	1.72
9	3.4	7.9	3.0	9.8	2.3	1.94	35.5	49	1.94	3.25	8.4	1.72
10	4.5	*6.1	2.7	4.7	2.2	1.72	17.0	23	1.83	3.0	7.4	1.61
11	5.0	5.6	2.55	3.1	3.1	1.50	20	25.5	1.83	2.7	9.4	*1.40
12	3.25	28.5	2.45	*2.85	3.25	1.83	7.0	26	1.83	2.45	8.6	1.40
13	6.5	41	2.3	10.9	2.7	1.83	4.5	12.1	3.65	27.5	6.5	1.30
14	40	39	2.05	36.5	3.25	1.83	3.75	8.7	23.5	54	5.6	1.30
15	13.4	18.5	4.1	134	3.95	7.8	3.25	7.0	53	43	5.0	1.50
16	9.2	49	2.7	115	2.55	48	3.0	5.9	11.4	14.9	4.7	1.61
17	7.6	208	2.2	121	2.85	11.2	2.7	4.8	13.7	6.3	4.3	1.50
18	135	32	1.94	16.7	5.8	11.9	2.45	12.5	16.0	5.9	4.1	3.75
19	*24.5	13.0	1.83	9.0	6.7	4.7	6.2	6.3	8.6	50	4.1	2.55
20	11.6	9.5	1.72	6.5	4.5	3.75	10.4	4.7	8.2	10.3	3.8	2.7
21	11.3	7.7	1.72	5.2	3.1	3.1	4.3	4.1	4.7	6.3	3.4	2.05
22	8.4	6.5	12.6	4.5	2.7	2.85	3.85	3.75	3.75	4.8	3.3	1.72
23	5.9	5.9	4.4	3.95	2.45	2.45	9.5	3.25	3.25	120	3.1	1.40
24	5.0	5.4	2.3	3.4	2.2	2.3	4.3	3.1	3.0	51	3.0	1.30
25	4.8	5.2	1.94	4.1	2.05	2.05	5.6	3.0	2.7	*167	2.85	1.40
26	4.1	4.5	1.83	3.4	1.94	1.94	3.6	2.85	2.45	101	2.7	1.50
27	5.0	4.5	1.72	3.4	1.83	1.83	3.0	2.7	2.45	44	2.55	1.40
28	37.5	5.2	1.61	5.0	1.83	1.72	2.85	2.55	2.2	50	2.45	1.30
29	51	5.2	2.7	8.9	2.05	1.72	3.95	-	2.05	39	2.3	1.20
30	19.2	25	3.0	9.5	2.05	1.94	3.25	-------	3.5	95	2.2	1.20
31	16.1	10.8	-------	6.7	-------	9.1	2.85	-------	3.0	-------	2.05	-------
Total	474.00	732.3	96.26	601.33	94.20	152.06	210.20	930.05	198.17	1,088.68	492.00	51.89
Mean:												
mgd	15.3	23.6	3.21	19.4	3.14	4.91	6.78	33.2	6.39	36.3	15.9	1.73
cfs	23.7	36.5	4.97	30.0	4.86	7.60	10.5	51.4	9.89	56.2	24.6	2.68
Ac-ft	1,450	2,250	295	1,850	289	467	645	2,850	608	3,340	1,510	159

Calendar year 1956. Max 1,120 Min 1.20 Mean(mgd) 25.2 Mean(cfs) 39.0 Ac-ft 28,330
Fiscal year 1956-57: Max 212 Min 1.20 Mean(mgd) 14.0 Mean(cfs) 21.7 Ac-ft 15,710

Peak discharge (base, 1,300 mgd).--July 18 (3 p.m.) 1,860 mgd (2,880 cfs), 7.30 ft.

* Discharge measurement made on this day.

5770. Kailua Stream near Huelo--Continued

Discharge, in million gallons a day, July 1957 to March 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.40	24	13.7	3.4	6.3	52	16.4	24	15.7			
2	2.05	12.3	12.1	2.55	4.1	15.8	12.1	12.0	6.7			
3	3.25	70	10.9	2.3	3.4	24	9.7	7.9	4.8			
4	11.6	18.7	7.9	2.05	3.0	16.5	8.2	6.3	3.95			
5	6.3	41	6.7	1.94	2.7	9.0	7.4	9.7	3.6			
6	4.5	295	5.6	1.83	15.8	25.5	6.5	5.9	58			
7	2.7	162	5.0	1.83	48	83	5.6	5.0	18.1			
8	3.25	57	4.5	1.72	34.5	23.5	5.6	4.5	6.7			
9	7.0	19.4	4.1	1.61	41	20.5	5.4	3.95	4.8			
10	9.6	11.8	*3.75	1.61	13.7	118	4.7	3.6	4.5			
11	4.5	9.2	3.4	1.72	12.6	359	4.1	3.25	3.95			
12	3.1	7.7	3.25	1.50	7.9	87	3.95	3.1	3.6			
13	2.85	6.3	3.1	1.40	5.6	49	3.6	3.0	9.1			
14	4.8	6.5	3.0	1.30	4.7	26.5	3.25	2.7	4.3			
15	3.1	18.9	2.7	1.30	3.95	24	3.1	2.7	3.25			
16	2.45	7.2	2.85	3.85	3.4	150	3.1	2.45	3.0			
17	17.0	5.6	7.5	3.1	3.1	48	3.0	2.7	2.85			
18	4.8	7.0	17.6	2.45	3.1	46	3.1	2.7	2.85			
19	34	7.9	4.3	1.83	2.7	29	3.0	2.3	4.7			
20	26.5	6.1	3.1	2.15	2.55	164	2.85	2.05	†2.99			
21	20.5	5.6	2.85	69	10.6	190	2.45	1.94	-			
22	6.7	4.8	2.55	18.2	328	151	2.3	1.83	-			
23	5.9	29.5	2.45	22.5	68	40	2.7	1.83	-			
24	6.5	484	2.85	13.0	140	24.5	19.6	3.0	-			
25	*5.4	30.5	2.45	*5.9	49	31.5	5.4	5.2	-			
26	14.4	12.4	2.2	3.95	44	60	3.25	96	-			
27	5.2	9.2	2.3	3.25	17.4	23.5	5.6	63	-			
28	4.5	78	3.0	2.85	9.5	45	21	57	-			
29	5.6	236	3.6	34.5	7.4	56	155	-	-			
30	12.2	111	7.9	19.3	111	68	226	-------	-			
31	110	30.5	-------	6.5	-------	30	114	-------	-			
Total	351.65	1,825.1	157.20	240.39	1,007.00	2,089.8	671.95	339.60	-			
Mean:												
mgd	11.3	58.9	5.24	7.75	33.6	67.4	21.7	12.1	-			
cfs	17.5	91.1	8.11	12.0	52.0	104	33.6	18.7	-			
Ac-ft	1,080	5,600	482	738	3,090	6,410	2,060	1,040	-			

Calendar year 1957. Max 484 Min 1.20 Mean(mgd) 23.7 Mean(cfs) 36.7 Ac-ft 26,510
Fiscal year 1957-58 : Max - Min - Mean(mgd) - Mean(cfs) - Ac-ft -

Peak discharge (base, 1,300 mgd).--Aug. 24 (8:30 a.m.) 2,170 mgd (3,360 cfs), 7.60 ft; Nov. 22 (2 p.m.) 1,560 mgd (2,410 cfs), 6.97 ft.

* Discharge measurement made on this day.
† Result of discharge measurement.

5850. Hoolawanui Stream near Huelo

Location.--Lat 20°53'15", long 156°14'55", on right bank 250 ft upstream from intake of Wailoa ditch, 2 miles west of Kailua, and 2 miles southwest of Huelo.

Drainage area.--1.34 sq mi.

Records available.--December 1910 to June 1958.

Gage.--Water-stage recorder and concrete control. Datum of gage is 1,219.42 ft above mean sea level (East Maui Irrigation Co. bench mark). Prior to June 20, 1914, staff gage at site 180 ft downstream at different datum. June 20, 1914, to Oct. 24, 1933, water-stage recorder at site 80 ft downstream at datum 4.43 ft lower.

Average discharge.--46 years (1911-15, 1916-58), 7.80 mgd (12.1 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 1,210 mgd (1,870 cfs) Oct. 15 (gage height, 4.16 ft), from rating curve extended above 100 mgd by logarithmic plotting; minimum, 0.59 mgd (0.91 cfs) June 30.

1957-58: Maximum discharge during fiscal year, 808 mgd (1,250 cfs) Nov. 22 (gage height, 3.63 ft), from rating curve extended above 100 mgd by logarithmic plotting; minimum, 0.65 mgd (1.01 cfs) July 1.

1910-58: Maximum discharge, 3,240 mgd (5,010 cfs) Apr. 27, 1950 (gage height, 5.94 ft), from rating curve extended above 100 mgd by logarithmic plotting; minimum, 0.15 mgd (0.23 cfs) Oct. 25, 1917.

Remarks.--Records good except those for period of no gage-height record, which are poor. Water used for irrigation in central Maui.

Rating table, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

0.3	0.59	1.0	19.0
.4	1.39	1.2	31
.5	2.7	1.6	67
.6	4.5	2.0	131
.8	10.7	2.5	260

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	5.0	5.0	3.2	1.10	3.1	2.55	1.49	1.72	1.84	1.29	41	1.29
2	4.5	4.3	2.85	1.10	2.4	1.29	1.19	2.45	1.72	1.19	19.7	1.29
3	4.3	13.0	2.7	1.10	2.25	1.19	1.19	6.5	1.72	1.47	14.2	1.19
4	3.7	20	2.85	7.0	2.1	1.10	1.10	52	1.60	29	46	1.19
5	3.35	13.2	3.35	1.97	*1.97	1.19	1.19	76	1.72	6.2	22	1.19
6	3.2	8.3	2.4	1.29	1.97	1.49	1.79	51	1.97	2.4	12.4	1.10
7	3.0	7.8	2.25	1.29	1.84	1.60	3.7	14.2	1.49	1.97	9.7	1.10
8	2.85	5.8	2.25	9.0	1.72	1.10	2.85	13.1	1.39	1.84	7.5	1.02
9	2.7	4.8	2.1	5.3	1.72	1.10	6.3	9.7	1.39	1.72	6.4	1.02
10	2.55	4.3	1.97	2.25	1.72	1.02	4.4	8.5	1.39	1.60	5.5	*.94
11	2.4	4.1	1.84	1.60	2.9	.94	6.7	9.5	1.39	1.60	5.8	1.02
12	2.25	11.2	1.72	1.49	2.4	1.10	2.55	10.2	1.29	1.49	4.8	1.02
13	3.2	13.6	1.72	5.2	1.97	1.10	1.97	5.5	2.4	11.9	4.1	1.02
14	8.1	12.5	1.60	23	2.4	1.19	1.97	4.8	5.1	19.8	3.7	.94
15	4.5	7.3	2.4	69	1.72	2.95	1.72	4.3	5.7	29.5	3.35	1.10
16	3.35	20	1.72	31	1.60	10.7	1.60	3.7	2.55	6.6	3.2	1.02
17	3.9	83	1.49	67	3.8	3.9	1.60	3.35	5.4	4.1	3	1.10
18	73	17.2	1.39	9.6	3.4	3.6	1.49	7.5	6.4	4.1	2.85	1.39
19	7.8	10.1	1.39	6.4	2.55	1.97	4.4	3.5	4.6	18.1	2.55	1.02
20	5.0	7.8	1.29	5.0	1.97	1.60	4.0	3.2	2.85	5.2	2.4	.94
21	5.0	6.4	1.19	4.5	1.72	1.49	1.97	2.85	1.97	4.1	2.4	.86
22	4.1	5.2	3.45	3.9	1.60	1.39	3.25	2.55	1.97	3.5	2.25	.79
23	3.5	4.5	1.84	3.35	1.60	1.29	6.7	2.4	1.84	49	2.25	.79
24	3.35	4.3	*1.29	3.0	1.49	1.19	2.25	2.4	1.60	14.1	2.25	.79
25	3.35	3.9	1.19	3.8	1.39	1.19	2.4	2.25	1.60	*40	1.97	.86
26	2.85	3.5	1.19	3.0	1.39	1.10	1.97	2.1	1.49	24.5	1.84	.72
27	3.35	3.9	1.10	2.55	1.29	1.10	1.72	2.1	1.39	16.6	1.72	.72
28	10.4	3.9	1.10	3.35	1.29	1.10	*1.72	1.97	1.29	16.4	1.60	.72
29	12.4	4.0	1.72	4.0	1.39	1.19	3.05	-	1.39	12.8	1.60	.72
30	8.7	8.3	1.39	3.9	1.39	1.39	1.97	-------	1.97	25.5	1.60	.72
31	9.2	5.2	-------	3.0	-------	5.5	1.60	-------	1.39	-------	1.39	-------
Total	214.85	326.4	57.94	289.04	60.05	60.61	81.80	309.34	71.81	357.57	241.02	29.59
Mean:												
mgd	6.93	10.5	1.93	9.32	2.00	1.96	2.64	11.0	2.32	11.9	7.77	0.99
cfs	10.7	16.2	2.99	14.4	3.09	3.03	4.08	17.0	3.59	18.4	12.0	1.53
Ac-ft	659	1,000	178	887	184	186	251	949	220	1,110	740	91

Calendar year 1956. Max 605 Min 0.94 Mean(mgd) 11.0 Mean(cfs) 17.0 Ac-ft 12,340
Fiscal year 1956-57: Max 83 Min 0.72 Mean(mgd) 5.75 Mean(cfs) 8.90 Ac-ft 6,460

Peak discharge (base, 400 mgd).--July 18 (3:30 p.m.) 530 mgd (820 cfs), 3.20 ft; Oct. 15 (2 p.m.) 1,210 mgd (1,870 cfs), 4.16 ft; Feb. 6 (1 p.m.) 460 mgd (712 cfs), 3.07 ft; Apr. 15 (4 p.m.) 420 mgd (650 cfs), 2.97 ft.

* Discharge measurement made on this day.

5850. Hoolawanui Stream near Huelo--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.79	8.5	9.0	1.72	2.7	16.5	10.7	10.0	5.3	4.8	1.97	17.5
2	1.02	4.8	8.5	1.49	2.55	9.3	8.8	6.6	3.5	5.6	7.5	11.2
3	1.29	11	7.5	1.49	2.25	11.2	7.2	4.8	3.0	4.1	3.0	6.2
4	2.1	6.0	5.5	1.39	1.97	8.6	6.1	4.1	2.7	4.6	2.25	5.0
5	1.84	6.5	5.0	1.39	1.97	6.1	5.5	5.0	2.7	3.8	2.1	*4.6
6	1.29	36	4.5	1.29	4.6	16.7	5.0	3.5	16.8	3.35	5.1	4.8
7	.94	34	4.0	1.29	13.0	19.9	4.5	3.35	5.5	3.35	11.6	7.3
8	1.02	16	3.7	1.19	11.5	9.6	5.3	3.0	3.7	2.85	19.3	5.2
9	1.29	8.0	3.5	1.19	11.6	9.9	4.1	2.7	3.35	3.15	13.1	5.0
10	2.75	6.0	3.5	1.19	6.6	29	3.5	2.55	3.2	3.25	7.7	3.9
11	1.10	5.0	3.2	1.19	6.2	94	3.35	2.4	2.85	2.7	10.1	4.2
12	.94	4.1	3.0	1.10	5.0	33	3.0	2.1	2.75	2.4	9.0	19.5
13	1.10	3.7	2.85	1.02	3.9	21	2.85	2.1	4.2	2.25	6.6	5.0
14	1.29	3.3	2.7	1.02	3.5	14.8	2.7	2.1	2.55	2.55	16.8	4.1
15	.86	4.1	2.55	1.02	3.35	13.2	2.55	2.1	2.25	2.25	16.9	4.1
16	.86	3.6	2.7	1.29	3.0	32	2.4	1.84	2.1	3.05	14.6	3.5
17	8.1	3.2	4.1	1.19	2.7	18.7	*2.25	2.4	1.97	*2.85	8.5	3.2
18	2.05	3.2	6.3	1.10	2.7	18.2	2.55	1.97	2.35	2.1	7.2	3.0
19	8.8	4.4	2.55	.94	2.4	14.8	2.25	1.72	2.7	1.97	10.8	2.7
20	6.0	3.5	2.25	1.73	2.25	60	2.25	1.49	1.97	6.4	10.0	2.55
21	5.3	2.5	2.1	21	6.1	61	1.97	1.49	1.84	4.3	5.8	2.55
22	2.4	2.1	1.97	5.8	137	64	1.84	1.39	1.84	2.25	5.2	2.4
23	2.55	16	1.97	*7.0	23.5	24	2.7	1.39	2.4	1.97	4.8	2.4
24	*2.1	100	2.1	3.9	65	17.8	7.2	2.4	2.35	3.4	4.3	2.1
25	3.1	13	1.84	2.7	20	16.0	2.4	2.1	1.72	2.1	4.5	5.0
26	3.5	7.0	1.72	2.25	16.4	25.5	1.97	32.5	3.0	2.5	4.9	4.1
27	2.5	5.5	1.72	2.1	11.1	13.8	4.3	25.5	10.8	7.0	3.9	12.0
28	2.3	10	1.84	1.97	8.5	21.0	4.5	13.8	3.5	3.45	4.8	6.3
29	2.7	34	2.75	11.1	6.8	18.1	36.5	-	21.5	2.25	3.7	3.2
30	3.6	28	3.1	5.3	28	19.1	45	-------	17.6	2.1	5.3	2.7
31	23	14	-------	3.2	-------	13.5	21	-------	6.4	-------	7.6	-------
Total	98.48	407.0	108.01	91.55	416.14	750.3	216.23	146.39	148.39	98.69	238.92	165.30
Mean:												
mgd	3.18	13.1	3.60	2.95	13.9	24.2	6.98	5.23	4.79	3.29	7.71	5.51
cfs	4.92	20.3	5.57	4.56	21.5	37.4	10.8	8.09	7.41	5.09	11.9	8.53
Ac-ft	302	1,250	331	281	1,280	2,300	664	449	455	303	733	507

Calendar year 1957. Max 137 Min 0.72 Mean(mgd) 8.12 Mean(cfs) 12.6 Ac-ft 9,100
Fiscal year 1957-58: Max 137 Min 0.79 Mean(mgd) 7.91 Mean(cfs) 12.2 Ac-ft 8,860

Peak discharge (base, 400 mgd).--Aug. 24 (time unknown) 480 mgd (743 cfs), 3.12 ft; Nov. 22 (11:30 a.m.) 808 mgd (1,250 cfs), 3.63 ft.

* Discharge measurement made on this day.
Note.--No gage-height record July 24 to Sept. 9; discharge estimated on basis of records for stations on nearby streams.

5860. Hoolawaliiiii Stream near Huelo

Location (revised).--Lat 20°53'17", long 156°14'35", on right bank just upstream from Wailoa ditch intake, 1.8 miles west of Kailua and 1.8 miles southwest of Huelo church.

Drainage area.--0.55 sq mi (revised).

Records available.--April 1911 to December 1957 (discontinued).

Gage.--Water-stage recorder and concrete control. Altitude of gage is 1,245 ft (from topographic map). Prior to June 19, 1914, staff gage at same site and datum.

Average discharge.--45 years (1911-15, 1916-57), 4.68 mgd (7.24 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 235 mgd (364 cfs) Oct. 14, 15, from rating curve extended above 90 mgd by broad-crested weir formula; maximum gage height, 4.21 ft Oct. 15; minimum discharge, 0.80 mgd (1.24 cfs) June 30.

1957: Maximum discharge during period July to December, 255 mgd (395 cfs) Nov. 22 (gage height, 4.28 ft), from rating curve extended above 90 mgd by broad-crested weir formula; minimum, 0.86 mgd (1.33 cfs) July 1.

1911-57: Maximum discharge, 657 mgd (1,020 cfs) Nov. 18, 1930 (gage height, 6.74 ft, control then in use), from rating curve extended above 22 mgd; minimum, 0.2 mgd (0.3 cfs) June 8, 1926.

Remarks.--Records good. Water used for irrigation in central Maui.

Revisions (fiscal years).--WSP 755: 1931-32. WSP 1449: 1934-39(M), 1941(M).

Rating table, July 1, 1956, to Dec. 5, 1957 (gage height, in feet, and discharge, in million gallons a day)

1.3	0.80	2.1	19.4
1.4	1.50	2.4	34.5
1.5	2.7	2.7	54
1.6	4.2	3.0	79
1.8	8.7		

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.4	3.4	2.4	1.42	3.0	2.15	1.82	2.15	1.71	1.50	15.4	1.26
2	3.1	3.0	2.05	1.42	2.4	1.60	1.71	2.4	1.71	1.42	10.5	1.26
3	3.0	5.0	2.05	1.42	2.3	1.50	1.60	5.8	1.71	1.71	8.0	1.26
4	2.55	10.3	2.3	4.7	2.05	1.42	1.60	21.5	1.60	9.3	18.4	1.26
5	2.4	8.2	2.4	1.82	*1.93	1.60	1.60	37	1.82	3.75	12.4	1.19
6	2.4	4.9	1.93	1.50	1.93	1.93	1.82	25	1.71	2.05	6.2	1.12
7	2.3	4.8	1.82	1.71	1.93	1.82	1.82	8.0	1.50	1.82	4.8	1.12
8	2.15	3.7	1.82	5.0	1.82	1.60	2.3	6.0	1.42	1.82	4.0	1.12
9	2.05	3.1	1.71	4.4	1.82	1.42	3.45	4.6	1.42	1.71	3.7	1.05
10	2.05	3.0	1.71	2.3	1.82	1.42	3.65	4.4	1.42	1.71	3.1	1.05
11	1.93	2.85	1.60	1.82	2.4	1.42	5.1	5.5	*1.42	1.71	3.5	1.12
12	1.82	6.5	1.50	1.82	2.3	1.50	2.4	5.7	1.34	1.60	2.85	1.12
13	2.3	*7.2	1.42	3.8	1.93	1.42	2.3	3.7	1.80	11.7	2.4	1.12
14	3.45	6.3	1.42	20.5	2.55	1.60	2.15	3.4	2.8	18.2	2.3	1.05
15	2.55	4.0	1.71	27.5	2.05	2.25	1.93	3.0	2.65	17.3	2.3	1.19
16	2.4	11.3	1.42	17.3	1.82	5.7	1.82	3.0	1.93	6.0	2.05	1.05
17	2.8	28	1.42	44	5.3	3.6	1.71	2.55	3.4	3.9	1.93	1.12
18	31.5	8.2	1.34	7.7	3.5	3.1	1.71	5.1	4.5	3.85	1.93	1.26
19	5.1	5.4	1.34	5.2	3.0	2.15	3.75	2.85	3.25	8.1	1.82	1.12
20	3.7	4.4	1.34	4.2	2.3	1.82	3.5	2.55	2.4	4.6	1.71	1.05
21	3.7	3.7	1.26	3.7	2.05	1.71	2.3	2.3	2.05	3.55	1.71	1.05
22	3.0	3.4	1.60	3.1	1.93	1.71	3.6	2.3	1.93	3.1	1.60	.98
23	2.7	3.1	1.34	3.0	1.93	1.71	5.6	2.15	1.82	24.5	1.71	.92
24	2.4	2.85	1.34	2.7	1.82	1.60	2.4	2.05	1.71	7.8	1.71	.92
25	2.4	2.7	1.34	3.4	1.82	1.50	2.4	1.93	1.71	*14.9	1.50	.98
26	2.3	2.4	1.42	2.55	1.71	1.50	2.3	1.82	1.71	9.2	1.42	.92
27	2.3	2.4	1.34	2.3	1.71	1.50	2.15	1.82	1.50	7.0	1.42	.92
28	3.8	2.3	1.34	3.0	1.60	1.50	2.0	1.71	1.50	6.6	1.34	.92
29	4.7	3.3	1.82	3.15	1.82	1.71	3.65	-	1.60	5.6	1.34	.92
30	4.6	4.9	1.71	3.1	1.71	1.71	1.93	-------	1.82	12.0	1.34	.92
31	6.0	3.4	-------	2.85	-------	4.9	1.93	-------	1.60	-------	1.26	-------
Total	120.85	168.00	49.21	192.38	66.25	62.07	78.00	170.28	60.46	198.00	125.64	32.34
Mean:												
mgd	3.90	5.42	1.64	6.21	2.21	2.00	2.52	6.08	1.95	6.60	4.05	1.08
cfs	6.03	8.39	2.54	9.61	3.42	3.09	3.90	9.41	3.02	10.2	6.27	1.67
Ac-ft	371	516	151	590	203	190	239	523	186	608	386	99

Calendar year 1956. Max 128 Min 1.26 Mean(mgd) 5.13 Mean(cfs) 7.94 Ac-ft 5,760
Fiscal year 1956-57: Max 44 Min 0.92 Mean(mgd) 3.63 Mean(cfs) 5.62 Ac-ft 4,060

Peak discharge (base, 150 mgd).--July 18 (9 a.m.) 165 mgd (255 cfs), 3.77 ft; Oct. 14 (9 p.m.) 235 mgd (364 cfs), 4.18 ft; Oct. 15 (12:30 p.m.) 235 mgd (364 cfs), 4.21 ft; Oct. 17 (7:30 a.m.) 226 mgd (350 cfs), 4.17 ft; Feb. 6 (12:30 p.m.) 180 mgd (279 cfs), 3.87 ft; Apr. 15 (4:30 p.m.) 158 mgd (244 cfs), 3.72 ft.

* Discharge measurement made on this day.

5860. Hoolawaliilii Stream near Huelo--Continued

Discharge, in million gallons a day, July to December 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.05	5.8	6.2	1.71	2.4	10.0						
2	1.12	3.9	6.6	1.60	2.15	5.2						
3	1.26	9.5	5.8	1.50	2.05	6.5						
4	1.50	4.8	4.4	1.50	1.93	5.0						
5	1.82	5.6	3.9	1.50	1.82	3.9						
6	1.42	30	3.4	1.50	3.55	†3.61						
7	1.19	28.5	3.1	1.42	7.3	-						
8	1.26	13.3	2.7	1.42	10.5	-						
9	1.42	7.7	2.65	1.42	8.6	-						
10	2.7	5.4	2.4	1.42	5.6	-						
11	1.50	4.6	2.3	1.42	5.3	-						
12	1.42	3.9	2.15	1.34	4.2	-						
13	1.42	3.55	2.15	1.34	3.4	-						
14	1.42	3.4	2.05	1.26	3.1	-						
15	1.26	3.9	1.93	1.26	2.85	-						
16	1.19	3.0	2.05	1.34	2.55	-						
17	4.8	2.85	2.55	1.34	2.4	-						
18	2.15	2.85	3.35	1.34	2.3	-						
19	5.4	3.25	2.05	1.26	2.15	-						
20	4.2	2.7	1.93	1.70	2.05	-						
21	3.2	2.7	1.82	11.8	4.2	-						
22	2.4	2.3	1.82	4.4	72	-						
23	2.5	10.6	1.71	*5.0	18.7	-						
24	*2.15	71	1.82	3.1	35	-						
25	2.6	9.8	1.60	2.3	14.5	-						
26	2.85	5.9	1.60	2.05	9.1	-						
27	2.15	5.0	1.60	1.93	6.2	-						
28	2.05	7.4	1.60	1.93	4.8	-						
29	2.4	29	2.4	7.8	4.2	-						
30	2.9	26	2.25	3.9	11.7	-						
31	15.3	9.4	-------	2.7	-------	-						
Total	80.00	327.60	81.88	75.50	256.60	-						
Mean:												
mgd	2.58	10.6	2.73	2.44	8.55	-						
cfs	3.99	16.4	4.22	3.78	13.2	-						
Ac-ft	246	1,010	251	232	787	-						

Calendar year	Max	Min	Mean(mgd)	Mean(cfs)	Ac-ft
Fiscal year	Max	Min	Mean(mgd)	Mean(cfs)	Ac-ft

Peak discharge (base, 150 mgd).--Aug. 24 (8:30 a.m.) 194 mgd (300 cfs), 3.97 ft; Aug. 30 (2:00 p.m.) 210 mgd (325 cfs), 4.06 ft; Nov. 22 (11:30 a.m.) 255 mgd (395 cfs), 4.28 ft.

* Discharge measurement made on this day.
† Result of discharge measurement.

5870. Honopou Stream near Huelo

Location.--Lat 20°53'20", long 156°15'20" (revised), on left bank just upstream from Wailoa ditch intake, 2.2 miles southwest of Huelo and 2.5 miles west of Kailua.

Drainage area.--0.64 sq mi (revised).

Records available.--December 1910 to June 1958.

Gage.--Water-stage recorder and concrete control. Datum of gage is 1,208 ft above mean sea level (by vertical angles). Prior to June 19, 1914, staff gage at same site and datum.

Average discharge.--45 years (1911-14, 1916-58), 3.07 mgd (4.75 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 285 mgd (441 cfs) Feb. 6 (gage height, 3.35 ft), from rating curve extended above 70 mgd by model studies of the station site; minimum, 0.15 mgd (0.23 cfs) June 30.

1957-58: Maximum discharge during fiscal year, 130 mgd (201 cfs) Aug. 24, Nov. 22, from rating curve extended above 70 mgd by model studies of the station; maximum gage height, 2.91 ft Nov. 22; minimum discharge, 0.25 mgd (0.39 cfs) July 1, 15, 16.

1910-58: Maximum discharge, 3,690 mgd (5,710 cfs) Nov. 18, 1930 (gage height, 7.28 ft), from rating curve extended above 70 mgd by model studies of the station site; minimum, 0.01 mgd (0.02 cfs) for several days in 1933, 1934.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Water used for irrigation in central Maui.

Revisions (fiscal years).--WSP 1219: 1913-50(M). WSP 1249: 1948-50(P).

Rating table, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

0.4	0.03	1.1	8.6
.5	.48	1.4	15.7
.6	1.26	1.7	25
.7	2.3	2.0	37
.9	5.0	2.5	68

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	a2.2	2.05	1.56	0.54	1.76	1.38	0.68	1.00	1.00	0.60	13.1	0.60
2	*a2.1	1.86	1.26	.48	1.46	.60	.54	1.24	1.00	.60	9.0	.60
3	1.96	3.6	1.26	.48	1.26	.60	.48	3.55	.84	.60	7.1	.60
4	1.78	6.7	1.46	3.3	1.16	.60	.48	13.7	.76	5.7	17.6	.54
5	1.66	5.1	1.56	.92	1.08	.60	.54	31	1.00	1.76	11.2	.54
6	1.56	3.4	1.08	.60	1.08	.68	.76	22.5	.84	1.00	6.7	.54
7	1.46	3.4	1.08	.87	*1.00	.92	1.00	7.3	.76	.84	5.5	.48
8	1.36	2.7	1.08	3.2	.92	.60	1.19	5.5	.68	.84	4.6	.48
9	1.26	2.4	1.00	2.7	.84	.54	2.4	4.0	.60	.84	3.85	.42
10	1.26	2.2	.92	1.00	.92	.48	2.1	3.85	.68	.76	3.3	.42
11	1.16	2.05	.84	.76	1.26	.48	3.1	4.4	.68	.68	3.2	.48
12	1.08	4.2	.84	.68	1.08	.54	1.08	4.5	.60	.68	2.7	*.42
13	1.26	4.5	.84	2.1	1.00	.48	.84	2.8	.93	7.3	2.3	.42
14	2.15	4.2	.76	13.0	1.36	.60	.84	2.55	1.70	10.4	2.05	.36
15	1.56	2.8	.92	16.1	.92	1.31	.76	2.3	1.56	10.4	1.86	.48
16	1.26	8.3	.76	11.0	.76	4.1	.76	2.05	1.00	3.85	1.76	.42
17	1.51	23	.68	26.5	2.95	1.98	.68	1.96	2.25	2.7	1.66	.42
18	23.5	7.9	.60	6.2	1.66	1.73	.68	4.3	*2.9	2.7	1.56	.54
19	3.2	5.2	.60	4.6	1.36	.92	2.75	1.96	1.61	5.8	1.46	.42
20	2.4	*4.1	.60	3.55	1.00	.84	1.85	1.76	1.08	2.9	1.26	.36
21	2.3	3.55	.60	3.05	.84	.68	1.00	1.56	.92	2.4	1.26	.30
22	1.96	3.2	1.00	2.7	.76	.60	3.55	1.46	.84	2.2	1.16	.25
23	1.76	2.7	.68	2.3	.76	.60	3.45	1.46	.84	18.2	1.08	.25
24	1.66	2.55	.60	2.05	.68	.60	1.26	1.36	.76	6.0	1.08	.25
25	1.66	2.2	.54	2.55	.68	.54	1.26	1.26	.76	13.2	1.00	.30
26	1.46	1.96	.60	1.96	.60	.48	1.00	1.16	.68	8.6	.92	.25
27	1.56	1.96	.48	1.66	.60	.48	.84	1.08	.68	6.5	.84	.20
28	2.55	1.96	.48	1.96	.60	.42	.88	1.08	.68	6.2	.76	.20
29	3.35	2.1	1.00	2.25	.60	.54	1.71	-	.68	5.5	.76	.20
30	2.9	3.25	.68	2.05	.68	.60	1.00	-------	1.00	*9.9	.68	.20
31	3.75	2.05	-------	1.66	-------	3.4	.84	-------	.68	-------	.60	-
Total	80.57	127.14	26.36	122.77	31.63	28.92	40.30	132.64	30.99	139.65	111.90	11.94
Mean:												
mgd	2.60	4.10	0.879	3.96	1.05	0.933	1.30	4.74	1.00	4.66	3.61	0.398
cfs	4.02	6.34	1.36	6.13	1.62	1.44	2.01	7.33	1.55	7.21	5.59	0.616
Ac-ft	247	390	81	377	97	89	124	407	95	429	343	37

Calendar year 1956 :	Max	147	Min	0.30	Mean(mgd)	4.10	Mean(cfs)	6.34	Ac-ft	4,600
Fiscal year 1956-57 :	Max	31	Min	0.20	Mean(mgd)	2.42	Mean(cfs)	3.74	Ac-ft	2,720

Peak discharge (base, 130 mgd).--July 18 (8 a.m.) 185 mgd (286 cfs), 3.08 ft; Oct. 14 (9 p.m.) 220 mgd (340 cfs), 3.22 ft; Oct. 17 (8 a.m.) 155 mgd (240 cfs), 3.02 ft; Feb. 6 (1:30 p.m.) 285 mgd (441 cfs), 3.35 ft; Apr. 15 (3:30 p.m.) 202 mgd (313 cfs), 3.14 ft.

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for Hoolawanui and Hoolawaliilii Streams.

5870. Honopou Stream near Huelo--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.30	a5.5	6.4	0.84	1.36	7.9	4.7	2.55	2.3	2.2	1.00	7.0
2	.42	a3.3	6.0	.76	1.26	4.9	4.1	2.2	1.86	2.2	3.25	4.8
3	.60	a7.5	5.0	.68	1.16	5.4	3.7	1.96	1.76	1.86	1.46	2.9
4	.84	a4.3	4.0	.60	1.08	4.3	3.3	1.76	1.56	2.05	1.16	2.55
5	.84	a4.7	3.4	.60	1.08	3.55	2.9	1.96	1.46	1.86	*1.05	2.55
6	.48	*a26	3.05	.54	2.0	8.0	2.7	1.66	7.1	1.66	1.96	2.3
7	.30	24	2.8	.54	5.0	7.9	2.4	1.56	2.3	1.56	2.35	3.2
8	.36	11.9	2.4	.54	5.4	4.7	3.0	1.36	1.86	1.36	5.8	2.4
9	.48	7.3	2.3	.54	4.7	4.6	2.3	1.26	1.76	1.46	4.9	2.3
10	1.40	5.3	2.05	.54	3.3	8.8	1.86	1.16	1.76	1.46	3.45	1.86
11	.42	4.4	1.86	.54	3.1	22	1.76	1.16	1.66	1.36	3.8	1.96
12	.30	3.85	1.76	.48	2.7	12.1	1.66	1.08	1.56	1.26	3.2	8.8
13	.30	3.3	1.76	.48	2.3	9.4	1.56	1.00	1.71	1.16	2.7	*2.4
14	.42	3.05	1.56	.48	2.05	7.5	1.46	.92	1.36	1.16	4.7	2.3
15	.25	3.2	1.46	.48	1.96	6.4	1.36	.92	1.26	1.08	6.3	2.3
16	.25	2.3	1.56	.54	1.76	8.1	1.26	.92	1.16	1.36	5.8	2.05
17	3.25	2.2	1.75	.48	1.66	6.6	1.16	1.00	1.08	1.36	3.7	1.86
18	.84	2.2	2.2	.48	1.66	*6.6	1.26	.84	1.28	1.00	3.4	1.76
19	3.1	2.3	1.26	.48	1.46	5.8	1.16	.76	1.41	.92	4.7	1.66
20	1.91	1.86	1.16	.80	1.36	19.2	1.08	.76	1.00	3.65	4.2	1.56
21	1.26	1.76	1.08	7.6	3.4	20	1.00	.68	.92	1.82	2.9	1.46
22	.84	1.66	1.00	2.4	39	19.7	.92	.68	1.00	1.08	2.7	1.36
23	.91	5.5	1.00	2.8	14.7	12.2	1.22	.60	1.08	1.00	2.4	1.36
24	.76	50	1.00	1.66	24	10.4	2.55	1.00	1.08	1.26	2.3	1.26
25	.88	8.8	.92	1.26	11.7	8.2	1.08	.92	.84	1.00	2.2	2.3
26	1.20	5.7	.84	1.16	8.8	9.1	.92	8.4	1.78	1.15	2.05	2.1
27	.68	4.0	.84	1.08	6.5	6.7	1.67	12.2	4.7	3.6	1.86	4.1
28	.60	6.2	.92	.92	5.2	9.1	1.62	5.7	1.36	1.63	1.96	2.65
29	a.80	20	1.30	5.6	4.4	6.9	7.5	-	8.4	1.08	1.66	1.56
30	a1.3	17.2	1.28	2.25	10.1	6.7	6.5	-------	5.5	1.00	1.96	1.36
31	all	8.6	-------	1.56	-------	5.5	4.1	-------	2.55	-------	2.55	-------
Total	37.29	257.88	63.91	39.71	174.15	278.25	73.76	56.97	66.41	46.60	93.42	78.02
Mean:												
mgd	1.20	8.32	2.13	1.28	5.80	8.98	2.38	2.03	2.14	1.55	3.01	2.60
cfs	1.86	12.9	3.30	1.98	8.97	13.9	3.68	3.14	3.31	2.40	4.66	4.02
Ac-ft	114	791	196	122	534	854	226	175	204	143	287	239

Calendar year 1957. Max 50 Min 0.20 Mean(mgd) 3.61 Mean(cfs) 5.59 Ac-ft 4,050
Fiscal year 1957-58: Max 50 Min 0.25 Mean(mgd) 3.47 Mean(cfs) 5.37 Ac-ft 3,880

Peak discharge (base, 130 mgd).--Aug. 24 (9 a.m.) 130 mgd (201 cfs), 2.88 ft; Nov. 22 (11 a.m.) 130 mgd (2.01 cfs), 2.91 ft.

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for Hoolawanui and Hoolawaliilii Streams.

5880. Wailoa ditch at Honopou, near Huelo

Location (revised).--Lat 20°53'20", long 156°15'19", on right bank 100 ft downstream from intake at Honopou Stream, 0.5 mile west of Lupi, 2.2 miles southwest of Huelo, and 2.5 miles west of Kailua.

Records available.--November 1922 to June 1958.

Gage.--Water-stage recorder. Datum of gage is 1,208 ft above mean sea level (by vertical angles).

Average discharge.--35 years (1923-58), 113 mgd (175 cfs).

Extremes.--1922-58: Maximum daily discharge, 195 mgd (302 cfs) for several days in 1954-56; no flow Jan. 24-27, 1923.

Remarks.--Records excellent. Wailoa ditch receives water from Koolau ditch at Alo Stream and from all streams from Alo Stream west of Halehaku Stream at altitude of about 1,200 ft. Water used for irrigation in central Maui.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	164	169	126	66	143	134	91	*67	59	50	188	41
2	*134	132	104	59	104	59	56	124	53	47	188	41
3	128	174	93	59	86	47	50	154	50	56	188	41
4	108	180	99	153	79	44	47	180	47	170	188	47
5	101	180	150	124	72	74	59	168	67	180	188	41
6	90	186	86	72	72	151	99	136	103	108	188	38
7	86	188	79	63	*66	76	158	136	53	79	183	36
8	82	186	86	164	59	53	173	148	50	69	176	35
9	79	152	84	166	56	47	188	136	47	69	156	33.5
10	93	120	72	112	56	44	178	124	47	63	148	33.5
11	97	116	66	79	97	41	180	144	50	56	165	33.5
12	72	164	63	69	112	59	120	148	59	53	144	*32
13	125	180	59	162	83	59	86	136	103	163	108	33.5
14	173	180	59	168	121	*73	79	136	178	188	97	30.5
15	180	188	72	186	80	156	69	112	186	177	90	42
16	156	186	64	186	59	164	63	90	143	*180	86	47
17	133	180	56	*180	77	156	59	79	178	164	79	46
18	173	180	53	186	149	145	56	152	177	156	79	98
19	188	186	*50	166	126	93	136	93	139	188	72	59
20	176	174	47	132	82	76	182	79	133	183	69	69
21	180	144	47	112	66	*68	107	86	86	140	63	57
22	146	132	101	97	59	63	108	76	92	112	59	54
23	108	120	72	86	59	56	161	72	100	*170	59	35
24	101	116	50	79	53	53	90	66	72	*188	59	35
25	101	126	47	96	53	50	125	66	82	*186	56	86
26	86	97	47	79	50	47	76	59	66	*188	56	44
27	112	108	47	79	47	44	66	64	59	188	50	35
28	184	136	*46	130	44	44	63	61	53	188	50	35
29	180	127	111	128	50	44	92	-	53	186	47	38
30	186	188	107	180	50	53	79	-------	85	*188	44	35
31	186	184	-------	153	-------	169	63	-------	47	-------	44	-------
Total	4,108	4,879	2,243	3,771	2,310	2,442	3,159	3,092	2,717	4,133	3,367	1,331.5
Mean:												
mgd	133	157	74.8	122	77.0	78.8	102	110	87.6	138	109	44.4
cfs	206	243	116	189	119	122	158	170	136	214	169	68.7
Ac-ft	12,610	14,970	6,880	11,570	7,090	7,490	9,690	9,490	8,340	12,680	10,330	4,090

Calendar year 1956: Max 195 Min 41 Mean(mgd) 121 Mean(cfs) 187 Ac-ft 136,100
Fiscal year 1956-57: Max 188 Min 30.5 Mean(mgd) 103 Mean(cfs) 159 Ac-ft 115,200

* Discharge measurement made on this day.

5880. Wailoa ditch at Honopou, near Huelo--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	41	186	186	72	108	172	108	132	99	104	76	186
2	*73	176	186	59	86	164	156	128	53	108	168	188
3	96	188	183	53	76	172	160	116	44	86	123	180
4	169	186	160	53	69	180	148	97	38	97	90	153
5	164	183	140	50	63	140	132	110	36.5	97	*77	154
6	109	173	124	47	92	120	124	86	147	86	145	146
7	72	173	108	44	186	176	112	82	115	90	188	186
8	104	186	101	44	176	183	124	79	56	76	188	164
9	140	*188	93	41	186	188	116	69	50	76	154	164
10	163	180	86	41	180	188	97	66	80	86	166	136
11	97	164	79	47	176	182	90	59	59	86	188	132
12	76	160	79	41	168	120	82	56	46	93	186	188
13	90	128	79	38	124	108	79	63	*105	86	174	*173
14	132	133	72	36.5	108	116	76	53	47	97	186	144
15	72	183	66	39	93	120	72	50	38	82	167	128
16	63	148	71	131	82	*120	66	47	35	94	188	108
17	161	129	111	118	76	164	66	50	34	110	188	97
18	125	156	180	88	76	185	69	47	34	72	186	90
19	183	164	128	53	72	183	66	44	54	63	188	79
20	183	140	86	69	63	176	66	41	29.5	82	188	76
21	176	144	72	188	148	148	56	41	31.5	112	180	69
22	140	116	66	183	186	124	53	41	52	66	152	69
23	153	151	69	186	188	140	62	34	98	59	132	72
24	144	180	72	183	188	136	166	39.5	135	114	116	66
25	119	186	66	145	188	104	82	69	73	76	127	134
26	167	188	56	101	188	160	59	69	55	142	144	142
27	120	183	63	82	176	58	104	68	182	184	125	188
28	112	188	86	72	144	160	121	82	141	164	155	178
29	136	*186	96	118	120	160	188	-	140	121	131	116
30	180	188	142	162	176	160	188	-------	128	86	165	93
31	188	188	-------	128	-------	140	155	-------	116	-------	188	-------
Total	3,948	5,222	3,106	2,712.5	3,962	4,647	3,243	1,908.5	2,351.5	2,895	4,849	3,999
Mean:												
mgd	127	168	104	87.5	132	150	105	68.2	75.9	96.5	156	133
cfs	196	260	161	135	204	232	162	106	117	149	241	206
Ac-ft	12,120	16,030	9,530	8,320	12,160	14,260	9,950	5,860	7,220	8,880	14,880	12,270

Calendar year 1957 . Max 186 Min 30.5 Mean(mgd) 113 Mean(cfs) 175 Ac-ft 127,000
Fiscal year 1957-58 . Max 188 Min 29.5 Mean(mgd) 117 Mean(cfs) 181 Ac-ft 131,500

* Discharge measurement made on this day.

5890. New Hamakua ditch at Honopou, near Huelo

Location (revised).--Lat 20°53'28", long 156°15'22", on right bank 15 ft upstream from tunnel portal, 600 ft downstream from Honopou Stream crossing, 2.1 miles southwest of Huelo, and 2.5 miles west of Kailua.

Records available.--January 1918 to June 1958.

Gage.--Water-stage recorder. Datum of gage is 1,170 ft above mean sea level (by vertical angles). Prior to May 15, 1921, at site 300 ft upstream at different datum.

Average discharge.--40 years, 25.8 mgd (39.9 cfs).

Extremes.--1918-58: Maximum daily discharge, 116 mgd (179 cfs) Feb. 13, 14, 27, 1932; no flow at times.

Remarks.--Records good except those for period of no gage-height record, which are fair. Ditch diverts water from streams between Waiakamoi and Halehaku Streams above Center and Lowrie ditches. Flow regulated by gates and spillways. Water used for irrigation in central Maui.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	5.9	5.6	2.15	1.78	15.1	11.7	2.65	1.23	1.41	0.62	88	0.62
2	1.83	1.20	1.55	.71	2.3	.98	1.09	5.3	.98	.58	88	.58
3	1.55	46	1.34	.93	1.41	.71	.82	30.5	.82	.55	86	.55
4	1.27	92	1.41	44	1.20	.66	.77	85	.96	51	88	.43
5	1.27	90	12.4	22.5	1.15	1.35	.71	1.23	.77	50	88	.39
6	1.20	*28	1.41	1.04	1.09	18.8	3.45	.93	9.2	1.14	81	.39
7	1.09	53	1.20	.88	1.04	.32	45	.82	.77	.77	47	.36
8	.98	45	1.20	57	.93	.32	29.5	.77	.77	.71	12.4	.32
9	1.35	13.0	1.49	38	.88	.28	72	.77	.66	.71	4.1	.28
10	7.6	6.8	1.15	6.9	.82	.28	52	49	.66	.66	4.4	.28
11	8.0	5.9	.98	2.65	1.45	.26	24	28	.71	.66	34	.28
12	2.15	61	.82	1.15	1.48	.26	2.1	.71	.71	.62	10.7	.28
13	7.8	94	.77	37.5	1.35	.24	1.15	.66	4.0	55	2.6	.28
14	63	94	.77	51	4.3	.24	1.04	.66	47	92	2.1	.26
15	36	75	.77	90	1.35	12.5	.98	.66	68	60	1.83	.32
16	15.9	76	.77	66	1.04	75	.88	.66	25.5	*35	1.69	.32
17	4.3	96	.66	94	5.6	40	.82	.66	35	9.6	1.41	.28
18	92	94	.62	59	32	42	.71	.66	*57	10.7	1.41	.66
19	57	54	.58	18.0	9.5	1.76	20	.66	16.0	85	1.27	.47
20	25	*12.7	.51	8.2	3.6	1.34	53	.66	15.9	51	1.20	.39
21	31	7.9	.47	3.3	3.05	1.04	1.81	.62	1.15	2.8	1.20	.32
22	8.9	2.6	12.6	2.8	2.55	.98	7.3	.62	1.04	2.35	1.15	.28
23	3.3	2.25	1.95	2.35	2.1	.88	44	.62	.98	71	1.09	.26
24	1.09	1.99	.55	2.1	1.04	.77	2.25	.62	.82	90	1.15	.24
25	1.15	1.83	.51	3.5	.93	.71	4.0	.58	.77	90	1.04	.28
26	.93	1.69	.66	2.15	.88	.66	1.55	.58	.71	88	.98	.26
27	.82	1.55	.71	1.90	.82	.66	1.34	.58	.66	86	.88	.21
28	67	9.4	.71	4.6	.77	.66	1.27	1.87	.62	86	.82	.21
29	83	1.69	3.75	11.5	.82	.66	2.75	-	.62	86	.97	.21
30	57	63	3.3	18.9	.93	.66	1.41	-------	.66	*88	1.90	.21
31	62	39	-------	14.5	-------	46	1.20	-------	.71	-------	.66	-------
Total	651.38	1,176.10	57.76	668.84	101.48	262.68	381.55	215.63	295.56	1,196.47	656.95	10.22
Mean:												
mgd	21.0	37.9	1.93	21.6	3.38	8.47	12.3	7.70	9.53	39.9	21.2	0.341
cfs	32.5	58.6	2.99	33.4	5.23	13.1	19.0	11.9	14.7	61.7	32.8	0.528
Ac-ft	2,000	3,610	177	2,050	311	806	1,170	662	907	3,670	2,020	31

Calendar year 1956: Max 96 Min 0.01 Mean(mgd) 16.9 Mean(cfs) 26.1 Ac-ft 19,000
Fiscal year 1956-57: Max 96 Min 0.21 Mean(mgd) 15.5 Mean(cfs) 24.0 Ac-ft 17,410

* Discharge measurement made on this day.

5890. New Hamakua ditch at Honopou, near Huelo--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.28	88	73	1.09	2.1	16.4	0.28	0.66	4.6	12.6	1.20	94
2	.69	46	56	.77	1.69	23	25	.66	4.0	23.5	49	92
3	.88	90	57	.66	1.41	28	20	.66	3.3	5.2	12.6	45
4	50	86	9.5	.66	1.27	53	8.5	.47	3.3	16.7	1.55	64
5	26.5	69	4.6	.62	1.27	4.6	5.5	.66	3.3	17.6	1.30	14.0
6	9.3	94	3.4	.58	9.6	10.8	3.5	.28	55	2.6	34.5	11.4
7	.66	94	2.9	.55	85	36.5	1.2	7.6	12	4.5	88	68
8	2.2	92	2.45	.51	*65	.66	1.2	.93	3.8	2.6	88	20.5
9	4.0	88	2.25	.51	84	.62	1.2	.66	3.8	2.45	90	34
10	41	50	1.90	.51	60	.58	1.2	.66	3.0	4.9	65	2.15
11	.96	16.2	1.69	.51	63	.55	1.2	.66	3.4	2.1	88	1.76
12	.66	12.1	1.62	.51	33.5	.47	1.2	.28	3.4	12.4	86	88
13	.58	5.9	1.76	.47	5.9	.43	1.2	.28	*12	1.30	64	*25.5
14	16.2	7.4	1.48	.43	3.15	.43	1.1	.28	2.35	1.43	77	2.85
15	.62	75	1.34	.39	2.7	.43	.93	.28	1.20	1.90	88	1.99
16	.51	6.6	1.20	16.5	2.45	.39	.93	.28	1.20	4.2	88	1.83
17	53	1.76	5.4	12.6	1.99	.39	.93	.06	1.15	4.2	80	1.62
18	2.55	6.8	64	2.65	2.1	.34	.93	.06	1.15	3.05	49	1.34
19	75	30	2.1	.55	1.76	.28	.66	.06	2.95	2.6	70	1.20
20	86	3.25	1.15	.48	1.55	.28	.66	.06	3.15	13.4	94	1.20
21	65	4.8	.98	89	30.5	.28	.66	.06	5.3	12.2	41	1.09
22	2.5	1.41	.88	82	77	.28	.47	.06	6.0	3.5	10.8	1.04
23	13.8	15.9	.88	86	86	.28	.47	.06	10.7	3.15	8.0	1.15
24	22.5	96	1.04	78	88	.28	30	.14	22	7.1	6.4	.93
25	2.65	90	.93	13.2	86	.28	2.0	.14	2.45	2.8	5.0	16.4
26	51	52	.71	1.41	86	.28	1.2	.06	1.82	34	14.9	17.5
27	1.41	26.5	.66	1.20	36	25	20	.06	64	69	10.0	75
28	1.20	74	.71	1.09	5.6	30	25	.06	29	36.5	29	64
29	8.7	94	5.5	27	4.0	15	92	-	67	10.2	9.2	2.2*
30	48	94	16.2	46	.68	4.5	65	-------	96	1.34	27	1.41
31	90	94	-------	2.6	-------	.28	9.0	-------	74	-------	72	-------
Total	678.35	1,604.62	323.23	469.05	929.22	254.61	323.12	16.18	506.32	319.02	1,448.45	753.06
Mean:												
mgd	21.9	51.8	10.8	15.1	31.0	8.21	10.4	0.578	16.3	10.6	46.7	25.1
cfs	33.9	80.1	16.7	23.4	48.0	12.7	16.1	0.894	25.2	16.4	72.3	38.8
Ac-ft	2,080	4,920	992	1,440	2,850	781	992	50	1,550	979	4,450	2,310

Calendar year 1957. Max 96 Min 0.21 Mean(mgd) 19.2 Mean(cfs) 29.7 Ac-ft 21,520
Fiscal year 1957-58. Max 96 Min 0.06 Mean(mgd) 20.9 Mean(cfs) 32.3 Ac-ft 23,390

* Discharge measurement made on this day.
Note.--No gage-height record Dec. 24 to Mar. 13; discharge estimated on basis of twice-daily gage readings and records for Lowrie ditch.

5900. Old Hamakua ditch at Honopou, near Huelo

Location (revised).--Lat 20°53'31", long 156°15'16", on right bank 400 ft downstream from Honopou Stream and Wailoa ditch trail crossing in Honopou Gulch, 2.0 miles southwest of Huelo, 2.5 miles west of Kailua, and 5.0 miles east of Haiku.

Records available.--January 1918 to June 1922, November 1936 to June 1958.

Gage.--Water-stage recorder and modified Parshall flume. Datum of gage is 1,117 ft above mean sea level (by vertical angles).

Average discharge.--25 years (1918-22, 1937-58), 2.21 mgd (3.42 cfs).

Extremes.--1918-22, 1936-58: Maximum daily discharge, 39.5 mgd (61.1 cfs) Apr. 7, 1938; no flow at times.

Remarks.--Records good. Wailoa and New Hamakua ditches divert most of flow above this station. Water used for irrigation in central Maui.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.17	0.15	0.10	0.04	0.08	0.10	0.10	0.06	0.06	0.04	0.12	0.05
2	.10	.08	.07	.04	.08	.07	.06	.07	.05	.03	.10	.05
3	.07	4.7	.06	.03	.07	.06	.05	.11	.04	.03	.10	.04
4	.07	19.0	.05	3.15	.06	.05	.03	.15	.03	13.2	.10	.04
5	.06	10.7	.06	.23	.06	.05	.02	.14	.03	6.5	.08	.04
6	.06	.20	.05	.07	.06	.19	.02	.06	.03	.10	.07	.04
7	.06	.32	.05	.08	.05	.31	.18	.04	.02	.06	.06	.04
8	.05	.22	.05	3.9	.05	.29	.13	.03	.02	.05	.06	.04
9	.05	.10	.05	1.10	.05	.27	.22	.03	.02	.05	.10	.04
10	.05	.08	.04	.15	.05	.25	.20	.03	.02	.05	.08	.04
11	.05	.08	.04	.08	.05	.24	.15	.04	.02	.04	.23	.04
12	.05	7.6	.04	.06	.06	.22	.10	.04	.02	.04	.13	.04
13	.05	10.4	.03	.82	.05	.22	.07	.03	.03	8.0	.07	.03
14	2.3	9.0	.03	4.7	.10	.22	.05	.03	9.0	18.9	.05	.03
15	.19	1.39	.04	18.0	.08	.22	.04	.03	17.3	8.9	.05	.03
16	.12	7.8	.05	18.8	.06	.22	.03	.03	2.65	2.25	.05	.03
17	.10	23.5	.05	*22.5	.55	.19	.03	.02	.94	.15	.04	.03
18	17.8	15.2	.05	2.75	.37	.19	.03	.04	*8.9	.12	.04	.03
19	1.65	.31	.05	.22	.19	.13	.08	.02	.16	13.4	.04	.03
20	.13	.16	.05	.17	.12	.08	.12	.02	.16	.94	.04	.02
21	.13	.13	.05	.15	.08	.06	.10	.02	.07	.13	.04	.02
22	.10	.10	.05	.12	.07	.05	.10	.02	.06	.10	.04	.02
23	.08	.08	.05	.10	.06	.05	.13	.03	.05	17.2	.04	.02
24	.07	.08	.05	.08	.06	.05	.10	.03	.05	16.3	.05	.02
25	.07	.07	.05	.12	.05	.04	.08	.05	.04	12.2	.05	.02
26	.06	.07	.05	.10	.05	.04	.08	.05	.04	.60	.05	.02
27	.06	.06	.04	.07	.05	.04	.07	.05	.03	.17	.05	.02
28	2.25	.07	.04	.08	.05	.04	.06	.11	.03	.17	.05	.02
29	6.8	.07	.05	.10	.06	.04	.10	-	.04	.17	.05	.02
30	2.4	4.5	.05	.16	.06	.04	.08	-------	.04	.18	.05	.02
31	3.0	.20	-------	.10	-------	.19	.07	-------	.04	-------	.05	-------
Total	38.20	116.42	1.49	78.07	2.83	4.21	2.68	1.38	39.99	120.08	2.13	0.93
Mean:												
mgd	1.23	3.76	0.050	2.52	0.094	0.136	0.086	0.049	1.29	4.00	0.069	0.031
cfs	1.90	5.82	0.077	3.90	0.145	0.210	0.133	0.076	2.00	6.19	0.107	0.048
Ac-ft	117	357	4.6	240	8.7	13	8.2	4.2	123	369	6.5	2.9

Calendar year 1956 . Max 25.5 Min 0.03 Mean(mgd) 1.66 Mean(cfs) 2.57 Ac-ft 1,870
Fiscal year 1956-57 . Max 23.5 Min 0.02 Mean(mgd) 1.12 Mean(cfs) 1.73 Ac-ft 1,250

* Discharge measurement made on this day.

5900. Old Hamakua ditch at Honopou, near Huelo--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.02	6.7	0.05	0.05	0.07	0.12	0.05	0.04	0.07	0.02	0.02	0.06
2	.02	.31	.04	.04	.06	.07	.05	.04	.07	.02	.04	.05
3	.02	5.8	.04	.03	.06	.08	.05	.03	.07	.02	.03	.03
4	.20	.49	.04	.03	.05	.07	.05	.02	.07	.02	.02	.02
5	.12	3.05	.04	.02	.05	.07	.05	.03	.07	.03	.02	.02
6	.09	8.7	.04	.02	3.95	.08	.05	.03	.15	.03	.02	.02
7	.05	1.29	.04	.02	11.0	.08	.05	.03	.06	.03	.05	.03
8	.03	1.16	.05	.02	*13.0	.07	.06	.02	.06	.03	.05	.03
9	.03	.56	.05	.02	12.4	.07	.06	.02	.06	.03	.03	.03
10	.90	.28	.05	.02	5.0	.08	.06	.03	.06	.02	.03	.03
11	.06	.19	.06	.02	5.8	.08	.06	.03	.06	.02	.04	.03
12	.04	.16	.06	.02	.21	.07	.05	.04	.06	.02	.03	.06
13	.04	.13	.05	.02	.15	.07	.05	.04	.05	.02	.03	.03
14	.03	.07	.05	.02	.12	.07	.05	.04	.04	.02	.03	.02
15	.03	3.5	.05	.02	.12	.07	.05	.04	.04	.02	.04	.02
16	.03	.13	.05	.02	.10	.07	.05	.04	.04	.02	.04	.01
17	4.6	.07	.46	.06	.10	.06	.05	.05	.04	.02	.03	.01
18	.11	.06	3.5	.04	.08	.05	.05	.06	.05	.01	.03	.01
19	7.7	.10	.08	.03	.08	.05	.05	.06	.05	.01	.03	.05
20	5.5	.08	.05	.03	.08	.07	.05	.06	.05	.03	.04	.05
21	3.15	.06	.05	14.6	.40	.05	.05	.06	.04	.02	.03	.05
22	.08	.05	.05	5.1	8.3	.05	.05	.06	.04	.02	.02	.05
23	.07	1.47	.04	6.1	.12	.05	.05	.06	.04	.02	.02	.06
24	.08	22.5	.04	2.05	.15	.05	.12	.07	.04	.03	.02	.05
25	.06	13.7	.03	.13	.08	.05	.10	.07	.05	.02	.02	.07
26	1.47	.38	.03	.06	.07	.06	.08	.10	.04	.03	.02	.13
27	.07	.20	.03	.05	.06	.06	.07	.08	.05	.05	.02	.16
28	.05	.24	.03	.04	.06	.06	.12	.08	.05	.03	.02	.16
29	.05	.19	.04	8.0	.06	.06	.09	-	.06	.02	.01	.13
30	.10	.11	.04	3.1	.10	.06	.07	-------	.04	.02	.02	.09
31	12.3	.05	-------	.12	-------	.05	.06	-------	.03	-------	.02	-------
Total	37.10	71.78	5.23	39.90	61.88	2.05	1.90	1.33	1.70	0.70	0.87	1.56
Mean:												
mgd	1.20	2.32	0.174	1.29	2.06	0.066	0.061	0.048	0.055	0.023	0.028	0.052
cfs	1.86	3.59	0.269	2.00	3.19	0.102	0.094	0.074	0.085	0.036	0.043	0.080
Ac-ft	114	220	16	122	190	6.3	5.8	4.1	5.2	2.1	2.7	4.8

Calendar year 1957 : Max 22.5 Min 0.02 Mean(mgd) 1.06 Mean(cfs) 1.64 Ac-ft 1,180
Fiscal year 1957-58 : Max 22.5 Min 0.01 Mean(mgd) 0.619 Mean(cfs) 0.958 Ac-ft 693

* Discharge measurement made on this day.

5920. Lowrie ditch at Honopou Gulch, near Huelo

Location (revised).--Lat 20°54'57", long 156°15'07", on left bank 0.2 mile downstream from siphon across Honopou Stream, 1.6 miles west of Huelo, and 2.7 miles northwest of Kailua.

Records available.--January 1910 to March 1927, February 1930 to June 1958. Published as "at Opana weir" 1910-27.

Gage.--Water-stage recorder and concrete control. Datum of gage is 598.0 ft above mean sea level, datum of 1929. Jan. 1, 1910, to Mar. 31, 1927, at site 1.5 miles downstream at different datum.

Average discharge.--44 years (1910-26, 1930-58), 27.9 mgd (43.2 cfs).

Extremes.--1910-27, 1930-58: Maximum daily discharge, 75 mgd (116 cfs) Oct. 31, 1921; no flow at times.

Remarks.--Records good except those for period of no gage-height record, which are fair. Lowrie ditch diverts water from all streams between Kailua and Halehaku Streams. Flow regulated by gates. Water used for irrigation in central Maui.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	21.5	15.5	16.8	7.6	28	11.1	10.4	3.1	11.5	4.8	2.85	5.6
2	23	15.9	13.2	7.6	13.5	7.6	15.4	10.2	8.4	4.3	3.05	5.2
3	24.5	27.5	14.1	5.6	10.8	6.9	13.7	16.6	7.8	*4.1	2.2	5.0
4	22.5	55	*21.5	26	10.2	6.5	11.8	57	7.4	25.5	26	5.0
5	17.9	55	27	30.5	9.5	7.1	6.9	40	8.3	34	23	4.8
6	11.8	23	18.5	14.7	9.5	20.5	6.9	6.7	15.4	11.8	3.4	4.6
7	11.3	35.5	18.5	15.4	8.8	11.6	31	35.5	9.6	12.0	2.95	4.3
8	10.6	32	10.6	41	8.2	7.8	14.1	23	9.9	13.0	11.3	4.2
9	10.4	19.6	11.3	36	7.8	6.9	37.5	5.4	6.7	9.8	25	4.0
10	10.3	16.4	9.1	21.5	7.8	8.8	*35	38.5	6.3	10.2	22.5	3.9
11	12.0	14.3	8.6	18.8	8.8	8.0	39	42	7.1	4.6	35.5	*3.9
12	9.1	35.5	8.0	15.4	9.5	6.5	15.4	55	7.4	4.3	25.5	3.7
13	10.6	52	7.6	32.5	8.6	6.3	14	45	11.1	28.5	17.8	3.7
14	37.5	52	7.4	43	17.1	6.9	13	42	33	57	18.8	3.4
15	18.6	46	7.6	57	9.5	16.3	12	31	38	46	20	4.5
16	13.0	44	7.4	57	7.8	51	11	19.0	22.5	39	22.5	4.0
17	13.5	60	6.5	57	24.5	26	10	16.6	22.9	22.5	17.8	3.7
18	53	57	6.3	55	30.5	37.5	11	42	41	21.5	15.4	4.9
19	40	42	6.1	42	19.0	14.2	16	16.4	15	48	10.8	4.6
20	21	28.5	5.9	37.5	17.8	19.9	20	15.4	19.5	32.5	9.9	4.2
21	25	28.5	5.8	27.5	13.5	17.3	8.0	16.6	14.4	15.2	9.5	3.7
22	14	25	14.5	25	10.6	16.6	5.0	17.8	16.0	17.8	8.8	4.0
23	13.7	22.5	9.7	26	9.9	10.4	12	14.7	8.0	47	8.8	3.1
24	15.2	22.5	7.0	25	9.1	7.6	20	11.8	6.0	55	9.5	2.95
25	16.6	19	5.0	24	8.6	7.3	18	12.3	10.2	55	8.2	3.7
26	14.2	15.8	5.2	19.0	8.2	6.9	12	9.9	8.0	52	7.6	3.4
27	13.7	18.1	4.8	13.7	8.0	6.7	11	10.4	5.2	52	7.3	2.95
28	42	16	4.3	14.9	7.8	6.5	5.0	9.9	4.8	36	6.7	3.1
29	55	13.7	9.3	19.9	8.4	6.3	2.6	-	4.6	5.4	6.5	3.1
30	38.5	48	9.1	30.5	8.2	7.4	.17	-------	5.6	3.6	6.1	2.85
31	49	41	-------	24	-------	32.5	.05	-------	5.2	-------	5.8	-------
Total	689.0	996.8	306.7	870.6	359.5	412.9	437.92	663.8	396.4	772.4	401.05	120.05
Mean:												
mgd	22.2	32.2	10.2	28.1	12.0	13.3	14.1	23.7	12.8	25.7	12.9	4.00
cfs	34.3	49.8	15.8	43.5	18.6	20.6	21.8	36.7	19.8	39.8	20.0	6.19
Ac-ft	2,110	3,060	941	2,670	1,100	1,270	1,340	2,040	1,220	2,370	1,230	368

Calendar year 1956: Max 60 Min 0.04 Mean(mgd) 25.1 Mean(cfs) 38.8 Ac-ft 28,210
Fiscal year 1956-57: Max 60 Min 0.05 Mean(mgd) 17.6 Mean(cfs) 27.2 Ac-ft 19,720

* Discharge measurement made on this day.
Note.--No gage-height record Jan. 13-29; discharge estimated on basis of gage readings from East Maui Irrigation Co.

5920. Lowrie ditch at Honopou Gulch, near Huelo--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.95	52	52	7.3	12.6	11.9	5.9	5.9	0.36	0.32	0.25	28.5
2	4.2	26.5	47	6.1	9.1	5.0	26.5	5.6	.32	.32	.56	32.5
3	4.8	49	52	5.6	9.3	6.8	46	4.8	.28	.32	.32	24
4	15.0	52	35	5.6	14.7	a42	22.5	3.9	.22	.36	.28	20
5	15.1	30.5	25.5	5.0	14.9	a50	21.5	3.9	.22	.32	.25	*24
6	9.0	57	24	4.6	16.1	a32	16.6	3.55	1.16	.32	.32	21
7	4.5	57	21.5	4.5	55	a15	14.9	1.93	.51	.32	.41	29
8	6.5	57	19.0	4.3	41	a7.0	16.6	.32	.36	.32	.56	22.5
9	8.0	55	16.6	4.2	55	a6.9	15.4	.32	.32	.32	.56	22.5
10	18.0	38.5	15.9	4.3	45	a6.9	13.2	.28	.41	.32	.46	21.5
11	9.3	26	16.6	4.6	50	a6.7	12.0	.28	.32	.32	.56	15.4
12	7.4	21.5	17.8	4.3	31	6.3	11.3	.28	.28	.28	.46	40
13	5.4	17.8	17.8	4.0	22.5	6.1	10.6	.25	.28	.28	.41	24
14	8.2	15.4	11.1	3.7	20	5.8	9.9	.25	.25	.28	.46	17.8
15	4.6	47	10.2	3.4	19.0	5.6	9.5	.25	.25	.28	.68	14.9
16	4.3	17.8	12.3	6.4	14.4	5.6	9.3	.25	.25	.28	.74	14.5
17	31	16.6	15.4	8.6	12.3	4.6	*8.6	.28	.22	.32	.51	15.8
18	15.0	20	42	5.0	20	4.2	9.7	.25	.22	.28	.46	21.5
19	40	28	11.5	4.2	22.5	13.4	8.6	.22	.19	.28	1.18	20.5
20	52	20.5	11.3	3.9	17.8	12.4	8.8	.19	.19	.46	3.0	17.8
21	42	13.0	12.8	45	23.5	7.8	7.8	.22	.19	.36	1.71	9.9
22	13.2	11.3	12.2	47	55	7.4	7.3	.22	.25	.28	1.30	9.5
23	14.5	12.3	15.2	47	57	7.1	7.8	.25	.28	.28	1.30	11.4
24	13.5	60	11.6	47	60	6.7	29.5	.32	.41	.28	1.30	9.5
25	*10.6	52	8.1	*15.5	57	6.5	10.6	.28	.41	.28	1.21	12.0
26	31.5	47	6.7	9.9	52	6.9	10.6	.72	.36	.28	1.30	19.2
27	10.4	35	6.5	10.4	55	7.3	16.1	.74	.36	.41	3.25	31.5
28	10.6	47	6.9	16.6	47	7.1	21.5	.86	.32	.42	6.1	44
29	12.3	57	7.5	25	37.5	7.1	53	-	.71	.28	5.6	19.0
30	14.9	57	13.7	39	50	6.7	40	-------	.56	.25	5.4	17.8
31	50	57	-------	15.4	-------	6.1	6.7	-------	.46	-------	16.6	-------
Total	488.75	1,153.7	575.7	417.4	996.2	330.9	508.3	36.61	10.92	9.42	57.50	631.5
Mean:												
mgd	15.8	37.2	19.2	13.5	33.2	10.7	16.4	1.31	0.352	0.314	1.85	21.0
cfs	24.4	57.6	29.7	20.9	51.4	16.6	25.4	2.03	0.545	0.486	2.86	32.5
Ac-ft	1,500	3,540	1,770	1,280	3,060	1,020	1,560	112	34	29	176	1,940

Calendar year 1957: Max 60 Min 0.05 Mean(mgd) 18.5 Mean(cfs) 28.6 Ac-ft 20,740
Fiscal year 1957-58: Max 60 Min 0.19 Mean(mgd) 14.3 Mean(cfs) 22.1 Ac-ft 16,020

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for nearby stations.

5940. Haiku ditch at Honopou Gulch, near Kailua

Location.--Lat 20°55'05", long 156°14'55", on right bank of ditch and west side of Honopou Gulch, 160 ft below new Government Road, 2.5 miles northwest of Kailua, and 5 miles east of Haiku.

Records available.--January 1910 to December 1928, February 1930 to June 1958. Published as "at Peahi weir" January 1910 to June 1919, as "at Manawai Gulch" July 1919 to December 1928, and as "at Kapalalaea Gulch" February 1930 to January 1940.

Gage.--Water-stage recorder and concrete control. Datum of gage is 421.54 ft above mean sea level, datum of 1929. Jan. 1, 1910, to Oct. 6, 1914, water-stage recorder at site at Peahi weir on old Haiku ditch at different datum. Oct. 7, 1914, to Dec. 31, 1928, water-stage recorder at site 2.9 miles downstream at different datum. Feb. 19, 1930, to Feb. 20, 1940, water-stage recorder at site 0.9 mile downstream at different datum.

Average discharge.--46 years (1910-28, 1930-58), 20.2 mgd (31.3 cfs).

Extremes.--1910-28, 1930-58: Maximum daily discharge, 135 mgd (209 cfs) Nov. 13, 1934, Jan. 8, 9, Feb. 25-27, 1935, Jan. 27, 1938; no flow at times.

Remarks.--Records excellent. Haiku ditch diverts water from all streams between Kailua Stream and Maliko Gulch. Flow regulated by gates. Water used for irrigation in central Maui.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.05	0.93	1.15	0.24	5.6	1.11	0.53	7.6	0.95	0.20	67	0.22
2	1.43	.58	.90	.20	1.71	.58	.30	1.50	.85	.18	67	.20
3	1.32	14.7	.85	.24	1.43	.51	.30	1.30	.70	.20	63	.20
4	1.22	67	.85	19.0	1.29	.48	.28	46	.58	40	67	.20
5	1.15	54	1.00	6.5	1.20	.51	.24	2.15	.58	33.5	67	.18
6	1.10	1.82	.75	.44	1.10	.95	.22	1.64	.58	.95	63	.18
7	1.00	7.8	.65	.63	1.00	.85	4.7	1.50	.51	.75	54	.18
8	.95	8.6	.70	24.5	.95	.54	.37	1.43	.44	.50	28.5	.18
9	.90	1.05	.70	15.0	.90	.44	16.4	1.36	.34	.18	5.6	.16
10	.90	.95	.58	1.35	.85	.37	5.9	1.29	.34	.16	4.3	.16
11	.85	.95	.54	.75	.90	.34	25.5	1.29	.48	.16	5.3	.18
12	.85	33.5	.51	.65	.90	.30	.74	33.5	.61	.16	3.25	.16
13	.90	*67	.48	11.6	.80	.30	.37	11.7	.54	23.5	2.55	.18
14	25	67	.48	25.5	1.60	.40	.44	6.1	23	73	2.3	.20
15	1.48	28.5	.48	58	.90	6.6	.34	2.3	31	32	1.85	.20
16	1.15	37.5	.48	63	.75	55	.52	1.78	9.7	18.3	1.29	.12
17	.95	70	.44	63	17.4	6.0	.28	1.50	2.5	1.78	1.15	.12
18	47	52	.40	38	8.4	27.5	.26	7.7	19.9	1.13	1.05	.10
19	17.8	3.55	.34	10.2	3.55	.85	5.7	2.9	2.1	52	.95	.10
20	.90	2.1	.30	7.3	2.3	.65	4.8	1.85	1.04	6.4	.85	.10
21	.90	1.94	.30	5.2	1.64	.54	6.3	1.57	.51	1.43	.75	.10
22	.65	1.78	5.2	4.3	1.43	.51	8.5	1.50	.48	1.13	.65	.10
23	.51	1.71	.77	3.5	1.22	.48	32	1.43	.44	52	.65	.10
24	.51	1.50	.15	3.0	.95	.37	1.74	1.22	.34	*67	.98	.10
25	.70	1.43	.20	3.45	.95	.30	1.60	1.15	.30	67	.58	.10
26	.48	1.36	.28	2.9	.90	.30	1.22	1.05	.26	67	.48	.10
27	.48	1.36	.22	2.35	.80	.28	1.10	1.00	.24	63	.44	.10
28	32	1.27	.22	2.35	.65	.26	*6.0	.90	.22	67	.34	.10
29	56	.87	.22	7.3	.79	.26	12.5	-	.20	67	.30	.10
30	14.3	*31.5	.34	12.4	.75	.30	10.5	-------	.24	67	.28	.10
31	30.5	12.3	-------	1.85	-------	18.0	9.8	-------	.20	-------	.24	-------
Total	245.93	576.55	20.48	394.70	63.61	125.88	159.45	146.21	100.17	804.61	512.63	4.32
Mean: mgd	7.93	18.6	0.683	12.7	2.12	4.06	5.14	5.22	3.23	26.8	16.5	0.144
cfs	12.3	28.8	1.06	19.6	3.28	6.28	7.95	8.08	5.00	41.5	25.5	0.223
Ac-ft	755	1,770	63	1,210	195	386	489	449	307	2,470	1,570	13

Calendar year 1956 : Max 70 Min 0.06 Mean(mgd) 13.2 Mean(cfs) 20.4 Ac-ft 14,880
Fiscal year 1956-57 : Max 73 Min 0.10 Mean(mgd) 8.64 Mean(cfs) 13.4 Ac-ft 9,680

* Discharge measurement made on this day.

5940. Haiku ditch at Honopou Gulch, near Kailua--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.10	33	26	0.30	0.30	0.86	12.2	0.30	32	12.5	10.2	60
2	.10	3.25	18.7	.28	.24	23	15.0	.28	17.5	10.9	38.5	50
3	.09	44	21	.28	.16	47	4.1	.26	9.6	10.0	22.5	2.45
4	.16	1.08	5.0	.28	.12	33.5	1.94	.26	13.0	10.9	10.2	1.04
5	.34	5.6	6.5	.26	.18	11.4	1.78	.26	12.2	10.9	8.5	*1.86
6	.09	18.5	3.5	.24	.20	9.3	1.57	.24	49	9.2	19.4	.93
7	.09	.51	2.9	.24	54	1.03	1.43	.15	43	9.4	67	16.7
8	.09	4.9	2.45	.24	37	.58	1.78	.03	24	8.5	67	4.0
9	.10	25	2.1	.24	50	.54	1.50	.04	22	8.3	67	6.2
10	.10	3.65	*1.87	.26	20	15.8	1.22	.05	26	7.3	35	2.35
11	.09	2.35	1.71	.26	20	4.8	1.10	.06	24	6.3	67	.94
12	.10	1.78	1.50	.22	2.35	.51	1.00	.06	19.0	5.9	51	54
13	.10	1.43	1.57	.20	1.92	.22	.90	.05	21.5	5.6	41	10.4
14	.12	1.22	1.29	.22	1.50	.12	.85	.06	16.0	5.6	53	1.48
15	.10	34.5	1.15	.24	1.29	.12	.80	.08	14.0	5.2	22	1.15
16	.10	1.18	1.15	.24	1.10	.12	.75	.08	13.2	5.6	.08	1.00
17	23	.95	1.22	.24	1.00	.12	.54	.08	12.5	6.5	.07	3.25
18	.43	.95	31	.24	1.10	.12	.70	.07	12.6	*5.3	.07	.62
19	35	1.00	1.00	.24	.90	.12	.54	.07	16.2	4.7	.08	.54
20	41	.85	.85	.26	.85	.12	.51	.06	11.8	17.1	.08	.51
21	29	.75	.70	54	2.6	.10	.44	.07	10.5	18.0	.07	.48
22	.35	.65	.65	36	46	.10	.37	.06	10.9	7.3	.08	.40
23	.22	1.25	.62	36	58	.10	.46	.07	12.2	6.0	.07	.68
24	.16	22	.65	21	50	.09	14.8	.09	17.5	7.9	.08	.48
25	.14	30	.51	.75	35.5	.09	.54	.09	10.2	6.8	.07	.48
26	17.1	11.3	.44	.48	35.5	.10	.40	.09	9.0	15.4	9.0	.66
27	.18	4.5	.44	.34	28.5	10.7	.37	.06	38	51	18.2	28
28	.10	39.5	.40	.28	10.5	32.5	.49	.09	18.4	37.5	15.3	33.5
29	.12	31.5	.40	13.7	6.8	15.5	41	-	40	15.5	12.8	.80
30	.29	28	.40	27	32.5	9.4	13.0	-------	60	11.3	20	.54
31	55	39.5	-------	.54	-------	40	.34	-------	39	-------	20.5	-------
Total	203.98	404.37	137.67	195.07	502.11	258.06	122.42	3.16	674.8	342.4	675.85	285.44
Mean:												
mgd	6.58	13.0	4.59	6.29	16.7	8.32	3.95	0.113	21.8	11.4	21.8	9.51
cfs	10.2	20.1	7.10	9.73	25.8	12.9	6.11	0.175	33.7	17.6	33.7	14.7
Ac-ft	626	1,240	422	599	1,540	792	376	9.7	2,070	1,050	2,070	876

Calendar year 1957: Max 73 Min 0.09 Mean(mgd) 9.39 Mean(cfs) 14.5 Ac-ft 10,520
Fiscal year 1957-58: Max 67 Min 0.03 Mean(mgd) 10.4 Mean(cfs) 16.1 Ac-ft 11,670

* Discharge measurement made on this day.

6180. Kahakuloa Stream near Honokohau

Location.--Lat 20°58'54", long 156°33'26" (revised), on right bank just downstream from Kapuna Stream, 1.3 miles south of Kahakuloa, 2 miles west of Puu Makawana, and 4.3 miles southeast of Honokohau.

Drainage area.--3.47 sq mi (revised).

Records available.--July 1939 to August 1943, September 1947 to June 1958. Records for January 1913 to December 1914 (fragmentary), at site 1 mile upstream, not equivalent owing to difference in drainage area.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 330 ft (from topographic map).

Average discharge.--13 years (1940-43, 1948-58), 11.3 mgd (17.5 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 499 mgd (772 cfs) Oct. 14 (gage height, 6.32 ft), from rating curve extended above 90 mgd on basis of slope-area measurement at gage height 8.35 ft; minimum, 2.5 mgd (3.9 cfs) June 10, 11, 14, 15.

1957-58: Maximum discharge during fiscal year, 860 mgd (1,330 cfs) Dec. 3 (gage height, 7.82 ft), from rating curve extended above 90 mgd as explained above; minimum, 2.85 mgd (4.41 cfs) Oct. 20.

1939-43, 1947-58: Maximum discharge, 1,990 mgd (3,080 cfs) Dec. 14, 1942 (gage height, 7.02 ft, control then in use), from rating curve extended above 55 mgd by test on model of station site; minimum, 1.95 mgd (3.02 cfs) Feb. 9-11, 1954.

Remarks.--Records good except those for periods of no gage-height record, which are fair.

Rating table, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)
(Shifting-control method used May 31 to June 26, 1957)

2.8	2.85	3.6	30
2.9	4.4	4.0	59
3.0	6.5	4.5	116
3.3	15.5	5.0	197

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	8.0	8.6	7.2	5.1	7.8	29.5	5.9	3.65	6.2	5.2	40	3.5
2	6.5	6.5	5.9	4.4	6.3	5.1	4.3	3.95	3.95	3.35	42	3.5
3	10.7	8.1	5.5	4.3	5.1	4.4	3.95	3.95	3.65	3.75	12.2	3.5
4	6.5	38	5.5	6.4	4.9	4.1	3.95	12.3	3.5	50	59	3.8
5	5.9	35	7.5	5.1	4.7	4.1	3.8	46	13.8	14.0	43	3.5
6	6.6	9.0	5.5	4.3	6.2	8.5	3.65	30	7.7	4.9	12.5	3.5
7	10.6	15.1	5.1	22.5	6.4	10.2	*3.8	14.0	3.95	3.95	8.2	3.35
8	6.8	12.6	5.1	*40	4.7	4.9	4.1	*8.8	3.5	4.4	6.5	3.35
9	6.1	11.5	5.1	27.5	4.4	4.1	5.1	7.8	3.5	8.1	5.9	3.35
10	6.7	7.2	4.9	8.1	4.3	3.95	6.9	5.5	3.35	4.6	5.9	3.35
11	9.1	7.0	4.9	5.9	4.3	3.95	4.1	13.1	3.65	3.5	7.2	3.35
12	6.3	27.5	4.7	5.3	6.3	3.95	3.95	15.9	3.95	3.35	5.9	3.35
13	6.5	28	4.9	18.5	5.1	3.8	3.5	7.9	4.1	66	*4.9	3.35
14	14.4	17.0	4.9	72	16.0	3.95	3.35	5.1	14.2	91	4.4	3.5
15	8.5	8.5	4.9	27.5	7.2	8.6	3.5	5.9	7.2	20	4.3	3.65
16	6.5	44	4.9	15.9	4.9	9.7	4.1	4.9	5.9	8.1	4.1	3.65
17	6.5	69	4.4	60	4.9	13.9	3.5	4.1	5.3	5.9	4.1	3.5
18	37.5	15.8	4.4	13.3	10.8	14.1	3.95	16.2	9.8	5.9	4.0	5.5
19	18.9	9.6	4.4	9.1	7.7	10.2	11.8	5.6	5.1	5.3	4.3	4.7
20	11.4	8.2	4.3	7.2	5.5	7.0	8.3	5.5	4.7	5.3	4.1	3.35
21	10.5	7.2	4.3	6.1	4.9	4.9	4.4	4.7	4.2	4.4	4.4	3.0
22	7.5	6.5	9.6	5.9	4.7	5.1	10.0	4.1	4.1	4.1	5.1	4.4
23	6.1	6.1	7.4	5.5	4.9	4.3	10.0	3.95	3.65	57	4.1	3.0
24	6.0	6.1	4.9	5.3	4.3	4.1	5.1	3.95	3.35	9.8	9.2	2.85
25	8.5	5.9	4.7	7.1	4.1	3.95	11.3	4.3	3.35	22	5.1	4.4
26	5.9	5.9	5.9	17.4	4.1	3.95	4.4	3.8	3.15	9.6	4.3	*3.4
27	8.3	5.9	5.1	6.9	3.95	3.65	4.1	3.95	*3.15	9.2	3.95	3.7
28	11.0	10.3	4.4	5.9	3.95	3.5	3.8	4.9	3.15	11.4	3.65	6.3
29	15.1	16.4	4.4	6.1	4.0	3.8	5.7	-	3.0	6.1	3.5	5.9
30	9.8	28	5.1	6.6	14.1	5.4	4.8	-------	4.4	26	3.5	3.65
31	33	11.0	-------	5.9	-------	30.5	3.8	-------	3.95	-------	3.5	-------
Total	321.7	495.5	159.8	441.1	180.50	231.15	162.90	253.80	156.45	476.20	332.80	113.20
Mean: mgd	10.4	16.0	5.33	14.2	6.02	7.46	5.25	9.06	5.05	15.9	10.7	3.77
cfs	16.1	24.8	8.25	22.0	9.31	11.5	8.12	14.0	7.81	24.6	16.6	5.83
Ac-ft	987	1,520	490	1,350	554	709	500	779	480	1,460	1,020	347

Calendar year 1956: Max 72 Min 3.5 Mean(mgd) 11.9 Mean(cfs) 18.4 Ac-ft 13,310
Fiscal year 1956-57: Max 91 Min 2.85 Mean(mgd) 9.11 Mean(cfs) 14.1 Ac-ft 10,200

Peak discharge (base, 400 mgd).--Oct. 14 (10 p.m.) 499 mgd (772 cfs), 6.32 ft.

* Discharge measurement made on this day.

6180. Kahakuloa Stream near Honokohau--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.1	16	10.5	4.9	4.4	27	10.5	7.5	9.0	5.5	4.3	40
2	4.9	5.3	12.5	4.3	4.1	10.5	8.2	6.1	5.7	7.4	30.5	13.8
3	4.4	30	10.6	3.8	3.8	91	7.2	5.5	4.9	5.5	21	7.0
4	5.0	6.0	6.8	3.95	3.65	29.5	6.1	5.3	4.4	7.2	6.1	5.5
5	7.4	9.0	5.7	3.5	3.95	10.8	6.1	5.5	4.3	5.5	4.9	6.7
6	3.95	120	5.3	3.35	*25	22.5	5.7	5.1	44	4.7	*5.8	4.9
7	3.8	*100	4.9	3.35	52	35.5	5.5	8.6	14.6	4.4	17.7	12.2
8	4.0	10.0	4.4	3.15	48	12.0	5.7	5.1	6.1	5.2	17.5	6.3
9	4.8	8.8	4.3	3.15	29.5	18.6	6.1	4.7	5.1	4.7	9.8	8.4
10	14	5.7	4.1	3.15	11.0	22.5	5.3	4.4	6.2	8.1	8.0	5.3
11	4.8	4.9	4.1	4.0	9.2	64	5.1	4.4	5.5	7.9	22.5	4.4
12	4.0	6.9	3.95	3.65	6.5	12.5	5.1	4.3	4.9	4.9	7.0	35
13	10	5.1	4.1	4.8	5.1	12.5	4.9	4.1	4.9	6.9	5.9	7.5
14	12	4.4	5.1	3.35	5.1	10.5	4.9	4.1	4.4	6.1	9.3	5.3
15	4.0	17.6	3.95	3.15	4.9	9.8	4.9	4.4	4.4	6.5	28	4.9
16	3.9	4.9	3.8	3.15	4.4	18.0	4.7	4.1	4.7	7.3	39	4.9
17	10	4.1	9.4	3.95	4.9	8.0	4.7	4.1	4.3	6.1	28	*4.7
18	6.0	7.2	20.5	3.35	4.1	*9.8	6.4	4.1	4.4	5.1	21.5	4.3
19	18	6.1	7.4	3.15	4.4	9.7	5.1	3.95	5.9	4.4	43	4.1
20	13	4.9	4.4	2.85	3.8	43	5.5	3.95	4.3	4.1	33.5	3.95
21	12	5.3	4.1	33	25	39	4.9	3.95	4.1	9.1	9.8	3.8
22	5.5	4.9	3.8	14.5	111	30	4.4	3.8	4.3	4.4	7.2	3.8
23	9.0	4.9	4.1	23	65	11.1	12.6	3.95	13.4	4.1	6.1	5.7
24	5.2	131	9.5	30	112	8.5	20	9.5	13.1	4.1	5.7	4.3
25	3.9	16.6	4.9	8.1	48	10.3	6.3	9.3	5.1	7.8	6.2	8.2
26	9.0	8.4	3.95	5.1	24.5	9.0	5.1	8.8	4.3	10.9	6.5	7.8
27	7.0	6.1	3.65	4.4	12.7	7.2	4.9	18.5	11.0	30	4.9	17.2
28	4.8	13.6	5.5	3.95	10.5	21.5	26	35	5.7	27	6.5	6.5
29	4.5	35.5	9.0	19.6	9.0	13.2	*65	-	41	6.1	6.0	4.7
30	5.2	124	14.4	9.3	47	26	48	-------	14.1	4.9	5.9	4.1
31	36	18.2	-------	4.9	-------	15.1	16.3	-------	6.4	-------	10.2	-------
Total	244.15	745.4	198.70	227.85	702.50	668.6	331.2	192.10	274.5	225.9	438.3	255.25
Mean:												
mgd	7.88	24.0	6.62	7.35	23.4	21.6	10.7	6.86	8.85	7.53	14.1	8.51
cfs	12.2	37.1	10.2	11.4	36.2	33.4	16.6	10.6	13.7	11.7	21.8	13.2
Ac-ft	749	2,290	610	699	2,160	2,050	1,020	590	842	693	1,350	783

Calendar year 1957: Max 131 Min 2.85 Mean(mgd) 11.7 Mean(cfs) 18.1 Ac-ft 13,140
Fiscal year 1957-58: Max 131 Min 2.85 Mean(mgd) 12.3 Mean(cfs) 19.0 Ac-ft 13,840

Peak discharge (base, 400 mgd).--Aug. 24 (7 a.m.) 568 mgd (879 cfs), 6.55 ft; Aug. 30 (2:30 p.m.) 568 mgd (879 cfs), 6.55 ft; Nov. 22 (11:30 a.m.) 499 mgd (772 cfs), 6.26 ft; Dec. 3 (7:30 p.m.) 860 mgd (1,330 cfs), 7.82 ft.

* Discharge measurement made on this day.
Note.--No gage-height record July 7 to Aug. 7, May 5, 6; discharge estimated on basis of records for nearby streams.

6200. Honokohau Stream near Honokohau

Location.--Lat 20°57'48", long 156°35'22" (revised), on right bank 1,000 ft upstream from intake of Honokohau ditch and 5 miles southeast of Honokohau.

Drainage area.--4.09 sq mi (revised).

Records available.--March 1913 to September 1920, May 1922 to June 1958.

Gage.--Water-stage recorder and masonry control. Altitude of gage is 950 ft (by barometer).

Average discharge.--40 years (1916-20, 1922-58), 25.3 mgd (39.1 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 720 mgd (1,110 cfs) Oct. 17 (gage height, 5.38 ft), from rating curve extended above 120 mgd; minimum, 8.1 mgd (12.5 cfs) Apr. 3, 11, 12.

1957-58: Maximum discharge during fiscal year, 2,420 mgd (3,740 cfs) Aug. 30 (gage height, 8.39 ft), from rating curve extended above 120 mgd; minimum, 8.7 mgd (13.5 cfs) Aug. 13, 14.

1913-20, 1922-58: Maximum discharge, 2,420 mgd (3,740 cfs) Dec. 14, 1942, Aug. 30, 1957, from rating curve extended above 120 mgd; maximum gage height, 8.40 ft Dec. 14, 1942; minimum discharge, 5.4 mgd (8.4 cfs) May 1, 1945, Jan. 5, 1946.

Remarks.--Records good except those for period of doubtful gage-height record, which are fair.

Rating table; July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

1.9	7.3	3.5	147
2.2	17.1	4.0	250
2.5	34.5	4.5	395
2.9	67	5.0	570

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	19.6	22	20	15.8	19.6	45	11.6	9.8	9.3	8.7	84	9.3
2	26	18.1	18.1	14.0	14.4	13.2	11.0	14.3	9.0	8.4	64	9.3
3	28.5	72	17.6	14.0	14.6	12.3	10.7	15.5	9.0	8.4	26.5	9.5
4	18.1	141	17.6	18.0	14.0	12.3	11.3	89	9.0	84	113	9.3
5	17.6	70	22.5	14.0	13.2	12.0	11.0	111	17.3	18.0	48	9.3
6	19.2	20.5	17.1	13.2	13.6	14.2	11.3	93	12.3	9.3	15.7	9.3
7	23.5	27.5	16.3	17.3	14.0	21.5	13.4	35.5	9.5	8.7	12.6	9.3
8	18.1	19.1	16.3	44	12.9	12.3	13.8	26.5	9.5	9.7	11.6	9.3
9	16.7	18.6	16.7	47	12.6	12.0	22.5	24	9.3	11.6	11.0	9.3
10	18.2	18.3	16.3	15.9	12.6	11.6	22.5	15.2	9.0	9.0	11.0	9.3
11	19.7	19.3	15.9	14.0	14.8	11.3	16.6	36.5	14.3	8.1	18.1	10.8
12	19.1	65	15.5	13.6	21.5	11.3	10.7	28.5	13.2	8.4	14.0	10.4
13	30.5	89	15.5	66	16.6	11.3	10.4	13.4	13.7	82	10.7	11.2
14	44	80	15.2	121	30.5	13.8	10.4	11.0	38	67	10.1	9.5
15	24	23.5	15.2	*61	14.7	19.6	17.1	*12.2	33	22	10.1	15.8
16	20.5	102	23	56	12.6	46	13.5	10.7	13.5	11.0	10.4	14.4
17	21.5	237	15.9	160	13.7	43	10.7	10.1	14.8	9.5	10.1	17.1
18	109	43	14.8	19.3	15.2	30	11.4	17.9	26	16.7	10.7	18.4
19	32.5	23.5	14.8	15.2	15.2	26	12.5	10.7	10.4	56	10.4	13.2
20	*35.5	19.6	14.4	14.0	14.5	15.9	13.6	11.6	9.5	18.2	10.4	11.3
21	39.5	18.6	14.4	12.6	14.2	12.3	12.0	10.4	9.3	10.7	11.2	10.7
22	22.5	18.1	32.5	12.6	12.3	12.3	11.3	9.5	9.3	9.8	11.4	10.4
23	19.5	18.1	18.7	12.3	12.0	11.6	14.0	9.5	9.0	135	11.0	9.3
24	38.5	20.5	14.4	12.3	12.0	11.3	14.4	12.2	8.7	24.5	22	9.3
25	30.5	19.1	14.4	12.6	11.6	11.0	20	11.1	8.7	67	14.9	11.7
26	16.7	18.1	20.5	19.7	11.6	10.7	10.1	9.5	8.7	24	12.8	10.1
27	20.5	18.1	14.8	13.3	11.6	10.7	9.8	9.3	8.4	31	10.1	29.5
28	51	27	14.0	20	11.6	10.7	9.8	9.3	8.4	31	9.8	23
29	54	49	14.4	29	13.3	11.2	10.1	-	8.4	16.9	9.5	14.6
30	27	60	17.7	17.6	46	13.3	11.1	-------	20.5	81	9.5	10.7
31	82	43	-------	19.1	-------	28.5	9.8	-------	9.8	-------	9.5	-------
Total	963.5	1,438.6	514.5	934.4	467.0	538.2	398.4	677.2	398.8	905.6	644.1	364.6
Mean:												
mgd	31.1	46.4	17.2	30.1	15.6	17.4	12.9	24.2	12.9	30.2	20.8	12.2
cfs	48.1	71.8	25.6	46.6	24.1	26.9	20.0	37.4	20.0	46.7	32.2	18.9
Ac-ft	2,960	4,410	1,580	2,870	1,430	1,650	1,220	2,080	1,220	2,780	1,980	1,120

Calendar year 1956: Max 237 Min 10.1 Mean(mgd) 29.5 Mean(cfs) 45.6 Ac-ft 33,160
Fiscal year 1956-57: Max 237 Min 8.1 Mean(mgd) 22.6 Mean(cfs) 35.0 Ac-ft 25,300

Peak discharge (base, 700 mgd).--Oct. 17 (8:30 a.m.) 720 mgd (1,110 cfs), 5.38 ft.

* Discharge measurement made on this day.

6200. Honokohau Stream near Honokohau--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	13.8	36.5	15.6	15.5	12.8	44	22	19.6	20	15.2	12.0	93
2	19.2	14.7	42	12.9	11.0	15.5	18.1	17.1	16.7	27	76	36.5
3	16.4	71	26	11.6	11.0	113	16.7	15.9	14.4	15.9	20.5	16.9
4	32	16.1	15.5	11.6	10.7	28.5	16.3	15.9	14.0	21	14.5	22.5
5	60	26	13.6	11.3	10.4	15.5	18.1	15.9	15.0	14.8	12.6	21.5
6	13.1	213	12.6	11.0	51	35.5	16.3	15.2	85	13.2	33	16.2
7	10.4	191	12.0	11.0	101	46	15.9	15.5	28	19.3	52	32
8	11.3	30	11.6	10.7	49	19.4	15.9	14.8	14.4	16.1	66	31.5
9	14.6	*11.7	11.3	11.0	64	42	16.3	14.4	14.0	40	43	35
10	38.5	9.8	11.3	10.7	43	94	15.5	14.4	36.5	32.5	42	*19.8
11	14.3	9.0	11.3	11.3	33.5	177	15.2	14.4	16.4	17.5	53	14.8
12	10.7	9.5	11.3	11.3	22	36	15.2	14.4	14.4	14.8	19.5	94
13	29	9.0	13.2	10.7	12.3	37.5	15.2	14.0	18.1	21	17.9	15.6
14	35.5	17.5	12.6	11.3	11.0	30.5	15.2	14.4	14.0	19.2	29	14.0
15	11.0	54	12.0	11.1	10.7	35	*14.8	15.2	13.2	15.9	41	47
16	10.7	12.3	12.0	*11.0	10.7	77	14.4	14.0	12.9	18.4	35	17.5
17	29	11.3	13.7	13.6	10.4	31.5	14.4	14.0	12.9	20.5	22	13.8
18	16.4	18.7	22.5	11.0	10.4	33	18.2	14.0	13.2	14.4	20	12.6
19	46	24	15.4	11.0	10.1	29.5	15.5	13.2	14.4	13.8	31	12.0
20	34.5	12.3	12.9	11.0	9.8	137	15.5	15.5	12.9	19.1	31.5	11.6
21	31	15.2	12.6	31.5	44	114	14.8	14.9	12.6	14.7	14.4	11.3
22	15.5	12.3	12.3	17.8	84	106	14.4	13.2	14.0	12.3	12.9	11.3
23	24	21.5	12.6	21.5	49	32.5	21.5	14.0	22	11.6	12.9	21.5
24	14.0	436	23.5	21	94	23.5	27.5	19.2	17.9	12.3	12.9	12.9
25	10.5	43	14.4	12.6	64	34.5	15.2	21.5	12.9	12.6	29.5	34
26	24	24	12.6	11.0	47	31.5	14.4	32.5	35.5	14.6	18.3	45
27	20	12.6	12.3	10.7	23	19.6	14.4	49	56	32	12.6	45
28	12.6	80	26	10.4	15.9	64	60	66	17.7	24	13.6	26
29	12.2	99	44	64	16.3	27.5	134	-	125	12.6	12.6	12.6
30	14.1	213	41	20	98	58	177	-------	44	11.6	22	15.1
31	91	30	-------	30.5	-------	32.5	38.5	-------	16.3	-------	44	-------
Total	735.3	1,784.0	519.7	481.6	1,040.0	1,621.0	856.4	532.1	774.3	547.9	877.2	812.5
Mean:												
mgd	23.7	57.5	17.3	15.5	34.7	52.3	27.6	19.0	25.0	18.3	28.3	27.1
cfs	36.7	89.0	26.8	24.0	53.7	80.9	42.7	29.4	38.7	28.3	43.8	41.9
Ac-ft	2,260	5,470	1,590	1,480	3,190	4,970	2,630	1,630	2,380	1,680	2,690	2,490

Calendar year 1957: Max 436 Min 8.1 Mean(mgd) 26.2 Mean(cfs) 40.5 Ac-ft 29,360
Fiscal year 1957-58: Max 436 Min 9.0 Mean(mgd) 29.0 Mean(cfs) 44.9 Ac-ft 32,460

Peak discharge (base, 700 mgd).--Aug. 24 (7 a.m.) 1,480 mgd (2,290 cfs), 7.02 ft; Aug. 30 (2 p.m.) 2,420 mgd (3,740 cfs), 8.39 ft; Dec. 3 (8 p.m.) 720 mgd (1,110 cfs), 5.39 ft.

* Discharge measurement made on this day.

Note.--Doubtful gage-height record Aug. 31 to Oct. 14; discharge computed from reconstructed gage-height graph based on recorder graph, notes by engineer, and discharge measurements.

6290. Honokowai ditch near Lahaina

Location (revised). Lat 20°55'57", long 156°37'31", on left bank just downstream from intake on Kapaloa Stream, 5.4 miles northeast of Lahaina Lighthouse.

Records available.--July 1912 to January 1958, June 1958.

Gage.--Water-stage recorder. Altitude of gage is 1,600 ft, revised (from topographic map). Prior to Dec. 31, 1917, staff gage at site 0.5 mile downstream at different datum. Nov. 14, 1918, to May 27, 1921, water-stage recorder at site 1.5 miles downstream at different datum.

Average discharge.--38 years (1919-57), 5.92 mgd (9.16 cfs).

Extremes.--1912-58: Maximum daily discharge, 43 mgd (66 cfs) June 30, 1930; no flow at times.

Remarks.--Ditch diverts water for power and irrigation from Amalu and Kapaloa Streams just above station. Flow regulated by headgates at intake.

Cooperation.--Records of daily discharges since July 1932 furnished by Pioneer Mill Co.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.9	5.8	4.9	4.5	6.8	9.6	4.4	3.75	4.0	2.95	13.4	3.15
2	4.4	4.7	4.3	4.4	4.9	4.5	4.4	5.1	4.0	2.8	13.0	3.15
3	6.9	15.4	3.9	4.4	4.6	4.2	4.4	7.1	4.0	2.8	7.6	3.0
4	4.6	24	3.75	5.1	4.6	4.1	4.4	15.6	3.8	9.7	16.5	2.9
5	4.6	11.9	5.0	4.6	4.6	4.1	4.4	14.6	3.65	4.8	8.8	2.9
6	4.6	5.2	4.3	4.5	4.2	4.1	4.4	16.1	3.5	3.16	4.3	2.9
7	4.5	5.8	4.2	4.5	3.85	6.4	4.9	8.8	3.5	3.15	3.6	2.9
8	4.5	4.6	4.2	7.0	3.85	4.4	4.9	8.0	3.5	3.15	3.45	2.9
9	4.3	4.6	4.2	7.2	3.95	4.1	8.5	7.2	3.4	3.15	3.2	2.9
10	4.1	4.6	4.1	4.9	3.85	4.0	7.2	6.0	3.4	3.15	3.15	2.65
11	4.1	4.8	4.1	4.6	3.85	4.0	6.6	9.7	4.0	3.15	3.15	2.55
12	4.1	10.1	4.1	4.6	5.4	4.0	4.2	7.2	4.9	3.15	3.65	2.55
13	9.1	14.6	4.1	16.1	5.4	4.0	4.0	4.6	4.7	5.0	3.0	2.7
14	11.3	19.5	4.1	14.9	6.6	4.0	3.9	4.0	10.5	5.8	2.9	2.95
15	6.6	6.3	4.1	9.3	4.9	6.0	5.4	3.85	9.4	5.0	2.9	4.3
16	5.4	12.7	4.4	9.8	4.6	15.1	5.8	3.75	4.5	3.95	2.9	4.7
17	4.3	31.5	4.6	18.6	5.8	9.3	4.7	3.75	5.1	3.75	2.9	4.6
18	15.9	13.3	4.4	5.8	5.2	8.6	4.1	4.2	8.7	7.2	2.9	5.9
19	5.8	5.7	4.4	5.2	4.8	5.1	4.2	3.9	3.65	18.5	2.9	3.8
20	6.4	4.9	4.4	4.8	4.4	5.1	4.3	3.75	3.4	7.4	3.05	3.5
21	9.1	4.8	4.4	4.6	4.4	4.1	3.9	3.75	3.4	4.2	3.15	3.15
22	5.9	4.6	5.9	4.3	4.2	3.85	3.75	3.75	3.4	3.75	3.3	3.05
23	4.1	4.6	5.7	4.1	4.2	3.85	5.3	3.75	3.4	9.0	3.15	3.05
24	8.2	4.9	4.5	4.2	4.1	4.0	4.3	4.3	3.4	11.5	5.9	2.8
25	8.4	4.6	4.4	4.3	4.0	4.1	6.6	4.0	3.1	15.2	4.8	2.7
26	4.1	4.4	4.7	4.4	4.1	4.1	3.8	4.0	3.05	13.3	4.2	2.7
27	4.2	4.1	4.8	4.4	4.1	4.1	4.0	4.0	3.05	11.9	3.15	5.3
28	13.5	6.0	4.4	6.3	4.1	4.1	3.8	4.0	3.05	7.2	3.15	6.0
29	13.8	9.3	4.4	8.2	4.1	4.2	3.75	-	3.05	6.4	3.15	4.1
30	4.7	13.3	4.8	6.0	8.0	4.4	3.75	-------	4.2	16.2	3.15	3.15
31	12.8	9.4	-------	5.9	-------	4.4	3.75	-------	3.35	-------	3.15	-------
Total	209.2	280.0	133.55	201.5	141.35	159.90	145.80	172.50	132.05	200.35	147.50	102.90
Mean:												
mgd	6.75	9.03	4.45	6.50	4.71	5.16	4.70	6.16	4.26	6.68	4.76	3.43
cfs	10.4	14.0	6.89	10.1	7.29	7.98	7.27	9.53	6.59	10.3	7.36	5.31
Ac-ft	642	859	410	618	434	491	447	529	405	615	453	316

Calendar year 1956. Max 31.5 Min 2.6 Mean(mgd) 6.48 Mean(cfs) 10.0 Ac-ft 7,280
Fiscal year 1956-57: Max 31.5 Min 2.55 Mean(mgd) 5.55 Mean(cfs) 8.59 Ac-ft 6,220

6290. Honokowai ditch near Lahaina--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.1	9.0	4.4	3.6	4.1	11.1	5.5					12.0
2	6.0	5.7	5.5	3.4	3.25	4.4	4.8					6.5
3	5.2	13.2	5.0	3.7	3.15	11.5	4.4					5.6
4	11.9	4.5	4.2	3.15	3.0	7.2	4.4					6.7
5	13.2	5.9	3.85	3.15	2.9	3.95	4.4					6.7
6	4.6	21.5	3.75	3.15	5.8	6.2	4.3					5.3
7	3.35	18.5	3.75	2.75	16.8	10.2	4.2					7.9
8	3.25	10.2	3.75	2.55	5.5	5.6	4.0					9.0
9	3.4	4.5	3.7	2.55	11.5	8.6	4.0					8.8
10	8.5	3.75	3.65	2.55	13.2	16.0	4.0					5.8
11	3.4	3.35	3.65	2.55	10.3	11.3	4.0					6.3
12	3.4	3.15	3.65	2.55	6.0	7.5	4.0					18.7
13	4.9	3.15	3.65	2.55	3.7	7.5	3.8					5.0
14	7.0	5.2	3.65	2.55	3.55	7.0	3.75					4.4
15	3.2	10.4	3.65	2.55	3.5	6.5	3.75					10.7
16	3.15	3.65	3.55	2.55	3.35	7.2	3.75					5.8
17	6.5	3.3	3.5	2.55	3.15	5.8	3.85					4.6
18	4.2	5.0	3.5	2.55	3.15	6.0	3.85					4.5
19	14.5	7.3	3.5	2.55	3.15	6.0	3.85					4.4
20	9.6	3.5	3.5	2.55	3.15	6.5	3.8					4.4
21	6.6	4.4	3.5	2.95	8.5	6.5	3.75					4.3
22	3.25	3.65	3.5	2.75	9.0	6.5	3.75					4.1
23	4.7	4.9	3.45	2.7	6.9	6.2	4.9					6.4
24	3.85	15.0	5.0	2.7	10.0	5.9	5.6					4.3
25	3.0	5.0	4.0	2.7	10.4	6.4	3.9					11.2
26	4.9	6.5	3.75	2.7	11.3	6.4	3.75					13.1
27	5.9	5.1	3.95	2.7	6.0	6.0	3.4					12.8
28	3.85	13.4	5.9	2.75	4.5	6.0	3.4					8.2
29	3.5	12.7	6.8	10.5	3.9	6.2	15.5					4.2
30	4.5	9.6	7.7	5.3	18.1	5.9	17.2					4.2
31	14.8	5.3	-------	10.1	-------	6.0	8.0					-------
Total	182.20	230.30	124.90	103.90	200.80	224.05	155.55	-	-	-	-	215.9
Mean:												
mgd	5.88	7.43	4.16	3.35	6.69	7.23	5.02	-	-	-	-	7.20
cfs	9.10	11.5	6.44	5.18	10.4	11.2	7.77	-	-	-	-	11.1
Ac-ft	559	707	383	319	616	688	477	-	-	-	-	663

Calendar year 1957. Max 21.5 Min 2.55 Mean(mgd) 5.39 Mean(cfs) 8.34 Ac-ft 6,040
Fiscal year 1957-58: Max - Min - Mean(mgd) - Mean(cfs) - Ac-ft -

6460. Olowalu ditch near Olowalu

Location.--Lat 20°49'30", long 156°36'50", on left bank 40 ft upstream from intake of pipeline to hydroelectric plant, 1.2 miles northeast of Olowalu, and 5.5 miles southeast of Lahaina.

Records available.--August 1911 to June 1958.

Gage.--Water-stage recorder and Parshall flume. Prior to June 30, 1916, staff gage in tailrace of powerhouse 1,000 ft downstream at different datum. July 28, 1916, to June 8, 1919, staff gage and June 9, 1919, to June 21, 1932, water-stage recorder, at site 300 ft upstream at different datum. July 1, 1932, to Oct. 7, 1933, records obtained by combining flows of three stations about 1,000 ft downstream.

Average discharge.--39 years (1917-20, 1921-57), 4.92 mgd (7.61 cfs).

Extremes.--1911-58: Maximum daily discharge, 13.7 mgd (21.2 cfs) Apr. 17, 1935; no flow at times.

Remarks.--Ditch diverts water from Olowalu Stream at altitude of about 450 ft for power and irrigation. Regulated by headgates.

Cooperation.--Records of daily discharges since January 1932 furnished by Pioneer Mill Co.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	6.1	8.1	5.4	2.85	2.9	7.7	2.85	2.8	3.25	2.5	10.4	2.5
2	5.6	6.4	5.0	2.8	2.8	3.95	2.65	2.8	3.15	2.4	10.4	2.4
3	5.7	7.3	4.7	2.8	2.7	3.85	2.65	3.0	3.1	2.45	9.8	2.4
4	5.0	9.4	4.6	2.85	2.65	4.1	2.55	6.3	3.05	3.65	10.5	2.4
5	4.8	9.2	4.7	2.75	2.6	3.6	2.5	9.5	3.1	2.85	10.2	2.4
6	4.7	8.7	4.2	2.65	2.6	3.8	2.4	10.7	2.95	2.5	9.5	2.35
7	4.8	8.4	4.0	2.65	2.55	4.2	2.4	10.1	2.8	2.45	7.5	2.35
8	4.4	7.8	3.95	2.7	2.45	3.35	2.35	9.8	2.75	2.4	6.0	2.3
9	4.3	6.8	3.95	3.1	2.35	3.1	2.65	9.5	2.7	2.4	5.1	2.3
10	4.2	5.8	3.8	2.75	2.3	3.0	3.05	8.1	2.7	2.3	4.7	2.25
11	4.1	5.4	3.7	2.7	2.35	2.9	2.55	8.8	2.9	2.25	4.6	2.55
12	4.0	7.0	3.65	2.55	2.4	2.8	2.35	9.0	2.85	2.2	4.2	2.5
13	4.4	8.8	3.65	5.3	2.4	2.75	2.35	7.2	2.95	2.45	3.95	2.3
14	5.4	9.0	3.6	7.7	2.5	2.85	2.4	6.0	4.2	2.85	3.65	2.2
15	4.7	8.6	3.55	7.9	2.2	3.05	5.3	5.4	4.2	4.7	3.45	2.3
16	4.2	8.9	3.7	6.1	1.87	5.8	6.9	4.8	3.4	3.15	3.35	2.35
17	4.2	9.0	3.35	8.4	2.05	4.8	6.3	4.5	3.2	2.55	3.15	2.4
18	7.5	6.6	3.3	7.7	2.45	6.8	3.95	4.3	3.7	3.15	3.05	2.85
19	7.9	6.0	3.2	5.8	2.7	4.8	3.8	4.0	3.05	6.2	3.0	2.4
20	7.2	5.6	3.15	4.7	2.15	4.3	3.7	5.0	2.9	4.4	2.95	2.25
21	6.8	5.0	3.1	4.1	2.1	3.6	4.0	4.1	2.8	3.2	3.25	2.15
22	6.4	4.6	3.85	3.8	1.94	3.35	4.4	3.75	2.9	2.85	3.0	2.1
23	5.3	4.4	3.4	3.55	1.91	3.1	8.7	3.75	2.7	7.8	2.9	2.05
24	5.7	4.0	3.15	3.3	1.87	2.95	7.0	4.4	2.6	7.1	3.2	2.1
25	6.2	3.9	3.05	3.2	1.85	2.85	7.4	3.5	2.55	9.2	3.0	2.3
26	5.0	3.8	3.35	3.25	2.0	2.75	6.2	3.05	2.45	6.4	3.05	2.15
27	5.0	3.7	3.1	3.05	1.95	2.7	4.6	2.9	2.4	6.0	2.85	2.5
28	7.6	4.2	3.0	3.15	1.91	2.65	3.25	3.1	2.35	7.8	2.65	2.75
29	8.9	5.8	2.9	3.45	5.6	2.7	3.6	-	2.35	6.5	2.6	2.6
30	7.4	8.2	2.9	3.35	6.4	3.45	3.2	-------	3.6	9.7	2.55	2.35
31	8.3	6.5	-------	2.9	-------	4.1	2.9	-------	2.65	-------	2.5	-------
Total	175.8	206.9	110.95	123.85	76.50	115.70	120.90	160.15	92.25	126.35	151.00	70.80
Mean:												
mgd	5.67	6.67	3.70	4.00	2.55	3.73	3.90	5.72	2.98	4.21	4.87	2.36
cfs	8.77	10.3	5.72	6.19	3.95	5.77	6.03	8.85	4.61	6.51	7.54	3.65
Ac-ft	540	635	340	380	235	355	371	491	283	388	463	217

Calendar year 1956 : Max 10.9 Min 1.85 Mean(mgd) 5.70 Mean(cfs) 8.82 Ac-ft 6,400
Fiscal year 1956-57 : Max 10.7 Min 1.85 Mean(mgd) 4.19 Mean(cfs) 6.48 Ac-ft 4,700

6460. Olowalu ditch near Olowalu--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.5	6.6	8.5	4.0	3.05	8.4	9.4					7.8
2	2.65	4.8	8.6	3.75	2.85	7.5	8.9					11.8
3	2.75	8.2	8.7	3.6	2.75	8.3	8.1					9.5
4	4.7	5.5	8.5	3.45	2.65	8.5	7.6					7.0
5	4.7	4.9	8.0	3.35	2.6	8.5	7.3					7.0
6	3.55	10.2	7.2	3.3	3.6	7.5	6.7					5.7
7	2.95	8.8	6.7	3.2	8.6	9.1	6.4					7.6
8	2.85	7.8	6.2	3.1	6.5	9.0	6.2					5.7
9	2.7	7.6	5.8	3.05	8.5	8.8	6.0					9.7
10	6.1	6.5	5.5	3.0	6.9	9.2	5.7					6.9
11	3.5	5.8	5.3	3.1	7.4	11.2	5.5					5.8
12	2.9	5.4	5.1	2.95	5.5	10.2	5.4					9.3
13	3.1	4.8	5.0	2.9	4.4	9.8	5.2					10.3
14	4.0	4.7	4.8	2.85	3.85	9.6	5.1					7.4
15	3.1	6.4	4.6	2.8	3.6	9.6	4.9					6.0
16	2.7	4.5	4.5	2.8	3.4	10.2	4.8					6.7
17	2.8	4.1	4.5	2.8	3.15	9.8	4.6					5.6
18	2.7	4.1	4.8	2.7	3.05	9.6	5.2					5.0
19	4.7	4.5	4.3	2.65	2.95	9.4	4.6					4.6
20	5.0	3.95	4.2	2.65	2.9	10.3	4.5					4.2
21	5.2	3.7	4.0	2.7	3.35	10.7	4.3					4.0
22	3.65	3.55	3.9	2.7	6.1	10.8	4.3					3.9
23	3.5	3.55	3.85	2.95	8.2	10.2	4.2					4.6
24	3.0	8.6	4.8	3.0	8.3	9.8	4.1					4.0
25	2.7	8.5	3.75	2.7	8.4	9.7	3.95					5.6
26	2.9	8.3	3.55	2.6	8.4	9.6	3.9					5.4
27	2.55	8.2	4.0	2.55	8.3	9.5	3.75					10.2
28	2.4	8.5	4.1	2.5	7.0	9.7	4.0					8.0
29	2.35	8.9	4.5	4.6	5.7	9.7	10.7					5.7
30	2.4	8.6	5.9	4.7	7.1	9.6	11.1					5.1
31	7.9	8.6	-------	3.45	-------	9.5	10.7					-------
Total	108.50	198.15	163.15	96.45	159.05	293.3	187.10	-	-	-	-	200.1
Mean:												
mgd	3.50	6.39	5.44	3.11	5.30	9.46	6.04	-	-	-	-	6.67
cfs	5.42	9.89	8.42	4.81	8.20	14.6	9.35	-	-	-	-	10.3
Ac-ft	333	608	501	296	488	900	574	-	-	-	-	614

Calendar year 1957 : Max 11.2 Min 2.05 Mean(mgd) 4.77 Mean(cfs) 7.38 Ac-ft 5,340
Fiscal year 1957-58 : Max - Min - Mean(mgd) - Mean(cfs) - Ac-ft -

Note.--No record Feb. 1 to May 31; data not available to estimate discharge.

7000. Waiakea Stream at middle flume house, near Mountain View

Location.--Lat 19°38'25", long 155°10'35", on left bank at middle flume house, 800 ft upstream from Olaa Sugar Co.'s main flume and 7.5 miles northwest of Mountain View.

Records available.--September 1930 to June 1958.

Gage.--Water-stage recorder and combined Parshall flume and concrete weir. Altitude of gage is 1,820 ft (by barometer).

Average discharge.--27 years (1931-58), 7.44 mgd (11.5 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 162 mgd (251 cfs) Aug. 17 (gage height, 4.38 ft), from rating curve extended above 40 mgd as explained below; minimum, 0.69 mgd (1.07 cfs) Apr. 11-13.

1957-58: Maximum discharge during fiscal year, 82 mgd (127 cfs) Aug. 24 (gage height, 3.72 ft), from rating curve extended above 40 mgd as explained below; minimum, 0.62 mgd (0.96 cfs) Mar. 26.

1930-58: Maximum discharge, 166 mgd (257 cfs) Mar. 14, 1942 (gage height, 4.43 ft), from rating curve extended above 40 mgd on basis of weir formulas; no flow at times.

Remarks.--Records good. Large part of flow comes from three tunnels.

Rating table, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

0.25	0.62	2.0	14.5
.4	1.25	2.5	22.5
.6	2.35	3.0	39
1.0	5.1	3.5	65
1.5	9.4		

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	7.2	3.1	18.4	2.45	18.4	9.4	3.2	8.5	3.6	1.35	22.5	3.3
2	6.7	2.95	18.4	2.3	18.4	9.0	2.65	8.5	3.3	1.25	19.3	3.2
3	6.3	3.3	17.7	2.1	17.7	8.0	2.55	8.5	3.1	1.16	17.7	2.95
4	5.9	16.4	16.4	1.99	17.0	7.2	2.4	11.2	2.9	1.12	16.4	2.8
5	5.5	17.7	15.1	2.6	20	6.7	2.45	10.3	2.65	1.07	16.4	2.6
6	5.1	15.7	12.8	2.2	17.0	6.7	3.45	15.2	2.45	.98	15.1	2.4
7	4.8	15.7	11.8	2.05	15.7	*5.9	3.55	15.1	2.3	.94	*14.0	2.3
8	4.5	16.4	10.8	1.93	14.0	5.5	4.8	16.4	2.15	.89	12.8	2.1
9	4.2	15.7	9.8	1.82	12.8	4.8	4.9	15.7	1.99	.84	12.8	1.99
10	4.3	17.0	9.0	1.76	12.3	4.4	4.9	15.7	1.82	.76	12.8	1.71
11	4.2	15.1	8.0	1.71	12.8	4.1	4.6	15.1	1.61	.73	14.1	1.56
12	3.65	16.8	7.6	1.61	19.4	3.95	4.3	15.1	1.50	.73	14.0	1.40
13	3.5	22.5	7.2	*1.61	17.0	3.8	4.2	14.0	1.45	3.95	12.8	1.25
14	3.75	25	6.7	2.65	17.7	4.7	4.3	12.8	2.75	3.85	12.3	1.16
15	3.5	22.5	5.9	7.8	17.0	4.7	4.2	11.8	4.2	2.85	11.3	1.40
16	3.1	27.5	5.5	6.3	16.4	4.4	4.1	10.8	2.8	2.78	10.3	1.20
17	3.65	58	5.1	5.9	16.4	4.8	3.9	10.3	3.05	3.6	9.8	1.16
18	10.1	43	4.8	5.9	30	5.5	3.75	9.4	3.1	3.7	9.0	1.12
19	7.2	41	4.5	5.5	33	5.1	5.4	8.5	2.7	10.3	8.5	1.12
20	5.9	35	4.2	5.5	30	4.6	8.5	8.0	2.6	9.4	7.6	1.60
21	5.5	25	4.0	5.5	30	4.2	6.3	7.2	2.4	8.5	7.2	1.81
22	5.1	19.3	3.8	5.1	25	4.3	5.5	6.7	2.55	8.0	6.7	1.50
23	4.6	16.4	3.5	5.1	20	3.9	5.1	5.9	2.35	15.6	6.3	1.20
24	*4.2	15.4	3.3	4.9	17.7	4.4	4.9	5.5	2.15	15.7	5.9	1.12
25	3.95	12.3	3.2	5.5	16.4	3.8	4.7	5.1	1.99	21.5	5.5	1.20
26	3.75	10.8	2.95	9.9	14.5	3.65	4.5	4.8	*1.88	30	5.0	1.16
27	3.45	10.3	2.8	8.5	12.8	3.4	4.3	4.3	1.76	31.5	4.7	.98
28	4.0	9.4	2.65	9.4	11.8	3.25	4.3	4.0	1.61	31.5	4.5	1.07
29	3.6	8.5	2.7	9.8	10.8	2.95	*7.6	-	1.50	30	4.1	1.30
30	3.3	15.6	2.65	15.8	9.8	2.8	9.8	-------	1.40	26.5	3.9	1.12
31	3.25	20	-------	19.3	-------	3.35	8.5	-------	1.35	-------	3.6	-------
Total	147.75	593.35	231.25	164.48	541.8	153.25	147.60	284.4	72.96	271.05	326.9	50.78
Mean:												
mgd	4.77	19.1	7.71	5.30	18.1	4.94	4.76	10.2	2.35	9.04	10.5	1.69
cfs	7.38	29.6	11.9	8.20	28.0	7.64	7.36	15.8	3.64	14.0	16.2	2.61
Ac-ft	453	1,820	710	505	1,660	470	453	873	224	832	1,000	156

Calendar year 1956. Max 58 Min 1.61 Mean(mgd) 11.2 Mean(cfs) 17.3 Ac-ft 12,550
Fiscal year 1956-57: Max 58 Min 0.73 Mean(mgd) 8.18 Mean(cfs) 12.7 Ac-ft 9,160

Peak discharge (base, 50 mgd).--July 18 (5 p.m.) 96 mgd (149 cfs), 3.86 ft; Aug. 17 (3:30 p.m.) 162 mgd (251 cfs), 4.38 ft; Nov. 5 (4 p.m.) 62 mgd (96 cfs), 3.47 ft; Nov. 18 (12 m.) 62 mgd (96 cfs), 3.45 ft.

* Discharge measurement made on this day.

7000. Waiakea Stream at middle flume house, near Mountain View--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.02	12.3	28	2.53	7.6	12.8	16.4	4.2	1.30	12.3	4.6	7.9
2	1.56	12.3	31.5	2.35	6.7	11.8	15.1	3.5	1.20	12.8	4.5	8.5
3	1.35	13.4	26.5	2.17	6.3	12.8	14.0	3.2	1.12	12.8	5.6	9.0
4	2.2	12.8	22.5	2.05	6.3	12.3	12.3	2.95	1.07	12.8	5.9	8.5
5	6.2	12.8	19.3	1.88	5.5	15.2	11.3	2.8	1.02	12.3	5.1	8.5
6	5.1	15.1	17.0	1.71	5.1	14.0	10.8	2.55	1.07	11.8	5.1	8.0
7	4.3	20.5	15.7	1.56	5.1	13.4	9.8	2.35	1.96	12.3	5.5	8.0
8	3.8	20	14.0	1.45	6.2	12.8	9.0	2.15	1.88	12.8	6.7	7.6
9	3.6	20	12.3	1.35	7.2	12.3	8.0	1.99	2.5	12.3	7.6	7.6
10	3.6	19.3	11.3	1.40	8.0	12.3	7.6	1.82	*2.05	12.3	7.6	7.2
11	3.2	18.4	10.3	1.88	8.5	15.7	6.7	1.66	1.88	12.8	9.9	6.7
12	3.0	17.7	9.4	1.50	8.0	15.1	6.3	1.61	1.71	12.8	10.8	7.2
13	3.35	16.4	9.0	1.20	7.6	14.0	5.9	1.50	1.61	11.8	*10.3	6.7
14	3.5	14.5	8.0	1.07	*7.2	13.4	5.5	1.45	1.50	11.3	11.3	6.7
15	3.2	14.0	7.2	1.02	6.7	12.8	4.8	1.40	1.40	10.8	11.3	8.1
16	3.2	12.3	6.7	.94	6.7	15.7	4.5	1.35	1.35	10.8	11.3	7.6
17	*3.4	11.8	*6.3	.89	6.7	14.8	4.1	1.30	1.25	9.8	11.3	6.7
18	3.5	11.3	5.9	.84	9.2	17.8	3.9	1.20	1.20	9.4	11.8	6.3
19	4.0	10.8	5.5	1.63	8.5	16.4	3.5	1.12	1.07	8.5	11.8	5.9
20	5.9	10.3	4.9	1.02	8.5	17.7	3.3	1.02	1.02	8.0	11.8	5.1
21	7.6	9.4	4.5	2.15	7.6	19.3	3.1	.98	.94	7.6	11.3	4.9
22	8.0	9.0	4.2	25	10.3	28	2.9	.89	.89	7.2	10.8	4.7
23	7.6	16.6	3.8	16.4	9.4	26.5	2.8	.80	.89	6.7	10.3	4.4
24	7.6	39	3.6	13.4	9.8	26.5	*2.7	.76	.80	6.3	9.4	4.2
25	8.0	35	3.3	11.8	9.8	26.5	2.4	.69	.73	5.9	9.4	4.1
26	9.0	33	3.05	11.3	9.8	25	2.2	1.30	1.55	5.5	9.6	4.0
27	9.0	30	2.9	10.8	9.8	22.5	2.1	3.0	11.7	5.9	8.5	5.0
28	9.0	24	2.85	9.8	9.4	20	1.93	1.40	7.2	5.9	8.0	4.5
29	9.0	31	2.65	9.0	9.0	19.3	1.91	-	8.9	5.5	7.6	4.1
30	9.4	37.5	3.4	8.5	10.1	18.4	5.8	-------	14.2	4.9	7.2	4.0
31	12.3	33	-------	8.0	-------	17.0	6.5	-------	12.3	-------	6.7	-------
Total	165.48	593.5	305.55	156.59	236.6	532.1	197.14	50.94	89.26	291.9	268.6	191.7
Mean:												
mgd	5.34	19.1	10.2	5.05	7.89	17.2	6.36	1.82	2.88	9.73	8.66	6.39
cfs	8.26	29.6	15.8	7.81	12.2	26.6	9.84	2.82	4.46	15.1	13.4	9.89
Ac-ft	508	1,820	938	481	726	1,630	605	156	274	896	824	588

Calendar year 1957. Max 39 Min 0.73 Mean(mgd) 8.61 Mean(cfs) 13.3 Ac-ft 9,640
Fiscal year 1957-58: Max 39 Min 0.69 Mean(mgd) 8.44 Mean(cfs) 13.1 Ac-ft 9,450

Peak discharge (base, 50 mgd).--Aug. 24 (2:30 a.m.) 82 mgd (127 cfs), 3.72 ft; Aug. 30 (10:30 p.m.) 73 mgd (113 cfs), 3.60 ft; Oct. 22 (7:30 p.m.) 78 mgd (121 cfs), 3.67 ft.

* Discharge measurement made on this day.

7040. Wailuku River above Hilo Boarding School ditch intake, near Hilo

Location.--Lat 19°42'55", long 155°09'10", on left bank 1,000 ft upstream from intake of Hilo Boarding School ditch, 0.8 mile west of reservoir 1, and 4 miles west of Hilo.

Drainage area.--125 sq mi.

Records available.--July 1928 to June 1958.

Gage.--Water-stage recorder. Altitude of gage is 1,060 ft (by barometer).

Average discharge.--27 years (1929-40, 1941-47, 1948-58), 176 mgd (272 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 24,900 mgd (38,500 cfs) Aug. 17 (gage height, 24.17 ft), from rating curve extended above 3,400 mgd by logarithmic plotting; minimum, 1.48 mgd (2.29 cfs) Apr. 12.

1957-58: Maximum discharge during fiscal year, 18,000 mgd (27,900 cfs) Aug. 24 (gage height, 21.76 ft), from rating curve extended above 3,400 mgd by logarithmic plotting; minimum, 2.2 mgd (3.4 cfs) Feb. 24.

1928-58: Maximum discharge, 41,000 mgd (63,400 cfs) Aug. 11, 1940 (gage height, 28.6 ft, from floodmarks), from rating curve extended above 3,400 mgd by logarithmic plotting; minimum, 0.16 mgd (0.25 cfs) Mar. 9, 1941.

Remarks.--Records good. Hilo Water Works diverts about 1 mgd above station for domestic supply, and water passing station is used for power by Hilo Electric Light Co.

Revisions (fiscal years).--WSP 865: 1929-36(M). WSP 965: 1941.

Rating tables, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)
(Shifting-control method used May 4 to July 25, 1957)

July 1 to Aug. 16, 1956				Aug. 17, 1956, to June 30, 1958			
2.0	15.0	7.0	570	1.17	1.48	6.0	414
2.5	34.5	9.0	1,140	1.3	2.8	7.0	610
3.0	60	11.0	2,020	1.5	6.1	9.0	1,190
4.0	137	13.0	3,510	2.0	19.7	11.0	2,130
5.0	245			2.5	41	13.0	3,510
				3.0	70	15.0	5,560
				4.0	153	17.1	8,460
				5.0	267		

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	54	51	316	23.5	536	46	39	153	25.5	13.3	525	11.1
2	49	37	194	19.4	288	44	27	169	19.4	10.4	352	9.9
3	37	61	133	16.0	189	39	23	107	16.3	7.2	322	9.9
4	34.5	2,160	107	42	133	34	21	264	16.0	6.1	205	18.6
5	30	2,050	91	64	188	29.5	20.5	264	14.5	5.6	264	16.6
6	29	438	70	22	163	63	247	526	13.0	4.3	183	12.0
7	26.5	354	58	16.6	107	47	411	564	11.4	3.5	133	9.4
8	24	244	58	14.5	80	31.5	280	678	10.4	2.8	115	8.0
9	22	155	49	12.8	67	27.5	221	433	9.4	2.3	91	6.9
10	26	233	52	11.7	61	25.5	153	229	8.4	1.91	157	5.9
11	44	431	51	10.9	196	25.5	143	173	7.4	1.63	234	4.1
12	28	405	39	*13.6	830	28.5	95	133	6.5	1.48	301	3.5
13	22.5	1,090	34	13.0	680	44	67	115	5.7	116	153	2.55
14	25.5	1,230	36.5	43	450	123	61	99	30	198	107	2.2
15	29.5	518	36.5	438	274	103	52	77	127	124	77	18.9
16	22	975	31.5	173	192	124	44	64	70	67	61	37.5
17	18.0	7,400	29.5	110	277	115	39	55	41	63	52	17.0
18	28	870	24.5	201	2,420	182	31.5	46	39	103	46	15.4
19	49	507	22	90	1,820	91	173	41	27.5	1,950	39	12.5
20	25	337	19.7	58	604	77	525	36.5	20	564	34	12.2
21	43	241	18.0	49	449	64	133	34	17.0	294	29.5	28
22	39	173	17.3	88	322	70	88	29.5	15.1	270	26	22.5
23	*28	133	18.0	61	229	52	67	27.5	21	1,430	23.5	12.5
24	21.5	115	16.0	55	173	64	55	25	17.3	1,180	21.5	9.2
25	19.4	99	14.5	61	133	46	46	22.5	*17.7	2,470	19.0	8.9
26	16.8	77	13.6	208	103	39	39	20.5	13.9	2,020	17.3	7.6
27	15.0	67	13.0	160	84	34	34	26.5	11.7	699	16.0	5.6
28	46	64	12.5	216	74	29.5	*32.5	29.5	10.6	431	19.0	5.2
29	46	52	27.5	286	61	26.5	400	-	9.6	352	18.0	10.1
30	34.5	615	42	1,270	52	29.5	*756	-------	13.3	618	15.4	8.2
31	52	1,020	-------	1,580	-------	39	236	-------	15.7	-------	12.8	-------
Total	984.7	22,202	1,644.6	5,427.0	11,235	1,793.5	4,559.5	4,441.5	681.3	13,009.52	3,669.0	351.95
Mean:												
mgd	31.8	716	54.8	175	374	57.9	147	159	22.0	434	118	11.7
cfs	49.2	1,110	84.8	271	579	89.6	227	246	34.0	671	183	18.1
Ac-ft	3,020	68,140	5,050	16,650	34,480	5,500	13,990	13,630	2,090	39,920	11,260	1,080

Calendar year 1956. Max 7,400 Min 10.9 Mean(mgd) 264 Mean(cfs) 408 Ac-ft 296,700
Fiscal year 1956-57: Max 7,400 Min 1.48 Mean(mgd) 192 Mean(cfs) 297 Ac-ft 214,800

Peak discharge (base, 5,600 mgd).--Aug. 4 (11 p.m.) 6,420 mgd (9,930 cfs), 15.74 ft; Aug. 17 (6 a.m.) 24,900 mgd (38,500 cfs), 24.17 ft; Nov. 18 (1 p.m.) 5,920 mgd (9,160 cfs), 15.30 ft.

* Discharge measurement made on this day.

7040. Wailuku River above Hilo Boarding School ditch intake, near Hilo--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	5.2	337	460	27.5	55	877	183	67	27	194	31.5	60
2	8.6	243	1,760	18.0	44	311	143	41	19.4	115	31.5	173
3	8.2	716	751	14.2	55	593	115	29.5	14.8	84	60	124
4	33.5	254	382	13.3	52	267	91	24	12.8	109	111	91
5	194	173	267	12.5	39	747	77	19.4	13.6	173	55	84
6	90	1,300	194	10.9	31.5	333	64	17.3	23.5	205	67	73
7	49	1,270	153	9.4	57	217	52	19.0	40	241	73	115
8	39	1,050	143	8.2	121	143	46	24	20	267	115	74
9	44	462	103	7.6	230	107	41	27.5	30	270	133	64
10	46	294	84	7.0	224	133	36.5	17.7	25.5	231	133	52
11	31.5	332	70	19.7	252	572	31.5	14.2	16.0	217	282	46
12	23.5	358	61	18.7	163	424	29.5	12.5	*13.3	173	280	55
13	40	205	55	12.5	115	229	27	11.1	12.0	124	276	49
14	141	163	46	8.7	107	163	24.5	9.9	10.1	91	173	60
15	39	277	39	6.5	107	133	22.5	8.9	8.0	91	115	76
16	29.5	163	36.5	5.9	95	578	21	8.2	7.2	95	99	77
17	44	115	*31.5	5.2	107	796	18.7	7.6	6.5	80	107	73
18	29.5	115	*29.5	4.8	170	1,870	16.6	6.9	7.8	67	228	55
19	84	115	27.5	232	139	431	16.3	6.1	6.5	52	203	44
20	132	103	25.5	48	91	471	15.1	5.0	*5.0	52	133	36.5
21	290	80	23.5	34	70	923	14.2	4.5	3.95	49	99	31.5
22	153	67	21.5	1,390	155	2,420	12.2	3.8	3.35	44	77	27.5
23	183	798	19.0	1,210	411	835	*12.1	3.25	3.65	39	61	24
24	173	8,360	18.0	495	287	545	11.1	2.8	6.1	36.5	52	22.5
25	*183	1,220	16.6	276	183	714	9.9	2.8	4.3	34	58	30
26	502	608	14.8	143	133	860	8.0	12.6	99	31.5	70	57
27	202	382	13.9	99	103	838	6.5	428	2,140	44	58	84
28	180	308	14.8	70	80	398	7.8	43	475	70	64	77
29	133	911	19.0	61	64	337	7.6	-	495	67	52	44
30	173	*1,790	50	70	206	294	213	-------	906	41	44	41
31	658	1,140	-------	52	-------	254	159	-------	370	-------	39	-------
Total	3,941.5	23,709	4,929.6	4,390.6	3,946.5	17,813	1,532.6	877.55	4,825.35	3,387.0	3,380.0	1,920.0
Mean:												
mgd	127	765	164	142	132	575	49.4	31.3	156	113	109	64.0
cfs	196	1,180	254	220	204	890	76.4	48.4	241	175	169	99.0
Ac-ft	12,100	72,760	15,130	13,470	12,110	54,670	4,700	2,690	14,810	10,390	10,370	5,890

Calendar year 1957. Max 8,360 Min 1.48 Mean(mgd) 234 Mean(cfs) 362 Ac-ft 262,200
Fiscal year 1957-58: Max 8,360 Min 2.8 Mean(mgd) 205 Mean(cfs) 317 Ac-ft 229,100

Peak discharge (base, 5,600 mgd).--Aug. 24 (2 a.m.) 18,000 mgd (27,900 cfs), 21.76 ft.

* Discharge measurement made on this day.

7070. Kapehu ditch diversion near Hilo

Location.--Lat 19°43'45", long 155°11'05", on left bank 40 ft downstream from gate on Kapehu ditch, 3.1 miles northwest of Piihonua, and 6.2 miles west of Hilo.

Records available.--May 1954 to June 1958.

Gage.--Water-stage recorder and de Fabritis type-H flume.

Extremes.--1954-58: Maximum daily discharge, 11.0 mgd (17.0 cfs) Apr. 25, 1957; no flow at times.

Remarks.--Records good except those for periods of no gage-height record, which are poor. Ditch diverts water from Kapehu ditch for fluming of sugarcane near Hilo.

Revisions (fiscal years).--WSP 1449: 1954-55.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.85	2.3	0.38	1.88	2.35	0.02	0.01	0.01	0.03	1.68	9.9	0.02
2	2.85	2.25	.36	1.80	2.05	.02	.01	.01	.03	1.60	9.9	.02
3	2.85	2.55	.26	1.76	1.88	.02	.01	.01	.03	1.52	9.9	.02
4	2.85	5.6	.21	2.2	1.80	.02	.03	.01	.03	1.48	9.4	.02
5	2.85	5.0	.22	1.80	2.1	.02	.10	.01	.03	1.45	9.4	.02
6	2.8	3.1	.21	1.72	1.76	.03	.02	.01	.02	1.42	9.4	.02
7	2.75	3.5	.23	1.72	1.72	.02	.01	.01	.03	1.38	5.3	.02
8	2.7	2.8	.26	1.68	1.72	.01	.01	.01	.03	1.34	1.73	.02
9	2.65	2.6	.26	1.64	1.72	.01	.01	.01	.03	1.34	1.08	.01
10	2.65	3.15	.27	1.64	1.84	.01	.01	.01	.03	1.45	1.25	1.36
11	2.7	2.9	.27	1.64	1.92	.01	.01	.01	1.24	1.48	*1.49	2.05
12	2.6	4.1	.29	*1.60	3.9	.01	.01	.01	1.92	1.48	1.55	1.96
13	2.5	5.4	.29	1.60	2.3	.01	.01	.01	1.88	1.78	2.7	1.92
14	2.7	5.4	.35	1.76	2.15	.01	.01	.01	2.2	.77	2.1	1.88
15	2.65	4.1	.41	2.3	1.96	.01	.01	.01	2.75	.61	2.25	2.75
16	2.5	5.2	.41	1.68	2.2	.01	.01	.01	2.25	1.55	3.05	2.65
17	2.35	2.6	.41	1.72	1.99	.01	.01	.01	2.1	2.45	1.86	2.4
18	2.5	.29	.41	1.88	5.2	.01	.01	.01	1.92	2.35	.08	2.35
19	2.5	.22	.41	1.64	3.4	.01	.01	.01	1.88	4.8	.04	2.3
20	2.35	.19	.39	1.60	2.45	.01	.02	.01	1.92	3.05	.03	2.3
21	2.7	.17	.38	1.68	.68	.01	.01	.02	1.84	2.65	.02	2.45
22	2.5	.49	.38	1.68	.02	.01	.01	.02	1.84	2.45	.02	2.3
23	2.35	.66	.39	1.64	.02	.01	.01	.02	1.84	6.6	.02	2.05
24	*2.3	.20	.15	1.64	.02	.01	.01	.02	1.80	10.4	.02	1.92
25	2.25	.16	.02	1.64	.02	.01	.01	.02	1.76	11.0	.02	1.96
26	2.15	.27	.12	2.0	.02	.01	.01	.02	*1.72	10.4	.02	1.84
27	2.1	.30	.04	1.72	.02	.01	.01	.03	1.64	9.9	.02	1.72
28	2.75	.31	1.26	2.25	.02	.01	.01	.03	1.60	9.4	.02	1.80
29	2.35	.31	2.1	2.1	.02	.01	.01	-	1.60	9.4	.02	2.0
30	2.3	.59	1.92	3.8	.02	.01	.01	-------	1.76	10.4	.02	1.80
31	2.35	.49	-------	3.15	-------	.01	.01	-------	1.72	-------	.02	-------
Total	79.25	67.20	13.06	58.56	47.27	0.39	0.44	0.38	39.47	117.58	82.43	43.93
Mean:												
mgd	2.56	2.17	0.435	1.89	1.58	0.013	0.014	0.014	1.27	3.92	2.66	1.46
cfs	3.96	3.36	0.673	2.92	2.44	0.020	0.022	0.022	1.96	6.07	4.12	2.26
Ac-ft	243	206	40	180	145	1.2	1.4	1.2	121	361	253	135

Calendar year 1956. Max 6.6 Min 0.01 Mean(mgd) 2.56 Mean(cfs) 3.96 Ac-ft 2,880
Fiscal year 1956-57: Max 11.0 Min 0.01 Mean(mgd) 1.51 Mean(cfs) 2.34 Ac-ft 1,690

* Discharge measurement made on this day.
Note.--No gage-height record Dec. 1-13, Dec. 18 to Jan. 29; discharge estimated on basis of record for Kapehu ditch.

7070. Kapehu ditch diversion near Hilo--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.72	3.9	4.7	2.65	2.0	0.01	0.01	3.15	0.01	0.08	0.04	0.01
2	1.88	3.4	5.8	2.5	2.1	.01	.01	2.9	.01	.02	.04	.42
3	1.84	4.2	5.1	2.4	2.15	.01	.01	2.7	1.04	.02	.04	.16
4	2.7	3.5	4.6	2.35	2.1	.01	.01	2.6	.90	.03	.01	.11
5	3.6	3.35	4.3	2.3	2.0	.01	.01	2.5	0	.03	.01	.07
6	2.6	4.7	4.1	2.25	2.0	.01	.01	2.45	0	.03	.01	.05
7	2.3	5.2	4.1	2.2	2.3	.01	.01	.88	0	.03	.01	.03
8	2.3	4.8	4.1	2.15	3.3	.01	.01	.05	0	.04	.01	.03
9	2.3	4.2	3.7	2.1	2.7	.01	.01	.05	.01	.03	.01	.02
10	2.3	3.9	3.7	2.05	3.15	.01	.01	.05	.01	.02	.01	1.65
11	2.15	4.1	3.7	2.25	2.7	.01	.01	.04	0	.03	.01	2.7
12	2.05	4.3	3.7	2.1	2.7	0	.01	.04	0	.03	.01	3.05
13	2.55	3.8	3.6	1.96	2.45	0	.01	.04	0	.03	.01	2.85
14	2.4	3.8	3.5	1.92	1.22	0	.01	.04	.01	.03	.01	2.9
15	*2.05	4.1	3.45	1.88	.01	0	.01	.04	0	.03	.01	2.9
16	2.1	3.75	*3.4	1.84	.01	.01	.01	.03	0	.03	.01	2.9
17	2.2	3.7	3.3	1.84	.01	.01	1.60	.03	0	.03	.01	3.0
18	2.15	3.8	3.25	1.80	.01	0	2.75	.03	.01	.03	.01	2.9
19	2.55	3.8	3.15	2.45	0	0	2.7	.03	.01	.03	.01	2.75
20	3.15	3.7	3.1	1.88	0	0	2.65	.02	0	.03	.01	2.7
21	3.65	3.6	3.0	1.84	.01	0	2.6	.02	0	.03	.01	2.6
22	2.85	3.5	3.0	6.1	.02	.01	2.8	.02	0	.02	.01	2.6
23	2.65	5.0	2.9	4.9	.01	0	2.9	.02	.01	.02	.01	2.5
24	2.6	8.0	2.85	3.15	.01	.01	3.05	.26	.01	.03	.01	2.45
25	3.2	5.8	2.8	2.5	.01	.01	2.9	.04	.01	.03	.01	2.65
26	3.35	4.3	2.75	2.3	.01	.01	2.75	.03	.01	.03	.01	2.85
27	3.15	4.0	2.7	2.15	.01	.01	2.65	.01	.02	.04	.01	3.25
28	2.9	3.9	2.65	2.05	.01	.01	2.8	2.65	.02	.04	.01	3.1
29	3.1	5.4	2.7	2.1	.01	.01	2.85	-	.02	.04	.01	2.75
30	3.4	6.1	3.2	2.05	.01	.01	3.45	-------	.03	.04	.01	2.85
31	4.8	5.4	-------	2.05	-------	.01	3.45	-------	.02	-------	.01	-------
Total	82.54	135.00	106.90	74.06	33.02	0.22	42.06	20.71	2.16	0.89	0.40	58.80
Mean:												
mgd	2.66	4.35	3.56	2.39	1.10	0.007	1.36	0.740	0.070	0.030	0.013	1.96
cfs	4.12	6.73	5.51	3.70	1.70	0.011	2.10	1.14	0.108	0.046	0.020	3.03
Ac-ft	253	414	328	227	101	0.675	129	64	6.6	2.7	1.2	180

Calendar year 1957. Max 11.0 Min 0 Mean(mgd) 1.96 Mean(cfs) 3.03 Ac-ft 2,200
Fiscal year 1957-58: Max 8.0 Min 0 Mean(mgd) 1.53 Mean(cfs) 2.37 Ac-ft 1,710

* Discharge measurement made on this day.

7080. Kapehu ditch near Hilo

Location.--Lat 19°43'40", long 155°11'00", 0.9 mile downstream from intake, 3 miles west of Piihonua, and 6 miles west of Hilo.

Records available.--March 1938 to June 1941, July 1942 to June 1948, July 1953 to June 1958.

Gage.--Water-stage recorder and de Fabritis flume. Altitude of gage is 2,000 ft (from topographic map).

Average discharge.--14 years (1938-41, 1942-48, 1953-58), 1.47 mgd (2.27 cfs).

Extremes.--1938-41, 1942-48, 1953-58: Maximum daily discharge, 7.5 mgd (11.6 cfs) Nov. 23, 24, 1957; no flow at times.

Remarks.--Records good. Ditch diverts water from Kapehu Stream 0.6 mile northwest of station for domestic use in Hilo. Flow sometimes diverted into Kapehu diversion ditch (see preceding page).

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.05	0.05	0.18	0.09	0.02	2.1	1.62	3.2	2.55	0.02	0.18	1.58
2	.05	.05	.17	.08	.02	2.1	1.62	3.1	2.4	.02	.09	1.76
3	.05	.06	.26	.08	.03	2.05	1.62	3.0	2.4	.02	.07	1.84
4	.05	.49	.32	.10	.03	2.05	.72	3.95	2.35	.02	.05	1.92
5	.05	.18	.29	.04	.05	2.0	.16	3.2	2.3	.02	.07	1.96
6	.05	.03	.29	.05	.04	2.25	.61	5.0	2.25	.02	.05	2.0
7	.05	.04	.27	.05	.04	1.84	1.08	4.3	2.2	.02	.11	2.05
8	.05	.03	.24	.06	.04	1.84	1.39	5.0	2.15	.03	.12	2.1
9	.06	.03	.24	.07	.05	1.80	1.69	4.0	2.1	.03	.04	2.2
10	.06	.06	.24	.06	.06	1.76	1.40	3.6	2.1	.03	.02	.71
11	.07	.05	.22	.06	.05	1.76	1.62	3.55	.80	.04	.02	.05
12	.07	.10	.22	.06	.09	1.76	1.69	3.55	.03	.04	.01	.04
13	.07	.16	.21	.07	.03	*2.05	1.50	3.35	.03	.04	.12	.04
14	.07	.13	.21	.07	.04	2.05	1.98	3.35	.03	.02	.15	.05
15	.07	.10	.21	.06	.04	2.0	2.5	3.25	.03	.02	.26	.05
16	.06	.14	.20	.05	.05	1.88	2.4	3.15	.02	.02	.32	.04
17	.06	.16	.20	.05	.05	1.84	2.4	3.1	.02	.03	.40	.04
18	.07	.02	.20	.06	.14	1.96	2.35	3.1	.02	.02	.55	.04
19	.06	.02	.20	.06	.09	1.76	3.2	3.05	.02	.09	.62	.04
20	.07	.02	.20	.06	.03	1.76	3.9	2.95	.02	.02	.67	.04
21	.07	.02	.19	.06	1.64	1.73	2.95	2.85	.02	.02	.71	.04
22	.07	.02	.19	.06	2.4	1.80	2.75	2.8	.02	.02	.80	.04
23	.07	.03	.18	.08	2.3	1.69	2.65	2.7	.02	.40	.86	.04
24	.06	.19	1.54	.11	2.2	1.73	2.6	2.65	.02	.36	.92	.04
25	.06	.27	2.25	.11	2.15	1.69	2.5	2.6	.02	.55	.98	.04
26	.07	.25	2.2	.08	2.1	1.69	2.4	2.55	.03	.41	1.07	.04
27	.07	.24	2.1	.08	2.1	1.65	2.4	2.7	.03	.22	1.17	.04
28	.07	.21	.84	.07	2.15	1.65	2.7	2.75	.02	.22	1.23	.04
29	.06	.20	.14	.07	2.15	1.62	*4.2	-	.02	.19	1.33	.04
30	.05	.20	.11	.09	2.1	1.62	4.6	-------	.02	.32	1.40	.04
31	.06	.19	-------	.05	-------	1.65	3.25	-------	.02	-------	1.47	-------
Total	1.90	3.74	14.31	2.12	22.28	57.13	68.45	92.35	24.06	3.28	15.86	18.95
Mean:												
mgd	0.061	0.121	0.477	0.068	0.743	1.84	2.21	3.30	0.776	0.109	0.512	0.632
cfs	0.094	0.187	0.738	0.105	1.15	2.85	3.42	5.11	1.20	0.169	0.792	0.978
Ac-ft	5.8	11	44	6.5	68	175	210	283	74	10	49	58

Calendar year 1956, Max 2.8 Min 0.02 Mean(mgd) 0.343 Mean(cfs) 0.531 Ac-ft 384
Fiscal year 1956-57: Max 5.0 Min 0.01 Mean(mgd) 0.889 Mean(cfs) 1.38 Ac-ft 994

* Discharge measurement made on this day.

7080. Kapehu ditch near Hilo--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.04	0.03	0.10	0.05	0.04	4.5	3.7	0.04	2.0	3.0	3.05	3.4
2	.04	.03	.34	.05	.04	3.75	3.7	.03	1.88	2.8	3.05	3.1
3	.04	.06	.15	.06	.03	3.8	3.7	.03	.66	2.7	3.7	2.7
4	.05	.03	.10	.07	.04	3.25	3.65	.03	.41	3.2	3.55	3.05
5	.05	.04	.09	.07	.04	4.0	3.6	.03	1.80	3.3	3.25	3.0
6	.04	.07	.09	.07	.04	3.3	3.55	.03	2.15	3.4	3.3	3.2
7	.04	.07	.08	.07	.04	3.15	3.5	1.81	2.1	3.35	3.5	3.3
8	.05	.05	.05	.06	.11	3.05	3.4	2.65	1.96	3.55	3.65	3.05
9	.06	.04	.23	.06	.07	2.95	3.4	2.6	2.1	4.2	3.65	3.05
10	.06	.04	.27	.06	.10	3.4	3.35	2.4	1.96	3.7	3.9	1.27
11	.05	.05	.20	.05	.08	4.3	3.3	2.3	*1.80	3.7	4.3	.32
12	.05	.04	.18	.05	.08	3.7	3.25	2.25	1.65	3.65	*4.4	.16
13	.07	.04	.19	.05	.08	3.35	*3.2	2.1	1.58	3.35	3.6	.12
14	.04	.04	.19	.05	1.67	3.25	3.15	2.1	1.50	3.3	3.3	.11
15	.04	.05	.19	.05	2.6	3.2	3.1	2.05	1.43	3.4	3.1	.11
16	.04	.04	*.18	.05	2.6	4.6	3.05	2.0	1.40	3.5	3.25	.08
17	.03	.05	.17	.05	*2.65	4.3	1.21	1.96	1.40	3.4	3.3	.04
18	.03	.05	.17	.05	3.15	4.8	.02	1.92	1.40	3.35	3.5	.02
19	.03	.05	.17	.08	2.8	4.0	.02	1.84	1.53	3.25	3.3	.02
20	.02	.05	.17	.04	2.65	4.0	.02	1.80	1.30	3.25	3.25	.02
21	.04	.05	.16	.06	2.6	4.6	.02	1.76	1.26	3.25	3.15	.03
22	.02	.04	.15	.68	4.1	5.2	.02	1.73	1.26	3.2	3.1	.03
23	.02	.54	.10	.38	7.5	4.6	.02	1.69	1.33	3.2	3.05	.04
24	.02	1.13	.07	.05	7.5	4.3	.03	1.40	1.36	3.15	3.05	.12
25	.08	.16	.07	.08	4.6	4.6	.03	1.62	1.30	3.15	3.2	.06
26	.02	.02	.06	.08	3.05	4.6	.03	2.0	1.57	3.15	3.25	.03
27	.03	.18	.11	.07	2.75	4.3	.03	1.66	4.3	3.25	3.15	.08
28	.03	.23	.10	.05	2.7	4.0	.03	1.04	2.65	3.35	3.2	.03
29	.04	.39	.08	.05	2.7	4.0	.04	-	4.0	3.25	3.1	.02
30	.03	.81	.05	.04	3.7	4.0	.05	-------	5.2	3.15	3.05	.02
31	.06	.20	-------	.04	-------	4.0	.04	-------	3.4	-------	3.05	-------
Total	1.26	4.67	4.26	2.72	60.11	122.85	56.21	42.87	59.64	99.45	104.25	30.58
Mean:												
mgd	0.041	0.151	0.142	0.877	2.00	3.96	1.81	1.53	1.92	3.32	3.36	1.02
cfs	0.063	0.234	0.220	1.36	3.09	6.13	2.80	2.37	2.97	5.14	5.20	1.58
Ac-ft	3.9	14	13	8.3	184	377	173	132	183	305	320	94

Calendar year 1957 : Max 7.5 Min 0.01 Mean(mgd) 1.15 Mean(cfs) 1.78 Ac-ft 1,280
Fiscal year 1957-58 : Max 7.5 Min 0.02 Mean(mgd) 1.61 Mean(cfs) 2.49 Ac-ft 1,810

* Discharge measurement made on this day.

7370. Waiilikahi Stream near Waimanu

Location.--Lat 20°07'40", long 155°39'55", on right bank 30 ft upstream from Waimanu trail bridge, 1.7 miles upstream from confluence with Waimanu Stream, 1.9 miles southeast of head of Awini ditch, and 2.2 miles southwest of Waimanu.

Drainage area.--0.4 sq mi.

Records available.--March 1939 to June 1958. Prior to July 1941, published as Waimanu-Iiiiii Stream near Waimanu.

Gage.--Water-stage recorder. Altitude of gage is 2,740 ft (by barometer).

Average discharge.--19 years, 6.49 mgd (10.0 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 375 mgd (580 cfs) Oct. 15 (gage height, 4.38 ft), from rating curve extended above 25 mgd as explained below; minimum, 0.45 mgd (0.70 cfs) Oct. 6, 7, Mar. 27, 28.

1957-58: Maximum discharge during fiscal year, 470 mgd (727 cfs) Oct. 23 (gage height, 4.82 ft), from rating curve extended above 25 mgd as explained below; minimum, 0.30 mgd (0.46 cfs) Feb. 23, 24.

1939-58: Maximum discharge, 544 mgd (842 cfs) Dec. 20, 1946 (gage height, 5.17 ft), from rating curve extended above 25 mgd by test on model of station site; minimum, 0.15 mgd (0.23 cfs) Mar. 17, 18, 1944.

Remarks.--Records fair except those for periods of no gage-height record, which are poor.

Rating table, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

0.4	0.27	1.0	4.7	2.2	43
.5	.67	1.2	7.4	2.6	69
.6	1.24	1.4	11.3	3.0	110
.7	1.90	1.6	16.0	3.5	178
.8	2.7	1.8	23		

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.9	3.8	5.5	0.82	4.6	45	5.0	0.88	0.62	1.27	10.3	0.82
2	3.55	2.45	2.7	1.05	1.90	10	1.98	.72	.57	.72	3.4	.88
3	2.05	11.3	2.05	.89	1.42	3.5	1.62	.67	.57	.57	2.7	.88
4	1.69	70	3.5	.62	1.42	1.7	5.5	.67	.57	17.7	10.0	.94
5	1.48	22.5	3.25	.57	1.18	1.3	4.6	18.6	2.65	12.9	20	.88
6	1.42	5.3	1.76	.49	3.05	1.2	4.2	35	7.3	1.69	6.9	.88
7	1.36	6.4	1.76	*.45	2.35	6.0	14.3	12.8	1.39	1.18	2.7	.88
8	1.85	4.8	6.1	48	1.36	*1.5	5.9	20.5	.88	1.18	4.8	.88
9	2.1	3.0	2.9	2.9	1.12	1.06	3.9	7.4	.94	.88	5.0	.82
10	4.0	4.7	1.90	1.36	3.65	.82	1.90	3.75	1.06	.77	10.9	.82
11	5.5	4.4	1.55	1.00	17.8	.72	1.76	2.15	1.18	.57	7.8	5.7
12	2.15	35	1.30	1.18	26	3.9	1.36	10.6	1.18	.53	7.9	3.85
13	4.0	29	1.18	4.6	10	7.2	1.12	2.65	1.18	24	3.0	2.15
14	11.6	25	1.06	5.2	3.5	11.0	1.24	1.42	1.48	63	1.83	1.49
15	7.0	22	1.00	67	2.0	5.9	1.06	1.12	9.5	2.0	1.48	10.9
16	2.9	46	.88	12.3	1.3	6.7	.82	1.00	3.35	1.55	1.30	5.5
17	4.4	15.9	.82	6.4	1.2	11.8	.77	.82	2.2	1.24	*1.18	3.05
18	17.1	4.7	.82	2.45	2.5	15.8	.67	1.22	5.1	1.06	1.12	5.0
19	4.2	4.5	.82	1.98	4.0	13.8	.82	1.06	1.56	8.7	1.57	4.0
20	9.5	6.1	.77	1.48	2.0	5.6	1.41	.88	.88	8.6	3.4	4.0
21	19.6	3.4	.88	1.30	1.6	3.6	.94	2.2	.67	3.45	2.9	4.0
22	9.3	2.3	8.2	1.12	1.5	5.3	.72	1.00	.57	4.7	1.48	2.3
23	2.7	1.76	3.5	1.06	1.3	4.1	.62	.72	.57	8.1	1.39	1.18
24	2.15	5.9	1.30	1.30	1.2	7.3	.57	1.06	.53	10.3	3.15	1.12
25	2.45	7.6	.94	2.2	1.1	2.15	1.12	1.34	.53	14.5	1.76	1.66
26	1.55	3.5	.88	1.83	1.0	1.42	.94	.72	.53	29.5	1.30	1.30
27	1.42	3.95	1.00	1.42	1.0	1.18	.72	.82	.49	4.6	1.12	1.12
28	25.5	5.5	1.00	6.6	1.0	1.06	1.33	.67	.53	2.55	1.00	1.69
29	6.0	5.0	.88	12.6	1.0	2.45	1.18	-	*.74	8.4	.88	2.45
30	3.9	30.5	1.18	24.5	1.0	3.15	2.7	-------	9.9	17.0	.88	3.8
31	11.7	16.5	-------	10.7	-------	13.2	*1.41	-------	4.5	-------	.82	-------
Total	179.02	412.76	61.38	225.37	104.05	199.41	72.18	132.44	63.72	253.21	123.96	74.94
Mean:												
mgd	5.77	13.3	2.05	7.27	3.47	6.43	2.33	4.73	2.06	8.44	4.00	2.50
cfs	8.93	20.6	3.17	11.2	5.37	9.95	3.61	7.32	3.19	13.1	6.19	3.87
Ac-ft	549	1,270	188	692	319	612	222	406	196	777	380	230

Calendar year 1956. Max 73 Min 0.45 Mean(mgd) 7.27 Mean(cfs) 11.2 Ac-ft 8,160
Fiscal year 1956-57. Max 70 Min 0.45 Mean(mgd) 5.21 Mean(cfs) 8.06 Ac-ft 5,840

Peak discharge (base, 150 mgd).--Aug. 4 (5 p.m.) 178 mgd (275 cfs), 3.48 ft; Oct. 8 (3 a.m.) 156 mgd (241 cfs), 3.36 ft; Oct. 15 (5:30 p.m.) 375 mgd (580 cfs), 4.38 ft.

* Discharge measurement made on this day.

Note.--No gage-height record Nov. 13 to Dec. 8; discharge estimated on basis of records for nearby stations.

7370. Waiilikahi Stream near Waimanu--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.5	11.4	13.5	2.45	5.6	3.25	4.7	12.1	1.81	2.05	1.4	37.5
2	11.1	6.8	19.8	1.96	3.95	1.76	2.55	5.0	1.06	5.0	5.5	24.5
3	8.0	9.0	5.4	1.12	6.2	3.8	1.98	2.15	.77	8.5	4.0	17.1
4	26.5	7.0	2.4	.88	3.5	2.85	1.62	1.48	.57	32.5	6.0	15.5
5	9.7	8.2	1.76	.77	1.76	1.48	1.69	1.30	.57	9.0	4.0	14.3
6	2.7	32.5	1.42	.67	7.3	2.75	1.69	1.24	5.1	13.7	9.0	14.6
7	3.35	17.4	1.30	.57	3.95	15.6	1.42	1.69	7.7	10.7	15	14.9
8	7.0	8.2	1.30	.53	16.0	4.5	2.5	1.18	1.73	12.5	14	5.7
9	7.3	6.6	1.36	.57	11.5	6.5	2.75	.94	1.06	12.6	10	10.6
10	7.6	3.2	1.18	1.56	5.5	28.5	1.48	.82	.77	4.5	12	8.4
11	2.4	6.0	1.50	5.3	3.45	77	1.18	.77	.62	3.95	13	9.7
12	1.55	10.1	6.2	2.2	1.90	22.5	1.06	.72	1.60	14.7	15	13.1
13	7.1	2.9	3.0	1.12	1.48	15.9	.94	.67	13.7	3.6	11	4.3
14	4.9	2.55	1.55	.77	1.24	6.5	.82	.57	1.59	3.2	13	3.0
15	1.83	4.8	1.12	.62	1.12	9.1	.82	.57	*.88	5.2	10	3.75
16	1.55	2.75	1.69	.62	1.00	46	*.80	.53	.67	12.0	8.0	3.4
17	3.0	10.1	1.42	.57	.88	31	1.64	.49	.53	23	7.0	2.8
18	8.5	10.6	4.9	.49	.82	23.5	1.92	.49	.53	3.95	6.5	2.2
19	9.7	19.3	1.80	.41	.77	16.2	1.91	.41	2.7	2.2	6.0	1.69
20	*8.5	6.2	1.12	1.27	*.69	48	2.3	.37	1.06	1.83	11	1.42
21	16.0	8.5	*.90	35.5	.88	56	1.24	.37	.77	1.55	8.0	1.36
22	5.9	7.1	.77	56	16.9	57	.94	.33	1.83	1.30	*4.5	1.83
23	10.8	45	.72	133	5.0	6.6	1.16	.33	5.0	1.30	2.45	3.3
24	4.6	59	.67	6.8	17.4	3.3	33.5	.72	1.30	1.36	8.0	4.4
25	10.8	4.5	.77	2.45	11.5	2.2	4.3	7.2	1.00	1.30	9.3	18.6
26	6.8	2.6	.77	1.62	8.7	3.5	1.62	22.5	2.45	2.3	6.4	6.5
27	6.4	5.7	1.82	1.24	3.5	4.3	3.6	5.7	25.5	3.5	6.2	18.6
28	4.6	21	2.35	1.06	2.7	12.2	12.9	1.76	9.5	4.0	5.2	4.9
29	4.1	54	4.6	3.4	3.85	23.5	21.5	-	11.9	3.0	8.5	2.4
30	3.35	14.1	7.4	5.8	5.1	26.5	31.5	-------	32	1.8	14.6	3.95
31	29.5	11.0	-------	11.4	-------	7.6	31.5	-------	4.5	-------	14.2	-------
Total	239.63	418.10	94.49	282.72	154.14	569.39	179.53	72.40	140.77	206.09	268.75	274.30
Mean:												
mgd	7.73	13.5	3.15	9.12	5.14	18.4	5.79	2.59	4.54	6.87	8.67	9.14
cfs	12.0	20.9	4.87	14.1	7.95	28.5	8.96	4.01	7.02	10.6	13.4	14.1
Ac-ft	735	1,280	290	868	473	1,750	551	222	432	632	825	842

Calendar year 1957 . Max 133 Min 0.41 Mean(mgd) 6.79 Mean(cfs) 10.5 Ac-ft 7,610
Fiscal year 1957-58 . Max 133 Min 0.33 Mean(mgd) 7.95 Mean(cfs) 12.3 Ac-ft 8,900

Peak discharge (base, 150 mgd).--Aug. 23 (10:30 p.m.) 186 mgd (288 cfs), 3.55 ft; Aug. 29 (3 a.m.) 210 mgd (325 cfs), 3.68 ft; Oct. 23 (3 a.m.) 470 mgd (727 cfs), 4.82 ft; Nov. 22 (8 p.m.) 186 mgd (288 cfs), 3.55 ft; Jan. 29 (12 p.m.) 156 mgd (241 cfs), 3.36 ft.

* Discharge measurement made on this day.
Note.--No gage-height record Apr. 26 to May 22; discharge estimated on basis of records for nearby stations.

7430. Awini ditch at East Honokaneiki Gulch, near Niulii

Location.--Lat 20°09'55", long 155°43"10", at flume across East Honokaneiki Gulch, 4.5 miles southeast of Niulii.

Records available.--October 1927 to June 1949, July 1950 to June 1958.

Gage.--Water-stage recorder. Altitude of gage is 2,000 ft (from topographic map).

Average discharge.--28 years (1928-38, 1939-49, 1950-58), 12.0 mgd (18.6 cfs).

Extremes.--1927-49, 1950-58: Maximum daily discharge, 33 mgd (51 cfs) Jan. 8, 1935, Aug. 10, 1938; no flow at times.

Remarks.--Records fair except those for periods of no gage-height record, which are poor.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	20	14	18	5.0	18.0	22	15.8	5.6	4.6	*8.5	24.5	3.85
2	16	13	11.5	4.9	11.3	12.0	9.6	5.0	4.3	5.6	18.8	3.75
3	11	20	10	8.7	8.5	7.0	8.1	4.3	4.0	4.0	14.4	4.0
4	9.0	30	13	5.2	7.0	5.6	17.9	*3.9	3.75	13.1	15.8	4.0
5	8.2	23	14.4	4.6	6.5	4.8	18.0	22.5	5.0	26	28	3.55
6	7.8	12	12.5	3.9	10.9	4.4	15.4	28	13	13.1	24.5	3.45
7	7.4	13	10.1	3.55	11.3	16.0	24.5	24.5	8.0	9.0	17.2	3.15
8	7.4	11	14.7	19.0	7.5	8.8	22	26	5.5	8.0	18.8	3.0
9	7.4	9.0	14.8	7.3	6.0	5.2	20	22	4.5	6.5	20	2.95
10	7.4	10	10.7	*7.0	8.4	*5.0	16.5	18.0	4.2	5.6	24.5	2.8
11	12	11	9.6	6.5	26	5.0	11.9	12.5	4.2	4.8	21	5.0
12	9.0	19	8.0	6.0	28	12	9.6	24.5	4.2	4.3	22	15.0
13	9.0	24	7.5	12	21	21	8.0	15.8	4.2	16.0	15.8	9.6
14	20	22	7.0	15	18.8	22.5	7.5	10.7	6.0	24.5	11.3	8.0
15	23	22	6.5	11	11.3	19.2	7.0	8.5	19	18.0	9.6	20
16	16	28	6.0	5.6	8.5	22	6.0	7.5	20	14.4	8.0	21
17	13	25	5.6	5.6	10.2	22.5	5.2	7.0	12	9.6	7.5	13.1
18	16	13	5.6	5.0	20	23	4.9	14.4	24	7.5	7.0	19.5
19	16	10.5	5.6	8.0	16.5	18.0	6.0	9.0	17	16.5	*7.0	15.0
20	16	10.5	5.0	6.0	9.6	18.4	8.0	7.5	10	24.5	8.0	18.0
21	25	9.0	4.9	5.1	9.0	15.8	6.0	9.0	5.5	15.8	11.9	12.5
22	23	9.0	9.2	4.4	7.5	18.8	4.9	7.0	4.5	20	8.0	9.6
23	12	9.0	14.1	3.9	6.5	12.0	9.0	5.6	4.1	19.5	7.0	6.0
24	10	10	7.9	3.9	5.6	18.7	4.9	7.0	4.0	24.5	9.0	5.0
25	9.5	16	6.5	4.1	5.0	10.1	14.0	11.3	3.8	28	8.0	5.6
26	8.0	13	6.0	7.0	4.6	7.0	8.0	6.5	3.7	30	6.5	5.6
27	7.5	12	6.0	7.0	4.3	6.0	5.1	6.0	3.7	22.5	5.6	4.4
28	14	16	5.1	13.9	4.2	5.1	7.4	5.2	3.7	17.2	4.9	4.6
29	16	14	5.0	22	4.2	7.3	8.0	-	3.7	24.5	4.5	6.0
30	14	26	5.0	23.5	4.4	10.9	15.0	-------	10	26	4.2	5.6
31	17	22	-------	22	-------	24.5	8.6	-------	20	-------	4.0	-------
Total	407.6	496.0	265.8	267.25	320.6	410.6	332.8	334.8	244.15	469.5	397.3	243.60
Mean:												
mgd	13.1	16.0	8.86	8.62	10.7	13.2	10.7	12.0	7.88	15.6	12.8	8.12
cfs	20.3	24.8	13.7	13.3	16.6	20.4	16.6	18.6	12.2	24.1	19.8	12.6
Ac-ft	1,250	1,520	816	820	984	1,260	1,020	1,030	749	1,440	1,220	748

Calendar year 1956. Max 30 Min 2.9 Mean(mgd) 13.4 Mean(cfs) 20.7 Ac-ft 15,040
Fiscal year 1956-57: Max 30 Min 2.8 Mean(mgd) 11.5 Mean(cfs) 17.8 Ac-ft 12,860

* Discharge measurement made on this day.
Note.--No gage-height record July 1 to Sept. 4, Oct. 10-18, Dec. 10-12, Mar. 5 to Apr. 1; discharge estimated on basis of records for nearby stations.

7430. Awini ditch at East Honokaneiki Gulch, near Niulii--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	18.8	24.5	22	11.9	22	11.9	14.4	17.2	8.5	8.0	4.3	22.5
2	22.5	22.5	20	9.6	13.1	8.0	10.7	11.9	5.6	8.5	9.3	21
3	22	24.5	19.5	6.5	17.2	8.1	9.0	8.5	4.6	9.6	9.0	21
4	21	24.5	13.7	5.2	14.8	9.6	8.0	7.0	4.0	16.5	11.9	15.8
5	24.5	21	12.5	4.6	9.0	7.0	8.0	6.5	4.4	12.5	8.0	18.8
6	15.0	28	13.1	4.1	14.6	5.6	7.5	6.5	13.6	12.5	10.8	13.2
7	9.0	26	11.9	3.75	17.8	20.5	7.0	6.0	18.0	13.7	15.2	18.1
8	16.5	24.5	10.7	3.55	18.7	14.3	7.0	5.6	8.0	14.4	19.5	11.9
9	26	21	10.1	3.45	26	12.5	10.7	5.2	9.6	12.5	18.0	14.8
10	22.5	15.8	9.0	3.75	21	22	10.1	4.8	6.0	10.7	14.6	16.7
11	13.1	18.0	9.0	9.8	17.2	24.5	9.0	4.6	4.7	9.0	19.5	12.0
12	8.5	22	10.2	8.8	11.3	21	8.0	4.4	6.6	10.7	18.8	21
13	a11.5	15.0	15.0	5.0	9.0	18.8	7.5	4.2	18.0	9.6	14.8	11.9
14	a17	12.5	10.1	4.0	8.0	14.4	7.0	4.0	8.0	8.5	15.8	9.6
15	a8.5	18.0	8.0	3.45	7.0	14.4	6.5	3.9	5.6	9.0	18.0	8.0
16	a8.2	14.4	10.7	3.35	6.5	18.2	6.5	3.7	4.8	11.9	16.5	7.5
17	a13	15.8	9.6	3.0	6.0	18.0	10.5	3.7	*4.3	14.4	11.9	7.0
18	a19	24.5	20	2.85	5.6	17.2	13.5	3.7	4.1	10.1	11.9	6.5
19	a23	24.5	11.3	2.75	5.2	14.3	9.6	3.35	11.5	8.0	14.4	6.0
20	a18	21	8.0	6.5	4.7	20	12.5	3.2	6.0	7.5	17.2	5.6
21	a24	24.5	6.5	26	5.6	19.5	*8.0	3.1	4.8	7.5	11.3	5.1
22	a17	22	5.6	28	*8.7	20	6.5	2.95	5.8	5.4	10.1	5.6
23	17.2	26	*5.6	24	14.1	15.8	9.3	2.85	15.1	2.15	9.0	6.0
24	19.5	24.5	5.6	11.9	18.9	12.5	28	5.7	6.5	.73	10.3	6.5
25	18.0	19.5	5.2	10.1	18.0	10.7	20	12.3	5.6	0	16.1	19.3
26	22.5	15.0	5.1	7.5	15.0	13.1	12.5	18.8	6.1	0	*12.1	15.2
27	21	17.7	8.0	7.0	10.7	13.7	11.1	14.0	20	0	14.4	20
28	20	20.5	8.5	6.5	10.1	13.3	22.5	8.5	15.0	3.3	9.6	13.7
29	16.5	26	10.5	11.4	10.7	21	22.5	-	13.1	5.6	11.0	8.0
30	18.0	18.8	22	14.7	11.5	21	20	-------	18.0	4.7	18.0	9.9
31	28	19.5	-------	24.5	-------	18.8	20	-------	11.9	-------	18.0	-------
Total	559.3	652.0	337.0	277.50	378.0	479.7	363.4	186.15	277.8	246.98	419.3	378.2
Mean:												
mgd	18.0	21.0	11.2	8.95	12.6	15.5	11.7	6.65	8.96	8.23	13.5	12.6
cfs	27.9	32.5	17.3	13.8	19.5	24.0	18.1	10.3	13.9	12.7	20.9	19.5
Ac-ft	1,720	2,000	1,030	852	1,160	1,470	1,120	571	853	758	1,290	1,160

Calendar year 1957. Max 30 Min 2.75 Mean(mgd) 12.9 Mean(cfs) 20.0 Ac-ft 14,440
Fiscal year 1957-58 : Max 28 Min 0 Mean(mgd) 12.5 Mean(cfs) 19.3 Ac-ft 13,980

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for nearby stations.

7440. East Honokaneiki intake to Awini ditch at East Honokaneiki Gulch, near Niulii

Location.--Lat 20°09'55", long 155°43'15", on intake tunnel delivering water from East Honokaneiki Gulch to Awini ditch, on west side of gulch, 4.5 miles southeast of Niulii.

Records available.--October 1927 to June 1938, July 1939 to June 1949, July 1951 to June 1958.

Gage.--Water-stage recorder and sharp-crested weir. Altitude of gage is 2,000 ft (from topographic map).

Average discharge.--25 years (1928-36, 1937-38, 1939-40, 1941-49, 1951-58), 1.19 mgd (1.84 cfs).

Extremes.--1927-38, 1939-49, 1951-58: Maximum daily discharge, 8.4 mgd (13.0 cfs) Aug. 6, 1957; no flow at times.

Remarks.--Records good except those for periods of no gage-height record, which are poor.

Revisions (fiscal years).--WSP 725: 1928-30.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.5	2.0	3.0	0.17	6.0	6.9	1.35	0.20	0.12	*0.46	4.2	0.08
2	2.0	1.5	.90	.12	4.5	1.50	.69	.20	.10	.20	1.35	.08
3	.80	3.5	.65	.56	4.0	.64	.81	.14	.10	.12	.87	.08
4	.58	8.0	1.1	.23	3.9	.44	2.1	*.12	.08	3.75	1.92	.10
5	.45	5.4	1.44	.12	3.7	.35	1.46	4.8	.19	5.1	6.0	.08
6	.35	1.4	.56	.10	3.65	.26	1.90	7.4	2.55	.78	2.7	.06
7	.30	1.7	.41	.08	3.6	3.9	5.0	4.2	.41	.41	1.21	.06
8	.25	1.2	1.23	5.2	3.45	.84	3.4	6.0	.23	.38	2.9	.04
9	.25	.66	.86	1.39	3.4	.41	2.4	2.4	.14	.26	2.5	.04
10	.30	1.0	.44	*.56	3.35	.29	1.30	1.53	.12	.23	3.5	.03
11	1.0	1.4	.35	.44	6.4	.26	.79	.79	.12	.17	2.0	.14
12	.60	4.0	.29	.41	8.0	3.2	.52	4.6	.12	.14	1.73	.70
13	.60	5.8	.26	1.6	6.8	2.95	.38	1.05	.12	4.4	.90	.32
14	2.7	5.0	.23	1.8	6.0	3.9	.32	.56	.12	4.2	.52	.29
15	4.0	5.0	.23	3.9	3.2	2.95	.26	.41	2.7	1.44	.38	4.6
16	2.0	7.0	.20	3.45	1.85	4.5	.23	.35	1.56	1.06	.32	2.4
17	1.5	5.8	.17	3.3	2.2	3.7	.20	.29	.71	.48	.29	.72
18	2.5	1.7	.14	3.2	3.3	5.3	.17	1.11	1.78	.32	.26	1.69
19	2.5	.80	.14	3.05	2.45	3.3	.32	.60	.50	2.45	*.24	1.05
20	2.5	.80	.12	3.0	.92	2.25	.68	.38	.23	3.95	.35	1.28
21	5.0	.56	.12	2.9	.68	1.55	.32	.44	.14	.82	.48	.52
22	4.0	.56	2.2	2.8	.52	2.7	.20	.26	.10	1.70	.29	.26
23	1.1	.56	1.41	2.75	.44	1.01	1.06	.20	.10	2.65	.23	.17
24	.60	.66	.35	2.7	.35	2.35	.32	.74	.08	3.35	.23	.12
25	.50	2.2	.23	2.6	.29	.75	2.7	.58	.06	7.1	.23	.14
26	.30	1.0	.20	2.5	.26	.48	.57	.26	.06	8.0	.17	.12
27	.25	.80	.20	2.45	.23	.38	.26	.20	.06	2.8	.14	.10
28	1.5	2.2	.17	3.0	.23	.32	.29	.17	.06	1.30	.12	.08
29	2.2	1.7	.20	5.7	.20	.48	.32	-	.06	4.6	.10	.08
30	1.5	6.5	.17	6.8	.17	.88	1.31	-------	1.18	6.0	.10	.08
31	2.5	5.0	-------	7.2	-------	4.9	.41	-------	1.51	-------	.10	-------
Total	47.13	85.40	17.97	74.08	84.04	63.64	32.04	39.98	15.41	68.62	36.33	15.51
Mean: mgd	1.52	2.75	0.599	2.39	2.80	2.05	1.03	1.43	0.497	2.29	1.17	0.517
cfs	2.35	4.25	0.927	3.70	4.33	3.17	1.59	2.21	0.769	3.54	1.81	0.800
Ac-ft	145	262	55	227	258	195	98	123	47	211	111	48

Calendar year 1956: Max 8.0 Min 0.03 Mean(mgd) 1.60 Mean(cfs) 2.48 Ac-ft 1,790
Fiscal year 1956-57: Max 8.0 Min 0.03 Mean(mgd) 1.59 Mean(cfs) 2.46 Ac-ft 1,780

* Discharge measurement made on this day.
Note.--No gage-height record July 1 to Sept. 4, Oct. 10-14; discharge estimated on basis of records for nearby stations.

7440. East Honokaneiki intake to Awini ditch at East Honokaneiki Gulch, near Niulii--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.45	4.4	2.65	0.41	3.45	1.63	0.20	1.21	0.71	1.06	0.20	2.9
2	3.35	2.8	3.0	.26	1.21	.71	.14	.92	.48	1.06	.60	2.25
3	2.55	4.2	2.15	.17	1.65	.81	.12	.79	.29	1.21	.60	1.96
4	3.7	3.05	1.2	.12	1.29	1.08	.12	.75	.20	1.96	1.02	1.75
5	3.2	2.3	.90	.08	.60	.56	.12	.71	.85	1.25	.52	1.85
6	.74	8.4	.70	.06	2.3	.56	.12	.64	5.1	1.35	1.06	1.65
7	.41	6.8	.50	.06	2.2	3.3	.38	.56	4.3	1.30	1.63	1.85
8	1.16	3.95	.35	.04	2.9	1.90	.57	.41	1.16	1.30	1.62	1.83
9	5.0	2.3	.25	.04	4.5	1.75	.83	.38	2.05	1.21	1.45	3.05
10	2.65	1.21	.23	.04	2.8	3.05	.44	.35	.76	1.06	1.46	3.35
11	.71	1.21	.23	.06	1.88	3.3	.35	.29	.41	.97	1.50	2.15
12	.38	2.2	.23	.06	1.40	1.90	.29	.26	1.25	1.16	1.55	5.4
13	.87	.92	.90	.03	1.21	1.55	.26	.23	3.5	1.01	1.35	1.60
14	1.72	.68	.23	.03	.97	1.16	.23	.23	1.06	.97	1.40	1.01
15	.44	1.30	.20	.03	.79	1.21	.23	.20	.52	1.01	1.60	.83
16	.41	.75	.29	.02	.60	1.85	.23	.20	.35	1.35	1.35	.71
17	1.09	1.93	.30	.02	.44	1.06	.51	.20	*.29	1.85	1.21	.60
18	2.7	3.95	1.61	.02	.32	.92	.76	.20	.29	1.21	1.25	.52
19	4.2	5.5	.44	.02	.23	.72	.32	.17	1.24	1.01	1.45	.41
20	2.55	2.2	.26	.42	.17	1.60	.41	.14	.52	.75	1.50	.35
21	4.6	4.7	.17	5.5	.41	1.29	*.23	.12	.32	.75	1.21	.35
22	*1.77	2.05	.14	4.1	*1.54	1.19	.20	.10	.51	.56	.92	.35
23	1.86	6.4	*.12	.83	1.86	.41	1.28	.10	1.92	.48	.71	.32
24	1.57	4.4	.12	2.45	3.4	.29	7.0	.24	.56	.44	1.01	.35
25	3.3	1.96	.10	2.1	2.6	.26	2.25	1.05	.41	.38	1.65	4.3
26	3.25	1.50	.04	1.21	2.1	.32	.87	1.45	.80	.32	*1.44	2.8
27	2.4	1.90	.12	.79	1.25	.29	.81	.97	3.6	.26	1.45	4.7
28	2.05	2.55	.20	.60	1.11	.39	3.05	.71	2.35	.29	.83	2.1
29	1.01	4.7	.49	1.70	1.06	.55	3.25	-	2.0	.26	.92	.75
30	1.41	2.55	2.65	2.1	1.38	.62	2.15	-------	2.95	.23	2.0	1.29
31	8.2	2.3	-------	4.6	-------	.32	1.86	-------	1.25	-------	2.0	-------
Total	71.70	95.06	20.77	27.97	47.62	36.55	29.58	13.58	42.00	28.02	38.46	53.33
Mean:												
mgd	2.31	3.07	0.692	0.902	1.59	1.18	0.954	0.485	1.35	0.934	1.24	1.78
cfs	3.57	4.75	1.07	1.40	2.46	1.83	1.48	0.750	2.09	1.45	1.92	2.75
Ac-ft	220	292	64	86	146	112	91	42	129	86	118	164

Calendar year 1957: Max 8.4 Min 0.02 Mean(mgd) 1.39 Mean(cfs) 2.15 Ac-ft 1,560
Fiscal year 1957-58: Max 8.4 Min 0.02 Mean(mgd) 1.38 Mean(cfs) 2.14 Ac-ft 1,550

* Discharge measurement made on this day.
Note.--No gage-height record Sept. 4-14, Nov. 11-21; discharge estimated on basis of records for Awini and Kohala ditches.

7510. Kohala ditch at Pololu, near Niulii

Location.--Lat 20°10'20", long 155°44'15", on right bank of open section of ditch in Pololu Valley just downstream from boundary between land of Honokane and land of Pololu, 2.8 miles upstream from mouth of Pololu Stream and 4 miles south of Niulii.

Records available.--August 1927 to June 1958.

Gage.--Water-stage recorder. Altitude of gage is 1,100 ft (from topographic map).

Average discharge.--29 years (1928-38, 1939-58), 26.9 mgd (41.6 cfs).

Extremes.--1927-58: Maximum daily discharge, 63 mgd (98 cfs) May 1, July 17, 1952; no flow at times.

Remarks.--Records fair except those for period of no gage-height record, which are poor. Kohala ditch receives flow of Awini ditch at Honokane Gulch and diverts water at altitude of about 1,200 ft from Honokane and all streams west. Water is used for irrigation in vicinity of Kohala.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	36	33.5	36	19.7	31.5	31.5	29.5	19.7	17.4	25	43	16.6
2	31.5	29.5	27	a19.7	22.5	18.9	23	18.9	16.6	*19.7	38.5	15.8
3	27	43	25	a22.5	16.6	20.5	20.5	18.1	16.6	18.1	31.5	16.6
4	24	57	29.5	a21	18.9	19.7	31.5	17.4	16.6	27	31.5	16.6
5	23	46	31.5	a19	18.9	18.1	31.5	*31.5	22.5	46	46	15.8
6	21.5	27	25	a18.5	24	18.1	29.5	46	43	31.5	41	15.8
7	21.5	29.5	23	a20	25	31.5	41	33.5	27	24	36	15.1
8	21.5	27	31.5	a42	21.5	22.5	33.5	43	21.5	23	36	15.1
9	22.5	23	27	*a30	19.7	18.9	29.5	38.5	18.1	20.5	40	15.1
10	22.5	26	24	22.5	21.5	18.1	26	29.5	18.1	19.7	43	14.4
11	29.5	29.5	22.5	20.5	51	*16.6	23	27	18.1	18.9	41	16.6
12	24	41	21.5	20.5	54	26	20.5	41	18.1	18.1	41	26
13	23	46	20.5	29.5	43	36	20.5	31.5	19.7	31.5	36	22.5
14	36	46	23	31.5	38.5	38.5	21.5	25	23	41	26	21.5
15	38.5	46	24	26	27	33.5	20.5	22.5	36	34	23	36
16	31.5	54	24	13.6	24	38.5	19.7	21.5	38.5	33.5	22.5	38.5
17	31.5	46	23	12.9	25	36	18.9	19.7	27	24	20.5	27
18	36	31.5	22.5	11.5	43	41	18.1	26	41	21.5	20.5	38.5
19	36	25	22.5	17.4	38.5	31.5	19.7	24	29.5	31.5	19.7	33.5
20	36	26	21.5	18.9	25	31.5	22.5	20.5	22.5	46	*21.5	38.5
21	43	23	21.5	18.9	23	27	19.7	24	20.5	33.5	25	27
22	41	22.5	31.5	18.1	20.5	31.5	18.1	20.5	18.9	36	21.5	23
23	29.5	23	31.5	17.4	19.7	23	22.5	18.9	17.4	33.5	19.7	18.9
24	25	23	23	18.9	18.1	31.5	18.9	29.5	18.1	46	21.5	17.4
25	24	34	21.5	18.9	18.1	22.5	31.5	27	18.1	49	20.5	18.1
26	21.5	27	21.5	22.5	18.1	19.7	24	20.5	17.4	54	18.9	18.1
27	*20.5	27	20.5	20.5	18.1	18.1	18.9	19.7	17.4	41	18.1	16.6
28	36	31.5	20.5	29.5	17.4	17.4	20.5	18.1	17.4	33.5	17.4	16.6
29	38.5	29.5	19.7	43	17.4	18.1	21.5	-	17.4	43	16.6	18.1
30	29.5	49	19.7	49	18.1	22.5	29.5	-------	27	49	16.6	18.1
31	33.5	43	-------	43	-------	36	23	-------	36	-------	16.6	-------
Total	915.0	1,065.0	735.4	736.9	777.6	814.2	748.5	733.0	716.4	973.0	870.6	647.4
Mean:												
mgd	29.5	34.4	24.5	23.8	25.9	26.3	24.1	26.2	23.1	32.4	28.1	21.6
cfs	45.6	53.2	37.9	36.8	40.1	40.7	37.3	40.5	35.7	50.1	43.5	33.4
Ac-ft	2,810	3,270	2,260	2,260	2,390	2,500	2,300	2,250	2,200	2,990	2,670	1,990

Calendar year 1956: Max 57 Min 2.25 Mean(mgd) 28.1 Mean(cfs) 43.5 Ac-ft 31,580
Fiscal year 1956-57: Max 57 Min 11.5 Mean(mgd) 26.7 Mean(cfs) 41.3 Ac-ft 29,890

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for Awini ditch.

7510. Kohala ditch at Pololu, near Niulii--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	33.5	43	38.5	29.5	51	38.5	36	43	33.5	27	19.7	51
2	43	41	43	25	41	27	29.5	31.5	22.5	33.5	24	51
3	43	46	38.5	21.5	43	26	24	25	19.7	36	24	49
4	41	43	31.5	19.7	41	31.5	22.5	23	18.9	51	27	44
5	43	38.5	29.5	18.9	31.5	25	22.5	22.5	18.9	38.5	23	46
6	33.5	54	29.5	18.1	33.5	23	21.5	22.5	38.5	41	28.5	39
7	24	49	27	17.4	43	51	21.5	21.5	51	41	45	47
8	31.5	46	26	17.4	38.5	41	22.5	20.5	31.5	36	49	36.5
9	43	38.5	25	16.6	49	36	25	19.7	31.5	36	46	42
10	43	33.5	23	17.4	46	51	25	18.9	23	31.5	38	43
11	29.5	33.5	23	21.5	41	60	23	18.9	20.5	27	46	37
12	22.5	38.5	23	22.5	33.5	51	22.5	18.9	24	43	46	51
13	23	33.5	29.5	18.9	31.5	49	21.5	18.1	46	29.5	43	38.5
14	36	29.5	24	17.4	27	41	21.5	18.1	27	29.5	43	29.5
15	24	33.5	21.5	16.6	26	41	21.5	18.1	22.5	31.5	43	27
16	21.5	31.5	24	16.6	25	49	22.5	17.4	20.5	38.5	41	26
17	25	31.5	23	16.6	24	54	24	18.1	19.7	43	33.5	25
18	33.5	43	31.5	15.8	23	51	29.5	18.1	*18.9	31.5	42	24
19	46	46	25	15.8	22.5	38.5	24	17.4	29.5	26	41	23
20	41	41	21.5	16.6	21.5	57	29.5	17.4	22.5	24	41	22.5
21	46	46	19.7	41	24	60	24	17.4	20.5	24	31.5	21.5
22	38	41	20.5	49	27	60	*22.5	17.4	20.5	21.5	27	22.5
23	*31.5	51	21.5	57	*41	43	23	16.6	33.5	18.1	25	22.5
24	38.5	49	*21.5	33.5	41	41	54	18.9	22.5	16.6	26.5	22.5
25	31.5	31.5	20.5	36	41	33.5	43	29.5	20.5	15.8	40	40
26	43	33.5	19.7	31.5	36	41	31.5	46	21.5	15.1	36	42
27	38.5	38.5	22.5	27	31.5	36	29.5	38.5	51	15.1	*33.5	50
28	41	43	23	26	29.5	38.5	43	29.5	46	17.4	26	39.5
29	33.5	54	25	31.5	31.5	49	49	-	41	20.5	27	27
30	36	36	38.5	43	31.5	49	51	-------	57	20.5	46	30
31	51	38.5	-------	49	-------	43	54	-------	38.5	-------	46	-------
Total	1,109.0	1,256.0	789.9	804.3	1,026.5	1,335.5	914.0	642.4	912.6	879.6	1,108.2	1,069.5
Mean:												
mgd	35.8	40.5	26.3	25.9	34.2	43.1	29.5	22.9	29.4	29.3	35.7	35.6
cfs	55.4	62.7	40.7	40.1	52.9	66.7	45.6	35.4	45.5	45.3	55.2	55.1
Ac-ft	3,400	3,850	2,420	2,470	3,150	4,100	2,800	1,970	2,800	2,700	3,400	3,280

Calendar year 1957: Max 60 Min 14.4 Mean(mgd) 30.2 Mean(cfs) 46.7 Ac-ft 33,790
Fiscal year 1957-58: Max 60 Min 15.1 Mean(mgd) 32.5 Mean(cfs) 50.3 Ac-ft 36,340

* Discharge measurement made on this day.

7550. Kehena ditch near Kohala

Location.--Lat 20°07'25", long 155°45'05", on right bank at old Honokane weir near head of West Branch of Honokanenui Gulch, 8.5 miles southeast of Kohala.

Records available.--December 1917 to November 1919, April 1928 to June 1958.

Gage.--Water-stage recorder and artificial control. Altitude of gage is 3,850 ft (from topographic map). Prior to Apr. 26, 1928, water-stage recorder at same site at different datum.

Average discharge.--30 years (1928-58), 7.72 mgd (11.9 cfs).

Extremes.--1917-19, 1928-58: Maximum daily discharge, 54 mgd (84 cfs) Mar. 23, 1919; no flow at times.

Remarks.--Records good except those for periods of no gage-height record, which are poor. Intake on Honokanenui Stream 2 miles upstream from station at altitude of about 4,200 ft. Kahua Ranch diverts small quantity of water from ditch 2 miles above station for watering stock. Water used for irrigation in vicinity of Hawi.

Revisions (fiscal years).--WSP 740: 1930.

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	8.6	8.0	10.0	0.98	8.6	52	7.0	*2.0	0.82	2.25	17.1	0.40
2	5.8	7.4	3.7	.67	3.7	10	3.5	2.7	.67	1.13	6.7	.40
3	3.4	22.5	2.25	.67	2.05	3.5	3.0	1.85	.40	.67	4.7	.40
4	2.5	35	4.0	.53	1.30	1.7	9.4	1.13	.29	6.4	3.7	.40
5	1.85	27.5	7.2	.29	1.0	1.2	4.5	5.4	3.65	23	12.8	.40
6	1.50	10.0	2.7	.19	6.0	1.0	3.0	27.5	18.5	4.6	7.0	.29
7	1.30	7.7	1.65	.10	5.4	9.0	8.0	23.5	5.0	2.05	4.9	.19
8	1.13	6.4	3.65	21.5	3.0	2.6	5.0	29.5	3.7	1.65	3.4	.19
9	1.50	3.7	3.95	7.7	2.0	*1.4	3.0	24	3.15	1.50	9.2	.19
10	1.77	2.7	2.25	2.5	2.5	1.0	2.0	12.4	2.5	1.65	12.4	.04
11	4.7	6.1	1.65	1.30	14	.86	1.6	7.4	2.5	.98	10.1	.09
12	2.9	18.9	1.13	.82	35	.9	1.3	11.3	2.5	.67	20.5	1.65
13	2.7	24.5	.82	3.9	15	1.5	1.1	7.4	2.25	2.2	11.0	3.9
14	15.3	24	.67	10.1	7.0	10.0	1.0	3.7	3.6	7.2	2.9	4.0
15	13.7	19.8	.67	50	4.0	7.0	.92	1.85	16.1	6.9	1.65	16.6
16	6.1	35	.53	17.3	2.5	6.0	.90	1.50	11.1	6.0	1.13	15.5
17	5.8	27	.40	9.2	2.0	20	.90	1.13	6.0	2.05	.98	8.7
18	11.6	12.4	.29	4.5	5.0	30	.86	.98	18.0	1.13	.82	15.1
19	8.6	6.7	.19	2.7	8.0	15	.82	.82	5.3	10.2	.98	15.0
20	5.8	6.1	.19	2.05	4.5	7.0	.86	1.25	2.05	15.8	1.85	13.0
21	18.8	4.5	.29	1.65	3.5	4.5	.86	8.3	1.50	6.6	2.7	5.3
22	15.4	2.7	3.3	1.13	3.0	6.0	.86	2.5	1.30	10.0	1.65	3.15
23	4.9	1.85	6.3	.82	2.3	7.0	.84	1.50	1.13	12.0	1.30	1.85
24	2.5	2.05	1.65	.82	1.6	12	.84	19.0	.98	17.1	2.25	1.50
25	1.85	9.3	.82	.67	1.2	5.0	.84	9.9	.82	30	2.25	1.30
26	1.30	5.5	.98	2.3	.90	2.5	.82	2.9	.67	40	1.65	1.50
27	1.13	4.7	1.13	1.85	.68	1.5	.82	1.65	.40	12.5	1.13	.98
28	17.7	8.6	.67	5.0	.54	1.1	.90	1.30	.29	5.5	.82	.98
29	16.0	4.7	.82	11.4	.40	1.3	1.0	-	.29	17.5	.67	1.13
30	7.7	26	1.50	24.5	.30	1.6	3.0	-------	3.4	25	.40	3.85
31	8.0	21.5	-------	16.8	-------	16	2.3	-------	6.5	-------	.40	-------
Total	201.83	402.80	65.35	203.94	146.97	240.16	71.74	214.36	125.36	274.23	149.03	117.98
Mean:												
mgd	6.51	13.0	2.18	6.58	4.90	7.75	2.31	7.66	4.04	9.14	4.81	3.93
cfs	10.1	20.1	3.37	10.2	7.58	12.0	3.57	11.9	6.25	14.1	7.44	6.08
Ac-ft	619	1,240	201	626	451	737	220	658	385	842	457	362

Calendar year 1956: Max 52 Min 0.10 Mean(mgd) 9.09 Mean(cfs) 14.1 Ac-ft 10,220
Fiscal year 1956-57: Max 52 Min 0.04 Mean(mgd) 6.07 Mean(cfs) 9.39 Ac-ft 6,800

* Discharge measurement made on this day.
Note.--No gage-height record Nov. 5 to Jan. 18, Jan. 20 to Feb. 1, Mar. 23-28; discharge estimated on basis of records for nearby stations.

7550. Kehena ditch near Kohala--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	11.7	17.9	17.9	3.1	8.9	6.2	9.8	21.5	13.5	6.1	0.53	28
2	19.2	15.4	28	1.30	4.7	2.7	4.5	9.6	4.6	13.4	2.2	24
3	17.8	22	12.5	.67	4.7	1.85	2.7	4.5	2.25	17.1	4.7	18.8
4	21	17.9	4.2	.40	3.4	2.9	2.5	2.5	1.50	30	5.6	12.4
5	20	13.9	2.5	.19	2.05	1.85	2.7	2.25	1.13	17.4	3.95	17.9
6	8.2	42	1.85	.10	2.05	1.50	2.5	1.65	23.5	18.8	8.4	9.2
7	4.5	29	1.50	.10	3.95	26.5	1.85	1.30	34	18.9	21.5	17.0
8	9.5	20	1.13	.05	3.0	13.8	1.65	.98	9.6	12.8	23	7.4
9	18.4	11.4	.98	0	9.6	10.0	2.25	.82	9.2	11.7	17.9	12.4
10	15.4	5.5	.82	0	10.0	24.5	1.65	.67	3.4	10.1	13.9	11.7
11	5.2	3.4	.82	.02	8.4	45	1.30	.53	2.25	7.0	19.2	10.6
12	2.5	5.9	.82	.10	3.7	28	.98	.40	1.94	26.5	20.5	25
13	2.15	3.4	.82	.05	2.5	23	.82	.29	24	11.4	16.7	8.8
14	6.4	2.25	.67	0	1.65	13.2	.67	.29	5.5	10.6	16.6	5.0
15	2.25	6.3	.53	0	1.13	13.7	.67	.67	2.25	12.4	16.2	4.0
16	1.85	4.6	.53	0	.67	38	.53	.40	*1.30	19.7	11.7	5.2
17	5.4	6.7	.40	0	.40	35	*.53	.29	.82	18.7	9.0	2.9
18	12.9	14.3	.40	0	.40	26.5	.67	.67	.40	9.1	20	2.25
19	19.2	21	.67	0	.29	6.7	.53	.29	4.9	4.2	12.4	1.50
20	17.1	10.8	*.29	0	.19	36	.53	.19	2.25	2.7	10.0	1.13
21	*23.5	16.6	.19	7.7	*.53	37.5	.29	.10	1.50	3.95	5.5	.82
22	12.6	9.6	*.10	24	5.0	40	.29	.10	1.30	2.5	3.4	.98
23	7.3	27	.10	45	11.9	15.7	.29	0	5.5	1.50	*2.9	1.85
24	10.0	40	.05	12.6	12.0	6.9	27	.04	2.5	1.30	4.6	2.7
25	11.0	11.5	.05	3.6	10.3	3.7	11.4	1.74	1.30	.98	11.7	11.5
26	15.7	5.0	0	1.65	9.3	16.2	2.9	23	.98	.82	9.6	15.4
27	15.9	8.1	.47	1.13	5.0	20	1.85	14.5	33	.98	7.7	32.5
28	15.5	13.1	2.1	.53	4.5	15.8	9.4	13.1	18.8	2.25	4.5	11.2
29	10.0	35	2.7	3.3	3.7	27.5	16.8	-	12.8	1.50	5.7	4.5
30	13.6	13.4	8.6	7.6	5.3	23	25.5	-------	37.5	.82	22.5	5.5
31	37.5	14.6	-------	5.6	-------	14.1	42	-------	12.8	-------	21	-------
Total	393.25	467.55	91.69	118.79	139.21	577.30	177.05	102.37	276.27	295.20	353.08	312.13
Mean:												
mgd	12.7	15.1	3.06	3.83	4.64	18.6	5.71	3.66	8.91	9.84	11.4	10.4
cfs	19.6	23.4	4.73	5.93	7.18	28.8	8.83	5.66	13.8	15.2	17.6	16.1
Ac-ft	1,210	1,430	281	365	427	1,770	543	314	848	906	1,080	958

Calendar year 1957: Max 45 Min 0 Mean(mgd) 7.51 Mean(cfs) 11.6 Ac-ft 8,410
Fiscal year 1957-58: Max 45 Min 0 Mean(mgd) 9.05 Mean(cfs) 14.0 Ac-ft 10,130

* Discharge measurement made on this day.

7560. Kohakohau Stream near Kamuela

Location.--Lat 20°03'02", long 155°40'58", 0.2 mile below Kohala Forest Reserve Boundary and 2 miles northwest of Kamuela.

Drainage area.--2.34 sq mi.

Records available.--March 1956 to June 1958.

Gage.--Water-stage recorder. Altitude of gage is 3,500 ft (from topographic map).

Extremes.--1956: Maximum discharge during period March to June, 167 mgd (258 cfs) June 13 (gage height, 3.37 ft), from rating curve extended above 6 mgd by test on model of station site; minimum, 0.44 mgd (0.68 cfs) Apr. 30.

1956-57: Maximum discharge during fiscal year, 1,460 mgd (2,260 cfs) Oct. 15 (gage height, 8.82 ft), from rating curve extended above 6 mgd as explained above; minimum, 0.28 mgd (0.43 cfs) June 10, 11.

1957-58: Maximum discharge during fiscal year, 1,460 mgd (2,260 cfs) Oct. 23 (gage height, 8.84 ft), from rating curve extended above 21 mgd as explained above; minimum, 0.29 mgd (0.45 cfs) Feb. 22-24, Mar. 21, 22.

Remarks.--Records fair except those for periods of no gage-height record, which are poor. Parker Ranch pipeline diverts water above station.

Rating tables, Mar. 16, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

Mar. 15, 1956, to Oct. 22, 1957				Oct. 23, 1957, to June 30, 1958			
0.7	0.19	1.5	10.4	0.5	0.27	1.2	13.8
.8	.33	1.7	17.8	.6	.54	1.4	23
.9	.58	1.9	28.5	.7	1.14	1.6	36
1.0	1.02	2.1	44	.8	2.5	2.0	66
1.1	1.77	3.0	135	.9	4.5	3.0	143
1.3	5.3	4.0	214	1.0	7.2	4.0	232

Discharge, in million gallons a day, March to June 1956

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1									-	1.47	0.52	4.0
2									-	1.02	.81	11.6
3									-	13.7	1.74	*10.1
4									-	6.1	6.1	10.1
5									-	1.62	3.0	9.0
6									-	1.83	5.0	13.3
7									-	3.4	17.0	8.4
8									-	*1.91	15.9	4.2
9									-	14.2	18.4	9.1
10									-	24.5	18.0	14.6
11									-	24.5	15.2	3.3
12									-	11.9	8.9	21
13									-	10.9	13.2	44
14									-	3.75	7.7	32
15									†2.60	3.1	4.0	22.5
16									9.1	2.7	1.90	4.4
17									29.5	2.15	2.8	6.9
18									4.5	1.32	3.45	27.5
19									1.70	1.02	4.6	29
20									1.24	.81	5.8	19.7
21									1.02	.86	2.35	3.55
22									.86	1.54	1.62	2.7
23									.72	1.54	1.54	15.1
24									6.5	1.17	1.62	51
25									6.9	.76	3.4	11.1
26									2.05	.64	4.1	2.95
27									1.24	.55	1.90	2.6
28									1.17	.49	1.70	4.3
29									5.6	.49	1.62	5.3
30								-------	14.0	.44	2.8	22.5
31								-------	3.6	-------	4.4	-------
Total									-	140.38	181.07	425.80
Mean:												
mgd									-	4.68	5.84	14.2
cfs									-	7.24	9.04	22.0
Ac-ft									-	431	556	1,310

Calendar year	. Max	Min	Mean(mgd)	Mean(cfs)	Ac-ft
Fiscal year	: Max	Min	Mean(mgd)	Mean(cfs)	Ac-ft

* Discharge measurement made on this day.
† Result of discharge measurement.

7560. Kohakohau Stream near Kamuela--Continued

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	5.3	3.2	5.0	0.52	3.45	180	2.4	0.33	0.41	0.81	11.7	0.33
2	3.05	2.15	2.05	.49	1.24	4.2	1.32	*.32	.37	.49	2.65	.33
3	1.70	9.7	1.47	.44	.81	1.54	1.06	.30	.35	.39	1.70	.33
4	1.32	92	2.85	*.44	.64	.90	4.6	.32	.35	.75	1.95	.33
5	1.10	32	2.55	.41	.55	.72	2.05	.62	.39	3.7	7.8	.33
6	.90	7.1	1.40	.41	3.0	.61	1.61	44	1.11	.86	4.4	.32
7	.81	4.9	1.24	.39	2.3	1.49	11.8	18.1	.55	.49	2.15	.30
8	1.19	3.65	2.75	2.15	.96	.81	4.4	35	.41	.41	1.55	.30
9	1.32	2.15	2.05	.92	.81	.61	1.62	14.5	.37	.37	1.54	.30
10	1.79	1.46	1.40	.55	.86	.55	1.10	3.0	.37	.37	3.1	.28
11	2.5	2.55	1.02	.49	15.9	.49	.81	1.40	.37	.33	4.1	.44
12	1.47	26	.81	.49	39.5	.49	.61	4.3	.35	.32	9.8	.80
13	1.75	27.5	.72	1.90	9.4	.77	.52	1.99	.32	1.16	4.1	1.07
14	8.9	25.5	1.09	10.3	3.95	7.4	.46	1.02	.46	1.86	1.17	.72
15	7.2	20.5	.90	158	1.47	5.6	.44	.72	5.5	.68	.76	6.0
16	2.15	37	.72	10.5	.90	4.7	.41	.55	3.65	.82	*.58	8.4
17	2.45	22	.61	3.25	.68	12.5	.39	.49	1.47	.46	.49	2.4
18	8.3	6.0	.58	1.54	2.35	18.3	.37	.44	7.7	.41	.44	5.5
19	3.95	4.4	.55	.96	3.65	9.6	.39	.41	1.40	3.65	.49	a3.0
20	5.4	4.8	.55	.81	1.47	4.4	.46	.43	.76	9.2	.55	a2.5
21	16.3	2.95	.64	.68	1.32	1.47	.39	2.6	.61	2.2	.58	a1.6
22	11.4	1.77	3.1	.58	1.02	2.1	.35	.64	.64	3.55	.44	a.90
23	2.15	1.40	2.25	.55	.81	2.25	.35	.52	.49	9.1	.44	a.60
24	1.40	1.58	.90	.55	.64	5.3	.33	10.1	.39	8.3	.55	a.45
25	1.10	3.3	.68	.49	.58	1.54	.33	2.65	.35	21	.49	a.70
26	.86	2.3	.72	.46	.52	.90	.32	.81	.33	52	.44	a1.5
27	.76	3.1	.61	.44	.49	.68	.30	.61	.32	6.7	.39	a.60
28	21.5	5.2	.55	.89	.46	.58	.33	.46	.32	1.90	.39	a.70
29	9.0	4.1	.52	3.85	.44	.58	.33	-	.32	9.4	.37	a1.7
30	*3.45	34.5	.55	23	.41	.58	.52	-------	1.92	16.6	.37	a4.0
31	5.4	16.8	-------	11.6	-------	2.6	.39	-------	*1.86	-------	.33	-------
Total	135.87	411.56	40.83	238.05	100.58	274.26	40.76	146.63	34.21	158.28	65.81	46.73
Mean:												
mgd	4.38	13.3	1.36	7.68	3.35	8.85	1.31	5.24	1.10	5.28	2.12	1.56
cfs	6.78	20.6	2.10	11.9	5.18	13.7	2.03	8.11	1.70	8.17	3.28	2.41
Ac-ft	417	1,260	125	731	309	842	125	450	105	486	202	143

Calendar year 1956: Max - Min - Mean(mgd) - Mean(cfs) - Ac-ft -
Fiscal year 1956-57: Max 180 Min 0.28 Mean(mgd) 4.64 Mean(cfs) 7.18 Ac-ft 5,190

Peak discharge (base, 200 mgd).--Aug. 4 (6:30 p.m.) 307 mgd (475 cfs), 4.80 ft; Oct. 15 (1:30 a.m.) 1,460 mgd (2,260 cfs), 8.82 ft; Dec. 1 (6:30 a.m.) 830 mgd (1,280 cfs), 7.11 ft.

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for nearby stations.

7560. Kohakohau Stream near Kamuela--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.3	12.2	18.5	1.24	3.2	1.2	2.5	25.5	5.2	2.15	0.54	44
2	4.8	8.6	30	.68	3.5	.80	1.7	9.3	1.35	9.5	2.7	35
3	3.0	13.2	6.7	.55	3.8	2.5	1.0	2.65	.67	20.5	2.8	30.5
4	30	12.2	2.15	.49	1.7	2.2	.90	1.46	.46	52	6.2	16.7
5	10	11.6	1.54	.49	.75	.90	.80	1.71	.40	17.7	3.0	27.5
6	1.1	58	1.24	.46	3.0	2.3	.70	.98	7.6	17.7	10.2	10.7
7	1.0	26	.90	.44	3.0	15	.63	.84	44	13.8	33.5	26
8	1.5	12.1	.86	.44	4.5	3.5	.73	.67	4.7	14.8	34.5	6.8
9	12	6.1	.76	.41	5.0	5.0	.80	.58	1.58	13.0	18.7	11.5
10	4.0	2.15	.72	.44	2.0	20	.65	.46	.91	7.9	16.0	10.3
11	1.0	1.72	.81	.58	1.3	100	.58	.43	.67	2.5	23.5	10.9
12	.80	6.8	.81	.64	.85	15	.55	.43	.50	36.5	31	35.5
13	4.5	2.15	.76	.58	.75	10	.52	.38	.54	9.0	18.2	7.0
14	4.0	1.62	.68	.44	.65	5.0	.52	.38	.43	5.0	19.2	3.4
15	.90	2.75	.61	.44	.55	5.0	.47	.43	.38	8.2	11.7	3.25
16	.70	2.2	.58	.39	.50	70	.44	.35	.33	15.9	7.6	3.35
17	1.1	6.8	.58	.39	.46	12	.44	.35	.33	18.2	7.7	1.71
18	4.0	9.6	.72	.37	.45	10	.45	.35	.31	5.8	20.5	1.35
19	*5.0	23.5	*.61	.37	*.38	5.0	.42	.33	*.33	1.71	8.7	1.06
20	10.8	5.7	.55	.37	.38	20	*.38	.31	.31	1.06	9.9	.91
21	18.4	8.9	.52	2.05	.60	80	.33	.31	.31	1.35	3.8	.78
22	6.6	5.8	.49	18.2	5.0	70	.33	.31	.29	.78	2.5	.78
23	7.9	56	.49	150	4.0	8.0	.33	.29	.54	.67	2.0	1.46
24	5.5	76	.49	10	4.0	4.5	10.5	.29	.35	.58	5.1	1.88
25	3.6	5.8	.44	1.5	5.2	2.2	6.1	.33	.33	.54	*16.1	16.7
26	8.1	2.45	.44	1.0	4.5	2.1	1.24	9.0	.33	.54	9.8	16.4
27	7.6	3.25	.46	.70	1.7	2.8	.96	10.3	23	.72	5.1	38.5
28	7.5	18.4	.52	.55	1.5	4.0	9.3	2.4	16.8	1.35	2.5	8.5
29	2.15	51	.52	.65	1.3	35	18.7	-	11.8	.72	5.2	2.5
30	1.81	16.6	2.9	.90	1.3	45	30.5	-------	72	.54	30.5	3.8
31	36	12.0	-------	3.8	-------	7.0	79	-------	10.1	-------	30	-------
Total	207.66	481.19	77.35	199.56	65.82	566.00	172.47	71.12	206.85	280.71	398.74	378.73
Mean:												
mgd	6.70	15.5	2.58	6.44	2.19	18.3	5.56	2.54	6.67	9.36	12.9	12.6
cfs	10.4	24.0	3.99	9.96	3.39	28.3	8.60	3.93	10.3	14.5	20.0	19.5
Ac-ft	637	1,480	237	612	202	1,740	529	218	635	861	1,220	1,160

Calendar year 1957: Max 150 Min 0.28 Mean(mgd) 5.73 Mean(cfs) 8.87 Ac-ft 6,420
Fiscal year 1957-58: Max 150 Min 0.29 Mean(mgd) 8.51 Mean(cfs) 13.2 Ac-ft 9,530

Peak discharge (base, 200 mgd).--Aug. 23 (10:30 p.m.) 307 mgd (475 cfs), 4.85 ft; Oct. 23 (2:30 a.m.) 1,460 mgd (2,260 cfs), 8.84 ft; Jan. 31 (1 a.m.) 232 mgd (359 cfs), 4.02 ft.

* Discharge measurement made on this day.
Note.--No gage-height record July 1-19, Oct. 23 to Jan. 20; discharge estimated on basis of records for nearby streams.

7570. Waikoloa Stream near Kamuela

Location (revised).--Lat 20°03'17", long 155°40'02", on left bank 350 ft downstream from Parker Ranch boundary and 2.1 miles north of Kamuela.

Drainage area.--0.78 sq mi (revised).

Records available.--May 1947 to June 1958.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 3,500 ft (from topographic map).

Average discharge.--11 years, 4.91 mgd (7.60 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 240 mgd (371 cfs) Oct. 15 (gage height, 4.22 ft), from rating curve extended above 11 mgd by logarithmic plotting; minimum, 0.79 mgd (1.22 cfs) June 9.

1957-58: Maximum discharge during fiscal year, 860 mgd (1,330 cfs) Oct. 23 (gage height, 6.55 ft), from rating curve extended above 11 mgd by logarithmic plotting; minimum, 1.20 mgd (1.86 cfs) Feb. 22-24, Mar. 17, 18, 21, 22.

1947-58: Maximum discharge, that of Oct. 23, 1957; minimum, that of June 9, 1957.

Remarks.--Records good for 1956-57 except those for periods of no gage-height record and those above 50 mgd, which are fair; records fair for 1957-58.

Revisions (fiscal years).--WSP 1155: 1948(M).

Rating tables, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

July 1, 1956, to June 30, 1957

1.24	0.79	1.8	8.2
1.3	1.17	2.1	16.2
1.4	1.96	2.5	34
1.5	3.1	2.9	61

July 1, 1957, to June 30, 1958

1.25	1.20	2.0	13.2
1.3	1.52	2.3	24
1.4	2.4	2.6	40
1.5	3.4	3.0	70
1.7	6.4	3.5	125

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	5.7	3.35	5.7	1.4	3.55	30	4.3	1.10	1.24	1.46	6.2	0.97
2	4.2	2.3	3.0	1.4	1.96	3.45	2.05	*1.04	1.17	1.10	2.75	.91
3	2.35	6.0	2.2	1.4	1.62	1.78	1.98	.97	1.17	.97	2.15	.97
4	1.96	42	4.0	1.2	1.46	1.54	5.2	1.10	1.10	3.75	3.65	.91
5	1.78	21	3.7	*1.1	1.38	1.38	2.7	3.25	1.34	7.1	9.4	.91
6	1.70	7.0	2.2	1.10	2.9	1.38	2.35	22.5	5.2	1.70	5.6	.91
7	1.62	6.0	2.2	1.10	2.85	4.6	4.8	10.9	2.05	1.31	2.85	.85
8	1.70	4.7	4.5	6.8	1.70	1.96	2.75	16.5	1.46	1.17	3.2	.85
9	1.86	2.6	3.0	3.1	1.62	1.46	1.78	6.3	1.31	1.04	3.45	.85
10	2.55	3.0	2.1	1.54	1.86	1.38	1.62	2.85	1.24	1.04	6.5	.85
11	3.6	4.2	1.8	1.31	8.5	1.31	1.54	1.96	1.24	.97	4.5	1.92
12	1.96	17	1.6	1.40	16.2	1.38	1.38	4.6	1.24	.91	5.6	2.25
13	2.8	17	1.5	3.75	6.7	1.81	1.31	2.75	1.17	5.7	2.65	2.1
14	6.2	13	1.6	6.3	3.55	6.1	1.24	1.78	1.31	3.6	1.62	1.78
15	4.4	13	1.7	38	1.96	4.4	1.24	1.54	4.2	1.62	1.38	5.9
16	2.15	20	1.5	8.5	1.62	3.1	1.17	1.46	3.2	1.62	1.31	5.4
17	2.6	13	1.4	5.7	1.54	9.3	1.17	1.38	2.1	1.17	1.24	2.9
18	7.6	5.5	1.3	2.25	2.8	10.9	1.17	1.31	3.5	1.10	1.17	3.35
19	3.4	5.5	1.3	1.78	3.95	7.6	1.17	1.24	1.7	3.8	1.24	2.6
20	7.6	6.5	1.3	1.62	2.05	3.8	1.24	1.42	1.5	5.3	1.38	2.7
21	12.6	4.3	1.4	1.54	2.25	2.25	1.10	4.3	1.5	2.9	1.54	2.35
22	8.6	2.8	5.1	1.38	2.15	3.7	1.10	1.70	1.6	3.15	*1.38	1.86
23	2.6	2.2	3.7	1.38	1.96	4.1	1.04	1.38	1.3	4.9	1.17	1.46
24	1.96	2.6	1.8	1.46	1.54	6.3	1.04	2.5	1.2	4.9	1.46	1.31
25	1.78	4.9	1.5	1.38	1.46	2.15	1.04	2.25	1.1	8.3	1.38	1.70
26	1.46	3.1	1.6	1.38	1.38	1.70	.97	1.46	1.1	20	1.17	1.98
27	1.46	3.7	1.4	1.38	1.31	1.46	.97	1.46	1.1	4.2	1.17	1.38
28	11.4	5.5	1.4	2.25	1.24	1.38	1.10	1.38	1.1	1.96	1.24	1.46
29	5.9	5.1	1.4	5.5	1.24	1.54	1.10	-	1.2	5.7	1.10	1.86
30	3.65	19	1.4	9.6	1.24	1.70	1.46	-------	5.2	8.3	1.04	3.95
31	*6.4	12	-------	6.2	-------	7.8	1.24	-------	*3.8	-------	.97	-------
Total	125.54	277.85	68.3	124.20	85.54	132.71	54.32	102.38	58.64	110.74	81.46	59.19
Mean:												
mgd	4.05	8.96	2.28	4.01	2.85	4.28	1.75	3.66	1.89	3.69	2.63	1.97
cfs	6.27	13.9	3.53	6.20	4.41	6.62	2.71	5.66	2.92	5.71	4.07	3.05
Ac-ft	385	853	210	381	263	407	167	314	180	340	250	182

Calendar year 1956. Max 43 Min 0.91 Mean(mgd) 4.86 Mean(cfs) 7.52 Ac-ft 5,450
Fiscal year 1956-57: Max 42 Min 0.85 Mean(mgd) 3.51 Mean(cfs) 5.43 Ac-ft 3,930

Peak discharge (base, 100 mgd).--Aug. 4 (about 5:30 p.m.) 140 mgd (224 cfs), 3.62 ft; Oct. 15 (2:30 a.m.) 240 mgd (371 cfs), 4.22 ft; Dec. 1 (6 a.m.) 118 mgd (183 cfs), 3.45 ft.

* Discharge measurement made on this day.

Note.--No gage-height record Aug. 2 to Oct. 5, Mar. 15-31; discharge estimated on basis of records for nearby streams.

7570. Waikoloa Stream near Kamuela--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.65	10.1	13.4	2.5	4.3	3.35	5.4	11.2	3.15	2.9	1.96	20.5
2	6.0	7.7	18.2	2.15	4.6	2.15	3.7	6.2	1.87	3.9	5.4	17.6
3	3.95	7.9	6.8	1.87	4.9	4.2	2.8	3.0	1.52	8.9	4.3	16.7
4	11.9	8.5	3.7	1.78	3.25	3.95	2.5	2.3	1.39	21	6.4	12.2
5	6.6	8.3	3.0	1.70	2.3	2.4	2.4	2.2	1.39	8.2	4.3	14.4
6	2.5	24	2.6	1.70	4.2	4.1	2.2	1.96	5.1	9.6	6.9	11.6
7	2.5	11.8	2.4	1.61	4.1	19.4	2.05	1.96	13.0	7.1	13.5	14.5
8	3.8	7.5	2.3	1.52	6.6	4.6	2.2	1.78	2.95	9.3	12.7	7.4
9	8.5	7.2	2.2	1.61	7.8	7.0	2.3	1.61	1.87	8.2	9.8	8.9
10	5.4	3.2	2.15	1.70	4.1	16.9	1.96	1.52	1.61	4.9	9.9	8.4
11	2.5	3.35	2.5	3.3	3.2	42	1.78	1.46	1.46	3.2	11.3	9.7
12	1.96	8.7	2.9	3.25	2.2	22.5	1.78	1.39	1.39	12.3	14.7	16.3
13	5.3	3.55	2.6	2.4	1.96	16.2	1.61	1.39	1.78	5.3	11.2	6.4
14	4.8	3.0	2.15	1.96	1.78	8.9	1.61	1.39	*1.48	3.2	13.5	4.4
15	2.15	4.4	1.96	1.78	1.61	8.5	*1.46	1.39	1.33	5.0	10.2	4.8
16	1.87	3.4	1.96	1.78	1.52	32.5	1.39	1.33	1.26	6.6	9.0	4.5
17	2.45	7.6	1.87	1.70	1.46	18.8	1.39	1.33	1.20	11.0	8.2	3.3
18	5.3	8.6	3.9	1.61	1.46	17.3	1.46	1.33	1.20	4.8	8.3	3.0
19	*6.2	15.0	*2.65	1.52	*1.35	8.4	1.39	1.26	1.39	2.9	7.7	2.7
20	8.1	5.4	2.05	1.52	1.33	20.5	1.33	1.26	1.26	2.5	12.1	2.5
21	11.8	7.0	1.78	9.4	1.52	36.5	1.26	1.26	1.20	2.95	5.4	2.3
22	5.5	6.4	1.70	23	7.9	31.5	1.26	1.26	1.26	2.3	4.1	2.4
23	7.4	23	1.70	85	6.5	8.7	1.33	1.20	3.25	2.15	3.55	3.55
24	4.5	33.5	1.70	7.0	6.6	5.3	12.7	1.26	1.70	2.05	6.1	3.8
25	5.9	5.6	1.70	3.2	8.1	3.95	4.7	1.86	1.46	1.96	*9.9	11.0
26	6.5	3.55	1.70	2.4	7.3	3.8	2.15	9.7	2.1	2.45	8.0	7.5
27	6.0	4.1	1.78	2.15	3.95	4.8	2.45	5.6	14.8	3.55	5.8	12.7
28	4.2	13.5	1.96	1.96	3.7	6.8	9.6	2.45	6.9	4.5	4.3	5.5
29	2.8	26.5	2.3	2.25	3.4	14.8	11.0	-	6.9	2.3	8.1	3.2
30	2.4	13.0	5.3	2.9	3.55	19.7	13.1	-------	29.5	1.96	13.5	4.4
31	12.6	10.8	-------	4.8	-------	10.4	37	-------	5.7	-------	15.1	-------
Total	165.03	306.15	102.91	183.02	116.54	409.90	139.26	71.85	122.37	166.97	265.21	246.15
Mean:												
mgd	5.32	9.88	3.43	5.90	3.88	13.2	4.49	2.57	3.95	5.57	8.56	8.20
cfs	8.23	15.3	5.31	9.13	6.00	20.4	6.95	3.98	6.11	8.62	13.2	12.7
Ac-ft	506	940	316	562	358	1,260	427	220	376	512	814	755

Calendar year 1957: Max 85 Min 0.85 Mean(mgd) 4.80 Mean(cfs) 7.43 Ac-ft 5,380
Fiscal year 1957-58: Max 85 Min 1.20 Mean(mgd) 6.29 Mean(cfs) 9.73 Ac-ft 7,050

Peak discharge (base, 100 mgd).--Aug. 23 (11 p.m.) 100 mgd (155 cfs), 3.28 ft; Oct. 23 (2 a.m.) 860 mgd (1,330 cfs), 6.55 ft; Dec. 7 (1 a.m.) 192 mgd (297 cfs), 3.95 ft; Jan. 31 (3:30 a.m.) 105 mgd (162 cfs), 3.33 ft.

* Discharge measurement made on this day.

7580. Waikoloa Stream at Marine Dam, near Kamuela

Location (revised).--Lat 20°02'48", long 155°39'58", on right bank 160 ft upstream from Marine Dam and 1.5 miles north of Kamuela.

Drainage area (revised).--1.18 sq mi.

Records available.--May 1947 to June 1958.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 3,450 ft (from topographic map).

Average discharge.--11 years, 6.18 mgd (9.56 cfs).

Extremes.--1956-57: Maximum discharge during fiscal year, 259 mgd (401 cfs) Oct. 15 (gage height, 4.27 ft), from rating curve extended above 14 mgd by logarithmic plotting; minimum, 0.85 mgd (1.32 cfs) June 9, 10.

1957-58: Maximum discharge during fiscal year, 1,180 mgd (1,830 cfs) Oct. 23 (gage height, 6.99 ft), from rating curve extended above 14 mgd by logarithmic plotting; minimum, 1.15 mgd (1.78 cfs) Oct. 20, Feb. 23.

1947-58: Maximum discharge, that of Oct. 23, 1957; minimum, 0.65 mgd (1.01 cfs) Dec. 1, 1954.

Remarks.--Records good for 1956-57; records fair for 1957-58 except those for period of no gage-height record, which are poor. Diversions above station for stock and domestic use.

Rating table, July 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in million gallons a day)

1.4	0.60	2.0	8.6
1.5	1.15	2.2	14.5
1.6	2.0	2.4	24
1.7	3.05	2.6	36.5
1.8	4.5	3.0	71
1.9	6.4	3.5	129

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	7.7	4.7	7.6	1.58	4.4	44	5.1	1.22	1.29	1.66	8.7	0.96
2	5.5	3.05	4.0	1.58	2.4	4.7	2.4	*1.10	1.29	1.22	3.7	.96
3	3.2	8.0	2.95	1.58	1.74	2.4	2.2	1.03	1.22	1.03	2.85	1.03
4	2.5	65	5.3	1.36	1.66	1.74	6.5	1.15	1.15	3.9	4.3	1.03
5	2.3	31	4.9	*1.22	1.50	1.66	3.2	3.7	1.52	10.9	13.2	1.03
6	2.1	9.7	2.85	1.15	3.15	1.58	2.5	33.5	6.2	2.2	7.6	.96
7	2.0	8.0	2.85	1.15	3.2	5.7	5.8	15.8	2.4	1.36	3.85	.96
8	2.1	6.3	6.0	9.5	2.0	2.5	3.35	24.5	1.58	1.29	4.0	.90
9	2.3	3.55	3.9	3.45	1.74	1.74	2.2	9.1	1.36	1.15	4.7	.90
10	3.0	3.9	2.7	1.82	2.1	1.50	1.82	3.7	1.29	1.10	8.9	.85
11	4.3	5.6	2.3	1.50	11.0	1.43	1.66	2.5	1.29	1.03	6.5	1.95
12	2.4	27	2.1	1.50	27	1.36	1.50	5.7	1.36	.96	7.8	2.5
13	3.25	27.5	1.82	4.0	9.4	1.74	1.43	3.5	1.29	6.9	3.65	2.35
14	7.9	23	2.1	7.8	4.9	7.0	1.36	2.2	1.45	5.2	2.1	1.91
15	5.8	23	2.2	57	2.5	5.0	1.29	1.74	5.6	1.90	1.66	6.3
16	2.85	33	1.74	11.7	2.0	3.3	1.29	1.58	4.1	2.1	1.58	8.4
17	3.45	20.5	1.66	8.1	1.74	12.4	1.22	1.43	2.5	1.36	1.43	3.35
18	13.2	7.8	1.58	2.95	3.7	16.8	1.22	1.36	4.5	1.29	1.36	4.1
19	5.1	7.7	1.50	2.3	5.1	11.0	1.29	1.29	2.25	4.5	1.50	3.1
20	10.5	8.9	1.50	1.82	2.5	4.9	1.36	1.63	1.66	6.9	1.66	3.3
21	19.2	5.8	1.66	1.74	2.85	2.6	1.29	5.9	1.66	3.45	1.74	2.95
22	13.0	3.7	6.9	1.58	2.5	4.0	1.22	2.0	1.74	4.2	*1.45	2.3
23	3.7	2.85	4.9	1.58	2.4	4.6	1.22	1.50	1.43	6.8	1.29	1.58
24	2.7	3.45	2.3	1.58	1.74	8.1	1.15	2.75	1.29	6.3	1.50	1.36
25	2.5	6.6	1.74	1.43	1.66	2.6	1.15	2.7	1.22	12.2	1.43	1.60
26	2.1	4.1	1.82	1.43	1.50	1.74	1.10	1.66	1.15	34	1.29	2.2
27	2.0	4.9	1.74	1.43	1.43	1.58	1.10	1.58	1.10	6.1	1.15	1.50
28	18.8	7.6	1.66	2.35	1.36	1.43	1.22	1.36	1.15	2.85	1.22	1.50
29	8.9	6.9	1.58	6.4	1.36	1.58	1.22	-	1.29	7.1	1.10	2.1
30	5.1	30.5	1.58	15.0	1.29	1.74	1.58	------	6.4	11.6	1.03	4.5
31	9.0	17.7	------	8.0	------	9.4	1.36	------	4.9	------	1.03	------
Total	178.45	421.30	87.43	165.58	111.82	171.82	62.30	137.18	68.63	152.55	105.27	68.43
Mean:												
mgd	5.76	13.6	2.91	5.34	3.73	5.54	2.01	4.90	2.21	5.08	3.40	2.28
cfs	8.91	21.0	4.50	8.26	5.77	8.57	3.11	7.58	3.42	7.86	5.26	3.53
Ac-ft	548	1,290	268	508	343	527	191	421	211	468	323	210

Calendar year 1956. Max 68 Min 0.96 Mean(mgd) 6.71 Mean(cfs) 10.4 Ac-ft 7,530
Fiscal year 1956-57: Max 65 Min 0.85 Mean(mgd) 4.74 Mean(cfs) 7.33 Ac-ft 5,310

Peak discharge (base, 100 mgd).--Aug. 4 (5:30 p.m.) 166 mgd (257 cfs), 3.77 ft; Oct. 15 (2 a.m.) 259 mgd (401 cfs), 4.27 ft; Dec. 1 (5:30 a.m.) 136 mgd (210 cfs), 3.57 ft.

* Discharge measurement made on this day.

7580. Waikoloa Stream at Marine Dam, near Kamuela--Continued

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.95	14	20	2.4	5.2	4.0	6.9	18.6	4.5	2.95	1.58	34
2	7.3	10	28	1.82	5.4	2.3	4.3	9.4	2.4	3.8	5.7	29
3	4.5	10	9.0	1.58	6.0	6.8	3.3	4.0	1.82	12.5	4.7	26.5
4	17.4	12	4.1	1.43	3.65	5.2	2.85	2.85	1.58	34.5	7.4	17.7
5	9.5	11	3.2	1.36	2.4	2.7	2.6	2.7	1.50	12.2	4.7	23
6	2.7	40	2.6	1.36	5.0	8.7	2.3	2.5	8.2	13.4	8.3	17.3
7	2.6	17	2.4	1.29	5.1	24.5	2.2	2.3	24	9.1	20	23
8	4.4	10	2.3	1.22	9.8	6.1	2.3	2.1	4.5	11.8	19.2	9.4
9	11.3	7.5	2.2	1.29	11.4	9.3	2.5	1.82	2.6	10.6	12.9	12.2
10	6.9	3.4	2.2	1.36	5.4	28.5	2.1	1.66	2.1	5.9	14.3	11.6
11	2.5	3.6	2.6	2.95	3.9	66	1.74	1.58	1.74	3.45	16.3	13.9
12	1.74	12	3.1	3.05	2.5	35.5	1.66	1.50	1.58	18.0	23	26
13	6.0	3.9	2.7	2.2	2.1	24.5	1.58	1.50	2.2	6.8	14.9	8.6
14	5.7	3.2	2.1	1.58	1.82	12.4	1.58	1.43	*1.74	3.45	20	5.4
15	2.1	5.2	1.8	1.36	1.66	11.3	*1.46	1.50	1.58	5.8	13.8	6.0
16	1.58	3.7	1.8	1.36	1.58	53	1.43	1.43	1.50	7.9	12.0	5.5
17	2.3	10	1.7	1.29	1.50	34.5	1.43	1.43	1.43	15.9	10.1	3.85
18	6.2	12	4.4	1.22	1.58	27.5	1.43	1.36	1.36	6.1	10.9	3.2
19	7.5	6.0	*2.7	1.22	*1.29	12.0	1.36	1.29	1.58	3.05	10.5	2.85
20	11.1	6.5	1.82	1.29	1.22	33	1.36	1.29	1.43	2.5	16.5	2.6
21	12	9.0	1.58	13.4	1.65	57	1.29	1.29	1.36	3.55	6.4	2.5
22	6.5	8.0	1.50	37.5	11.7	52	1.22	1.22	1.50	2.4	4.7	2.6
23	9.5	38	1.43	125	9.9	11.9	1.29	1.22	4.1	2.1	4.0	3.8
24	5.2	50	1.50	9.7	9.0	6.8	19.8	1.29	2.1	1.82	7.4	4.2
25	7.5	7.0	1.43	3.55	12.3	4.7	7.0	1.89	1.74	1.74	*13.6	15.5
26	8.5	4.3	1.43	2.5	10.0	4.3	2.5	14.5	2.25	2.25	10.4	10.4
27	7.5	4.7	1.58	2.0	4.9	6.0	2.65	8.8	21	3.45	7.1	19.4
28	4.8	19	1.74	1.74	4.7	10.1	13.7	3.3	9.4	4.7	4.6	7.5
29	2.9	42	2.05	1.96	3.95	24.5	18.5	-	9.6	2.3	10.1	3.85
30	2.4	19	5.7	2.95	4.2	30.5	21	-------	47	1.74	20.5	5.4
31	18	15	-------	5.6	-------	14.8	56	-------	7.1	-------	23	-------
Total	202.07	417.0	120.66	238.53	150.80	630.4	191.33	95.75	176.49	215.75	358.58	356.75
Mean:												
mgd	6.52	13.5	4.02	7.69	5.03	20.3	6.17	3.42	5.69	7.19	11.6	11.9
cfs	10.1	20.9	6.22	11.9	7.78	31.4	9.55	5.29	8.80	11.1	17.9	18.4
Ac-ft	620	1,280	370	732	463	1,930	587	294	542	662	1,100	1,090

Calendar year 1957 : Max 125 Min 0.85 Mean(mgd) 6.45 Mean(cfs) 9.98 Ac-ft 7,220
Fiscal year 1957-58 : Max 125 Min 1.22 Mean(mgd) 8.64 Mean(cfs) 13.4 Ac-ft 9,670

Peak discharge (base, 100 mgd).--Aug. 23 (time unknown) 136 mgd (210 cfs), 3.53 ft; Oct. 23 (1:30 a.m.) 1,180 mgd (1,830 cfs), 6.99 ft; Nov. 22 (10 a.m.) 104 mgd (161 cfs), 3.28 ft; Dec. 7 (12:30 a.m.) 200 mgd (309 cfs), 3.93 ft; Jan. 31 (1 a.m.) 116 mgd (179 cfs), 3.38 ft.

* Discharge measurement made on this day.
Note.--No gage-height record July 21 to Sept. 19; discharge estimated on basis of records for nearby streams.

7590. Hauani Stream near Kamuela

Location.--Lat 20°02'28", long 155°39'05", 1,350 ft below Hawaii County pipeline intake and 1.8 miles northeast of Kamuela.

Drainage area.--0.35 sq mi.

Records available.--March 1956 to June 1958.

Gage.--Water-stage recorder. Datum of gage is 3,117.42 ft above mean sea level (Hawaii County Board of Water Supply bench mark).

Extremes.--1956: Maximum discharge during period March to June, 28.5 mgd (44.1 cfs) Apr. 6 (gage height, 1.78 ft), from rating curve extended above 7 mgd by slope-conveyance studies; minimum, 0.06 mgd (0.09 cfs) Apr. 30.

1956-57: Maximum discharge during fiscal year, 138 mgd (214 cfs) Oct. 15 (gage height, 2.87 ft), from rating curve extended above 7 mgd by slope-conveyance studies; minimum, 0.01 mgd (0.02 cfs) Apr. 3, 4, June 9, 10.

1957-58: Maximum discharge during fiscal year, 325 mgd (503 cfs) Oct. 23 (gage height, 4.65 ft), from rating curve extended above 7 mgd as explained above; minimum, 0.03 mgd (0.05 cfs) Mar. 21.

Remarks.--Records fair except those for periods of no gage-height record, which are poor.

Rating tables, Mar. 1, 1956, to June 30, 1958 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 27-29, June 12 to July 25, 1956)

Mar. 1 to Oct. 10, 1956				Oct. 11, 1956, to June 30, 1958			
0.2	0.05	1.2	4.5	0.72	0.01	1.4	12.6
.3	.09	1.4	9.4	.8	.12	1.6	24
.5	.24	1.6	17.5	1.0	1.60	1.7	32
.7	.44	1.7	23.5	1.2	5.5	1.8	40
.9	1.15						

Discharge, in million gallons a day, March to June 1956

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1									*f0.54	0.28	0.19	0.68
2									.38	.23	.38	1.62
3									.29	1.45	.41	1.38
4									.24	.36	1.87	1.13
5									.20	*.18	1.31	1.14
6									.18	.98	1.84	1.49
7									.17	1.99	6.0	.97
8									.26	.36	6.6	.52
9									.29	1.77	3.95	1.20
10									.20	2.6	5.1	1.53
11									.17	2.1	2.35	.42
12									.18	1.17	1.60	2.6
13									3.95	1.74	2.15	1.82
14									2.8	.90	1.69	1.40
15									.86	.75	.99	1.08
16									2.2	.73	.53	.45
17									8.1	.51	.95	.48
18									1.16	.26	.84	3.35
19									.47	.19	1.06	3.45
20									.35	.18	1.24	.95
21									.32	.21	.52	.38
22									.28	.36	.41	.33
23									.25	.39	.39	.81
24									2.0	.26	.43	2.75
25									1.00	.16	.47	.71
26									.38	.12	.45	.34
27									.27	.11	.31	.36
28									.24	.10	.29	.37
29									.54	.09	.30	.37
30									1.24	.10	.47	1.49
31									.57	-------	*.44	-------
Total									30.08	20.63	45.53	35.57
Mean:												
mgd									0.970	0.688	1.47	1.19
cfs									1.50	1.06	2.27	1.84
Ac-ft									92	63	140	109

Calendar year	: Max	Min	Mean(mgd)	Mean(cfs)	Ac-ft
Fiscal year	: Max	Min	Mean(mgd)	Mean(cfs)	Ac-ft

* Discharge measurement made on this day.
f Fragmentary gage-height record; discharge estimated on basis of discharge measurement and records for nearby streams.

7590. Hauani Stream near Kamuela--Continued

Discharge, in million gallons a day, fiscal year July 1956 to June 1957

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.46	0.57	1.9	0.14	0.44	11.6	0.50	0.04	0.09	0.12	0.10	0.04
2	.36	.33	.45	.12	.28	.80	.25	.04	.07	.06	.57	.06
3	.31	1.52	.31	.09	.25	.44	.34	*.04	.07	.03	.38	.06
4	.29	23.5	1.0	.09	.21	.33	1.34	.07	.04	1.11	.50	.06
5	.27	7.4	.74	.07	.17	.33	.38	.46	.07	2.35	2.35	.04
6	.25	2.3	.40	*.06	.21	.28	.25	8.6	.57	.28	.80	.03
7	.25	1.91	.27	.07	.25	*.84	.50	3.25	.14	.14	.44	.02
8	.24	1.30	.92	3.7	.17	.44	.33	5.2	.07	.12	.38	.02
9	.24	.81	.76	.38	.17	.28	.21	1.77	.07	.07	.44	.01
10	.24	.71	.31	.13	.17	.25	.17	.50	.06	.06	.90	.01
11	.24	.90	.22	.12	1.11	.21	.17	.33	.07	.04	1.00	.07
12	.22	8.6	.18	.21	6.3	.21	.14	.72	.06	.04	1.00	.17
13	.25	7.7	.15	.57	1.47	.25	.14	.38	.06	1.19	.44	.12
14	.41	5.6	.60	1.04	.64	.80	.12	.25	.06	.57	.28	.12
15	.36	5.7	.38	20.5	.33	.64	.09	.21	.33	.17	.21	.50
16	.24	*9.3	.34	2.1	.21	.44	.09	.14	.44	.21	*.17	.80
17	.32	4.8	.28	1.49	.17	2.45	.09	.12	.28	.07	.14	.33
18	1.76	1.66	.21	.44	.44	4.8	.06	.09	.33	.07	.12	.44
19	.40	1.69	.13	.33	.64	3.05	.09	.12	.14	.28	.09	.44
20	.73	2.0	.13	.28	.25	.72	.12	.14	.09	.57	.14	.50
21	2.1	1.10	.23	.25	.21	.38	.09	1.10	.12	.33	.17	.33
22	1.22	.50	.60	.21	.21	.76	.07	.17	.12	.50	.12	.21
23	.35	.33	.40	.25	.21	.95	.06	.14	.09	.64	.12	.12
24	.31	.45	.30	.21	.12	1.66	.04	.21	.07	.64	.12	.09
25	*.29	.80	.21	.17	.09	.44	.07	.21	.04	1.88	.12	.09
26	.24	.54	.21	.17	.07	.25	.06	.14	.04	10.9	.12	.09
27	.23	.90	.18	.17	.09	.21	.06	.09	*.03	1.20	.09	.07
28	5.8	1.7	.16	.25	.12	.17	.07	.09	.03	.44	.07	.07
29	2.05	1.1	.14	1.04	.12	.21	.07	-	.06	.64	.06	.12
30	.70	10	.14	4.2	.12	.21	.07	-------	.72	1.74	.06	.25
31	1.38	3.5	-------	1.12	-------	.84	.06	-------	.44	-------	.04	-------
Total	22.51	109.22	12.25	39.97	15.24	35.24	6.10	24.62	4.87	26.46	12.54	5.28
Mean:												
mgd	0.726	3.52	0.408	1.29	0.508	1.14	0.197	0.879	0.157	0.882	0.405	0.176
cfs	1.12	5.45	0.631	2.00	0.786	1.76	0.305	1.36	0.243	1.36	0.627	0.272
Ac-ft	69	335	38	123	47	108	19	76	15	81	38	16

Calendar year 1956: Max - Min - Mean(mgd) - Mean(cfs) - Ac-ft -
Fiscal year 1956-57: Max 23.5 Min 0.01 Mean(mgd) 0.861 Mean(cfs) 1.33 Ac-ft 965

Peak discharge (base, 50 mgd).--Aug. 4 (4:30 p.m.) 81 mgd (125 cfs), 2.51 ft; Oct. 15 (2 a.m.) 138 mgd (214 cfs), 2.87 ft.

* Discharge measurement made on this day. Note.--No gage-height record Aug. 22 to Oct. 5; discharge estimated on basis of records for Kohakohau Stream.

Discharge, in million gallons a day, fiscal year July 1957 to June 1958

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.33	3.4	4.0	0.28	0.80	0.57	0.90	2.9	0.44	0.44	0.14	10.6
2	1.36	2.6	*7.2	.21	.90	.33	.57	1.20	.21	.33	.44	8.2
3	.50	1.88	1.46	.17	.80	2.2	.50	.57	.14	1.95	.38	6.3
4	5.8	2.35	.72	.14	.50	.80	.38	.38	.12	6.6	.80	5.1
5	1.42	2.9	.57	.14	.33	.44	.38	.33	.12	1.88	.50	4.2
6	.33	13.3	.50	.14	.72	1.19	.33	.28	.80	2.2	.90	5.5
7	.69	4.0	.44	.14	.72	4.7	.28	.25	3.1	1.33	3.1	4.2
8	.80	2.0	.38	.12	2.65	1.10	.28	.21	.44	1.46	3.25	2.0
9	2.05	1.60	.38	.12	2.0	1.20	.33	.21	.28	1.60	2.35	2.35
10	.90	.57	.33	.14	.90	5.8	.28	.21	.21	.72	2.7	2.35
11	.33	.64	.33	.28	.64	12.6	.28	.17	.14	.50	3.25	3.1
12	.25	2.0	.33	.28	.44	5.5	.25	.17	.12	3.1	4.0	4.0
13	1.53	.57	.28	.25	.33	4.0	.25	.14	*.21	.90	2.55	1.33
14	.80	.44	.28	.14	.28	2.2	*.21	.14	.14	.50	*3.8	.80
15	.28	.50	.25	.12	.28	1.88	.21	.14	.09	.72	2.9	.90
16	.21	.50	.25	.12	.25	10.4	.21	.12	.07	.80	2.35	.80
17	.33	1.37	.25	.09	.21	6.6	.25	.12	.06	2.35	1.60	.57
18	*1.13	1.88	*.64	.07	*.14	5.6	.21	.12	.04	.80	1.60	.57
19	1.00	6.5	.38	.07	.07	1.88	.17	.12	.09	.44	2.0	.50
20	1.74	1.00	.28	.07	.06	5.2	.17	.12	.06	.33	2.35	.44
21	3.8	1.46	.25	2.95	.14	10.6	.14	.12	.04	.57	.90	.44
22	1.00	1.20	.21	9.8	3.55	10.6	.14	.12	.06	.33	.72	.38
23	1.81	12.2	.21	34.5	1.33	2.2	.17	.12	.21	.28	.57	.50
24	.72	16.5	.21	2.7	1.60	1.10	3.95	.12	.12	.25	1.46	.57
25	2.5	1.46	.21	.80	1.88	.64	.80	.21	.12	.21	2.55	1.74
26	1.81	.72	.21	.57	1.88	.57	.33	1.88	.14	.21	2.0	1.33
27	.80	.64	.21	.44	.72	.57	.33	1.00	2.8	.28	1.00	3.45
28	.57	6.2	.21	.38	.64	1.60	1.46	.33	1.46	.33	.72	1.00
29	.38	9.8	.21	.44	.57	5.2	3.25	-	1.33	.21	1.60	.57
30	.33	3.1	.57	.50	.72	5.5	3.25	-------	9.4	.14	5.0	.72
31	3.1	2.7	-------	1.00	-------	1.88	14.5	-------	1.10	-------	5.5	-------
Total	38.60	105.98	21.75	57.17	26.05	114.65	34.76	11.80	23.66	31.76	62.98	74.51
Mean:												
mgd	1.25	3.42	0.725	1.84	0.868	3.70	1.12	0.421	0.763	1.06	2.03	2.48
cfs	1.93	5.29	1.12	2.85	1.34	5.72	1.73	0.651	1.18	1.64	3.14	3.84
Ac-ft	118	325	67	175	80	352	107	36	73	97	193	229

Calendar year 1957: Max 34.5 Min 0.01 Mean(mgd) 1.22 Mean(cfs) 1.89 Ac-ft 1,360
Fiscal year 1957-58: Max 34.5 Min 0.04 Mean(mgd) 1.65 Mean(cfs) 2.55 Ac-ft 1,850

Peak discharge (base, 50 mgd).--Aug. 23 (10 p.m.) 64 mgd (99 cfs), 2.09 ft; Oct. 23 (1:30 a.m.) 325 mgd (503 cfs), 4.65 ft; Dec. 7 (1 a.m.) 60 mgd (93 cfs), 207 ft; Jan. 31 (1 a.m.) 76 mgd (118 cfs), 2.26 ft.

* Discharge measurement made on this day.

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or flood-flow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at partial-record stations are generally presented in two tables. However, no records at low-flow partial-record stations are available for the 1957-58 fiscal years. A table of annual maximum discharge at crest-stage stations is given first, followed by a table of measurements made at miscellaneous sites for both low flow and high flow.

Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each fiscal year is given. Information on some lower floods may have been obtained but is not published herein. The years given in the period of record represent fiscal years for which the annual maximum has been determined. The maximum discharge for each year since the crest-stage gage was established is given. The peak discharge for some years may have been published in a previous report as a measurement of discharge. Figures given herein supersede all previous figures of peak discharge for the floods listed.

Annual maximum discharge at crest-stage partial-record stations

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge a/
		Island of Kauai					
280	Waimea River below Kekaha ditch intake.	Lat 22°02'40", long 159°38'35", on right bank, 500 ft below Kekaha ditch intake, 6½ miles north of Waimea, and 6.9 miles northwest of Kekaha.	45.0	1956-58	11-11-55 10-29-56 12- 1-57	16.85 - 22.7	7,760 (12,000) (†) 15,800 (24,400)
		Island of Oahu					
2113	Makaleha Stream near Waialua.	Lat 21°33'56", long 158°09'24", on left bank, 1.9 miles southwest of Sugar Mill, Waialua.	4.24	1958	3- 5-58	4.46	(†)
2115	Makua Stream at Makua.	Lat 21°32'05", long 158°13'25", on left bank, 0.55 mile northeast of cemetery, Makua.	4.07	1958	2-28-58	5.44	317 (490)
2117	Kaupuni Stream near Waianae.	Lat 21°27'46", long 158°09'55", on right bank, 1.8 miles northeast of cemetery, Waianae.	4.39	1958	3- 5-58	5.28	(†)
2122	Mailiilii Stream at Lualualei Naval Reservation near Waianae.	Lat 21°27'34", long 158°08'05", on right downstream side of bridge at Lualualei Naval Reservation, 3.4 miles east of cemetery, Waianae.	1.76	1958	3- 5-58	2.58	(†)
2124	Awawanui Stream near Barbers Point Naval Air Station.	Lat 21°20'36", long 158°06'04", on left downstream side of bridge on Farrington Highway, 3.1 miles north of Barbers Point Lighthouse, Barbers Point Naval Air Station.	1.16	1958	1958	3.51	(†)
2125	Honouliuli Stream near Waipahu.	Lat 21°22'40", long 158°02'10", on left upstream side at Farrington Highway bridge, 1.85 miles west of Post Office, Waipahu.	11.0	1956-58	1956 1957 3- 5-58	2.72 1.10 5.74	(†) (†) 1,230 (1,900)
2126	Waikele Stream at Schofield Barracks.	Lat 21°28'57", long 158°03'40", on right bank, 1,100 ft south of National Cemetery, Schofield Barracks.	5.05	1958	3- 5-58	6.63	(†)
2127	Waikakalaua Stream near Wahiawa.	Lat 21°27'50", long 158°01'38", on right bank, 2.4 miles southeast of Post Office, Wahiawa.	7.14	1958	12- 6-57	9.42	388 (601)
2165	Waimano Flood Channel at Pearl City.	Lat 21°23'55", long 157°58'16", on left bank, 0.6 mile above mouth at Pearl City.	2.59	1956-58	2-26-56 1957 3- 5-58	1.44 .75 1.79	(†) (†) (†)
2285	Moanalua Stream at altitude 100 ft, near Honolulu.	Lat 21°22'00", long 157°43'57", at left end of bridge in Moanalua Golf Course, 4.55 miles northwest of Post Office, Honolulu.	4.16	1958	3- 5-58	7.50	(†)
2295	Waolani Stream at Honolulu.	Lat 21°20'00", long 157°51'04", on right downstream side of bridge on Wylie St., at Honolulu.	1.28	1958	3- 5-58	-	(†)

† Discharge not determined.

a Discharge figures opposite date are in million gallons a day; figures in parentheses immediately below are in cubic feet per second.

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge a/
		Island of Oahu--Continued					
2375	Pauoa Stream at Honolulu.	Lat 21°19'18", long 157°51'03", on left upstream side of bridge, 1.2 miles northwest of Post Office at Honolulu.	1.52	1958	11-20-57	0.94	(†)
2472	Waialae-Nui Gulch at Honolulu.	Lat 21°16'51", long 157°47'04", on right bank, 75 ft downstream from Kalanianaole Highway at Honolulu.	1.75	1958	3- 5-58	7.58	(†)
2475	Wailupe Stream at Aina Haina.	Lat 21°17'46", long 157°45'29", on right downstream side of bridge on Ani St., 1.0 mile upstream from Kalanianaole Highway at Aina Haina.	2.35	1958	3- 5-58	5.87	1,240 (1,920)
2479	Kuliouou Stream at Kuliouou.	Lat 21°17'44", long 157°43'33", at footbridge, 0.4 mile upstream from Kalanianaole Highway at Kuliouou.	1.21	1958	3- 5-58	-	(†)
2488	Pacific Ocean tributary at Waimanalo.	Lat 21°20'31", long 157°42'39", on left bank at culvert on Hihimanu St., 0.8 mile northwest of Post Office, Waimanalo.	1.21	1958	3- 5-58	4.37	384 (594)
2605	Maunawili Stream near Kailua.	Lat 21°22'47", long 157°45'48", at right upstream side of abandoned highway bridge, 1.7 miles southwest of Post Office, Kailua.	5.62	1958	3- 5-58	11.08	(†)
2745	Keaahala Stream at Kaneohe.	Lat 21°25'15", long 157°47'46", at upstream side of Wailele Street Bridge, 0.5 mile downstream from Kamehameha Highway at Kaneohe.	.79	1958	3- 5-58	5.37	1,120 (1,730)
2952	Waikane Stream at Waikane.	Lat 21°29'38", long 157°51'10", on left bank, 200 ft downstream from Kamehameha Highway bridge at Waikane.	2.60	1958	11-20-57	5.29	(†)
2959	Makaua Stream at Kaaawa.	Lat 21°33'36", long 157°51'24", on left downstream side of Kamehameha Highway bridge at Kaaawa.	.53	1958	3- 5-58	2.17	(†)
3045	Kaluanui Stream near Hauula.	Lat 21°35'55", long 157°54'25", at left downstream side of abandoned railroad bridge, 1.2 miles southeast of cemetery, Hauula.	2.12	1958	1958	-	(†)
3105	Malaekahana Stream near Kahuku.	Lat 21°39'21", long 157°57'38", on left bank, 1.3 miles south of Sugar Mill, Kahuku.	2.94	1958	12- 6-57	7.33	(†)
3110	Oio Stream near Kahuku.	Lat 21°41'32", long 157°59'48", on right bank, 2.9 miles west of Sugar Mill, Kahuku.	2.22	1958	12- 6-57	4.90	492 (762)
3400	Anahulu Stream near Haleiwa.	Lat 21°35'28", long 158°04'45", on right bank, 2.5 miles east of Waialua School, Haleiwa.	11.9	1958	3- 5-58	7.10	1,600 (2,480)
3500	Opaeula Stream near Haleiwa.	Lat 21°35'08", long 158°05'58", on left bank, 0.5 mile southeast of Haleiwa, 0.6 mile upstream from bridge on Kamehameha Highway, and 2.1 miles northeast of Waialua. Prior to Oct. 27, 1957, at site 0.3 mile downstream at different datum.	5.96	1956-58	2-25-56	12.9	2,660 (4,120)
					11-21-56	4.62	440 (681)
					12- 6-57	6.1	730 (1,130)
		Island of Maui					
6070	Iao Stream at Wailuku.	Lat 20°53'38", long 156°30'27", on right bank, 560 ft upstream from Market Street Bridge at Wailuku and 1.9 miles from mouth.	b8.24	1952-58	1-19-52	3.56	1,910 (2,960)
					3- 4-53	2.52	1,180 (1,830)
					1- 5-54	2.36	808 (1,250)
					7-28-54	2.26	450 (696)
					12-20-55	5.66	2,620 (4,050)
					8-17-56	2.78	750 (1,160)
					8-30-57	5.16	2,220 (3,430)

† Discharge not determined.
a Discharge figures opposite date are in million gallons a day; figures in parentheses immediately below are in cubic feet per second.
b Revised.

Measurements at miscellaneous sites

Measurements of streamflow at points other than gaging stations or partial-record stations are given in the following table. Those that are measurements of base flow are designated by an asterisk (*); measurements of peak flow by a dagger (†).

Discharge measurements made at miscellaneous sites during fiscal years 1957-58

Stream	Tributary to	Location	Measured previously (fiscal years)	Date	Discharge: Million gallons a day	Discharge: Cubic feet per second
		Island of Kauai				
Waimea River.	Pacific Ocean	Lat 21°59'50", long 159°40'15", at Kekaha ditch siphon, 2.8 miles north of Waimea.		7-16-56	2.89	4.48
Kalalau Stream.	....do.....	Lat 22°09'45", long 159°38'10", at former gaging station, 5.5 miles southwest of Kauai Electric Power House (drainage area, 1.6 sq mi, approximately).		7-21-56 8-29-57	2.81 2.70	4.35 4.17
Kalalau Stream tributary No. 4.	Kalalau Stream.	Lat 22°10'05", long 159°38'40", at mouth, 5.8 miles southwest of Kauai Electric Power House.		7-21-56 8-29-57	.2 .32	.31 .50
Kalalau Stream tributary No. 3.	....do.....	Lat 22°10'30", long 159°38'55", at mouth, 6.0 miles southwest of Kauai Electric Power House.	1946-49, 1956	7-21-56 8-29-57	1.44 1.35	2.23 2.09
Honopu Stream	Pacific Ocean	Lat 22°10'00", long 159°40'25", at mouth, 10.9 miles northwest of Mana.	1956	7-22-56 8-29-57	2.71 2.90	4.19 4.49
Milolii Stream.	....do.....	Lat 22°08'55", long 159°43'30", at mouth, 8.3 miles northwest of Mana.	1946-48, 1951, 1954-56	7-22-56 8-24-57	1.55 1.62	2.40 2.51
		Island of Oahu				
Makaha tunnel	Farm land....	Lat 21°29'35", long 158°11'20", at mouth in Makaha Valley, near Waianae.	1947-51, 1953-56	8-16-56 1-10-57 8-29-57	0.90 .63 .48	1.39 .98 .75
Makaha mauka ditch.	....do.....	Lat 21°29'20", long 158°11'40", at 4-foot Parshall flume, about 2,000 ft below tunnel in Makaha Valley, near Wainae.	1947-51, 1954-56	8-16-56 8-29-57	.90 .78	1.39 1.20
Tunnel 19....	Kanewai Stream.	Lat 21°29'25", long 158°08'35", at weir 28, near Waianae.	1947-51, 1953-56	8-15-56 1-11-57 8-28-57	.74 .53 .65	1.14 .82 1.01
Tunnel 6.....	....do.....	Lat 21°29'25", long 158°08'40", at weir 7, near Waianae.	1911,1923, 1925-27, 1947-51, 1953-56	8-15-56 1-11-57 8-28-57	.087 .067 .083	.135 .104 .128
Tunnel 6-A...	....do.....	Lat 21°29'24", long 158°08'40", at weir 20, near Waianae.	1948-51, 1953-55	8-15-56 1-11-57 8-28-57	.015 .014 .014	.023 .022 .022
Tunnel 7.....	....do.....	Lat 21°29'20", long 158°08'40", at weir 21, near Waianae.	1911, 1925-27, 1947-51, 1953-55	8-15-56 1-11-57 8-28-57	.045 .041 .035	.070 .063 .054
Tunnel 9.....	....do.....	Lat 21°29'20", long 158°08'40", at weir 23, near Waianae.	1925-27, 1947-51, 1953-55	8-15-56 1-11-57 8-28-57	.035 .039 .033	.054 .060 .051
Kanewai Stream.	Honua Stream.	Lat 21°29'17", long 158°08'40", above flume entrance, near Waianae.	1923, 1948-51, 1953-56	8-15-56 1-11-57 8-28-57	1.15 .72 .88	1.78 1.11 1.35
Right Branch of West Fork Kalalula Stream.	West Fork Kalalula Stream.	Lat 21°29'42", long 158°08'56", at weir 25, above tunnel 14, near Waianae.	1947-51, 1953-56	8-14-56 1-10-57 8-27-57	.033 .058 .037	.051 .090 .057
Tunnel 14....	Right Branch of West Fork Kalalulu Stream.	Lat 21°29'42", long 158°08'56", at weir 24, near Waianae.	1925-27, 1947-51, 1953-56	8-14-56 1-10-57 8-27-57	.045 .069 .041	.070 .107 .063
Right Branch of West Fork Kalalula Stream.	West Fork Kalalula Stream.	Lat 21°29'35", long 158°08'59", at weir 10, near Waianae.	1947-51, 1953-56	8-14-56 1-10-57 8-27-57	.154 .116 .125	.238 .179 .193
Left Branch of West Fork Kalalula Stream.	....do.....	Lat 21°29'35", long 158°08'58", at weir 9, below tunnel 11, near Waianae.	1925-27, 1947-51, 1953-56	8-14-56 1-10-57 8-27-57	.128 .033 .083	.198 .051 .128
Tunnel 15....	....do.....	Lat 21°29'30", long 158°08'59", at weir 13, near Waianae.	1925-27, 1947-56	8-14-56 1-10-57 8-27-57	.209 .191 .209	.323 .296 .323
West Fork Kalalula Stream.	Kalalula Stream.	Lat 21°29'25", long 158°08'59", at weir 14, below tunnel 15, above pipeline diversion, near Waianae.	1923, 1947-56	8-14-56 1-10-57 8-27-57	.59 .37 .39	.91 .58 .60
East Fork Kalalula Stream.	....do.....	Lat 21°29'25", long 158°08'56", at weir 30, near Waianae.	1948-56	8-14-56 1-10-57	(a) 0	(a) 0

a Trace.

Discharge measurements made at miscellaneous sites during fiscal years 1957-58--Continued

Stream	Tributary to	Location	Measured previously (fiscal years)	Date	Discharge: Million gallons a day	Discharge: Cubic feet per second
		Island of Oahu--Continued				
Kalalula Stream.	Honua Stream.	Lat 21°29'00", long 158°09'05", at weir 15, near Waianae.	1948-56	8-15-56 1-11-57	0.135 b.174	0.209 b.269
Hiu Stream...	....do.....	Lat 21°28'58", long 158°09'24", at weir 26, above flume outlet, near Waianae.	1948-56	8-16-56 1- 8-57 8-29-57	.030 .029 .045	.046 .045 .070
Do.....	....do.....	Lat 21°28'42", long 158°09'17", at weir 17, near Waianae.	1948-51, 1953-56	8-16-56 1- 8-57 8-29-57	.039 .099 .072	.060 .153 .111
Kumaipo Stream.	....do.....	Lat 21°29'15", long 158°09'34", at weir 11, below tunnel 16, near Waianae.	1926, 1948-56	8-16-56 8- 8-57 8-29-57	.058 .054 .063	.090 .084 .098
Do.....	....do.....	Lat 21°29'02", long 158°09'35", at weir 12, above diversion flume to Hiu Stream, near Waianae.	1947-56	8-16-56 1- 8-57 8-29-57	.079 .110 .056	.122 .170 .087
Punanaula Stream.	....do.....	Lat 21°29'05", long 158°09'39", at weir 16, below tunnel 17, near Waianae.	1926-27, 1948-51, 1953-56	8-16-56 1- 8-57 8-29-57	.019 .019 .022	.029 .029 .034
City and County of Honolulu tunnel.	....do.....	Lat 21°28'27", long 158°09'20", 40 ft below tunnel portal, near Waianae.	1948-51, 1953-56	8-15-56 1-11-57 8-28-57	1.34 1.44 1.27	2.08 2.23 1.97
Puea mauka ditch.	Farm land....	Lat 21°28'12", long 158°09'43", at 2-foot Parshall flume below powerplant, near Waianae.	1947-51, 1953-56	8-15-56 1-11-57 8-28-57	1.33 1.03 1.12	2.06 1.60 1.73
Kapakahi Stream.	West Loch Pearl Harbor.	Lat 21°22'43", long 158°00'31", 0.7 mile southeast of Waipahu Post Office.		2- 6-58	1.15	1.78
Pearl Harbor Springs.	Middle Loch Pearl Harbor.	Lat 21°23'13", long 157°59'44", on Waipo Peninsula, 0.9 mile southeast of Waipahu Post Office.		2- 6-58	5.41	8.37
Kipapa Stream	Waikele Stream.	Lat 21°28'29", long 157°56'19", at altitude 945 ft, 5.0 miles northeast of Kipapa School at Waipio Camp A.		4-10-57 6- 3-57	.029 0	.045 0
Do.....	....do.....	Lat 21°28'30", long 157°56'20", at altitude 940 ft, 5.0 miles northeast of Kipapa School at Waipio Camp A.		4-10-57 6- 3-57	.743 .134	1.15 .207
Do.....	....do.....	Lat 21°28'27", long 157°56'43", at altitude 875 ft, 4.5 miles northeast of Kipapa School at Waipio Camp A.		4-10-57 6- 3-57	.646 .105	1.00 .162
Do.....	....do.....	Lat 21°28'22", long 157°56'56", at altitude 820 ft, 4.3 miles northeast of Kipapa School at Waipio Camp A.		4-10-57 6-3-57	.879 .067	1.36 .104
Do.....	....do.....	Lat 21°28'16", long 157°57'32", at altitude 740 ft, 3.7 miles northeast of Kipapa School at Waipio Camp A.		4-10-57 6- 3-57	.853 .045	1.32 .070
Do.....	....do.....	Lat 21°28'15", long 157°58'15", at altitude 620 ft, 2.9 miles northeast of Kipapa School at Waipio Camp A.		4-10-57 6- 3-57	1.09 .015	1.69 .023
Do.....	....do.....	Lat 21°27'47", long 157°59'43", at altitude 460 ft, 1.3 miles southeast of Kipapa School at Waipio Camp A.		4-10-57 6- 3-57	1.28 0	1.98 0
Waiahole tunnel.	Canefields...	Lat 21°28'16", long 157°53'33", at dike 11, 2.6 miles southwest of Waiahole School.		2- 4-57	3.64	5.63
Do.....	....do.....	Lat 21°28'13", long 157°53'43", at dike 13, 2.8 miles southwest of Waiahole School.		2- 4-57	5.49	8.49
Do.....	....do.....	Lat 21°28'11", long 157°53'51", at dike 15, 3.0 miles southwest of Waiahole School.		2- 4-57	8.40	13.0
Do.....	....do.....	Lat 21°27'41", long 157°55'39", at South Portal, 5.7 miles east of Kipapa School at Waipio Camp A.	1915-16	2- 4-57	8.98	13.9
Waiawa Stream	Middle Loch Pearl Harbor.	Lat 21°24'20", long 157°59'09", at plantation road crossing, 1.9 miles northeast of Waipahu Post Office.		2- 6-58	.597	.923
Pearl Harbor Springs.	East Loch Pearl Harbor.	Lat 21°23'27", long 157°58'[illegible]", at Puukapu, 1,000 ft west of former gaging station.	1931-48, 1956	11-16-56	2.20	3.40
Do.....	....do.....	Lat 21°23'28", long 157°57'44", at Waiau, at former gaging station, 2.0 miles northwest of Aiea Post Office.	1940	6-13-58	3.12	4.83

b Estimated.

Discharge measurements made at miscellaneous sites during fiscal years 1957-58--Continued

Stream	Tributary to	Location	Measured previously (fiscal years)	Date	Discharge	
					Million gallons a day	Cubic feet per second
		Island of Oahu--Continued				
Waimalu Stream.	East Loch Pearl Harbor.	Lat 21°23'53", long 157°56'43", at culvert, 1.3 miles northwest of Aiea Post Office.		2- 6-58	0.294	0.455
Kalauao Stream.	....do.....	Lat 21°23'06", long 157°56'23", at Moanalua Highway, 3,500 ft northwest of Aiea Sugar Refinery Stack.		8-29-56	.473	.732
Manoa Stream.	Pacific Ocean	Lat 21°17'38", long 157°49'03", above confluence with Palolo Stream, at Honolulu.		10- 7-57	1.50	2.32
Palolo Stream	Manoa Stream.	Lat 21°17'38", long 157°49'03", above confluence with Manoa Stream, at Honolulu.		10- 7-57	.471	.728
Manoa Stream.	Pacific Ocean	Lat 21°17'22", long 157°49'18", above Date Street Bridge, 1.1 miles northwest of Kaimuki Post Office.		10- 7-57	1.89	2.92
Maunawili Stream c/..	Kawainui Swamp.	Lat 21°21'55", long 157°46'04", above confluence with Makawao Stream, 2.5 miles southwest of Kailua Post Office.		9- 5-56 10- 3-56 11-14-56 10- 9-57	.527 .457 .525 .323	.816 .707 .813 .500
Makawao Stream.	Maunawili Stream.	Lat 21°21'54", long 157°46'03", above confluence with Maunawili Stream, 2.5 miles southwest of Kailua Post Office.	1913-16	9- 5-56 10- 3-56 11-14-56 10- 9-57	1.15 1.30 1.32 .776	1.78 2.01 2.04 1.20
Kamakalepo Stream.	....do.....	Lat 21°21'53", long 157°46'08", near former gaging-station site, 2.45 miles southwest of Kailua Post Office.	1913-16	9- 5-56 10- 3-56 11-14-56 10- 9-57	.599 .449 .905 .186	.927 .694 1.40 .288
Pohakea Stream.	....do.....	Lat 21°22'04", long 157°46'17", near former gaging-station site, 2.4 miles southwest of Kailua Post Office.	1913-14	9- 5-56 10- 3-56 11-14-56 10- 9-57	.115 .099 .196 .033	.178 .153 .304 .051
Drainage ditch.	Pohakea Stream.	Lat 21°22'04", long 157°46'17", at Pohakea Stream, 2.4 miles southwest of Kailua Post Office.		9- 5-56 10- 3-56 11-14-56 10- 9-57	.023 .015 .016 .006	.036 .023 .025 .010
Wong Leong's ditch.	Kawainui Swamp.	Lat 21°22'15", long 157°46'02", at former gaging-station site, 2.1 miles southwest of Kailua Post Office.	1912-16	9- 5-56 10- 3-56 11-14-56 10- 9-57	.072 0 0 0	.111 0 0 0
Maunawili Stream c/.	....do.....	Lat 21°22'16", long 157°46'02", at former gaging-station site, 2.1 miles southwest of Kailua Post Office.	1912-16	9- 5-56 10- 3-56 11-14-56 10- 9-57	2.30 2.33 2.92 1.23	3.56 3.60 4.52 1.91
Do.....	....do.....	Lat 21°22'50", long 157°45'48", at bridge on Kalanianaole Highway, 1.6 miles southwest of Kailua Post Office.	1922	8- 8-56 9- 5-56 9-28-56 10- 3-56 11-14-56 2-21-57 4- 3-57 5- 9-57 6-24-57 9-19-57 10- 9-57 1- 9-58 2-24-58 3- 5-58 4-10-58 5-22-58	3.74 2.56 2.55 2.55 3.41 7.82 4.43 4.40 3.39 1.49 1.42 5.87 3.39 449 7.43 6.30	5.78 3.96 3.95 3.95 5.26 12.1 6.86 6.81 5.24 2.30 2.19 9.08 5.24 695 11.5 9.75
South Branch of Kahanaiki Stream.	Kahanaiki Stream.	Lat 21°22'21", long 157°46'27", above confluence with Kahanaiki Stream, 2.0 miles southwest of Kailua Post Office.	1913-15	9- 5-56 10- 3-56 11-14-56 10- 9-57	.191 .234 .207 .116	.296 .362 .320 .179
Kahanaiki Stream.	Kawainui Swamp.	Lat 21°22'23", long 157°46'28", above confluence with South Branch of Kahanaiki Stream, at former gaging-station site, 2.0 miles southwest of Kailua Post Office.	1913-15	9- 5-56 10- 3-56 11-14-56 10- 9-57	.140 .096 .242 .023	.216 .148 .375 .036
Do.....	....do.....	Lat 21°22'23", long 157°46'26", below confluence, at former gaging-station site, 1.95 miles southwest of Kailua Post Office.	1913-16	9- 5-56 10- 3-56 11-14-56 10- 9-57	.384 .275 .406 .226	.594 .426 .628 .349

c Formerly Kailua Stream.

Discharge measurements made at miscellaneous sites during fiscal years 1957-58--Continued

Stream	Tributary to	Location	Measured previously (fiscal years)	Date	Discharge: Million gallons a day	Discharge: Cubic feet per second
		Island of Oahu--Continued				
Kahanaiki Stream.	Kawainui Swamp.	Lat 21°22'49", long 157°46'06", at bridge, 1.85 miles southwest of Kailua Post Office.		8- 8-56	1.20	1.86
				9- 5-56	.789	1.22
				9-28-56	.67	1.03
				10- 3-56	.453	.701
				11-14-56	.976	1.51
				2-21-57	2.13	3.30
				4- 3-57	1.00	1.55
				5- 9-57	1.05	1.63
				6-24-57	.446	.690
				9-16-57	.344	.533
				10- 9-57	.179	.277
				1- 9-58	1.34	2.07
				2-24-58	.92	.14
				3- 5-58	†795	†1,230
				4-10-58	1.23	1.91
				5-22-58	.924	1.43
Kaelepulu Stream.	Pacific Ocean	Lat 21°23'30", long 157°43'57", at bridge on Keolu Drive, 0.9 mile southeast of Kailua Post Office.		3- 6-58	609	943
Do.....	....do.....	Lat 21°23'58", long 157°43'48", at bridge on South Kalaheo Ave., 1.0 mile northeast of Kailua Post Office.		3- 6-58	679	1,054
Kawainui Swamp.	....do.....	Lat 21°23'48", long 157°44'54", at bridge on Kailua Rd., 0.2 mile southwest of Kailua Post Office.		3- 6-58	281	434
Kawainui Canal.	....do.....	Lat 21°24'45", long 157°45'24", 4,200 ft upstream from bridge and 1.3 miles northwest of Kailua Post Office.		3- 5-58	†1,060	†1,640
Do.....	....do.....	Lat 21°25'20", long 157°45'02", at bridge on North Kalaheo Ave., 1.8 miles northwest of Kailua Post Office.		3- 6-58	860	1,334
Kamooalii Stream.	Kaneohe Stream.	Lat 21°24'27", long 157°48'17", at Kapalai Rd., 0.6 mile south of Parker School.		3- 5-58	1,290	†1,990
Kaneohe Stream.	Pacific Ocean	Lat 21°24'54", long 157°47'35", near mouth, 0.6 mile southeast of Parker School.		10- 7-57	4.82	7.46
Kahaluu Stream Tributary No. 1 d/.	Kahaluu Stream.	Lat 21°26'21", long 157°51'10", near culvert, 3.2 miles southeast of Waiahole School.	1953-56	9-14-56	.43	.66
				2-25-57	.478	.740
				5- 8-57	.416	.643
				9-17-57	.264	.409
				11- 5-57	.266	.411
				1-14-58	.291	.450
				4- 7-58	.898	1.39
				5-13-58	.270	.417
				6-23-58	.306	.474
Kahaluu Stream.	Pacific Ocean	Lat 21°27'30", long 157°50'20", above confluence with Waihee Stream, 2.2 miles southeast of Waiahole School.		10- 7-57	1.49	2.30
Waihee Stream	Kahaluu Stream.	Lat 21°26'57", long 157°51'40", above gaging station, 2.6 miles south of Waiahole School.	1954-56	1-17-58	3.04	4.70
				2-20-58	3.38	5.23
Do.....	....do.....	Lat 21°27'33", long 157°50'28", above confluence with Kahaluu Stream, 2.1 miles southeast of Waiahole School.		10- 7-57	6.2	9.5
Do.....	Pacific Ocean	Lat 21°29'38", long 157°51'10", near mouth, 0.55 mile north of Waiahole School.	1912	2- 4-58	1.78	2.76
Hakipuu Stream.	....do.....	Lat 21°30'42", long 157°51'35", 600 ft above Kamehameha Highway and 1.7 miles southwest of Sugar Mill Chimney at Kualoa.		2- 4-58	.564	.872
Kaaawa Stream	....do.....	Lat 21°31'32", long 157°51'51", at end of road, 1.7 miles west of Sugar Mill Chimney at Kualoa.		2-10-58	.036	.055
Do.....	....do.....	Lat 21°32'06", long 157°51'06", 1.1 miles northwest of Sugar Mill Chimney at Kualoa.		2-10-58	.216	.334
Kawa Stream..	Kahana Stream	Lat 21°32'33", long 157°53'00", above confluence with Kahana Stream, 3.1 miles northwest of Sugar Mill Chimney at Kualoa.		2-11-58	1.29	1.99
Kahana Stream	Pacific Ocean	Lat 21°32'38", long 157°53'05", near gaging-station site, 3.2 miles northwest of Sugar Mill Chimney at Kualoa.		2-11-58	13.7	21.2
Do.....	....do.....	Lat 21°32'58", long 157°52'48", 3.1 miles northwest of Sugar Mill Chimney at Kualoa.		10- 4-57	12.5	19.3
				2-11-58	16.8	26.0
Kahana Stream diversion.	Farm lands...	Lat 21°32'58", long 157"52'48", below intake, 3.2 miles northwest of Sugar Mill Chimney at Kualoa.		2-11-58	3.89	6.02

† Peak flow.
d Formerly left tributary to Kahaluu Stream.

Discharge measurements made at miscellaneous sites during fiscal years 1957-58--Continued

Stream	Tributary to	Location	Measured previously (fiscal years)	Date	Discharge: Million gallons a day	Discharge: Cubic feet per second
		Island of Oahu--Continued				
Right Branch of Punaluu Stream tributary No. 1.	Punaluu Stream.	Lat 21°33'42", long 157°54'11", near gaging-station site, 3.35 miles southeast of Hauula School.		2-10-58	0.332	0.514
				2-20-58	.30	.464
				3-31-58	.289	.345
				5-12-58	.262	.406
				6-24-58	.286	.443
Left Branch of Punaluu Stream tributary No. 1.	....do.....	Lat 21°33'44", long 157°54'12", at end of road, 3.3 miles southeast of Hauula School.		2-10-58	.371	.574
				2-20-58	.32	.495
				3-31-58	.380	.588
				5-12-58	.436	.674
				6-24-58	.42	.650
Punaluu Stream.	Pacific Ocean	Lat 21°34'34", long 157°53'28", 4.9 miles northwest of Sugar Mill Chimney at Kualoa.		10- 4-57	1.58	2.44
Kaluanui Stream.	....do.....	Lat 21°34'50", long 157°55'00", below Kaliuwaa Falls, 2.0 miles south of Hauula School.	1912	2- 4-58	.268	.415
Do.....	....do.....	Lat 21°35'26", long 157°54'32", at end of road, 1.3 miles southeast of Hauula School.		2- 4-58	.190	.294
				2-10-58	.116	.179
Do.....	....do.....	Lat 21°35'38", long 157°54'25", 1.1 miles southeast of Hauula School.		2-10-58	.056	.087
		Island of Molokai				
Kahawaiiki Stream.	Wailau Stream	Lat 21°10'01", long 156°49'52", above confluence with Wailau Stream, 7.2 miles north of Pukoo Post Office.	1956	7-19-56	14.0	21.7
				9-16-56	3.12	4.83
Wailau Stream	Pacific Ocean	Lat 21°10'02", long 156°49'53", above confluence with Kahawaiiki Stream, 7.2 miles north of Pukoo Post Office.	1919, 1956	7-19-56	58.0	89.8
				9-16-56	27.5	42.6
Pilipillau Stream.	Pelekunu Stream.	Lat 21°08'30", long 156°52'50", at altitude 450 ft, 6.15 miles northwest of Pukoo Post Office.	1919	9-15-56	1.53	2.36
				11-16-56	1.00	1.55
				1-16-57	1.21	1.87
				3-21-57	1.43	2.21
				5-17-57	1.19	1.84
Pelekunu Stream.	Pacific Ocean	Lat 21°09'25", long 156°52'47", at altitude 100 ft, 7.1 miles northwest of Pukoo Post Office.	1946, 1956	7-13-56	22.5	34.8
				9-15-56	10.1	15.7
				11-16-56	8.53	13.2
				1-16-57	16.0	24.7
				3-21-57	18.9	29.2
				5-17-57	14.1	21.8
Waikolu Stream.	....do.....	Lat 21°08'34", long 156°55'14", at altitude 1,000 ft, 7.75 miles northwest of Pukoo Post Office.	1930, 1956	7-23-56	2.03	3.14
				9-20-56	1.57	2.44
				11-22-56	1.88	2.91
				3-23-57	1.66	2.57
				5-19-57	1.85	2.87
Waikolu Stream tributary No. 1 e/.	Waikolu Stream.	Lat 21°08'36", long 156°55'13", altitude 1,000 ft, 7.75 miles northwest of Pukoo Post Office.	1956	7-23-56	.25	.39
				9-20-56	.01	.02
				11-22-56	.07	.11
				3-23-57	.06	.10
				5-19-57	.02	.04
Waikolu Stream tributary No. 2 f/.	....do.....	Lat 21°08'40", long 156"55'13", at altitude 990 ft, 7.8 miles northwest of Pukoo Post Office.	1956	7-23-56	.105	.163
				9-20-56	.014	.021
				11-22-56	.122	.189
				3-23-57	.079	.122
				5-19-57	.039	.061
Springs.....	....do.....	Lat 21°08'51", long 156°55'22", at altitude 800 ft, 8.1 miles northwest of Pukoo Post Office.		7-23-56	.578	.895
				9-20-56	.390	.604
				11-22-56	.182	.282
				3-23-57	.352	.545
				5-19-57	.469	.726
Waikolu Stream.	Pacific Ocean	Lat 21°10'19", long 156°55'58", above pipeline crossing, 9.75 miles northwest of Pukoo Post Office.	1937-39, 1956	7-12-56	12.0	18.6
				9-12-56	11.4	17.6
				11-15-56	10.7	16.6
				3-20-57	11.1	17.1
				5-15-57	11.3	17.5
				4-30-58	14.0	21.6
		Island of Hawaii				
Kohakohau Stream.	Keanuiomano Stream.	Lat 20°01'45", long 155°42'05", at bridge, at junction of Kohala, Kawaihae, Waimea roads, 2.0 miles west of Kamuela Post Office.	1955-56	10- 4-56	0.046	0.071
				9-19-57	.340	.529
				11-19-57	.417	.645
				1-15-58	.421	.651
				1-20-58	.234	.362
				3-19-58	.291	.451

e Formerly Right Branch of Waikolu Stream.
f Formerly Second Right Branch of Waikolu Stream.

INDEX

Page

Accuracy of field data and computed results..... 5
Acre-foot, definition of..... 2
Agencies other than Geological Survey, records collected by..... 6-7
Aiea, Halawa Stream near..... 98-99
  Kalauao Stream at..... 94-95
  North Halawa Stream near..... 96-97
  Pearl Harbor Springs near..... 92-93
  Waimalu Stream near..... 90-91
Alewa Heights Spring below reservoir 3 6
Alo Stream near Huelo.....209-210
Anahola ditch above Kaneha Reservoir, near Kealia..... 46-47
Anahola ditch wasteway near Kealia.... 44-45
Anahola River near Kealia..... 48-49
Awini ditch at East Honokaneiki Gulch, near Niulii.....269-270

Booth Springs at altitude 685 ft..... 6

Computations, accuracy of results of.. 5
Control, definition of..... 2
Cooperation, record of..... 1
Cubic foot per second, definition of..... 2

Data, accuracy of..... 5
  explanation of..... 3-5
Drainage area, definition of..... 2

East Honokaneiki intake to Awini ditch at East Honokaneiki Gulch, near Niulii.....271-272
East Lawai storm ditch near Kalaheo... 6
East Wailuaiki Stream near Keanae....175-176
East Wailuanui Stream near Keanae....181-182
Eleele, Hanapepe River near..... 22-23
Eleele ditch near Kalaheo..... 6
Everett ditch near Wailuku..... 6

Gaging station, definition of..... 1

Hahalawe Stream, Right Branch, near Kipahulu.....161-162
Haiku ditch at Honopou Gulch, near Kailua.....249-250
Haiku Stream near Heeia.....118-119
Haipuaena diversion ditch at Kolea Gulch, near Keanae.....193-194
Haipuaena Stream, above Spreckels ditch, near Huelo.....195-196
  at Kula pipeline intake, near Olinda.....191-192
Halaulani Stream at altitude 400 ft, near Kilauea..... 61
Halawa Stream (Island of Molokai) near Halawa.....140-141
Halawa Stream (Island of Oahu) near Aiea..... 98-99
Hanalei, Wainiha River near..... 66-68
Hanalei ditch, above Kalihiwai Reservoir, near Kilauea..... 6
  near Kilauea..... 62-63
Hanalei tunnel outlet near Lihue..... 64-65
Hanamaulu ditch near Hanamaulu..... 6
Hanapepe field ditch near Eleele..... 6
Hanapepe River, below Manuahi Stream, near Eleele..... 22-23
  near Eleele..... 6
Hanawi Stream, below Government Road, near Nahiku..... 7
  near Nahiku.....165-166
Hauani Stream near Kamuela.....284-285
Hawaii, island of, gaging-station records on.....259-285
  measurements at miscellaneous sites on..... 292
Hawaiian Electric Co. tunnel at Waiau, near Pearl City..... 88-89
Heeia, Haiku Stream near.....118-119
  Iolekaa Stream mauka near.....120-121

Page

Heeia, Kahaluu Stream near.....122-123
  Waihee Stream near.....124-125
Helemano ditch near Helemano Reservoir..... 6
Hering Springs at altitude 970 ft..... 6
Hilo, Kapehu ditch near.....265-266
  Kapehu ditch diversion near.....263-264
  Wailuku River near.....261-262
Hionamoa Gulch near Pahala..... 7
Honokaape ditch at Kukuihaele Village..... 7
Honokohau, Honokohau Stream near.....253-254
  Kahakuloa Stream near.....251-252
Honokohau Stream near Honokohau.....253-254
Honokohau tunnel at Mahinahina weir.... 6
Honokowai ditch near Lahaina.....255-256
Honolulu, East Branch Manoa Stream near.....106-107
  Kalihi Stream near.....102-103
  Moanalua Stream near.....100-101
  Nuuanu Stream near.....104-105
  Palolo Stream near.....114-115
  Pukele Stream near.....110-111
  Waiomao Stream near.....112-113
  West Branch Manoa Stream near.....108-109
Honomanu Stream near Keanae.....187-188
Honopou Stream near Huelo.....239-240
Hoolawaliilii Stream near Huelo.....237-238
Hoolawanui Stream near Huelo.....235-236
Huelo, Alo Stream near.....209-210
  Haipuaena Stream near.....195-196
  Honopou Stream near.....239-240
  Hoolawaliilii Stream near.....237-238
  Hoolawanui Stream near.....235-236
  Kaaiea Stream near.....211-212
  Kailua Stream near.....233-234
  Koolau ditch near.....199-200
  Lowrie ditch near.....247-248
  Manuel Luis ditch near.....203-204
  Nailiilihaele Stream near.....215-232
  New Hamakua ditch near.....243-244
  Old Hamakua ditch near.....245-246
  Oopuola Stream near.....213-214
  Puohokamoa Stream near.....201-202
  Spreckels ditch near.....197-198
  Waikamoi Stream near.....207-208
  Wailoa ditch near.....241-242

Iao-Waikapu ditch near Wailuku..... 6
Iolekaa Stream mauka near Heeia.....120-121

K-3 flume above Lahainaluna..... 6
Ka Loko ditch near Kilauea..... 52-53
Kaaiea Stream near Huelo.....211-212
Kahakuloa Stream near Honokohau.....251-252
Kahalawe Stream, Right Branch. See Hahalawe Stream near Kipahula...161-162
Kahaluu Stream near Heeia.....122-123
Kahoma tunnel above Lahaina..... 6
Kahuawai Springs at altitude 618 ft.... 6
Kailua, Haiku ditch near.....249-250
Kailua Stream near Huelo.....233-234
Kalae, Waialala Springs near.....151-152
Kalauao Stream, at Aiea..... 95
  at Moanalua Road at Aiea..... 94
Kalaupapa, Waikolu Stream near147-148.149-150
Kalihi Stream near Honolulu.....102-103
Kalihi tunnels at altitude 650 ft..... 6
Kalihiwai ditch near Kilauea..... 58-59
Kama ditch near Wailuku..... 6
Kamalo, Right Branch of East Fork Kawela Stream near.....155-156
Kamananui ditch..... 6
Kamooloa ditch near Koloa..... 6
Kamuela, Hauani Stream near.....284-285
  Kohakohau Stream near.....277-279
  Waikoloa Stream near.....280-281
Kanaha ditch above Lahainaluna..... 6
Kapaa, Kapaa River near..... 42-43
  North Fork Wailua River near..... 36-37
  Wailua ditch near..... 34-35

Page
Kapaa River at Kapahi ditch intake near Kapaa..... 42-43
Kapahi ditch near Kealia..... 40-41
Kapaula Stream near Nahiku.....167-168
Kapehu ditch near Hilo.....265-266
Kapehu ditch diversion near Hilo.....263-264
Kauai, island of, crest-stage partial-record stations on..... 286
gaging-station records on..... 8-68
measurements at miscellaneous sites on..... 288
Kauaula tunnel above Lahaina..... 6
Kaukonahua ditch near Wahiawa..... 69-70
Kaukonahua Stream, North Fork, near Wahiawa..... 71-72
South Fork, above Wahiawa Reservoir, near Wahiawa..... 74-75
near Wahiawa..... 73
Kaunakakai Stream at Kaunakakai.....153-154
Kawaikoi Stream near Waimea..... 8-9
Kawela Stream, Right Branch of East Fork, near Kamalo.....155-156
Keaiwa Gulch near Pahala..... 7
Kealia, Anahola ditch near..... 46-47
Anahola ditch wasteway near..... 44-45
Anahola River near..... 48-49
Kapahi ditch near..... 40-41
Lower Anahola ditch near..... 50-51
Makaleha ditch near..... 38-39
Kealia River near Kealia..... 6
Keanae, East Wailuaiki Stream near.....175-176
East Wailuanui Stream near.....181-182
Haipuaena diversion ditch near.....193-194
Honomanu Stream near.....187-188
Koolau ditch near.....185-186
Kopiliula Stream near.....173-174
Taro patch feeder ditch at.....183-184
West Wailuaiki Stream near.....177-178
West Wailuanui Stream near.....179-180
Kehena ditch near Kohala.....275-276
Kekaha ditch at camp 1, near Waimea..... 16-17
Kilauea, Halaulani Stream near..... 61
Hanalei ditch near..... 62-63
Ka Loko ditch near..... 52-53
Kalihiwai ditch near..... 58-59
Pohakuhonu Stream near..... 60
Puu Ka Ele ditch near..... 54-55
Ross ditch near..... 56-57
Kipahulu, Palikea Stream near.....159-160
Right Branch Hahalawe Stream near.....161-162
Kipapa Stream, at altitude 300 ft..... 6
near Wahiawa..... 78-79
Kohakohau Stream near Kamuela.....277-279
Kohala, Kehena ditch near.....275-276
Kohala ditch, at Awini weir near Niulii..... 7
at Pololu, near Niulii..... 273
Kokee ditch near Waimea..... 12-13
Koloa ditch near Lihue..... 6
Koolau ditch, at Haipuaena, near Huelo.....199-200
at Nahiku weir, near Nahiku.....169-170
near Keanae.....185-186
Kopiliula Stream near Keanae.....173-174
Koula ditch near Makaweli..... 6
Kula diversion from Haipuaena Stream, near Olinda.....189-190

Lahaina, Honokowai ditch near.....255-256
Lalakea ditch near Waipio..... 7
Lanipuni Stream near Pelekunu..... 146
Launiupoko ditch above Lahaina..... 6
Lawai Stream near Kalaheo..... 6
Lihue, East Branch of North Fork Wailua River near..... 32-33
Hanalei tunnel outlet near..... 64-65
North Fork Wailua River near..... 30-31
North Wailua ditch near..... 26-27
South Fork Wailua River near..... 24-25
Stable storm ditch near..... 28-29
Lihue lower ditch near Lihue..... 6
Lihue upper ditch near Lihue..... 6
Lower Anahola ditch near Kealia..... 50-51
Lower Hamakua ditch near Kukuihaele... 7
Lowrie ditch at Honopou Gulch, near Huelo.....247-248

Makaleha ditch near Kealia..... 38-39

Page
Makapipi ditch near Nahiku.....163-164
Makaweli River near Waimea..... 20-21
Makiki Springs at altitude 350 ft..... 6
Maniania ditch near Wailuku..... 6
Manoa Stream, East Branch, near Honolulu.....106-107
West Branch, near Honolulu.....108-109
Manoa tunnels..... 6
Manuel Luis ditch at Puohokamoa Gulch, near Huelo.....203-204
Maui, island of, crest-stage partial-record stations on..... 287
gaging-station records on.....159-258
Maunawili ditch near Waimanalo.....116-117
Million gallons, use of term..... 2
Moanalua Stream near Honolulu.....100-101
Moaula Gulch near Pahala..... 7
Mohihi Stream at altitude 3,500 ft, near Waimea..... 10-11
Molokai, island of, gaging-station records on.....140-158
measurements at miscellaneous sites on..... 292
Morikone pond outlet at Pearl City..... 84-85
Mountain View, Waiakea Stream near....259-260

Nahiku, Hanawi Stream near.....165-166
Kapaula Stream near.....167-168
Koolau ditch near.....169-170
Makapipi ditch near.....163-164
Waiohue Stream near.....171-172
Nailiilihaele Stream near Huelo.....215-232
New Hamakua ditch at Honopou, near Huelo 243-244
Niulii, Awini ditch near.....269-270
East Honokaneiki intake to Awini ditch near.....271-272
Kohala ditch near.....273-274
Noguchi tunnel 19 near Pahala..... 7
North Halawa Stream near Aiea..... 96-97
North Waiehu Stream near Wailuku..... 6
North Wailua ditch near Lihue..... 26-27
Nuuanu Stream below reservoir 2 waste-way, near Honolulu.....104-105
Nuuanu tunnels..... 6

Oahu, island of, crest-stage partial-record stations on.....286-287
gaging-station records on.....69-139
measurements at miscellaneous sites on.....288-292
Oheo Stream. See Palikea Stream near Kipahulu.....159-160
Old Hamakua ditch at Honopou, near Huelo.....245-246
Olinda, Haipuaena Stream near.....191-192
Kula diversion from Haipuaena Stream near.....189-190
Waikamoi Stream near.....205-206
Olokele ditch near Makaweli..... 6
Olowalu ditch near Olowalu.....257-258
Oopuola Stream near Huelo.....213-214
Order of listing gaging stations..... 2

Palikea Stream below diversion dam, near Kipahulu.....159-160
Palolo Stream near Honolulu.....114-115
Palolo tunnel..... 6
Partial-record station, definition of..... 2
Pearl City, Hawaiian Electric Co. tunnel near..... 88-89
Morikone pond outlet at..... 84-85
Pearl Harbor Springs near..... 82-83
Waiawa Stream near..... 86-87
Pearl Harbor Springs at Kalauao, near Aiea..... 92-93
Pearl Harbor Springs at Waiawa, near Pearl City..... 82-83
Pelekunu, Lanipuni Stream near..... 146
Pelekunu Stream near..... 145
Pelekunu Stream near Pelekunu..... 145
Poamoho Stream near Wahiawa..... 76-77
Pohakuhonu Stream near Kilauea..... 60
Pololu Inlets..... 7
Publications on streamflow by Geological Survey..... 5-6
Pukele Stream near Honolulu.....110-111
Pukoo, Punaula Stream near.....157-158
Pulena Stream near Wailau.....142-143
Punaluu ditch near Punaluu.....136-137
Punaluu Stream near Punaluu.....138-139

Page
Punaula Stream near Pukoo.....157-158
Puohokamoa Stream above Spreckels
ditch, near Huelo.....201-202
Puu Ka Ele ditch near Kilauea..... 54-55
Puwaiole Stream near Halawa..... 7

Ross ditch near Kilauea..... 56-57

South Waikapu ditch near Waikapu..... 6
Spreckels ditch, at Haipuaena weir,
near Huelo.....197-198
near Waihee..... 6
Stable storm ditch near Lihue..... 28-29
Stage-discharge relation, definition
of..... 2
Station numbers..... 2-3

Taro patch feeder ditch at Keanae....183-184
Terms and abbreviations, definition
of..... 1-2

Ukumehame ditch near Olowalu..... 6

WSP, definition of..... 2
Wahiawa, Kaukonahua ditch near..... 69-70
Kipapa Stream near..... 78-79
North Fork Kaukonahua Stream near... 71-72
Poamoho Stream near..... 76-77
South Fork Kaukonahua Stream
near.....73,74-75
Wahiawa Reservoir Outlet..... 6
Wahiawa Stream, East Branch, near
Kalaheo..... 6
near Kalaheo..... 6
Waiahole Stream at altitude 250 ft,
near Waiahole.....134-135
Waiahole tunnel, at adit 8, near
Waipahu.....6,132-133
at north portal, near Waiahole.....130-131
at Waianu, near Waiahole.....126-127
Waiahole tunnel wasteway at intake 31,
near Waiahole.....128-129
Waiakea Stream at middle flume house,
near Mountain View.....259-260
Waiakeakua Stream near Wailau..... 144
Waialala Springs near Kalae.....151-152
Waiapuka Stream near Niulii..... 7
Waiawa Stream at altitude 750 ft..... 6
near Pearl City..... 86-87
Waihee ditch near Waihee..... 6
Waihee Stream near Heeia.....124-125
Waililikahi Stream near Waimanu.....267-268

Page
Waikakalaua Stream at altitude 750 ft.. 6
Waikamoi Stream, above reservoir at
Kula pipeline intake, near
Olinda.....205-206
above Wailoa ditch, near Huelo.....207-208
Waikele Stream at Waipahu..... 80-81
Waikoloa Stream, at Marine Dam, near
Kamuela.....282-283
near Kamuela.....280-281
Waikolu Stream, at altitude 900 ft,
near Kalaupapa.....147-148
below pipeline crossing, near
Kalaupapa.....149-150
Wailau, Pulena Stream near.....142-143
Waiakeakua Stream near..... 144
Wailoa ditch at Honopou, near Huelo...241-242
Wailua ditch near Kapaa..... 34-35
Wailua River, North Fork, at altitude
650 ft, near Lihue..... 30-31
North Fork, near Kapaa..... 36-37
East Branch of, near Lihue..... 32-33
South Fork, near Lihue..... 24-25
Wailuku River above Hilo Boarding
School ditch intake, near Hilo..261-262
Waimalu Stream, at altitude 535 ft,
near Aiea..... 6
near Aiea..... 90-91
Waimanalo, Maunawili ditch near.....116-117
Waimanu, Waililikahi Stream near.....267-268
Waimea, Kawaikoi Stream near..... 8-9
Kekaha ditch near..... 16-17
Kokee ditch near..... 12-13
Makaweli River near..... 20-21
Mohihi Stream near..... 10-11
Waimea River near.....14-15,18-19
Waimea River, at altitude 890 ft, near
Waimea..... 14-15
near Waimea..... 18-19
Wainiha River near Hanalei..... 66-68
Waiohue Stream near Nahiku.....171-172
Waiomao Stream above Pukele Stream,
near Honolulu.....112-113
Waipahu, Waiahole tunnel near.....132-133
Waikele Stream at..... 80-81
Waipuhi Stream near Halawa..... 7
Waipunalau Stream near Halawa..... 7
West Kopiliula Stream. See Kopiliula Stream 173
West Lawai ditch near Kalaheo..... 6
West Wailuaiki Stream near Keanae.....177-178
West Wailuanui Stream near Keanae.....179-180
Work, division of..... 1
scope of..... 1

* U.S. GOVERNMENT PRINTING OFFICE : 1960 O—550652