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J. A. KRUG, Secretary

GEOLOGICAL SURVEY
W. E. WRATHER, Director

Water-Supply Paper 985

SURFACE WATER SUPPLY *of* HAWAII

JULY 1, 1942, *to* JUNE 30, 1943

Prepared by
WATER RESOURCES BRANCH
DIVISION OF SURFACE WATER

In cooperation with the
TERRITORY OF HAWAII

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SURFACE WATER SUPPLY OF HAWAII, JULY 1, 1942, TO JUNE 30, 1943

SCOPE OF WORK

This volume contains results of measurements of the flow of streams and ditches in the Territory of Hawaii during the year ending June 30, 1943. Since the beginning of stream-gaging work in Hawaii, in 1910, records of flow of streams and ditches have been obtained at about 489 stations for periods ranging from a few months to 32 years. In addition, hundreds of miscellaneous measurements have been made, and rather extensive studies of ground water have been made on most of the islands.

In this volume are given the records of daily flow obtained at stations that were operated during the year ending June 30, 1943, and the results of miscellaneous measurements of stream flow made during year. Most of the results of ground-water studies have been published in bulletins of the Territorial Division of Hydrography. See "Publications," on page 3, for a record of surface water-supply papers pertaining to Hawaii.

DEFINITION OF TERMS

The units in which stream-flow data are presented in this report are defined as follows:

"Second-feet" is an abbreviation for "cubic feet per second." A second-foot is the rate of discharge of water flowing in a channel having a cross-sectional area of 1 square foot and an average velocity of 1 foot a second.

An "acre-foot" is equivalent to 43,500 cubic feet and is the quantity required to cover an acre to the depth of 1 foot. The term is commonly used in connection with storage for irrigation.

In the Territory of Hawaii the unit most commonly used in measuring water is the "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 second-feet; million gallons a day, and acre-feet: 1 second-foot flowing 24 hours equals about 2 acre-feet; 1,000,000 gallons equals about 3 acre-feet or about 1.55 second-feet.

EXPLANATION OF DATA

The base data collected at gaging stations consist of records of stage, measurements of discharge, and general information used to supplement the gage heights and discharge measurements in determining the daily discharge. All records of stage are obtained from water-stage recorders that give continuous records of the fluctuations. Measurements of discharge are usually made with a current meter by the general methods outlined in standard textbooks on the measurement of river discharge. Occasionally discharge is determined from a weir or rating flume, using standard formulas, and for several stations the high-water

discharge has been determined from ratings developed by the use of models.

Rating tables giving the discharge for any stage are prepared from the discharge measurements. The application of the daily gage heights to these rating tables gives the discharge from which the daily, monthly, and yearly discharges are determined. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the discharge is determined by the "shifting-control method," in which correction factors based on individual discharge measurements and notes by engineers are used in applying the gage heights to the rating tables. At times the stage-discharge relation for a station may be temporarily changed by the presence of aquatic growth or debris on the control. For such times the discharge is computed by what is essentially the "shifting-control" method, described

The data presented in this report comprise, for each gaging station, a description of the station, a table showing the daily discharge of the stream, and a table of monthly and yearly discharge and runoff. Skeleton rating tables are published except for ditch, or spring stations. All rates of flow are expressed as million gallons a day.

The description of the station gives location, drainage area, records available, discharge corresponding to maximum and minimum recorded stages, average discharge if there has been more than 10 years of record, and, under "Remarks," notes on accuracy of the records, diversions that decrease the flow at the gage, and artificial regulation.

The table of daily discharge gives, in general, the discharge corresponding to the mean daily gage heights. But when, owing to sudden or rapid diurnal fluctuation, the discharge obtained from the rating table by applying the mean daily gage-height would not be within 2 percent of the true mean, the mean has been obtained by averaging discharges for intervals during the day or by use of the discharge or graphic integrators.

In the table of monthly discharge the column headed "Maximum" gives the flow for the day when the total discharge was greatest. This does not correspond to the rate of flow at the crest of the flood. The maximum rate of flow is given in the station description under the heading "Extremes," and the corresponding stage is always taken from the water-stage recorder graph unless otherwise noted. Likewise, in the column headed "Minimum" the quantity given is the flow for the day when the total discharge was least. The columns headed "Mean" give the average flow in million gallons a day and cubic feet a second during the month. The "total runoff in million gallons" is the sum of the daily flows, and the "total runoff in acre-feet" is computed from the total monthly discharges in million gallons. Selected peak discharges with the times of their occurrence are given below the table of monthly discharge for stations having drainage areas of more than 10 square miles.

TIME BASIS

At 2 a.m. on February 9, 1942, as an emergency measure, the Nation shifted from standard time to "war time," and clock time in the several zones of the country as well as in Hawaii was moved ahead 1 hour, or to 3 a.m. Records of daily discharge prior to February 9, 1942, have been published on the basis of standard time. Records subsequent to that date have been computed on the basis of war time. To convert war time to standard time, subtract 1 hour.

ACCURACY OF FIELD DATA AND COMPUTED RESULTS

The accuracy of stream-flow data depends primarily (1) on the permanency of the stage-discharge relation and (2) on the accuracy of observation of stage, measurements of flow, and interpretation of records.

A general statement under "Remarks" gives the accuracy of records, the terms "excellent," "good," "fair," and "poor" indicating that the record is probably accurate within 5, 10, 15, and 20 percent, respectively.

It should be borne in mind that the observation in each succeeding year may be expected to throw new light on data previously published.

Computations are carried to not more than three significant figures, except that monthly and yearly total runoff (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 1903-43 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 of 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. Miscellaneous 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, 1903-43

Year	Number	Year	Number	Year	Number
1903	*77	1921-22	555	1932-33	755
1909-11†	318	1922-23	575	1933-34	770
1912†	336	1923-24	595	1934-35	795
1913†	373	1924-25	615	1935-36	815
1913-15	430	1925-26	635	1936-37	835
1915-16	445	1926-27	655	1937-38	865
1916-17	465	1927-28	675	1938-39	885
1917-18	485	1928-29	695	1939-40	905
1918-19	515	1929-30	710	1940-41	935
1919-20	516	1930-31	725	1941-42	965
1920-21	535	1931-32	740	1942-43	985

* 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 report entitled "Surface water resources of the Territory of Hawaii 1901-1938," published by the Territorial Planning Board in December 1939, 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 1942 to June 1943 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 ditch	Near Government Road, near Kalaheo.	1924-43	McBryde Sugar Co.
Eleele ditch	Near Government Road, near Kalaheo.	1924-43	Do.
Hanalei ditch	Above Kaliniwai Reservoir, near Kilauea.	1923-43	Kilauea Sugar Plantation Co.
Hanamaulu ditch	Below intake, near Hanamaulu	1925-43	Lihue Plantation Co.
Koula (Hanapepe) ditch	At Olokele Plantation boundary, near Makaweli.	1926-43	Olokele Sugar Co.
Hanapepe Field ditch	Below Hanapepe River intake, near Eleele.	1924-43	Do.
Hanapepe Stream	At tidewater near Eleele	1924-43	McBryde Sugar Co.
Kamooloa ditch	Near Koloa boundary, near Koloa	1924-43	Do.
Kapaia River diversion to field 8 reservoir.	Near Hanamaulu	1928-43	Lihue Plantation Co.
Kapaia River diversion to field 29.	Near Lihue	1927-43	Do.
East Lawai Stream	½ mile above cannery near Kalaheo.	1924-43	McBryde Sugar Co.
Lihue lower ditch	Below intake, near Lihue	1925-43	Lihue Plantation Co.
Lihue upper ditch	....do	1925-43	Do.
Old Tunnel ditch	Above confluence with main Koloa ditch, near Koloa.	1925-43	Koloa Sugar Co.
Olokele ditch	At powerhouse near Makaweli	1926-43	Olokele Sugar Co.
Storm ditch	Above Kalaheo-Lihue main highway, near Koloa.	1926-43	Koloa Sugar Co.
Wahiawa Stream	Above Alexander Reservoir, near Kalaheo.	1924-43	McBryde Sugar Co.
Wahiawa Stream East Branch of.	....do	1929-43	Do.
West Lawai ditch	Near camp 12, near Kalaheo	1924-43	Do.

ISLAND OF OAHU

Alowa Heights Spring	Below reservoir 3	1932-43*	Board of Water Supply City and County of Honolulu.
Booth Springs	In Pauao Valley, at altitude 685 feet.	1929-43*	Do.
Helemano ditch	About 3 miles below Upper Helemano Reservoir.	1933-43	Waialua Agricultural Co.
Hering Springs	In Makiki Valley, at altitude 970 feet.	1925-43*	Board of Water Supply City and County of Honolulu.
Kahuawai Springs	In Pauao Valley, at altitude 615 feet.	1925-43*	Do.
Kalihi tunnels	At diversion, at altitude 650 feet.	1926-43*	Do.
Kamananui ditch	In Kawailoa Gulch about 500 yards above third siphon from Government Road.	1934-43*	Waialua Agricultural Co.
Kipapa Stream	At altitude 375 feet	1917-43	Waiahole Water Co.
Makiki Springs	In Makiki Valley, at altitude 350 feet.	1926-43*	Board of Water Supply City and County of Honolulu.
Manoa tunnels	Upper Manoa Valley	1925-43*	Do.
Nuuanu tunnels	At Lower Luakaha	1926-43*	Do.
Nuuanu tunnel 3	At overflow, in upper Nuuanu Valley.	1931-43*	Do.
Palolo tunnel	Upper Palolo Valley	1926-43*	Do.
Wahiawa Reservoir Outlet.	About 1,200 feet below dam	1912-43*	Wahiawa Water Co.
Waiahole Stream	At altitude 250 feet	1919-43	Do.
Waiahole tunnel	At adit 8	1916-43	Do.
Waiawa Stream	At altitude 750 feet	1917-43	Do.
Waikakalau Stream	....do	1917-43	Do.

* Published in Biennial Report of Honolulu Sewer & Water Commission and of Honolulu Board of Water Supply.

ISLAND OF MAUI (West Maui)

Everett ditch	Below intake, near Wailuku	1935-43	Wailuku Sugar Co.
Iao-Waikapu ditch	At lower end of tunnels, near Wailuku.	1923-43	Do.
Kama ditch	Below intake, near Wailuku	1933-43	Do.
Maniania ditch	....do	1923-43	Do.
North Waiehu	Near end of Waiehu Camp road, near Wailuku.	1922-43	Do.
South Waikapu ditch	Above first lateral, near Waikapu.	1935-43	Do.

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

ISLAND OF MAUI (West Maui)--Continued

Stream	Location	Period	Operated by
South Waikapu ditch	Below tunnel sections, near Waikapu.	1923-43	Wailuku Sugar Co.
Spreckels ditch	Below intake, near Waihee	1931-43	Do.
Waihee ditch	...do	1922-43	Do.
Honokohau tunnel	At outlet of tunnel, at Mahinahina Camp.	1917-43	Pioneer Mill Co., Ltd.
Kahoma tunnel	2,000 feet upstream from outlet above Lahaina.	1920-43	Do.
Kanaha ditch	At intake, above Lahainaluna School.	1921-43	Do.
Kauaula tunnel	At outlet, above Lahaina	1920-43	Do.
Launiupoko ditch	...do	1921-43	Do.
Ukumehame ditch	At outlet, near Olowalu	1931-43	Do.

ISLAND OF MAUI (East Maui)

Banana Spring	Near east wall of Keanae Valley, at altitude 700 feet.	1933-43	East Maui Irrigation Co.
Hanawi Spring upper high-level.	On east side of pali in Hanawi Gulch near Nahiku, at altitude 675 feet.	1932-43	Do.
Hanawi Spring lower high-level.	On east side of pali in Hanawi Gulch near Nahiku, at altitude 575 feet.	1932-43	Do.
Makapipi ditch	At west edge of Makapipi Gulch near Nahiku, at altitude 1,300 feet.	1933-44	Do.

ISLAND OF HAWAII

Kohala ditch	At Awini weir in Honokane, near Niulii.	1917-43†	Kohala Ditch Co.
Do	At Niulii weir, near Niulii	1917-43†	Do.
Pololu Inlet 1	At Pololu, near Niulii	1929-43	Do.
Pololu Inlet 2	In Waialalae Gulch at Pololu, near Niulii.	1929-43	Do.
Pololu Inlet 3	In Opaepilau Gulch, above Kohala ditch, near Niulii.	1937-43	Do.
Waiapuka Stream	Above Kohala ditch, near Niulii.	1929-43	Do.
Pololu Inlet 5	In Niulii Gulch, above Kohala ditch, near Niulii.	-43	Do.
Pololu Inlet 6	In Waikane Gulch, above Kohala ditch, near Niulii.	1937-43	Do.
Waipuhi Stream	Above Kohala ditch, near Halawa.	1933-43	Do.
Makapala ditch	...do	1929-43	Do.
Waipunalau Stream	...do	1929-43	Do.
Puwaiole Stream	...do	1937-43	Do.
Moaula Gulch	In Moaula Gulch below all development tunnels.	1929-43	Hawaiian Agricultural Co.
Hionamoa Gulch	In Hionamoa Gulch below all development tunnels.	1926-43	Do.
Keaiwa Gulch	In Keaiwa Gulch below all development tunnels.	1926-43	Do.
Noguchi tunnel 19	5.3 miles from Pahala, at altitude 3,500 feet.	1928-43	Do.
Makakupu tunnel 13	In Waiakaloa Gulch, at altitude 3,750 feet, 6.1 miles from Pahala.	1926-43	Do.
Lower Hamakua ditch	At main weir, near Kukuihaele	1921-43†	Do.
Honokaape ditch	At Kukuihaele Village	1923-43	Do.

† Records for some earlier years published in water-supply papers of Geological Survey.
Note.- Records not published unless otherwise indicated.

COOPERATION

The work during the year ending June 30, 1943, 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 Wahiawa Water Co. Ltd.; on the island of Maui by the Pioneer Mill Co. Ltd., and the East Maui Irrigation Co. Ltd.; 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 conducted by the water-resources branch of the Geological Survey, Glenn L. Parker, chief hydraulic engineer, Carl G. Paulsen, assistant chief engineer, and Rudolph G. Kasel, chief of the division of surface waters. The data were collected and prepared for publication under the direction of M. H. Carson, district engineer, Honolulu. The manuscript was typed in final form in the Washington office.

ISLAND OF KAUAI

Waimea River below Kekaha ditch intake, near Waimea

Location.- Lat. 22°02'40", long. 159°38'35", in Waimea Canyon, 500 feet downstream from Kekaha ditch lower intake and 6½ miles northeast of Waimea. Altitude of gage, 490 feet (by barometer).

Drainage area.- 45.0 square miles.

Records available.- July 1921 to June 1943.

Average discharge.- 18 years (1925-43), 39.5 million gallons a day (61.1 second-feet).

Extremes.- Maximum discharge during year, 6,920 million gallons a day (10,700 second-feet) Dec. 6 (gage height, 15.65 feet), from rating curve extended above 500 million gallons a day by test on model of station site; no flow at times owing to regulation.

1921-43: Maximum discharge, 10,700 million gallons a day (16,600 second-feet) Dec. 24, 1927 (gage height, 20.40 feet), from rating curve extended above 500 million gallons a day by test on model of station site; no flow occasionally, owing to regulation.

Remarks.- Records fair except those below 5 million gallons a day, and those for period of no gage-height record, which are poor. Kokee and Kekaha ditches divert water above the station, taking practically all the water at low and medium stages for irrigation near Waimea and Kekaha.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0	0	e0.11	0	0	140	15	23	0.3	5.8		65
2	19.3	0	0	0	0	46	200	25		18.0		15.1
3	12.8	.4	0	0	0	10.2	110	27	e.1	3.7	e0.1	6.3
4	1.2		0	0	0	2.4	400	67	1.4	14.6		.4
5	0	e.1	0	0	0	427	150	156	1.0	10.9		
6	0	0	0	0	0	2,390	50	160		1.8	10.8	
7	5.4	0	0	0	0	391	90	223	e.1	1.8	3.8	
8		0	0	0	0	186	250	243	394	.2	24.5	
9	e.15		0	0	0	58	40	94	683	.2	37.5	
10	0		0	0	0	19.8	25	42	542	3.4	4.6	
11	6.2	e.1	0	0	0	9.4	10	35.5	41	16.5	142	e.15
12	.4		0	0	0	106	800	10.3	16.6	35	220	
13	e.1		0	0	0	739	400	6.1	12.7	13.1	46	
14		.4	0	6.6	0	288	80	31	7.1	7.2	11.5	
15	0		28		30.5	129	140	8.4	5.2	7.2	15.9	
16	0	e.1	54	e.1	9.4	89	270	3.3	2.4	3.7	8.8	
17	0			0	3.2	38.5	220	1.2	.7	1.5	.6	.9
18	0			0	0	22.5	140	.6	.3	.3	.2	6.0
19	0	109	e.1	0	0	18.0	50	.6	.2	e.15	.2	10.0
20	0			.4	0	1,100	25	.4	.6		.5	78
21	0	e.13	0	10.8	0	1,290	17	8.0	.6	25	1.4	16.9
22	0		0		0	304	10	12.7	.2	114	.2	.8
23	0	5.1	0	e.15	0	120	5.0	.3	3.0	6.6	.2	.2
24	47		0	0	0	80	2.0	10.8	85	.3	2.5	.2
25	27.5		0	0	0	40	1.0	14.5	115		4.1	.2
26	10.0		0	0	0	35	30	.2	43		127	3.8
27		e.11	0	0	0	20	28	89	12.9	e.1	93	1.8
28	e.1		0	.7	240	25	17.9	.9			37.5	.3
29			0	0	635	250	24	-	32		1.9	3.8
30	0		0	0	1,080	50	23	-	62		.5	9.4
31	0		-	0	-	25	22	-	6.8	-	1.7	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	47	0	4.21	6.51	131	401
August	109	0	3.78	5.85	117	360
September	54	0	2.75	4.25	82.5	253
October	10.8	0	.590	.913	18.3	56
November	1,080	0	58.6	90.7	1,760	5,400
December	2,390	2.4	279	432	8,650	26,590
Calendar year 1942	2,390	0	53.4	82.6	19,480	59,790
January	800	1.0	118	183	3,650	11,210
February	243	.2	46.8	72.4	1,310	4,020
March	683	.1	66.8	103	2,070	6,350
April	114	.1	9.72	15.0	292	895
May	220	.1	25.7	39.8	797	2,450
June	78	.15	7.35	11.4	221	678
Fiscal year 1942-43	2,390	0	52.4	81.1	19,110	58,660

Peak discharge.- Nov. 30 (1:30 a.m.) 4,110 m.g.d. (6,360 sec.-ft.); Dec. 6 (3:30 a.m.) 6,920 m.g.d. (10,700 sec.-ft.); Dec. 13 (2:30 p.m.) 3,150 m.g.d. (4,870 sec.-ft.); Dec. 20 (9 p.m.) 6,090 m.g.d. (9,420 sec.-ft.); Dec. 21 (3:30 a.m.) 3,400 m.g.d. (5,260 sec.-ft.); Dec. 21 (5 a.m.) 3,850 m.g.d. (5,960 sec.-ft.).

e Daily discharge less than 0.2 m.g.d.

Note.- No gage-height record Dec. 23 to Feb. 3; discharge computed on basis of records for Waiahulu Stream and Kekaha ditch.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kawaikoi Stream near Waimea

Location.- Concrete control, lat. 22°08'00", long. 159°37'15", at old trail crossing, 12½ miles northeast of Waimea. Altitude of gage, 3,420 feet (by barometer).

Drainage area.- 4.1 square miles.

Records available.- April 1909 to June 1943. July 1917 to July 1919 (unpublished).

Average discharge.- 24 years (1919-43), 21.4 million gallons a day (33.1 second-feet).

Extremes.- Maximum discharge during year, 3,330 million gallons a day (5,150 second-feet) Mar. 9 (gage height, 9.98 feet), from rating curve extended above 180 million gallons a day; minimum, 2.0 million gallons a day (3.1 second-feet) Sept. 26, 27, Nov. 27, 28.
1909-43: Maximum discharge, 5,650 million gallons a day (8,740 second-feet) Oct. 2, 1940 (gage height, 12.00 feet), from rating curve extended above 180 million gallons a day; minimum, 1.3 million gallons a day (2.0 second-feet) Sept. 15, 1921.
Highest stage known, 15.2 feet, Dec. 18, 1916.

Remarks.- Records good. No diversions above station.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

1.9	1.8	2.4	8.9	3.2	42	5.0	355
2.0	2.7	2.5	11.4	3.4	59	5.5	500
2.1	3.8	2.6	14.4	3.7	93		
2.2	5.1	2.8	21.5	4.0	141		
2.3	6.8	3.0	30.5	4.5	241		

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	10.9	10.6	7.6	3.25	2.8	25.5	10.9	10.0	7.6	12.9	6.9	33
2	23.5	8.2	4.4	5.1	3.8	18.0	60	8.3	6.3	21.5	7.4	15.4
3	30	4.7	3.1	9.2	3.5	9.2	31.5	10.4	17.6	10.4	9.3	12.0
4	12.1	5.6	2.7	7.4	2.8	6.6	164	7.4	23.5	34.5	10.9	7.4
5	5.3	5.4	2.4	29.5	2.5	46	24.5	12.5	13.2	12.8	7.0	6.3
6	11.4	4.1	2.2	6.6	2.2	174	17.4	36.5	7.6	8.7	5.8	5.8
7	23.5	3.9	2.2	3.9	2.1	29	91	94	6.1	7.6	6.0	5.6
8	8.8	6.8	2.2	3.1	2.1	19.8	81	41	132	7.0	5.1	5.1
9	6.3	10.6	2.2	5.1	2.2	11.4	17.7	26	460	6.1	11.1	4.7
10	8.5	6.6	2.2	3.7	3.05	8.7	13.2	17.5	260	39	17.6	4.4
11	27	6.0	2.2	3.1	11.0	7.4	11.2	55	33	42	29	4.4
12	12.6	4.4	2.2	2.7	15.4	16.3	309	13.8	23.5	57	46	4.8
13	12.5	5.2	3.0	2.4	4.3	171	158	15.4	17.0	20	18.9	5.1
14	6.1	5.4	3.7	22.5	16.6	64	34	41	13.5	36	8.9	5.1
15	4.7	5.2	17.7	5.2	32	48	60	12.0	12.6	31	9.0	5.1
16	4.2	7.6	17.9	3.2	10.4	25.5	180	9.2	11.4	15.1	9.2	5.1
17	3.9	3.9	5.8	2.6	5.0	16.3	161	8.3	9.2	11.2	6.5	7.1
18	4.3	3.6	3.5	2.3	3.9	11.4	42	7.6	10.0	9.6	5.6	8.5
19	3.7	10.6	3.0	2.2	3.4	12.6	24	7.0	10.4	8.3	5.1	6.6
20	3.4	5.1	3.2	84	3.0	250	18.5	6.6	22.5	7.8	5.0	28
21	3.2	3.5	7.2	78	2.7	111	15.4	6.8	19.6	105	4.8	10.8
22	3.9	3.1	3.5	11.1	2.5	26	13.2	6.5	9.4	61	4.6	6.1
23	19.0	3.2	2.6	6.5	2.2	16.4	11.7	6.0	12.4	16.4	16.1	5.0
24	45	3.4	2.2	4.4	2.2	12.9	10.4	38	27	10.6	26.5	5.1
25	24	7.1	2.1	3.5	2.2	10.6	12.2	17.3	157	13.4	10.6	6.1
26	7.2	3.9	2.0	3.0	2.1	9.4	10.6	7.6	27	9.2	57	5.4
27	4.8	3.0	5.3	2.7	2.0	8.7	8.9	46	15.8	7.6	76	5.1
28	4.1	2.7	7.3	2.5	2.2	185	8.3	12.4	10.2	6.6	19.8	4.8
29	5.7	2.7	3.4	5.2	117	78	7.6	-	20	6.1	12.0	5.0
30	8.6	2.6	2.4	3.7	131	19.7	7.2	-	36.5	6.0	8.9	9.6
31	8.0	6.4	-	2.8	-	12.6	6.8	-	12.6	-	7.0	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	45	3.2	11.5	17.8	356	1,090
August	10.6	2.6	5.33	8.25	165	507
September	17.9	2.0	4.38	6.78	131	403
October	84	2.2	10.7	16.6	330	1,010
November	131	2.0	13.3	20.6	398	1,220
December	250	6.6	47.1	72.9	1,460	4,480
Calendar year 1942	445	2.0	22.8	35.3	8,340	25,560
January	309	6.8	51.7	80.0	1,600	4,910
February	94	6.0	20.7	32.0	580	1,780
March	460	6.1	46.6	72.1	1,440	4,430
April	105	6.0	21.3	33.0	640	1,970
May	76	4.6	15.3	23.7	474	1,450
June	33	4.4	8.08	12.5	242	744
Fiscal year 1942-43	460	2.0	21.4	33.1	7,820	23,990

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Mohihi Stream at altitude 3,500 feet, near Waimea

Location.- Boulder and concrete control, lat. 22°07'05", long. 159°36'15", at upper trail crossing, 3.8 miles northeast of confluence of Waiahulu and Poomau Streams, and 12 miles northeast of Waimea. Altitude of gage, 3,350 feet (from topographic map).

Drainage area.- 1.6 square miles.

Records available.- June 1920 to October 1926, October 1936 to June 1943. April 1909 to December 1912 at site 2 miles downstream (fragmentary).

Average discharge.- 12 years (1920-26, 1937-43), 5.07 million gallons a day (7.84 second-feet).

Extremes.- Maximum discharge during year, 447 million gallons a day (692 second-feet) Jan. 12 (gage height, 5.12 feet), from rating curve extended above 21 million gallons a day; minimum, 0.41 million gallons a day (0.63 second-foot) Nov. 28.
1920-26, 1936-43: Maximum discharge, 915 million gallons a day (1,420 second-feet) Oct. 2, 1940; minimum, 0.05 million gallons a day (0.08 second-foot) May 3, 4, 1941.

Remarks.- Records good except those for period of no gage-height record and those above 40 million gallons a day, which are poor. No diversions above station.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.9	0.20	1.3	2.0	1.8	8.2	3.2	68
1.0	.50	1.4	2.85	2.0	12.4	3.6	108
1.1	.88	1.5	3.8	2.4	23.5		
1.2	1.38	1.6	5.0	2.8	41		

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.38	1.13	1.33	0.50	0.61	12.0	3.55	1.94	2.3	2.15	1.08	4.8
2	9.8	1.33	1.03	.58	1.45	6.7	29.5	1.94	1.9	2.75	1.08	3.4
3	6.0	1.85	.84	.73	1.03	3.3	15.2	2.6	4.0	2.4	1.08	2.6
4	2.25	3.3	.73	.80	.93	2.25	43	2.35	5.0	7.4	1.28	1.88
5	1.57	1.44	.69	2.95	.77	23	10.6	15.3	4.0	3.05	1.28	1.57
6	1.33	1.13	.65	1.45	.65	84	7.2	11.1	2.2	2.15	1.32	1.38
7	2.75	1.03	.61	.80	.58	19.6	11.7	20.5	1.8	1.75	1.69	1.44
8	2.25	.98	.61	.61	.54	10.5	16.9	14.0	30	1.57	6.3	1.38
9	1.57	1.70	.65	1.16	.50	5.0	6.0	5.4	100	1.44	6.2	1.33
10	1.28	1.88	.65	.84	.50	3.4	4.2	3.6	70	2.7	5.4	1.13
11	4.2	1.50	.61	.73	.68	2.6	3.4	4.8	13	8.5	17.5	1.08
12	2.4	1.23	.58	.61	2.7	9.6	85	3.15	9.0	11.0	22.5	1.13
13	1.69	1.13	.65	.50	1.08	43	53	2.4	5.0	5.4	6.4	1.13
14	1.28	1.57	1.68	3.3	1.69	13.8	12.0	3.95	3.5	7.8	3.15	1.13
15	1.03	1.18	4.5	1.53	11.4	10.2	16.8	2.6	3.4	5.4	2.7	1.08
16	.93	1.08	7.4	.84	5.2	8.2	29.5	2.0	3.1	3.5	2.4	1.03
17	.84	1.08	2.3	.61	2.2	5.4	28.5	1.75	2.5	2.35	1.81	1.03
18	.80	.93	1.08	.54	1.75	3.7	12.6	1.63	2.7	1.94	1.50	1.23
19	.77	7.7	.84	.50	1.08	3.5	7.4	1.57	2.7	1.69	1.33	1.28
20	.73	2.2	.77	1.53	.93	54	5.3	1.75	5.0	1.50	1.28	4.5
21	.69	1.28	1.52	18.8	.80	53	4.3	2.15	4.5	3.25	1.33	4.0
22	.69	1.08	1.08	3.0	.65	12.6	3.7	2.15	2.3	12.9	1.23	1.75
23	.73	1.44	.77	1.44	.61	6.7	3.3	1.75	2.4	3.65	1.13	1.28
24	10.0	1.23	.65	1.03	.54	4.8	2.95	4.0	3.5	2.0	2.5	1.13
25	7.2	.98	.58	.80	.54	3.8	3.5	2.9	45	1.88	2.0	1.03
26	3.1	.88	.50	.69	.47	3.3	3.15	2.2	6.0	1.63	12.5	.98
27	1.63	.77	.50	.61	.44	2.95	2.6	10	3.3	1.38	12.5	1.13
28	1.23	.73	.50	.58	.58	9.8	2.35	4.0	2.5	1.23	6.3	1.08
29	1.08	.77	.47	.80	29	20	2.0	-	3.3	1.13	2.5	1.03
30	1.03	.77	.44	.69	48	7.2	1.94	-	f5.5	1.08	2.15	1.60
31	1.03	.91	-	.58	-	3.7	1.88	-	2.6	-	1.69	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	10.0	0.69	2.36	3.65	73.3	225
August	7.7	.73	1.49	2.31	46.2	142
September	7.4	.44	1.17	1.81	35.2	108
October	18.8	.50	1.62	2.51	50.1	154
November	48	.44	3.93	6.08	118	362
December	84	2.25	14.6	22.6	452	1,390
Calendar year 1942	84	.44	5.40	8.36	1,970	6,060
January	85	1.88	14.0	21.7	433	1,330
February	20.5	1.57	4.77	7.38	133	410
March	100	1.8	11.4	17.6	352	1,080
April	12.9	1.08	3.55	5.49	107	327
May	22.5	1.08	4.29	6.64	133	408
June	4.8	.98	1.68	2.60	50.5	155
Fiscal year 1942-43	100	.44	5.43	8.40	1,980	6,090

f Computed on basis of partly estimated gage-height record.
Note.- No gage-height record Feb. 24 to Mar. 29; discharge computed on basis of records for Kawaikoi Stream.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kokee ditch near Waimea

Location.- Suppressed weir control, lat. 22°06'25", long. 159°40'45", 1,000 feet west of road and 10½ miles north of Waimea. Altitude of gage, 3,310 feet (by barometer).

Records available.- September 1926 to June 1943.

Average discharge.- 16 years (1927-43), 17.7 million gallons a day (27.4 second-feet).

Extremes.- Maximum discharge during year, 70 million gallons a day (108 second-feet) Feb. 14, Mar. 10 (gage height, 2.57 feet); no flow Dec. 14, Jan. 2, 3, 8, 13, 14, 18, when water was shut out of ditch.

1926-43: Maximum discharge, 76 million gallons a day (118 second-feet) Mar. 26, 1938 (gage height, 2.69 feet); no flow occasionally, when water was shut out of ditch.

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

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	10.0	13.8	9.4	3.5	3.8	46	14.6	23	18.2	21	12.1	30
2	26.5	11.5	6.4	5.5	4.8	40	15.5	21	15.8	27.5	12.5	25
3	26.5	7.6	4.7	8.8	4.7	21	11.9	22	24	19.2	14.4	20
4	25	8.1	3.8	7.3	3.8	14.6	22	24.5	30.5	37	15.8	15
5	10.6	8.3	3.5	27	3.4	32	21.5	24.5	24	19.5	12.3	12
6	10.6	6.4	3.25	10.3	3.0	33.5	18.9	24.5	17.0	15.8	10.8	10
7	32	5.8	3.15	6.0	2.8	12.3	18.8	24.5	14.4	14.1	10.8	f9.8
8	14.6	7.3	3.15	4.4	2.65	21	23	24.5	28	13.2	10.4	9.1
9	10.6	11.7	3.15	5.8	2.65	23	16.0	24.5	50	12.5	18.2	8.5
10	11.7	9.8	3.0	5.2	3.0	24.5	17.4	f26	54	33.5	24	8.0
11	28.5	8.7	3.0	4.1	6.0	21	17.0	31	38.5	45	37.5	7.6
12	17.0	6.9	2.9	3.8	21	16.1	17.2	22	30.5	50	50	7.6
13	17.0	6.1	3.4	3.25	6.6	15.4	5.3	23.5	33.5	29	28.5	7.6
14	10.2	8.1	4.5	19.5	15.0	15.6	19.5	36.5	29	40	17.0	7.4
15	8.9	6.0	22	8.6	32.5	17.1	17.4	21	26	35.5	17.5	7.1
16	7.1	9.9	24	4.7	17.0	15.3	12.2	22	24.5	22	15.8	6.9
17	6.8	6.1	10.4	3.5	7.6	17.1	16.3	19.5	22	18.2	12.5	8.2
18	6.9	5.2	5.8	3.0	6.1	18.0	15.0	18.2	21	15.8	11.2	11
19	6.3	10.8	4.7	2.9	4.8	15.8	25.5	18.2	22	14.6	10.8	8.6
20	6.0	8.8	4.1	8.8	4.1	18.8	22.5	17.0	24	13.7	10.4	27
21	5.6	5.8	8.6	52	3.65	8.6	13.0	18.2	31	34.5	10	15
22	6.0	5.0	5.6	19.1	3.25	14.3	13.5	15.8	19.5	47	10	9.0
23	15.7	4.8	4.1	9.6	3.0	15.8	19.5	15.8	20	26	14	8.0
24	30	4.8	3.5	8.5	2.9	16.5	17.0	27	29.5	18.2	21	8.2
25	37	7.5	3.15	5.2	2.8	14.6	15.8	31.5	50	19.5	14	9.4
26	13.8	6.0	2.9	4.4	2.65	14.4	14.1	18.2	37	15.8	25	8.6
27	8.7	4.4	3.45	3.95	2.55	17.7	19.5	41	26	13.7	40	8.0
28	7.1	3.95	10.3	3.65	2.9	23.5	23	24.5	19.5	12.5	23	7.6
29	6.6	3.95	4.7	7.5	13.5	15.3	22	-	26	11.9	18	8.0
30	12.1	3.8	3.4	5.8	48	12.8	22	-	42	11.5	14	13
31	8.9	5.5	-	3.95	-	15.8	21	-	22	-	12	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	37	5.6	14.3	22.1	443	1,360
August	13.8	3.8	7.17	11.1	222	683
September	24	2.9	5.93	9.18	178	546
October	52	2.9	8.70	13.5	270	827
November	48	2.55	8.02	12.4	240	738
December	46	8.6	19.6	30.3	607	1,860
Calendar year 1942	61	2.55	14.8	22.9	5,390	16,550
January	25.5	5.3	17.7	27.4	548	1,680
February	41	15.8	23.6	36.5	660	2,030
March	54	14.4	28.0	43.3	869	2,670
April	50	11.5	23.6	36.5	708	2,170
May	50	10	17.9	27.7	554	1,700
June	30	6.9	11.4	17.6	341	1,050
Fiscal year 1942-43	54	2.55	15.5	24.0	5,640	17,310

f Computed on basis of partly estimated gage-height record.

Note.- No gage-height record May 21 to June 6, June 17-30; discharge computed on basis of records for Kawaikoi and Mohihi Streams.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Waiahulu Stream near Waimea

Location.- Lat. 22°04'45", long. 159°39'15", in Waimea Canyon, half a mile upstream from confluence with Koaie Stream and 8¾ miles north of Waimea. Altitude of gage, 890 feet (by barometer).

Drainage area.- 20.0 square miles.

Records available.- February to October 1916, October 1917 to June 1918, May 1925 to June 1943. July 1918 to November 1920 at same site (fragmentary and unreliable; unpublished).

Average discharge.- 18 years (1925-43), 28.6 million gallons a day (44.3 second-feet).

Extremes.- Maximum discharge during year, 1,420 million gallons a day (2,200 second-feet) Mar. 9 (gage height, 6.95 feet), from rating curve extended above 400 million gallons a day; minimum, 6.7 million gallons a day (10.4 second-feet) Nov. 27.
1916, 1917-18, 1925-43: Maximum discharge, 2,550 million gallons a day (3,950 second-feet) Dec. 24, 1927 (gage height, 9.92 feet), from rating curve extended above 400 million gallons a day; minimum, 5.2 million gallons a day (8.0 second-feet) Nov. 4, 1927.

Remarks.- Records good prior to Nov. 29 and fair thereafter. Kokee ditch diverts water above station for irrigation near Kekaha.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	9.1	8.5	8.9	7.9	7.7	92	45	15	18.6	12.4	10.0	24
2	25	8.7	8.9	8.1	8.1	54	173	15	12.4	12.7	10.0	16.0
3	29	11.6	8.7	8.1	8.1	35.5	112	15.5	12.8	12.7	10.3	14.0
4	17.9	11.6	8.5	8.5	7.7	30.5	307	15.9	13.9	20	10.6	12.4
5	9.5	9.7	8.5	13.9	7.7	184	126	85	14.6	16.9	10.6	11.8
6	8.9	8.7	8.3	10.2	7.5	511	73	78	12.1	12.7	11.3	11.8
7	10.3	8.5	8.3	8.5	7.3	174	106	105	11.2	12.1	10.9	11.8
8	10.6	8.5	8.3	8.1	7.1	108	200	89	57	11.8	16.8	11.5
9	9.3	8.7	8.3	8.1	7.1	56	66	40	484	11.5	28	11.2
10	8.9	9.3	8.3	8.3	7.1	40	52	29	383	26	21	10.6
11	12.4	9.1	8.3	8.1	7.1	35	40	63	69	31	92	10.6
12	11.4	8.7	8.0	8.1	9.0	70	600	25.5	29	53	141	10.3
13	9.5	8.9	7.9	8.1	8.3	300	400	14.7	19.7	22.5	39.5	10.6
14	9.1	9.1	10.2	9.8	7.7	171	110	58	15.9	25	21	10.3
15	8.7	9.1	23	10.2	19.6	114	150	25.5	14.3	21	23	10.0
16	8.5	9.1	18.9	8.7	17.1	90	250	13.9	13.5	16.7	19.6	10.0
17	8.3	9.1	11.9	8.1	9.7	60	220	12.7	12.7	12.4	15.5	10.0
18	8.3	9.1	9.1	8.1	9.1	50	140	12.4	12.4	11.5	12.7	10.0
19	8.3	14.5	8.3	7.9	8.1	45	80	12.1	12.4	11.2	12.1	10.0
20	8.3	11.4	8.1	29.5	7.7	390	60	12.1	11.8	10.9	11.8	14.8
21	8.3	9.3	8.7	142	7.3	524	50	13.1	18.8	78	11.8	15.9
22	8.3	9.1	8.7	13.0	7.1	179	40	12.7	12.7	84	11.2	11.2
23	8.5	9.1	8.3	9.1	7.1	109	35	12.4	13.4	17.9	11.2	10.3
24	71	9.1	8.1	8.3	7.1	79	32	25	16.2	12.1	22	10.0
25	33	8.9	8.1	7.9	7.1	58	40	28.5	181	11.5	12.7	9.7
26	13.8	8.7	7.9	7.7	6.9	52	33	13.5	22	11.2	49	10.0
27	10.0	8.7	8.3	7.5	6.9	40	25	55	16.1	10.9	75	9.7
28	8.9	8.5	8.3	7.7	9.6	172	18	29	13.1	10.6	26	9.7
29	8.7	8.5	8.1	8.7	205	182	16	-	12.4	10.3	13.5	9.7
30	8.5	8.5	7.9	7.9	347	66	16	-	23	10.0	13.5	9.7
31	8.5	8.5	-	7.7	-	50	14	-	14.9	-	12.1	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	71	8.3	13.5	20.9	419	1,290
August	14.5	8.5	9.32	14.4	289	886
September	23	7.9	9.37	14.5	281	863
October	142	7.5	13.7	21.2	424	1,300
November	347	6.9	26.3	40.7	790	2,420
December	524	30.5	133	206	4,120	12,650
Calendar year 1942	524	6.9	37.2	57.6	13,560	41,630
January	600	14	117	181	3,630	11,130
February	105	12.1	33.1	51.2	926	2,840
March	484	11.2	50.8	78.6	1,570	4,830
April	84	10.0	20.7	32.0	620	1,900
May	141	10.0	25.3	39.1	786	2,410
June	24	9.7	11.6	17.9	348	1,070
Fiscal year 1942-43	600	6.9	38.9	60.2	14,200	43,590

Peak discharge.- Dec. 5 (11:30 p.m.) 1,100 m.g.d. (1,700 sec.-ft.); Dec. 20 (8:30 p.m.) 1,260 m.g.d. (1,930 sec.-ft.); Dec. 28 (7 p.m.) 1,110 m.g.d. (1,720 sec.-ft.); Jan. 12 (7 p.m.) 1,160 m.g.d. (1,790 sec.-ft.); Mar. 9 (2 a.m.) 1,410 m.g.d. (2,180 sec.-ft.); Mar. 10 (6 a.m.) 1,200 m.g.d. (1,860 sec.-ft.).
Note.- Shifting control Nov. 29 to June 30.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kekaha ditch at camp 1, near Waimea

Location.- Lat. 22°02'35", long. 159°38'30", in Waimea Canyon, a quarter of a mile downstream from lower intake and 6¼ miles northeast of Waimea. Altitude of gage, 520 feet (by barometer).

Records available.- November 1907 to June 1943.

Average discharge.- 24 years (1918-24, 1925-43), 36.6 million gallons a day (56.6 second-feet).

Extremes.- Maximum discharge during year, not determined owing to doubtful gage-height record; no flow Jan. 26 to Feb. 9, when water was shut out of ditch.
1907-43: Maximum discharge, 71 million gallons a day (110 second-feet) Apr. 25, 1928 (gage height, 4.33 feet); no flow occasionally, when water was shut out of ditch.

Remarks.- Records excellent except those for periods of doubtful or no gage-height record, which are fair. Ditch diverts water from Waiahulu Stream and Koaie River, 3 miles above lower intake, for hydroelectric plant. Lower intake is on Waimea River 300 feet downstream from powerhouse and 1 mile downstream from confluence with Waialae River. Flow regulated by head gates. Water used for irrigation in vicinity of Kekaha.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	31.5	31	38.5	20.5	20.5	27	43	0	37	35	25	48
2	44	31	29.5	22.5	23	28	39	0	35	37	26	48
3	48	32	24.5	31	22.5	28	39	0	36	34	26	48
4	38.5	36	24.5	27.5	23.5	28	39	0	39	37	27	43
5	31	29	24.5	41	21.5	25	39	0	36	36	27	36
6	28.5	25.5	22.5	31	20.5	9.9	41	0	34	36	39	37
7	48	23.5	21.5	23.5	20.5	26	51	0	32	36	43	39
8	41	23.5	21.5	21.5	19.4	26	55	0	45	33	37	34
9	32	31	31.5	22.5	19.4	26	55	0	50	31	48	32
10	28.5	32	27.5	22.5	19.4	27	53	25	50	32	48	30
11	43	28.5	24.5	22.5	19.4	26	53	45	45	37	38	29
12	43	26.5	22.5	22.5	22.5	28	53	35	40	37	37	38
13	36	29	23.5	21.5	21.5	25	30	30	41	37	37	34
14	29.5	39.5	35	45	22	28	d62	40	39	37	37	34
15	25.5	27.5	53	38.5	45	29	d62	36	37	37	43	30
16	23.5	24.5	53	25.5	48	28	d60	34	35	37	48	31
17	22.5	23.5	45	22.5	41	27	d60	33	33	36	46	46
18	22.5	23.5	31	21.5	34	27	d55	31	32	34	39	48
19	21.5	49	25.5	21.5	26.5	27	d50	30	32	32	36	46
20	20.5	43	24.5	24.5	24.5	25.5	d45	30	32	30	37.5	51
21	20.5	29.5	25.5	53	22	22	d40	29	40	33	46	48
22	20.5	30.5	24.5	41	21.5	30	d38	28	36	41	34	46
23	21.5	53	22.5	27.5	21.5	34	d35	28	37	37	32	37
24	34.5	34	21.5	23.5	19.4	36	d33	31	40	34	46	32
25	45	27.5	21.5	22.5	21.5	36	d30	38	50	32	41	30
26	41	29.5	20.5	20.5	19.4	37	0	35	41	30	48	39
27	36	24.5	22.5	19.4	20.5	41	0	45	37	28	43	41
28	25.5	23.5	21.5	20.5	26.5	41	0	41	35	27	34	39
29	26.5	31	20.5	29.5	25.5	39	0	-	40	26	36	48
30	26.5	30	20.5	22.5	24	39	0	-	45	25	37	46
31	28.5	35	-	20.5	-	41	0	-	40	-	32.5	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	48	20.5	31.9	49.4	988	3,030
August	53	23.5	31.1	48.1	965	2,960
September	53	20.5	27.5	42.5	824	2,530
October	53	19.4	26.8	41.5	829	2,550
November	48	19.4	24.6	38.1	738	2,270
December	41	9.9	29.6	45.8	917	2,820
Calendar year 1942	53	9.9	31.3	48.4	11,430	35,130
January	62	0	38.4	59.4	1,190	3,650
February	45	0	23.0	35.6	644	1,980
March	50	32	38.7	59.9	1,200	3,690
April	41	25	33.8	52.3	1,010	3,110
May	48	25	37.9	58.6	1,170	3,600
June	51	29	39.6	61.3	1,190	3,650
Fiscal year 1942-43	62	0	32.0	49.5	11,660	35,840

d Doubtful gage-height record; discharge computed on basis of records for Waiahulu Stream.
Note.- No gage-height record Feb. 10 to Apr. 1, Apr. 18-20; discharge computed on basis of records for Waiahulu Stream.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Hanapepe River at Koula, near Eleele

Location.- Lat. 21°57'20", long. 159°33'15", just downstream from confluence with Manuahi Stream and 4 miles northeast of Eleele. Altitude of gage, 150 feet (by barometer).
Drainage area.- 18.8 square miles.
Records available.- May 1917 to January 1921, December 1926 to June 1943. August 1910 to December 1916 at site half a mile upstream; records not equivalent.
Average discharge.- 19 years (1917-20, 1927-43), 54.9 million gallons a day (84.9 second-feet).
Extremes.- Maximum discharge during year, 4,640 million gallons a day (7,180 second-feet) Dec. 6 (gage height, 7.76 feet), from rating curve extended above 2,400 million gallons a day by test on model of station site; minimum, 7.6 million gallons a day (11.8 second-feet) Nov. 11, 12.
1910-21, 1926-43: Maximum discharge, 5,550 million gallons a day (8,590 second-feet) Mar. 19, 1937 (gage height, 8.59 feet), from rating curve extended above 2,400 million gallons a day by test on model of station site; minimum, 6.2 million gallons a day (9.6 second-feet) Oct. 4, 5, 1939.
Remarks.- Records good. Hanapepe ditch diverts water from river 3 miles above station for irrigation in vicinity of Makaweli.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.2	7.0	0.7	32.5	1.6	148	3.5	860
.3	10.2	.8	41	2.0	238	4.0	1,170
.4	14.3	1.0	60	2.4	360	4.5	1,510
.5	19.4	1.2	84	2.8	515	5.0	1,910
.6	25.5	1.4	114	3.2	700		

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	27	19.4	22.5	11.0	8.6	86	177	24	15.8	65	18.2	236
2	98	19.8	14.3	15.2	8.6	46	875	21.5	14.8	44	11.8	226
3	62	14.7	12.7	14.2	8.3	34	585	46	14.8	24.5	11.4	93
4	45	23	11.8	12.7	10.6	28.5	1,070	71	16.8	126	10.6	59
5	23.5	12.8	11.4	10.2	8.9	422	307	109	14.3	46	12.0	36
6	34	14.1	11.0	9.6	11.2	1,800	170	51	14.3	93	47	31.5
7	92	11.4	12.7	10.5	9.6	560	108	127	14.3	42	14.8	26
8	33	17.1	18.0	10.2	10.6	193	84	174	31	31	19.0	22.5
9	25.5	23.5	14.3	12.8	10.2	100	71	57	50	23.5	60	18.9
10	21.5	14.6	34.5	9.9	8.6	72	62	34	78	20	32	15.3
11	83	13.0	12.0	11.0	8.3	58	63	27	21	17.4	204	32
12	42	10.6	10.2	9.6	8.0	91	480	21	19.4	17.4	148	25.5
13	28	67	34	9.7	8.3	318	369	19.4	14.8	15.3	29.5	81
14	20.5	21	74	78	9.0	143	110	17.4	14.3	14.3	17.9	30
15	16.8	11.4	265	14.1	28.5	338	74	16.8	13.9	13.9	21	21
16	15.3	11.0	415	9.6	22.5	151	63	16.3	13.5	38	18.9	24
17	13.5	20.5	78	8.9	24	86	59	16.8	13.5	20.5	13.9	35
18	13.6	15.0	27.5	9.2	22.5	30	47	17.9	15.0	14.8	12.2	30.5
19	12.7	255	18.9	9.9	9.9	55	44	17.4	14.8	13.1	12.7	71
20	13.1	57	28	9.6	21	278	51	17.9	13.5	12.2	90	210
21	13.7	36.5	22.5	9.6	11.0	620	53	102	16.6	17.5	29	56
22	12.7	47	13.1	9.2	10.2	148	51	28.5	15.3	37	16.3	31
23	11.8	59	12.2	8.3	9.2	78	46	20.5	19.5	17.9	15.2	23
24	12.6	17.9	11.4	8.3	9.2	55	32	18.4	19.0	14.3	20	32
25	22.5	20	10.6	8.3	11.0	97	48	14.8	42	21	37.5	27
26	14.8	12.7	10.2	8.6	10.2	112	47	14.3	100	12.2	141	197
27	11.8	11.8	28.5	8.6	11.5	55	46	70	38	10.6	196	44
28	10.6	15.7	16.0	8.6	55	94	40	20.6	36.5	10.2	63	61
29	21	47	10.6	8.9	550	251	24.5	-	59	10.2	43	113
30	23.5	16.6	10.2	8.3	524	121	20.5	-	187	9.9	44	94
31	20.5	80	-	8.3	-	139	19.4	-	88	-	23	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	98	10.6	28.2	43.6	875	2,690
August	255	10.6	32.8	50.7	1,020	3,120
September	415	10.2	42.4	65.6	1,270	3,900
October	78	8.3	12.3	19.0	381	1,170
November	550	8.0	48.6	75.2	1,460	4,480
December	1,800	28.5	216	334	6,710	20,590
Calendar year 1942	1,800	8.0	53.7	83.1	19,610	60,160
January	1,070	19.4	170	263	5,270	16,160
February	174	14.3	42.6	66.9	1,190	3,660
March	187	13.5	33.6	52.0	1,040	3,190
April	126	9.9	28.4	43.9	853	2,620
May	204	19.6	46.2	71.5	1,430	4,400
June	236	15.3	66.7	103	2,000	6,140
Fiscal year 1942-43	1,800	8.0	64.4	99.6	23,500	72,120

Peak discharge.- Dec. 6 (12:45 a.m.) 4,480 m.g.d. (6,930 sec.-ft.); Dec. 6 (2:30 p.m.) 4,350 m.g.d. (6,730 sec.-ft.); Dec. 6 (4 a.m.) 4,640 m.g.d. (7,180 sec.-ft.); Dec. 6 (6 a.m.) 4,210 m.g.d. (6,510 sec.-ft.); Jan. 4 (3 a.m.) 3,710 m.g.d. (5,740 sec.-ft.); Jan. 4 (4:15 a.m.) 4,080 m.g.d. (6,310 sec.-ft).
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

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Hanapepe ditch at Koula, near Eleele

Location.- Lat. 21°57'10", long. 159°33'00", at first flume downstream from siphon at Koula, 3 miles downstream from intake and 4 miles northeast of Eleele. Altitude of gage, 490 feet (by barometer).

Records available.- January 1910 to June 1921, March 1927 to June 1943.

Average discharge.- 26 years (1910-20, 1927-43), 25.6 million gallons a day (39.6 second-feet).

Extremes.- Maximum discharge during year, 34 million gallons a day (53 second-feet) Nov. 30 (gage height, 3.10 feet); no flow at times, when water was shut out of ditch.

1910-21, 1927-43: Maximum discharge, 38.5 million gallons a day (59.6 second-feet) Mar. 19, 1937 (gage height, 3.18 feet); ditch dry occasionally, owing to closing of head gates.

Remarks.- Records good except those for period of no gage-height record, which are fair. Ditch diverts water from Hanapepe River 3 miles above station for irrigation in vicinity of Makaweli. Flow regulated by head gates.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	25	27	27	25	20	14.5	7.6	23	23	25	23	27
2	25	25	27	27	20	16.0	11.8	23	21.5	25	21.5	29
3	25	24.5	25	27	20	15.4	8.0	22	21.5	23	20	19.3
4	27	25	23	27	21	15.4	6.0	21	21.5	27	20	25
5	25	25	23	25	20	18.7	13	23	21.5	25	20	27
6	25	25	21.5	23	21.5	15.6	17	23	20	27	23.5	25
7	27	23	23	20.5	21.5	f3.4	22	23	20	25	23	25
8	27	23	22.5	23	21.5	0	19	23	21.5	25	23	25
9	25	25	25	19.8	21.5	0	23	23	23	25	25	25
10	25	25	27	23	20	0	23	22	25	25	25	25
11	27	23	25	23	18.8	f1.3	22	22	23	25	25	27
12	25	23	25	21.5	18.8	11.3	13	23	23	25	25	27
13	25	25.5	26	23	18.8	3.9	9.0	22	21.5	25	25	27
14	25	25	14.1	27	21.5	f2.8	15	23	21.5	23	23	27
15	25	23	0	27	24	5.8	12	23	20	23	23	27
16	25	21.5	0	25	27	9.0	15	23	20	26	23	27
17	23	25	8.5	23	27	4.8	14	25	20	25	21.5	27
18	23	23	25	23	27	15.0	13	25	20	23	21.5	27
19	23	20.5	27	21.5	23	21.5	11	25	20	23	21.5	27
20	23	0	27	20	27	23	9.6	25	20	21.5	25	25.5
21	20.5	6.3	27	20	23	22.5	5.6	26.5	21.5	23	25	27
22	23	24	27	20	21.5	20.5	5.5	25	20	25	25	27
23	21.5	27	25	21.5	20	22.5	9.6	21	21.5	23	23	27
24	21.5	27	25	20	20	23	22	21	19.7	21.5	23	27
25	23	27	25	20	21.5	23	12	21.5	21.5	23	25	27
26	21.5	25	23	20	20	23	5.5	21.5	23	23	27	27
27	21.5	23	27	20	17.1	21.5	5.0	25	23	21.5	27	27
28	21.5	25	25.5	20	25	20	10	23	23	21.5	27	24.5
29	22	27	25	21.5	26.5	17.7	22	-	25	21.5	27	25.5
30	25	25	23	20	25.5	12.9	23	-	25	20	25	27
31	27	29	-	20	-	7.0	22	-	24	-	25	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	27	20.5	24.1	37.3	748	2,300
August	29	0	23.3	36.1	722	2,220
September	27	0	22.5	34.8	674	2,070
October	27	19.8	22.5	34.8	697	2,140
November	27	17.1	22.0	34.0	660	2,030
December	23	0	13.3	20.6	412	1,260
Calendar year 1942	29	0	21.8	33.7	7,950	24,400
January	23	5.0	13.7	21.2	426	1,310
February	26.5	21	23.1	35.7	646	1,980
March	25	19.7	21.8	33.7	675	2,070
April	27	20	23.5	36.8	714	2,190
May	27	20	23.8	36.8	736	2,260
June	29	19.3	26.2	40.5	787	2,410
Fiscal year 1942-43	29	0	21.6	33.4	7,900	24,240

f Computed on basis of partly estimated gage-height record.

Note.- No gage-height record Jan. 3 to Feb. 15; discharge computed on basis of records for Hanapepe River.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

South Fork Wailua River near Lihue

Location.- Lat. 22°02'10", long. 159°22'55", a third of a mile upstream from Wailua Falls and 5 miles north of Lihue. Altitude of gage, 230 feet (by barometer).
Drainage area.- 22.4 square miles.
Records available.- December 1911 to June 1943. December 1911 to November 1918 at site a third of a mile upstream.
Average discharge.- 21 years (1921-24, 1925-43), 68.2 million gallons a day (106 second-feet).
Extremes.- Maximum discharge during year, 7,160 million gallons a day (11,100 second-feet) June 2 (gage height, 9.08 feet), from rating curve extended above 1,550 million gallons a day by test on model of station sits; minimum, 1.80 million gallons a day (2.79 second-feet) Nov. 13, 14.
1911-43: Maximum discharge, 29,000 million gallons a day (44,900 second-feet) Jan. 16, 1920 (gage height, 11.25 feet), from rating curve extended above 9,000 million gallons a day; minimum, 1.2 million gallons a day (1.9 second-feet) May 3, 1926.
Remarks.- Records good except those for July 1 to Sept. 20, June 3-12, which are fair. Lihue and Hanamaula ditches divert water above station at altitudes of 600 and 500 feet, respectively, for irrigation in the vicinity of Lihue.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)
(Shifting-control method used July 1 to Sept. 14)

0.7	1.95	1.4	14.9	3.0	220
.8	2.1	1.6	22	3.5	390
.9	4.1	1.8	31.5	4.0	640
1.0	5.6	2.0	47	4.5	950
1.1	7.4	2.3	80	5.0	1,340
1.2	9.5	2.6	128	5.5	1,800

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	6.8	9.4	5.4	4.9	2.15	112	205	53	18.6	110	4.2	146
2	12.7	24	4.0	4.6	2.15	78	1,020	40	4.6	76	4.2	1,030
3	25.5	458	3.6	3.85	7.1	78	764	74	16.6	58	4.0	368
4	29.5	312	5.6	3.75	15.3	61	1,710	90	29	148	3.85	148
5	25	59	9.4	3.6	3.9	493	405	138	27	73	4.6	118
6	19.0	38.5	3.75	3.4	3.95	1,430	235	100	20.5	84	17.4	96
7	55	24.5	3.75	3.15	3.9	706	160	138	22	32	7.2	63
8	25.5	32.5	4.2	3.15	3.0	289	147	229	17.2	24.5	44	52
9	14.9	43	4.8	3.15	2.8	160	149	97	101	17.9	104	33
10	9.9	21.5	6.7	3.0	2.6	121	124	62	238	13.7	46	29.5
11	29.5	9.8	4.2	2.9	2.25	102	117	50	45	10.0	122	17.2
12	35	8.2	4.1	2.8	2.05	123	561	39.5	40	37.5	116	21
13	13.3	18.4	27	2.9	1.95	369	484	38.5	31.5	42	53	81
14	7.6	11.3	416	61	2.15	244	152	44	33	40	49	39.5
15	5.8	7.8	465	7.9	2.4	555	117	21	13.6	24	57	10.2
16	5.4	7.0	860	3.4	14.6	407	104	5.8	6.3	26	37	9.1
17	5.3	7.4	92	2.8	27	206	91	5.3	4.1	10.1	17.3	9.4
18	5.2	10.7	32	2.8	31	176	83	5.0	5.9	7.8	11.2	9.1
19	4.8	49	20.5	2.8	31.5	138	78	4.8	26	7.2	15.6	10.0
20	4.7	27	27.5	2.9	61	342	74	5.2	34.5	6.8	101	77
21	4.2	11.2	25.5	3.25	33	624	70	21	37.5	6.2	31	25.5
22	4.2	7.3	7.4	2.9	24	246	66	19.0	32	9.6	13.5	9.3
23	4.1	39.5	6.2	2.5	21	160	64	23	135	32	12.1	7.8
24	9.2	10.0	5.6	2.35	14.9	133	54	7.4	67	21.5	45	8.9
25	13.7	5.8	5.8	2.35	10.2	200	54	12.7	76	33	10.2	8.4
26	5.3	5.4	5.4	2.25	9.3	198	60	4.8	168	12.8	29	98
27	6.0	4.4	9.1	2.25	9.3	124	48	18.8	88	5.1	175	10.8
28	4.8	4.7	10.4	2.15	10.0	191	39.6	32	85	4.0	57	8.7
29	6.1	10.2	5.6	2.4	410	396	36.6	-	74	4.1	29.5	64
30	19.0	5.5	5.0	2.6	706	210	40	-	218	4.1	38	15.2
31	6.8	18.1	-	2.35	-	214	43	-	144	-	17.2	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	55	4.1	13.7	21.2	424	1,300
August	458	4.4	42.0	65.0	1,300	3,990
September	860	3.6	69.2	107	2,080	6,370
October	61	2.15	5.04	7.80	156	479
November	706	1.95	49.0	75.8	1,470	4,510
December	1,430	61	287	444	8,890	27,270
Calendar year 1942	1,430	1.95	67.1	104	24,490	75,100
January	1,710	36.5	238	368	7,380	22,630
February	229	4.8	49.2	76.1	1,380	4,230
March	238	4.1	60.0	92.8	1,860	5,700
April	148	4.0	32.7	50.6	980	3,010
May	176	3.85	41.2	63.7	1,280	3,920
June	1,030	7.8	88.1	135	2,640	8,110
Fiscal year 1942-43	1,710	1.95	81.7	126	29,840	91,520

Peak discharge.- Sept. 16 (2 a.m.) 6,010 m.g.d. (9,300 sec.-ft.); Nov. 30 (1 a.m.) 2,510 m.g.d. (3,880 sec.-ft.); Dec. 6 (7:30 a.m.) 2,870 m.g.d. (4,440 sec.-ft.); Dec. 7 (3:30 a.m.) 2,550 m.g.d. (3,950 sec.-ft.); Jan. 12 (8:30 p.m.) 3,120 m.g.d. (4,830 sec.-ft.); June 2 (6 a.m.) 7,160 m.g.d. (11,100 sec.-ft.).
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

North Fork Wailua River at altitude 650 feet, near Lihue

Location.- Lat. 22°03'50", long. 159°26'20", 1½ miles upstream from intake of Kanaha ditch and 7¾ miles northwest of Lihue. Altitude of gage, 650 feet (from topographic map).

Drainage area.- 6.6 square miles.

Records available.- August 1910 to June 1943. December 1910 to September 1914 at site 300 feet downstream from confluence of main and east branches; records not equivalent.

Average discharge.- 22 years (1921-43), 52.7 million gallons a day (81.5 second-feet).

Extremes.- Maximum discharge during year, 4,020 million gallons a day (6,220 second-feet) June 2 (gage height, 9.96 feet), from rating curve extended above 600 million gallons a day by test on model of station site; minimum, 2.7 million gallons a day (4.2 second-feet) July 21, 22, 27.

1910-43: Maximum discharge, that of June 2, 1943; minimum, 0.75 million gallons a day (1.16 second-feet) Sept. 3, 1938.

Remarks.- Records good. 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.

Rating tables, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)
(Shifting-control method used Dec. 6 to Jan. 4, June 2-30)

July 1 to Sept. 16

-0.8	2.0	-0.2	10.8	1.1	81
-.7	3.0	0.0	16.5	1.5	126
-.6	4.2	.2	24	2.0	198
-.5	5.5	.5	38.5	2.5	302
-.3	8.9	.8	57	3.0	436

Sept. 17 to June 30

-0.8	2.2	-0.2	13.8	1.6	152
-.7	3.35	0.0	20.5	2.0	208
-.6	4.8	.2	29.5	2.5	302
-.5	6.5	.5	47	3.0	436
-.4	8.6	.8	70	4.0	770
-.3	11.0	1.2	107		

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	50	50	36.5	10.7	5.2	82	110	30	23.5	86	32	128
2	50	60	11.3	14.1	3.4	67	259	33.5	23	72	24.5	353
3	53	105	5.8	10.5	8.4	62	292	64	31.5	47	15.2	143
4	72	95	7.7	8.4	4.5	50	497	57	45	99	6.9	99
5	41	47	5.1	8.3	3.35	255	134	72	27.5	67	10.4	62
6	54	50	4.6	6.2	6.3	677	97	54	24	68	60	54
7	96	36	6.8	5.5	6.4	150	94	91	23.5	47	12.6	47
8	54	41	31.5	7.3	4.8	73	79	93	48	56	54	41
9	54	46	7.8	5.8	3.95	44	83	50	113	41	73	35
10	44	38.5	34	6.1	3.65	30	66	38	147	41	70	31
11	68	36	7.1	7.7	4.4	24.5	65	35	58	50	104	37
12	54	15.8	24	5.1	3.35	45	314	30	41	58	99	35
13	44	75	96	7.5	3.1	118	150	28.5	33	41	64	67
14	47	27	340	59	4.8	68	84	31.5	29.5	52	52	38
15	38.5	11.9	282	7.5	18.8	132	66	27	28	43	50	32
16	15.6	9.3	425	5.0	28	87	62	26	26.5	76	38	33.5
17	3.5	25.5	99	4.2	50	50	62	26.5	25.5	48	34.5	35
18	3.1	25	70	5.7	50	76	47	38	32	38	30.5	38
19	2.9	87	58	4.2	40	44	41	27.5	38	33.5	33.5	66
20	2.8	34	71	22.5	44	153	38	35.5	29.5	30	99	91
21	2.8	15.6	63	23	34	150	34	41	37	51	61	47
22	2.9	79	51	6.5	29.5	84	33	30	32	59	40	38.5
23	4.4	71	36	5.3	27	74	31	25.5	97	61	53	28.5
24	16.5	44	24	4.5	12.6	71	30.5	35	54	38	72	28
25	4.6	43	10.3	3.95	4.5	94	36.5	28	92	43	61	43
26	3.0	13.2	8.0	3.8	4.2	78	30	25	123	30	108	123
27	13.6	7.4	36	3.95	4.1	54	29	29.5	65	27	153	54
28	26.5	8.2	17.4	3.35	26	78	28	23.5	64	25	82	71
29	31	47	8.6	3.65	257	114	24.5	-	84	24.5	66	100
30	18.8	36	6.9	3.5	227	90	27	-	113	24	83	82
31	19.8	63	-	3.1	-	121	27	-	92	-	49	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	96	2.8	32.0	49.5	991	3,040
August	105	7.4	43.3	67.0	1,340	4,120
September	425	4.6	62.8	97.2	1,880	5,780
October	59	3.1	8.90	13.8	276	847
November	257	3.1	30.7	47.5	922	2,830
December	677	24.5	106	164	3,300	10,110
Calendar year 1942	677	2.8	54.6	84.5	19,930	61,190
January	497	24.5	95.8	148	2,970	9,120
February	93	23.5	40.2	62.2	1,130	3,450
March	147	23	54.8	84.8	1,700	5,220
April	99	24	49.1	76.0	1,470	4,520
May	153	6.9	58.1	89.9	1,800	5,530
June	353	28	69.4	107	2,080	6,380
Fiscal year 1942-43	677	2.8	54.4	84.2	19,860	60,950

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Hanalei tunnel outlet near Lihue

Location.- Sharp-crested brass weir, lat. 22°05'00" (revised), long. 159°28'15", at end of Hanalei tunnel, 2¼ miles downstream from intake on Kaapoko Stream and 9¾ miles northwest of Lihue. Altitude of gage, 1,210 feet (Lihue Plantation Co. levels).

Records available.- July 1932 to June 1943.

Average discharge.- 11 years 25.9 million gallons a day (40.1 second-feet).

Extremes.- Maximum discharge during year, 79 million gallons a day (122 second-feet) Jan. 4 (gage height, 1.85 feet); no flow Apr. 7, when water was shut out of ditch.
1932-43: Maximum discharge, that of Jan. 4, 1943; no flow occasionally, when water was shut out of ditch.

Remarks.- Records excellent. Tunnel diverts water from Kaapoko Stream and Hanalei River and empties it 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 head gates.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	25	28	26.5	23.5	19.5	28.5	48	20.5	18.7	37.5	23.5	38.5
2	28.5	27.5	21	25.5	18.0	26.5	62	23	18.7	38.5	19.5	33
3	28	32	20.5	23	18.4	26.5	58	34.5	25	27	20.5	22.5
4	31.5	36.5	19.9	22	18.0	23	60	31.5	33	44	18.7	17.6
5	22	24	19.1	23.5	18.0	35.5	46	39	21.5	32.5	19.7	13.1
6	28	26	18.7	19.9	20.5	24.5	37.5	29	19.5	26.5	31	12.0
7	40	22	20.5	19.1	20.5	4.7	39	42	19.1	20	22.5	11.3
8	25	24	34.5	20.5	19.5	1.87	37.5	40	35.5	27	27	11.3
9	26.5	24.5	22	19.6	18.0	1.51	37	26.5	53	22.5	30	10.7
10	23.8	23	30.5	19.9	17.8	.87	31	23	52	26.5	33	10.7
11	32	22	19.9	21	18.2	.36	29	24.5	38.5	34.5	32	12.0
12	28	20.5	22	18.7	18.0	.36	47	21	28.5	34.5	32.5	11.7
13	24.5	40	38	22	17.6	1.11	48	20.5	24.5	26.5	24.5	15.3
14	25.5	25	46	32	22.5	.36	34.5	23	23	32.5	29.5	11.7
15	21.5	21	56	22	30.5	.34	32	19.7	21.5	29	28.5	11.7
16	20.5	20.5	42	19.7	29	.15	33.5	19.5	20.5	35	23	12.0
17	19.7	25.5	30.5	18.8	30.5	.17	33.5	20.5	20.5	28	22	12.3
18	19.1	26	28.5	19.9	26.5	.88	26.5	26	24	24.5	20.5	12.7
19	18.7	43	26.5	18.7	23	.17	23.5	21	23.5	22.5	23	15.3
20	18.7	29.5	29	24	22.5	1.04	23	25	23	21.5	35.5	18.0
21	18.7	23	28	28.5	19.7	11.0	22	26.5	25.5	29	30	13.1
22	19.1	41	26	22	18.4	f22	21.5	21.5	23	32	22.5	12.0
23	25.5	32.5	23.5	20.5	18.0	f28	20.5	19.5	33.5	29.5	25	11.3
24	32	24	21.5	19.1	18.0	29.5	20.5	27	28.5	23	32	11.3
25	25.5	28	20.5	18.7	17.6	39.5	23.5	21	44	25	31	13.8
26	20.5	22	20.5	18.0	17.6	33.5	19.9	19.7	49	20.5	38.5	18.4
27	19.6	20.5	27.5	18.4	17.2	25	19.7	20.5	31	19.9	40	13.8
28	19.5	23.5	23.5	18.0	23.5	58	19.7	19.1	31.5	19.5	33.5	15.3
29	28	34	20.5	18.0	35.5	50	19.5	-	40	19.1	30.5	16.4
30	23	22	19.9	17.6	36.5	40	19.1	-	41	18.7	34	15.6
31	24.5	30.5	-	17.2	-	49	19.5	-	35.5	-	24.5	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	40	18.7	24.6	38.1	762	2,340
August	43	20.5	27.1	41.9	842	2,580
September	56	18.7	26.8	41.5	803	2,460
October	32	17.2	20.9	52.3	649	1,990
November	36.5	17.2	21.6	33.4	648	1,990
December	50	.15	17.5	27.1	544	1,670
Calendar year 1942	64	.15	25.3	39.1	9,250	28,360
January	62	19.1	32.6	50.4	1,010	3,110
February	42	19.1	25.2	39.0	704	2,160
March	53	18.7	29.9	46.3	926	2,840
April	44	18.7	27.6	42.7	827	2,540
May	40	18.7	27.7	42.9	858	2,630
June	38.5	10.7	15.1	23.4	454	1,390
Fiscal year 1942-43	62	.15	24.7	38.2	9,030	27,700

f Computed on basis of partly estimated gage-height record.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

North Wailua ditch near Lihue

Location.- Sharp-crested weir, lat. 22°03'40", long. 159°27'55", 300 feet downstream from intake diversion dam on North Fork Wailua River, 8 miles west of Wailua and 8½ miles northwest of Lihue. Datum of gage is 1,105.45 feet above mean sea level (Lihue Plantation Co. levels).

Records available.- July 1932 to June 1943. Records from 1926 to June 1932 collected by Lihue Plantation Co.

Average discharge.- 11 years, 12.8 million gallons a day (19.8 second-feet).

Extremes.- Maximum discharge during year, 34.5 million gallons a day (53.4 second-feet) May 5 (gage height 1.26 feet); no flow at times, when water was shut out of ditch. 1932-43: Maximum discharge, 59 million gallons a day (91 second-feet) Feb. 25, 1935 (gage height, 1.57 feet); no flow occasionally, when water was shut out of ditch.

Remarks.- Records excellent. Flow regulated by gates. Water used for power and irrigation in vicinity of Lihue.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	9.6	8.9	8.6	14.0	14.5	5.3	1.49	11.9	11.2	3.2	16.0	0.70
2	11.0	7.8	11.5	13.7	11.5	11.9	.30	12.7	11.2	6.7	13.1	1.53
3	10.1	11.0	13.3	13.4	15.3	11.7	.54	12.2	12.9	9.9	14.2	.14
4	8.3	11.5	13.0	13.4	13.2	11.5	1.01	9.6	15.3	4.1	12.1	.77
5	10.5	11.6	12.5	12.9	14.0	4.6	.82	12.0	12.6	6.1	15.3	5.0
6	10.0	11.4	12.1	12.4	16.0	1.39	4.6	11.3	11.6	5.4	10.9	5.7
7	7.4	11.5	13.0	12.1	15.1	.25	6.6	8.8	11.3	7.6	14.6	6.3
8	8.3	12.8	14.9	12.7	14.2	1.46	7.4	6.2	14.3	7.1	9.0	8.3
9	9.2	11.4	14.1	12.1	12.4	8.1	8.8	9.8	10.0	9.6	.44	9.5
10	11.6	11.6	11.8	13.0	11.8	11.0	8.5	12.7	4.5	13.1	2.45	11.2
11	12.1	12.7	11.9	14.3	8.5	11.0	8.0	12.8	9.6	13.8	3.6	10.7
12	11.8	12.9	13.4	12.8	11.3	7.5	4.5	12.5	11.8	11.5	3.85	9.7
13	11.6	7.1	10.8	14.7	11.3	3.2	.18	12.4	13.0	11.9	7.9	5.9
14	11.6	8.8	5.7	22.5	13.2	.18	2.6	12.3	12.5	12.8	10.7	7.3
15	11.3	11.6	2.4	15.3	19.4	.27	8.1	11.9	12.2	14.0	11.9	11.1
16	11.6	12.7	3.3	13.1	19.0	1.00	8.8	11.7	11.9	18.1	12.9	11.3
17	13.0	13.8	3.6	12.5	20.5	5.9	8.8	12.2	11.6	14.9	13.1	11.4
18	12.1	13.2	8.6	13.6	18.3	6.0	11.6	12.7	12.5	14.2	12.8	11.6
19	12.6	9.7	10.6	12.2	14.9	5.7	12.5	12.2	12.1	13.1	13.1	4.3
20	12.5	12.7	13.0	14.1	13.0	1.61	12.6	13.1	12.1	13.2	6.9	1.24
21	12.2	12.0	11.4	13.4	12.0	.46	13.3	13.1	12.6	16.7	8.8	6.2
22	12.3	11.7	13.4	12.0	12.0	3.5	13.1	12.6	12.5	15.6	9.7	10.5
23	12.4	10.5	13.5	11.7	12.0	6.0	12.8	11.9	8.4	6.1	14.7	14.0
24	12.2	11.2	13.2	11.6	11.9	8.1	12.7	12.2	7.3	9.7	12.6	14.0
25	13.5	11.6	13.2	11.3	11.6	9.1	12.6	11.4	5.2	11.6	8.9	13.5
26	12.3	12.7	13.6	11.3	11.3	6.7	12.4	11.3	3.2	11.8	3.05	1.99
27	11.9	12.5	11.3	11.4	11.2	7.8	12.0	14.3	4.7	12.6	2.0	3.35
28	12.3	12.9	9.9	11.0	13.2	11.9	11.9	11.6	4.9	12.8	1.34	3.6
29	10.9	13.3	12.2	11.2	6.8	3.75	11.8	-	4.0	12.8	7.3	2.6
30	8.9	11.9	13.1	10.9	.37	3.7	11.7	-	1.87	12.5	4.1	2.0
31	11.4	7.8	-	10.8	-	2.15	11.9	-	3.3	-	7.0	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	13.5	7.4	11.2	17.3	346	1,060
August	13.8	7.1	11.4	17.6	352	1,080
September	14.9	2.4	11.1	17.2	333	1,020
October	22.5	10.8	12.9	20.0	401	1,230
November	20.5	.37	13.0	20.1	390	1,200
December	11.9	.18	5.57	8.62	173	530
Calendar year 1942	24.5	.15	10.4	16.1	3,790	11,640
January	13.3	.18	8.19	12.7	254	779
February	14.3	6.2	11.8	18.3	329	1,010
March	15.3	1.87	9.75	15.1	302	927
April	18.1	3.2	11.1	17.2	332	1,020
May	16.0	.44	9.14	14.1	283	870
June	14.0	.14	6.86	10.6	206	632
Fiscal year 1942-43	22.5	.14	10.1	15.6	3,700	11,360

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Stable storm ditch near Lihue

Location.- Sharp-crested weir, lat. 22°04'00", long. 159°26'45", 100 feet downstream from intake, 7.8 miles northwest of Lihue, and 8.2 miles west of Kapaa.

Records available.- December 1936 to June 1943. Records for April 1931 to December 1936 collected by Lihue Plantation Co. from staff gage at site 1 mile downstream.

Extremes.- Maximum discharge during year, 73 million gallons a day (113 second-feet) June 2 (gage height, 2.22 feet); no flow at times, when water was shut out of ditch.
1936-43: Maximum discharge, that of June 2, 1943; no flow at times, when water was shut out of ditch.

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

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.02	0.07	14.4	26.5	22.5	0.12	0.12	0.07	0	0.12	0.07	0.07
2	.02	.12	23	27	21.5	.12	.39	.12	.05	.12	.07	1.75
3	.02	.16	23.5	26.5	23.5	.12	.38	.12	.12	.07	13.1	.18
4	.02	.12	24	25	23	.07	.73	.07	.07	.07	19.0	.18
5	.02	.07	23	24.5	21.5	.53	.12	.07	.03	.01	19.6	.15
6	.02	.02	22.5	23	23.5	.76	.02	.07	0	0	11.4	.12
7	.02	.02	23.5	22	25	.24	0	.07	0	0	19.8	.10
8	.02	.02	26.5	23.5	23.5	.12	0	.07	0	0	23.5	.01
9	.02	0	24	22.5	21.5	.12	0	.07	0	0	19.6	0
10	.02	0	27.5	23	21.5	1.78	0	.02	.12	0	6.5	0
11	.02	0	24	24.5	22.5	.41	0	0	0	0	.16	0
12	.02	14.9	6.6	21.5	20.5	.32	.42	0	.03	0	.07	0
13	.02	24	.07	23	20	.31	.02	0	.09	0	.07	0
14	.02	22.5	1.05	30.5	24	.18	.02	0	.07	0	.02	0
15	.01	21.5	.61	26	27.5	.18	.02	0	.07	0	.01	0
16	21.5	21	.61	23.5	28.5	.18	0	.07	.04	0	0	0
17	27.5	22.5	.02	22.5	18.6	.18	0	.12	.07	.02	0	0
18	26.5	22.5	.01	23.5	.07	.19	0	.12	.12	.02	0	0
19	25	24.5	0	22.5	.06	.12	0	.12	.12	.02	0	0
20	25	23	.04	25	.12	.18	0	.07	.12	.02	0	0
21	24.5	22	.07	28	.07	.22	0	.07	.12	0	0	0
22	26	10.6	5.0	26	.07	.18	0	.07	.01	0	1.19	0
23	30	.07	7.2	24.5	.02	.18	0	0	.26	0	.04	0
24	35	.02	14.9	23	14.8	.07	0	0	.01	0	0	0
25	31.5	10.3	23.5	22.5	20.5	.12	.17	0	0	0	0	0
26	26.5	20	24.5	22	20.5	.12	.12	0	.10	0	0	0
27	11.7	23.5	30	22	20	.07	.07	0	.18	.02	.17	0
28	.07	26.5	27.5	21.5	23.5	.07	.07	0	.18	.02	.07	0
29	16.7	15.3	24.5	21.5	13.5	.12	3.25	-	.12	.02	.07	.02
30	23.5	.02	23.5	21	.23	.12	.07	-	.12	.02	.07	.07
31	17.6	4.4	-	20.5	-	.12	.12	-	.18	-	.02	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	35	0.01	11.9	18.4	368	1,130
August	26.5	0	10.6	16.4	330	1,010
September	30	0	14.9	23.1	446	1,370
October	30.5	20.5	23.8	36.8	738	2,270
November	28.5	.02	16.7	25.8	502	1,540
December	1.78	.07	.246	.381	7.62	23
Calendar year 1942	35	0	8.71	13.5	3,180	9,770
January	3.25	0	.197	.305	6.11	19
February	.12	0	.050	.077	1.39	4.3
March	.26	0	.077	.119	2.40	7.4
April	.12	0	.018	.028	.55	1.7
May	23.5	0	4.34	6.71	136	413
June	1.75	0	.088	.136	2.65	8.1
Fiscal year 1942-43	35	0	6.96	10.8	2,540	7,800

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kanaha ditch near Lihue

Location.- Sharp-crested weir, lat. 22°03'50", long. 159°25'30", 750 feet downstream from intake and 7 miles northwest of Lihue. Altitude of gage, 540 feet (by barometer).

Records available.- August 1910 to June 1943.

Average discharge.- 23 years (1916-22, 1926-43), 6.61 million gallons a day (10.2 second-feet).

Extremes.- Maximum discharge during year, 9.6 million gallons a day (14.9 second-feet) June 2 (gage height, 0.43 foot); no flow at times, when intake gate was closed.
1910-43: Maximum discharge recorded, 45 million gallons a day (70 second-feet) Dec. 24, 1927 (gage height, 3.22 feet, site and datum then in use); no flow occasionally, when water was shut out of ditch.

Remarks.- Records fair. Ditch diverts water from North Fork Wailua River for domestic use only. Flow regulated by head gate.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.17	0.21	0.21	0.21	0.43	0.16	0.31	0.21	0.16	0.16	0.16	0.12
2	.17	.16	.21	.21	.26	.12	.43	.21	.16	.16	.16	.36
3	.17	.17	.21	.21	.21	.12	.65	.21	.16	.16	.16	.08
4	.21	.11	.21	.21	.21	.12	.83	.21	.16	.16	.16	0
5	.17	.16	.21	.31	.18	.21	.40	.21	.16	.16	.16	0
6	.21	.16	.17	.31	.31	.31	.31	.21	.16	.16	.12	0
7	.21	.16	.21	.21	.21	.21	.31	.21	.16	.16	.12	0
8	.16	.16	.21	.21	.18	.12	.31	.21	.16	.12	.21	0
9	.16	.16	.21	.16	.16	.16	.31	.21	.21	0	.21	.04
10	.16	.16	.31	.21	.21	.26	.21	.21	.21	0	.12	.05
11	.16	.16	.21	.21	.21	.31	.21	.21	.21	0	.12	.12
12	.16	.21	.21	.21	.21	.31	.45	.21	.21	0	.12	.12
13	.16	.37	.31	.16	.21	.31	.31	.21	.21	0	.16	.21
14	.21	.37	.28	.21	.21	.40	.21	.21	.21	0	.21	.16
15	.21	.31	.21	.21	.31	.43	.21	.21	.21	.09	.16	.12
16	.16	.37	.31	.21	.37	.55	.21	.16	.21	.21	.16	.12
17	.16	.43	.16	.21	.31	.31	.21	.16	.16	.21	.12	.12
18	.21	.37	.16	.21	.31	.31	.21	.16	.16	.21	.12	.43
19	.21	.31	.16	.21	.31	.43	.19	.16	.17	.31	.16	1.24
20	.21	.21	.21	.21	.31	.49	.16	.16	.16	.31	.21	1.58
21	.16	.21	.21	.21	.31	.31	.10	.16	.16	.31	.21	1.24
22	.16	.21	.21	.21	.31	.43	.28	.16	.16	.31	.21	1.09
23	.21	.21	.16	.21	.26	.43	.28	.16	.18	.21	.16	.67
24	.16	.21	.21	.21	.16	.40	.28	.16	.16	.16	.16	.43
25	.16	.26	.21	.21	.16	.31	.31	.16	.18	.16	.16	.55
26	.16	.31	.26	.21	.21	.31	.28	.16	.18	.16	.12	.67
27	.21	.21	.60	.21	.21	.31	.21	.16	.16	.21	.05	.55
28	.21	.21	.21	.21	.21	.37	.16	.16	.16	.21	.05	.55
29	.21	.21	.16	.21	.31	.31	.16	-	.16	.21	.05	.55
30	.37	.21	.15	.21	.21	.31	.16	-	.16	.21	.05	.66
31	.21	.21	-	.21	-	.43	.16	-	.18	-	.05	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	0.37	0.16	0.189	0.292	5.86	18
August	.43	.11	.232	.359	7.18	22
September	.60	.15	.225	.348	6.76	21
October	.31	.16	.213	.330	6.61	20
November	.43	.16	.249	.385	7.47	23
December	.55	.12	.308	.477	9.56	29
Calendar year 1942	.60	.11	.238	.368	86.8	265
January	.83	.10	.285	.441	8.82	27
February	.21	.16	.187	.289	5.23	16
March	.21	.16	.176	.272	5.45	17
April	.31	0	.158	.244	4.73	15
May	.21	.05	.142	.220	4.39	13
June	1.58	0	.391	.605	11.7	36
Fiscal year 1942-43	1.58	0	.230	.356	83.8	257

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Wailua ditch near Kapaa

Location.- Lat. 22°04'25", long. 159°24'05", 2,000 feet downstream from Wailua Reservoir, 5¼ miles west of Kapaa, and 7 miles north of Lihue. Altitude of gage, 462±5 feet (by estimating slope of 2,000-foot length of ditch on basis of Lihue Plantation Co. levels).

Records available.- November 1936 to June 1943. Records collected by East Kauai Water Co. July 1922 to April 1932 at site 2 miles upstream, below intake, and April 1932 to November 1936 at present site.

Extremes.- Maximum discharge during year, 41 million gallons a day (63 second-feet) June 14 (gage height, 3.48 feet); minimum, 1.0 million gallons a day (1.6 second-feet) Dec. 15.

1936-43: Maximum discharge, 46 million gallons a day (71 second-feet) Oct. 6, 1938 (gage height, 3.96 feet); no flow May 15 to June 4, 1940.

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

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	12.2	4.3	20.5	27.5	9.6	2.8	2.2	1.8	15.4	2.3	13.0	13.9
2	11.1	11.1	30.5	31.5	8.6	2.8	2.3	1.8	26.5	2.4	1.2	9.3
3	1.7	9.1	31.5	24	14.3	2.8	2.3	1.8	28	2.4	4.8	8.8
4	1.6	3.9	23.5	12.4	12.2	2.8	1.9	1.8	29.5	2.1	12.9	8.2
5	1.7	10.5	10.3	13.0	5.5	3.0	1.6	1.8	28	2.7	22.5	8.2
6	1.8	13.6	5.2	27	5.8	3.0	1.6	1.7	12.8	7.1	30.5	7.6
7	1.9	14.2	22	27.5	5.8	2.9	1.6	1.8	2.9	11.4	29.5	9.2
8	1.9	9.6	21	22.5	5.8	2.6	1.6	1.9	9.8	17.5	26.5	15.1
9	2.8	5.0	13.6	21	6.1	2.6	1.7	1.9	15.1	17.5	15.7	25
10	5.4	9.6	13.0	10.1	5.7	2.7	1.7	2.0	15.1	10.5	2.4	33.5
11	5.5	15.2	19.6	8.9	11.3	2.8	1.8	1.9	12.1	3.6	2.1	36.5
12	5.9	15.4	17.4	25.5	10.8	2.8	1.8	1.9	9.8	9.4	2.1	30.5
13	10.8	16.0	10.2	27.5	11.8	f2.6	1.6	1.9	5.6	15.1	2.2	18.8
14	14.2	23.5	14.0	22.5	12.4	f2.1	1.6	1.8	3.8	22.5	2.3	27
15	18.7	13.0	17.2	21	13.3	1.9	1.6	5.0	6.6	19.9	2.4	28
16	24	4.6	16.0	25	16.9	1.6	1.6	15.1	6.6	16.3	2.4	17.8
17	26.5	16.2	16.0	18.7	6.4	2.0	f1.6	21	8.2	9.6	2.5	12.7
18	16.6	15.4	16.0	9.9	11.8	2.8	f1.6	28	8.5	4.8	2.6	12.1
19	8.3	15.4	11.6	27.5	15.4	2.8	1.6	29.5	4.0	13.6	3.0	7.8
20	21	12.4	13.4	30.5	15.4	2.8	1.7	19.5	5.4	13.9	4.5	2.4
21	21	8.6	23.5	31.5	10.4	2.8	1.8	10.8	3.6	13.9	19.3	2.4
22	22.5	4.4	22.5	26.5	3.4	2.5	1.8	26.5	8.2	9.1	22	9.2
23	24	3.0	26	15.1	6.7	2.4	1.8	22.5	8.2	4.1	16.3	22.5
24	11.7	11.5	29	7.0	18.5	2.4	1.8	24	8.2	7.6	25	26.5
25	2.3	15.4	29	8.3	21	2.5	1.8	17.5	4.8	5.1	32	32
26	12.1	23	18.4	22.5	17.2	2.4	1.8	17.5	2.3	21	32	17.8
27	21.5	29	4.8	21	15.4	2.4	1.8	11.0	2.3	21	28	7.0
28	19.9	29	14.4	21	10.7	2.3	1.8	4.4	2.3	22.5	26.5	17.5
29	9.8	12.8	17.2	21	3.5	2.2	1.8	-	2.3	28	17.8	17.5
30	9.0	3.6	22.5	21	2.8	2.2	1.8	-	2.3	28	9.3	12.7
31	7.8	8.0	-	16.2	-	2.2	1.8	-	2.3	-	12.1	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	26.5	1.6	11.5	17.8	355	1,090
August	29	3.0	12.5	19.3	386	1,190
September	31.5	4.6	18.3	28.3	549	1,680
October	31.5	7.0	20.8	32.2	645	1,980
November	21	2.8	10.5	16.2	316	968
December	3.0	1.6	2.53	3.91	78.5	241
Calendar year 1942	31.5	.7	9.74	15.1	3,560	10,920
January	2.3	1.6	1.77	2.74	54.8	168
February	29.5	1.7	9.93	15.4	278	853
March	29.5	2.3	9.69	15.0	300	922
April	28	2.1	12.2	18.9	365	1,120
May	32	1.2	13.7	21.2	425	1,310
June	36.5	2.4	16.6	25.7	498	1,530
Fiscal year 1942-43	36.5	1.2	11.6	17.9	4,250	13,050

f Computed on basis of partly estimated gage-height record.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

East Branch of North Fork Wailua River near Lihue

Location.- Lat. 22°04'10", long. 159°25'05", 1,200 feet upstream from confluence with North Fork and 7½ miles northwest of Lihue. Altitude of gage, 500 feet (by barometer).
Drainage area.- 6.2 square miles.
Records available.- July 1912 to June 1943.
Average discharge.- 23 years (1920-43), 30.8 million gallons a day (47.7 second-feet).
Extremes.- Maximum discharge during year, 2,000 million gallons a day (3,090 second-feet) June 2 (gage height, 8.71 feet), from rating curve extended above 270 million gallons a day; minimum, 10.8 million gallons a day (16.7 second-feet) Nov. 1.
1912-43: Maximum discharge, 3,340 million gallons a day (5,170 second-feet) Dec. 24, 1927 (gage height, 10.57 feet), from rating curve extended above 500 million gallons a day; minimum, 4.4 million gallons a day (6.8 second-feet) July 3, 13, 1926.
Remarks.- Records good except those for period of no gage-height record, which are fair. No diversions above station.

Rating tables, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

July 1 to June 2

1.1	10.0	2.1	67
1.2	12.8	2.5	112
1.3	16.4	3.0	167
1.5	24.5	3.5	216
1.7	35.5	4.0	280
1.9	50	4.5	358

June 3 to June 30

1.3	18.0
1.5	26.5
1.7	36
1.9	50

Note.- Same as preceding table above 1.9 feet.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	23	18.5	18.0	15.5	11.1	36	54	17.2	12.1	38.5	15.4	50
2	37	16.4	14.6	16.8	11.3	25.5	155	16.4	12.0	34	14.2	246
3	26	227	12.8	15.0	19.7	25	259	24.5	12.8	23.5	13.9	96
4	27	74	14.8	14.2	15.0	20	338	27	19.7	38.5	13.5	54
5	21.5	30.5	12.8	13.5	12.5	114	111	31.5	13.9	28.5	12.8	41
6	24.5	27	12.0	12.8	14.6	313	67	26	12.2	32.5	18.8	35.5
7	35.5	21.5	14.4	12.0	16.0	136	52	50	12.0	23	22.5	32
8	23.5	21.5	15.8	12.0	16.0	68	46	46	21.5	21	56	29
9	24.5	22	12.8	12.0	14.2	45	53	24.5	77	19.7	77	26
10	22.5	19.3	16.4	12.0	13.2	36	35.5	20.5	83	31.5	72	24
11	31	18.0	12.2	12.0	12.2	29.5	34.5	21	24	22	61	23.5
12	29.5	16.4	11.7	11.7	12.0	28	100	17.6	19.3	26	97	23.5
13	25.5	26	38	11.4	11.7	98	67	16.4	16.8	20.5	46	27
14	23.5	19.7	177	37	12.2	55	37	19.4	15.5	23.5	92	21.5
15	21	16.0	113	14.2	22.5	84	32.5	15.7	14.2	23.5	44	a18
16	19.7	15.0	155	12.2	26.5	102	30	15.0	13.5	32	30	a18
17	18.0	19.2	48	11.7	30	49	29	14.6	13.2	23	25	a18
18	17.2	19.7	33	11.7	27.5	63	25	14.2	15.7	20.5	22	a19
19	16.4	32.5	27.5	12.0	18.4	41	23.5	13.9	33	18.4	20.5	a29
20	16.0	19.7	25.5	23.5	19.7	82	21.5	16.5	15.0	17.2	29	a41
21	15.3	16.4	27	44	16.4	99	20.5	17.6	15.3	24	23.5	a27
22	15.3	20.5	21.5	14.6	14.6	54	19.3	14.6	20	33.5	19.7	a18
23	15.3	21	19.3	13.5	13.5	41	18.9	13.5	26.5	25	21.5	a18
24	20	15.3	17.6	12.8	13.2	34.5	18.0	21	22.5	19.3	25	a18
25	18.4	17.7	16.4	12.2	12.8	33.5	20.5	15.0	41	20	24.5	a27
26	15.3	14.2	15.7	11.7	12.2	36.5	17.2	13.5	43	16.8	58	a55
27	14.2	12.8	23.5	11.7	12.2	27.5	16.4	12.8	26	15.7	91	a24
28	13.9	14.2	18.0	11.7	12.2	48	15.7	12.2	23.5	15.0	37	a27
29	15.8	18.7	15.3	11.7	141	55	15.3	-	32.5	14.6	31	a32
30	18.4	13.5	14.6	11.7	125	39.5	14.6	-	39	14.2	24.5	a29
31	17.6	18.9	-	11.1	-	52	15.0	-	28	-	22	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	37	13.9	21.4	33.1	663	2,040
August	227	12.8	27.8	43.0	863	2,650
September	177	11.7	32.5	50.3	974	2,990
October	44	11.1	14.8	22.9	460	1,410
November	141	11.1	23.6	36.5	709	2,180
December	313	20	63.6	98.4	1,970	6,050
Calendar year 1942	313	9.7	31.5	48.7	11,510	35,340
January	338	14.6	56.8	87.9	1,760	5,410
February	50	12.2	20.3	31.4	569	1,750
March	83	12.0	25.0	38.7	774	2,370
April	38.5	14.2	23.8	36.6	715	2,200
May	97	12.8	37.4	57.9	1,160	3,560
June	246	18	38.2	59.1	1,150	3,520
Fiscal year 1942-43	338	11.1	32.2	49.8	11,770	36,130

a No gage-height record June 15-30; discharge computed on basis of records for North Fork Wailua River.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kapaa River at Kapahi ditch intake, near Kapaa

Location.- Masonry dam, lat. 22°06'05", long. 159°22'30", 4 miles northwest of Kapaa and 4.5 miles northwest of Wailua. Altitude of gage, 365 feet (by barometer).

Drainage area.- 3.3 square miles.

Records available.- December 1936 to June 1943. July 1910 to May 1915 at site half a mile upstream, published as Kapaa River at Kapaa. June 1915 to April 1920 at site three-quarters of a mile upstream, published as Kapaa River near Kealia.

Extremes.- Maximum discharge during year, 2,810 million gallons a day (4,350 second-feet) Aug. 3 (gage height, 4.16 feet), from rating curve extended above 330 million gallons a day; no flow at times, when low flow is diverted into Kapahi ditch.

1936-43: Maximum discharge, 3,390 million gallons a day (5,250 second-feet) Mar. 19, 1937 (gage height, 4.50 feet), from rating curve extended above 330 million gallons a day; no flow at times, when low flow is diverted into Kapahi ditch.

Remarks.- Records fair. Entire low flow is diverted into several ditches above station.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

-0.05	0	0.3	6.3	0.7	40	1.1	115
0.0	.1	.4	11.7	.8	55	1.3	168
.1	.8	.5	19.0	.9	72	1.5	234
.2	2.7	.6	28.5	1.0	92	1.8	366

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	7.2	11.6	0	0	1.9	20	35.5	14.3	0	24	4.2	24
2	98	6.6	0	0	0	14.6	93	13.1	.7	20	4.5	61
3	24	337	0	0	10.4	14.6	220	21.5	6.7	13.9	1.1	34
4	20	39.5	14.7	0	1.2	11.7	291	21.5	23	29	0	24.5
5	13.9	12.1	1.1	0	0	88	42	17.2	5.5	12.7	0	17.5
6	18.4	7.9	0	0	.9	206	24	14.2	2.4	12.4	.7	15.4
7	28	5.6	0	0	2.0	87	19.2	32	.8	1.4	1.1	8.4
8	13.9	4.6	2.3	0	4.5	28.5	22	30	8.7	.6	11.2	2.2
9	13.2	7.7	1.1	0	4.1	19.0	23	17.5	64	0	94	.2
10	10.6	1.1	4.1	0	.5	15.4	16.8	11.7	57	12.6	59	0
11	15.1	.6	0	0	0	13.9	19.3	12.4	12.0	10.2	41	0
12	18.3	.1	0	0	0	14.6	100	7.4	7.4	8.2	101	0
13	5.2	8.1	5.6	.4	0	113	36	6.3	5.6	1.4	26	6.5
14	5.5	0	81	11.2	0	48	18.3	6.6	3.5	8.2	22	0
15	1.8	1.3	25.5	0	.9	69	17.5	0	1.9	7.0	16.8	0
16	0	4.1	47	0	2.5	71	21	0	5.8	14.6	13.2	1.7
17	0	0	7.2	.5	3.3	29	20	0	3.0	11.5	12.4	7.9
18	0	0	3.1	1.7	.5	32.5	15.4	0	17.9	11.5	11.2	7.9
19	0	.1	4.1	.6	2.1	20	13.2	0	42	3.1	9.5	12.3
20	.5	.1	9.7	22	1.7	49	12.4	3.1	11.2	0	7.3	38.5
21	2.1	0	21	15.9	3.8	45	11.7	7.0	13.2	16.5	.8	2.1
22	2.5	1.7	2.5	1.3	5.6	29.5	11.7	2.0	25	15.1	0	.1
23	1.1	6.2	0	.4	5.2	19.0	11.7	.6	21	16.0	8.6	1.5
24	14.4	.7	0	0	2.9	17.5	11.2	15.2	17.5	7.5	9.4	.2
25	5.7	.4	0	0	5.6	20.5	14.6	2.8	29.5	16.5	1.5	.2
26	6.3	0	0	0	7.9	19.0	11.7	0	37	5.2	24	34.5
27	6.2	0	15.7	0	1.9	14.6	10.6	2.2	18.9	6.8	53	8.7
28	5.1	0	2.0	0	0	29.5	10.1	3.3	16.8	4.0	15.0	17.3
29	5.3	0	0	0	196	27.5	10.1	-	28.5	.3	5.7	9.3
30	3.6	0	0	0	99	23	10.1	-	24	0	3.6	8.4
31	9.2	0	-	1.1	-	28.5	10.6	-	18.1	-	3.1	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	98	0	11.5	17.8	355	1,090
August	337	0	14.7	22.7	457	1,400
September	81	0	8.26	12.8	248	760
October	22	0	1.78	2.75	55.1	169
November	196	0	12.1	18.7	364	1,120
December	206	11.7	39.9	61.7	1,240	3,800
Calendar year 1942	796	0	18.0	27.9	6,580	20,190
January	291	10.1	38.2	59.1	1,180	3,630
February	32	0	9.35	14.5	262	804
March	64	0	17.0	26.3	527	1,620
April	29	0	9.67	15.0	290	891
May	101	0	18.1	28.0	561	1,720
June	61	0	11.5	17.8	344	1,060
Fiscal year 1942-43	337	0	16.1	24.9	5,880	18,060

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kapahi ditch near Kealia

Location.- Parshall flume, lat. 22°06'00", long. 159°22'30", 500 feet downstream from intake and 4½ miles west of Kealia. Altitude of gage, 360 feet (by barometer).

Records available.- April 1909 to May 1914, May 1915 to June 1943.

Average discharge.- 25 years (1917-20, 1921-43), 6.13 million gallons a day (9.48 second-feet).

Extremes.- Maximum discharge during year, 32 million gallons a day (50 second-feet) Aug. 25 (gage height, 2.05 feet); no flow many times.
1909-14, 1915-43: Maximum discharge, 233 million gallons a day (361 second-feet) Mar. 31, 1923 (gage height, 3.15 feet); no flow occasionally, when water was shut out of ditch.

Remarks.- Records excellent. Ditch diverts water from Kapaa River for irrigation in vicinity of Kapaa. Flow regulated by head gates.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	5.7	0.23	4.7	3.45	1.33	0.28	0	0	3.8	0.23	1.10	5.8
2	1.98	1.45	3.6	3.8	2.75	.27	.01	0	3.15	.23	.16	7.9
3	.19	1.47	3.15	3.45	2.95	.23	.04	0	2.45	.23	2.85	10.3
4	.16	1.31	2.55	3.25	3.45	.23	.18	.76	1.16	.19	3.7	6.1
5	.16	7.7	3.8	3.25	3.35	.41	0	3.7	1.82	4.6	3.35	2.6
6	.16	8.5	3.6	3.05	3.8	.66	0	3.2	2.6	9.1	6.3	.27
7	.19	8.4	3.8	3.35	2.65	.38	0	.27	3.6	11.5	8.5	4.9
8	.99	5.6	4.0	3.7	.19	0	0	.23	4.9	10.8	10.5	10.3
9	3.35	1.85	2.5	3.6	.16	0	0	.19	6.4	10.4	4.1	11.5
10	4.6	7.2	3.1	3.35	3.5	.06	0	.16	3.75	10.4	.26	10.4
11	6.3	5.9	3.25	3.05	3.7	.16	0	.10	2.85	8.9	.19	7.5
12	.23	4.7	3.15	2.75	3.35	.16	0	.13	2.15	14.6	.24	5.7
13	10.3	9.5	5.1	3.05	3.45	.30	0	.10	2.15	14.0	.13	8.6
14	9.3	7.6	4.8	4.3	3.7	0	0	2.8	2.95	13.8	.16	6.0
15	6.7	3.85	7.7	3.35	4.3	0	0	5.3	3.7	13.2	.16	5.0
16	8.2	1.32	6.4	2.85	3.45	.01	0	5.0	1.53	11.3	.16	3.2
17	5.5	6.1	3.9	1.99	3.75	0	0	4.9	1.92	5.8	.13	2.45
18	3.7	6.7	5.1	1.22	3.9	0	0	4.9	.50	2.5	.36	.31
19	3.7	10.3	5.0	2.15	3.05	0	0	4.7	.85	8.8	2.05	.31
20	3.15	5.2	3.8	2.65	3.45	.02	0	3.0	1.00	10.8	6.1	.31
21	1.99	4.3	5.0	7.0	4.0	.10	0	1.01	.40	12.3	8.8	6.9
22	1.37	11.0	4.9	2.4	4.3	.07	0	4.4	.40	10.6	6.1	7.2
23	2.6	4.8	4.5	2.6	4.3	.04	0	4.9	.40	2.9	3.8	4.5
24	2.7	5.7	4.2	2.85	3.9	.10	0	4.1	.35	5.9	7.9	6.0
25	.10	10.2	4.5	2.75	2.9	.23	0	4.5	.08	1.12	9.3	6.0
26	1.44	5.7	4.3	2.65	.19	.23	0	4.9	0	6.1	5.2	14.0
27	3.0	4.2	2.2	2.75	5.8	.23	0	2.5	0	3.3	2.7	8.9
28	1.15	3.7	5.4	2.55	7.9	.18	0	1.22	0	5.2	.27	5.4
29	5.5	5.8	4.4	2.85	4.1	0	0	-	.11	6.0	6.0	3.65
30	6.5	3.6	3.45	2.65	.54	0	0	-	.19	3.8	4.7	4.5
31	3.2	5.3	-	1.76	-	0	0	-	.19	-	3.6	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	10.3	0.10	3.42	5.29	106	326
August	11.0	.23	5.46	8.45	169	519
September	7.7	2.2	4.20	6.50	126	386
October	7.0	1.22	3.05	4.72	94.4	290
November	7.9	.16	3.27	5.06	98.2	301
December	.66	0	.140	.217	4.35	13
Calendar year 1942	12.7	0	2.95	4.56	1,080	3,310
January	.18	0	.007	.011	.23	.7
February	5.3	0	2.39	3.70	67.0	206
March	6.4	0	1.79	2.77	55.4	170
April	14.6	.19	7.29	11.3	219	671
May	10.5	.13	3.51	5.43	109	334
June	14.0	.27	5.68	9.10	176	542
Fiscal year 1942-43	14.6	0	3.36	5.20	1,220	3,760

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Makaleha ditch near Kealia

Location.- Parshall flume, lat. 22°06'55", long. 159°02'00", at end of last tunnel from which water spills down slope into Mimino Reservoir, 3.9 miles northwest of Kealia, and 4.1 miles northwest of Kapaa.

Records available.- November 1936 to June 1943. Equivalent records for July 1925 to November 1936 at site 150 feet downstream, collected by East Kauai Water Co.

Extremes.- Maximum discharge during year, 26.5 million gallons a day (41.0 second-feet) July 2 (gage height, 2.82 feet); minimum, 0.02 million gallons a day (0.03 second-foot) Nov. 28, 29.

1936-43: Maximum discharge, that of July 2, 1942; minimum, that of Nov. 28, 29, 1942.

Remarks.- Records excellent except those for period of no gage-height record, which are fair. Ditch diverts water from Makeleha Stream for irrigation of sugarcane. Flow regulated by gates at intake and wasteway 1 mile upstream.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.19	5.4	9.5	7.2	5.4	0.54	0.11	0.07	4.5	0.25	5.0	7.6
2	3.45	5.4	7.2	8.6	5.9	.34	.21	.07	4.4	.24	5.0	7.2
3	.53	8.2	6.4	7.7	8.2	.23	.59	.10	4.8	.21	5.0	3.8
4	.25	2.3	8.8	7.2	8.2	.18	.44	.10	5.0	.21	5.0	.51
5	.19	.11	8.2	7.2	6.8	.23	.11	.10	4.7	.19	5.0	.37
6	.17	.10	6.4	5.9	9.4	.19	.10	.08	4.6	.16	4.2	.30
7	.17	.10	7.7	5.0	8.7	.19	.08	.11	4.5	.16	5.4	.26
8	.14	3.4	9.0	5.1	9.2	.12	.07	.12	4.8	.16	4.5	.19
9	.21	5.9	7.2	5.7	7.7	.10	.07	a.11	4.7	.14	4.9	.14
10	.12	5.4	f10.2	5.9	5.9	.08	.08	a3.0	4.8	.41	6.4	.14
11	.10	6.4	f6.7	6.4	5.0	.07	.08	a5.0	4.4	.26	6.9	3.9
12	.11	7.2	6.8	5.9	5.0	.06	.27	a4.7	4.2	.23	3.8	5.9
13	.10	11.8	10.2	7.1	4.6	.18	.09	4.7	4.1	.19	1.01	5.9
14	.08	10.6	19.9	11.8	5.9	.12	.07	4.9	4.0	.26	.80	5.9
15	2.0	8.2	12.4	7.7	9.7	.13	.06	4.7	3.9	.23	.48	5.4
16	3.1	8.2	12.9	6.2	9.7	.14	.06	4.5	3.9	.23	.30	5.4
17	4.9	10.2	11.2	5.9	10.2	.12	.06	4.5	3.85	.21	.25	5.9
18	5.9	10.7	5.9	5.4	9.2	.12	.05	4.6	3.8	.19	.17	5.9
19	5.4	11.2	3.0	5.4	8.6	.12	.06	4.6	2.8	.17	.16	6.4
20	5.4	9.7	2.6	7.6	9.6	.15	.06	4.6	.26	.14	4.3	6.8
21	5.4	7.4	3.65	11.4	4.1	.16	.06	4.8	.23	.24	6.4	5.9
22	5.9	6.9	5.5	7.2	.11	.14	.05	4.3	.75	.21	5.4	5.4
23	6.4	5.0	6.4	6.5	.10	.14	.04	3.7	.40	.19	5.9	5.4
24	10.7	4.8	5.4	6.4	1.91	.12	.04	4.2	.30	.17	6.8	5.7
25	5.9	5.0	4.8	5.9	.12	.11	.05	4.8	.34	.19	6.4	7.0
26	.16	4.8	5.1	5.4	.11	.12	.05	4.6	.34	.16	7.2	4.3
27	.14	5.4	8.7	5.4	.08	.12	.05	4.6	.34	.12	8.2	.25
28	3.15	7.4	7.7	5.4	.02	.11	.06	4.5	.30	.12	6.9	.31
29	5.4	9.2	5.9	5.4	1.29	.11	.06	-	.30	3.2	6.4	3.75
30	5.4	6.8	5.9	5.4	2.25	.10	.06	-	.28	5.0	5.9	5.4
31	5.4	9.0	-	5.0	-	.11	.07	-	.28	-	5.4	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	10.7	0.08	2.79	4.32	86.5	265
August	11.8	.10	6.52	10.1	202	621
September	12.9	2.6	7.41	11.5	222	682
October	11.8	5.0	6.59	10.2	204	627
November	10.2	.02	5.43	8.40	163	500
December	.54	.06	.153	.237	4.75	15
Calendar year 1942	12.9	.02	3.87	5.99	1,410	4,530
January	.59	.04	.107	.166	3.31	10
February	5.0	.07	3.08	4.77	86.2	264
March	5.0	.23	2.77	4.29	85.9	264
April	5.0	.12	.461	.715	13.8	42
May	8.2	.16	4.50	6.96	139	428
June	7.6	.14	4.04	6.25	121	372
Fiscal year 1942-43	12.9	.02	3.65	5.65	1,330	4,090

a No gage-height record; discharge computed on basis of ditchman's notes.
f Computed on basis of partly estimated gage-height record.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Anahola River near Kealia

Location.- Concrete dam and orifice control, lat. 22°08'55", long. 159°21'20", just upstream from intake of Lower Anahola ditch, 4½ miles northwest of Kealia. Altitude of gage, 220 feet (by barometer).

Drainage area.- 5.5 square miles.

Records available.- August to November 1910, December 1912 to June 1943.

Average discharge.- 24 years (1919-43), 13.7 million gallons a day (21.2 second-feet).

Extremes.- Maximum discharge during year, 3,760 million gallons a day (5,820 second-feet) May 7 (gage height, 7.88 feet), from rating curve extended above 230 million gallons a day; minimum, 2.2 million gallons a day (3.4 second-feet) Nov. 27.
1910, 1912-43: Maximum discharge, 5,780 million gallons a day (8,940 second-feet) Aug. 12, 1940 (gage height, 9.53 feet), from rating curve extended above 230 million gallons a day; minimum, 1.4 million gallons a day (2.2 second-feet) Sept. 12, 13, 1923.

Remarks.- Records good. Anahola ditch diverts water 3 miles above station for irrigation in vicinity of Kealia.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.7	1.75	1.4	8.0	2.6	95
.8	2.4	1.6	13.5	3.0	162
.9	3.15	1.8	23	3.4	254
1.0	3.95	2.0	34.5	3.8	380
1.2	5.8	2.3	59		

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	7.2	6.2	4.4	3.65	2.55	10.8	14.8	7.6	4.7	12.0	5.2	13.9
2	103	5.0	3.65	3.55	2.6	6.7	76	6.8	4.7	11.2	5.0	181
3	12.6	141	3.3	3.4	2.9	5.8	154	11.6	8.9	9.1	5.1	45
4	9.8	23	3.3	3.0	3.25	5.2	275	9.2	10.1	11.2	4.9	20.5
5	7.9	7.2	3.3	3.55	2.7	42	50	16.9	5.7	10.0	5.0	14.8
6	8.4	5.6	3.15	2.9	2.7	246	29	8.4	4.8	14.8	5.2	11.6
7	9.0	5.2	3.8	2.7	2.85	45	41	10.5	4.7	8.8	300	10.3
8	7.4	6.2	3.8	2.8	3.15	23	38	12.5	6.9	8.0	47	9.5
9	7.4	7.4	3.7	2.8	3.15	14.4	17.8	8.4	33.5	7.5	42	9.0
10	6.8	5.5	3.55	2.9	2.9	10.1	16.5	7.3	44	17.4	141	8.2
11	7.8	4.7	3.15	2.8	2.55	8.8	15.2	9.2	9.8	9.0	50	8.2
12	7.1	5.1	4.2	2.6	2.5	7.9	66	6.6	8.4	10.8	203	7.6
13	6.6	15.8	5.9	2.7	2.35	177	35.5	6.5	7.2	8.2	70	15.2
14	6.5	7.6	21	7.7	2.4	168	17.8	12.1	5.3	11.2	73	7.9
15	5.7	5.5	11.0	3.25	2.8	88	16.5	6.1	5.9	8.7	29.5	7.0
16	5.7	5.1	23	2.7	3.25	49	24	5.6	5.5	14.9	19.9	6.5
17	5.2	5.4	4.6	2.55	4.2	47	32.5	5.5	5.5	9.7	15.6	6.3
18	4.8	8.3	3.7	2.5	4.1	31.5	17.4	5.4	34.5	9.5	11.6	6.4
19	4.7	5.8	3.4	2.5	3.55	18.8	14.4	5.5	26	7.6	10.3	6.1
20	4.6	4.9	4.3	5.5	5.3	39.5	12.5	5.2	9.1	7.0	14.2	16.3
21	4.5	4.4	16.2	57	3.25	33.5	11.2	8.7	9.0	8.4	11.0	6.6
22	4.6	5.9	3.95	3.95	2.6	21	10.3	6.3	26.5	10.9	9.3	5.6
23	4.7	7.3	3.3	3.25	2.5	15.6	9.7	5.1	94	8.2	12.8	5.4
24	42	4.4	3.1	3.1	2.4	13.9	9.3	36	27	6.7	13.6	8.5
25	8.2	4.2	2.9	2.9	2.4	12.5	22	8.0	25.5	8.8	9.5	6.1
26	5.5	3.85	2.9	2.7	2.35	12.0	9.8	5.8	19.9	6.4	21	86
27	4.8	3.7	5.0	2.6	2.25	10.1	9.0	5.4	15.2	5.8	57	8.7
28	4.6	3.8	3.95	2.8	2.35	19.1	8.4	5.0	15.6	5.6	14.2	8.4
29	5.0	4.0	3.15	2.6	151	17.2	7.8	-	15.4	5.6	11.0	9.6
30	6.5	3.7	3.1	2.55	58	12.0	7.4	-	19.0	5.2	9.3	7.3
31	7.3	3.85	-	2.5	-	13.5	8.0	-	14.4	-	8.8	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	103	4.5	10.8	16.7	336	1,030
August	141	3.7	10.6	16.4	330	1,010
September	23	2.9	5.59	8.65	168	515
October	57	2.5	4.90	7.58	152	466
November	151	2.25	9.70	15.0	291	893
December	246	5.2	39.5	61.1	1,220	3,760
Calendar year 1942	246	2.25	13.6	21.0	4,970	15,260
January	275	7.4	34.7	53.7	1,080	3,300
February	36	5.0	8.83	13.7	247	759
March	94	4.7	17.0	26.3	528	1,620
April	17.4	5.2	9.27	14.3	278	854
May	300	4.9	39.6	61.6	1,240	3,790
June	181	5.4	18.8	29.1	566	1,740
Fiscal year 1942-43	300	2.25	17.6	27.2	6,440	19,740

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Anahola ditch above Kaneha Reservoir, near Kealia

Location.- Parshall flume, lat. 22°08'00", long. 159°22'30", at point of discharge into Kaneha Reservoir, 5 miles northwest of Kealia. Datum of gage is 821.8 feet above mean sea level (Lihue Plantation bench mark).

Records available.- May 1915 to June 1943.

Average discharge.- 20 years (1921-25, 1927-43), 3.33 million gallons a day (5.15 second-feet).

Extremes.- Maximum discharge during year, 79 million gallons a day (122 second-feet) May 7 (gage height, 3.62 feet); minimum, 0.01 million gallons a day (0.02 second-foot) many times.

1915-43: Maximum discharge recorded, 130 million gallons a day (201 second-feet) Jan. 16, 1921 (gage height, 6.25 feet, site and datum then in use); no flow occasionally, when water was shut out of ditch.

Remarks.- Records excellent. Ditch diverts water from Anahola River to Kaneha Reservoir, where it is stored for irrigation. Flow regulated by wasteway gates.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.02	6.9	6.6	4.1	1.40	6.0	0.06	0.01	2.2	0.01	2.55	11.0
2	.70	4.0	2.65	3.05	1.48	2.5	.26	.01	2.1	.01	2.45	4.0
3	.01	9.0	3.2	2.75	4.8	.04	.33	.04	7.7	.02	2.55	.04
4	.01	.01	2.4	2.65	2.3	.04	.33	.02	9.1	.02	2.3	.01
5	.01	2.65	2.0	4.2	1.56	.21	.13	.05	3.15	.02	2.3	.01
6	.01	5.4	1.92	2.0	3.7	.27	.04	.04	2.35	.02	6.7	.01
7	.01	4.2	3.2	1.83	2.35	.19	.04	.06	2.2	.02	17.3	.01
8	.01	8.0	4.5	2.1	2.45	.01	.02	.06	11.1	2.4	7.6	.01
9	3.65	8.9	2.65	2.4	2.2	.01	.02	.17	7.6	3.3	6.6	.01
10	4.2	6.2	3.4	2.1	1.74	.01	.02	.04	.15	2.45	3.75	2.3
11	7.4	4.1	2.1	1.92	1.40	.01	.02	1.82	.04	3.6	.07	3.4
12	6.6	4.6	3.1	1.65	1.32	.01	.33	3.2	.01	10.6	.55	3.1
13	5.0	17.7	8.6	2.25	1.24	.40	.04	3.0	.01	5.4	.01	5.5
14	4.9	6.7	13.6	10.9	1.32	.15	.01	9.7	.01	9.6	1.10	3.65
15	3.5	5.0	12.9	2.35	3.6	.02	.01	3.1	1.57	7.3	1.48	2.9
16	4.2	4.6	18.4	1.83	4.0	.01	.14	2.55	2.2	4.8	1.32	2.55
17	2.9	5.1	5.4	1.66	4.1	.16	.04	2.45	1.92	.08	3.15	2.9
18	2.65	9.1	3.7	1.65	3.95	.01	.01	2.3	2.35	.06	4.1	3.65
19	2.45	6.0	3.1	1.65	4.3	.01	.01	2.45	.07	2.6	3.75	3.4
20	2.35	4.0	9.0	8.3	5.3	.09	.01	3.0	.04	3.5	8.9	7.7
21	2.3	3.3	13.7	13.7	2.3	.05	.01	7.1	.04	12.0	5.5	3.85
22	3.0	7.8	3.9	3.5	1.65	.01	.01	3.5	.12	4.8	4.0	2.75
23	3.2	5.5	3.1	2.7	1.48	.01	.01	2.3	.34	.08	6.6	2.45
24	18.6	3.2	2.65	2.3	1.32	.01	.01	15.0	.06	.08	4.8	5.4
25	6.4	4.0	2.4	2.1	1.24	.01	.02	4.8	.06	.08	.06	3.85
26	3.5	2.75	2.3	1.92	1.16	.01	.01	3.05	.06	1.88	.08	8.8
27	2.65	2.45	4.8	1.74	1.09	.01	.01	2.65	.02	3.3	.08	5.2
28	2.45	3.1	3.3	1.65	1.09	.04	.01	2.35	.02	3.0	.01	5.4
29	5.8	5.4	2.2	1.65	19.7	.01	.01	-	.02	2.75	.01	5.8
30	4.5	2.9	2.3	1.48	18.4	.01	.01	-	.01	2.55	.82	5.5
31	7.3	4.3	-	1.40	-	.06	.01	-	.01	-	3.5	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	18.6	0.01	3.56	5.51	110	338
August	17.7	.01	5.38	8.32	167	512
September	18.4	1.92	5.10	7.89	153	470
October	13.7	1.40	3.08	4.77	95.5	293
November	19.7	1.09	3.46	5.35	104	319
December	6.0	.01	.335	.518	10.4	32
Calendar year 1942	19.7	0	2.94	4.55	1,070	3,300
January	.33	.01	.064	.099	1.99	6.1
February	15.0	.01	2.67	4.13	74.8	230
March	11.1	.01	1.82	2.82	56.5	173
April	12.0	.01	2.88	4.46	86.3	265
May	17.3	.01	3.35	5.18	104	319
June	11.0	.01	3.50	5.42	105	322
Fiscal year 1942-43	19.7	.01	2.93	4.53	1,070	3,280

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Anahola ditch wasteway near Kealia

Location.- Sharp-crested weir, lat. 22°08'10", long. 159°22'30", 300 feet downstream from wasteway gates on Anahola ditch, 500 feet upstream from Kaneha Reservoir, 3.8 miles west of Anahola, and 4.9 miles northwest of Kealia.

Records available.- December 1936 to June 1943.

Extremes.- Maximum discharge during year, 78 million gallons a day (121 second-feet) July 2 (gage height, 2.42 feet); no flow at times, when water was turned out of ditch.
1936-43: Maximum discharge, 110 million gallons a day (170 second-feet) Aug. 12, 1940 (gage height, 2.95 feet); no flow at times, when water was turned out of ditch.

Remarks.- Records good except those for periods of doubtful or no gage-height record, which are fair. Water that passes station is returned to Anahola River.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.5	0	0	0.06	0.06	0.19	13.2	3.7	0	8.4	0.06	0.06
2	17.2	0	0	.06	.06	1.20	26	2.6	0	10.1	.06	d16.2
3	9.1	4.2	0	0	.06	3.25	26.5	12.7	0	4.5	.13	d9.9
4	8.3	6.2	0	0	0	2.6	30	8.7	0	13.8	.13	d9.4
5	4.7	3.55	0	0	0	20.5	16.6	12.5	0	5.1	.08	7.5
6	5.6	.13	0	0	0	30.5	9.5	6.3	0	12.1	0	6.2
7	9.2	.06	0	0	0	18.6	11.7	10.6	0	4.5	2.2	a5.3
8	4.6	0	.06	.06	0	9.2	22.5	8.2	.08	1.65	.63	a4.4
9	4.0	0	0	.06	0	5.7	12.4	5.3	11.9	.19	.69	a3.4
10	.26	0	0	.06	0	4.4	8.0	3.8	17.0	10.3	2.2	1.10
11	.19	0	0	.06	0	3.6	7.1	6.3	9.3	4.1	2.35	0
12	.13	0	0	.06	0	3.1	13.9	.32	4.9	.32	8.1	0
13	.13	0	0	.06	0	19.8	13.7	.32	4.9	.19	2.5	.06
14	.13	0	0	.06	.06	23.5	6.6	.19	3.1	.26	.69	0
15	.13	0	0	0	.06	28	6.6	.06	1.22	.19	0	0
16	.13	.06	0	0	.06	21.5	12.6	.06	.32	7.1	0	0
17	.13	.06	0	0	.06	18.3	15.1	.06	.32	7.3	0	0
18	.13	.06	0	0	.06	13.1	6.6	.06	12.6	6.0	0	0
19	.13	.06	0	.06	.06	7.7	4.9	.06	11.9	1.78	0	0
20	.06	.06	.13	.06	.06	12.2	4.4	.06	5.3	.13	.06	0
21	.06	0	.06	0	.06	17.7	3.8	.06	5.5	.19	0	0
22	.06	0	.06	0	.06	10.9	3.6	0	14.3	4.5	0	0
23	.06	0	.06	0	.06	6.4	3.1	0	16.3	6.1	.04	0
24	.06	0	.06	0	.06	5.1	2.95	.06	8.0	4.2	4.0	0
25	0	0	.06	0	.06	6.5	6.9	0	16.5	10.0	5.9	0
26	0	0	.06	0	.06	6.1	3.4	0	15.5	2.2	13.1	.15
27	0	0	.06	0	.06	4.4	2.95	0	6.9	.19	18.3	0
28	0	.06	.06	.06	.06	12.2	2.6	0	8.3	.13	f7.7	0
29	0	.06	.06	.06	.26	17.2	2.45	-	10.9	.13	6.4	0
30	0	0	.06	.06	5.1	11.4	2.3	-	11.7	.13	3.6	0
31	0	0	-	.06	-	13.7	3.2	-	7.6	-	.13	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	17.2	0	2.23	3.45	69.0	212
August	6.2	0	.470	.727	14.6	45
September	.13	0	.026	.040	.79	2.4
October	.06	0	.029	.045	.90	2.8
November	5.1	0	.215	.333	6.44	20
December	30.5	.19	11.6	17.9	359	1,100
Calendar year 1942	33	0	3.86	5.97	1,410	4,320
January	30	2.3	9.91	15.3	307	943
February	12.7	0	2.93	4.53	82.0	252
March	17.0	0	6.59	10.2	204	627
April	13.8	.13	4.19	6.48	126	386
May	18.3	0	2.55	3.95	79.0	243
June	16.2	0	2.12	3.28	63.7	195
Fiscal year 1942-43	30.5	0	3.60	5.57	1,310	4,030

a No gage-height record; discharge computed on basis of records for stations on Anahola River and Anahola ditch.
d Faulty gage-height record; discharge computed on basis of records for stations on Anahola River and Anahola ditch.
f Computed on basis of partly estimated gage-height record.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Lower Anahola ditch near Kealia

Location.- Parshall flume, lat. 22°08'00", long. 159°19'30", 100 feet downstream from last wasteway, 1.3 miles southwest of mouth of Anahola River, and 2.5 miles northwest of Kealia. Altitude of gage, about 270 feet (by levels from approximate site of two demolished Geological Survey bench marks).

Records available.- December 1936 to June 1943. Records collected by East Kauai Water Co. July 1925 to January 1935 at site half a mile downstream, and January 1935 to December 1936 at present site.

Extremes.- Maximum discharge during year, 9.9 million gallons a day (15.3 second-feet) Mar. 9 (gage height, 1.49 feet); no flow many times, when water was turned out of ditch. 1936-43: Maximum discharge, 16.5 million gallons a day (25.5 second-feet) Apr. 19, 1937 (gage height, 2.11 feet); no flow at times, when water was turned out of ditch.

Remarks.- Records excellent except those for Apr. 16-19, which are fair. Ditch diverts water from Anahola River for irrigation of sugarcane. Flow regulated by spillways and gates.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0	4.9	3.05	2.85	1.90	0.03		0	3.5	0.02	6.0	0
2	0	4.6	.71	2.9	2.0	0		0	4.0	.02	5.8	.10
3	0	2.95	0	2.8	2.0	0		.52	6.6	.01	5.9	1.54
4	0	1.91	1.56	2.55	2.55	0		.96	7.5	0	5.6	.61
5	0	1.56	1.78	2.75	2.2	0		.77	6.4	0	5.6	0
6	0	1.45	.01	2.5	2.1	0		.23	5.1	0	5.6	0
7	0	3.9	2.1	2.25	2.2	0		0	3.9	2.65	5.8	0
8	0	3.9	3.0	2.25	2.4	0		3.05	5.8	4.0	4.3	4.8
9	0	3.65	3.15	2.25	2.4	0		4.6	4.4	3.65	.01	6.6
10	0	4.1	3.1	2.3	2.5	0		5.6	0	1.53	.01	6.1
11	0	4.5	2.75	2.25	2.0	0		6.6	0	.02	0	6.0
12	0	4.6	3.05	2.15	1.90	0		5.2	0	2.45	0	5.7
13	1.55	5.4	4.1	2.2	1.78	.01		7.5	0	4.2	0	5.9
14	3.9	5.1	4.5	3.9	1.72	0		8.0	0	4.3	0	6.6
15	4.3	4.8	5.6	3.0	1.90	0		7.0	0	4.3	0	5.5
16	4.7	4.7	2.8	2.35	2.45	.70		5.5	0	a4.4	0	5.3
17	4.6	4.3	.01	2.15	2.6	1.69		4.8	0	a5.6	0	5.2
18	4.4	1.65	0	2.0	2.95	1.18		4.5	0	a6.6	2.55	5.5
19	4.2	.27	1.29	2.0	2.7	.44		5.4	0	a5.8	7.0	5.2
20	4.2	.19	3.3	2.15	1.06	0		3.55	.31	4.4	7.0	5.2
21	2.55	.12	4.9	6.1	0	0		0	0	3.2	7.0	5.2
22	0	1.05	3.75	3.65	0	0		4.4	0	2.45	2.85	5.8
23	0	0	3.1	2.8	0	0		4.0	0	2.2	.01	5.6
24	0	2.8	2.8	2.6	0	0		2.3	0	2.15	.01	5.9
25	0	2.1	2.7	2.45	0	0		4.2	0	2.2	0	6.0
26	0	.01	2.6	2.3	1.29	0		5.4	0	2.2	.01	2.55
27	0	.01	3.6	2.2	1.72	0		4.6	2.8	5.1	0	0
28	0	2.45	5.0	2.25	1.72	0		3.65	5.0	6.6	0	0
29	0	3.6	2.85	2.2	1.47	0		-	6.0	6.1	0	3.65
30	3.6	3.35	2.6	2.1	.01	0		-	7.0	6.1	0	6.1
31	5.0	5.5	-	1.96	-	0		-	4.0	-	0	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	5.0	0	1.39	2.15	43.0	132
August	5.4	0	2.82	4.56	87.4	268
September	5.9	0	2.67	4.13	80.1	246
October	6.1	1.96	2.59	4.01	80.2	246
November	2.95	0	1.64	2.54	49.3	151
December	1.69	0	.131	.203	4.05	12
Calendar year 1942	7.5	0	1.62	2.51	591	1,810
January	0	0	0	0	0	0
February	8.0	0	3.65	5.65	102	314
March	7.5	0	2.33	3.61	72.3	222
April	6.6	0	3.08	4.77	92.2	283
May	7.0	0	2.29	3.54	71.0	218
June	6.6	0	3.88	6.00	116	357
Fiscal year 1942-43	8.0	0	2.19	3.39	798	2,450

a No gage-height record; discharge computed on basis of ditchman's notes.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

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Ka Loko ditch near Kilauea

Location.- Parshall flume, lat. 22°10'35", long. 159°23'00", 60 feet downstream from confluence of Ka Loko and Moloaa ditches, 400 feet upstream from Ka Loko Reservoir, and 3¾ miles southeast of Kilauea. Altitude of gage, 750 feet (from topographic map).

Records available.- August 1932 to June 1943.

Average discharge.- 10 years (1933-43), 4.10 million gallons a day (6.34 second-feet).

Extremes.- Maximum discharge during year, 102 million gallons a day (158 second-feet) May 7 (gage height, 4.25 feet); minimum, 0.57 million gallons a day (0.88 second-foot) Aug. 22.

1932-43: Maximum discharge, 108 million gallons a day (167 second-feet) Jan. 2, 1933 (gage height, 4.41 feet); minimum, 0.19 million gallons a day (0.29 second-foot) May 24, 1933.

Remarks.- Records excellent except those for Oct. 1-11, which are fair, and those for June 8-14, which are poor. Ditch diverts water from Molcaa and Puu Ka Ele Streams, half a mile southeast and 1½ miles southwest of station, respectively. Flow regulated by wasteway gates. Water used for irrigation in vicinity of Kilauea.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.35	2.75	2.05	1.80	1.16	2.8	5.9	2.55	1.80	4.6	1.98	6.0
2	18.9	2.25	1.98	1.80	1.09	1.89	17.4	2.56	1.80	4.3	1.89	21
3	5.9	8.4	1.89	1.80	1.26	1.89	19.3	4.5	2.5	3.25	1.89	9.8
4	4.6	5.2	1.80	1.54	1.16	1.54	31	3.65	3.15	4.4	1.80	5.9
5	3.55	3.15	1.80	1.71	1.09	7.3	9.4	4.7	1.80	4.0	1.80	4.9
6	4.4	2.85	1.80	1.47	1.09	27	4.2	2.95	1.63	5.5	1.98	4.4
7	4.6	2.45	1.98	1.47	1.20	9.4	3.2	4.0	1.54	3.25	24.5	3.9
8	3.35	2.95	2.25	1.54	1.31	5.2	5.4	4.6	2.65	2.95	14.8	a3.7
9	3.45	3.05	1.98	1.54	1.39	3.8	4.8	2.95	6.4	2.75	11.8	a3.6
10	3.45	2.75	2.05	1.71	1.16	3.15	5.2	2.45	7.7	3.55	22	a3.4
11	3.55	2.45	1.63	1.36	1.02	2.85	5.1	3.3	3.15	3.05	9.2	a3.2
12	3.45	2.55	2.05	1.16	.95	2.65	5.7	2.25	2.35	3.85	8.8	a3.0
13	3.15	5.4	2.35	1.24	.88	19.9	4.5	2.35	2.15	2.95	10.9	a4.4
14	2.95	3.25	2.95	2.55	.88	18.0	4.6	3.5	1.89	4.3	9.0	a3.2
15	2.75	2.85	3.7	1.31	1.31	14.6	4.7	2.25	1.80	3.35	6.4	2.65
16	2.55	2.65	5.0	1.09	1.22	12.9	6.9	2.25	1.80	6.7	5.0	2.45
17	2.45	3.15	2.35	1.09	3.0	8.4	7.9	2.15	2.9	4.4	4.5	2.45
18	2.35	4.3	1.80	1.09	2.6	8.0	4.9	2.25	17.2	3.8	4.0	2.45
19	2.25	3.15	1.54	.95	1.54	5.8	4.0	2.25	8.4	2.95	3.8	2.35
20	2.25	2.65	1.89	.95	2.35	10.1	3.7	2.05	3.25	2.75	5.5	3.7
21	2.15	2.45	3.1	4.1	1.31	10.9	3.55	2.75	3.15	3.25	4.3	2.35
22	2.15	3.1	1.71	1.31	1.09	6.3	3.45	2.2	9.1	3.45	3.55	2.05
23	2.25	3.25	1.47	1.09	1.02	5.0	3.25	1.98	10.4	4.0	4.0	1.98
24	8.8	2.35	1.39	1.02	.95	4.6	3.15	6.3	4.6	2.75	4.0	2.45
25	3.55	2.15	1.39	1.02	.96	4.4	5.5	2.9	7.4	4.5	3.7	2.15
26	2.45	2.05	1.39	.95	.88	4.4	3.25	2.15	7.1	2.75	6.3	10.0
27	2.25	2.05	3.2	.95	.88	3.8	2.95	1.98	4.9	2.45	11.1	2.75
28	2.15	2.25	2.05	.95	.88	4.9	2.75	1.89	5.0	2.25	4.6	3.05
29	2.55	2.25	1.54	.95	6.9	6.2	2.65	-	6.3	2.25	3.9	2.95
30	2.7	2.05	1.54	.95	16.4	4.4	2.55	-	6.8	2.05	3.25	2.65
31	3.35	2.15	-	.88	-	5.5	2.85	-	5.0	-	3.15	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	18.9	2.15	3.79	5.66	118	361
August	8.4	2.05	3.04	4.70	94.3	289
September	5.0	1.39	2.12	3.28	63.6	195
October	4.1	.88	1.40	2.17	43.3	133
November	16.4	.88	1.96	3.03	58.9	181
December	27	1.54	7.34	11.4	228	698
Calendar year 1942	30	.88	3.86	5.97	1,410	4,320
January	31	2.55	6.25	9.67	194	594
February	6.3	1.69	2.92	4.52	81.8	251
March	17.2	1.54	4.70	7.27	146	447
April	6.7	2.05	3.54	5.48	106	326
May	24.5	1.80	6.56	10.1	203	624
June	21	1.98	4.29	6.64	129	395
Fiscal year 1942-43	31	.88	4.01	6.20	1,470	4,490

a No gage-height record; discharge computed on basis of records for Puu Ka Ele and Kalihiwai ditches.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Puu Ka Ele ditch near Kilauea

Location.- Parshall flume, lat. 22°11'05", long. 159°24'20", 100 feet upstream from Puu Ka Ele Reservoir and 2 miles south of Kilauea. Altitude of gage, 430 feet (by barometer).

Records available.- August 1932 to June 1943.

Average discharge.- 10 years (1933-43), 3.63 million gallons a day (5.62 second-feet).

Extremes.- Maximum discharge during year, 38 million gallons a day (59 second-feet) May 7 (gage height, 2.28 feet); no flow during several periods in year.
1932-43: Maximum discharge, that of May 7, 1943; no flow occasionally, when water was shut out of ditch.

Remarks.- Records good except those for period Dec. 17 to Jan. 6, which are poor. Ditch diverts water from Puu Ka Ele Stream, 1 mile southwest of station. Flow regulated by wasteway gate 100 feet above station. Water used for irrigation in vicinity of Kilauea.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.35	0.09	0.78	2.45	2.05	5.9	0.64	1.06	2.15	0	2.35	6.6
2	2.95	2.05	.79	2.45	1.98	4.1	2.4	.57	2.25	0	2.15	4.5
3	6.0	3.2	2.05	2.45	1.95	4.1	4.0	1.55	2.55	0	2.15	5.2
4	7.4	.15	2.05	2.05	1.89	5.25	3.1	2.0	3.45	0	2.05	6.7
5	1.86	2.7	1.98	2.55	1.71	8.1	1.54	0	2.45	0	2.25	5.5
6	.16	1.98	1.98	2.05	1.80	11.6	.92	0	2.25	0	2.65	5.2
7	.16	.09	2.15	1.98	2.05	.95	.46	0	2.15	0	13.2	4.5
8	.16	.09	2.45	1.89	2.15	.34	.68	0	2.65	0	5.4	4.4
9	2.95	.09	2.15	1.98	2.15	0	.09	0	7.2	2.45	8.3	4.0
10	4.9	.09	2.95	2.15	1.80	0	.09	0	9.6	3.55	7.4	3.8
11	3.1	2.0	1.98	1.98	1.71	0	.09	0	3.55	3.35	6.0	3.7
12	.16	3.15	2.55	1.98	1.63	0	.42	0	2.85	4.3	6.6	3.45
13	.62	3.25	2.85	2.1	1.54	1.78	.39	1.15	2.75	3.25	1.18	8.7
14	2.85	.09	4.2	3.9	1.63	2.3	0	3.35	2.35	4.5	2.65	3.9
15	3.55	1.31	4.5	2.05	2.35	2.05	0	2.35	2.25	3.7	.20	2.95
16	3.45	2.35	8.7	1.80	2.15	2.1	.20	2.25	2.15	8.8	5.25	2.75
17	3.15	3.7	3.45	1.71	6.5	1.04	.36	2.35	3.1	4.9	4.7	5.45
18	2.95	1.89	2.65	1.63	5.3	1.08	.06	2.35	8.4	3.9	4.5	3.25
19	2.85	0	2.35	1.63	2.75	.30	.09	2.45	.72	3.36	4.3	3.35
20	2.75	0	2.75	1.54	3.45	.75	.06	2.25	1.02	3.15	6.0	4.9
21	2.65	1.90	5.0	5.8	2.45	1.46	0	3.45	1.81	3.35	4.3	3.05
22	2.65	3.85	2.45	1.98	2.05	.46	0	2.45	3.4	5.25	3.8	2.85
23	2.85	1.72	2.25	1.80	1.98	.19	0	2.15	2.9	3.6	4.1	2.65
24	2.1	0	2.05	1.71	1.80	.19	0	2.45	.09	2.85	3.8	2.95
25	2.65	1.70	1.98	1.71	1.71	.19	0	1.81	.12	3.95	3.9	2.85
26	3.45	2.55	2.05	1.54	1.63	.19	0	2.25	.06	2.85	3.5	11.1
27	f3.05	2.35	4.6	1.54	1.47	.19	0	2.15	0	2.55	6.2	10.9
28	f2.85	2.65	3.15	1.54	1.54	.40	.88	1.98	0	2.45	4.7	4.5
29	3.3	2.65	2.35	1.63	8.2	.64	2.65	-	.24	2.45	4.3	4.4
30	3.45	2.35	2.45	1.63	13.2	.19	1.77	-	.14	2.25	3.8	4.1
31	1.31	2.55	-	1.63	-	.61	1.26	-	0	-	4.2	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	7.4	0.16	2.73	4.22	84.6	260
August	3.85	0	1.69	2.61	52.3	161
September	8.7	.78	2.79	4.32	83.6	257
October	5.8	1.54	2.09	3.23	64.8	199
November	13.2	1.47	2.82	4.36	84.6	260
December	11.6	0	1.76	2.72	54.4	167
Calendar year 1942	13.2	0	2.34	3.62	855	2,630
January	4.0	0	.715	1.11	22.2	68
February	3.45	0	1.51	2.34	42.4	130
March	9.6	0	2.40	3.71	74.4	228
April	8.8	0	2.63	4.07	79.0	242
May	13.2	.20	4.32	6.68	134	411
June	11.1	2.65	4.67	7.23	140	430
Fiscal year 1942-43	15.2	0	2.51	3.88	916	2,810

f Computed on basis of partly estimated gage-height record.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kalihiwai ditch near Kilauea

Location.- Parshall flume, lat. 22°10'55", long. 159°25'55", 0.1 mile upstream from Kalihiwai Reservoir and 2.4 miles southwest of Kilauea. Altitude of gage, 410 feet (by barometer).

Records available.- June 1934 to June 1943.

Extremes.- Maximum discharge during year, 50 million gallons a day (77 second-feet) Nov. 29 (gage height, 2.70 feet); minimum, 0.16 million gallons a day (0.25 second-foot) Dec. 9.

1934-43: Maximum discharge recorded, 64 million gallons a day (99 second-feet) Mar. 7, 1938 (gage height, 3.17 feet); minimum, 0.01 million gallons a day (0.02 second-foot) Nov. 28, Dec. 4, 1934.

Remarks.- Records good except those for periods of no gage-height record, which are poor. Ditch diverts low-water flow from most branches of Pohakuhonu Stream at intakes, about 1 mile south of station. Diversion of flow to Kahililolo 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, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.19	3.15	1.3	3.05	2.25	0.36	0.36	2.85	2.25	0.90	2.95	4.8
2	.38	3.35	1.80	3.0	1.98	.32	.46	2.95	2.35	4.0	2.75	3.75
3	.32	2.8	2.1	3.35	1.89	.27	.73	3.3	3.05	5.2	2.85	.93
4	.27	.68	2.1	2.75	1.80	.23	.56	2.4	3.35	6.3	2.65	.52
5	.27	2.05	2.1	3.5	1.80	.38	.36	3.1	2.65	5.1	2.85	.52
6	.27	3.55	2.1	2.65	1.80	.81	.32	1.25	2.35	5.5	3.5	2.75
7	.32	-	2.2	2.45	1.88	.27	.27	.52	2.25	4.6	4.5	3.9
8	.27	-	2.3	2.35	1.89	.19	.27	.63	3.15	4.4	3.1	3.7
9	.27	-	2.2	2.25	1.80	2.25	3.75	.46	5.3	4.0	3.75	3.35
10	.27	-	2.5	2.35	1.80	1.50	5.9	.46	5.9	2.15	3.9	3.15
11	.23	-	2.2	2.15	1.71	.46	5.2	.46	4.6	.57	.53	3.05
12	.19	-	2.3	2.15	1.63	.36	6.9	2.1	3.9	2.6	.52	2.95
13	.19	-	2.6	2.35	1.54	.79	4.3	3.2	3.7	4.1	2.25	3.9
14	.19	-	3.2	4.2	1.63	.76	.57	3.55	3.15	4.5	2.35	3.2
15	.19	-	3.9	2.45	2.6	.88	.52	2.95	2.95	4.5	.57	2.95
16	1.92	-	5.2	2.15	3.4	.75	.64	2.85	2.85	5.7	.52	2.75
17	3.8	-	3.0	2.05	7.9	.57	.68	2.75	2.75	2.75	2.45	3.05
18	3.7	-	2.7	1.98	4.2	.46	.57	2.75	2.25	2.95	5.25	3.25
19	3.55	-	2.4	1.89	2.95	.36	.52	2.75	.68	2.85	3.15	3.25
20	3.35	-	3.15	1.95	3.25	.36	.52	1.65	.52	2.75	4.1	4.4
21	2.35	-	4.2	7.2	2.35	.36	.52	.36	2.25	2.65	3.55	3.25
22	1.47	-	3.25	2.55	2.05	.32	2.05	.35	4.3	2.75	3.15	2.85
23	2.55	-	2.95	2.15	1.89	.27	3.15	1.53	3.2	2.85	3.25	2.65
24	2.05	-	2.75	2.05	1.89	.27	3.05	1.27	.68	2.65	3.35	2.75
25	.41	-	2.55	1.98	1.80	.27	1.52	2.2	.81	3.05	3.45	3.05
26	.32	2.4	2.65	1.98	1.71	.32	.36	2.65	.68	3.15	5.0	3.0
27	.27	2.3	3.25	1.98	1.53	.32	.36	2.45	3.0	3.05	5.5	.41
28	1.69	2.5	3.15	1.98	1.54	.32	.36	2.35	5.4	2.95	4.3	1.83
29	3.1	2.5	2.55	1.98	12.3	.41	.32	-	5.1	2.95	4.0	3.6
30	3.05	2.2	2.65	1.89	9.2	.36	1.74	-	5.0	2.85	3.7	2.85
31	3.2	2.2	-	1.89	-	.36	2.95	-	1.49	-	3.55	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	3.8	0.19	1.31	2.03	40.6	125
August	-	-	-	-	-	-
September	5.2	1.3	2.75	4.19	81.3	250
October	7.2	1.89	2.54	3.93	78.6	241
November	12.3	1.54	2.87	4.44	86.1	264
December	2.25	.19	.513	.794	15.9	49
Calendar year	-	-	-	-	-	-
January	6.9	.27	1.61	2.49	49.8	153
February	3.55	.36	2.00	3.09	56.1	172
March	5.9	.52	2.96	4.58	91.9	282
April	6.3	.57	3.48	5.38	104	320
May	5.5	.52	3.08	4.77	95.4	293
June	4.8	.41	2.88	4.46	86.4	265
Fiscal year	-	-	-	-	-	-

Note.- No gage-height record Aug. 26 to Sept. 1, Sept. 3-19; discharge computed on basis of records for Puu Ka Ele and Ka Loko ditches. Data insufficient to compute discharge for days for which no figures are given.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Hanalei River at altitude 625 feet, near Hanalei

Location.- Lat. 22°07'10", long. 159°28'05", 0.4 mile downstream from confluence with Kaapoko Stream and 6¼ miles southeast of Hanalei. Altitude of gage, 625 feet (from topographic map).
Drainage area.- 7.4 square miles.
Records available.- January 1914 to June 1943.
Average discharge.- 25 years (1918-43), 47.2 million gallons a day (73.0 second-feet).
Extremes.- Maximum discharge during year, 7,100 million gallons a day (11,000 second-feet) Sept. 16 (gage height, 8.95 feet), from rating curve extended above 200 million gallons a day; minimum, 11.3 million gallons a day (17.5 second-feet) Oct. 28, 29.
1914-43: Maximum discharge, 13,500 million gallons a day (20,900 second-feet) Apr. 27, 1939 (gage height, 11.12 feet), from rating curve extended above 200 million gallons a day; minimum, 5.8 million gallons a day (9.0 second-feet) Apr. 28, May 1-3, 1926.
Remarks.- Records good except those between 50 and 200 million gallons a day, which are fair, and those above 200 million gallons a day and those for periods of no gage-height record, which are poor. Since 1925 Hanalei tunnel has been diverting an average of about 20 million gallons of water a day from Kaapoko Stream and Hanalei River, at points about 2 miles above station, for irrigation in vicinity of Lihue.

Rating tables, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)
(Shifting-control method used Sept. 16 to Oct. 29)

July 1 to Dec. 29

0.3	7.4	1.3	56
.5	12.8	1.6	84
.7	20.5	2.0	132
1.0	35.5	2.5	212

Note.- Same as following table above 2.5 feet.

Dec. 30 to June 30

0.4	7.0	1.3	50	3.5	452
.5	9.3	1.6	79	4.0	660
.7	15.5	2.0	129	4.5	890
.9	24	2.5	212	5.0	1,220
1.1	35.5	3.0	318		

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	23	20.5	20	22.5	12	30	43	14	9.1	40	13.5	82
2	30	18.8	15.6	24.5	12	23	200	18	9.1	43	11.6	484
3	20.5	97	13.8	21.5	22	20	350	27	14.9	23	12.2	110
4	21.5	44	13.5	20	17	16	1,000	30	26.5	44	11.0	64
5	17.1	20	12.8	23	12	150	200	38	11.9	25	11.6	41
6	21.5	18.0	12.2	16.3	14	800	80	32	9.9	36.5	52	34.5
7	34.5	16.3	16.6	14.9	17	200	45	70	9.3	22.5	13.8	30
8	21	19.1	23	14.9	17	90	35	66	111	18.7	40	26.5
9	22.5	22.5	14.2	14.6	15	50	40	30	209	15.5	53	25.5
10	21	18.0	16.3	13.8	13	27	30	18	173	36.5	47	24
11	41	17.1	12.8	13.5	12	23	28	19	35.5	27	56	28.5
12	34.5	14.9	13.2	12.5	12	23	200	15	22.5	27	42	26
13	26.5	44	68	14.5	12	110	100	13	18.3	19.5	20.5	51
14	21.5	19.2	359	45	12	50	45	14.9	15.9	33.5	91	25
15	18.4	15.6	238	20	25	90	30	11.6	14.5	25	25.5	23.5
16	17.1	15.2	502	14	30	115	25	11.0	13.2	33.5	16.7	24
17	16.0	20	54	13	33	45	22	11.0	12.5	21.5	14.8	30
18	14.9	22.5	32.5	13	31	80	20	11.3	15.9	17.9	13.5	28
19	14.6	78	26	15	23	35	18	10.8	17.8	15.9	13.2	42
20	14.2	22.5	44	28	24	100	17	14.6	13.2	14.8	48	95
21	13.5	17.6	29	50	19	130	16	14.2	13.5	35	17.5	32
22	13.5	38	26.5	17	17	60	15	11.0	19.7	39	13.8	27
23	17.1	28	18.8	15	15	35	15	9.9	88	22	32.5	23
24	68	17.6	16.7	12	14	30	14	25	30	15.5	48	23.5
25	20.5	23	16.0	12	13	34.5	16	12.5	62	17.1	30	44
26	14.6	15.6	15.6	12	13	30	14	10.5	72	13.8	105	131
27	12.5	14.6	39.5	12	12	25	13	9.9	25	12.9	161	35.5
28	12.2	15.6	20	11.6	12	54	13	9.3	23	12.2	35.5	53
29	15.3	24	16.3	12	300	66	12	-	32	11.9	26.5	67
30	15.1	15.2	16.0	12	250	35	12	-	47	11.6	42	62
31	17.8	25.5	-	12	-	45	13	-	26	-	17.5	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	68	12.2	21.7	33.6	671	2,060
August	97	14.6	25.7	39.8	798	2,450
September	502	12.2	56.7	87.7	1,700	5,220
October	50	11.6	17.8	27.5	552	1,690
November	300	12	34.3	53.1	1,030	3,160
December	800	16	84.6	131	2,620	8,050
Calendar year 1942	800	9.6	40.0	61.9	14,600	44,850
January	1,000	12	86.5	134	2,680	8,230
February	70	9.3	20.6	31.9	578	1,770
March	209	9.1	38.7	59.9	1,200	3,690
April	44	11.6	24.4	37.8	731	2,240
May	161	11.0	36.7	56.8	1,140	3,490
June	484	23	59.8	92.5	1,800	5,510
Fiscal year 1942-43	1,000	9.1	42.5	65.8	15,500	47,560

Note.- No gage-height record Oct. 14-27, Oct. 29 to Dec. 24, Dec. 26 to Feb. 13; discharge computed on basis of records for stations on Wailua River.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Hanakapiai Stream near Hanalei

Location.- Lat. 22°11'20", long. 159°35'50", 1½ miles upstream from mouth and 6 miles west of Hanalei. Altitude of gage, 450 feet (by barometer).

Drainage area.- 2.6 square miles.

Records available.- December 1931 to June 1943.

Average discharge.- 11 years (1932-43), 11.7 million gallons a day (18.1 second-feet).

Extremes.- Maximum discharge during year, 954 million gallons a day (1,480 second-feet) Mar. 10 (gage height, 5.52 feet), from rating curve extended above 60 million gallons a day; minimum, 2.9 million gallons a day (4.5 second-feet) Nov. 25-28.

1931-43: Maximum discharge, 2,680 million gallons a day (4,150 second-feet) Dec. 23, 1937 (gage height, 8.41 feet), from rating curve extended above 60 million gallons a day; minimum, 2.35 million gallons a day (3.64 second-feet) probably Sept. 22, 1940.

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

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.4	2.9	1.1	14.9	2.1	62
.5	4.0	1.3	20.5	2.5	96
.7	6.7	1.6	32	2.9	144
.9	10.3	1.9	48	3.3	206

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	7.4	7.2	4.4	3.8	6.9	9.0	9.0	4.2	4.9	11.5	4.6	37
2	7.4	6.4	4.0	4.9	4.8	8.0	24.5	4.2	4.6	11.3	4.3	9.6
3	38	f5.2	3.7	6.8	4.0	4.8	14.2	3.9	11.6	6.4	5.0	6.6
4	12.3	5.8	3.7	5.4	3.65	4.0	63	3.9	14.1	13.4	5.8	6.0
5	6.7	5.7	3.6	7.2	3.45	25	12.5	14	6.7	6.7	4.3	5.3
6	9.5	4.8	3.6	4.5	3.45	35	8.1	4.5	5.0	5.4	4.0	4.6
7	15.0	4.8	3.6	3.9	3.45	11	43	25	4.8	4.8	5.2	4.5
8	8.1	5.8	3.6	4.0	3.45	10	70	22	41	4.5	5.7	4.6
9	6.7	6.4	3.6	4.3	3.45	5.6	9.9	15	73	4.3	14.0	4.1
10	8.8	5.6	3.5	3.8	3.45	4.6	7.0	12.5	95	31	10.8	4.0
11	20	5.2	3.6	3.65	4.3	4.0	6.0	34.5	20.5	19.0	9.3	4.0
12	10	4.8	3.6	3.45	5.4	4.7	96	7.7	10.8	28	19.6	4.0
13	9.0	6.2	4.3	6.7	3.55	64	150	32.5	8.1	12.4	9.8	4.1
14	7.0	5.6	4.0	15.2	5.6	70	30	23.5	6.1	19.8	5.0	4.0
15	6.0	4.7	10	4.9	10.7	25	15	7.0	6.3	27.5	9.8	3.8
16	5.6	5.0	7.4	4.0	5.2	10	20	5.6	5.3	11.7	6.1	3.6
17	5.4	4.4	4.5	3.8	4.1	6.6	110	5.0	4.6	7.6	4.6	4.4
18	5.4	4.7	3.8	3.55	3.55	5.2	25	4.6	8.3	6.3	4.3	4.6
19	5.0	5.6	3.65	3.45	3.45	4.8	13	4.4	5.7	5.4	4.3	4.1
20	5.0	4.4	7.0	72	3.45	39	9.0	4.4	15.3	5.4	4.1	11.0
21	4.7	4.1	5.9	40	3.35	26.5	7.0	8.1	8.3	25.5	4.0	5.0
22	5.6	4.4	4.1	8.8	3.25	7.7	6.2	4.7	5.3	22.5	3.9	4.1
23	35	4.4	3.8	6.7	3.1	5.7	5.4	4.2	8.6	7.7	11.5	3.9
24	15	4.4	3.65	5.2	3.0	4.9	5.0	25	10.1	7.0	9.0	4.0
25	13	5.6	3.45	4.4	3.0	4.4	20	9.1	60	8.2	6.8	4.0
26	7.6	4.4	3.55	4.0	2.9	4.3	5.4	5.4	18.0	5.3	22	4.0
27	6.2	4.0	5.3	3.9	2.9	4.3	5.0	19.9	8.2	4.6	33	4.0
28	5.6	4.0	5.0	3.9	3.1	46	4.7	6.7	8.2	4.4	9.6	4.0
29	6.2	4.0	3.65	5.3	28	109	4.5	-	15.5	4.3	7.7	3.9
30	7.2	4.0	3.55	4.0	30	15.6	4.2	-	22	4.1	5.3	10.0
31	6.6	4.6	-	3.65	-	9.9	4.2	-	8.6	-	16.1	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	38	4.7	10.0	15.5	311	954
August	7.2	4.0	5.04	7.80	156	479
September	10	3.45	4.37	6.76	131	403
October	72	3.45	8.36	12.9	259	795
November	30	2.9	5.73	8.87	172	528
December	109	4.0	19.0	29.4	588	1,800
Calendar year 1942	171	2.9	12.3	19.0	4,500	13,800
January	150	4.2	26.0	40.2	807	2,480
February	34.5	3.9	11.5	17.8	322	987
March	95	4.6	16.9	26.1	524	1,610
April	31	4.1	11.2	17.3	336	1,030
May	33	3.9	8.73	13.5	270	830
June	37	3.8	6.03	9.33	181	555
Fiscal year 1942-43	150	2.9	11.1	17.2	4,060	12,450

f Computed on basis of partly estimated gage-height record.

Note.- No gage-height record July 11 to Aug. 2, Aug. 6 to Sept. 17, Nov. 28 to Dec. 19, Jan. 12 to Feb. 9, Feb. 22-24; discharge computed on basis of records for Hanakoa and Kalalau Streams.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Hanakoa Stream near Hanalei

Location.- Lat. 22°11'00", long. 159°37'35", three-quarters of a mile upstream from mouth and 7½ miles west of Hanalei. Altitude of gage, 470 feet (by barometer).

Drainage area.- 1.1 square miles.

Records available.- December 1931 to June 1943.

Average discharge.- 11 years (1932-43), 3.71 million gallons a day (5.74 second-feet).

Extremes.- Maximum discharge during year, 382 million gallons a day (591 second-feet) Mar. 10 (gage height, 4.67 feet), from rating curve extended above 30 million gallons a day; minimum, 0.36 million gallons a day (0.56 second-foot) Oct. 13.
1931-43: Maximum discharge, 569 million gallons a day (880 second-feet) June 10, 1938 (gage height, 5.51 feet), from rating curve extended above 30 million gallons a day; minimum, 0.17 million gallons a day (0.26 second-feet) Mar. 21, 22, 1934.

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

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.9	0.10	1.3	3.9	2.1	31.5
1.0	.47	1.4	5.8	2.4	49
1.05	.79	1.5	8.2	2.7	71
1.1	1.20	1.7	14.2		
1.2	2.35	1.9	22		

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.02	1.30	0.59	0.40	2.45	3.9	1.96	0.66	1.11	1.96	0.94	14.2
2	.94	1.06	.47	.47	1.11	2.9	6.2	.66	.94	2.2	.79	1.50
3	14.6	.72	.43	1.01	.72	1.40	4.2	.60	1.50	1.40	1.02	1.11
4	3.7	1.04	.43	.72	.59	1.02	30.5	.60	2.1	2.7	.94	.87
5	1.40	.94	.40	1.25	.53	9.0	5.6	2.0	1.20	1.40	.79	.72
6	2.0	.65	.40	.65	.47	17.8	3.1	1.0	.67	1.11	.72	.65
7	3.1	.65	.40	.47	.47	2.95	15.9	12	.79	1.02	.65	.65
8	1.50	.94	.40	.43	.47	2.9	31	10	17.5	.94	.65	.59
9	1.20	1.11	.40	.53	.47	1.60	3.6	6.2	40	.87	4.7	.53
10	1.50	.87	.40	.43	.47	1.20	2.35	3.9	52	18.4	2.05	.47
11	4.2	.79	.40	.40	.59	1.02	1.83	19.9	6.2	7.4	2.15	.53
12	1.71	.65	.40	.40	.79	1.33	32	2.65	3.4	9.8	5.6	.53
13	1.50	1.06	.53	.67	.47	32.5	49	14.6	2.5	3.5	2.16	.59
14	1.11	.87	.47	3.2	1.01	33	14.5	17.4	1.71	5.3	1.20	.59
15	.94	.65	1.29	.65	2.25	12.9	6.8	2.5	2.15	7.2	1.61	.53
16	.87	.72	.87	.47	.94	4.8	10	1.71	1.50	2.65	1.02	.53
17	.79	.59	.53	.40	.65	2.5	45	1.40	1.20	1.71	.79	.65
18	.79	.65	.43	.40	.53	1.83	12	1.20	1.64	1.50	.72	.72
19	.72	.87	.40	.40	.47	1.60	4.5	1.11	1.20	1.30	.72	.59
20	.72	.59	.60	34.5	.47	27	2.7	1.02	3.95	1.20	.65	1.81
21	.65	.53	.78	27	.43	13.6	2.0	2.15	2.0	6.9	.65	.79
22	.79	.59	.47	2.5	.43	3.05	1.5	1.11	1.30	7.1	.65	.53
23	13.0	.59	.40	1.50	.40	1.96	1.2	.94	1.86	1.83	1.57	.47
24	4.3	.59	.40	1.11	.40	1.60	1.0	11.1	1.99	1.68	1.32	.53
25	3.65	.87	.40	.87	.40	1.30	7.0	2.35	26	1.60	1.02	.53
26	1.50	.59	.36	.79	.40	1.20	1.1	1.30	4.7	1.11	4.2	.47
27	1.11	.47	.43	.72	.40	1.20	1.0	6.7	2.1	1.02	8.9	.47
28	.94	.47	.53	.72	.40	26.5	.84	1.71	1.83	.94	2.05	.47
29	1.11	.47	.40	1.64	15.8	53	.74	-	3.4	.87	1.50	.47
30	1.30	.47	.40	.79	16.5	4.5	.66	-	6.5	.87	1.02	1.51
31	1.20	.65	-	.59	-	2.65	.66	-	2.2	-	1.08	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	14.6	0.65	2.38	3.68	73.9	227
August	1.30	.47	.742	1.15	23.0	71
September	1.29	.36	.494	.764	14.8	45
October	34.5	.40	2.77	4.29	86.0	264
November	16.6	.40	1.72	2.66	51.5	158
December	53	1.02	8.83	13.7	274	840
Calendar year 1942	91	.36	4.23	6.54	1,550	4,740
January	49	.66	9.69	15.0	300	922
February	19.9	.60	4.59	7.10	128	394
March	52	.79	6.37	9.86	197	606
April	18.4	.87	3.26	5.03	97.5	299
May	8.9	.65	1.74	2.69	53.8	165
June	14.2	.47	1.15	1.78	34.6	106
Fiscal year 1942-43	53	.36	3.66	5.66	1,330	4,100

Note.- No gage-height record Jan. 16 to Feb. 8; discharge computed on basis of records for Kalalau Stream.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kalalau Stream near Hanalei

Location.- Lat. 22°09'50", long. 159°38'15", 2 miles upstream from mouth and 9 miles southwest of Hanalei. Altitude of gage, 960 feet (by barometer).

Drainage area.- 1.6 square miles.

Records available.- November 1931 to June 1943.

Average discharge.- 11 years (1932-43), 4.44 million gallons a day (6.87 second-feet).

Extremes.- Maximum discharge during year, 305 million gallons a day (472 second-feet) Jan. 12 (gage height, 3.65 feet), from rating curve extended above 18 million gallons a day; minimum, 2.6 million gallons a day (4.0 second-feet) Nov. 24-28.
1931-43: Maximum discharge, 338 million gallons a day (523 second-feet) Nov. 27, 1939 (gage height, 3.76 feet), from rating curve extended above 18 million gallons a day; minimum, 1.9 million gallons a day (2.9 second-feet) Dec. 10, 11, 1933.

Remarks.- Records fair. No diversions.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.6	3.75	3.6	3.3	3.05	6.2	4.7	3.05	3.95	3.6	3.6	4.6
2	3.76	3.6	3.6	3.3	2.9	5.6	6.0	3.05	3.6	3.45	3.6	3.75
3	4.3	3.6	3.6	3.3	2.8	4.1	5.1	2.9	3.6	3.3	3.6	3.75
4	3.95	3.6	3.6	3.3	2.8	3.6	16.6	2.9	3.6	3.45	3.6	3.75
5	3.75	3.6	3.6	3.3	2.8	10.9	8.7	3.75	3.45	3.3	3.6	3.75
6	3.95	3.6	3.6	3.3	2.8	30	6.7	3.45	3.3	3.3	3.6	3.76
7	3.95	3.6	3.6	3.3	2.8	7.9	7.5	6.9	3.3	3.3	3.6	3.75
8	3.75	3.6	3.6	3.3	2.8	5.8	12.3	5.5	8.3	3.3	3.75	3.75
9	3.75	3.6	3.6	3.3	2.8	4.5	6.9	4.7	22	3.45	4.5	3.6
10	3.75	3.6	3.45	3.3	2.8	4.1	5.6	4.5	53	7.2	4.1	3.6
11	3.95	3.6	3.45	3.3	2.8	3.75	4.9	10.9	9.7	6.7	4.5	3.75
12	3.95	3.6	3.45	3.3	2.8	3.95	52	5.8	7.1	6.7	6.2	3.75
13	3.95	3.6	3.45	3.3	2.8	23.5	100	9.4	6.0	5.6	5.3	3.75
14	3.95	3.6	3.45	3.3	2.8	11.5	19.6	12.7	4.9	5.1	4.5	3.75
15	3.95	3.6	3.6	3.2	2.8	7.8	10.8	6.4	4.5	5.1	4.3	3.75
16	3.95	3.6	3.45	3.2	2.8	5.8	14.4	4.9	4.1	4.3	4.1	3.75
17	3.95	3.6	3.45	3.2	2.7	4.7	63	4.1	3.95	4.1	3.95	4.1
18	3.95	3.6	3.45	3.2	2.7	4.5	18.4	3.75	3.75	3.95	3.75	4.1
19	3.95	3.6	3.45	3.2	2.7	4.1	8.7	3.6	3.6	3.95	3.75	4.1
26	3.96	3.6	3.45	13.8	2.7	32	6.2	3.6	3.6	3.75	3.75	4.3
21	3.95	3.6	3.45	12.4	2.7	26.5	4.9	3.45	3.6	4.7	3.95	4.3
22	3.95	3.6	3.46	3.95	2.7	8.4	4.3	3.3	3.6	5.3	3.95	4.1
23	5.7	3.6	3.45	3.3	2.7	6.0	3.75	3.3	3.75	4.3	4.1	4.1
24	4.3	3.6	3.45	3.2	2.6	5.1	3.45	5.8	3.9	4.1	3.95	4.1
25	4.3	3.6	3.45	3.05	2.6	4.5	5.3	4.5	10.1	3.95	3.95	4.1
26	3.95	3.6	3.45	3.05	2.6	4.1	3.75	3.75	6.0	3.75	4.1	4.1
27	3.75	3.6	3.45	3.05	2.6	3.75	3.45	7.0	4.5	3.6	4.7	4.1
28	3.75	3.6	3.45	3.05	2.7	9.6	3.3	5.1	4.1	3.6	4.1	4.1
29	3.75	3.6	3.3	3.2	9.1	14.8	3.2	-	3.95	3.6	3.95	4.1
30	3.75	3.6	3.3	3.05	18.3	6.9	3.05	-	4.1	3.6	3.95	4.1
31	3.75	3.6	-	2.8	-	5.3	3.05	-	3.75	-	3.8	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	5.7	3.6	3.96	6.13	123	377
August	3.75	3.6	3.60	6.57	112	343
September	3.6	3.3	3.49	5.40	105	321
October	13.8	2.8	3.87	5.99	120	369
November	18.3	2.6	3.48	5.36	105	321
December	32	3.6	9.01	13.9	279	857
Calendar year 1942	49	2.6	5.04	7.80	1,840	5,640
January	100	3.05	13.5	20.9	420	1,290
February	12.7	2.9	5.04	7.80	141	433
March	53	3.3	6.80	10.5	211	646
April	7.2	3.3	4.25	6.58	127	391
May	6.2	3.6	4.07	6.30	126	387
June	4.6	3.6	3.94	6.10	118	363
Fiscal year 1942-43	100	2.6	5.44	8.42	1,990	6,100

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Right Branch of North Fork Kaukonahua Stream near Wahiawa

Location.- Concrete weir control, lat. 21°31'15", long. 157°56'55", 200 feet upstream from intake of Wahiawa Water Co.'s tunnel, which is just downstream from confluence of Right and Left Branches of North Fork Kaukonahua Stream, and 8 miles northeast of Wahiawa. Altitude of gage, 1,200 feet (from topographic map).
Drainage area.- 1.2 square miles.
Records available.- May 1913 to January 1933, February 1934 to June 1943.
Average discharge.- 24 years (1915-24, 1926-32, 1934-43), 7.75 million gallons a day (12.0 second-feet).
Extremes.- Maximum discharge during year, 901 million gallons a day (1,390 second-feet) Aug. 3 (gage height, 7.67 feet), from rating curve extended above 40 million gallons a day by test on model of station site; minimum, 0.65 million gallons a day (1.01 second-feet) sometime in March.
1913-43: Maximum discharge, 1,500 million gallons a day (2,320 second-feet) Aug. 12, 1940; minimum, 0.09 million gallons a day (0.15 second-foot) Mar. 22, 1926.
Remarks.- Records good except those for period of no gage-height record, which are poor. No diversions above station.

Rating tables, fiscal year 1942-43 (gage height, in feet, and discharge in million gallons a day)

July 1 to Sept. 15						Sept. 16 to June 30			
2.8	1.35	3.4	15.1	4.8	118	2.7	0.80	3.2	9.2
2.9	2.45	3.6	24	5.1	159	2.8	1.63	3.4	16.0
3.0	3.9	3.9	42	5.2	175	2.9	2.85	3.6	24.5
3.1	5.8	4.2	64			3.0	4.5	3.9	42
3.2	8.3	4.5	88			3.1	6.6		

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	6.3	6.7	3.2	3.2	1.22	16.9	18.2	4.0		25	15	33
2	8.2	3.9	5.3	3.0	3.6	4.5	13.6	3.3		15	2.0	7.2
3	12.0	171	2.9	2.6	1.90	3.2	37.5	6.0		11	1.5	14.5
4	16.7	14.7	2.75	2.5	1.46	2.0	10.9	2.5	2.1	40	2.5	18.9
5	4.5	7.8	2.35	4.6	3.4	1.46	11.7	7.0		7.0	7.0	5.8
6	9.5	5.6	2.1	4.0	5.8	10.8	6.6	3.2		9.0	10	4.5
7	47	5.7	3.35	3.75	2.65	4.5	5.3	10		6.6	13	4.0
8	8.9	9.9	5.1	6.6	1.46	6.2	5.6	6.6		12	5.0	3.5
9	8.1	4.9	2.45	4.0	1.22	2.95	7.2	7.0		6.0	4.0	3.35
10	8.4	3.75	6.3	3.1	1.67	2.1	5.0	3.0	16	3.5	6.0	2.85
11	5.2	4.4	2.1	7.5	1.38	1.75	3.85	2.3		3.0	2.9	2.75
12	8.4	3.9	1.90	2.75	1.05	1.55	3.7			10	4.8	3.35
13	5.4	40	10.4	8.1	.97	3.8	33.5			3.5	2.9	31
14	5.8	5.4	48	7.3	4.7	14.2	5.3			3.1	5.0	3.9
15	3.9	6.5	86	3.2	16.4	12.5	4.2			4.0	2.85	3.5
16	3.45	4.1	57	2.6	33	3.9	4.3	1.7		13	2.25	8.2
17	3.2	3.9	11.6	2.35	4.3	2.5	7.5		2.1	5.0	2.35	4.6
18	2.9	26	7.9	2.25	3.55	2.0	3.85			3.0	1.87	3.2
19	2.6	22.5	6.6	2.1	4.6	1.63	2.85			2.5	30	14.0
20	2.35	6.6	15.5	2.0	3.2	1.87	2.75			3.5	22	8.2
21	2.35	4.8	6.0	2.0	2.25	1.55	2.5			3.0	6.0	3.35
22	2.35	30.5	4.7	3.15	1.75	2.45	2.25			6.0	3.7	3.2
23	4.3	6.6	4.2	2.0	1.55	2.85	2.25		.9	10	5.1	3.55
24	16.4	5.0	3.85	1.55	1.46	4.0	2.1		.8	5.0	6.4	3.4
25	3.1	4.3	3.7	1.46	1.30	15.0	2.0	2.0	1.1	3.0	9.7	8.2
26	2.35	3.6	7.0	1.46	1.22	9.0	1.75		12	2.1	9.6	33
27	2.0	3.6	6.7	1.30	1.13	3.15	1.63		1.5	1.8	22.5	4.5
28	1.90	4.3	4.0	1.13	1.13	19.7	1.55		.9	1.7	4.9	6.4
29	4.0	9.4	3.35	14.8	1.30	30.5	1.46	-	.8	1.6	4.0	24
30	12.4	3.75	5.5	3.45	8.1	28.5	1.5	-	2.0	1.5	6.4	17.7
31	9.0	5.8	-	1.55	-	26.5	1.5	-	4.0	-	14.8	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	47	1.90	7.51	11.6	233	715
August	171	3.6	14.2	22.0	439	1,350
September	86	1.90	11.1	17.2	332	1,020
October	14.8	1.13	3.59	5.55	111	342
November	33	.97	3.96	6.13	119	364
December	30.5	1.46	7.86	12.2	244	747
Calendar year 1942	171	.24	7.73	12.0	2,820	8,660
January	37.5	1.46	6.90	10.7	214	656
February	-	-	3.08	4.77	86.2	265
March	-	-	4.06	6.28	126	386
April	40	1.5	7.38	11.4	221	679
May	30	1.5	7.61	11.8	236	724
June	33	2.75	9.59	14.8	288	883
Fiscal year 1942-43	171	-	7.26	11.2	2,650	8,130

Note.- No gage-height record Jan. 30 to May 14; discharge computed on basis of records for Left Branch of North Fork Kaukonahua Stream and recorded range in stage.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Left Branch of North Fork Kaukonahua Stream near Wahiawa

Location.- Columbus control, lat. 21°31'10", long. 157°56'55", 140 feet (revised) upstream from intake of Wahiawa Water Co.'s tunnel, which is just downstream from confluence of Right and Left Branches of North Fork Kaukonahua Stream, and 8 miles northeast of Wahiawa. Altitude of gage, 1,200 feet (from topographic map).

Drainage area.- 1.5 square miles.

Records available.- May 1913 to June 1943.

Average discharge.- 26 years (1915-24, 1926-43), 11.3 million gallons a day (17.5 second-feet).

Extremes.- Maximum discharge during year, 1,160 million gallons a day (1,790 second-feet) Sept. 15 (gage height, 7.00 feet), from rating curve extended above 43 million gallons a day by test on model of station site; minimum, 0.67 million gallons a day (1.04 second-feet) date uncertain.

1913-43: Maximum discharge, 5,400 million gallons a day (8,360 second-feet) Jan. 1, 1933 (gage height, 11.7 feet, from floodmark on well), from rating curve extended above 15 million gallons a day; minimum, 0.08 million gallons a day (0.12 second-foot) Mar. 2, 13, 1941.

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

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

1.7	0.93	2.2	5.9	3.0	42
1.8	1.45	2.3	7.9	3.3	74
1.9	2.15	2.4	10.4	3.6	115
2.0	3.1	2.6	17.4	4.0	185
2.1	4.3	2.8	27.5		

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	8.5	18.8	4.9	7.0	1.94	23	13.1	5.8		41	26	57
2	7.3	10.8	17.9	6.6	6.3	5.9	15.0	4.5		20	3.3	10.5
3	20	179	5.1	4.3	2.8	3.95	46	9.1		16.2	2.6	13.4
4	18.4	14.7	4.8	3.8	2.9	2.6	11.9	3.3	2.7	68	4.1	53
5	5.9	12.2	3.8	8.2	4.2	2.1	14.6	10.2		10.9	11.0	8.4
6	31.5	7.7	3.45	6.3	9.7	18.4	7.3	4.4		13.3	16.5	6.5
7	91	9.3	8.2	6.3	6.1	6.5	6.1	15.5		10.6	21	5.6
8	13.7	17.0	8.2	10.9	2.7	9.8	6.3	9.6		17.5	6.9	4.8
9	12.5	8.2	9.7	6.5	2.1	3.95	8.2	10.1		9.3	5.9	4.2
10	16.6	5.9	13.3	5.7	2.25	2.7	5.7	4.2	24	4.8	12.1	3.8
11	9.2	13.4	4.1	11.7	1.87	2.35	4.5	3.1		4.3	4.6	3.7
12	17.7	11.7	3.8	4.2	1.59	2.1	4.2			15.7	10.7	3.55
13	11.9	39.5	23	13.0	1.45	6.8	53			5.0	4.6	22.5
14	13.0	7.7	75	8.0	10.4	15.6	6.5			4.4	11.6	4.4
15	7.3	10.8	176	4.2	29	32	5.3			6.4	4.6	4.1
16	6.1	7.1	127	3.45	23	6.7	4.9	2.0		20.5	3.1	17.4
17	5.6	10.3	15.8	3.1	5.4	3.8	12.6			9.5	2.9	10.7
18	5.3	26	10.4	2.9	8.0	3.0	5.5			4.9	2.6	4.5
19	4.5	18.0	10.4	2.8	6.2	2.8	3.8		2.8	4.3	13.6	24.5
20	4.1	8.3	18.1	2.55	4.5	2.8	3.45			5.1	34	11.9
21	4.5	6.1	6.9	2.6	3.0	2.55	3.1			4.8	10.6	4.9
22	5.2	31	5.9	4.0	2.55	2.8	3.0			9.2	4.1	4.2
23	17.9	8.3	5.1	2.45	2.15	4.0	2.7			16.2	3.45	4.8
24	27.5	6.1	4.6	2.1	2.0	4.1	2.6			9.8	9.9	6.5
25	5.5	5.6	4.2	1.87	1.87	21.5	2.45	2.7		4.6	12.7	8.4
26	4.8	4.9	11.2	1.80	1.73	18.1	2.35		21	3.8	13.3	22
27	4.2	5.7	16.2	1.80	1.59	7.0	2.15		2.1	3.35	54	5.3
28	3.35	6.2	6.1	1.73	1.52	37.5	1.87		1.40	3.0	7.5	10.4
29	20.5	9.2	5.7	23	1.96	36	1.80	-	1.33	2.8	6.7	53
30	16.9	7.2	8.4	5.2	12.7	16.0	1.73	-	3.15	2.6	6.5	32
31	13.4	15.8	-	2.6	-	16.5	1.73	-	5.6	-	14.0	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	91	3.35	14.0	21.7	434	1,330
August	179	4.9	17.5	27.1	542	1,660
September	176	3.45	20.6	31.9	617	1,890
October	23	1.73	5.50	8.51	171	524
November	29	1.45	5.45	8.43	163	502
December	37.5	2.1	10.4	16.1	323	991
Calendar year 1942	179	.18	12.1	18.7	4,400	13,500
January	53	1.73	8.50	13.2	263	808
February	15.5	2.0	4.26	6.59	119	366
March	24	1.33	6.09	9.42	189	579
April	68	2.6	11.7	18.1	352	1,080
May	54	2.6	11.1	17.2	343	1,050
June	57	3.55	14.2	22.0	426	1,310
Fiscal year 1942-43	179	1.33	10.8	16.7	3,940	12,090

Note.- No gage-height record Feb. 12 to Mar. 25; discharge computed on basis of records for Kalihi Stream.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Puhawai Stream at Lualualei, near Waianae

Location.- Parshall flumes, lat. 21°28'10", long. 158°08'00", in Lualualei Valley, 5 miles northeast of Waianae. Altitude of gage, 600 feet (from topographic map).

Drainage area.- 0.6 square mile.

Records available.- September 1930 to June 1943.

Average discharge.- 12 years (1931-43), 0.246 million gallons a day (0.381 second-foot).

Extremes.- Maximum discharge during year, 394 million gallons a day (610 second-feet) Nov. 3 (gage height, 2.56 feet for 6-inch flume and 4.89 feet for 4-foot flume), from rating curve extended above 3.2 million gallons a day and 1.0 million gallons a day, respectively, by test on model of station site; minimum, 0.01 million gallons a day (0.02 second-foot) several days in August.

1930-43: Maximum discharge, 862 million gallons a day (1,330 second-feet) Oct. 22, 1939 (gage height, 2.63 feet for 6-inch flume and 6.54 feet for 4-foot flume), from rating curves extended above 3.2 and 1.0 million gallons a day, respectively, by test on model of station site; minimum, 0.01 million gallons a day (0.02 second-foot) several times during period of record.

Remarks.- Records good except those for periods of no gage-height record, which are poor. Continuous rainfall records are obtained at station.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.06	0.06	0.04	0.05	0.10	2.05	0.13	0.12	0.16	0.03	0.03	0.14
2	.06	.06	.04	.05	.07	1.98	.21	.11	.13	.03	.04	.10
3	.06	.09	.04	.05	4.0	.54	2.4	.11	.09	.03	.03	.10
4	.06	.06	.05	.04	.53	.27	2.95	.11	.09	.03	.03	.10
5	.06	.06	.05	.04	.17	.18	4.0	.11	.08	.05	.03	.10
6	.06	.06	.05	.04	.10	3.55	1.5	.12	.06	.05	.03	.07
7	.06	.06	.05	.04	.08	2.65	.50	.13	.05	.04	.61	.05
8	.06	.06	.05	.04	.06	2.05	.40	.10	.06	.04	.25	.05
9	.06	.06	.05	.04	.04	1.43	.35	.10	.52	.04	.33	.05
10	.06	.06	.05	.04	.04	.57	.30	.10	.26	.03	.75	.05
11	.06	.06	.05	.04	.03	.36	.30	.10	.15	.03	2.3	.05
12	.06	.06	.05	.04	.02	.31	.70	.10	.11	.03	3.3	.05
13	.06	.11	.07	.04	.02	2.7	4.0	.10	.10	.05	1.55	.05
14	.06	.06	.09	.04	.03	4.1	2.5	.10	.08	.06	1.25	.05
15	.06	.06	.11	.04	.02	2.4	2.2	.08	.07	.06	1.80	.04
16	.06	.06	.09	.04	.02	2.2	1.5	.06	.06	.06	.98	.05
17	.06	.05	.06	.06	.02	1.57	.60	.05	.06	.05	.46	.04
18	.06	.06	.06	.07	.02	.69	.30	.05	.06	.04	.19	.04
19	.06	.06	.06	.08	.02	.40	.25	.05	.04	.03	.16	.06
20	.06	.06	.06	.08	.02	.38	.22	.05	.04	.03	.18	.03
21	.06	.05	.06	.08	.04	.61	.22	.10	.06	.03	.18	.03
22	.06	.05	.06	.06	.05	.40	.22	.07	.06	.03	.10	.03
23	.16	.05	.05	.06	.03	.30	.22	.06	.06	.04	.09	.03
24	.42	.05	.05	.06	.02	.24	.22	.33	.06	.03	.10	.03
25	.18	.05	.05	.06	.02	.23	.22	.54	.04	.03	.07	.03
26	.09	.05	.05	.02	.02	.21	.16	.15	.04	.03	.08	.03
27	.06	.05	.05	.04	.02	.16	.14	.50	.03	.03	.07	.03
28	.05	.05	.05	.15	.02	.18	.13	.38	.03	.04	.07	.03
29	.06	.05	.05	1.18	.02	.16	.12	-	.03	.03	.07	.02
30	.06	.05	.05	.39	1.22	.13	.11	-	.03	.03	.07	.02
31	.06	.04	-	.12	-	.12	.10	-	.03	-	.07	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	0.42	0.05	0.079	0.122	2.46	7.5
August	.11	.04	.058	.090	1.81	5.6
September	.11	.04	.056	.087	1.69	5.2
October	1.18	.02	.103	.159	3.18	9.8
November	4.0	.02	.229	.354	6.87	21
December	4.1	.12	1.07	1.66	33.1	102
Calendar year 1942	4.1	.02	.184	.285	67.2	206
January	4.0	.10	.876	1.36	27.2	83
February	.54	.05	.142	.220	3.98	12
March	.52	.03	.088	.136	2.74	8.4
April	.06	.03	.038	.059	1.13	3.5
May	3.3	.03	.493	.763	15.3	47
June	.14	.02	.052	.080	1.55	4.8
Fiscal year 1942-43	4.1	.02	.277	.429	101	310

Note.- No gage-height record Sept. 13 to Oct. 15, Jan. 5-23; discharge estimated on basis of records for Right Branch of North Fork Kaukonahua Stream and rainfall records at Lualualei and Mikilua.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Pearl Harbor Springs at Waiawa, near Pearl City

Location (revised).- Sharp-crested weir, lat. 21°23'40", long. 157°59'10", at rear of Oahu Sugar Co.'s pumping plant 9, on right bank of stream, 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 1943.

Extremes.- Maximum daily discharge during year, 14.6 million gallons a day (22.6 second-feet) Nov. 18-25; minimum daily, 8.1 million gallons a day (12.5 second-feet) July 20-29, Sept. 10-26, Oct. 16-29.
1931-34, 1937-43: Maximum daily discharge, 17 million gallons a day (26 second-feet) Mar. 15-17, 1932, Mar. 3, 4, 8, 1933; minimum daily, 6.0 million gallons a day (9.3 second-feet) June 18-20, 1941.

Remarks.- Records good. Oahu Sugar Co.'s pump 9 diverts about 3 million gallons a day 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, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	8.5	8.5	8.5	8.5	11.9	12.2	13.6	14.2	13.5	13.6	12.5	11.0
2	8.5	8.5	8.5	8.5	f11.9	12.2	13.6	14.0	13.5	13.6	12.5	13.0
3	8.5	8.7	8.5	8.5	11.9	12.2	13.9	14.0	13.5	13.6	12.2	13.0
4	8.5	8.7	8.5	8.7	12.2	f12.2	13.9	14.0	13.5	13.6	12.2	13.0
5	8.5	8.7	8.5	8.7	12.5	12.5	13.9	14.0	13.5	13.6	12.2	12.5
6	8.5	8.5	8.7	8.5	12.5	12.5	13.9	14.0	13.5	13.6	12.2	12.5
7	8.5	8.5	8.7	8.5	12.9	12.5	13.9	14.0	13.5	13.6	10.0	12.5
8	8.5	8.5	8.7	8.5	13.2	12.5	13.9	14.0	13.5	13.6	9.0	10.0
9	8.5	8.5	8.5	8.7	13.6	12.5	13.9	14.0	13.5	13.6	9.0	8.8
10	8.5	8.5	8.1	8.7	13.9	12.5	13.9	14.0	13.5	13.6	9.0	8.8
11	8.5	8.5	8.1	8.7	13.9	12.5	13.9	13.5	13.5	13.2	9.0	8.8
12	8.5	8.5	8.1	8.7	13.9	12.5	13.9	13.5	13.5	13.2	10.6	8.8
13	8.5	8.5	8.1	8.7	14.2	12.5	13.9	13.5	13.5	13.2	12.9	8.8
14	8.5	8.5	8.1	8.7	14.2	12.5	13.9	13.5	13.5	13.2	12.9	8.8
15	8.5	8.5	8.1	8.5	14.2	12.5	14.2	13.5	13.5	13.2	12.9	8.8
16	8.5	8.5	8.1	8.1	14.2	12.5	14.2	13.5	13.0	12.9	12.9	8.8
17	8.5	8.5	8.1	8.1	14.2	12.5	14.2	13.5	13.0	12.9	13.2	8.8
18	8.5	8.5	8.1	8.1	14.6	12.9	14.2	13.5	13.0	12.9	13.2	8.8
19	8.5	8.5	8.1	8.1	14.6	12.9	14.2	13.5	13.2	12.9	13.0	8.8
20	8.1	8.5	8.1	8.1	14.6	13.2	14.2	13.5	13.6	12.9	13.0	8.8
21	8.1	8.5	8.1	8.1	14.6	13.2	14.2	13.5	13.9	12.9	13.0	8.7
22	8.1	8.5	8.1	8.1	14.6	13.2	14.2	13.5	13.9	12.9	13.0	8.7
23	8.1	8.5	8.1	8.1	14.6	13.2	14.2	13.5	13.9	12.9	13.0	8.7
24	8.1	8.5	8.1	8.1	14.6	13.2	14.2	13.5	13.9	12.5	13.0	8.7
25	8.1	8.5	8.1	8.1	f14.6	13.6	14.2	13.5	13.9	12.5	13.0	8.7
26	8.1	8.5	8.1	8.1	13.5	13.6	14.2	13.5	13.9	12.5	13.0	8.7
27	8.1	8.5	8.5	8.1	13.0	13.6	14.2	13.5	13.9	12.5	13.0	8.7
28	8.1	8.5	8.5	8.1	12.5	f13.6	14.2	13.5	13.9	12.5	13.0	8.7
29	8.1	8.5	8.5	8.1	12.2	13.6	14.2	-	13.9	12.5	13.0	8.7
30	8.5	8.5	8.5	10.3	12.2	13.6	14.2	-	13.6	12.5	13.0	8.7
31	8.5	8.5	-	11.9	-	13.6	14.2	-	13.6	-	13.0	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	8.5	8.1	8.37	13.0	260	796
August	8.7	8.5	8.52	13.2	264	810
September	8.7	8.1	8.29	12.8	249	764
October	11.9	8.1	8.54	13.2	265	812
November	14.6	11.9	13.5	20.9	406	1,240
December	13.6	12.2	12.8	19.8	398	1,220
Calendar year 1942	14.6	7.3	10.0	13.5	3,650	11,200
January	14.2	13.6	14.0	21.7	435	1,340
February	14.2	13.5	13.7	21.2	383	1,180
March	13.9	13.0	13.6	21.0	421	1,290
April	13.6	12.5	13.1	20.3	393	1,210
May	13.2	9.0	12.2	18.9	377	1,160
June	13.0	8.7	9.67	15.0	290	890
Fiscal year 1942-43	14.6	8.1	11.3	17.5	4,140	12,710

f Computed on basis of partly estimated gage-height record.

Note.- No gage-height record Oct. 17 to Nov. 1, Nov. 26 to Dec. 3, Dec. 29-31, Jan. 12-21, Jan. 27 to Mar. 18, May 19 to June 27; discharge computed on basis of pumpage by pump 9 and records for stations on nearby springs.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Pearl Harbor Springs at Puukapu, near Pearl City

Location.- Sharp-crested weir, lat. 21°23'20", long. 157°58'10", near levee, 0.4 mile east of Pearl City and 8.9 miles northwest of Honolulu. Datum of gage is 0.5 foot below mean sea level.

Records available.- July 1931 to June 1943.

Average discharge.- 11 years (1931-35, 1936-43), 4.01 million gallons a day (6.20 second-feet).

Extremes.- Maximum daily discharge during year, 5.2 million gallons a day (8.0 second-feet) Jan. 13; minimum daily, 2.95 million gallons a day (4.56 second-feet) Aug. 11-16, Sept. 5-10.

1931-43: Maximum daily discharge, 6.0 million gallons a day (9.3 second-feet) June 4, 1932, Mar. 4, 1933; minimum daily, 1.55 million gallons a day (2.40 second-feet) July 22, 1931.

Remarks.- Records good. About a million gallons a day is occasionally diverted from stream. Surface runoff from floods not included in figures of discharge given below.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.0	3.1	3.0	3.2	3.3	3.75	4.0	4.4	4.0	3.8	3.9	4.1
2	3.0	3.1	3.0	3.2	3.3	3.75	4.4	4.3	4.0	3.8	3.9	4.1
3	3.0	3.1	3.0	3.2	3.3	3.75	5.1	4.3	4.0	3.8	3.9	4.1
4	3.0	3.1	3.0	3.2	3.35	3.75	4.5	4.3	4.0	3.8	3.9	4.1
5	3.0	3.0	2.95	3.2	3.35	3.65	4.2	4.3	4.0	3.8	3.9	4.1
6	3.1	3.0	2.95	3.2	3.35	3.65	4.1	4.3	4.0	3.8	3.9	4.1
7	3.1	3.0	2.95	3.1	3.35	3.75	4.1	4.3	4.0	3.8	3.9	4.1
8	3.1	3.0	2.95	3.1	3.35	3.75	4.1	4.3	4.0	4.0	3.9	4.1
9	3.1	3.1	2.95	3.1	3.45	3.75	4.1	4.3	4.0	4.1	3.9	4.0
10	3.1	3.0	2.95	3.1	3.45	3.8	4.2	4.3	4.0	4.1	3.9	4.0
11	3.1	2.95	3.0	3.1	3.45	3.8	4.2	4.2	4.0	4.1	3.9	4.0
12	3.1	2.95	3.1	3.0	3.45	3.8	4.2	4.2	4.0	4.1	4.8	4.0
13	3.1	2.95	3.1	3.0	3.45	3.8	5.2	4.2	4.0	4.1	4.2	4.0
14	3.1	2.95	3.1	3.0	3.55	3.8	4.3	4.2	4.0	4.0	4.1	4.0
15	3.1	2.95	3.1	3.0	3.55	3.9	4.3	4.2	3.9	4.0	4.0	4.0
16	3.1	2.95	3.1	3.0	3.55	3.9	4.3	4.2	3.9	4.0	4.0	4.0
17	3.1	3.0	3.1	3.1	3.55	3.9	4.3	4.1	3.8	4.0	4.1	4.0
18	3.1	3.0	3.1	3.1	3.55	3.9	4.3	4.1	3.8	4.1	4.2	4.0
19	3.0	3.1	3.1	3.1	3.65	3.9	4.3	4.1	3.8	4.0	4.2	4.0
20	3.0	3.1	3.2	3.1	3.65	3.9	4.3	4.1	3.9	4.0	4.2	4.0
21	3.0	3.1	3.2	3.1	3.65	3.9	4.3	4.2	3.9	4.0	4.2	4.0
22	3.0	3.1	3.2	3.1	3.65	3.9	4.3	4.0	3.9	4.0	4.1	4.0
23	3.0	3.1	3.2	3.1	3.75	3.9	4.4	4.0	3.8	4.0	4.1	3.9
24	3.1	3.1	3.2	3.1	3.65	4.0	4.4	4.1	3.8	4.0	4.2	3.9
25	3.1	3.1	3.1	3.1	3.55	4.0	4.4	4.0	3.9	4.0	4.2	3.8
26	3.1	3.0	3.2	3.2	3.55	4.0	4.4	4.0	3.9	4.0	4.2	3.8
27	3.0	3.0	3.1	3.2	3.65	4.0	4.4	4.0	3.9	4.0	4.1	3.8
28	3.0	3.0	3.1	3.2	3.65	4.0	4.4	4.0	3.9	3.9	4.1	3.8
29	3.0	3.0	3.1	3.3	3.65	4.0	4.4	-	3.8	3.9	4.1	3.8
30	3.1	3.0	3.2	3.3	3.65	4.0	4.4	-	3.8	3.9	4.1	3.8
31	3.1	3.0	-	3.3	-	4.0	4.5	-	3.8	-	4.1	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	3.1	3.0	3.06	4.73	94.8	291
August	3.1	2.95	3.03	4.69	93.9	288
September	3.2	2.95	3.08	4.77	92.3	283
October	3.3	3.0	3.13	4.84	97.1	298
November	3.75	3.3	3.51	5.43	105	323
December	4.0	3.65	3.86	5.97	120	367
Calendar year 1942	4.0	2.95	3.26	5.04	1,190	3,650
January	5.2	4.0	4.55	6.73	135	414
February	4.4	4.0	4.18	6.47	117	359
March	4.0	3.8	3.92	6.07	122	373
April	4.1	3.8	3.96	6.13	119	365
May	4.8	3.8	4.07	6.30	126	387
June	4.1	3.8	3.98	6.16	119	366
Fiscal year 1942-43	5.2	2.95	3.67	5.68	1,340	4,110

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Pearl Harbor Springs at Loko Kukona, near Pearl City

Location.- Sharp-crested brass weir, lat. 21°23'30", long. 157°58'00", near levee, half a mile east of Pearl City and 8.8 miles northwest of Honolulu. Datum of gage is 0.80 foot below mean sea level.

Records available.- June 1931 to June 1943.

Average discharge.- 11 years (1931-35, 1936-43), 2.58 million gallons a day (3.99 second-feet).

Extremes.- Maximum daily discharge during year, 2.4 million gallons a day (3.7 second-feet) Jan. 4, 5; minimum daily, 1.68 million gallons a day (2.60 second-feet) Sept. 4-6.
1931-43: Maximum daily discharge recorded, 4.0 million gallons a day (6.2 second-feet) Mar. 21, 22, Mar. 31 to Apr. 3, 1932; minimum daily, 1.60 million gallons a day (2.48 second-feet) Aug. 31, Sept. 3, 4, Nov. 19, 1941.

Remarks.- Records good. No diversions. Surface runoff from floods not included in figures of discharge given below.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.82	1.75	1.75	1.90	2.05	2.05	2.15	2.15	2.15	1.98	1.90	1.90
2	1.82	1.75	1.75	1.90	2.15	2.05	2.2	2.15	2.15	1.98	1.90	1.90
3	1.82	1.75	1.75	1.90	2.15	2.05	2.3	2.15	2.15	1.98	1.90	1.90
4	1.75	1.75	1.68	1.90	2.05	2.05	2.4	2.15	2.15	1.98	1.90	1.90
5	1.82	1.75	1.68	1.90	2.05	2.15	2.4	2.15	2.15	1.98	1.90	1.90
6	1.82	1.75	1.68	1.90	1.98	2.2	2.2	2.15	2.15	1.98	1.90	1.90
7	1.82	1.75	1.75	1.90	1.98	2.15	2.15	2.15	2.15	1.98	1.90	1.90
8	1.90	1.75	1.75	1.90	1.98	2.05	2.2	2.15	2.15	1.98	1.90	1.90
9	1.90	1.75	1.75	1.90	1.98	2.05	2.2	2.15	2.2	1.98	1.90	1.90
10	1.90	1.75	1.75	1.90	1.98	2.05	2.2	2.15	2.15	1.98	1.90	1.90
11	1.90	1.75	1.75	1.90	1.98	2.05	2.15	2.15	2.15	1.98	1.90	1.90
12	1.82	1.75	1.75	1.90	1.98	2.15	2.15	2.15	2.05	1.98	1.98	1.90
13	1.82	1.75	1.82	1.90	1.98	2.15	2.2	2.05	1.98	1.98	1.98	1.90
14	1.82	1.75	1.82	1.90	2.05	2.15	2.15	2.05	1.98	1.98	1.98	1.90
15	1.82	1.75	1.82	1.90	2.15	2.15	2.15	2.05	1.98	1.98	1.90	1.90
16	1.75	1.75	1.82	1.90	2.15	2.15	2.2	2.05	1.98	1.98	1.90	1.90
17	1.75	1.75	1.82	1.82	2.15	2.15	2.2	2.15	1.98	1.98	1.90	1.90
18	1.75	1.75	1.82	1.82	2.15	2.2	2.2	2.15	1.98	1.98	1.90	1.90
19	1.75	1.75	1.82	1.82	2.15	2.2	2.15	2.15	1.98	1.90	1.90	1.90
20	1.75	1.75	1.82	1.82	2.15	2.2	2.15	2.15	1.98	1.90	1.90	1.90
21	1.75	1.75	1.82	1.82	2.15	2.2	2.15	2.15	1.98	1.90	1.90	1.90
22	1.75	1.75	1.82	1.82	2.15	2.2	2.15	2.15	1.98	1.90	1.90	1.82
23	1.75	1.75	1.82	1.82	2.05	2.2	2.05	2.15	1.98	1.90	1.90	1.82
24	1.75	1.75	1.82	1.90	2.05	2.15	1.98	2.15	1.98	1.90	1.90	1.82
25	1.75	1.75	1.82	1.90	1.98	2.05	1.98	2.15	1.98	1.90	1.90	1.82
26	1.75	1.75	1.90	1.90	1.98	2.05	2.05	2.15	1.98	1.90	1.90	1.82
27	1.75	1.75	1.90	1.90	1.98	2.05	2.05	2.15	1.98	1.90	1.90	1.82
28	1.75	1.75	1.90	1.90	1.98	2.15	2.05	2.15	1.98	1.90	1.90	1.82
29	1.75	1.75	1.90	1.98	1.98	2.15	2.05	-	1.98	1.90	1.90	1.82
30	1.75	1.75	1.90	2.05	2.05	2.15	2.05	-	1.98	1.90	1.90	1.82
31	1.75	1.75	-	2.05	-	2.15	2.15	-	1.98	-	1.90	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	1.90	1.75	1.79	2.77	55.6	170
August	1.75	1.75	1.75	2.71	54.2	166
September	1.90	1.68	1.80	2.79	54.0	166
October	2.05	1.82	1.89	2.92	58.7	180
November	2.15	1.98	2.05	3.17	61.6	189
December	2.2	2.05	2.13	3.30	65.9	202
Calendar year 1942	2.2	1.68	1.87	2.89	684	2,100
January	2.4	1.98	2.16	3.34	86.8	205
February	2.15	2.06	2.14	3.31	59.8	184
March	2.2	1.98	2.04	3.16	63.[illegible]	194
April	1.98	1.90	1.95	3.02	58.4	179
May	1.98	1.90	1.91	2.96	59.1	181
June	1.90	1.82	1.88	2.91	56.3	173
Fiscal year 1942-43	2.4	1.68	1.96	3.03	714	2,190

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Hawaiian Electric Co. tunnel at Waiau, near Pearl City

Location.- 160° V-notched brass weir, lat. 21°23'35", long. 157°58'00", above Hawaiian Electric Co.'s power plant, 0.6 mile east of Pearl City and 8.8 (revised) miles northwest of Honolulu. Datum of gage is 0.64 foot above mean sea level.

Records available.- October 1939 to June 1943.

Extremes.- Maximum discharge during year, 37.5 million gallons a day (58.0 second-feet) Jan. 13 (gage height, 2.32 feet); minimum, 8.1 million gallons a day (12.5 second-feet) Oct. 1.

1939-43: Maximum discharge, that of Jan. 13, 1943; minimum, 2.05 million gallons a day (3.17 second-feet) June 27, 1940.

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

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	-	13.4	12.1	12.3	12.7	12.9	11.1	-	-	10.5	10.8	11.1
2	-	12.9	11.8	10.6	12.9	11.7	10.8	-	10.8	10.5	10.8	10.8
3	-	13.0	11.8	13.0	13.5	11.1	11.7	-	10.8	10.5	11.4	10.6
4	-	13.3	11.8	13.2	13.9	11.1	12.0	-	10.8	10.5	10.8	10.2
5	-	12.9	12.0	12.2	13.8	11.1	14.4	-	10.5	10.5	11.1	10.2
6	-	12.4	11.9	13.1	13.7	11.5	11.8	-	-	10.5	11.1	10.5
7	-	12.2	12.0	12.9	13.5	11.6	11.4	-	-	10.5	11.1	10.5
8	-	12.4	11.4	12.2	13.6	11.7	11.1	-	-	10.8	11.1	11.4
9	-	10.5	11.8	13.0	13.7	11.7	11.1	-	-	10.8	10.8	10.8
10	-	11.8	12.5	13.3	13.2	11.4	11.1	-	-	10.8	10.8	10.8
11	-	11.9	12.7	10.9	13.1	11.1	10.8	-	-	11.7	10.8	10.2
12	-	12.3	12.5	12.3	13.5	10.8	10.8	-	-	11.4	10.8	10.5
13	-	12.2	12.7	11.4	13.3	11.1	14.8	-	11.1	11.4	10.8	10.5
14	12.6	12.5	13.0	11.3	13.0	10.8	11.1	-	11.1	11.4	10.8	10.8
15	11.9	12.5	12.7	11.7	11.1	11.1	10.8	-	11.7	11.7	10.8	11.1
16	12.1	14.0	12.4	12.0	12.0	10.5	11.1	-	11.1	11.4	10.8	10.5
17	12.0	12.7	12.5	11.4	11.8	10.5	11.1	-	11.1	11.1	11.1	10.2
18	12.1	12.8	12.5	9.2	9.8	10.5	11.1	-	10.8	11.4	11.1	10.2
19	11.3	12.0	12.9	10.7	11.7	10.5	11.1	-	10.8	12.9	10.8	10.2
20	11.2	12.4	13.4	11.4	12.5	10.8	11.1	-	11.1	11.1	11.1	10.5
21	11.5	12.5	12.5	11.2	12.6	11.1	11.1	-	10.8	12.8	10.8	10.5
22	12.5	12.7	12.8	11.6	10.2	10.8	11.1	-	11.4	10.8	10.8	10.5
23	12.5	13.7	13.0	11.3	12.6	11.1	11.7	-	10.8	11.1	10.8	10.2
24	12.6	12.6	13.1	11.6	13.1	10.2	11.7	10.8	10.8	11.1	10.5	10.2
25	12.6	12.7	13.2	11.0	13.3	11.1	11.1	10.8	10.8	11.3	10.8	10.2
26	13.4	12.5	13.4	11.9	12.6	11.1	11.4	-	10.8	12.6	11.1	11.1
27	13.3	11.9	13.6	12.4	12.5	11.1	11.4	-	10.8	11.4	10.8	10.2
28	12.4	12.5	13.4	13.0	13.1	11.1	11.4	-	10.8	11.4	10.5	10.2
29	13.1	12.9	13.2	12.5	10.2	10.8	11.1	-	10.8	11.1	10.5	10.2
30	13.1	12.7	12.4	11.3	11.8	10.8	-	-	10.8	11.1	10.5	10.4
31	13.0	12.3	-	12.2	-	10.8	-	-	10.5	-	10.5	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July 14-31	13.4	11.2	12.4	19.2	223	685
August	14.0	10.5	12.6	19.5	389	1,190
September	13.6	11.4	12.6	19.5	377	1,160
October	13.3	9.2	11.9	18.4	368	1,130
November	13.9	9.8	12.6	19.5	378	1,160
December	12.9	10.2	11.1	17.2	344	1,050
Calendar year	-	-	-	-	-	-
January 1-29	14.8	10.8	11.5	17.8	332	1,020
February	-	-	-	-	-	-
March	-	-	-	-	-	-
April	12.9	10.5	11.2	17.3	336	1,030
May	11.4	10.5	10.8	16.7	336	1,030
June	11.4	10.2	10.5	16.2	315	968
Fiscal year	-	-	-	-	-	-

Note.- Data insufficient to compute discharge for days for which no figures are given.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Pearl Harbor Springs at Waiau, near Pearl City

Location.- Lat. 21°23'25", long. 157°57'40", a fifth of a mile below Kamehameha Highway, 0.8 mile east of Pearl City, and 8.5 miles northwest of Honolulu.

Records available.- May 1931 to February 1939, December 1942 to June 1943.

Extremes.- Not determined owing to faulty operation of control.

Remarks.- Records fair. Water is used for cooling condensers of Hawaiian Electric Co. power plant and afterwards for irrigation of sugar cane.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1						-	-	6.1	5.7	5.7	4.9	5.7
2						-	-	6.1	5.7	5.7	4.9	5.3
3						-	-	6.1	5.7	5.7	4.9	5.3
4						-	-	6.1	5.7	5.7	4.9	5.3
5						-	-	6.1	5.5	5.7	5.3	5.3
6				*4.53		-	-	6.1	5.7	5.7	5.3	5.3
7						-	-	5.7	5.7	5.7	5.3	5.3
8						5.3	-	5.7	5.7	5.7	5.3	5.3
9						4.9	-	5.7	5.7	5.7	4.9	5.3
10						5.3	-	5.7	5.7	5.7	5.3	5.5
11						5.3	-	5.7	5.7	5.7	5.3	4.9
12						5.3	-	5.7	5.7	5.7	5.7	5.3
13						5.7	-	5.7	5.7	5.7	5.7	5.3
14						-	-	5.7	5.7	5.7	5.7	5.3
15						-	-	5.7	5.7	5.7	5.7	4.9
16						-	-	5.7	5.7	5.7	5.7	5.3
17						-	-	5.3	5.7	5.7	5.7	4.9
18						-	-	5.3	5.7	5.7	5.3	4.9
19						-	-	5.3	5.7	5.7	5.3	4.9
20						-	-	5.7	5.7	5.7	5.7	4.9
21						-	6.1	5.7	5.7	5.7	5.7	4.9
22						-	6.1	5.7	5.7	5.7	5.7	4.9
23						-	6.1	5.7	5.7	5.7	5.7	4.9
24			†4.52			-	6.1	5.7	5.7	5.3	5.7	4.9
25						-	6.1	5.7	5.7	5.3	5.7	4.9
26						-	6.1	5.7	5.7	5.3	5.3	4.9
27						-	6.1	5.7	5.7	4.9	5.5	4.9
28						-	6.1	5.7	5.7	4.9	5.3	4.9
29	*3.52					-	6.1	-	5.7	4.9	5.3	4.5
30						-	6.1	-	5.7	-	5.3	4.9
31						-	6.1	-	5.7	-	5.7	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July						
August						
September						
October						
November						
December						
Calendar year						
January 21-31	6.1	6.1	6.10	9.44	67.1	206
February	6.1	5.3	5.74	8.88	161	493
March	5.7	5.3	5.69	8.80	176	541
April	5.7	4.9	5.55	8.59	167	511
May	5.7	4.9	5.40	8.36	168	514
June	5.7	4.5	5.07	7.84	152	467
Fiscal year	-	-	-	-	-	-

* Discharge measurement made on this day.
† Average of 2 discharge measurements made on this day.
Note.- Data insufficient to compute discharge for days for which no figures are given.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Pearl Harbor Springs at Kalauao, near Aiea

Location.- Sharp-crested weir, lat. 21°23'00", long. 157°56'50", a quarter of a mile downstream from Honolulu Plantation pump 6, 1.1 miles west of Aiea, and 7.6 miles northwest of Honolulu. Datum of gage is 1.10 feet below near sea level.

Records available.- March 1931 to June 1943.

Average discharge.- 12 years, 16.6 million gallons a day (25.7 second-feet), unadjusted for pumpage.

Extremes.- Maximum daily discharge during year, 19.1 million gallons a day (29.6 second-feet) May 14-20; minimum daily, 12.3 million gallons a day (19.0 second-feet) Aug. 8, 18-22, 29, Sept. 10.
1931-43: Maximum daily discharge, 25 million gallons a day (39 second-feet) Feb. 17-26, 1938; minimum daily, 8.7 million gallons a day (13.5 second-feet) Aug. 23, 1934.

Remarks.- Records good. When water is needed for irrigation of sugarcane, Honolulu Plantation pump 6 diverts about 7 million gallons a day as a high-lift pump or 9 million gallons a day as a low-lift pump. Surface runoff from floods not included in figures of discharge given below.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	13.4	12.7	12.7	14.2	16.8	17.6	18.0	16.0	16.0	14.5	13.8	15.6
2	14.5	15.6	12.7	14.2	16.8	17.6	18.0	16.0	16.0	15.6	13.4	16.4
3	13.4	13.1	12.7	14.5	16.8	17.6	18.0	16.0	16.0	14.9	13.4	15.6
4	14.5	13.1	13.1	17.2	16.8	17.6	18.0	16.0	16.0	18.0	13.4	16.0
5	16.4	13.1	13.4	14.9	16.8	f17.6	18.0	16.0	16.0	15.3	13.4	16.7
6	14.9	12.7	16.8	14.5	16.8	17.6	18.0	16.0	16.0	15.3	16.0	18.7
7	14.2	12.7	13.4	13.4	17.2	17.6	18.0	18.7	18.7	17.6	13.4	15.6
8	13.8	12.3	13.1	13.4	17.2	17.6	18.0	18.7	16.0	14.9	15.6	17.2
9	13.8	15.6	13.1	13.1	17.2	17.6	18.0	18.7	18.7	14.5	16.4	15.6
10	12.7	13.1	12.3	14.5	13.4	17.6	18.0	18.7	18.7	14.5	13.8	15.3
11	13.4	12.7	12.7	16.8	13.4	17.6	18.0	18.7	18.7	17.6	13.8	15.3
12	16.0	12.7	12.7	13.4	13.4	18.0	18.0	16.0	18.7	14.5	17.6	17.6
13	13.8	12.7	16.8	13.4	13.4	18.4	18.0	16.8	18.7	14.5	18.0	18.7
14	13.1	13.4	13.1	13.4	14.9	18.4	18.0	18.7	18.7	16.0	19.1	15.3
15	13.1	13.1	13.1	13.4	17.6	18.0	18.0	18.0	18.7	14.5	19.1	15.3
16	14.2	15.6	13.1	13.4	17.6	18.0	18.0	15.6	18.7	14.6	19.1	17.2
17	14.2	13.1	14.2	13.4	17.6	18.0	18.4	15.6	15.6	14.5	19.1	14.9
18	14.2	12.3	14.2	16.8	17.6	18.0	18.4	15.6	15.6	14.5	19.1	16.4
19	16.0	12.3	14.2	13.4	17.6	18.0	18.7	15.6	15.6	14.5	19.1	16.0
20	14.2	12.3	16.8	13.4	17.6	18.0	18.7	18.7	14.9	14.5	19.1	18.7
21	14.2	12.3	13.4	13.4	17.6	18.0	18.7	18.7	17.6	15.3	16.7	16.8
22	14.2	12.3	13.4	13.4	17.6	18.0	18.7	16.0	17.6	14.2	18.7	14.9
23	13.1	16.0	13.4	13.4	14.9	15.3	18.7	17.2	14.5	15.6	18.7	14.6
24	13.1	12.7	13.4	12.7	14.2	14.9	18.7	17.2	15.6	15.3	18.7	14.9
25	13.4	12.7	13.1	16.0	14.2	18.0	18.7	18.4	14.5	16.8	18.7	16.3
26	15.6	12.7	13.1	13.1	14.2	15.3	18.7	16.0	14.5	14.2	16.8	13.4
27	13.1	12.7	16.8	13.1	14.2	18.0	16.0	16.0	15.3	14.2	18.7	17.6
28	13.4	12.7	13.1	13.1	17.6	16.3	16.0	18.7	17.6	14.2	18.7	14.2
29	13.1	12.3	13.1	f14.9	17.6	15.3	16.0	-	14.5	14.2	18.7	14.2
30	12.7	15.6	13.1	16.8	17.6	15.3	16.0	-	14.5	13.8	18.7	14.5
31	13.1	12.7	-	16.8	-	18.0	18.7	-	16.8	-	18.7	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	16.4	12.7	14.0	21.7	433	1,330
August	16.0	12.3	13.2	20.4	409	1,250
September	16.8	12.3	13.7	21.2	410	1,260
October	17.2	12.7	14.2	22.0	441	1,350
November	17.6	13.4	16.2	25.1	486	1,490
December	18.4	14.9	17.3	26.8	536	1,650
Calendar year 1942	18.4	12.3	15.1	23.4	5,620	18,920
January	18.7	16.0	18.0	27.9	557	1,710
February	18.7	15.6	17.0	26.3	476	1,460
March	18.7	14.5	16.6	25.7	615	1,580
April	18.0	13.6	15.1	23.4	452	1,390
May	19.1	13.4	17.1	26.5	630	1,620
June	18.7	13.4	16.1	24.9	482	1,480
Fiscal year 1942-43	19.1	12.3	15.7	24.3	5,730	17,570

f Computed on basis of partly estimated gage-height record.
Note.- No gage-height record Oct. 11-21, 30, 31, Nov. 9 to Dec. 4; discharge computed on basis of pumpage by pump 6 and records for stations on nearby springs.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

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Moanalua Stream near Honolulu

Location.- Concrete weir control, lat. 21°22'50", long. 157°52'20", 5 miles upstream from mouth and 5 miles north of Honolulu post office. Datum of gage is 339.12 feet above mean sea level.

Drainage area.- 2.8 square miles.

Records available.- June 1926 to June 1943.

Average discharge.- 17 years, 2.59 million gallons a day (4.01 second-feet).

Extremes.- Maximum discharge during year, 1,210 million gallons a day (1,870 second-feet) Jan. 13 (gage height, 7.99 feet), from rating curve extended above 71 million gallons a day by test on model of station site; no flow for several periods during year.
1926-43: Maximum discharge, 2,960 million gallons a day (4,580 second-feet) Nov. 18, 1930 (gage height, 11.58 feet), from rating curve extended above 71 million gallons a day by test on model of station site; no flow during dry weather.

Remarks.- Records good except those for period of no gage-height record, which are fair. Continuous records of rainfall are obtained at station.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.0	0	0.7	2.55	1.4	17.0
.2	.07	.8	3.75	1.6	24.5
.3	.22	.9	5.1	1.8	34.5
.4	.51	1.0	6.8	2.0	46
.5	.99	1.1	8.8	2.4	78
.6	1.66	1.2	11.1	2.8	120

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.03	0.01	0.04	1.11	0.51	27.5	1.72	0	0	0	0.20	10.8
2	.02	0	.85	.31	2.4	10.0	9.7	0	0	0	.02	1.65
3	.01	93	.14	.14	1.26	2.3	27	0	1.87	0	0	1.01
4	.01	8.5	.14	.10	.45	.99	57	0	1.35	10.4	0	10.7
5	0	2.6	.09	.22	.18	.42	47	0	1.36	1.86	8.4	2.1
6	.30	1.19	.01	.38	.06	45	7.7	0	.07	2.49	8.4	.89
7	10	.65	0	.37	.03	15.5	3.55	1.94	0	.75	18.7	.51
8	.35	1.06	0	3.7	.01	43	10.1	1.15	0	1.12	10.4	.28
9	.10	.57	0	.95	.01	5.8	2.35	.46	40	.58	3.7	.12
10	.04	.18	0	1.36	.01	2.4	1.93	.16	2.9	.20	1.38	.08
11	.01	.06	0	.65	0	1.26	.99	.05	1.14	.80	.70	.05
12	.01	.03	0	.22	0	.70	2.1	.01	.46	1.45	21.5	.04
13	.01	1.81	0	1.32	0	9.8	81	0	.18	1.25	6.3	.98
14	.01	.28	73	.58	0	6.4	6.1	0	.06	.51	12.6	.16
15	.01	.05	31	.03	7.4	6.2	3.0	0	.03	.15	5.6	.04
16	0	.03	20.5	.01	40	1.80	1.93	0	.01	.03	2.0	.03
17	0	.03	3.7	.01	4.6	.70	1.39	0	0	.04	.99	.01
18	0	.02	1.53	.01	.99	.36	.89	0	5.8	.05	.50	.01
19	0	.01	.75	.01	.48	.20	.61	0	1.33	.01	.41	0
20	0	.01	2.0	.01	.31	.10	.35	0	1.29	.01	3.8	0
21	0	0	.59	0	.20	.05	.19	0	2.6	0	.80	0
22	0	9.0	.18	0	.05	.02	.12	0	1.19	0	.31	0
23	1.0	1.12	.05	0	.01	.01	.07	0	.27	.23	.12	0
24	7.5	.24	.01	0	0	0	.02	2.5	.14	.02	7.0	0
25	.50	1.96	.01	0	.01	0	0	.51	0	0	1.32	0
26	.05	.16	10.7	0	0	0	0	.01	.84	0	1.67	0
27	.02	.04	4.9	0	0	0	0	0	.20	0	10.1	0
28	.02	0	1.36	0	0	8.2	0	0	.01	0	2.25	0
29	.02	0	.39	2.95	0	16.9	0	-	0	0	1.00	0
30	.01	.31	.54	21	13.3	5.5	0	-	0	0	1.11	0
31	0	.33	-	1.61	-	1.66	0	-	0	-	.41	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	10	0	0.646	1.00	20.0	61
August	93	0	3.98	6.16	123	378
September	73	0	5.08	7.86	152	468
October	21	0	1.20	1.86	37.0	114
November	40	0	2.41	3.73	72.3	222
December	45	0	6.86	10.6	213	653
Calendar year 1942	102	0	3.27	5.06	1,190	3,660
January	81	0	8.61	13.3	267	819
February	2.5	0	.242	.374	6.79	21
March	40	0	2.04	3.16	63.1	194
April	10.4	0	.730	1.13	21.9	67
May	21.5	0	4.25	6.58	132	404
June	10.8	0	.981	1.52	29.4	90
Fiscal year 1942-43	93	0	3.12	4.83	1,140	3,490

Note.- No gage-height record July 1-28; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kalihi Stream near Honolulu

Location (revised).- Lat. 21°22'00", long. 157°50'45", at Kioi Pool, three-eighths of a mile upstream from Catholic Orphanage and 4.1 miles north of Honolulu post office. Datum of gage is 464.40 feet above mean sea level.

Drainage area.- 2.7 square miles.

Records available.- September 1913 to June 1943.

Average discharge.- 26 years (1916-20, 1921-43), 5.13 million gallons a day (7.94 second-feet).

Extremes.- Maximum discharge during year, 865 million gallons a day (1,340 second-feet) Jan. 13 (gage height, 8.95 feet), from rating curve extended above 220 million gallons a day by test on model of station site; minimum, 0.97 million gallons a day (1.50 second-feet) Sept. 12.

1913-43: Maximum discharge, 10,900 million gallons a day (16,900 second-feet) Nov. 18, 1930 (gage height, 13.81 feet), from rating curve extended above 220 million gallons a day by test on model of station site; minimum, 0.06 million gallons a day (0.09 second-foot) Oct. 22, 1933.

Remarks.- Records good except those for period of no gage-height record, which are poor. Water for domestic use diverted from stream above station.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.9	1.26	1.7	14.8	3.2	62
1.0	2.2	2.0	22	3.5	74
1.1	3.5	2.3	30.5	4.0	98
1.2	5.1	2.6	40	4.5	127
1.4	8.7	2.9	50		

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.7	10.3	a2.6	10.0	2.35	43	6.7	2.45	1.28	2.0	2.25	12.8
2	2.6	3.7	a2.9	6.0	3.3	11.2	12.7	2.1	1.28	1.91	1.91	3.65
3	2.0	99	a2.4	4.0	3.05	5.3	30.5	2.0	2.7	5.1	1.82	3.5
4	1.82	11.7	2.1	3.35	2.55	4.0	89	1.91	3.85	14.2	2.3	12.6
5	1.73	6.3	2.0	3.55	2.1	3.35	50	7.8	2.5	6.3	12.2	4.5
6	4.7	4.8	1.91	3.1	2.1	29.5	15.8	3.0	1.82	4.9	12.3	3.35
7	28	4.5	2.0	3.1	2.0	15.4	9.3	4.7	1.55	3.25	11.4	3.1
8	7.2	4.5	1.91	2.7	1.82	32	17.4	2.85	6.6	3.65	5.8	2.7
9	6.7	3.5	1.73	4.0	1.73	7.9	7.2	2.6	52	2.85	3.8	2.6
10	4.1	3.1	1.73	2.7	3.3	5.8	7.4	2.1	5.4	2.85	3.1	2.45
11	3.35	3.0	1.55	2.95	2.0	4.8	5.8	1.91	3.35	2.9	2.85	2.35
12	4.5	2.85	1.55	2.45	1.82	4.1	6.3	1.73	2.7	7.1	22.5	2.2
13	3.5	4.9	1.64	2.75	1.73	13.2	69	1.73	2.45	5.7	6.1	4.1
14	3.5	2.85	47	3.0	3.85	7.7	8.5	1.55	2.2	3.5	14.1	2.35
15	2.85	3.25	29.5	2.2	24	7.8	6.5	1.46	2.0	3.1	6.2	2.1
16	2.6	2.7	28	2.1	26.5	5.3	5.6	1.46	1.91	3.1	4.1	2.8
17	2.45	2.45	6.8	2.0	6.1	4.3	5.3	1.37	1.82	3.65	3.5	2.1
18	2.35	3.4	4.8	1.91	4.6	3.65	4.6	1.37	5.3	2.7	3.1	2.0
19	2.0	5.1	4.0	1.82	4.0	3.35	4.1	1.37	2.85	2.7	3.95	3.0
20	1.91	3.0	4.8	1.73	3.65	3.0	3.7	1.37	3.95	2.6	5.3	2.0
21	2.0	2.45	3.5	1.73	3.0	2.85	3.35	2.6	4.4	2.35	3.65	1.82
22	2.1	12.4	3.0	3.2	2.6	2.85	3.25	1.46	3.1	4.4	3.0	1.82
23	4.5	4.3	2.7	1.82	2.35	2.7	3.0	1.28	2.6	3.75	2.7	1.73
24	13.2	9.3	2.6	1.64	2.2	2.65	2.85	6.1	2.1	4.6	5.7	1.64
25	3.35	5.4	2.6	1.55	2.2	3.4	2.85	2.3	3.7	3.0	3.5	1.91
26	2.7	3.25	2.6	1.55	2.1	2.85	2.6	1.64	4.8	2.45	3.55	2.65
27	2.35	a3.3	15.5	1.64	2.0	2.45	2.6	1.82	2.6	2.2	6.7	1.64
28	2.2	a3.4	6.6	1.55	2.0	16.1	2.45	1.46	2.2	2.1	3.5	1.73
29	2.35	a2.7	4.0	17.4	1.91	12.5	2.2	-	2.0	2.0	3.0	1.64
30	2.1	a2.8	4.8	10.2	20.5	10.2	2.2	-	1.91	1.91	2.6	1.55
31	2.0	a3.0	-	3.1	-	5.6	2.2	-	1.91	-	2.75	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	28	1.73	4.17	6.45	129	397
August	99	2.45	7.85	11.8	237	728
September	47	1.55	6.82	10.2	199	610
October	17.4	1.55	3.57	5.52	111	340
November	26.5	1.73	4.77	7.38	143	439
December	43	2.45	9.00	13.9	279	856
Calendar year 1942	99	.72	6.04	9.35	2,200	6,760
January	69	2.2	12.1	18.7	375	1,150
February	7.8	1.28	2.34	3.62	65.5	201
March	52	1.28	4.48	6.93	139	426
April	14.2	1.91	3.76	5.82	113	346
May	22.5	1.82	5.46	8.45	169	519
June	12.8	1.55	3.15	4.87	94.4	290
Fiscal year 1942-43	99	1.28	5.63	8.71	2,050	8,300

a No gage-height record; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Nuuanu Stream below reservoir 2 wasteway, near Honolulu

Location.- Sharp-crested weirs, lat. 21°20'55", long. 157°49'40", on Pali road in upper Nuuanu Valley, a quarter of a mile downstream from reservoir 2 wasteway and 3.5 miles northeast of Honolulu post office. Datum of gage is 631.71 feet above mean sea level.

Drainage area.- 3.4 square miles.

Records available.- October 1913 to June 1943.

Average discharge.- 24 years (1917-20, 1922-43), 5.65 million gallons a day (8.74 second-feet).

Extremes.- Maximum discharge during year, 574 million gallons a day (888 second-feet) Jan. 4 (gage height, 5.33 feet), from rating curve extended above 300 million gallons a day by test on model of station site; minimum, 1.00 million gallons a day (1.55 second-feet) Nov. 7.

1913-43: Maximum discharge, 4,520 million gallons a day (6,990 second-feet) Jan. 18, 1921 (gage height, 8.74 feet, from floodmarks), from rating curve extended above 300 million gallons a day by test on model of station site; minimum, 0.06 million gallons a day (0.09 second-foot) Sept. 10, 11, 1925.

Revisions.- The figures of maximum discharge for water years 1921 to 1935 have been revised, as shown in the following table. They supersede those published in the water-supply papers indicated.

Water-Supply Paper	Water year	Date	Gage height (feet)	Discharge (m.g.d.)	Discharge (second-feet)
535	1920-21	Jan. 16, 1921	8.74	4,520	6,990
555	1921-22	Oct. 3, 1921	5.22	526	814
575	1922-23	Jan. 19, 1923	6.95	1,710	2,650
595	1923-24	Dec. 30, 1923	5.84	835	1,290
615	1924-25	Feb. 11, 1925	2.57	73	113
635	1925-26	June 14, 1926	2.27	53	82
655	1926-27	Mar. 5, 1927	6.47	1,290	1,980
675	1927-28	Nov. 19, 1927	6.07	980	1,520
695	1928-29	Nov. 4, 1928	4.02	197	305
710	1929-30	Jan. 2, 1930	5.93	889	1,380
725	1930-31	Nov. 18, 1930	8.03	3,150	4,870
740	1931-32	Feb. 13, 1932	6.77	1,530	2,370
755	1932-33	Jan. 31, 1933	6.11	1,000	1,550
770	1933-34	Apr. 26, 1934	4.50	277	429
795	1934-35	Feb. 27, 1935	6.93	1,690	2,610

Remarks.- Records excellent prior to Jan. 13 and good thereafter. Reservoirs 2, 3, and 4 (capacities, 21, 34, and 1,630 acre-feet, respectively) regulate flow. Board of Water Supply diverts ground water from tunnels in drainage area.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.05	4.3	2.4	4.9	2.45	42	6.5	3.05	1.70	1.92	2.0	33.5
2	2.1	2.9	2.7	2.95	3.1	25	7.6	2.7	1.65	1.92	1.92	16.2
3	2.3	48	2.25	2.75	2.6	4.2	43	2.6	1.75	3.0	1.88	3.7
4	2.0	46	2.25	2.75	2.45	3.5	106	2.5	2.7	11.8	2.15	8.1
5	1.92	19.1	2.2	2.8	2.4	3.15	68	2.96	1.97	3.2	8.3	3.05
6	3.3	3.25	2.1	2.95	2.25	22.5	41	2.5	1.65	3.1	5.5	2.7
7	12.3	3.1	2.35	2.6	1.70	16.1	25.5	2.65	1.61	2.5	5.2	2.7
8	3.9	3.25	2.1	2.95	1.92	37	38	2.45	4.0	3.9	3.2	2.6
9	3.8	2.8	2.05	2.65	1.92	19.8	16.9	2.4	34.5	2.45	2.5	2.45
10	2.75	2.65	2.05	2.6	2.05	4.4	4.4	2.3	4.4	2.35	2.35	2.4
11	2.75	2.65	1.92	2.7	1.92	3.95	4.0	2.15	3.05	2.3	2.3	2.35
12	4.0	2.6	1.92	2.45	1.83	3.55	4.0	2.1	a2.6	5.7	10.9	2.3
13	2.8	3.7	2.0	2.55	1.78	6.7	54	2.05	a2.3	3.55	28	4.1
14	2.75	2.55	16.6	2.3	3.65	6.0	35.5	2.0	a2.2	2.65	19.7	2.4
15	2.45	2.95	61	2.05	4.0	7.0	16.3	1.92	a2.1	2.45	4.1	2.2
16	2.35	2.55	29.5	2.0	23.5	4.1	6.6	1.74	a2.0	2.7	3.05	2.35
17	2.35	2.5	20.5	2.0	4.6	3.6	5.9	1.88	a2.0	2.6	2.85	2.2
18	2.25	4.5	3.76	2.0	17.3	3.5	5.9	1.88	a2.5	2.35	2.6	2.1
19	2.25	3.1	3.4	1.96	23	3.3	5.8	1.83	2.0	2.35	4.4	2.6
20	2.15	2.3	3.75	1.92	9.6	3.2	5.1	1.88	2.3	2.0	6.8	2.05
21	2.15	2.05	3.0	2.0	2.45	3.2	4.4	2.3	2.85	2.2	4.5	1.92
22	2.16	4.0	2.85	3.3	2.25	3.1	4.4	1.88	2.4	11.9	3.05	1.92
23	3.8	2.45	2.75	2.15	2.15	2.9	4.1	1.78	2.1	3.05	2.85	1.88
24	8.0	3.15	2.65	2.1	2.1	3.1	4.1	3.75	2.0	2.95	6.0	1.83
25	2.15	5.0	2.55	1.78	2.0	4.4	3.9	2.0	2.15	2.3	3.5	2.0
26	2.1	2.65	4.8	2.2	2.0	7.4	3.7	1.88	3.2	2.2	3.55	2.7
27	2.05	2.7	4.7	1.83	1.96	2.95	3.55	1.96	1.87	2.1	6.0	1.74
28	2.05	2.75	3.15	1.78	2.0	24.5	3.55	1.74	1.88	2.05	3.4	1.92
29	2.2	2.5	2.7	13.2	1.96	20.5	3.2	-	1.88	2.0	3.05	2.2
30	2.25	2.55	3.4	7.1	14.3	6.5	3.05	-	1.83	1.96	2.7	1.88
31	2.4	2.8	-	2.75	-	5.0	3.05	-	1.92	-	2.9	-

Month	Million gallons a day: Maximum	Minimum	Mean	Second-feet (mean)	Total runoff: Million gallons	Acre-feet
July	12.3	1.92	3.03	4.69	93.8	288
August	48	2.05	6.37	9.86	197	606
September	61	1.92	6.64	10.3	199	612
October	13.2	1.78	2.97	4.60	92.0	282
November	23.5	1.70	4.91	7.60	147	452
December	42	2.9	9.87	15.3	306	939
Calendar year 1942	88	.90	6.33	9.79	2,310	7,090
January	106	3.05	17.5	27.1	541	1,660
February	3.75	1.74	2.24	3.47	62.8	193
March	34.5	1.61	3.32	5.14	103	316
April	11.9	1.92	3.25	5.03	97.5	299
May	28	1.88	5.20	8.05	161	495
June	33.5	1.74	4.07	6.30	122	375
Fiscal year 1942-43	106	1.61	5.82	9.00	2,120	6,520

a No gage-height record; discharge computed on basis of records for stations on nearby streams.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

West Branch Manoa Stream near Honolulu

Location.- Combined Parshall flume and concrete weir control, lat. 21°19'50", long. 157°48'15", 100 feet upstream from highway and 4 miles northeast of Honolulu post office. Datum of gage is 290.84 feet above mean sea level (Board of Water Supply bench mark).

Drainage area.- 1.1 square miles.

Records available.- August 1925 to June 1943. May 1913 to January 1921 at site 200 feet upstream.

Average discharge.- 24 years (1913-20, 1926-43), 2.88 million gallons a day (4.46 second-feet).

Extremes.- Maximum discharge during year, 740 million gallons a day (1,140 second-feet) Jan. 4 (gage height, 5.02 feet), from rating curve extended above 33 million gallons a day by test on model of station site; minimum, 0.36 million gallons a day (0.56 second-foot) Feb. 24.

1913-21, 1925-43: Maximum gage height, 10.4 feet, Jan. 16, 1921, from floodmarks, site and datum then in use, (discharge, 2,100 million gallons a day or 3,250 second-feet, estimated from rating curve extended above 40 million gallons a day); minimum discharge, about 0.05 million gallons a day (0.08 second-foot) Mar. 16, 22, 1926.

Remarks.- Records good. Small quantity of water is diverted occasionally for irrigation.

Rating tables, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

July 1 to Sept. 24				Sept. 25 to June 30					
0.3	1.11	0.9	9.7	0.1	0.25	0.6	3.5	1.1	15.0
.4	1.78	1.0	12.5	.2	.62	.7	4.8	1.2	18.7
.5	2.65	1.1	15.7	.3	1.11	.8	6.7	1.4	28
.6	3.8	1.2	19.5	.4	1.78	.9	9.0	1.6	40
.7	5.4	1.4	29	.5	2.6	1.0	11.8	2.0	71
.8	7.4								

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.4	7.7	1.87	4.3	1.11	19.6	6.4	0.86	0.47	0.67	0.86	13.5
2	1.81	3.3	2.35	2.1	1.59	5.4	5.6	.72	.44	.86	.77	2.8
3	2.28	27	1.44	1.78	1.01	2.7	16.0	.62	.84	3.65	.72	2.9
4	2.0	7.3	1.51	1.87	.86	1.94	59	.62	1.00	14.3	.68	11.6
5	1.44	3.35	1.58	2.55	.86	1.58	11.0	1.34	.80	4.1	4.4	2.95
6	6.3	2.55	1.11	3.9	1.01	7.2	4.1	1.11	.47	2.85	2.9	2.2
7	20.5	2.4	1.53	2.25	.82	3.1	2.6	1.18	.44	2.4	3.05	1.78
8	7.6	3.0	1.18	2.2	.72	13.8	7.9	1.02	1.82	3.25	1.38	1.58
9	5.0	1.95	1.06	1.71	.72	3.3	2.5	.96	27.5	2.2	1.06	1.44
10	3.85	1.71	1.11	2.0	1.17	2.2	2.25	.77	2.55	2.1	.91	1.24
11	3.85	1.65	.91	1.99	.77	1.78	1.94	.62	1.51	1.64	.86	1.11
12	6.1	1.58	.98	1.51	.72	1.58	1.86	.58	1.11	4.3	8.9	.96
13	3.8	4.4	1.92	2.0	.67	3.9	9.9	.55	.96	2.5	2.1	2.1
14	4.3	1.78	9.2	1.77	7.5	3.1	2.2	.51	.91	1.71	6.2	.96
15	2.75	2.1	16.3	1.24	3.85	7.4	1.71	.44	.86	1.58	1.94	.86
16	2.3	1.44	9.5	1.11	18.7	2.45	1.58	.44	.77	1.78	1.44	1.13
17	3.0	1.31	3.0	1.06	4.1	1.71	1.44	.44	.72	1.51	1.53	.86
18	2.15	1.65	1.95	.96	3.35	1.44	1.31	.44	1.36	1.24	1.11	.77
19	1.71	2.75	2.15	.96	2.4	1.24	1.24	.40	.94	1.31	2.4	1.55
20	4.65	1.95	2.75	.91	2.1	1.18	1.18	.40	2.25	1.24	4.1	.96
21	1.58	1.51	1.51	.91	1.51	1.11	1.06	.84	2.45	1.24	4.5	.91
22	1.71	3.5	1.31	2.6	1.24	f1.18	1.01	.47	1.78	3.35	1.94	.77
23	8.8	1.51	1.11	.96	1.11	1.06	.96	.40	1.18	2.6	1.44	.62
24	8.9	1.36	1.11	.82	1.01	1.26	.91	2.35	.91	1.86	3.15	.58
25	2.5	2.1	.96	.77	1.01	3.15	.91	.69	1.17	1.51	1.44	.62
26	1.78	1.31	6.1	.77	1.01	f1.69	.86	.51	1.61	1.24	2.0	1.19
27	1.51	2.15	4.7	.77	.96	f1.18	.82	.61	.91	1.11	8.0	.58
28	1.38	2.3	2.6	.77	.91	10.2	.77	.55	.77	1.01	2.5	.58
29	1.70	1.44	1.86	9.9	1.06	12.8	.72	-	.72	.91	1.86	.83
30	1.31	1.55	2.55	5.1	8.8	5.8	.67	-	.62	.82	1.51	.58
31	1.44	2.65	-	1.65	-	3.25	.72	-	.62	-	1.88	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	20.5	1.31	3.79	6.86	117	360
August	27	1.31	3.30	5.11	102	314
September	16.3	.91	2.91	4.50	87.2	268
October	9.9	.77	2.04	3.16	63.2	194
November	18.7	.67	2.42	3.74	72.6	223
December	19.6	1.06	4.17	6.45	129	397
Calendar year 1942	48	.32	3.15	4.87	1,150	3,530
January	59	.67	4.87	7.54	151	464
February	2.35	.40	.730	1.13	20.4	63
March	27.5	.44	1.96	3.03	60.7	186
April	14.3	.67	2.36	3.65	70.8	217
May	8.9	.72	2.51	3.88	77.7	239
June	13.5	.58	2.02	3.13	60.5	186
Fiscal year 1942-43	59	.40	2.78	4.30	1,010	3,110

f Computed on basis of partly estimated gage-height record.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

East Branch Manoa Stream near Honolulu

Location.- Combined Parshall flume and concrete weir control, lat. 21°19'50", long. 157°48'10", just downstream from highway bridge, 400 feet upstream from confluence with West Branch, and 4 miles northeast of Honolulu post office. Datum of gage is 294.50 feet above mean sea level (Board of Water Supply bench mark).
Drainage area.- 1.0 square mile.
Records available.- May 1913 to January 1921, August 1925 to June 1943.
Average discharge.- 24 years (1913-20, 1926-43), 3.27 million gallons a day (5.06 second-feet).
Extremes.- Maximum discharge during year, 325 million gallons a day (503 second-feet) Jan. 4 (gage height, 3.76 feet), from rating curve extended above 5.7 million gallons a day by test on model of station site; minimum, 2.1 million gallons a day (3.2 second-feet) Oct. 28, 29, June 27.
1913-21, 1925-43: Maximum gage height, 10.4 feet, Jan. 16, 1921, from floodmarks, site and datum then in use (discharge, 2,000 million gallons a day or 3,090 second-feet, estimated from rating curve extended above 37 million gallons a day); minimum discharge, 0.4 million gallons a day (0.6 second-foot) June 7, 8, 1926.
Remarks.- Records fair. East Manoa ditch diverts water from stream about 1,500 feet above station. Board of Water Supply, at times, diverts a small amount of ground water from tunnels in drainage area.

Rating tables, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

July 1 to Sept. 24				Sept. 25 to June 30			
0.4	1.85	0.8	7.2	0.4	1.85	0.9	7.3
.5	2.75	1.1	13.7	.5	2.65	1.1	11.4
.6	3.9	1.4	22.5	.6	3.55	1.3	16.8
.7	5.4			.7	4.5	1.6	27.5
				.8	5.7	2.0	49

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	5.1	4.7	2.75	5.4	2.25	15.8	5.1	3.1	2.55	2.55	2.75	9.9
2	4.2	3.65	3.2	3.3	2.95	4.8	4.8	2.85	2.55	3.2	2.75	3.45
3	6.0	18.3	2.65	3.2	2.4	3.65	13	2.75	3.3	6.7	2.65	3.85
4	4.4	5.8	3.25	3.3	2.25	3.2	45	2.75	3.55	14.5	2.85	10.9
5	3.65	3.9	2.7	3.55	2.4	3.0	9.0	4.0	2.9	5.1	6.9	5.75
6	10.2	3.65	2.5	4.6	2.55	6.5	4.5	3.4	2.65	4.5	3.6	3.2
7	19.2	3.4	2.55	3.35	2.4	5.2	3.5	3.4	2.55	3.95	6.2	3.0
8	8.4	4.2	2.55	3.45	2.35	10.3	7.0	3.2	4.5	4.3	3.0	2.9
9	7.1	3.55	2.5	5.1	2.25	3.65	4.6	3.2	29.5	3.45	3.35	2.9
10	5.4	3.2	2.4	3.1	3.15	3.1	4.2	2.85	4.2	3.65	2.65	3.0
11	5.1	3.3	2.3	3.0	2.4	2.9	3.8	2.65	3.35	3.4	2.4	2.85
12	5.6	3.3	2.5	2.75	2.4	2.75	3.4	2.55	3.0	8.7	12.9	2.75
13	4.6	5.0	3.1	3.55	2.4	5.3	9.0	2.55	2.85	4.8	3.45	3.25
14	5.8	3.2	5.9	2.9	7.1	4.7	4.4	2.55	2.75	3.75	9.6	2.55
15	4.0	3.5	6.6	2.55	4.4	6.1	3.9	2.5	2.65	3.55	3.7	2.55
16	3.65	2.85	4.8	2.5	13.6	3.45	3.6	2.5	2.4	3.95	3.2	2.75
17	4.2	2.75	2.75	2.4	3.65	3.0	3.4	2.5	2.35	3.75	3.9	2.55
18	3.35	3.45	2.55	2.4	4.0	2.9	3.4	2.5	3.8	3.3	3.2	2.5
19	3.2	4.4	2.65	2.35	3.75	2.85	3.1	2.5	2.85	3.6	4.4	2.9
20	3.1	3.2	3.85	2.35	3.3	2.65	3.1	2.5	8.7	3.2	5.4	2.5
21	3.1	3.0	2.65	2.7	2.55	2.5	3.1	3.6	5.7	3.2	4.7	2.35
22	3.45	4.2	2.5	5.3	2.35	2.55	3.0	2.55	4.6	5.8	3.55	2.35
23	8.1	3.1	2.4	2.5	2.55	2.5	2.9	2.5	3.35	4.4	3.35	2.35
24	10.2	2.85	2.65	2.35	2.55	2.5	2.9	5.2	3.1	4.3	6.5	2.35
25	3.3	3.05	2.4	2.25	2.5	3.1	3.1	2.85	3.3	3.35	3.65	2.5
26	3.0	2.65	7.4	2.25	2.4	2.65	2.85	2.55	3.95	3.1	4.8	2.8
27	2.85	2.75	7.4	2.25	2.35	2.4	2.85	2.9	2.9	3.0	10.3	2.35
28	2.85	2.85	3.95	2.15	2.35	5.6	2.85	2.55	2.85	2.85	3.95	2.25
29	3.2	2.5	3.2	9.4	2.65	6.4	2.75	-	2.75	2.86	3.45	2.25
30	2.85	2.55	4.0	5.5	10.9	4.0	2.85	-	2.65	2.75	3.0	2.15
31	3.0	3.15	-	2.5	-	3.35	2.9	-	2.65	-	3.2	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	19.2	2.85	5.24	8.11	162	498
August	18.3	2.5	3.93	6.08	122	374
September	7.4	2.3	3.42	5.29	103	315
October	9.4	2.15	3.30	5.11	102	314
November	13.6	2.25	3.50	5.42	105	323
December	15.8	2.4	4.30	6.65	133	409
Calendar year 1942	65	1.50	4.57	7.07	1,670	5,120
January	45	2.75	5.61	8.68	174	534
February	5.2	2.5	2.91	4.50	81.4	250
March	29.5	2.35	4.21	6.51	131	401
April	14.5	2.55	4.32	6.68	130	397
May	12.9	2.4	4.49	6.95	139	427
June	10.9	2.15	3.26	5.04	97.7	300
Fiscal year 1942-43	45	2.15	4.05	6.27	1,480	4,540

Note.- No gage-height record Jan. 2-18; discharge computed on basis of records for Waiomao and West Manoa Streams.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Pukele Stream near Honolulu

Location.- Concrete weir control, lat. 21°19'15", long. 157°47'10", 200 feet upstream from bridge on Palolo Belt Road, five-eighths of a mile upstream from confluence with Waiomao Stream, and 4¾ miles east of Honolulu post office. Datum of gage is 344.78 feet above mean sea level (Board of Water Supply bench mark).

Drainage area.- 1.2 square miles.

Records available.- June 1926 to June 1943. April 1912 to September 1913, above present site and just below Mahoe Springs.

Average discharge.- 17 years (1926-43), 1.46 million gallons a day (2.26 second-feet).

Extremes.- Maximum discharge during year, 594 million gallons a day (919 second-feet) Jan. 4 (gage height, 5.82 feet), from rating curve extended above 15 million gallons a day by test on model of station site; minimum, 0.34 million gallons a day (0.53 second-foot) Sept. 14.

1912-13, 1926-43: Maximum discharge, 1,680 million gallons a day (2,600 second-feet) Apr. 11, 1930 (gage height, 7.75 feet, from floodmarks), from rating curve extended above 14 million gallons a day by test on model of station site; minimum, 0.09 million gallons a day (0.14 second-foot) Dec. 7-13, 20, 21, 1933.

Remarks.- Records good except those for periods of doubtful gage-height record, which are poor. A 2-inch pipe diverts water from stream above station.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

1.1	0.28	1.6	3.9	2.2	19.0
1.2	.60	1.7	5.5	2.4	27
1.3	1.10	1.8	7.4	2.6	36
1.4	1.76	1.9	9.7	3.0	60
1.5	2.7	2.0	12.5	3.4	90

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.60	0.60	0.41	0.75	0.50	14.0	4.1	1.1	0.42	0.41	0.33	3.35
2	.66	.50	.41	.47	.54	3.2	2.85	.86	.38	.44	.32	1.1
3	1.12	6.2	.38	.47	.57	1.23	10.0	.72	.58	1.2	.30	2.7
4	.70	1.48	1.95	.50	.57	.85	82	.72	.70	5.1	.28	6.7
5	.70	.54	.41	.50	.57	.85	30	1.3	.60	1.04	1.36	1.2
6	1.81	.50	.38	.54	.57	3.1	17.3	1.1	.40	1.07	.72	.90
7	8.0	.50	.41	.50	.54	2.2	4.7	1.1	.38	.60	1.24	.76
8	1.91	.54	.41	.53	.50	19.4	20.5	.00	.36	.54	.57	.66
9	1.77	.54	.38	.63	.47	2.45	4.7	.88	15.6	.45	2.55	.60
10	.90	.54	.38	.50	.70	1.36	4.5	.86	1.37	.44	.54	.54
11	.80	.50	.38	.50	.47	1.10	3.9	.56	.90	.46	.57	.50
12	.80	.50	.38	.47	.44	1.05	f3.4	.50	.80	3.55	10.2	.47
13	.80	.57	.34	.44	.44	2.3	16.8	.44	.76	1.30	1.68	.54
14	.90	.50	.83	.44	1.62	1.92	3.4	.42	.74	.20	3.65	.49
15	.80	.47	1.26	.41	.50	2.1	2.4	.40	.72	.80	1.10	.46
16	.80	.47	.95	.41	16.4	1.10	2.15	.40	.70	.70	.70	.50
17	.75	.44	.38	.41	2.65	.95	1.95	.40	.70	.64	.73	.46
18	.70	.50	.38	.41	1.34	.90	1.95	.40	.75	.60	.66	.44
19	.60	1.26	.38	.38	1.14	.85	1.85	.37	.75	.56	.70	.48
20	.60	.54	.41	.38	.95	.85	1.7	.37	1.12	.58	1.2	.46
21	.57	.44	.41	.38	.80	.80	1.6	.68	1.33	.54	.85	.44
22	.54	.54	.41	4.4	.75	.75	1.5	.41	1.28	1.7	.76	.44
23	4.5	.47	.41	.44	.75	.70	1.4	.37	.70	1.5	.72	f.44
24	3.2	.47	.41	.38	.75	.65	1.3	1.3	.65	1.1	3.3	.44
25	.60	.47	.41	.34	.70	1.57	1.2	.50	.80	.61	.85	.44
26	.54	.47	1.24	.38	.65	.78	1.1	.47	1.2	.50	.80	.44
27	.54	.47	1.34	.38	.60	.60	1.0	.50	.59	.43	5.7	.44
28	.54	.44	.54	.38	.60	5.0	1.0	.40	.52	.39	1.0	.41
29	.54	.41	.41	7.6	.57	4.4	.96	-	.46	.36	.85	.41
30	.54	.41	.52	4.6	6.1	1.67	.94	-	.41	.33	.76	.41
31	.50	.41	-	.65	-	1.05	1.0	-	.41	-	.70	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	8.0	0.50	1.24	1.92	38.3	118
August	6.2	.41	.732	1.13	22.7	70
September	1.95	.34	.577	.893	17.3	53
October	7.6	.34	.954	1.48	29.6	91
November	16.4	.44	1.46	2.26	43.8	134
December	19.4	.60	2.57	3.98	79.7	245
Calendar year 1942	60	.16	1.74	2.69	634	1,960
January	82	.94	7.52	11.6	233	716
February	1.3	.37	.660	1.02	18.5	57
March	15.6	.36	1.20	1.86	37.1	114
April	5.1	.33	.961	1.49	28.8	89
May	10.2	.28	1.47	2.27	45.7	140
June	6.7	.41	.921	1.42	27.6	85
Fiscal year 1942-43	82	.28	1.70	2.63	622	1,910

f Computed on basis of partly estimated gage-height record.

Note.- Doubtful gage-height record Jan. 20 to Mar. 8, Mar. 11-16, Mar. 23 to Apr. 3, Apr. 7-11, Apr. 14 to May 4, May 16-23, 25, 26, 28-31, June 2, 5-22; discharge computed on basis of records for West Branch Manoa Stream.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Waiomao Stream above Pukele Stream, near Honolulu

Location.- Concrete weir control, lat. 21°19'10", long. 157°46'45", 300 feet west of road, 1 mile upstream from confluence with Pukele Stream, and 5 miles east of Honolulu post office. Datum of gage is 373.49 feet above mean sea level (Board of Water Supply bench mark).

Drainage area.- 1.0 square mile.

Records available.- June 1926 to June 1943. April 1911 to December 1912 at highway bridge below preeent site.

Average discharge.- 17 years (1926-43), 1.32 million gallons a day (2.04 second-feet).

Extremes.- Maximum discharge during year, 406 million gallons a day (628 second-feet) Jan. 4 (gage height, 4.97 feet), from rating curve extended above 45 million gallons a day by test on model of station site; minimum, 0.06 million gallons a day (0.09 second-foot) Feb. 19, 20, June 28-30.

1911-12, 1926-43: Maximum discharge, 602 million gallons a day (931 second-feet) Oct. 15, 1938 (gage height, 5.43 feet), from rating curve extended above 45 million gallons a day by test on model of station site; no flow in extremely dry weather.

Remarks.- Records excellent except those for period of doubtful gage-height record, which are fair. Board of Water Supply diverts ground water from tunnels in drainage area.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

1.0	0.01	1.6	2.7	2.2	15.5
1.1	.10	1.7	3.85	2.4	24
1.2	.30	1.8	5.3	2.6	33.5
1.3	.63	1.9	7.2	2.8	44
1.4	1.15	2.0	9.4	3.0	55
1.5	1.83	2.1	12.0	3.3	75

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.68	0.75	0.22	1.21	0.56	14.6	3.4	0.18	0.16	0.14	0.18	2.35
2	.56	.33	.32	.63	.91	3.85	2.6	.20	.16	.23	.16	.74
3	1.37	5.1	.20	.40	.60	1.37	10.3	.14	.30	.61	.14	1.79
4	.56	1.95	2.5	.40	.33	.89	70	.12	.35	3.65	.18	4.8
5	.33	.68	.43	.63	.26	.63	31	.60	.30	.99	.96	1.09
6	2.2	.46	.24	.84	.26	1.85	15.0	.45	.25	1.08	.86	.63
7	8.2	.40	.22	.50	.26	2.0	3.15	.30	.17	.46	1.71	.53
8	2.0	.64	.20	.57	.18	16.8	8.2	.25	.16	.43	.66	.43
9	1.95	.33	.16	.73	.16	3.15	3.6	.24	11	.33	1.89	.30
10	.89	.26	.14	.53	1.32	1.35	2.95	.22	1.3	1.05	.77	.28
11	.60	.24	.12	.37	.43	.84	2.55	.20	.80	1.10	.48	.22
12	.60	.24	.10	.26	.20	.63	2.2	.18	.60	4.3	8.3	.20
13	.50	.71	.12	.42	.16	1.91	13.0	.16	.45	1.66	2.1	.26
14	.87	.30	1.37	.40	1.26	3.0	3.6	.14	.37	1.28	2.9	.22
15	.50	.24	1.80	.24	.53	1.90	2.0	.12	.28	.85	1.10	.18
16	.33	.20	2.4	.20	10.1	1.22	1.42	.16	.24	.68	.68	.27
17	.28	.16	.56	.18	2.45	.63	.99	.14	.18	.53	.66	.24
18	.33	.32	.37	.14	1.48	.50	.79	.09	.26	.37	.46	.18
19	.22	1.01	.26	.10	1.53	.43	.56	.06	.37	.33	.55	.26
20	.20	.43	1.60	.09	1.24	.37	.45	.06	1.16	.38	1.06	.20
21	.16	.24	.43	.73	.63	.30	.40	.16	2.3	.30	.63	.14
22	.16	.71	.24	7.2	.40	.28	.33	.20	1.84	1.01	.43	.12
23	2.65	.33	.18	1.06	.28	.30	.28	.10	.74	1.31	.30	.09
24	6.4	.24	.20	.50	.24	.28	.22	.72	.40	1.86	2.25	.07
25	.89	.52	.16	.28	.20	1.13	.28	.33	.33	.63	.73	.08
26	.50	.22	1.29	.24	.18	1.01	.30	.20	.76	.37	.46	.10
27	.33	.30	2.4	.26	.16	.40	.22	.18	.40	.28	5.2	.08
28	.28	.42	1.07	.26	.19	4.8	.20	.17	.28	.24	1.03	.06
29	.30	.20	.66	8.9	.70	4.2	.18	-	.22	.20	.73	.06
30	.24	.16	1.08	6.4	10.8	1.64	.16	-	.18	.18	.46	.06
31	.22	.30	-	1.05	-	1.22	.14	-	.16	-	.33	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	8.2	0.16	1.14	1.76	35.3	108
August	5.1	.16	.593	.918	18.4	56
September	2.5	.10	.701	1.08	21.0	65
October	8.9	.09	1.15	1.78	35.7	110
November	10.8	.16	1.27	1.96	38.0	117
December	16.8	.23	2.37	3.67	73.5	226
Calendar year 1942	48	.01	1.66	2.57	605	1,860
January	70	.14	5.82	9.00	180	554
February	.72	.06	.217	.336	6.07	19
March	11	.16	.854	1.32	26.5	81
April	4.3	.14	.894	1.38	26.8	82
May	8.3	.14	1.24	1.92	38.4	118
June	4.8	.06	.523	.828	15.0	49
Fiscal year 1942-43	70	.06	1.41	2.18	516	1,580

Note.- Doubtful gage-height record Feb. 5-12, Feb. 25 to Mar. 13; discharge computed on basis of records for East Branch Manoa Stream.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Haiku Stream near Heeia

Location.- Lat. 21°24'40", long. 157°49'40", on left bank of stream, 1.7 miles west of Kaneohe post office and 1.8 miles southwest of Heeia. Datum of gage is 271.9 feet above mean sea level (levels by City and County of Honolulu).

Drainage area.- 1.0 square mile.

Records available.- January 1914 to October 1919, July 1939 to June 1943.

Extremes.- Maximum discharge during year, 952 million gallons a day (1,470 second-feet) Jan. 13 (gage height, 4.99 feet), from rating curve extended above 13 million gallons a day by test on model of station site; minimum, 0.97 million gallons a day (1.50 second-feet) May 15.

1914-19, 1939-43: Maximum discharge, that of Jan. 13, 1943; minimum, that of May 15, 1943.

Remarks.- Records good except those for periods of no gage-height record, which are fair. Suburban Water System diverts ground water from tunnel in drainage area.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

1.1	0.92	1.6	5.9
1.2	1.45	1.7	9.2
1.3	2.1	1.8	15.3
1.4	3.05	2.0	30.5
1.5	4.2	2.2	46

Discharge, in million gallons, fiscal year July 1942 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.4	1.45	1.45	1.78	1.40	2.5	1.97	1.78	1.52	2.95	2.85	4.2
2	2.5	1.40	1.69	1.64	1.45	1.7	2.7	1.78	1.52	2.95	2.85	1.29
3	2.4	27.5	1.59	1.58	1.40	1.6	11.5	1.78	2.15	3.05	2.85	1.24
4	2.2	1.97	2.1	1.52	1.34	1.5	16.3	1.78	3.65	3.45	2.85	1.57
5	2.1	1.64	1.45	1.52	1.34	1.5	8.8	1.78	2.3	3.15	3.1	1.29
6	2.3	1.45	1.40	1.52	1.40	2.3	4.5	1.78	1.71	3.05	2.85	1.24
7	7.1	1.45	1.34	1.58	1.34	1.8	2.85	1.71	1.64	3.05	17.3	1.24
8	2.85	1.45	1.34	2.25	1.29	5.0	8.5	1.71	1.71	3.05	13.3	1.18
9	2.15	1.45	1.34	1.64	1.29	2.0	3.0	1.71	11.9	3.05	1.83	1.18
10	1.58	1.40	1.29	1.64	1.3	1.9	2.3	1.71	2.1	3.65	1.52	1.24
11	1.52	1.40	1.29	1.52	1.3	1.9	2.1	1.71	1.78	3.5	1.45	1.24
12	1.52	1.40	1.3	1.52	1.3	1.9	2.05	1.71	1.64	3.75	10.8	1.18
13	1.52	1.87	1.5	2.25	1.3	23	34.5	1.64	1.58	3.4	1.90	1.29
14	1.45	1.45	21	1.71	1.3	3.2	2.85	1.78	1.52	3.15	11.4	1.24
15	1.45	1.58	5.2	1.58	2.0	3.0	2.4	1.71	1.52	3.15	2.2	1.24
16	1.40	1.45	3.8	1.52	1.3	2.2	2.2	1.64	1.45	3.15	1.78	1.24
17	1.62	1.34	1.84	1.45	1.3	2.1	2.1	1.64	1.45	3.05	1.64	1.29
18	1.50	1.34	1.64	1.45	1.3	2.05	1.97	1.64	14.2	3.05	1.58	1.24
19	1.40	1.34	1.58	1.45	1.3	1.97	1.90	1.64	3.85	3.05	1.57	1.29
20	1.45	1.34	2.15	1.45	1.3	1.97	1.90	1.71	3.95	2.95	1.64	1.29
21	1.40	1.29	1.64	1.52	1.3	1.97	1.84	1.93	3.75	3.8	1.52	1.29
22	1.40	6.8	1.58	1.58	1.3	1.97	1.84	1.64	3.5	2.85	1.52	1.29
23	6.1	1.64	1.45	1.52	1.3	1.97	1.84	1.58	3.3	3.05	1.45	1.29
24	7.1	1.40	1.45	1.45	1.3	1.97	1.84	6.3	3.75	2.85	1.80	1.29
25	2.2	1.40	1.81	1.45	1.3	1.97	1.96	1.84	3.6	2.85	1.52	1.34
26	1.78	1.34	6.5	1.34	1.3	1.97	1.90	1.64	3.4	2.85	1.64	1.40
27	1.58	1.34	2.2	1.34	1.3	1.97	1.90	1.71	3.35	2.85	3.15	1.34
28	1.52	1.34	1.71	1.34	1.3	3.6	1.84	1.58	3.3	2.85	1.58	1.40
29	1.52	1.34	1.64	5.6	1.3	3.7	1.84	-	3.05	2.85	1.45	1.47
30	1.52	1.34	1.71	7.1	1.8	2.4	1.84	-	2.95	2.85	1.45	1.58
31	1.58	1.34	-	1.52	-	1.97	1.78	-	2.95	-	1.40	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	7.1	1.40	2.26	3.50	70.1	215
August	27.5	1.29	2.46	3.81	76.2	234
September	21	1.29	2.60	4.02	78.0	239
October	7.1	1.34	1.88	2.91	58.3	179
November	2.0	1.29	1.36	2.10	40.8	125
December	23	1.5	2.92	4.52	90.6	278
Calendar year 1942	29.5	1.29	2.52	3.90	921	2,820
January	34.5	1.78	4.41	6.82	137	420
February	6.3	1.58	1.88	2.91	52.6	161
March	14.2	1.45	3.23	5.00	100	307
April	3.8	2.85	3.11	4.81	93.2	286
May	17.3	1.40	3.41	5.28	106	325
June	4.2	1.18	1.40	2.17	41.9	129
Fiscal year 1942-43	34.5	1.18	2.59	4.01	945	2,900

Note.- No gage-height record Sept. 12-14, Nov. 10 to Dec. 16; discharge computed on basis of records for stations on nearby streams.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Iolekaa Stream mauka near Heela

Location.- Columbus type concrete control, lat. 21°26'30", long. 157°49'50", 0.7 mile upstream from confluence with Haiku Stream, 1.5 miles southwest of Heela, and 1.8 miles west of Kaneohe post office. Datum of gage is 320 feet ±1.0 foot above mean sea level.

Drainage area.- 0.3 square mile.

Records available.- March 1940 to June 1943.

Extremes.- Not determined owing to faulty gage-height record.
1940-43: Maximum discharge, 69 million gallons a day (107 second-feet) Oct. 22, 1941 (gage height, 2.40 feet), from rating curve extended above 1.0 million gallons a day by rating for Columbus type control and test on model of station site; minimum, 0.26 million gallons a day (0.40 second-foot) Nov. 15, 1941.

Remarks.- Records poor. No diversions above station.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.29	0.35	0.33	0.33	0.29	0.38	0.25	0.43	0.43	0.41	0.39	-
2	.29	.35	.37	.31	.29	.31	.39	.43	.43	.41	.39	-
3	.29	1.40	.37	.29	.29	.29	1.02	.43	.43	.41	.39	-
4	.29	.33	.41	.29	.31	.29	-	.43	.43	.39	.39	-
5	.29	.33	.35	.29	.31	.29	-	.43	.43	.39	.39	-
6	.29	.33	.35	.29	.31	.39	-	.43	.43	.39	.39	-
7	.48	.33	.35	.31	.29	.33	-	.43	.43	.39	.39	-
8	.37	.33	.35	.43	.29	.49	-	.43	.43	.39	-	-
9	.31	.33	.37	.35	.29	.29	.43	.43	-	.39	-	-
10	.31	.33	.37	.35	.29	.28	.43	.43	.43	.39	-	-
11	.31	.33	.35	.37	.29	.28	.43	.43	.43	.39	-	-
12	.31	.33	.37	.37	.29	.28	.43	.43	.43	.39	-	-
13	.31	.37	.37	.47	.29	1.65	-	.43	.43	.39	-	-
14	.31	.35	2.0	.39	.29	.71	.43	.43	.43	.39	-	-
15	.31	.39	1.38	.35	.35	.54	.43	.43	.43	.39	-	-
16	.31	.35	.62	.35	.31	.43	.43	.43	.43	.39	-	-
17	.31	.35	.41	.35	.29	.45	.43	.43	.43	.39	-	-
18	.37	.35	.37	.35	.29	.43	.43	.43	-	.39	-	-
19	.31	.33	.41	.35	.29	.41	.43	.43	.43	.39	-	-
20	.29	.33	.59	.35	.29	.39	.43	.43	.43	.39	-	-
21	.29	.33	.41	.37	.29	.37	.43	.43	.43	.39	-	-
22	.29	.62	.41	.39	.29	.33	.43	.43	.43	.39	-	-
23	.41	.37	.39	.37	.29	.33	.43	.43	.43	.39	-	-
24	1.37	.35	.39	.35	.29	.33	.43	.43	.43	.39	-	-
25	.43	.35	.39	.33	.29	.33	.43	.43	.41	.39	-	-
26	.37	.35	.56	.31	.29	.33	.43	.43	.41	.39	-	.39
27	.37	.35	.43	.28	.29	.33	.43	.43	.41	.39	-	.39
28	.35	.33	.39	.28	.29	.51	.43	.43	.41	.39	-	.37
29	.35	.33	.41	.39	.29	.47	.43	-	.41	.39	-	.39
30	.35	.33	.41	.42	.33	.28	.43	-	.41	.39	-	.37
31	.35	.33	-	.31	-	.25	.43	-	.41	-	-	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	1.37	0.29	0.364	0.563	11.3	35
August	1.40	.33	.385	.596	11.9	37
September	2.0	.33	.489	.757	14.7	45
October	.47	.28	.346	.535	10.7	33
November	.35	.29	.296	.458	8.88	27
December	1.65	.25	.412	.637	12.8	39
Calendar year 1942	5.2	.25	.444	.687	162	497
January	-	-	-	-	-	-
February	.43	.43	.430	.665	12.0	37
March	-	-	-	-	-	-
April	.41	.39	.392	.607	11.8	36
May 1-7	.39	.39	.390	.603	2.73	8.4
June 26-30	.39	.37	.382	.591	1.91	5.9
Fiscal year	-	-	-	-	-	-

Note.- Faulty gage-height record throughout; discharge computed on basis of estimated gage heights.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kahaluu Stream near Heeia

Location.- Modified Parshall flume, lat. 21°26'20", long. 157°51'05", 40 feet upstream from intake of Libby ditch, half a mile upstream from forest-reserve boundary, and 3.5 miles northwest of Kaneohe. Datum of gage is 357.22 feet above mean sea level (levels by Wright, Harvey & Wright).

Drainage area.- 0.4 square mile.

Records available.- October 1935 to June 1943.

Extremes.- Maximum discharge during year, 170 million gallons a day (263 second-feet) Jan. 13, May 8 (gage height, 4.95 feet), from rating curve extended above 8.4 million gallons a day by test on model of station site; minimum, 2.05 million gallons a day (3.17 second-feet) May 13, 14.

1935-43: Maximum discharge, 290 million gallons a day (449 second-feet) Sept. 27, 1937 (gage height, 5.47 feet, control then in use), from rating curve computed from 11 to 240 million gallons a day by Parshall flume formula and extended above; minimum, that of May 13, 14, 1943.

Remarks.- Records fair. No diversions above station. Continuous records of rainfall are obtained at the station.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.5	1.91	0.9	6.0
.6	2.7	1.0	7.5
.7	3.75	1.2	10.7
.8	4.8	1.4	14.5

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.0	f2.8	2.8	3.0	2.7	7.0	2.55	2.4	2.45	2.4	2.4	2.7
2	2.9	2.8	2.8	2.9	2.8	3.45	3.2	2.4	2.45	2.4	2.3	2.4
3	2.9	12	2.8	2.8	2.7	2.9	4.5	2.4	2.6	2.4	2.3	2.3
4	2.9	3.2	3.2	2.8	2.7	3.0	5.2	2.4	3.05	3.4	2.3	8.65
5	2.9	3.0	2.8	2.8	2.7	2.8	5.6	2.45	2.55	2.45	2.4	2.45
6	2.9	2.9	2.8	2.8	2.8	5.1	3.1	2.4	2.4	2.4	2.3	2.4
7	5.2	2.9	2.8	2.8	2.7	3.0	2.9	2.4	2.3	2.4	5.3	2.4
8	2.8	2.9	2.8	2.9	2.7	6.2	2.9	2.4	3.15	2.4	8.8	2.4
9	2.6	2.9	2.8	2.8	2.7	3.0	2.8	2.4	7.9	2.4	2.55	2.4
10	2.6	2.9	2.8	2.8	2.7	2.9	2.8	2.4	2.4	2.4	2.45	2.4
11	2.55	3.0	2.6	2.8	2.7	2.9	2.8	2.4	2.3	2.45	2.45	2.4
12	2.55	3.0	2.6	2.8	2.7	2.9	2.8	2.4	2.3	3.25	6.2	2.4
13	2.45	3.5	2.9	2.9	2.7	7.0	11.9	2.4	2.3	2.9	2.45	2.4
14	2.45	3.0	7.0	2.9	2.7	3.4	2.4	2.4	2.3	2.4	4.2	2.3
15	2.45	3.4	4.0	2.8	6.5	3.15	2.4	2.4	2.3	2.45	2.4	2.3
16	2.45	3.1	3.3	2.8	4.2	2.6	2.45	2.4	2.3	2.55	2.3	2.3
17	3.35	2.9	3.0	2.8	2.6	2.55	2.45	2.3	2.3	2.4	2.3	2.3
18	3.65	3.8	2.9	2.8	2.7	2.45	2.45	2.3	3.55	2.3	2.3	2.3
19	2.8	3.1	2.8	2.8	2.7	2.45	2.45	2.4	2.7	2.3	2.3	2.3
20	2.8	2.8	3.4	2.8	2.8	2.45	2.45	2.4	2.4	2.3	2.4	2.25
21	2.7	2.8	3.0	2.8	2.8	2.55	2.45	2.4	2.4	2.3	2.4	2.25
22	2.7	6.0	2.9	2.9	2.7	2.55	2.45	2.45	2.3	2.4	2.4	2.25
23	3.5	3.2	2.8	2.8	2.7	2.55	2.45	2.45	2.7	2.4	2.4	2.25
24	6.7	2.9	2.7	2.8	2.7	2.55	2.45	2.85	f2.55	2.4	2.45	2.25
25	3.1	2.9	2.7	2.8	2.8	2.55	2.45	2.45	2.55	2.4	2.45	2.5
26	2.9	2.8	3.3	2.8	2.9	2.55	2.45	2.45	2.55	2.4	3.7	2.3
27	2.9	2.8	3.1	2.7	2.9	2.55	2.45	2.45	2.55	2.4	3.95	2.3
28	2.8	2.8	2.9	2.7	2.8	2.7	2.45	2.45	2.45	2.4	2.4	2.3
29	2.7	2.8	2.9	4.3	2.7	2.8	2.4	-	2.45	2.4	2.3	2.3
30	2.7	2.8	2.9	4.2	4.4	2.6	8.4	-	2.4	2.4	2.3	2.3
31	2.8	2.8	-	2.7	-	2.55	2.45	-	2.4	-	2.3	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	6.7	2.45	3.02	4.67	93.7	288
August	12.0	2.8	3.37	5.21	104	321
September	7.0	2.6	3.07	4.75	92.1	283
October	4.3	2.7	2.91	4.50	90.1	277
November	6.5	2.6	2.96	4.58	88.9	273
December	7.0	2.45	3.22	4.98	99.7	306
Calendar year 1942	12.5	2.45	2.98	4.61	1,090	3,340
January	11.9	2.4	3.13	4.84	97.0	298
February	2.85	2.3	2.42	3.74	67.8	208
March	7.9	2.3	2.69	4.16	83.3	256
April	3.4	2.3	2.48	3.84	74.2	228
May	8.8	2.3	2.95	4.56	91.4	281
June	2.7	2.25	2.35	3.64	70.6	217
Fiscal year 1942-43	12.0	2.25	2.89	4.47	1,050	3,240

f Computed on basis of partly estimated gage-height record.

Note.- No gage-height record Aug. 2, 3, Aug. 5 to Oct. 20, Mar. 19-23; discharge computed on basis of records for stations on nearby streams.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Waihee Stream near Heeia

Location.- Modified Parshall flume, lat. 21°27'05", long. 157°51'35", 70 feet upstream from intake of Kihe ditch, 120 feet downstream from forest-reserve boundary, and 4.1 miles northwest of Kaneohe. Altitude of gage, 193 feet.

Drainage area.- 1.1 square miles.

Records available.- December 1935 to June 1943.

Extremes.- Maximum discharge during year, 251 million gallons a day (388 second-feet) May 14 (gage height, 4.98 feet), from rating curve extended above 50 million gallons a day by test on model of station site; minimum, 5.4 million gallons a day (8.4 second-feet) July 5.

1935-43: Maximum discharge, 465 million gallons a day (719 second-feet) Feb. 28, 1939 (gage height, 5.47 feet, control then in use), from rating computed from 20 to 230 million gallons a day by Parshall flume formula and extended above; minimum, 4.4 million gallons a day (6.8 second-feet) July 13-15, 18, 21, 22, 1941.

Remarks.- Records good except those for Oct. 29, 30, Nov. 15, 30, Dec. 1, 6, 8, which are fair.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.8	4.6	1.2	11.0
.9	6.0	1.4	15.1
1.0	7.5	1.7	22.5
1.1	9.0	2.1	35.5

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	6.5	7.2	7.0	7.5	6.5	22	8.1	6.6	6.0	7.4	7.5	8.4
2	5.7	7.2	7.0	7.4	7.0	8.0	9.8	6.4	6.0	7.8	7.5	6.6
3	6.7	30.5	7.0	7.2	6.4	7.0	12.9	6.4	6.6	7.8	7.5	6.4
4	5.6	9.0	7.8	7.2	6.2	7.2	15.2	6.3	6.9	10.3	7.5	7.8
5	5.6	8.0	7.0	7.2	6.0	6.4	15.0	6.4	6.4	8.1	7.8	6.8
6	5.7	7.2	7.0	7.2	6.2	10	9.8	6.4	6.2	7.8	7.5	6.8
7	14.6	7.2	7.0	7.2	6.0	7.0	8.9	6.8	6.0	7.5	11.9	7.0
8	6.8	7.2	7.0	7.5	5.8	15	9.2	6.3	7.0	7.5	17.9	7.0
9	6.2	7.2	7.0	7.4	5.8	8.0	8.6	6.4	19.8	7.5	9.0	6.8
10	6.0	7.2	7.0	7.2	5.8	7.5	8.4	6.4	8.2	7.5	8.2	6.9
11	6.0	7.4	6.9	7.2	5.8	8.1	8.2	6.4	7.4	7.7	7.6	6.9
12	6.0	7.4	6.9	7.2	5.8	7.8	8.2	6.3	7.0	9.6	18.2	6.9
13	6.0	8.2	7.2	7.5	5.8	14.2	33.5	6.3	6.9	8.8	8.1	7.2
14	6.0	7.2	21.5	7.4	5.8	11.2	8.2	6.3	6.8	8.1	17.9	6.8
15	5.9	8.1	12.4	7.2	19	12.0	7.2	6.3	6.8	7.8	8.4	6.8
16	5.9	7.4	8.7	7.2	8.0	9.2	7.2	6.3	6.6	8.2	7.5	6.8
17	8.1	7.0	7.6	7.2	6.0	8.6	7.2	6.4	6.6	8.0	7.2	6.8
18	9.1	9.3	7.4	7.2	6.4	8.2	7.0	6.4	13.2	7.6	7.0	6.8
19	6.0	7.5	7.2	7.2	6.4	8.2	6.9	6.4	7.9	7.6	7.0	6.8
20	5.9	7.0	9.2	7.4	6.8	8.1	6.9	6.6	6.8	7.6	7.0	6.6
21	5.9	7.0	7.5	7.5	6.8	8.0	6.8	7.0	6.8	7.6	6.8	6.6
22	5.9	12.3	7.4	8.1	6.4	8.0	6.6	6.8	6.6	7.6	6.3	6.6
23	12.6	7.5	7.2	7.5	6.4	7.8	6.2	6.8	8.1	7.6	6.4	6.6
24	17.7	7.2	7.0	7.0	6.4	7.8	6.3	8.6	7.6	7.8	7.8	6.6
25	8.9	7.2	7.0	7.0	6.6	8.0	6.2	6.5	8.0	7.5	6.5	6.6
26	8.0	7.0	8.9	7.0	7.0	7.8	6.0	6.0	8.1	7.5	10.4	6.4
27	7.5	7.0	8.1	6.6	7.0	8.0	6.0	6.0	7.6	7.5	13.2	6.4
28	7.4	7.0	7.6	6.6	6.8	10.0	6.4	6.0	7.6	7.5	7.2	6.4
29	7.5	7.0	7.5	15	6.4	10.4	6.4	-	7.5	7.5	6.8	6.4
30	7.6	7.0	7.4	13	14	8.6	6.4	-	7.5	7.5	6.6	6.4
31	7.2	7.0	-	6.6	-	8.1	6.9	-	7.4	-	6.4	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	17.7	5.6	7.40	11.4	230	704
August	30.5	7.0	8.31	12.9	258	791
September	21.5	6.9	8.04	12.4	241	741
October	15	6.6	7.66	11.9	238	729
November	19.0	5.8	7.04	10.9	211	648
December	22	6.4	9.23	14.3	286	878
Calendar year 1942	32.5	5.2	7.45	11.5	2,720	8,350
January	33.5	6.0	8.92	13.8	277	849
February	8.6	6.0	6.49	10.0	182	557
March	19.8	6.0	7.67	11.9	238	730
April	10.3	7.4	7.86	12.2	236	724
May	18.2	6.3	8.79	13.6	273	837
June	8.4	6.4	6.80	10.5	204	626
Fiscal year 1942-43	33.5	5.6	7.87	12.2	2,870	8,180

Note.- No gage-height record Oct. 24 to Dec. 10; discharge computed on basis of records for stations on nearby streams.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

MISCELLANEOUS DISCHARGE MEASUREMENTS

Measurements of streams on the island of Oahu at other than regular gaging stations are listed below:

Miscellaneous discharge measurements on Oahu during fiscal year July 1942 to June 1943

Date	Stream	Tributary to--	Locality	Discharge	
				Second-feet	Million gallons a day
July 29	Pearl Harbor Springs.	Pacific Ocean.....	All springs west of Puukapu gaging station, near Pearl City.	1.92	1.24
Mar. 30	....do.....	....do.....	....do.....	2.68	1.73
June 30	....do.....	....do.....	....do.....	2.43	1.57
Aug. 10	Waimano.....	....do.....	Above ditch diversion dam, near Pearl City.	.753	.487
Apr. 14	....do.....	....do.....	....do.....	1.40	.905
14	Waimano ditch.....	....do.....	At intake, near Pearl City.....	.842	.544

Halawa Stream near Halawa

Location.- Concrete and masonry dam, lat. 21°09'30", long. 156°46'00", about 500 feet downstream from confluence of two main branches, 1¾ miles west of Halawa, and 6 miles northeast of Pukoo.
Drainage area.- 4.5 square miles.
Records available.- August 1917 to July 1932, November 1937 to June 1943.
Average discharge.- 19 years (1918-32, 1938-43), 19.6 million gallons a day (30.3 second-feet).
Extremes.- Maximum discharge during year, 3,320 million gallons a day (5,140 second-feet) Mar. 18 (gage height, 11.31 feet), from rating curve extended above 100 million gallons a day by logarithmic plotting; minimum daily, 2.6 million gallons a day (4.02 second-feet) Feb. 23.
1917-32, 1937-43: Maximum discharge, that of Mar. 18, 1943; minimum, 0.8 million gallons a day (1.2 second-feet) Oct. 13-15, 19, 1917.
A greater discharge may have occurred Jan. 20, 1929.
Remarks.- Records fair except those for period of no gage-height record, which are poor. A 1-inch pipe line diverts water about a quarter of a mile above station for domestic use of Halawa village.

Rating tables, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

July 1 to Mar. 18						Mar. 19 to June 30					
1.8	1.5	2.3	15.2	3.6	160	0.8	3.95	1.3	12.5	2.5	62
1.9	2.9	2.5	26.5	4.0	242	.9	5.3	1.5	17.5	3.0	104
2.0	5.0	2.7	41	5.0	470	1.0	6.8	1.7	23.5	3.5	167
2.1	7.7	2.9	59			1.1	8.5	2.0	35		
2.2	11.0	3.3	108								

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	14.3	45	13.1	42	7.2	57	46	8.3	5.0	20	8.0	44
2	7.0	13.1	30.5	13.1	9.0	15.0	33.5	8.5	4.4	12	5.9	19.0
3	10.0	21	10.0	29	6.4	53	38	13.8	26.5	30	5.4	44
4	6.6	10.7	7.4	11.4	5.0	32	401	5.8	65	80	151	63
5	4.2	8.0	6.1	13.8	11.9	14.5	124	10.2	23	20	15.9	22.5
6	14.1	10.7	5.0	10.3	37.6	8.0	32.5	10.3	8.4	15	14.7	50
7	108	14.6	8.7	26	11.4	6.4	20	28	5.8	20	53	10.9
8	31	29	13.4	24.5	6.4	116	16.8	9.7	8.2	50	105	8.5
9	24	14.0	7.6	20	4.6	20	17.3	9.0	302	12	35	7.3
10	37	9.4	12.8	16.1	11.2	9.7	23	19.4	127	60	12.3	6.0
11	14.2	32	7.4	10.0	6.6	7.4	18.0	42	35	35	17.2	5.3
12	30	15.4	12.5	7.4	4.4	6.1	15.1	11.0	29	13	64	5.3
13	20	71	18.7	6.6	3.5	101	299	6.1	14.9	25	12.9	33.5
14	10.7	13.8	37.5	5.8	25	62	53	64	10.3	80	54	6.9
15	11.5	37.5	62	5.0	14.4	31	37.5	10.0	8.4	30	11.5	5.0
16	8.4	33	51	4.4	12.2	12.4	17.3	6.1	7.2	15	8.9	10.7
17	6.1	15.2	18.6	3.7	6.8	10.0	13.5	4.6	6.4	10	8.2	12.9
18	28	27.5	10.3	3.3	12.4	10.2	10.7	4.2	250	9.0	6.8	5.8
19	15.6	23.5	15.9	2.9	20.5	10.1	9.0	3.7	40	8.0	19.8	29
20	6.9	12.3	53	2.8	20.5	8.0	7.7	3.7	60	7.0	23	7.0
21	16.4	9.0	11.8	154	13.9	6.9	6.9	4.4	30	8.0	9.9	5.2
22	19.3	27.5	44	364	6.6	5.8	6.1	3.1	15	40	7.6	4.4
23	17.6	13.1	16.2	37	5.3	6.6	5.3	2.6	9.0	20	5.8	8.2
24	112	9.4	12.7	16.4	4.4	8.6	4.8	171	6.5	11	112	19.9
25	24.5	9.0	10.2	11.4	3.5	13.3	7.5	51	5.0	9.0	24	27.5
26	23	6.9	22.5	9.0	3.1	11.3	6.2	10.0	30	8.0	31	34
27	21	10.5	22.5	7.4	2.8	5.5	4.2	10.0	9.0	7.0	27	7.3
28	11.4	13.6	15.3	10.3	2.6	29	6.2	8.2	7.0	6.0	11.5	6.8
29	23.5	8.0	12.4	7.4	2.9	15.6	3.7	-	6.0	9.5	8.9	19.5
30	18.9	25.5	22.5	50	102	9.4	5.7	-	5.0	9.7	7.5	15.2
31	13.1	49	-	12.5	-	11.0	4.6	-	4.5	-	6.8	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	112	4.2	22.8	35.3	708	2,170
August	71	6.9	20.6	31.9	638	1,960
September	62	5.0	19.7	30.6	592	1,820
October	364	2.8	30.2	46.7	938	2,880
November	102	2.6	12.8	19.8	384	1,180
December	116	5.5	23.0	35.6	713	2,190
Calendar year 1942	461	1.4	25.4	39.3	9,270	28,430
January	401	3.7	41.7	64.5	1,290	3,970
February	171	2.6	19.2	29.7	539	1,650
March	302	4.4	37.5	58.0	1,160	3,570
April	80	6.0	22.6	35.0	679	2,080
May	151	5.4	28.5	44.1	884	2,710
June	63	4.4	18.2	28.2	545	1,670
Fiscal year 1942-43	401	2.6	24.9	38.5	9,070	27,850

Note.- No gage-height record Mar. 18 to Apr. 28; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Waiakeakua Stream near Wailau

Location.- Concrete and boulder dam, lat. 21°07'30", long. 156°49'40", three-quarters of a mile upstream from confluence with Pulena Stream, 3.2 miles south of Wailau, and 3.8 miles northwest of Pukoo. Datum of gage is 698 feet above mean sea level (hand levels from Reclamation Service bench mark).

Drainage area.- 1.4 square miles.

Records available.- October 1919 to September 1929, September 1937 to June 1943.

Average discharge.- 14 years (1920-29, 1938-43), 7.84 million gallons a day (12.1 second-feet).

Extremes.- Maximum discharge during year, 1,340 million gallons a day (2,070 second-feet) Mar. 18 (gage height, 9.82 feet), from rating curve extended above 140 million gallons a day by logarithmic plotting; minimum daily, 1.78 million gallons a day (2.75 second-feet) Nov. 29.

1919-29, 1937-43: Maximum discharge, that of Mar. 18, 1943; minimum, 1.3 million gallons a day (2.0 second-feet) Mar. 7, 1920.

Remarks.- Records fair. No diversions.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.5	14	8.3	8.7	2.4	10.9	8.6	2.95	2.5	3.1	3.6	12.8
2	3.0	8.0	7.7	4.2	2.95	3.55	4.4	3.1	2.4	3.15	3.5	9.4
3	2.3	15	5.3	8.4	2.25	21	6.0	3.1	4.8	10.7	3.5	9.4
4	2.5	7.4	5.0	5.0	2.4	7.3	112	2.5	5.4	23.5	11.8	19.4
5	2.5	6.0	4.6	8.0	3.1	4.4	33.5	3.5	3.7	5.5	4.6	6.8
6	5.0	6.7	4.4	4.8	5.0	3.55	11.7	3.25	2.8	5.4	6.3	5.8
7	6.0	9.0	5.0	4.8	3.3	3.1	8.1	8.2	2.5	6.5	9.4	5.0
8	6.5	13	4.6	9.5	2.4	20	6.6	3.55	4.4	13.4	16.9	4.6
9	5.4	7.4	4.4	5.5	2.25	4.6	5.9	3.25	35.5	4.3	5.6	4.5
10	7.0	6.0	4.8	5.0	2.25	3.7	6.4	3.6	36.5	8.1	4.6	4.2
11	10	6.4	3.85	4.2	2.0	3.4	5.5	4.9	9.1	6.6	5.0	3.95
12	20	8.0	4.4	3.7	2.0	3.1	4.8	3.4	6.4	7.0	13.0	3.95
13	7.0	7.5	4.4	3.4	1.90	4.2	64	2.95	5.0	13.3	5.1	7.8
14	5.5	4.5	6.2	3.25	8.3	6.9	11.9	4.2	4.4	16.0	14.9	3.85
15	4.5	5.0	15.6	2.95	3.25	4.2	7.6	2.95	4.0	7.3	5.0	3.6
16	4.0	9.0	13.4	2.8	3.3	3.1	6.1	2.65	3.7	6.4	4.8	5.7
17	3.7	6.0	5.0	2.5	2.5	2.8	5.5	2.5	3.4	6.1	4.3	3.95
18	3.5	7.0	3.85	2.4	4.2	3.1	5.1	2.5	44	4.9	4.3	3.75
19	3.3	6.6	3.9	2.25	4.4	2.65	4.8	2.4	8.8	4.5	7.9	8.3
20	3.5	f5.1	8.3	2.25	4.0	2.65	4.4	2.4	18.5	4.3	7.2	3.85
21	4.5	5.1	3.7	3.25	3.25	2.4	4.0	2.25	9.5	4.1	4.5	3.6
22	6.0	8.5	5.3	9.0	2.5	2.25	3.85	2.25	5.6	10.4	4.2	3.5
23	3.7	5.7	3.4	3.65	2.4	2.15	3.7	2.15	4.3	7.2	4.1	3.95
24	12	5.1	3.55	2.65	2.25	2.5	3.55	8.2	3.05	5.8	13.7	3.85
25	10	5.0	3.25	2.4	2.15	4.0	3.55	6.5	2.55	4.6	7.1	4.7
26	8.0	4.4	3.55	2.25	2.0	2.65	3.25	2.8	5.3	4.2	10.0	5.5
27	6.6	5.0	5.6	2.15	1.90	2.35	3.25	4.7	3.6	4.1	9.4	3.6
28	5.0	4.8	3.7	2.15	1.90	6.5	3.1	2.8	3.05	3.75	5.6	3.75
29	8.1	4.6	3.85	2.25	1.78	3.55	3.1	-	2.8	3.85	4.9	4.4
30	7.6	10.0	7.7	7.1	11.7	4.3	3.1	-	2.35	3.85	4.6	4.9
31	8.0	11.4	-	2.5	-	3.7	2.96	-	2.05	-	5.0	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	20	2.5	6.15	9.52	191	585
August	15	4.4	7.23	11.2	224	688
September	15.6	3.25	5.55	8.59	167	511
October	9.5	2.15	4.29	6.64	133	408
November	11.7	1.78	3.20	4.95	96.0	295
December	21	2.15	4.99	7.72	155	474
Calendar year 1942	120	1.78	6.79	10.5	2,480	7,600
January	112	2.95	11.6	17.9	360	1,110
February	8.2	2.15	3.56	5.51	99.6	306
March	44	2.05	8.13	12.6	252	774
April	23.5	3.1	7.08	10.9	212	650
May	16.9	3.5	6.92	10.7	214	658
June	19.4	3.5	5.74	8.88	172	529
Fiscal year 1942-43	112	1.78	6.24	9.65	2,280	6,990

f Computed on basis of partly estimated gage-height record.

Note.- No gage-height record July 1 to Aug. 19; discharge computed on basis of records for Pulena Stream.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Pulena Stream near Wailau

Location.- Lat. 21°07'40", long. 156°49'50", half a mile upstream from confluence with Waiakeakua Stream, 3 miles south of Wailau, and 4 miles northwest of Pukoo. Datum of gage is 546 feet above mean sea level (hand levels from Reclamation Service bench mark).
Drainage area.- 4.4 square miles.
Records available.- October 1919 to December 1928, September 1937 to June 1943.
Average discharge.- 13 years (1920-28, 1938-43), 21.8 million gallons a day (33.7 second-feet).
Extremes.- Maximum discharge during year, 11,400 million gallons a day (17,600 second-feet) Mar. 18 (gage height, 11.68 feet), from rating curve extended above 220 million gallons a day by logarithmic plotting; minimum, 3.8 million gallons a day (5.9 second-feet) July 4, 5.
1919-28, 1937-43: Maximum discharge, that of Mar. 18, 1943; minimum, 3.0 million gallons a day (4.6 second-feet) June 28, July 14, 1920.
Flood of Jan. 20, 1929, reached a stage of at least 22 feet.
Remarks.- Records good except those above 150 million gallons a day, which are fair.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)
(Shifting-control method used May 9 to June 30)

0.9	3.5	1.5	22.5	2.9	235
1.0	5.0	1.7	35.5	3.2	330
1.1	7.0	1.9	53	3.5	445
1.2	9.7	2.1	76	4.0	570
1.3	13.2	2.3	104	4.5	950
1.4	17.5	2.6	158		

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	5.8	36	23.5	21	12.7	159	37	8.1	8.9	17.0	a8.9	38.5
2	4.4	17.9	17.5	10.0	11.4	31	25	9.6	7.3	13.2	8.4	17.1
3	4.2	41	11.4	18.4	8.4	30.5	38	9.2	18.2	25	8.6	15.2
4	4.0	16.2	9.7	14.7	8.4	19.5	698	7.5	26	56	20	26.5
5	4.0	13.2	8.6	19.9	10.8	14.1	212	11.3	17.1	22.5	35	14.5
6	8.9	14.9	8.4	15.8	10.4	11.8	65	19.0	10.4	26	51	11.8
7	29.5	20	11.2	12.8	9.2	11.4	39	32	8.6	32.5	97	10.4
8	21	34	9.2	21	7.0	91	28	12.5	16.1	34.5	153	9.4
9	15.0	17.5	9.6	15.4	6.6	27	22.5	8.9	120	17.5	42	9.2
10	25	14.5	10.8	14.5	6.4	17.1	21.5	9.4	226	71	24	8.6
11	39	15.8	7.5	11.4	5.2	13.6	19.0	16.8	64	42	24.5	8.1
12	66	12.8	8.4	9.2	6.2	11.8	15.4	8.9	35	36	71	8.1
13	28	19.0	7.0	8.4	5.6	12.4	338	7.3	23	36	26.5	17.7
14	16.4	11.8	6.6	8.1	41	15.1	85	18.5	17.5	84	19.5	7.5
15	11.8	14.2	34	7.5	17.5	11.8	38.5	8.9	14.5	33.5	15.8	6.8
16	9.2	23	41	6.8	12.5	9.4	28.5	7.0	12.5	25.5	14.5	15.8
17	8.1	14.1	12.5	6.4	9.4	8.9	23.5	6.6	11.1	22.5	12.5	9.2
18	7.3	15.4	10.0	5.2	16.3	8.1	18.5	6.2	225	18.0	12.8	7.0
19	5.6	14.1	9.2	5.8	13.2	7.5	15.4	6.0	49	14.5	23.5	14.4
20	7.0	10.4	13.3	5.6	10.0	8.1	13.2	5.8	76	14.1	23	7.3
21	12.9	9.4	8.1	15.8	8.1	7.5	11.8	5.4	50	14.7	15.4	6.2
22	19.9	20.5	15.2	39.5	7.3	5.8	10.8	5.0	28.5	39.5	10.8	5.0
23	9.2	12.2	9.2	14.5	6.5	5.8	9.7	4.8	20.5	24	9.4	8.1
24	32.5	10.9	8.9	9.2	6.2	7.8	9.2	26.5	17.1	15.8	65	8.9
25	24.5	10.9	7.3	7.6	6.0	16.6	9.4	21	16.3	12.5	30	13.3
26	14.7	8.4	7.3	7.0	5.5	10.1	8.4	9.8	26.5	11.1	56	14.5
27	12.6	8.9	8.1	6.4	5.2	7.5	8.1	54	13.2	a10.2	49	7.0
28	9.7	8.9	7.5	6.4	5.0	31	7.5	13.5	12.2	a9.2	24	9.2
29	16.0	9.7	8.0	8.1	5.0	20.5	7.3	-	10.8	a9.4	17.5	11.3
30	14.5	15.4	15.6	38.5	26	23	7.5	-	10.0	a9.0	14.5	17.2
31	15.4	36	-	11.4	-	20.6	7.0	-	9.4	-	14.8	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	66	4.0	16.2	25.1	502	1,540
August	41	8.4	17.0	26.3	528	1,520
September	41	5.6	12.2	18.9	365	1,120
October	39.5	5.6	13.0	20.1	403	1,240
November	41	5.0	10.3	15.9	310	952
December	159	6.8	21.8	33.7	677	2,080
Calendar year 1942	841	3.5	23.9	37.0	8,739	26,820
January	698	7.0	60.6	93.8	1,880	5,760
February	54	4.8	12.8	19.8	360	1,100
March	226	7.3	38.8	60.0	1,200	3,690
April	71	9.0	25.9	40.1	776	2,380
May	153	8.4	32.2	49.8	998	3,060
June	38.5	6.0	12.2	18.9	355	1,120
Fiscal year 1942-43	698	4.0	22.9	35.4	8,366	25,660

a No gage-height record; discharge computed on basis of records for Waiakeakua Stream.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Pelekunu Stream near Pelekunu

Location.- Lat. 21°08'20", long. 156°52'50", three-quarters of a mile upstream from confluence with Lanipuni Stream, 1.8 miles south of Pelekunu, and 6.8 miles northwest of Pukoo. Datum of gage is 546 feet above mean sea level (hand levels from Reclamation Service bench mark).
Drainage area.- 2.4 square miles.
Records available.- December 1919 to January 1929, September 1937 to June 1943.
Average discharge.- 13 years (1920-28, 1938-43), 10.9 million gallons a day (16.9 second-feet).
Extremes.- Maximum discharge during year, 786 million gallons a day (1,220 second-feet) Mar. 18 (gage height, 3.93 feet), from rating curve extended above 15 million gallons a day by logarithmic plotting; minimum, 1.82 million gallons a day (2.82 second-feet) Apr. 29.
1919-29, 1937-43: Maximum discharge, 3,080 million gallons a day (4,770 second-feet) Nov. 20, 1940; minimum, 1.8 million gallons a day (2.8 second-feet) Mar. 7, July 13, 1920.
Remarks.- Records good July 1 to Mar. 18, fair thereafter. No diversions.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.6	2.0	1.0	13.3	1.6	60
.7	3.6	1.1	18.5	1.8	86
.8	6.0	1.2	24.5	2.0	117
.9	9.2	1.4	39.5	2.4	200

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.3	10.4	6.0	7.3	6.6	33	9.2	4.8	7.6	4.3	4.3	12.2
2	2.95	6.8	5.0	3.6	5.8	15.0	8.7	5.4	6.3	4.3	3.85	7.3
3	2.8	14.2	3.6	5.8	4.6	17.8	13.6	5.3	10.4	5.3	4.1	6.6
4	2.8	5.8	3.45	4.6	4.1	11.1	118	4.3	10.9	17.5	5.3	8.9
5	2.8	4.8	3.3	5.9	4.8	7.9	56	6.6	8.5	9.6	8.8	5.8
6	4.3	4.8	3.1	5.3	4.1	6.3	29.5	10.2	6.6	9.6	10.0	5.3
7	8.8	5.3	3.85	4.3	3.85	6.6	18.0	14.9	5.8	13.8	23	5.0
8	5.6	7.1	3.6	5.9	3.45	36	12.5	8.8	8.7	9.6	23.5	4.8
9	4.8	4.3	4.0	5.0	3.3	15.7	10.0	5.8	39.6	5.3	11.7	4.6
10	7.3	4.1	4.4	4.6	3.1	9.6	8.6	5.3	72	19.5	8.2	4.3
11	12.2	4.3	3.1	4.1	3.1	7.6	7.6	9.9	34	11	7.6	4.3
12	23.5	3.85	3.3	3.45	3.3	6.3	6.6	6.3	19.5	9.2	25.5	4.1
13	10.7	4.9	2.95	3.3	2.95	8.2	74	5.0	12.1	9.0	14.3	7.1
14	7.0	3.6	2.8	3.1	17.9	8.8	34	12.6	9.2	16	10.8	4.3
15	5.5	4.2	7.6	2.95	11.4	6.3	17.5	5.8	7.9	11	8.6	3.85
16	4.6	6.1	8.4	2.95	7.2	5.5	13.3	4.8	7.0	9.4	7.6	8.4
17	4.1	4.3	4.1	2.8	5.5	5.0	11.9	4.3	6.0	8.2	6.6	5.0
18	3.6	4.1	3.45	2.8	6.8	4.6	8.9	4.1	38.5	7.3	6.6	4.1
19	3.45	4.3	3.3	2.65	6.0	4.3	7.6	3.85	12.3	6.8	9.7	6.6
20	3.65	3.45	3.85	2.65	4.8	4.1	6.6	3.85	21.5	6.5	10.0	4.3
21	6.1	3.3	3.1	4.7	4.3	3.85	6.0	3.6	16	7.0	7.3	3.85
22	6.6	6.7	4.1	16.8	3.85	3.6	5.5	3.45	12	15	5.3	3.6
23	5.7	4.1	3.3	7.6	3.6	3.85	5.3	3.3	9.2	10	4.3	4.3
24	7.8	3.85	3.1	4.8	3.45	4.3	4.8	19.1	6.6	7.7	25	3.85
25	6.7	3.6	2.95	3.85	3.3	6.4	5.0	15.0	5.5	6.2	14.5	4.8
26	5.3	3.1	2.95	3.6	3.1	4.3	4.6	7.4	11.7	5.6	18.5	5.8
27	4.6	3.1	2.95	3.45	3.1	3.55	4.3	30	7.0	5.2	18.0	3.85
28	4.1	3.1	2.95	3.3	2.95	12.2	4.1	11.4	5.3	6.0	12.5	4.3
29	6.2	3.6	3.1	4.0	2.95	6.8	3.85	-	4.6	5.2	9.6	5.0
30	5.3	4.0	4.9	11.7	16.8	7.0	3.85	-	4.1	4.8	8.2	6.7
31	5.0	7.9	-	6.8	-	7.2	3.6	-	4.0	-	7.9	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	23.5	2.8	6.04	9.35	187	574
August	14.2	3.1	6.03	7.78	156	479
September	8.4	2.8	3.88	6.00	117	358
October	16.8	2.65	4.96	7.67	154	472
November	17.9	2.95	5.34	8.26	160	491
December	36	3.55	9.12	14.1	283	868
Calendar year 1942	250	2.5	9.81	15.2	3,580	10,980
January	118	3.6	16.9	26.1	523	1,610
February	30	3.3	8.04	12.4	225	691
March	72	4.0	13.9	21.5	430	1,320
April	19.5	4.3	8.83	13.7	265	813
May	25.5	3.85	11.0	17.0	341	1,050
June	12.2	3.6	5.43	8.40	163	500
Fiscal year 1942-43	118	2.65	8.23	12.7	3,000	9,230

Note.- Faulty gage-height record Mar. 21, 22, 31, Apr. 11-30; discharge computed on basis of records for Pulena Stream.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

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Lanipuni Stream near Pelekunu

Location.- Lat. 21°08'40", long. 156°52'30", 0.4 mile upstream from confluence with Pelekunu Stream, 1½ miles southeast of Pelekunu, and 6.8 miles northwest of Pukoo. Datum of gage is 418 feet above mean sea level (hand levels from Geological Survey bench mark).

Drainage area.- 0.8 square mile.

Records available.- December 1910 to September 1929, September 1937 to June 1943.

Average discharge.- 14 years (1920-29, 1938-43), 10.1 million gallons a day (15.6 second-feet).

Extremes.- Maximum discharge during year, 3,470 million gallons a day (5,370 second-feet) Mar. 18 (gage height, 9.02 feet), from rating curve extended above 35 million gallons a day by logarithmic plotting; minimum, 3.15 million gallons a day (4.87 second-feet) Nov. 29, 30.

1919-29, 1937-43: Maximum discharge, that of Mar. 18, 1943; minimum, 1.66 million gallons a day (2.57 second-feet) Oct. 4, 1938.

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

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	5.4	12.0	12.4	8.2	4.2	25	12	4.5	5.9	4.0	4.0	9.0
2	5.0	6.8	8.5	5.0	4.4	6.6	11	4.7	5.4	4.1	3.8	7.4
3	4.7	7.4	6.1	8.2	3.65	7.6	16	4.4	8.0	4.5	3.9	6.6
4	4.4	5.7	5.2	5.7	3.65	5.7	60	3.85	8.4	15	9.0	7.4
5	4.4	5.2	5.0	5.9	4.2	4.7	30	5.8	6.6	9.0	12	5.7
6	8.4	5.4	5.0	6.1	4.0	4.4	15	8.9	5.4	9.0	16	5.0
7	14.5	6.4	5.7	5.7	3.85	4.0	10	12.2	4.5	14	20	4.7
8	9.9	7.8	5.4	13.0	3.5	25	8.0	7.3	7.0	9.0	21	4.5
9	7.4	5.4	6.0	6.8	3.5	6.8	7.0	5.4	25	5.0	10	4.1
10	15.8	5.2	5.4	5.7	3.5	5.4	6.0	5.2	30	20	8.0	4.0
11	17.1	7.2	4.7	4.9	3.65	4.7	5.6	13.5	15	11	7.0	f4.0
12	35.5	5.4	5.2	4.5	3.65	4.4	5.2	6.1	10	9.0	10	4.0
13	11.8	6.7	4.7	4.2	3.4	21.5	30	5.0	7.5	8.3	8.0	6.4
14	7.5	5.2	4.5	4.0	16.2	23	11	13.1	6.4	17	6.8	3.85
15	6.6	7.7	9.7	3.85	9.5	10	7.7	5.7	5.7	12	6.0	3.85
16	5.7	7.1	16.2	3.65	6.4	8.0	f6.1	4.7	5.2	9.4	5.6	9.7
17	5.2	5.7	5.7	3.4	5.0	7.0	5.7	4.4	4.9	8.0	5.2	4.7
18	5.0	5.9	5.0	3.4	6.6	6.4	f5.0	4.2	35	7.0	5.2	4.2
19	4.9	5.4	5.1	3.4	5.7	5.9	4.7	4.0	9.0	5.4	8.6	6.6
20	5.1	4.9	5.4	3.25	5.0	5.7	4.4	3.85	13	6.0	8.1	4.2
21	7.5	4.9	4.5	21.5	4.4	5.4	4.2	3.65	10	6.4	7.0	3.85
22	8.3	7.0	4.7	36	4.0	5.2	4.0	3.5	8.0	13	6.0	3.85
23	6.7	6.2	4.4	8.3	3.85	5.6	3.85	3.4	6.6	9.5	5.5	4.5
24	10.6	5.4	4.4	5.9	3.65	7.0	3.85	41	5.5	7.4	15	4.4
25	7.6	5.2	4.0	5.0	3.5	9.0	4.2	15.9	4.5	6.0	12	5.9
26	6.6	4.7	3.85	4.7	5.5	7.0	3.65	6.6	8.0	5.2	13	6.5
27	5.7	4.7	4.0	4.4	3.4	6.0	3.5	5.1	5.4	4.9	12	4.2
28	5.7	4.7	4.0	4.2	3.25	14	3.5	6.3	4.5	4.6	10	5.0
29	8.0	5.0	4.2	4.5	3.25	9.0	3.4	-	4.0	4.7	9.0	5.0
30	6.8	7.9	5.8	5.5	5.8	9.0	3.5	-	3.8	4.5	8.0	7.5
31	7.7	17.0	-	4.4	-	9.5	3.4	-	3.7	-	7.6	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	35.5	4.4	8.56	13.2	266	815
August	17.0	4.7	6.46	10.0	200	614
September	16.2	3.85	5.82	9.00	175	536
October	36	3.25	6.88	10.6	213	654
November	16.2	3.25	4.74	7.33	142	436
December	25	4.0	8.98	13.9	278	855
Calendar year 1942	450	2.3	12.2	18.9	4,460	13,700
January	60	3.4	9.72	15.0	301	925
February	41	3.4	7.62	11.8	213	654
March	35	3.7	9.09	14.1	282	865
April	20	4.0	8.46	13.1	254	779
May	21	3.8	9.14	14.1	283	869
June	9.7	3.85	5.35	8.28	160	493
Fiscal year 1942-43	60	3.25	7.59	11.7	2,770	8,500

f Computed on basis of partly estimated gage-height record.

Note.- No gage-height record Dec. 14 to Jan. 15, Feb. 28 to Mar. 12, Mar. 18 to Apr. 29; faulty gage-height record Apr. 30 to June 10; discharge computed on basis of records for Pelekunu and Pulena Streams.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Waikolu Stream below pipe-line crossing, near Kalaupapa

Location.- Concrete and stone dam, lat. 21°09'50", long. 156°56'00", three-quarters of a mile upstream from mouth and 3.9 miles southeast of Kalaupapa post office. Datum of gage is 253 feet above mean sea level (hand levels from Reclamation Service bench mark).

Drainage area.- 4.0 square miles.

Records available.- August 1931 to July 1932, September 1937 to June 1943. June 1919 to November 1930 at site 500 feet upstream.

Extremes.- Maximum discharge during year, 976 million gallons a day (1,510 second-feet) Mar. 18 (gage height, 5.21 feet), from rating curve extended above 42 million gallons a day by logarithmic plotting; minimum, 6.1 million gallons a day (9.4 second-feet) Feb. 23, 24.

1919-32, 1937-43: Maximum discharge, 2,510 million gallons a day (3,880 second-feet) Apr. 9, 1938 (gage height, 6.01 feet), from rating curve extended above 50 million gallons a day by logarithmic plotting; minimum, 1.3 million gallons a day (2.0 second-feet) Nov. 1, 2, 1925, June 5, 1926.

Remarks.- Records good. Kalaupapa water-supply system diverts water above station.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

1.3	5.8	1.6	16.0	2.2	58
1.4	8.5	1.8	26.5	2.6	106
1.5	11.9	2.0	40	3.0	172

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	12.5	15.4	16.0	11.4	12.7	38	10.3	6.9	7.4	7.7	8.0	9.2
2	11.2	10.9	11.6	8.2	10.2	13.3	9.2	8.0	6.9	7.7	7.7	8.5
3	11.2	13.6	8.8	9.3	8.5	10.4	12.2	8.2	18.8	13.6	8.0	8.2
4	10.9	10.2	8.5	8.0	8.0	9.7	108	7.7	14.5	22.5	29	8.5
5	10.9	9.5	8.2	8.0	8.0	8.0	47	7.7	11.2	10.2	9.2	8.2
6	10.9	9.5	8.0	8.8	8.0	7.7	13.1	14.0	7.7	10.8	9.2	8.0
7	19.5	9.5	8.2	8.0	8.0	7.7	10.7	23	7.0	16.3	48	7.7
8	14.2	9.9	8.0	19.2	7.7	75	8.5	10.7	7.6	9.9	24.5	7.7
9	14.2	9.9	8.2	10.4	7.7	13.0	8.2	7.7	72	7.7	11.5	7.7
10	18.5	9.5	9.5	8.0	7.7	8.8	8.0	7.2	117	61	8.5	7.4
11	26	9.9	8.5	7.6	7.7	8.0	8.0	11.3	19.5	22.5	8.5	7.4
12	28	9.5	8.2	7.2	7.7	7.7	7.7	8.2	11.9	21	31.5	7.4
13	15.5	9.8	8.2	7.2	7.7	38	70	6.9	9.9	26	13.8	7.7
14	11.9	9.5	8.8	7.2	26.5	22	15.3	34	8.5	61	8.8	7.4
15	11.9	10.9	8.2	7.2	17.7	13.7	9.2	8.6	8.2	13.8	8.5	7.2
16	11.6	10.6	11.8	7.2	9.2	9.2	8.0	7.0	8.0	10.5	8.2	8.0
17	11.2	9.8	8.2	7.2	8.0	8.2	8.8	6.6	6.0	9.7	8.0	8.5
18	10.9	9.2	7.7	7.2	8.0	8.0	8.2	6.6	47	8.5	8.0	7.4
19	10.9	8.8	8.0	7.2	8.5	8.0	7.4	6.3	15.9	8.0	8.5	8.5
20	10.5	8.6	8.0	7.2	8.0	7.7	7.2	6.3	33.5	8.0	10.9	7.7
21	10.9	8.5	8.0	44	7.7	7.7	7.2	6.3	16.1	11.1	8.5	7.4
22	14.8	9.5	8.0	87	7.4	7.7	7.2	6.3	9.2	17.7	8.0	7.2
23	19.8	9.2	7.7	17.2	7.2	7.7	7.2	6.3	8.2	16.0	8.0	7.2
24	14.2	8.5	7.7	9.9	7.2	7.7	6.9	78	8.0	9.9	108	7.2
25	11.2	8.5	7.7	8.8	7.2	8.0	9.2	23	8.0	8.5	15.3	7.2
26	10.9	8.5	7.7	8.2	7.2	8.5	7.4	7.7	12.7	8.2	19.8	7.7
27	10.2	8.2	7.7	8.2	7.2	8.2	7.2	35	8.5	8.2	15.1	7.4
28	10.2	8.2	7.7	8.0	7.2	17.1	6.9	10.4	8.0	8.0	10.2	7.2
29	11.2	8.2	7.7	8.0	7.2	9.9	8.9	-	7.7	8.0	8.8	7.4
30	10.9	8.2	6.6	18.3	34	8.2	6.9	-	7.7	9.4	8.5	8.0
31	10.2	15.1	-	10.2	-	8.2	6.9	-	7.7	-	8.5	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	26	10.2	13.4	20.7	417	1,280
August	15.4	8.2	9.84	15.2	305	936
September	16.0	7.7	8.53	13.4	259	795
October	87	7.2	12.9	20.0	400	1,230
November	34	7.2	9.83	15.2	295	905
December	75	7.7	13.5	20.9	418	1,280
Calendar year 1942	538	6.6	18.9	29.2	6,900	21,180
January	108	8.9	15.0	23.2	465	1,430
February	78	6.3	13.4	20.7	376	1,150
March	117	6.9	17.5	27.1	542	1,660
April	61	7.7	15.0	23.2	451	1,380
May	108	7.7	16.0	24.8	497	1,530
June	9.2	7.2	7.74	12.0	232	713
Fiscal year 1942-43	117	6.3	12.8	19.8	4,660	14,290

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Keolewa Stream near Kalae

Location.- Soil Conservation Service type H (De Fabritis) flume, lat. 21°10'30", long. 156°58'45", 2.1 miles northeast of Kalae and 6.4 miles northeast of Kaunakakai post office. Altitude of gage, 1,950 feet (from topographic map).

Records available.- June 1940 to June 1943.

Extremes.- Maximum discharge during year, 52 million gallons a day (80 second-feet) Mar. 18 (gage height, 2.75 feet), from rating curve extended above 5 million gallons a day by broad-crested weir formula; minimum, 0.01 million gallons a day (0.02 second-foot) Oct. 10-20.

1940-43: Maximum discharge, that of Mar. 18, 1943; minimum, 0.01 million gallons a day (0.02 second-foot) Aug. 1-5, 1940, Oct. 21, 1942.

Remarks.- Records good except those for periods of backwater from debris or no gage-height record, which are fair. No diversions.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.1	0.01	0.7	0.61	1.3	2.5
.2	.05	.8	.82	1.4	3.5
.3	.10	.9	1.07	1.5	5.0
.4	.16	1.0	1.35	1.6	6.8
.5	.29	1.1	1.69	1.7	8.8
.6	.43	1.2	2.05	1.8	11.2

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.02	0.40	0.05	0.02	0.67	2.1	0.03	0.03	0.03	0.08	a0.07	0.05
2	.03	.20	.11	.02	.17	.19	.03	.03	.03	.06	a.07	.05
3	.13	.08	.02	.02	.04	.04	.03	.03	.45	1.06	f.07	.05
4	.02	.03	.02	.02	.03	.04	5.1	.03	.42	1.86	1.22	.68
5	.02	.03	.02	.02	.03	.03	2.45	.03	.13	.07	.07	.06
6	.02	.03	.02	.08	.03	.03	.26	.04	.04	.51	.07	.05
7	1.31	.02	.02	.02	.03	.03	.17	.37	.03	.27	1.22	.05
8	.28	.02	.02	.19	.03	3.75	.08	.03	.13	.10	.27	.05
9	.06	.02	.03	.02	.03	.17	.07	.03	3.5	.06	.07	.05
10	.60	.02	.03	.01	.03	.08	.06	.03	3.05	.61	.06	.04
11	1.19	.08	.03	.01	.04	.07	.06	.03	.29	.35	.06	.04
12	.20	.03	.03	.01	.05	.06	.05	.02	.70	1.31	.64	.04
13	.05	.22	.03	.01	.05	2.2	2.2	.02	.12	.43	.08	.04
14	.03	.03	.03	.01	.44	1.23	.80	1.55	.09	1.58	.18	.04
15	.03	.02	.03	.01	.77	.27	.12	.04	.08	.50	.12	.04
16	.03	.02	.03	.01	.03	.08	.08	.03	.07	.23	.06	.04
17	.03	.02	.02	.01	.03	.07	.07	.03	.08	.24	.06	.04
18	.03	.02	.02	.01	.18	.06	.06	.02	1.47	.08	.06	.03
19	.03	.02	.02	.01	.39	.05	.06	.02	.21	.06	.06	.03
20	.02	f.02	.02	.01	.04	.05	.05	.02	1.23	.06	.06	.03
21	.03	a.02	.02	8.5	.03	.04	a.05	.02	.31	.09	.06	.03
22	.03	f.07	.02	8.9	.03	.05	a.05	.03	.09	1.23	.05	.03
23	.31	.02	.02	.66	.03	.05	a.05	.03	.07	2.6	.05	.05
24	.08	.02	.02	.18	.03	.04	.05	3.1	.07	1.09	3.0	.03
25	.03	.02	.02	.09	.03	.03	.05	.17	.26	.14	.10	.03
26	.03	.02	.02	.05	.03	.03	.04	.03	.54	.11	.55	.03
27	.10	.02	.02	.04	.03	.03	.04	.46	.06	.14	.15	.03
28	.02	.02	.02	.04	.04	.04	.06	.06	.06	.10	.07	.03
29	.03	.02	.02	.04	.05	.13	.04	-	.06	f.08	.21	.03
30	.03	.02	.02	1.39	2.2	.03	.05	-	.07	a.09	.06	.04
31	.02	.02	-	.04	-	.03	.03	-	.06	-	.05	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	1.31	0.02	0.156	0.241	4.84	15
August	.40	.02	.052	.080	1.60	4.9
September	.11	.02	.027	.042	.80	2.5
October	8.9	.01	.660	1.02	20.4	63
November	2.2	.03	.187	.289	5.61	17
December	3.75	.03	.358	.554	11.1	34
Calendar year 1942	9.9	.01	.430	.665	157	483
January	5.1	.03	.397	.614	12.3	38
February	3.1	.02	.226	.350	6.33	19
March	3.5	.03	.464	.716	14.4	44
April	2.6	.06	.506	.783	15.2	47
May	5.0	.05	.288	.446	8.93	27
June	.68	.03	.060	.093	1.81	5.6
Fiscal year 1942-43	8.9	.01	.283	.438	103	317

a No gage-height record; discharge computed on basis of records for stations on nearby streams.
f Computed on basis of partly estimated gage-height record.
Note.- Backwater from debris Oct. 8-14, Oct. 22 to Dec. 4, Mar. 18 to Apr. 28.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Waialala Springs near Kalae

Location.- Right angle brass weir control, lat. 21°10'20", long. 157°00'05", on the highway from Kalae to the Kalaupapa Pali, 0.8 mile northeast of Kalae and 5.7 miles northeast of Kaunakakai post office. Altitude of gage, 1,600 feet (from topographic map).

Records available.- September 1940 to June 1943.

Extremes.- Maximum daily discharge during year, 0.084 million gallons a day (0.130 second-foot) Oct. 22; minimum daily, 0.020 million gallons a day (0.031 second-foot) Mar. 30, Apr. 3-7.

1940-43: Maximum daily discharge, 0.275 million gallons a day (0.425 second-foot) Mar. 11, 1942; minimum daily, 0.018 million gallons a day (0.028 second-foot) Dec. 4-7, 9, 10, 1940.

Remarks.- Records excellent. Maui County Water Works diverts the entire flow for domestic supply, from tail bay at station.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.040	0.036	0.029	0.026	0.030	0.022	0.024	0.043	0.035	0.021	a0.031	0.027
2	.040	.036	.028	.026	.030	.021	.024	.042	.035	.021	a.031	.027
3	.039	.036	.028	.025	.030	.021	.024	.041	.035	.020	a.031	.026
4	.038	.035	.028	.025	.029	.021	.038	.041	.034	.020	.030	.026
5	.038	.035	.028	.025	.029	.021	.042	.040	.034	.020	.030	.026
6	.038	.035	.028	.025	.028	.021	.036	.039	.034	.020	.030	.026
7	.038	.035	.028	.024	.028	.021	.033	.039	.034	.020	.030	.026
8	.038	a.035	.027	.024	.028	.045	.031	.038	.033	.026	.030	.026
9	.038	a.035	.027	.024	.027	.041	.030	.038	.038	.034	.029	.026
10	.038	a.035	.027	.024	.027	.034	.030	.038	.042	.034	.029	.026
11	.038	a.034	.027	.024	.026	.031	.030	.038	.042	.033	.028	.029
12	.038	a.034	.027	.024	.026	.030	.030	.037	.040	.033	.029	.030
13	.036	a.034	.027	.024	.026	.030	.035	.037	.039	.033	.028	.030
14	.037	a.034	.027	.024	.026	.034	.036	.038	.038	.033	.028	.030
15	.037	a.034	.027	.026	.026	.031	.034	.038	.037	.033	.028	.031
16	.036	a.034	.027	.026	.025	.030	.034	.038	.036	.033	.028	.031
17	.036	a.034	.026	.026	.025	.030	.033	.038	.036	.033	.028	.031
18	.036	a.033	.026	.026	.025	.029	.033	.038	.035	.033	.028	.031
19	.035	.033	.026	.026	.024	.027	.033	.038	.027	.032	.028	.030
20	.034	.033	.026	.026	.024	.026	.040	.038	.026	.032	.028	.030
21	.034	.033	.026	.063	.024	.026	.045	.037	.025	.032	.028	.030
22	.034	.031	.026	.084	.023	.025	.047	.037	.024	.032	.028	.030
23	.034	.030	.028	.050	.023	.024	.047	.036	.023	.033	.028	.030
24	.034	.030	.026	.038	.023	.024	.047	.038	.023	.033	.028	.030
25	.034	.030	.026	.034	.023	.024	.047	.038	.023	.032	.028	.030
26	.037	.030	.026	.033	.023	.024	.045	.036	.022	.032	.028	.030
27	.037	.030	.026	.031	.023	.024	.045	.036	.021	.032	.027	.030
28	.036	.030	.026	.031	.023	.024	.045	.036	.021	.032	.027	.030
29	.036	.030	.026	.031	.023	.024	.044	-	.021	.032	.027	.030
30	.036	.029	.026	.032	.023	.024	.044	-	.020	a.032	.027	.030
31	.036	.029	-	.031	-	.024	.043	-	.021	-	.027	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	0.040	0.034	0.037	0.057	1.14	3.5
August	.036	.029	.033	.051	1.02	3.1
September	.029	.026	.027	.042	.804	2.5
October	.084	.024	.031	.048	.958	2.9
November	.030	.023	.026	.040	.770	2.4
December	.045	.021	.027	.042	.833	2.6
Calendar year 1942	.275	.021	.043	.066	15.7	48
January	.047	.024	.037	.057	1.15	3.5
February	.043	.036	.038	.059	1.07	3.3
March	.042	.020	.031	.048	.954	2.9
April	.034	.020	.030	.046	.886	2.7
May	.031	.027	.029	.045	.885	2.7
June	.031	.026	.029	.045	.865	2.7
Fiscal year 1942-43	.084	.020	.031	.048	11.3	35

a No gage-height record; discharge computed on basis of probable decrease in flow.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Makaeleele Stream near Kalae

Location.- Soil Conservation Service type H (De Fabritis) flume, lat. 21°09'05", long. 156°57'55", about 50 feet downstream from Maui County pipe-line intake, 3.1 miles southeast of Kalae, and 5.6 miles northeast of Kaunakakai post office. Altitude of gage, 2,450 feet (from topographic map).

Records available.- May 1940 to June 1943.

Extremes.- Maximum discharge during year, 36 million gallons a day (56 second-feet) Oct. 22 (gage height, 3.25 feet), from rating curve extended above 4.2 million gallons a day by broad-crested weir formula; minimum, 0.01 million gallons a day (0.02 second-foot) Oct. 16-21.

1940-43: Maximum discharge, that of Oct. 22, 1942; minimum, 0.01 million gallons a day (0.02 second-foot) July 27, 1940, Oct. 21, 1942.

Remarks.- Records excellent except those for periods of no gage-height record, which are poor. Maui County Water Works diverts about 0.014 million gallons a day for domestic supply from pool about 50 feet upstream.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.1	0.01	0.6	0.43	1.4	2.95
.2	.06	.7	.41	1.6	4.2
.3	.10	.8	.82	1.8	6.1
.4	.18	1.0	1.36	2.0	8.4
.5	.29	1.2	2.06		

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.24	1.00	1.23	0.24	1.0	2.5	0.05	0.05	0.10	0.07	0.16	0.13
2	.10	.17	.46	.06	.30	.50	.04	.04	.08	.08	.16	.12
3	.06	.14	.08	.16	.10	.20	.04	.04	.71	1.09	.16	.10
4	.04	.12	.05	.07	.07	f.10	7.0	.03	.38	1.96	1.11	.54
5	.03	.10	.04	.07	.05	.08	3.5	.03	.23	.22	.16	.14
6	.38	.09	.03	.14	.04	f.07	.70	.04	.10	.91	.12	.10
7	2.1	.08	.04	.05	.03	.07	.35	.28	.07	.69	1.21	.08
8	.59	.08	.05	1.42	.03	5.0	.20	.07	.07	.20	.50	.08
9	.27	.07	.04	.24	.03	.50	.16	.04	2.9	.13	.16	.07
10	1.93	.08	.07	.07	.03	.20	.14	.03	4.3	1.27	.13	.07
11	3.3	.17	.04	.04	.04	.13	.12	.43	.72	.83	.12	.06
12	2.35	.10	.10	.03	.06	.11	.10	.12	.33	1.25	.90	.06
13	.48	.22	.06	.02	.10	3.0	3.0	.05	.20	1.17	.21	.06
14	.22	.10	.03	.02	.50	1.6	1.2	2.3	.14	2.55	.19	.05
15	.38	.36	.05	.02	1.0	.50	.30	.14	.11	.85	.19	.05
16	.19	.09	.10	.01	.07	.16	.16	.07	.10	.47	.12	.06
17	.12	.06	.04	.01	.07	.10	.10	.05	.08	.77	.11	.06
18	.10	.07	.03	.01	.20	.09	.08	.04	1.35	.67	.10	.05
19	.08	.06	.02	.01	.50	.08	.07	.03	.47	.25	.11	.04
20	.08	.05	.02	.01	.10	.07	.07	.03	2.2	.38	.10	.04
21	.24	.04	.02	1.73	.06	.06	.07	.03	.69	1.30	.09	.04
22	.61	f.05	.02	6.2	.04	.06	.07	.02	.25	1.53	.08	.03
23	.86	.04	.02	.93	.03	.06	f.07	.02	.15	1.15	.08	.03
24	.56	.07	.02	.52	.03	.06	.06	4.4	.12	.65	4.3	.03
25	.21	.10	.02	.40	.03	.05	.08	.92	.16	.25	.43	.03
26	.90	.04	.02	.36	.03	.04	.07	.13	.30	.20	1.01	.03
27	.32	.03	.02	.33	.03	.04	.06	1.29	.11	.32	.45	.03
28	.20	.03	.02	f.32	.05	.06	.06	.25	.12	.18	.25	.03
29	.50	.03	.02	.32	.07	.20	.05	-	.10	.25	.20	.03
30	.23	.02	.06	1.6	3.5	.07	.05	-	.08	.74	.14	.03
31	.36	.96	-	.32	-	.06	.04	-	.07	-	.12	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	3.3	0.03	0.582	0.900	18.0	55
August	1.00	.02	.149	.231	4.62	14
September	1.23	.02	.094	.145	2.81	8.6
October	6.2	.01	.507	.784	15.7	48
November	3.5	.03	.273	.422	8.19	25
December	5.0	.04	.510	.788	15.8	49
Calendar year 1942	8.1	.01	.587	.908	214	658
January	7.0	.04	.583	.902	18.1	55
February	4.4	.02	.392	.607	11.0	34
March	4.3	.07	.542	.839	16.8	52
April	2.55	.07	.742	1.15	22.3	68
May	4.3	.08	.425	.658	13.2	40
June	.54	.03	.076	.118	2.27	7.0
Fiscal year 1942-43	7.0	.01	.407	.630	149	456

f Computed on basis of partly estimated gage-height record.

Note.- No gage-height record Oct. 29 to Dec. 3, Dec. 7 to Jan. 22; discharge computed on basis of records for Waikolu Stream.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kapuna Stream near Kalae

Location.- Soil Conservation Service type H (De Fabritis) flume, lat. 21°09'05", long. 156°59'00"; 2.1 miles southeast of Kalae and 4.9 miles northeast of Kaunakakai post office. Altitude of gage, 1,900 feet (from topographic map).
Records available.- June 1940 to June 1943.
Extremes.- Maximum discharge during year, 1.87 million gallons a day (2.89 second-feet) Dec. 8 (gage height, 1.15 feet); minimum, 0.01 million gallons a day (0.02 second-foot) Sept. 19 to Oct. 20, Nov. 27-29.
1940-43: Maximum discharge, 10.0 million gallons a day (15.5 second-feet) Mar. 11, 1942 (gage height, 2.00 feet); minimum, 0.01 million gallons a day (0.02 second-foot) Nov. 11-19, 1940, Oct. 1-7, Nov. 11-29, 1941, Oct. 5, 6, 1942.
Remarks.- Records good. No diversions.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.05	0.02	0.02	0.01	0.03	0.02	0.02	0.04	0.05	0.04	0.04	0.05
2	.05	.02	.02	.01	.03	.03	.02	.04	.05	.04	.04	.05
3	.05	.02	.02	.01	.03	.03	.02	.04	.05	.04	.04	.05
4	.05	.02	.02	.01	.03	.03	.03	.04	.04	.04	.04	.04
5	.05	.02	.02	.01	.03	.03	.09	.03	.04	.04	.04	.04
6	.05	.02	.02	.01	.03	.03	.13	.03	.04	.04	.04	.04
7	.05	.02	.02	.01	.03	.02	.12	.03	.04	.04	.04	.04
8	.05	.02	.02	.01	.03	.30	.10	.03	.04	.04	.04	.04
9	.05	.02	.02	.01	.03	.16	.08	.03	.04	.04	.04	.04
10	.05	.03	.02	.01	.02	.12	.07	.03	.05	.04	.04	.04
11	.05	.03	.02	.01	.02	.08	.06	.03	.07	.04	.04	.04
12	.05	.02	.02	.01	.02	.07	.05	.03	.07	.04	.04	.04
13	.05	.02	.02	.01	.02	.06	.06	.03	.07	.04	.04	.04
14	.04	.02	.02	.01	.02	.05	.07	.03	.06	.04	.04	.04
15	.04	.02	.02	.01	.02	.10	.08	.03	.06	.04	.04	.04
16	.04	.02	.02	.01	.02	.10	.07	.03	.05	.04	.05	.04
17	.04	.02	.02	.01	.02	.09	.07	.03	.05	.04	.05	.04
18	.04	.02	.02	.01	.02	.07	.06	.03	.05	.04	.05	.04
19	.04	.02	.01	.01	.02	.06	.06	.03	.05	.04	.05	.04
20	.04	.02	.01	.01	.02	.06	.05	.03	.06	.04	.04	.04
21	.03	f.02	.01	.02	.02	.05	.05	.03	.06	.04	.04	.04
22	.03	f.02	.01	.02	.02	.05	.04	.03	.06	.04	.04	.04
23	.03	.02	.01	.02	.02	.04	.05	.03	.05	.04	.04	.04
24	.03	.02	.01	.02	.02	.04	.04	.03	.05	.04	.04	.03
25	.03	.02	.01	.02	.02	.03	.04	.04	.04	.04	.05	.03
26	.03	.02	.01	.02	.02	.03	.04	.04	.04	.04	.05	.03
27	.03	.02	.01	.03	.01	.03	.04	.04	.04	.04	.06	.03
28	.03	.02	.01	.03	.01	.03	.04	.04	.04	.04	.06	.03
29	.03	.02	.01	.02	.01	.03	.04	-	.04	.04	.06	.03
30	.02	.02	.01	.03	.02	.03	.04	-	.04	.04	.05	.03
31	.02	.02	-	.03	-	.03	.04	-	.04	-	.05	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	0.05	0.02	0.040	0.062	1.24	3.8
August	.03	.02	.021	.032	.64	2.0
September	.02	.01	.016	.025	.48	1.5
October	.03	.01	.015	.023	.46	1.4
November	.03	.01	.022	.034	.66	2.0
December	.30	.02	.061	.094	1.90	5.8
Calendar year 1942	3.8	.01	.096	.149	35.0	108
January	.13	.02	.057	.088	1.77	5.4
February	.04	.03	.033	.051	.92	2.8
March	.07	.04	.049	.076	1.53	4.7
April	.04	.04	.040	.062	1.20	3.7
May	.06	.04	.045	.070	1.38	4.2
June	.05	.03	.039	.060	1.16	3.6
Fiscal year 1942-43	.30	.01	.037	.057	13.3	40.9

f Computed on basis of partly estimated gage-height record.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

MISCELLANEOUS DISCHARGE MEASUREMENTS

Measurements of streams on the island of Molokai at other than regular gaging stations are listed below:

Miscellaneous discharge measurements on Molokai during fiscal year July 1942 to June 1943

Date	Stream	Tributary to--	Locality	Discharge	
				Second-feet	Million gallons a day
June 10	Pelekunu	Pacific Ocean	At altitude 350 feet, 100 feet below confluence with Lanipuni Stream near Pelekunu.	15.5	10.0

Left Branch Makamakaole Stream near Waihee

Location.- Combined orifice and concrete control, lat. 20°57'40", long. 156°33'45", at intake to Marshall Ranch diversion ditch on left branch, a quarter of a mile upstream from confluence with main stream, 2 miles northeast of Waihee, and 2¼ miles south of Kahakuloa village. Altitude of gage, 1,500 feet (by barometer).

Drainage area.- 0.4 square mile.

Records available.- July 1939 to June 1943.

Extremes.- Maximum discharge recorded, 275 million gallons a day (425 second-feet) Mar. 18 (gage height, 4.87 feet), from rating curve extended above 20 million gallons a day by test on model of station site; minimum, 0.57 million gallons a day (0.88 second-foot) Feb. 23, 24.

1939-43: Maximum discharge, that of Mar. 18, 1943; minimum, 0.55 million gallons a day (0.85 second-foot) July 28, 1940.

Remarks.- Records good except those for periods of no gage-height record, which are fair. Marshall Ranch diversion ditch diverts water from gage pool for watering stock.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

1.2	0.54	1.6	1.90	2.0	10.0
1.3	.60	1.7	3.0	2.1	14.3
1.4	.72	1.8	4.5	2.2	19.5
1.5	1.09	1.9	6.8	2.3	26

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.20	1.81	3.15	1.96	0.77	4.9	0.80	0.77	0.77	2.2	1.45	1.32
2	.90	.94	3.05	1.22	1.05	.78	.80	a.80	.72	1.71	1.29	.98
3	.86	.86	1.53	1.34	.89	.65	1.70	a1.0	2.45	1.98	1.37	.90
4	.82	.62	1.15	1.22	.75	.63	14.2	a.80	6.7	8.4	1.93	2.4
5	.80	.77	1.03	4.2	.75	.62	6.4	a1.0	3.7	2.55	4.1	1.74
6	1.65	.80	1.03	2.1	.82	.61	2.25	a2.0	1.62	1.80	2.6	1.44
7	2.3	1.16	1.15	1.29	.72	.60	1.90	1.56	1.22	1.71	1.37	1.03
8	1.79	2.0	1.18	3.3	.71	1.30	1.37	.72	2.3	1.80	1.37	.98
9	1.90	1.22	.90	2.3	.70	.74	1.15	.69	19.9	1.37	1.09	.92
10	4.6	.94	.90	1.62	1.43	.64	1.22	.57	25.5	5.3	1.03	.86
11	3.65	5.6	.80	1.22	1.36	.63	1.15	1.14	8.4	6.2	1.18	.86
12	3.8	2.2	.94	1.09	.77	a.62	.94	.76	4.0	11.3	1.03	.86
13	2.1	12.4	1.37	1.03	.77	a2.5	8.3	.64	2.45	3.9	.90	1.21
14	1.63	2.35	1.26	.98	1.87	a25	3.65	3.15	2.0	10.6	.86	.90
15	1.29	2.0	1.28	.94	1.52	a2.0	1.71	.80	1.80	4.2	.86	.80
16	1.09	1.45	.98	.86	1.44	a1.4	1.45	.68	1.62	2.65	.82	.90
17	1.03	1.22	.90	.80	.98	a1.8	2.15	.65	1.71	2.45	.80	.82
18	1.16	2.2	.80	.80	2.35	a1.1	1.37	.64	20.5	2.1	.86	.77
19	1.08	1.22	.97	.77	1.64	.98	1.09	.63	7.2	1.90	1.30	.87
20	.94	1.03	1.52	.77	.98	.94	1.03	.63	3.75	2.0	.98	.72
21	.90	1.00	.82	3.25	.86	.86	.98	.63	3.05	1.85	.88	.71
22	1.20	3.05	4.8	14.0	.82	.82	.94	.60	2.25	4.5	.82	.69
23	1.53	1.22	1.42	1.75	.77	.80	.86	.58	1.80	3.05	.80	1.18
24	1.67	1.15	1.95	1.09	.75	.77	.86	7.0	1.62	2.6	13.0	.77
25	.94	1.35	1.62	.98	.72	.75	.82	3.7	2.05	2.0	1.87	.72
26	1.16	.98	1.55	.94	.71	.72	.80	.98	1.94	1.71	1.37	.72
27	.98	.94	1.29	.86	.69	.71	.80	1.11	1.37	1.71	1.62	.69
28	.90	1.09	1.03	1.23	.68	1.62	.77	.86	1.75	1.53	1.09	.67
29	1.09	.90	1.66	.82	.67	3.75	.77	-	1.29	1.53	1.03	.69
30	.86	1.70	3.0	.90	3.7	.94	.77	-	2.2	1.71	.98	.69
31	.82	3.15	-	.80	-	.86	.77	-	2.8	-	.94	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	4.6	0.80	1.50	2.32	46.5	143
August	12.4	.77	1.92	2.97	59.5	183
September	4.8	.80	1.50	2.32	45.0	138
October	14.0	.77	1.82	2.82	56.4	173
November	3.7	.67	1.09	1.69	32.6	100
December	25	.60	1.97	3.05	61.0	187
Calendar year 1942	57	.60	2.71	4.19	987	3,030
January	14.2	.77	2.06	3.19	63.8	196
February	7.0	.58	1.26	1.95	35.2	108
March	25.5	.72	4.53	7.01	140	431
April	11.3	1.37	3.28	5.07	98.3	302
May	13.0	.80	1.66	2.57	51.6	158
June	2.4	.67	.960	1.49	28.8	88
Fiscal year 1942-43	25.5	.58	1.97	3.05	719	2,210

a No gage-height record; discharge computed on basis of records for Honokohau Stream.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kahakuloa Stream near Honokohau

Location.- Concrete control, lat. 20°58'50", long. 156°33'25", just downstream from confluence with lowest tributary, 1.3 miles south of Kahakuloa, and 2 miles west of Puu Makawana.
Drainage area.- 3.4 square miles.
Records available.- July 1939 to August 1943 (discontinued). Fragmentary records at site about 1 mile upstream January 1913 to December 1914.
Extremes.- Maximum discharge during year, 1,990 million gallons a day (3,080 second-feet) Dec. 14 (gage height, 7.02 feet), from rating curve extended above 55 million gallons a day by test on model of station site; minimum, 2.9 million gallons a day (4.5 second-feet) June 22, 23.
1939-43: Maximum discharge, that of Dec. 14, 1942; minimum, that of June 22, 23, 1943.
Remarks.- Records good except those for July 1-8 and those after Dec. 14, which are poor. No diversions.

Discharge, in million gallons, 1942-43

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	9.0	12.7	19.8	11.7	4.1	15.5	4.4	3.55	3.75	11.4	8.5	13.4
2	6.8	6.2	20	6.2	4.2	6.2	4.4	3.4	3.55	4.8	5.7	4.8
3	6.4	7.2	7.1	10.9	5.1	4.6	5.3	3.75	11.9	5.5	5.7	4.1
4	6.0	5.7	5.7	6.5	3.9	3.9	108	3.4	42	125	23.5	33
5	5.8	5.3	5.3	21.5	12.1	3.9	43	4.8	15.6	22	63	8.5
6	12	5.3	5.0	10.0	8.2	3.75	9.9	16.0	6.0	12.6	21.5	7.5
7	18	6.6	6.0	6.2	4.8	3.75	11.0	11.2	4.6	12.2	8.2	4.8
8	14	17.4	7.7	18.5	3.9	12.9	6.0	4.6	18.2	17.5	6.0	4.4
9	13.7	7.7	5.3	12.2	3.9	6.7	5.3	3.75	235	10.3	5.0	4.1
10	27	6.2	5.5	6.8	5.0	4.1	7.3	3.75	299	32.5	4.6	3.9
11	35	37	4.8	5.7	7.2	3.9	8.0	5.1	58	37.5	4.8	3.9
12	22.5	11.2	5.4	5.0	4.6	3.75	4.8	5.0	15.0	64	4.8	3.9
13	11.7	59	11.6	5.0	4.4	23.5	33.5	3.55	11.8	42	4.1	12.4
14	8.0	9.8	13.2	4.8	13.5	304	24	13.0	7.4	89	3.9	4.6
15	7.1	8.4	25.5	4.6	10.9	13	8.0	6.0	6.0	24.5	3.75	3.9
18	6.5	6.8	8.6	4.6	12.8	7.0	5.7	3.75	5.3	11.3	3.75	5.9
17	6.2	6.0	6.2	4.4	6.0	9.0	12.0	3.4	5.5	8.0	3.75	4.6
18	6.2	15.4	5.5	4.4	16.8	6.0	7.7	3.4	105	7.1	4.1	3.4
19	6.2	6.8	5.8	4.1	9.6	5.6	5.0	3.2	80.5	6.8	10.7	4.8
20	6.0	5.7	12.8	4.1	5.5	5.2	4.6	3.75	22.5	6.8	7.1	3.55
21	6.2	5.3	5.5	5.2	4.6	4.9	4.1	3.75	16.8	6.2	5.5	3.2
22	7.6	22	10.7	46	4.1	15	3.9	3.2	9.2	27.5	4.1	2.9
23	12.2	6.5	7.2	8.1	3.9	8.0	3.9	3.05	5.5	13.8	3.75	8.7
24	10.4	6.8	10.1	5.0	3.9	4.8	3.75	43	4.8	10.7	103	4.6
25	7.7	9.5	9.3	4.6	3.9	5.0	3.75	27.5	9.0	6.8	9.2	5.0
26	13.4	5.5	10.8	4.6	3.75	4.5	3.75	5.0	12.1	5.7	6.8	5.5
27	9.5	5.0	8.7	4.4	3.75	4.3	3.55	7.4	3.05	5.7	9.9	4.1
28	6.2	6.4	6.2	4.6	3.55	9.0	3.4	5.7	3.75	5.3	5.5	4.1
29	7.6	5.6	13.3	4.4	3.55	20	3.4	-	3.05	5.3	5.2	4.1
30	6.0	14.5	12.8	4.9	21	5.5	3.4	-	10.5	10.5	5.4	4.1
31	5.5	19.3	-	4.6	-	5.0	3.4	-	11.8	-	4.4	-

1943

Day	July	Aug.	Day	July	Aug.	Day	July	Aug.	Day	July	Aug.
1	5.0	9.3	9	14.7	-	17	6.3	-	25	3.9	-
2	4.1	4.6	10	16.1	-	18	11.4	-	26	7.7	-
3	3.75	-	11	5.5	-	19	4.8	-	27	7.9	-
4	20.5	-	12	16.8	-	20	5.0	-	28	4.8	-
5	7.8	-	13	11.6	-	21	4.4	-	29	3.75	-
6	28	-	14	5.5	-	22	10.8	-	30	3.55	-
7	55	-	15	4.6	-	23	10.2	-	31	5.2	-
8	10.7	-	16	4.1	-	24	4.8	-			

Monthly discharge, in million gallons, 1942-43

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July 1942	35	5.5	10.5	16.2	326	1,000
August	59	5.0	11.4	17.6	353	1,080
September	25.5	4.8	9.38	14.5	281	864
October	46	4.1	8.18	12.7	254	778
November	21	3.55	6.75	10.4	202	621
December	304	3.75	17.2	26.6	532	1,630
Calendar year 1942	450	3.55	18.1	28.0	6,600	20,240
January 1943	108	3.4	11.6	17.9	358	1,100
February	43	3.05	7.39	11.4	207	635
March	299	3.05	32.1	49.7	996	3,060
April	125	4.8	21.6	33.4	648	1,990
May	103	3.75	11.8	18.3	365	1,120
June	33	2.9	6.19	9.58	186	570
Fiscal year 1942-43	304	2.9	12.9	20.0	4,710	14,450
July 1943	55	3.55	9.94	15.4	308	946

Note.- No gage-height record July 1-8, Dec. 15 to Jan. 1; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Honokohau Stream near Honokohau

Location.- Masonry dam control, lat. 20°57'45", long. 156°35'20", 1,000 feet upstream from intake of Honokohau ditch and about 5 miles southeast of Honokohau. Altitude of gage, about 950 feet (by barometer).

Drainage area.- 4.2 square miles.

Records available.- March 1913 to September 1920, May 1922 to June 1943.

Average discharge.- 25 years (1916-20, 1922-43), 26.5 million gallons a day (41.0 second-feet).

Extremes.- Maximum discharge during year, 2,420 million gallons a day (3,740 second-feet) Dec. 14 (gage height, 8.40 feet), from rating curve extended above 120 million gallons a day; minimum, 7.8 million gallons a day (12.1 second-feet) Feb. 23, 24.
1913-20, 1922-43: Maximum discharge, that of Dec. 14, 1942; minimum, 6.2 million gallons a day (9.6 second-feet) June 30, 1926.

Remarks.- Records good. No diversions above station.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

1.9	6.4	2.3	18.9	3.0	73
2.0	8.7	2.5	29	3.3	114
2.1	11.5	2.7	42	3.6	165

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	28	32	47	31	10.9	23	10.1	6.5	8.2	84	65	58
2	70	26.5	33	13.5	11.2	12.2	9.5	10.3	8.0	36.5	13.5	12.5
3	36	20.5	15.3	27	10.7	10.4	9.5	14.5	10.9	42	17.4	10.9
4	21	17.8	14.2	16.8	10.7	10.1	70	9.5	14.0	156	22.5	42
5	16.9	14.9	13.9	34	27	9.8	38.5	16.7	11.6	34.5	46	12.5
6	64	17.3	13.9	20.5	14.9	9.8	17.0	45	8.5	18.5	39	11.2
7	76	35.5	29	14.2	11.5	9.8	15.5	25	8.0	36.5	43	10.9
8	42	44	16.0	44	10.7	32	13.6	10.1	43	35	15.6	10.7
9	25.5	17.7	23	18.8	10.4	12.2	17.0	9.3	163	11.8	12.2	10.4
10	62	16.5	21.5	13.9	10.7	10.1	17.1	6.7	103	25.5	11.8	10.4
11	132	55	14.2	12.9	11.2	9.8	11.5	9.0	23.5	28.5	10.9	10.4
12	54	18.9	19.4	12.2	10.9	9.5	9.8	6.7	12.5	23.5	11.8	13.6
13	23.5	61	16.9	11.8	13.8	28.5	57	8.2	10.7	26	11.2	52
14	18.9	17.7	18.1	11.5	56	161	33	16.6	9.3	76	10.9	11.8
15	17.7	17.7	70	11.5	30	13.5	11.2	9.5	8.7	39	11.2	10.9
16	16.9	15.7	18.8	11.5	21.5	10.9	10.7	8.5	8.5	20	10.9	29.5
17	16.5	19.0	17.3	11.2	12.2	12.9	30	8.2	8.5	12.9	11.5	14.6
18	16.1	31.5	13.9	11.2	29	9.8	13.2	6.5	45	12.2	12.5	12.0
19	15.7	17.3	14.8	11.2	16.1	9.5	9.8	8.2	18.2	13.6	56	19.5
20	15.7	14.6	22	11.2	14.2	9.3	9.5	6.5	59	11.8	26.5	10.7
21	18.2	14.2	13.5	11.8	10.9	9.3	9.3	8.2	43	12.9	12.5	10.1
22	26	34	14.6	15.9	10.7	24	9.3	8.0	14.2	49	11.2	9.5
23	45	15.7	13.9	12.2	10.4	14.0	2.0	7.8	9.8	16.9	10.7	23
24	27.5	24.5	15.7	11.2	10.1	9.5	8.7	30.5	9.3	13.5	76	12.9
25	22	25	14.4	10.9	10.1	10.1	8.7	21.5	57	12.9	16.1	31
26	41	14.6	16.7	10.9	10.1	9.8	6.7	8.5	54	10.9	25.5	19.3
27	21	13.9	18.5	10.9	10.1	9.3	8.7	29.5	10.4	10.9	19.4	11.2
28	17.7	27	24.5	10.9	9.8	62	8.7	10.2	12.5	10.4	11.8	14.9
29	22	17.1	27	10.9	9.8	69	8.7	-	9.5	12.3	15.7	13.6
30	18.9	46	22.5	13.9	41	13.1	8.5	-	35.5	39	13.5	19.1
31	19.5	68	-	11.2	-	10.7	8.5	-	17.2	-	13.7	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	132	15.7	33.8	52.3	1,050	3,210
August	68	13.9	26.2	40.5	813	2,600
September	70	13.5	21.2	32.8	636	1,960
October	44	10.9	15.5	24.0	481	1,470
November	56	9.8	15.9	24.6	477	1,460
December	161	9.3	21.1	32.6	655	2,010
Calendar year 1942	268	7.1	31.3	48.4	11,430	35,050
January	70	8.5	16.5	25.5	510	1,570
February	45	7.8	13.4	20.7	376	1,150
March	163	8.0	27.6	42.7	854	2,620
April	156	10.4	31.1	48.1	932	2,860
May	65	10.7	22.1	34.2	686	2,100
June	58	9.5	18.0	27.9	539	1,650
Fiscal year 1942-43	163	7.8	21.9	33.9	8,010	24,560

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Honokawai ditch near Lahaina

Location.- Lat. 20°56'00", long. 156°37'30", just downstream from intake on Honokawai Stream, 2½ miles upstream from Pioneer Mill Co.'s powerhouse, and 7½ miles northeast of Lahaina. Altitude of gage, about 1,900 feet (from topographic map).

Records available.- July 1912 to June 1943.

Average discharge.- 24 years (1919-43), 5.79 million gallons a day (8.96 second-feet).

Extremes.- Maximum daily discharge during year, 17.3 million gallons a day (26.8 second-feet) July 11; minimum daily, 3.15 million gallons a day (4.87 second-feet) June 21, 22.

1912-32: Maximum discharge, 76 million gallons a day (118 second-feet) Aug. 11, 1929 (gage height, 2.17 feet); no flow occasionally, when water was shut out of ditch.

Remarks.- Records good. Ditch diverts water for power and irrigation from Honokawai Stream just above station. Flow regulated by head gates at intake.

Cooperation.- Records of daily discharges since July 1932 furnished by Pioneer Mill Co.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	6.7	8.5	9.1	9.0	3.8	6.6	3.6	3.55	3.6	12.6	12.6	10.2
2	7.2	5.8	7.3	4.4	3.8	3.95	3.55	3.55	3.55	8.0	4.0	3.6
3	6.4	6.1	4.9	6.7	3.8	3.8	3.55	5.6	3.5	5.3	4.2	3.45
4	4.6	5.9	4.5	4.8	3.7	3.8	9.3	3.9	3.5	13.7	3.65	5.7
5	4.5	4.8	4.3	8.1	3.8	3.7	10.7	5.7	3.5	6.0	5.4	3.8
6	10.9	4.7	4.2	5.4	4.6	3.65	5.5	9.1	3.55	4.6	5.1	3.25
7	13.0	9.5	6.9	4.2	3.9	3.65	6.8	7.2	3.55	7.7	6.8	3.25
8	9.1	9.4	6.1	7.8	3.8	6.9	5.5	3.7	7.8	7.8	4.8	3.3
9	7.2	4.9	6.1	5.6	3.8	4.2	6.6	3.55	11.2	3.65	3.6	3.3
10	14.7	4.8	7.0	4.2	3.8	3.8	5.2	3.55	10.5	4.4	3.45	3.25
11	17.3	9.3	4.4	4.1	3.8	3.7	4.2	3.5	5.3	5.9	3.4	3.3
12	14.6	5.1	4.7	4.1	3.8	3.65	3.7	3.55	3.65	3.95	3.4	3.7
13	6.5	10.1	4.6	4.0	3.9	4.1	7.8	3.55	3.55	5.7	3.5	11.3
14	5.0	5.3	4.2	4.0	12.0	9.4	9.0	3.75	3.45	8.0	3.4	3.45
15	4.8	4.4	9.1	3.9	7.3	3.85	4.3	3.75	3.4	5.2	3.4	3.3
16	4.6	4.1	5.4	4.0	4.9	3.8	3.9	3.55	3.4	5.1	3.3	7.6
17	4.6	4.7	4.5	3.9	4.2	4.0	8.0	3.5	3.4	3.6	3.3	4.4
18	4.6	5.7	4.3	3.8	5.7	3.65	4.5	3.55	5.6	3.4	3.4	3.5
19	4.6	4.4	4.3	3.8	4.5	3.55	4.0	3.55	5.4	3.65	10.2	5.5
20	4.5	3.95	4.7	3.8	4.3	3.55	3.8	3.55	10.4	3.55	6.6	3.2
21	4.5	3.9	4.5	3.8	3.85	3.55	3.55	3.5	10.1	3.8	3.65	3.15
22	6.9	5.6	4.3	3.8	3.7	4.2	3.55	3.55	4.5	8.7	3.5	3.15
23	8.8	4.5	4.2	4.0	3.7	4.2	3.55	3.55	3.6	4.2	3.4	4.0
24	7.5	5.5	4.2	4.0	3.65	3.65	3.55	5.4	3.5	3.6	10.2	3.8
25	5.3	7.1	4.2	3.8	3.6	3.65	3.55	6.3	8.2	3.55	4.7	8.8
26	6.7	4.8	3.65	3.9	3.5	3.6	3.5	3.6	7.9	3.5	10.4	5.7
27	6.0	4.4	4.4	3.8	3.5	3.55	3.5	9.1	3.75	3.4	5.8	3.5
28	5.0	7.1	5.6	3.8	3.6	9.4	3.55	4.1	3.85	3.3	3.7	4.8
29	6.9	5.5	7.9	3.8	3.55	9.5	3.55	-	3.5	3.3	3.45	4.2
30	6.2	12.4	5.7	3.8	8.4	4.2	3.55	-	7.5	8.1	3.4	5.7
31	7.0	13.4	-	3.8	-	3.75	3.55	-	3.8	-	3.8	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	17.3	4.3	7.29	11.3	226	694
August	13.4	3.9	6.30	9.75	195	600
September	9.1	3.65	5.31	8.22	169	489
October	9.0	3.8	4.58	7.09	142	435
November	12.0	3.5	4.48	6.93	134	412
December	9.5	3.5	4.53	7.01	140	431
Calendar year 1942	19.5	3.5	5.87	9.08	2,140	6,580
January	10.7	3.5	4.89	7.57	151	455
February	9.1	3.5	4.45	6.89	124	382
March	11.2	3.4	5.23	8.09	162	497
April	13.7	3.3	5.51	8.53	165	507
May	12.6	3.3	4.95	7.66	154	471
June	11.3	3.15	4.63	7.16	139	426
Fiscal year 1942-43	17.3	3.15	5.19	8.03	1,890	5,810

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Olowalu ditch near Olowalu

Location.- Parshall flume control, lat. 20°49'40", long. 156°36'40", 114 feet upstream from intake of pipe line to hydroelectric plant, 1¼ miles northeast of Olowalu, and 7 miles east of Lahaina.

Records available.- August 1911 to June 1943.

Average discharge.- 25 years (1917-20, 1921-43), 5.05 million gallons a day (7.81 second-feet).

Extremes.- Maximum daily discharge during year, 10.9 million gallons a day (16.9 second-feet) July 11, Apr. 4; minimum daily, 2.8 million gallons a day (4.3 second-feet) Oct. 25, 27, Nov. 9-13, June 28, 29.
1911-32: Maximum discharge, 18 million gallons a day (28 second-feet) Dec. 25, 1920 (gage height, 1.53 feet, site and datum then in use); no flow occasionally, when water was shut out of ditch.

Remarks.- Records good. Ditch diverts water from Olowalu Stream at altitude of about 450 feet. Water used for power and irrigation. Regulated by head gates.

Cooperation.- Records of daily discharges since January 1932 furnished by Pioneer Mill Co.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.0	5.9	9.0	4.8	3.35	8.1	3.8	4.6	6.6	10.4	8.1	5.3
2	5.0	4.6	9.6	3.9	3.6	8.2	3.6	4.3	5.4	10.2	5.6	4.5
3	5.6	4.3	6.4	4.4	3.05	5.7	3.9	4.2	5.0	9.8	5.5	4.2
4	4.7	4.1	5.1	3.9	2.9	4.7	9.0	4.0	4.5	10.9	4.9	5.8
5	3.9	3.8	4.4	6.2	3.4	4.1	7.7	4.2	4.0	10.2	4.6	4.7
6	5.5	4.1	4.1	4.8	4.1	5.0	7.8	7.2	3.9	9.9	4.3	4.3
7	7.3	4.7	4.4	4.0	3.25	4.9	7.8	5.7	3.8	9.9	5.8	4.0
8	6.3	6.8	4.2	4.5	2.9	6.4	6.0	4.4	4.1	9.7	8.4	3.8
9	7.6	4.5	4.0	4.8	2.8	8.9	5.7	4.0	8.1	9.4	7.4	3.7
10	7.8	4.2	4.9	4.0	2.8	7.0	5.7	3.9	9.5	8.5	6.6	3.65
11	10.9	8.7	3.85	3.6	2.8	5.3	5.6	3.85	9.0	7.1	8.5	3.4
12	10.7	6.8	3.95	3.4	2.8	4.6	5.4	3.65	7.4	6.8	10.0	3.35
13	9.4	7.9	3.7	3.25	2.8	4.2	7.0	3.45	6.1	6.5	9.6	5.0
14	7.1	6.4	3.55	3.1	6.4	8.2	8.2	3.4	5.4	7.5	8.0	3.8
15	6.0	5.4	5.4	3.05	7.6	7.3	7.9	3.25	5.0	8.9	6.6	3.5
16	5.2	4.8	6.4	2.95	4.3	5.6	7.9	3.2	4.6	8.1	5.8	4.7
17	4.8	4.5	4.5	2.9	3.6	4.9	7.7	3.2	4.3	6.9	5.3	4.1
18	4.5	5.1	4.0	2.9	4.2	4.4	7.0	3.25	4.7	6.2	5.0	3.6
19	4.4	4.3	3.8	2.85	4.2	4.0	6.1	3.2	4.7	6.0	5.8	3.6
20	4.3	3.95	3.8	2.85	3.5	3.8	6.1	3.2	8.0	5.6	7.0	3.3
21	4.1	3.8	3.55	2.85	3.25	3.6	6.9	3.15	10.0	5.4	5.2	3.1
22	4.5	3.95	4.4	2.95	3.05	3.85	6.0	3.15	8.3	7.6	4.9	3.0
23	5.9	3.8	3.86	2.9	2.95	3.55	5.8	3.15	6.5	5.4	4.5	3.5
24	7.0	3.7	3.65	2.85	2.9	3.35	5.4	3.2	5.6	5.7	7.2	3.05
25	5.1	3.9	3.45	2.8	2.9	3.25	6.4	3.1	6.7	5.3	7.1	2.95
26	5.6	3.45	3.45	2.85	2.85	3.15	5.0	3.25	10.2	5.0	7.9	2.9
27	5.7	3.35	3.4	2.8	2.85	3.05	4.9	10.3	8.4	4.8	7.1	2.85
28	4.8	3.45	3.65	3.1	3.0	7.5	4.7	9.6	7.0	4.5	5.6	2.8
29	4.6	3.3	5.5	2.95	3.8	6.6	4.6	-	5.9	4.4	5.0	2.8
30	4.4	5.8	4.3	5.1	7.2	4.8	4.5	-	7.6	5.2	4.6	3.6
31	4.2	8.7	-	3.4	-	4.1	4.3	-	6.4	-	4.4	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	10.9	3.9	5.84	9.04	181	555
August	8.7	3.3	4.90	7.58	152	467
September	9.6	3.4	4.61	7.13	138	424
October	6.2	2.8	3.57	5.52	111	340
November	7.6	2.8	3.64	5.63	109	335
December	8.9	3.05	5.23	8.09	162	497
Calendar year 1942	10.9	2.55	5.08	7.86	1,850	5,700
January	9.0	3.6	6.02	9.31	187	573
February	10.3	3.1	4.25	6.58	119	365
March	10.2	3.8	6.34	9.81	197	603
April	10.9	4.4	7.43	11.5	223	684
May	10.0	4.3	6.33	9.79	196	602
June	5.8	2.8	3.76	5.82	113	346
Fiscal year 1942-43	10.9	2.8	6.17	8.00	1,890	5,790

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Oheo Stream below diversion dam, near Kipahulu

Location.- Concrete control, lat. 20°41'05", long. 156°04'10", just downstream from old diversion dam at elevation 1,550 feet, 2 miles northwest of Kipahulu, and 2½ miles upstream from mouth.

Drainage area.- 5.8 square miles.

Records available.- February 1927 to September 1929, December 1931 to June 1943.

Extremes.- Maximum discharge during year, 4,440 million gallons a day (6,870 second-feet) Dec. 14 (gage height, 10.50 feet), from rating curve extended above 750 million gallons a day by test on model of station site; minimum, 0.04 million gallons a day (0.06 second-foot) Jan. 29, 17-19, Mar. 6-8.

1927-29, 1931-43: Maximum discharge, 6,190 million gallons a day (9,580 second-feet) Jan. 4, 1933 (gage height, 11.95 feet), from rating curve extended above 400 million gallons a day; no flow in dry periods.

Remarks.- Records good except those for Dec. 20-23, 27, Jan. 16-20, which are poor. Small quantity of water is diverted for domestic supply and livestock.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.1	0.04	0.5	1.08	1.3	15.3	3.0	136
.2	.14	.6	1.79	1.6	27.5	4.0	254
.3	.33	.8	4.0	2.0	51	5.0	465
.4	.63	1.0	7.5	2.5	91	6.0	760

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.13	103	12.2	108	0.10	19.9	114	6.3	0.22	112	24	79
2	.10	12.2	5.7	12.6	.11	5.2	184	32.5	.13	28	1.36	44
3	9.4	16.7	.62	74	30	31.5	465	166	.07	3.6	.38	15.7
4	6.8	8.4	.33	16.8	10.3	27.5	314	54	.06	101	.12	21
5	.16	4.0	.24	47	17.1	43	58	76	.05	67	2.1	5.4
6	34	4.6	.38	15.0	25	7.2	6.7	237	.04	6.7	41	5.7
7	35	22	.72	1.32	21	1.40	8.0	79	.04	46	101	1.09
8	6.5	24	11.9	9.8	.96	2.35	15.8	55	30	88	34.5	.45
9	5.7	2.05	25.5	4.9	.63	2.0	37	7.0	94	11.9	1.31	.31
10	14.0	3.65	43	2.75	.42	.68	13.9	.58	3.25	2.55	.99	.45
11	113	6.8	4.3	5.3	.27	.39	13.9	.27	.48	.65	.59	.27
12	154	1.64	9.6	.52	.20	.27	10.4	.31	.24	.39	1.01	29.5
13	12.5	1.56	9.4	.33	.18	.21	69	.13	.37	.31	.34	108
14	1.98	.40	175	1.06	203	335	49	.09	.14	.87	.18	6.6
15	.72	.18	285	.45	90	5.1	2.15	.07	.08	.29	.14	1.19
16	.51	.24	187	.24	37	1.49	a.84	.05	.08	.25	.14	57
17	.39	8.8	36.5	.14	8.2	1.72	a.42	.04	.05	.14	.25	12.8
18	11.2	25	5.0	.11	4.3	6.2	a.36	.04	.34	.09	.25	23
19	11.2	28	2.05	.08	13.1	1.53	a.31	.04	3.25	.10	98	75
20	2.0	4.5	45	.07	.86	a.72	a.28	15.6	.13	.09	62	12.3
21	14.4	.29	6.7	6.4	.52	a.39	.24	215	10.6	.06	13.4	2.05
22	9.1	35	95	6.6	.38	a.20	.18	1.75	.69	12.9	16.3	.51
23	1.05	14.2	15.1	26	2.6	a8.8	.14	.39	.08	7.8	1.30	44
24	25	2.2	2.95	2.8	11.6	13.9	.10	13.0	.06	.16	3.45	119
25	5.0	2.15	1.15	.62	.68	25	.08	2.65	5.7	.07	44	154
26	15.8	.25	.68	.39	.36	6.2	.06	.54	29.5	.06	105	192
27	1.33	.32	.63	.86	.24	a.45	.06	1.24	.21	.05	64	45
28	.33	5.5	.62	.46	.20	167	.05	.41	.92	.05	3.95	164
29	.36	7.5	.85	.30	.10	17.2	.04	-	.20	.07	1.03	225
30	.73	82	13.4	.44	.31	102	.64	-	.05	.08	.60	116
31	.39	67	-	.20	-	64	.12	-	.06	-	3.75	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	154	0.10	15.9	24.6	493	1,510
August	103	.18	15.9	24.6	494	1,520
September	285	.24	33.2	51.4	997	3,060
October	108	.07	11.1	17.2	344	1,050
November	203	.10	16.0	24.8	480	1,470
December	335	.20	29.0	44.9	898	2,760
Calendar year 1942	589	.04	25.5	39.5	9,300	28,540
January	465	.04	44.0	68.1	1,360	4,190
February	237	.04	34.5	53.4	965	2,960
March	94	.04	5.85	9.05	181	556
April	112	.05	16.4	25.4	491	1,510
May	105	.12	20.2	31.3	626	1,920
June	225	.27	52.0	80.5	1,560	4,790
Fiscal year 1942-43	465	.04	24.4	37.8	8,690	27,300

a Faulty gage-height record; discharge computed on basis of estimated gage heights.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Right Branch Kahalawe Stream near Kipahulu

Location.- Columbus control, lat. 20°41'05", long. 156°03'00", at old ditch intake and 2 miles north of Kipahulu. Altitude of gage, 1,100 feet.

Drainage area.- 0.1 square mile.

Records available.- February 1927 to June 1943.

Average discharge.- 13 years (1927-34, 1935-36, 1938-43), 3.64 million gallons a day (5.63 second-feet).

Extremes.- Maximum discharge during year, 520 million gallons a day (805 second-feet) Dec. 14 (gage height, 3.90 feet), from rating curve extended above 15 million gallons a day by test on model of station site; minimum, 0.50 million gallons a day (0.77 second-foot) Mar. 7.

1927-43: Maximum discharge, 1,940 million gallons a day (3,000 second-feet) Apr. 29, 1937 (gage height, 15.74 feet, datum then in use), from rating curve extended above 22 million gallons a day; minimum, 0.15 million gallons a day (0.23 second-foot) Dec. 18, 1929.

Remarks.- Records good. No diversions.

Rating tables, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

July 1 to Dec. 14

0.9	0.51	1.4	4.8
1.0	.89	1.6	9.3
1.1	1.46	1.8	17.4
1.2	2.25	2.0	29.5
1.3	3.3		

Dec. 15 to June 30

0.8	0.35	1.1	1.54
.9	.62	1.2	2.3
1.0	1.01	1.3	3.3

Note.- Same as preceding table above 1.3 feet.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.20	7.9	4.1	8.1	0.84	11.0	8.8	0.97	0.71	5.3	7.2	6.2
2	1.14	3.0	3.45	2.65	1.06	3.0	3.35	1.43	.65	1.77	1.05	7.9
3	3.8	4.3	1.98	3.8	16.6	3.65	12.6	2.2	.64	1.44	1.31	4.5
4	1.81	2.45	1.60	3.3	3.4	2.7	25	1.47	.65	9.8	.97	6.5
5	1.32	1.98	1.46	6.3	3.85	7.3	6.7	2.7	.58	3.15	1.61	3.0
6	7.1	2.25	1.53	2.95	5.2	2.9	2.95	8.7	.55	1.66	1.55	5.7
7	4.3	4.0	1.94	2.15	4.4	1.60	2.45	3.0	.53	2.35	1.98	2.55
8	2.45	3.9	2.45	4.7	1.82	2.85	2.6	1.66	2.75	3.8	2.15	2.05
9	2.05	2.25	4.5	2.7	1.39	2.05	4.8	1.66	9.1	2.55	1.41	1.75
10	2.05	2.9	5.1	2.95	1.14	1.32	4.2	1.36	1.15	2.95	2.0	1.80
11	5.8	4.3	2.45	2.4	1.04	1.14	3.9	1.10	.92	1.41	1.37	1.66
12	6.9	2.7	3.55	1.90	.99	.99	3.75	.97	.80	1.20	1.56	3.3
13	2.45	2.8	4.2	1.67	.99	1.18	5.5	.87	.97	1.13	1.01	10.6
14	1.82	1.82	17.6	2.3	8.1	29	6.9	.79	.68	1.82	.92	2.4
15	1.63	1.60	13.4	1.67	2.0	2.6	2.1	.75	.62	1.15	.92	1.80
16	1.60	1.64	8.1	1.46	1.67	1.97	1.80	.71	.58	1.20	1.01	4.2
17	1.52	3.0	6.6	1.39	1.54	1.73	1.60	.71	.58	1.05	1.13	2.45
18	10.3	5.7	3.05	1.26	2.6	3.15	1.47	.68	2.15	.97	1.11	2.4
19	4.0	3.2	4.0	1.20	3.55	4.6	1.41	.65	1.88	1.01	6.2	3.85
20	3.0	2.2	10.7	1.09	1.74	6.3	1.30	.62	.87	.92	4.3	2.05
21	3.05	1.67	6.8	2.7	1.32	1.80	1.25	3.95	2.05	.92	4.3	1.66
22	2.8	2.9	15.5	1.67	1.09	1.60	1.20	.79	1.01	3.7	20.5	1.54
23	2.05	3.25	5.8	5.3	4.0	2.2	1.15	.75	.87	1.47	2.4	3.2
24	3.45	2.6	3.2	1.68	6.7	1.73	1.10	7.1	.74	1.15	2.8	8.3
25	2.05	2.45	2.45	1.26	1.46	2.5	1.05	1.29	2.15	.97	3.4	9.9
26	3.55	1.67	2.15	1.04	1.09	1.75	1.01	.75	1.73	.83	5.4	6.9
27	2.1	1.92	2.2	1.57	.94	1.47	.97	2.2	.87	.75	4.8	3.4
28	1.67	3.0	2.2	1.47	.99	6.0	.92	.92	1.29	.71	2.1	7.0
29	1.67	2.05	2.5	1.04	.89	1.86	.87	-	.75	.68	1.66	7.4
30	1.82	6.1	4.6	1.14	.94	5.0	2.25	-	.75	.71	1.60	5.3
31	1.74	8.6	-	.94	-	4.9	.92	-	.71	-	2.7	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	10.5	1.14	2.94	4.55	91.1	280
August	8.6	1.60	3.23	5.00	100	307
September	17.6	1.46	4.94	7.64	148	455
October	8.1	.94	2.41	3.73	74.8	229
November	16.6	.84	2.78	4.30	83.3	256
December	29	.99	3.98	6.13	123	377
Calendar year 1942	36.5	.38	3.61	5.59	1,320	4,040
January	25	.87	3.74	5.79	115	356
February	8.7	.62	1.81	2.80	50.7	156
March	9.1	.53	1.30	2.01	40.3	124
April	9.8	.68	1.95	3.02	58.5	180
May	20.5	.92	2.98	4.61	92.4	284
June	10.6	1.64	4.44	6.87	133	409
Fiscal year 1942-43	29	.53	3.04	4.70	1,110	3,410

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Hana flume near Hana

Location.- Soil Conservation Service type H (De Fabritis) flume, lat. 20°45'10", long. 156°01'50", on Hana flume, 13 feet downstream from end of wooden flume, 2.5 miles south of Kaeleku, and 2.7 miles west of Hana.

Records available.- February 1940 to June 1943. Records prior to July 1940 unpublished.

Extremes.- Maximum discharge during year, 2.8 million gallons a day (4.3 second-feet) Dec. 14 (gage height, 1.36 feet); no flow many times.
1940-43: Maximum discharge, 3.0 million gallons a day (4.6 second-feet) Sept. 19, 1941 (gage height, 1.41 feet); no flow occasionally, when water was shut out of flume.

Remarks.- Records good. Water used for fluming cane and for domestic supply near Hana.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.08	0.80	0.86	1.01	0	0.04	0.66	0.01	0	0.34	0.16	
2	.01	.74	.90	.68	0	.03	.36	.01	0	.19	.01	
3	.25	.58	.37	.86	.16	.25	.82	.03	.22	.09	.15	
4	.14	.11	.03	.76	.02	.23	1.07	.29	.04	.60	.09	
5	.01	.09	.01	.96	.09	.10	.40	.47	.03	.38	.10	
6	.77	.08	.03	.88	.11	.05	.05	.82	0	.07	.46	
7	.61	.33	.50	.52	.04	.01	.03	.24	0	.19	.63	
8	.24	.32	.64	.83	.02	.57	.36	.13	.32	.13	.29	
9	.52	.15	.74	1.06	.01	.60	.72	.03	1.12	.06	0	
10	.89	.12	.94	.96	.01	.18	.85	.04	.80	.49	0	
11	1.08	.70	.71	.79	.01	.01	.58	.47	.22	.27	0	
12	1.07	.33	.86	.33	.01	.01	.12	.05	.02	.41	0	
13	.68	.37	.87	.08	.01	.22	.41	0	0	.41	0	
14	.33	.10	1.69	.45	.47	1.25	.13	.07	0	.77	0	
15	.09	.06	1.50	.06	.64	.58	.01	.01	0	.48	0	
16	.01	.16	1.38	.01	.53	.07	0	0	0	.15	0	
17	.09	.21	1.29	.01	.26	.01	0	0	.11	0	0	
18	.57	.28	1.06	.01	.60	.09	0	0	.29	0	0	
19	.19	.26	1.18	0	.76	.22	0	0	.16	0	.07	
20	.14	.05	1.30	0	.26	.34	0	.04	.13	0	.06	
21	.10	.01	.85	.07	.01	0	0	.35	.08	0	.10	
22	.36	.33	1.35	.09	.01	0	0	0	0	.23	.26	
23	.24	.22	.80	.18	.12	0	0	0	0	.14	0	
24	.42	.28	.33	.02	.13	0	0	.20	0	.01	.28	
25	.19	.20	.05	.01	.02	.03	0	.16	.19	0	.10	
26	.51	.08	.01	.01	.01	0	0	.01	.04	0	.16	
27	.13	.16	.01	.01	.01	0	0	0	0	0	.20	
28	.03	.28	.14	.01	.01	.19	0	0	0	0	0	
29	.16	.23	.24	0	.07	0	0	-	0	0	0	
30	.07	.82	.65	0	.02	.18	.06	-	0	.01	0	
31	.09	.80	-	0	-	.20	0	-	0	-	0	

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	1.08	0.01	0.325	0.503	10.1	31
August	.88	.01	.304	.470	9.41	29
September	1.69	.01	.710	1.10	21.3	65
October	1.06	0	.344	.532	10.7	33
November	.76	0	.147	.227	4.42	14
December	1.25	0	.176	.272	5.47	17
Calendar year 1942	1.87	0	.392	.607	143	440
January	1.07	0	.214	.331	6.63	20
February	.92	0	.122	.189	3.43	11
March	1.12	0	.122	.189	3.77	12
April	.77	0	.181	.280	5.42	17
May	.63	0	.101	.156	3.13	9.6
June	-	-	-	-	-	-
The period	-	-	-	-	-	259

Note.- Data insufficient to compute discharge for days for which no figures are given.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kaeleku flume near Kaeleku

Location.- Soil Conservation Service type H (De Fabritis) flume, lat. 20°46'00", long. 156°03'25", on Kaeleku flume, just downstream from its intake from Hana flume, 2.5 miles southwest of Kaeleku, and 5.5 miles west of Hana.

Records available.- February 1940 to June 1943.

Extremes.- Maximum discharge during year, 8.1 million gallons a day (12.5 second-feet) May 6 (gage height, 2.16 feet); no flow many times.
1940-43: Maximum discharge, that of May 6, 1943; no flow many times.

Remarks.- Records good. Water used for fluming cane and domestic water supply near Kaeleku.

Discharge, in million gallons, fiscal year July 1942to June 1943

Day	July	Aug.	Sept.	Oct:	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.24	2.7	1.70	2.0	0	0	0.95	0.09	0	3.15	3.1	2.35
2	.38	2.3	.85	.23	0	0	.57	.33	0	2.3	1.20	2.25
3	1.21	2.9	.44	.90	.30	.29	1.09	1.03	.86	1.57	2.8	.83
4	1.38	1.84	.24	.87	.46	.32	.71	.18	.31	3.4	2.0	1.75
5	.32	1.67	.07	1.02	1.53	.12	.27	.32	.43	2.4	1.52	.42
6	3.4	2.2	.23	1.00	1.65	.01	0	2.1	.08	1.21	2.85	.27
7	3.7	4.1	.48	.02	.72	0	0	1.46	0	2.25	3.85	.01
8	2.4	3.3	.18	1.04	.01	.34	.16	.69	1.39	2.05	1.97	0
9	.91	2.85	.78	.97	0	.08	.24	.66	1.27	1.42	.34	0
10	.75	3.0	.66	.80	0	0	.39	.30	.02	2.2	.13	.06
11	3.15	4.2	.03	.32	.01	0	.19	1.06	0	2.1	.40	.04
12	3.9	2.9	.58	0	0	0	0	.07	0	2.45	.22	1.40
13	2.35	3.05	.53	0	.09	.27	.55	.01	0	2.25	.01	3.4
14	1.18	1.65	2.7	0	1.08	1.51	.92	.04	0	3.55	0	1.34
15	.53	1.08	2.6	0	.08	.34	.34	0	0	2.6	0	.61
16	.28	1.64	1.85	0	.26	0	.10	0	0	1.55	0	2.05
17	.14	2.8	2.0	0	.02	0	.02	0	0	.69	.07	1.52
18	1.10	3.85	.44	0	.23	0	0	0	.05	.50	.33	.82
19	1.22	3.3	1.02	0	.12	.08	0	0	0	.62	2.45	1.84
20	.96	1.78	1.58	0	0	.05	0	.05	.96	.79	1.62	1.32
21	2.05	1.00	.23	.20	0	0	0	1.13	1.63	.81	1.03	.80
22	2.6	2.6	1.59	.11	0	0	0	.12	.62	2.7	.05	.28
23	1.79	1.50	.16	.30	0	.01	0	.01	.27	1.64	0.	2.0
24	1.44	2.1	0	.08	0	.10	0	.54	.07	.68	1.65	3.4
25	1.16	1.88	0	0	0	.20	0	.17	1.27	.28	1.59	3.85
26	2.85	.86	0	0	0	.01	0	0	.95	.05	2.65	3.3
27	1.31	1.05	0	0	0	0	0	0	.35	0	2.1	1.93
28	.77	1.98	.14	0	0	.61	0	0	.66	0	.13	3.1
29	1.68	1.15	.17	0	0	.48	0	-	.44	.01	0	3.15
30	1.52	2.3	.75	0	0	.90	.04	-	1.33	1.63	.02	2.65
31	1.42	2.45	-	0	-	.71	0	-	.76	-	.61	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	3.9	0.14	1.58	2.44	49.1	151
August	4.2	.86	2.32	3.59	72.0	221
September	2.7	0	.733	1.13	22.0	68
October	2.0	0	.318	.492	9.86	30
November	1.65	0	.219	.339	6.56	20
December	1.51	0	.207	.320	6.43	20
Calendar year 1942	5.7	0	1.06	1.64	387	1,190
January	1.09	0	.211	.326	6.54	20
February	2.1	0	.370	.572	10.4	32
March	1.63	0	.443	.685	13.7	42
April	3.55	0	1.56	2.41	46.8	144
May	3.85	0	1.12	1.73	34.7	106
June	3.85	0	1.56	2.41	46.7	143
Fiscal year 1942-43	4.2	0	.690	1.38	325	997

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Makapipi Stream near Nahiku

Location.- Concrete control, lat. 20°48'35", long. 156°05'55", 100 feet upstream from highway crossing, 1½ miles south of Nahiku, and 4¾ miles southeast of Keanae post office.

Drainage area.- 5.0 square miles.

Records available.- July 1932 to June 1943. Records at same site collected by East Maui Irrigation Co. June 1930 to June 1932.

Average discharge.- 11 years, 7.09 million gallons a day (11.0 second-feet).

Extremes.- Maximum discharge during year, 1,430 million gallons a day (2,210 second-feet) Dec. 14 (gage height, 6.42 feet), from rating curve extended above 70 million gallons a day by tests on model of station site; no flow many times.
1932-43: Maximum discharge, that of Dec. 14, 1942; no flow occasionally during dry weather.

Remarks.- Records good except those for periods of no gage-height record, which are poor. Koolau ditch diverts water 1 mile above station for irrigation in central Maui.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.7	0.1	1.2	0	0	0	0	0	0	17.0	2.3	2.2
2	1.5	0	1.7	0	0	0	1.7	0	0	9.9	1.1	2.0
3	1.5	0	1.7	0	0	0	42	0	0	2.0	3.0	1.7
4	1.3	0	1.5	0	0	0	11.8	0	0	17.7	1.7	1.5
5	1.0	0	1.4	.1	0	0	7.5	0	0	6.3	3.5	1.5
6	1.2	0	1.1	0	0	0	3.1	7.7	0	4.3	3.0	1.5
7	1.2	0	1.0	0	0	0	1.5	0	0	5.1	11	1.4
8	1.2	0	.8	3.3	0	.5	1.0	0	0	7.8	4.0	1.2
9	.8	0	.6	1.1	0	0	.7	0	64	4.1	3.5	1.2
10	.9	0	.6	.4	0	0	.6	0	10.8	14.2	3.2	1.1
11	15.9	.6	.5	0	0	0	.1	0	5.9	9.6	2.9	1.1
12	9.4	.7	.4	0	0	0	0	0	3.1	4.8	2.6	1.1
13	3.4	1.0	.1	0	0	3.7	0	0	2.0	13.6	2.4	1.1
14	2.7	.9	2.2	0	0	154	0	0	1.2	61	2.0	1.0
15	2.4	.8	2.0	0	4.1	5.1	0	0	.9	20	1.9	1.0
16	2.2	.7	2.1	0	36	1.7	0	0	.8	7.0	1.9	1.0
17	2.2	.6	1.5	0	1.2	.9	0	0	.7	2.0	1.7	1.0
18	1.9	.7	1.1	0	.8	.5	0	0	14.1	1.6	1.7	1.0
19	1.4	.6	1.0	0	.7	.1	0	0	3.2	1.5	1.7	1.1
20	1.1	.5	1.0	0	.3	0	0	0	2.0	1.4	2.1	1.0
21	1.1	.4	.9	0	0	0	0	0	2.2	1.4	1.8	1.0
22	1.1	.5	.9	0	0	0	0	0	1.2	2.2	1.7	.9
23	1.1	.5	.7	0	0	0	0	0	1.0	1.6	1.9	.9
24	1.1	.1	.6	0	0	0	0	.2	.8	1.3	6.0	1.0
25	.8	0	.5	0	0	0	0	0	1.7	1.2	2.4	1.0
26	.8	0	.2	0	0	0	0	0	1.9	1.1	10.9	1.1
27	.7	0	0	0	0	0	0	0	1.0	1.0	4.6	1.1
28	.6	.2	0	0	0	25	0	0	.9	.9	3.6	1.4
29	.4	0	0	0	0	9.7	0	-	.8	.8	3.1	1.4
30	.1	.7	0	0	0	.2	0	-	.6	.8	2.6	1.2
31	0	.8	-	0	-	0	0	-	.5	-	2.2	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	15.9	0	2.02	3.13	62.7	192
August	1.0	0	.34	.53	10.4	32
September	2.2	0	.91	1.41	27.3	84
October	3.3	0	.16	.25	4.9	15
November	36	0	1.44	2.23	43.1	132
December	154	0	6.50	10.1	201	618
Calendar year 1942	362	0	11.3	17.5	4,140	12,700
January	42	0	2.26	3.50	70.0	215
February	7.7	0	.28	.43	7.9	24
March	64	0	3.91	6.05	121	372
April	61	.8	7.44	11.5	223	685
May	11	1.1	3.16	4.89	98.0	301
June	2.2	.9	1.22	1.89	36.7	113
Fiscal year 1942-43	154	0	2.48	3.84	906	2,780

Note.- No gage-height record Apr. 15-26, May 3-10, 20-24; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

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West Makapipi Spring near Nahiku

Location.- Parshall flume, lat. 20°48'20", long. 156°06'20", half a mile upstream from highway, 1.7 miles south of Nahiku, and 4¼ miles southeast of Keanae post office.

Records available.- July 1932 to June 1943. Records at same site collected by East Maui Irrigation Co. June 1931 to June 1932.

Average discharge.- 11 years, 0.652 million gallons a day (1.01 second-feet).

Extremes.- Maximum discharge during year, 1.02 million gallons a day (1.58 second-feet) May 7 (gage height, 0.45 foot); no flow Jan. 2, Jan. 7 to Feb. 21.
1932-43: Maximum discharge, 32 million gallons a day (50 second-feet) Feb. 25, 1935 (gage height, 2.93 feet, control then in use), from rating curve extended above 1.5 million gallons a day by weir formulas; no flow in dry weather.

Remarks.- Records good. No diversions.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.71	0.19	0.23	0.19	0.27	0.23	0.01	0	0.05	0.23	0.44	0.75
2	.66	.19	.23	.19	.27	.21	0	0	.05	.25	.47	.75
3	.62	.17	.23	.19	.27	.21	.04	0	.06	.25	.54	.71
4	.62	.17	.23	.19	.27	.21	.08	0	.07	.25	.58	.71
5	.58	.17	.21	.23	.27	.19	.08	0	.07	.25	.66	.71
6	.54	.17	.21	.23	.27	.19	.03	0	.07	.25	.71	.71
7	.54	.17	.21	.23	.27	.17	0	0	.07	.25	.84	.68
8	.54	.17	.21	.27	.27	.17	0	0	.09	.25	.75	.66
9	.50	.16	.19	.27	.30	.17	0	0	.16	.25	.75	.62
10	.50	.16	.19	.25	.30	.17	0	0	.17	.25	.75	.62
11	.58	.16	.19	.25	.30	.16	0	0	.17	.25	.76	.62
12	.54	.16	.19	.25	.30	.14	0	0	.16	.25	.75	.58
13	.50	.17	.19	.25	.30	.14	0	0	.16	.30	.75	.58
14	.47	.17	.22	.25	.30	.16	0	0	.16	.40	.75	.58
15	.44	.17	.23	.25	.32	.17	0	0	.16	.38	.75	.58
16	.40	.17	.23	.25	.35	.16	0	0	.16	.40	.75	.54
17	.40	.17	.21	.25	.32	.14	0	0	.16	.38	.75	.54
18	.38	.17	.21	.25	.30	.13	0	0	.16	.35	.75	.54
19	.35	.17	.19	.25	.30	.11	0	0	.19	.32	.75	.54
20	.32	.17	.19	.25	.30	.11	0	0	.19	.32	.75	.50
21	.32	.17	.19	.25	.30	.10	0	0	.19	.32	.75	.50
22	.30	.17	.19	.25	.30	.09	0	.01	.19	.32	.75	.50
23	.30	.17	.17	.25	.27	.07	0	.02	.19	.35	.79	.50
24	.30	.17	.17	.25	.27	.06	0	.03	.19	.35	.84	.50
25	.27	.17	.17	.25	.27	.05	0	.06	.19	.35	.79	.50
26	.25	.17	.17	.25	.27	.03	0	.06	.21	.35	.64	.47
27	.25	.17	.17	.25	.25	.03	0	.05	.21	.35	.84	.47
28	.23	.17	.17	.25	.25	.02	0	.05	.21	.35	.79	.50
29	.23	.17	.17	.25	.25	.02	0	-	.21	.38	.79	.47
30	.21	.19	.17	.25	.23	.02	0	-	.21	.38	.75	.47
31	.21	.19	-	.25	-	.01	0	-	.21	-	.75	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	0.71	0.21	0.421	0.651	13.1	40
August	.19	.16	.171	.265	5.31	16
September	.23	.17	.198	.306	5.93	18
October	.27	.19	.242	.374	7.49	23
November	.35	.23	.284	.439	8.51	26
December	.23	.01	.124	.192	3.84	12
Calendar year 1942	2.05	.01	.758	1.17	277	848
January	.08	0	.008	.012	.24	.7
February	.06	0	.010	.016	.28	.9
March	.21	.05	.153	.237	4.74	15
April	.40	.23	.311	.481	9.33	29
May	.84	.44	.731	1.13	22.7	70
June	.75	.47	.580	.897	17.4	53
Fiscal year 1942-43	.84	0	.271	.419	98.9	304

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Hanawi Stream near Nahiku

Location.- Lat. 20°48'35", long. 156°06'50", 200 feet upstream from Koolau ditch intake and trail, 1¾ miles southwest of Nahiku, and 4½ miles southeast of Keanae.

Drainage area.- 0.8 square mile.

Records available.- January 1914 to January 1916, November 1921 to June 1943.

Average discharge.- 21 years (1922-43), 13.3 million gallons a day (20.6 second-feet).

Extremes.- Maximum discharge during year, 930 million gallons a day (1,440 second-feet) Dec. 14 (gage height, 8.90 feet), from rating curve extended above 260 million gallons a day by logarithmic plotting; minimum, 1.4 million gallons a day (2.2 second-feet) Dec. 7.
1914-16, 1921-43: Maximum gage height, about 20 feet during flood of Jan. 18, 1916, from floodmarks; minimum discharge, 1.2 million gallons a day (1.9 second-feet) Feb. 19, 1936.

Remarks.- Records good except those above 200 million gallons a day, which are fair, and those for period of no gage-height record, which are poor. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.2	1.3	1.0	9.2	2.5	52
.3	1.9	1.3	13.7	3.0	88
.5	3.4	1.6	19.3	3.5	137
.7	5.4	2.0	29.5	4.0	188

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.1	6.8	18.4	14.4	2.2	1.7	3.25	2.3	2.3	66	23.5	5.5
2	2.7	3.75	13	5.5	2.1	1.7	36.5	7.9	2.25	48	7.1	3.6
3	2.55	3.25	5.8	9.2	2.1	1.7	94	17.0	8.1	12.3	24.5	3.25
4	2.45	2.9	4.6	7.4	2.05	1.6	62	4.8	3.65	54	10.2	3.5
5	2.3	2.75	4.3	14.4	2.2	1.5	21	25	3.25	11.4	8.0	3.15
6	4.7	3.85	4.5	8.4	2.0	1.5	5.8	109	2.7	10.1	17.0	2.9
7	6.3	12.8	6.0	5.1	1.9	1.5	4.4	35	2.55	18.4	13.7	2.75
8	4.0	9.0	5.8	27	1.9	6.5	4.0	8.7	16.0	14.7	7.3	2.7
9	3.75	5.8	7.6	9.1	1.8	5.2	3.15	5.0	93	6.8	6.0	2.6
10	7.7	6.0	6.2	6.4	1.8	3.2	2.9	3.65	20.5	20	6.3	2.6
11	108	13.3	5.4	5.2	1.8	1.9	2.55	6.5	11.2	17.0	5.2	2.55
12	58	6.7	7.0	4.2	1.8	1.7	2.3	3.85	7.2	12.9	4.4	3.55
13	8.1	6.7	6.0	3.85	1.8	22	12.8	2.75	5.6	34	3.95	5.4
14	5.2	4.7	8.2	3.6	67	162	9.0	3.9	4.5	106	3.75	2.9
15	4.1	4.2	8.4	3.3	94	5.0	2.3	2.9	3.75	20.5	3.5	2.6
16	3.6	3.65	13	3.1	42	3.25	2.05	2.4	3.4	11.4	3.3	6.2
17	3.25	4.7	6.4	3.0	4.7	2.85	2.0	2.25	3.3	8.8	3.25	6.6
18	3.0	6.8	5.2	2.85	4.5	2.45	1.9	2.2	15.9	7.8	3.15	4.4
19	2.75	4.1	5.4	2.75	3.6	2.2	1.9	2.2	7.2	8.1	6.2	6.4
20	2.75	3.5	5.9	2.7	2.75	2.05	1.8	2.1	12.1	7.4	4.4	4.2
21	3.0	3.3	4.4	2.75	2.55	1.9	1.8	2.25	10.4	6.5	3.15	3.6
22	5.3	4.6	5.7	2.6	2.3	1.9	1.8	2.0	5.2	16.1	3.0	3.15
23	5.6	4.7	4.5	2.7	2.2	1.8	1.8	2.0	4.1	6.4	2.85	6.0
24	3.0	8.4	3.85	2.55	2.1	1.8	1.8	8.3	3.5	6.6	18.5	11.3
25	2.75	7.3	3.6	2.45	2.0	1.8	1.7	7.2	16.4	6.2	7.1	7.8
26	3.0	3.95	3.3	2.6	1.9	1.7	1.7	2.75	9.4	5.8	73	6.7
27	2.75	3.85	3.25	2.4	1.8	1.7	1.7	2.55	4.1	5.3	18.1	5.2
28	2.55	4.8	3.75	2.3	1.8	96	1.7	2.4	10.6	4.8	6.0	14.7
29	2.6	4.6	3.85	2.25	1.7	43	1.7	-	4.6	4.8	4.6	12.5
30	2.55	23.5	5.9	2.3	1.8	4.6	1.6	-	8.2	10.6	4.1	14.5
31	4.2	33.5	-	2.25	-	3.25	1.6	-	5.4	-	3.85	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	108	2.3	8.89	13.8	276	846
August	33.5	2.75	7.09	11.0	220	674
September	18.4	3.25	6.31	9.76	189	581
October	27	2.25	5.44	8.42	169	517
November	94	1.7	8.80	13.6	264	811
December	162	1.5	12.6	19.5	391	1,200
Calendar year 1942	377	1.5	18.7	28.9	6,820	20,910
January	94	1.6	9.50	14.7	294	904
February	109	2.0	9.94	15.4	278	854
March	93	2.25	10.0	15.5	310	952
April	106	4.6	19.0	29.4	568	1,740
May	73	2.85	9.97	15.4	309	948
June	14.7	2.55	5.49	8.49	165	506
Fiscal year 1942-43	162	1.5	9.41	14.6	3,430	10,530

Note.- No gage-height record Sept. 2-17; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Hanawi Stream below Government Road, near Nahiku

Location.- Concrete control, lat. 20°49'15", long. 156°06'25", three-quarters of a mile southwest of Nahiku and 4 miles southeast of Keanae post office. Altitude of gage, 500 feet (by barometer).

Drainage area.- 1.6 square miles.

Records available.- July 1932 to June 1943. Records at same site collected by East Maui Irrigation Co. January 1927 to June 1932.

Average discharge.- 11 years, 29.3 million gallons a day (45.3 second-feet).

Extremes.- Maximum discharge during year, 3,440 million gallons a day (5,320 second-feet) Dec. 14 (gage height, 9.07 feet), from rating curve extended above 28 million gallons a day; minimum, 11.9 million gallons a day (18.4 second-feet) Feb. 1, Mar. 1, 2.

1932-43: Maximum discharge, 7,180 million gallons a day (11,100 second-feet) Mar. 21, 1937 (gage height, 9.54 feet); minimum, 8.2 million gallons a day (12.7 second-feet) Feb. 25, 26, 1936.

Flood that destroyed shelter Apr. 6 or 7, 1938, probably reached a higher stage than 9.54 feet, the maximum given.

Remarks.- Records good except those prior to Nov. 27, those above 50 million gallons a day, and those for periods of no gage-height record, which are fair. Entire flow of stream above station up to 25 million gallons a day is diverted by the East Maui Irrigation Co.'s ditch at altitude 1,300 feet for irrigation in central Maui.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	13.5	14.0	16.9	13.8	13.1	12.6	13.7	12.2	12.2	60	19.9	13.3
2	13.8	13.8	15.8	13.3	13.1	12.6	33	12.6	11.9	36	13.0	13.0
3	13.8	13.8	14.9	13.5	13.1	12.6	151	14.1	14.8	16.9	23	12.6
4	13.8	13.8	14.4	13.5	13.1	12.6	60	12.2	13.0	47	14.1	13.0
5	13.8	13.8	14.0	14.2	13	12.6	26.5	16.2	13.0	16.9	17.1	12.6
6	13.8	13.8	14.0	13.5	13	12.6	15.2	91	12.2	15.5	19.6	12.6
7	13.5	13.8	14.0	13.5	13	12.6	14.5	27	12.2	17.7	26	12.6
8	13.8	14.0	14.0	20	13	14.7	14.1	13.0	18.5	16.4	15.2	12.6
9	13.5	14.0	14.0	14.4	13	13.3	13.7	13.0	153	14.5	14.5	12.6
10	13.8	14.0	14.0	13.8	13	13.0	13.3	12.6	35.5	25.5	13.7	12.2
11	79	14.7	13.8	13.5	13	12.6	13.0	12.6	17.8	18.1	13.7	12.2
12	37	14.2	14.0	13.5	13	12.2	13.0	12.2	15.6	15.6	13.3	12.2
13	15.1	15.4	13.8	13.3	15	16.3	17.2	12.2	14.1	50	13.3	12.6
14	14.7	14.7	15.5	13.3	40	436	16.1	13.0	13.7	102	13.0	12.2
15	14.2	14.4	14.4	13.5	150	14	13.0	12.6	13.7	25	13.0	12.2
16	14.0	14.4	16.8	13.5	45	14	13.0	12.6	13.3	16.4	13.0	12.6
17	14.0	14.2	14.2	13.3	16	14	13.0	12.6	13.0	15.2	13.0	12.6
18	14.0	14.4	13.8	13.3	13	13	13.0	12.6	33	14.1	13.0	12.6
19	13.8	14.2	13.8	13.3	13	13	12.6	12.2	17.3	13.7	13.3	12.6
20	13.8	14.0	14.0	13.5	13	13	12.6	12.2	14.1	13.3	13.3	12.2
21	13.8	14.0	13.8	13.5	13	13.3	12.6	12.2	15.7	13.0	13.0	12.2
22	14.0	14.2	13.8	13.5	13	13.3	12.6	12.2	13.7	14.6	13.0	12.2
23	14.0	14.0	13.5	13.3	13	13.3	12.6	12.2	13.3	13.3	13.0	12.2
24	14.0	14.0	13.3	13.3	13	13.0	12.6	13.5	13.0	13.3	23.5	13.0
25	13.8	14.0	13.3	13.5	13	13.0	12.6	14.1	16.4	13.0	14.1	13.0
26	13.8	13.8	13.1	13.5	13	12.6	12.6	13.0	14.9	13.0	48	12.6
27	13.8	14.0	13.3	13.5	13	12.6	12.6	12.6	13.7	13.0	15.8	12.6
28	13.8	14.2	13.3	13.5	13.0	121	12.6	12.2	13.7	12.6	14.1	14.4
29	13.8	14.0	13.5	13.3	13.0	45	12.6	-	13.0	12.6	13.3	13.3
30	13.8	16.1	13.5	13.3	13.0	13.7	12.6	-	13.0	12.6	13.0	13.7
31	13.8	22.5	-	13.1	-	13.3	12.6	-	13.0	-	13.0	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	79	13.5	16.7	25.8	519	1,590
August	22.5	13.8	14.5	22.4	448	1,380
September	16.9	13.1	14.2	22.0	424	1,300
October	20	13.1	13.7	21.2	425	1,300
November	150	13.0	19.7	30.5	591	1,810
December	436	12.2	31.3	48.4	971	2,980
Calendar year 1942	1,060	10.0	29.4	45.5	10,740	32,930
January	151	12.6	20.3	31.4	630	1,930
February	91	12.2	16.1	24.9	451	1,380
March	153	11.9	19.8	30.6	615	1,890
April	102	12.6	22.7	35.1	680	2,090
May	48	13.0	16.2	25.1	502	1,540
June	14.4	12.2	12.7	19.6	380	1,170
Fiscal year 1942-43	436	11.9	18.2	28.2	6,640	20,360

Note.- No gage-height record Nov. 5-27, Dec. 15-20; discharge computed on basis of records for stations on nearby streams.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kapaula Stream near Nahiku

Location.- Lat. 20°48'50", long. 156°07'05", 40 feet upstream from intake to Koolau ditch, 300 feet upstream from ditch trail, 1¾ miles southwest of Nahiku, and 4 miles southeast of Keanae.

Drainage area.- 0.2 square mile.

Records available.- November 1921 to June 1943.

Average discharge.- 21 years (1922-43), 11.0 million gallons a day (17.0 second-feet).

Extremes.- Maximum discharge during year, 1,330 million gallons a day (2,060 second-feet) Dec. 14 (gage height, 7.19 feet), from rating curve extended above 140 million gallons a day; minimum, 0.91 million gallons a day (1.41 second-feet) Jan. 29-31.
1921-43: Maximum discharge, 1,780 million gallons a day (2,750 second-feet) Apr. 6, 1938 (gage height, 8.40 feet), from rating curve extended above 140 million gallons a day; minimum, 0.2 million gallons a day (0.3 second-foot) Nov. 23-25, 1933, Oct. 2-5, 1938.

Remarks.- Records good except those above 100 million gallons a day and those for period of no gage-height record, which are fair. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.4	0.70	1.0	8.8	2.0	41
.5	1.40	1.2	13.4	2.4	68
.6	2.35	1.4	18.6	2.8	106
.7	3.5	1.6	25	3.0	130
.8	5.0	1.8	32	3.3	176

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	Jnly	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.05	9.0	18.4	17.0	1.40	1.50	2.7	2.0	1.40	53	22	5.2
2	2.45	3.4	12.1	6.7	1.40	1.33	20.5	8.6	1.33	36	5.8	2.7
3	2.15	2.7	4.2	9.1	1.33	1.26	41	16.5	8.1	13.2	21	2.35
4	2.05	2.15	3.06	8.2	1.33	1.19	36.5	5.0	3.25	45	10.8	2.8
5	1.88	1.97	2.6	19.4	1.40	1.19	17.4	25.5	2.6	12.4	7.3	2.15
6	4.8	3.5	2.35	11.7	1.33	1.12	4.2	70	1,88	6.9	9.9	1.97
7	7.3	14.1	5.2	4.6	1.26	1.12	3.4	25	1.59	18.6	17.9	1.88
8	4.1	11.2	5.1	25.5	1.26	6.6	3.2	10.5	20	14.7	7.3	1.78
9	3.5	5.7	5.3	11.4	1.19	4.7	2.35	5.2	82	4.7	5.0	1.68
10	8.4	5.2	6.1	5.5	1.19	3.25	2.15	3.3	22.5	17.3	4.4	1.50
11	85	14.0	3.5	3.95	1.19	1.68	1.88	7.3	12.6	20.5	3.8	1.26
12	47	6.3	6.3	3.05	1.26	1.40	1.59	4.3	7.2	13.9	3.25	f2.5
13	8.1	8.5	3.95	2.7	1.26	24.5	1.59	2.15	5.4	27	2.9	4.9
14	3.95	3.4	6.8	2.45	43	151	4.1	3.55	3.6	79	2.7	2.36
15	3.05	2.8	6.9	2.25	64	3.65	1.88	2.35	2.8	19.9	2.45	1.88
16	2.7	2.35	14.5	2.15	41	2.15	1.50	1.78	2.35	9.7	2.25	6.3
17	2.35	3.55	6.7	2.05	6.4	1.78	1.40	1.50	2.25	6.4	2.15	7.7
18	2.15	6.4	3.95	1.97	4.0	1.59	1.26	1.40	16.5	5.0	2.05	4.1
19	2.05	3.05	4.2	1.88	3.4	1.40	1.26	1.33	13.3	6.4	6.3	9.8
20	2.05	2.45	5.5	1.78	2.35	1.33	1.19	1.33	13.2	5.4	3.75	3.65
21	2.05	2.25	3.15	1.88	1.97	1.26	1.19	1.40	17.5	3.65	2.45	2.7
22	4.5	3.7	5.7	1.78	1.78	1.26	1.19	1.26	5.3	16.8	2.15	2.15
23	5.3	4.4	5.0	1.88	1.59	1.33	1.12	1.19	3.55	8.1	1.97	6.0
24	2.8	7.7	2.9	1.76	1.50	1.19	1.06	8.5	2.6	3.95	21.5	12.8
25	2.25	7.2	2.6	1.68	1.40	1.12	1.06	10.5	14.9	3.4	8.7	10.8
26	2.6	3.15	2.25	1.78	1.33	1.05	.98	2.45	12.9	2.9	62	8.6
27	2.45	2.7	2.05	1.68	1.33	.98	.98	1.78	3.4	2.7	21	5.0
28	2.05	3.9	2.35	1.59	1.33	89	.98	1.50	9.6	2.6	5.7	18.6
29	1.97	3.25	3.35	1.59	1.26	37.5	.91	-	4.4	2.6	3.25	15.1
30	1.88	23	5.5	1.50	1.33	4.6	.91	-	8.4	9.4	2.7	15.8
31	3.45	37	-	1.40	-	2.6	.91	-	5.5	-	2.45	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	85	1.88	7.40	11.4	229	704
August	37	1.97	6.77	10.5	210	644
September	16.4	2.05	5.38	8.32	162	496
October	25.5	1.40	5.19	8.03	161	494
November	64	1.19	6.53	10.1	196	601
December	151	.98	11.5	17.8	356	1,090
Calendar year 1942	304	.98	14.2	22.0	5,180	15,890
January	41	.91	5.24	8.11	162	498
February	70	1.19	8.12	12.6	227	698
March	82	1.33	10.1	15.6	312	958
April	79	2.6	15.7	24.3	471	1,450
May	62	1.97	8.93	13.8	277	850
June	18.6	1.26	5.53	8.56	166	509
Fiscal year 1942-43	151	.91	8.03	12.4	2,930	8,990

f Computed on basis of partly estimated gage-height record.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kapaula Stream below Government Road, near Nahiku

Location.- Concrete control, lat. 20°49'25", long. 156°06'55", 3,000 feet downstream from highway, 1.3 miles southwest of Nahiku, and 3.8 miles southeast of Keanae post office. Altitude of gage, 620 feet (by barometer).

Drainage area.- 0.5 square mile.

Records available.- July 1932 to June 1943. Records at same site collected by East Maui Irrigation Co. March 1927 to June 1932.

Average discharge.- 11 years, 8.60 million gallons a day (13.3 second-feet).

Extremes.- Maximum discharge during year, 720 million gallons a day (1,110 second-feet) Dec. 14 (gage height, 4.37 feet), from rating curve extended above 10 million gallons a day by logarithmic plotting; minimum, 1.2 million gallons a day (1.9 second-feet) Nov. 9.

1932-43: Maximum discharge, 960 million gallons a day (1,490 second-feet) Apr. 7, 1938 (gage height, 5.00 feet), from rating curve extended above 10 million gallons a day by logarithmic plotting; minimum, 1.1 million gallons a day (1.7 second-feet) several days in August 1934, January 1935, and Feb. 24, 1941.

Remarks.- Records good except those above 30 million gallons a day and those for periods of no gage-height record, which are fair. Koolau ditch diverts water 4,000 feet above station, at 1,300 feet altitude, for irrigation in central Maui.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.2	0.7	0.7	11.4	1.6	74
.3	1.6	.8	15.6	1.8	97
.4	3.2	1.0	26	2.0	123
.5	5.3	1.2	39		
.6	8.0	1.4	55		

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.5	1.9	9.7	4.2	1.2	1.4	1.9	1.3	1.4	37	16.6	2.2
2	1.5	1.5	8.1	2.1	1.2	1.4	17.5	2.4	1.4	29.5	2.1	1.9
3	1.4	1.5	2.2	1.8	1.2	1.4	43	5.7	4.4	3.2	10.3	1.9
4	1.4	1.4	1.8	1.8	1.2	1.3	30	1.8	2.4	a32	6.7	1.8
5	1.4	1.4	1.6	8.0	1.3	1.3	15.3	5.3	1.9	a5.3	6.0	1.8
6	1.8	1.4	1.6	2.6	1.2	1.3	2.4	47	1.6	a5.0	6.4	1.6
7	1.8	2.5	1.6	2.7	1.2	1.3	2.1	17.0	1.5	14.2	16.6	1.6
8	1.6	2.9	1.8	16.5	1.2	4.3	1.9	2.1	8.3	13.1	2.7	1.4
9	1.6	1.3	1.9	5.2	1.2	1.9	1.9	1.8	79	2.4	2.2	1.3
10	1.8	1.6	2.2	1.9	1.3	1.4	1.9	1.6	12.7	15.9	1.9	1.3
11	60	5.8	1.8	1.6	1.3	1.5	1.8	1.6	7.7	14.9	1.8	1.3
12	38.5	2.4	1.9	1.6	1.3	1.2	1.8	1.5	2.9	6.1	1.6	1.3
13	2.8	3.4	1.8	1.5	1.3	1.6	1.8	1.5	2.4	14.3	1.6	1.6
14	1.9	2.9	4.3	1.5	21	117	2.3	1.4	2.2	74	1.6	1.3
15	1.8	1.8	2.7	1.5	46	21	1.6	1.4	2.1	23	1.5	1.3
16	1.6	1.6	10.6	1.4	47	1.6	1.6	1.3	1.8	7.9	1.5	1.4
17	1.5	1.8	2.1	1.4	2.2	1.6	1.6	1.3	1.8	2.4	1.5	2.4
18	1.5	1.9	1.8	1.4	1.8	1.6	1.6	1.3	8.1	2.1	1.4	1.5
19	1.4	1.6	1.8	1.4	1.6	1.6	1.5	1.3	9.4	2.1	1.8	2.4
20	1.4	1.5	2.1	1.4	1.5	1.6	1.4	1.3	1.9	2.2	1.9	1.8
21	1.4	1.4	1.8	1.4	1.5	1.5	1.4	1.3	9.7	1.9	1.5	1.4
22	1.5	1.9	1.9	1.4	1.5	1.5	1.3	1.3	2.2	8.5	1.4	1.4
23	1.9	1.6	1.9	1.4	1.4	1.6	1.3	1.3	1.9	2.6	1.4	1.8
24	1.6	1.6	1.8	1.4	1.4	1.5	1.3	4.9	1.8	1.9	16.5	3.6
25	1.4	1.9	1.5	1.3	1.4	1.6	1.3	6.0	7.7	1.8	2.8	a5.6
26	1.4	1.6	1.5	1.3	1.4	1.4	1.3	1.8	8.1	1.8	47	a2.5
27	1.5	1.8	1.5	1.3	1.4	1.4	1.3	1.5	2.1	1.5	14.7	a2.0
28	1.4	1.8	1.5	1.3	1.4	66	1.3	1.4	3.2	1.6	2.7	a3.5
29	1.4	1.8	1.6	1.3	1.4	37	1.2	-	2.1	1.4	1.9	a3.0
30	1.4	13.2	1.6	1.3	1.4	1.8	1.2	-	1.9	1.3	1.8	a2.7
31	1.3	27.5	-	1.3	-	1.8	1.2	-	2.1	-	1.8	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	60	1.3	4.65	7.19	144	443
August	27.5	1.3	3.17	4.90	98.2	301
September	10.6	1.5	2.66	4.12	79.8	245
October	16.5	1.3	2.46	3.81	76.2	234
November	47	1.2	5.05	7.81	151	465
December	117	1.2	9.13	14.1	283	868
Calendar year 1942	282	1.2	11.2	17.3	4,080	12,540
January	43	1.2	4.81	7.44	149	457
February	47	1.3	4.26	6.59	119	366
March	79	1.4	6.38	9.87	198	607
April	74	1.4	11.0	17.0	331	1,020
May	47	1.4	5.85	9.05	181	556
June	8.5	1.3	2.12	3.28	63.6	195
Fiscal year 1942-43	117	1.2	5.14	7.95	1,870	5,760

a No gage-height record; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Koolau ditch at Nahiku weir, near Nahiku

Location.- Sharp-crested weir, lat. 20°48'55", long. 156°07'15", between Kapaula and Waiohue Streams, 3½ miles southwest of Nahiku, and 4 miles southeast of Keanae. Datum of gage is 1,289.14 feet above mean sea level.

Records available.- February 1919 to June 1943.

Average discharge.- 24 years, 21.8 million gallons a day (33.7 second-feet).

Extremes.- Maximum discharge during year, 62 million gallons a day (96 second-feet) Dec. 14 (gage height, 1.75 feet); minimum, 5.6 million gallons a day (8.7 second-feet) Dec. 7, 8. 1919-43: Maximum discharge, 62 million gallons a day (96 second-feet) Oct. 22, 1941, Dec. 14, 1942; no flow occasionally, when intake gates are closed.

Remarks.- Records excellent except those for Oct. 13-21, which are good. 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, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	13.9	27	48	43	8.1	7.1	14.6	7.9	8.9	51	45	22.5
2	12.0	15.3	42	22	7.9	6.8	24.5	19.2	8.4	50	29	16.7
3	11.4	13.3	27.5	28	7.6	6.3	55	33.5	24	36.5	42	15.0
4	11.1	11.7	23.5	25.5	7.3	6.1	62	15.0	14.3	52	40	16.0
5	10.4	11.4	19.9	39	7.9	6.1	45	35	12.0	48	37	14.3
6	17.6	14.2	18.4	33	7.3	5.8	27.5	55	10.1	36.5	31	13.3
7	22.5	34.5	23	21.5	7.1	5.6	22	43	9.2	48	50	12.3
8	15.4	30.5	22.5	32	6.8	17.6	20.5	27	31.5	48	38	11.7
9	15.3	22.5	23.5	41	6.8	16.4	16.7	18.0	48	31	29	11.1
10	25.5	22.5	26.5	28	6.6	11.8	15.6	14.4	45	37.5	26	10.8
11	53	40	19.9	23	6.8	7.9	13.6	21.5	40	30	22.5	10.4
12	55	28.5	26	19.5	6.8	7.1	12.7	15.4	31	48	19.9	12.0
13	40	30	20.5	a17	6.6	14.4	14.7	11.7	25.5	45	18.1	18.8
14	27.5	21	30.5	a16	33.5	45	21.5	15.2	21	55	16.7	12.3
15	22	18.8	28.5	a15	54	20.5	11.4	12.0	17.4	52	15.6	10.8
16	18.8	17.0	38	a14	36	15.3	10.1	10.4	15.6	48	14.6	18.3
17	16.7	19.2	29	a13	22.5	13.0	9.6	9.8	14.6	40	14.0	21
18	15.0	26	22.5	a12	16.1	11.4	8.9	9.5	21	33.5	13.3	16.7
19	13.6	17.8	23	a12	14.0	10.4	8.4	8.9	33	33.5	20.5	26.5
20	13.3	15.3	25.5	a11	11.1	10.1	7.9	8.6	30	29	17.9	17.0
21	13.0	14.3	19.5	a12	9.8	9.5	7.6	9.2	38	25	13.6	14.6
22	17.8	19.4	23.5	10.8	8.9	8.9	7.3	8.1	22	42	12.3	13.0
23	20.5	18.8	21	10.8	8.4	8.9	7.1	7.9	18.1	33.5	11.7	18.2
24	13.6	25	17.0	10.1	8.1	8.1	6.8	21.5	15.3	29.5	30.5	31
25	12.0	25	15.6	9.8	7.6	8.1	6.8	26.5	34.5	23.5	26.5	28.5
26	13.0	16.4	14.5	9.8	7.6	7.6	6.6	12.0	33	21	48	23.5
27	12.3	15.6	13.8	9.2	7.3	7.3	6.3	10.4	18.8	19.5	48	19.5
28	11.1	18.8	14.5	8.9	7.1	41	6.3	9.5	27	18.1	26.5	39.5
29	11.1	17.3	16.0	8.6	6.8	42	5.1	-	18.1	17.8	20.5	38
30	10.4	46	19.5	8.4	6.8	18.6	6.1	-	26	29.5	18.1	40
31	13.9	52	-	8.1	-	15.0	5.8	-	22	-	16.7	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	58	10.4	18.7	28.9	580	1,780
August	52	11.4	22.7	35.1	705	2,160
September	48	13.6	23.8	36.8	713	2,190
October	43	8.1	18.5	28.6	572	1,760
November	54	6.6	12.0	18.6	359	1,100
December	45	5.6	13.5	20.9	420	1,200
Calendar year 1942	58	5.6	23.1	35.7	8,450	25,940
January	55	5.8	15.6	24.1	485	1,490
February	55	7.9	17.7	27.4	496	1,520
March	48	8.4	23.7	36.7	733	2,250
April	55	17.8	37.6	58.2	1,130	3,460
May	50	11.7	26.2	40.5	812	2,490
June	40	10.4	19.1	29.6	573	1,760
Fiscal year 1942-43	55	5.6	20.8	32.2	7,580	23,250

a No gage-height record; discharge computed on basis of records for stations at Keanae, Haipuaena, and Wailoa ditch at Honopou.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Waiaaka Stream near Nahiku

Location.- Concrete control, lat. 20°49'25", long. 156°07'00", 3,000 feet downstream from Government Road, 1½ miles west of Nahiku, and 3½ miles southeast of Keanae post office. Altitude of gage, about 650 feet (by barometer).

Drainage area.- 0.1 square mile.

Records available.- July 1932 to June 1943. Records at same site collected by East Maui Irrigation Co. March 1927 to June 1932.

Average discharge.- 11 years, 0.822 million gallons a day (1.27 second-feet).

Extremes.- Maximum discharge during year, 44 million gallons a day (68 second-feet) Dec. 14 (gage height, 2.44 feet), from rating curve extended above 14 million gallons a day by tests on model of station site; minimum, 0.35 million gallons a day (0.54 second-foot) Nov. 10.

1932-43: Maximum discharge, 73 million gallons a day (113 second-feet) Mar. 6, 1933 (gage height, 1.87 feet, site and datum then in use), from rating curve extended above 1 million gallons a day by formula for V-notch weirs; minimum, 0.30 million gallons a day (0.46 second-foot) several days in October, November, 1933, and April, May, and June, 1934.

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

Rating table, fiscal year 1942-43 (gage-height, in feet, and discharge, in million gallons a day)

0.3	0.24	0.7	3.15
.4	.55	.8	4.4
.5	1.14	1.0	7.5
.6	2.0		

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.54	0.54	1.04	0.72	0.42	0.46	0.72	0.42	f0.50	1.40	1.5	0.91
2	.50	.50	.95	.58	.38	.42	.80	.50	.50	.83	.80	.67
3	.50	.50	.77	.58	.38	.42	2.55	.54	.95	.77	1.0	.67
4	.50	.46	.77	.58	.38	.42	1.53	.50	.85	1.29	.90	.67
5	.50	.46	.72	.84	.38	.42	1.37	.54	.72	1.22	.86	.62
6	.62	.50	.67	.67	.38	.42	1.08	.96	.62	.95	.88	.58
7	.62	.54	.67	.58	.38	.42	.95	.67	.58	1.02	1.5	.68
8	.58	.58	.67	.95	.38	.75	.89	.58	1.66	1.26	.72	.54
9	.50	.62	.67	.77	.38	.50	.77	.54	7.4	.95	.66	.54
10	.58	.58	.67	.62	.38	.46	.77	.54	1.81	1.50	f.62	.54
11	1.45	.86	.62	.58	.42	.42	.67	.54	1.37	2.55	.62	.54
12	1.20	.67	.67	.58	.42	.42	.67	.50	1.22	1.08	.62	.54
13	.83	1.19	.58	.54	.42	.88	.52	.46	1.08	.95	.58	.58
14	.72	.72	1.73	.54	.57	3.3	.62	.54	.95	2.15	.58	.54
15	.62	.67	1.03	.54	.58	.72	.54	.46	.83	1.5	.58	.50
16	.58	.62	.89	.50	.84	.62	.54	.42	.72	1.1	.54	.58
17	.58	.62	.81	.50	.54	.58	.50	.42	.72	.80	.54	.58
18	.54	.67	.72	.50	.50	.58	.50	.42	1.84	.74	.58	.58
19	.54	.62	.77	.50	.50	.54	.46	.42	1.02	.74	.58	.58
20	.54	.58	.89	.46	.46	.54	.46	.42	.96	.76	.54	.54
21	.50	.58	.72	.50	.46	.54	.46	.42	.95	.70	.50	.54
22	.58	.79	.83	.46	.46	.50	.46	.42	.77	1.0	.50	.46
23	.58	.62	.72	.54	.46	.54	.46	.42	.72	.82	.50	.50
24	.54	.58	.57	.46	.46	.50	.42	.89	.67	.70	1.5	.68
25	.50	.62	.62	.42	.46	.50	.42	.78	.82	.66	.82	.67
26	.50	.58	.62	.42	.46	.50	.42	.54	1.02	.66	4.2	.62
27	.50	.67	.58	.42	.46	.46	.42	.50	.72	f.60	.95	.58
28	.50	.67	.62	.42	.46	.58	.42	.50	.67	.60	.77	.81
29	.50	.62	.54	.42	.46	1.80	.42	-	.67	.58	.72	.77
30	.50	1.53	.58	.46	.46	.62	.42	-	.62	.66	.67	.72
31	.46	1.86	-	.42	-	.58	.42	-	.67	-	.67	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	1.45	0.46	0.603	0.933	18.7	57
August	1.86	.46	.697	1.08	21.6	66
September	1.73	.54	.760	1.18	22.8	70
October	.95	.42	.551	.853	17.1	52
November	.84	.38	.456	.706	13.7	42
December	3.3	.42	.659	1.02	20.4	63
Calendar year 1942	11.2	.38	.878	1.36	320	982
January	2.55	.42	.702	1.09	21.8	67
February	.96	.42	.531	.822	14.9	46
March	7.4	.50	1.12	1.73	34.6	106
April	2.55	.58	1.02	1.58	30.5	94
May	4.2	.50	.871	1.35	27.0	83
June	.91	.46	.608	.941	18.2	66
Fiscal year 1942-43	7.4	.38	.716	1.11	261	802

f Computed on basis of partly estimated gage-height record.

Note.- No gage-height record Apr. 15-26, Apr. 28 to May 9, May 22-24; discharge computed on basis of records for stations on nearby streams.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Paakea Stream near Nahiku

Location.- Concrete control, lat. 20°49'25", long. 156°07'05", 3,000 feet downstream from highway, 1½ miles west of Nahiku, and 3½ miles southeast of Keanae post office. Altitude of gage, 650 feet (by barometer).

Drainage area.- 0.5 square mile.

Records available.- July 1932 to June 1943. Records at same site collected by East Maui Irrigation Co. March 1927 to June 1932.

Average discharge.- 11 years, 4.38 million gallons a day (6.78 second-feet).

Extremes.- Maximum discharge during year, 236 million gallons a day (365 second-feet) Mar. 9 (gage height, 5.52 feet), from rating curve extended above 20 million gallons a day by logarithmic plotting; minimum, 1.29 million gallons a day (2.00 second-feet) Oct. 5.
1932-43: Maximum discharge, that of Mar. 9, 1943; minimum, that of Oct. 5, 1942.

Remarks.- Records good except those for periods of no gage-height record, which are poor. Koolau ditch diverts all low flow at altitude of about 1,200 feet for irrigation in central Maui.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.4	1.50	0.8	9.2	1.4	30
.5	2.9	.9	12.3	1.6	37
.6	4.6	1.0	15.8	1.8	44
.7	6.7	1.2	23		

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.4	3.2	6.0	4.0	2.1	2.1	2.7	2.0	2.2	14.7	8.3	3.5
2	2.25	2.4	4.0	2.9	2.1	2.1	5.3	2.4	2.2	4.3	2.55	3.1
3	2.25	2.4	3.25	2.9	2.1	2.1	14.3	4.5	5.5	4.2	5.2	3.1
4	2.25	2.25	3.05	2.9	2.1	2.1	7.1	2.4	3.15	12.7	3.05	3.0
5	2.25	2.25	2.9	5.5	2.1	2.1	3.9	4.6	2.55	4.5	5.0	3.0
6	2.9	2.4	2.9	3.05	2.1	2.1	3.4	7.3	2.4	4.3	4.2	2.6
7	2.7	4.5	3.05	2.9	2.1	2.1	3.05	2.9	2.25	5.2	10.8	2.6
8	2.4	2.9	3.05	9.6	2.1	6.2	2.9	2.55	7.3	6.2	3.4	2.4
9	2.25	2.8	3.0	3.75	2.1	2.55	2.7	2.4	44	3.75	3.05	2.25
10	2.7	2.55	3.05	3.05	2.1	2.4	2.9	2.25	11	14.0	2.9	2.25
11	21	5.2	2.9	2.9	2.25	2.25	2.55	2.25	7.0	5.1	2.7	2.25
12	11.3	3.05	3.05	2.9	2.25	2.25	2.55	2.25	3.5	3.4	2.55	2.25
13	3.05	4.0	2.7	2.4	2.25	6.6	2.55	2.25	3.0	11.0	2.5	2.55
14	2.7	2.9	5.2	2.4	5.6	21.5	2.55	2.55	2.8	25.5	2.5	2.4
15	2.4	2.7	3.7	2.25	4.4	5.25	2.4	2.25	2.7	6.0	2.5	2.25
16	2.4	2.7	5.6	2.25	7.0	2.7	2.25	2.1	2.4	3.6	2.5	2.4
17	2.25	2.7	3.5	2.25	2.9	2.55	2.25	2.1	2.4	3.25	2.5	2.4
18	2.25	2.9	3.05	2.25	2.4	2.55	2.25	2.1	12.2	3.05	2.4	2.25
19	2.25	2.7	3.15	2.25	2.4	2.4	2.1	2.1	4.0	2.9	3.0	2.7
20	2.25	2.55	3.6	2.25	2.25	2.25	2.1	2.1	4.2	2.7	3.2	2.25
21	2.25	2.55	3.05	2.25	2.25	2.25	2.1	2.1	3.6	2.7	2.6	2.1
22	2.55	3.15	3.05	2.1	2.25	2.25	2.1	2.1	2.7	4.4	2.4	2.1
23	2.7	2.7	2.9	2.4	2.25	2.4	2.1	2.1	2.55	2.9	2.4	2.4
24	2.55	2.7	2.7	2.25	2.1	2.25	2.1	6.0	2.55	2.55	8.0	3.25
25	2.25	2.9	2.7	2.1	2.1	2.25	2.1	7.0	7.0	2.55	3.5	3.25
26	2.4	2.55	2.55	2.1	2.1	2.25	2.1	2.7	4.6	2.4	15	2.9
27	2.4	2.95	2.55	2.1	2.1	2.25	2.1	2.3	2.55	2.25	10	2.7
28	2.25	3.0	2.55	2.1	2.1	7.6	2.1	2.2	2.55	2.25	4.5	4.4
29	2.25	3.5	2.55	2.1	2.1	12.7	2.1	-	2.4	2.25	3.2	3.6
30	2.25	10.1	2.7	2.25	2.1	2.55	2.1	-	2.9	2.4	3.0	3.5
31	2.25	8.8	-	2.25	-	2.4	2.0	-	3.15	-	3.0	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	21	2.25	3.30	5.11	102	314
August	10.1	2.25	3.35	5.18	104	319
September	6.0	2.55	3.27	5.06	98.0	301
October	9.6	2.1	2.86	4.43	88.6	272
November	7.0	2.1	2.54	3.93	76.2	234
December	21.5	2.1	3.72	5.76	115	354
Calendar year 1942	80	2.0	3.21	4.97	1,170	5,440
January	14.3	2.0	3.06	4.73	94.8	291
February	7.3	2.0	2.92	4.52	81.8	251
March	44	2.2	5.27	8.15	163	501
April	25.5	2.25	5.63	8.71	169	519
May	15	2.4	4.27	6.61	132	406
June	4.4	2.1	2.72	4.21	81.7	251
Fiscal year 1942-43	44	2.0	3.58	5.54	1,310	4,010

Note.- No gage-height record Jan. 15-18, Jan. 29 to Feb. 2, Feb. 16 to Mar. 2, Mar. 10-16, Apr. 11-13, 23-27, May 13 to June 8; discharge computed on basis of records for stations on nearby streams.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Waiohue Stream near Nahiku

Location.- Lat. 20°49'05", long. 156°07'40", 200 feet upstream from intake to Koolau ditch, 300 feet upstream from ditch trail, 2¼ miles southwest of Nahiku, and 3¼ miles southeast of Keanae.

Drainage area.- 1.5 square miles.

Records available.- October 1921 to June 1943.

Average discharge.- 21 years (1922-43), 8.27 million gallons a day (12.8 second-feet).

Extremes.- Maximum discharge during year, 550 million gallons a day (851 second-feet) Dec. 13 (gage height, 5.40 feet), from rating curve extended above 50 million gallons a day; minimum, 1.81 million gallons a day (2.80 second-feet) Jan. 30, 31.
1921-43: Maximum discharge, 760 million gallons a day (1,180 second-feet) Apr. 7, 1938 (gage height, 6.24 feet), from rating curve extended above 50 million gallons a day; minimum, 1.4 million gallons a day (2.2 second-feet) Nov. 25, 1933.

Remarks.- Records good. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.5	1.45	1.0	6.6	1.8	33.6
.6	2.05	1.1	8.4	2.0	45
.7	2.85	1.2	10.6	2.3	67
.8	3.8	1.4	16.3	2.6	93
.9	6.1	1.6	24		

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.7	6.9	10.2	9.7	2.55	2.15	3.15	2.1	2.45	27.5	15.3	4.6
2	3.3	4.1	7.4	4.3	2.45	2.05	10.7	4.6	2.35	15.2	4.7	3.3
3	3.25	3.5	4.7	5.2	2.45	1.99	22	7.9	7.0	7.4	11.8	3.15
4	3.15	3.15	4.3	5.5	2.35	1.99	17.8	3.15	3.8	23.5	6.5	3.55
5	3.05	3.05	4.1	10.7	2.55	1.93	9.6	11.1	3.25	8.0	5.8	3.25
6	5.4	3.3	4.2	6.5	2.35	1.93	3.55	31.5	2.7	6.0	8.1	3.05
7	6.0	7.5	5.4	4.2	2.3	1.87	3.25	11.6	2.55	12.1	11.2	2.85
8	4.2	6.5	5.2	16.0	2.2	6.0	3.5	4.4	11.3	10.0	5.6	2.75
9	3.95	5.0	6.4	6.7	2.15	2.7	2.95	3.3	50	5.0	4.4	2.7
10	6.6	4.6	6.7	5.0	2.15	2.45	3.0	2.85	11.8	17.5	4.2	2.6
11	39	9.7	4.4	4.6	2.15	2.05	2.7	3.55	6.5	12.1	3.95	2.6
12	21	5.1	6.2	4.3	2.2	1.99	2.6	2.9	5.0	9.3	3.7	2.85
13	5.2	7.0	4.7	4.2	2.15	22.5	2.7	2.55	3.9	24	3.5	4.2
14	4.3	4.3	6.6	3.95	17.9	70	2.75	3.6	3.4	39	3.4	2.85
15	3.8	3.95	7.7	3.8	26	3.05	2.55	2.75	3.15	15.2	3.3	2.6
16	3.6	3.7	7.5	3.6	21	2.55	2.45	2.6	2.85	7.7	3.25	4.2
17	3.5	4.6	5.1	3.5	3.9	2.45	2.35	2.55	2.85	6.4	3.25	4.0
18	3.4	6.3	4.4	3.4	3.6	2.3	2.3	2.55	15.1	6.0	3.15	3.55
19	3.3	4.2	5.2	3.3	3.15	2.2	2.3	2.55	7.4	6.3	4.5	5.5
20	3.4	3.8	5.4	3.25	2.6	2.15	2.3	2.55	8.5	5.6	3.75	3.4
21	3.3	3.6	4.2	3.25	2.45	2.06	2.2	2.7	8.0	5.0	3.05	2.95
22	4.5	4.9	5.8	3.15	2.35	2.0	2.2	2.45	3.75	12.1	2.85	2.75
23	4.7	5.0	4.3	3.75	2.3	2.15	2.15	2.45	3.5	6.0	2.75	3.75
24	3.5	5.8	3.8	3.15	2.2	1.93	2.15	9.5	3.15	4.8	14.9	5.5
25	3.25	5.4	3.6	2.85	2.2	1.99	2.05	5.9	11.4	4.4	5.4	5.3
26	3.6	3.8	3.4	2.95	2.15	1.93	1.99	2.95	7.3	4.1	29	4.2
27	3.5	3.8	3.3	2.75	2.15	1.87	1.99	2.7	3.5	3.8	9.3	3.6
28	3.15	4.5	3.7	2.7	2.15	39	1.93	2.55	5.5	3.7	3.8	9.3
29	3.15	4.2	4.0	2.7	2.05	1.95	1.93	-	3.6	3.6	3.3	6.5
30	3.15	14.5	4.3	2.65	2.15	3.3	1.87	-	5.0	7.3	3.05	8.0
31	4.2	19.8	-	2.6	-	3.0	1.87	-	5.3	-	2.95	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	39	3.05	5.58	8.63	173	531
August	19.8	3.05	5.66	8.76	175	538
September	10.2	3.3	5.17	8.00	155	476
October	16.0	2.6	4.65	7.19	144	443
November	26	2.05	4.34	6.71	130	400
December	70	1.87	6.94	10.7	215	660
Calendar year 1942	172	1.87	9.46	14.6	3,450	10,590
January	22	1.87	4.09	6.33	127	389
February	31.5	2.1	5.07	7.84	142	435
March	50	2.35	7.00	10.8	217	665
April	39	3.6	10.6	16.4	319	978
May	29	2.75	6.25	9.67	194	594
June	9.3	2.6	3.98	6.16	120	367
Fiscal year 1942-43	70	1.87	5.78	8.94	2,110	6,480

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

West Kopiliula Stream near Keanae

Location.- Lat. 20°49'10" (revised), long. 156°08'15", 600 feet upstream from Koolau ditch crossing and highway bridge and 3 miles southeast of Keanae post office. Datum of gage is 1,292.30 feet above mean sea level.

Drainage area.- 3.9 square miles.

Records available.- January 1914 to September 1917, October 1921 to June 1943.

Average discharge.- 19 years (1922-34, 1936-43), 19.3 million gallons a day (29.9 second-feet).

Extremes.- Maximum discharge during year, 1,710 million gallons a day (2,650 second-feet) Dec. 14 (gage height, 6.20 feet), from rating curve extended above 10 million gallons a day; minimum, 1.58 million gallons a day (2.44 second-feet) Jan. 30, 31.
1914-17, 1921-43: Maximum discharge, 4,020 million gallons a day (6,220 second-feet) Apr. 6, 1938 (gage height, 9.12 feet), from rating curve extended above 75 million gallons a day; minimum, 0.6 million gallons a day (0.9 second-foot) Sept. 15-17, 1917.

Remarks.- Records fair. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.3	1.20	0.8	12.3	2.2	122
.4	2.15	.9	15.8	2.6	185
.5	3.65	1.1	25	3.0	265
.6	6.0	1.4	43	3.5	400
.7	9.0	1.8	77		

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.65	11.8	34	27.5	2.46	2.5	3.65	4.4	2.45	68	27.5	6.3
2	3.2	4.0	20	9.0	2.3	1.96	47	12.3	2.3	44	6.9	3.5
3	2.9	3.65	7.2	14.3	2.15	1.86	60	21	11.4	18.3	27	3.2
4	2.75	3.2	6.0	14.4	2.15	1.86	73	5.4	5.7	56	15.2	3.65
5	2.6	3.05	5.2	31.5	2.3	1.77	37	37.5	3.8	16.0	7.4	3.5
6	7.5	6.0	5.2	21.5	2.15	1.77	9.6	146	2.9	12.4	11.2	3.5
7	9.7	23.5	9.4	8.4	1.96	1.77	7.5	47	2.6	22.5	13.7	2.9
8	4.7	17.4	7.1	33	1.96	10.4	5.7	15.8	26.5	15.7	11.1	2.9
9	4.0	7.8	7.8	15.6	1.86	4.4	4.0	7.5	153	6.5	8.3	2.75
10	10.8	7.4	8.6	9.0	1.86	3.35	3.65	6.2	30	23	6.9	2.75
11	145	20	6.0	6.6	2.15	2.05	5.2	11.5	18.8	25.5	8.9	2.75
12	67	8.0	10	5.2	2.15	1.86	2.9	7.7	12.6	19.6	5.4	3.9
13	12.4	10.0	7.4	4.7	2.3	12.3	3.05	4.3	9.3	77	4.9	5.4
14	6.0	5.7	14	4.5	92	330	11.6	5.7	7.6	93	6.9	2.9
15	4.7	4.7	13	4.0	131	7.8	3.35	4.0	5.4	26.5	5.4	2.6
16	4.0	4.3	17	3.85	57	3.85	3.05	3.35	4.3	13.0	4.0	8.0
17	3.65	6.4	9.8	3.6	11.2	3.35	2.75	3.05	4.3	9.0	3.85	7.0
18	3.35	8.4	5.4	3.35	6.9	2.9	2.6	2.9	21.5	7.5	3.65	4.3
19	3.05	4.0	6.4	3.35	4.7	2.6	2.45	2.75	19.8	9.0	8.2	10.0
20	3.2	3.35	8.6	3.2	3.65	2.3	2.3	2.6	22.5	6.9	4.4	3.85
21	3.65	3.5	5.0	3.5	3.2	2.05	2.15	2.45	23.5	6.3	3.36	3.35
22	6.5	4.5	19	3.35	2.9	1.96	2.05	2.15	9.8	24	3.35	3.2
23	7.4	7.4	9.9	4.4	2.6	2.05	1.96	2.05	6.4	9.9	3.2	7.6
24	4.3	12	6.4	3.35	2.45	1.86	1.96	11.8	4.5	6.6	28	13.4
25	3.65	10	4.9	2.9	2.15	1.77	1.86	12.8	22	5.7	10.3	9.7
26	4.0	4.2	4.7	3.05	2.05	1.77	1.86	5.05	13.6	4.9	95	6.9
27	3.35	4.0	4.3	2.9	1.96	1.68	1.77	2.75	4.7	4.3	28	5.2
28	3.05	4.8	5.1	2.75	1.96	203	1.77	2.6	13.4	4.3	8.2	23.5
29	3.05	4.8	6.0	2.6	1.86	68	1.68	-	4.9	4.5	4.9	16.7
30	3.05	50	9.9	2.75	2.6	5.8	1.68	-	11.4	12.8	4.0	19.3
31	6.7	72	-	2.6	-	3.85	1.68	-	7.1	-	3.65	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	145	2.6	11.4	17.6	353	1,080
August	72	3.05	11.0	17.0	340	1,040
September	34	4.3	9.41	14.6	282	866
October	33	2.6	8.40	13.0	260	799
November	131	1.86	11.9	12.4	358	1,100
December	330	1.68	22.4	34.7	694	2,130
Calendar year 1942	750	1.68	23.9	37.0	8,720	26,760
January	73	1.68	9.96	15.4	309	948
February	146	2.05	14.0	21.7	392	1,200
March	153	2.3	15.7	24.3	486	1,500
April	93	4.3	21.8	33.7	653	2,000
May	95	3.2	12.3	19.0	383	1,170
June	23.5	2.6	6.48	10.0	194	527
Fiscal year 1942-43	330	1.68	12.9	20.0	4,710	14,430

Note.- No gage-height record Aug. 21 to Sept. 22; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

East Wailuaiki Stream near Keanae

Location.- Lat. 20°49'05", long. 156°08'25", 1,000 feet upstream from Koolau ditch crossing and trail and 3 miles southeast of Keanae post office.
Drainage area.- 3.7 square miles.
Records available.- December 1913 to October 1917, July 1922 to June 1943.
Average discharge.- 21 years (1922-43), 20.1 million gallons a day (31.1 second-feet).
Extremes.- Maximum discharge during year, 1,360 million gallons a day (2,100 second-feet) Dec. 14 (gage height, 7.20 feet), from rating curve extended above 300 million gallons a day; minimum, 1.4 million gallons a day (2.2 second-feet) Jan. 29-31.
1913-17, 1922-43: Maximum discharge, 3,060 million gallons a day (4,730 second-feet) Apr. 6, 1938 (gage height, 9.26 feet), from rating curve extended above 300 million gallons a day; minimum, 1.0 million gallons a day (1.6 second-feet) Oct. 22, 23, 1917, Aug. 1, 2, 1922.
Flood of Dec. 24, 1921, may have reached a higher stage than 9.26 feet, the maximum given, but owing to destruction of station no data are available for this peak.
Remarks.- Records good except those for periods of faulty or no gage-height record, which are fair. No diversions above station. Water used for irrigation in central Maui.

Rating tables, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)
(Shifting-control method used Dec. 28 to Apr. 1)

July 1 to Apr. 1

0.4	1.5	1.2	8.5	2.8	72
.5	2.1	1.4	11.5	3.2	105
.6	2.7	1.6	16.0	3.6	151
.8	4.1	2.0	28	4.0	213
1.0	6.0	2.4	46		

Apr. 2 to June 30

0.6	2.8	1.2	9.1	2.4	47
.7	3.5	1.4	12.6	2.8	75
.8	4.3	1.6	16.9	3.2	112
.9	5.2	1.8	22	3.6	159
1.0	6.3	2.0	28.5		

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.2	14.5	31.5	31	2.6	2.4	3.6	5.0	a1.8	75	41	7.4
2	3.6	4.6	18.2	8.0	2.5	2.3	39	14.8	a1.7	68	7.8	4.3
3	3.4	3.9	6.7	12.8	2.5	2.2	44	23	14.5	18.9	36.5	3.9
4	3.3	3.4	5.3	12.5	2.4	2.0	69	4.8	5.3	87	19.4	4.5
5	3.2	3.2	4.6	35.5	2.6	2.0	44	32.5	3.6	16.4	8.1	4.0
6	9.2	6.0	4.7	20.5	2.4	2.0	9.2	123	2.4	13.6	13.6	4.0
7	11.0	31.5	9.1	7.8	2.3	1.9	7.2	48	2.1	29.5	14.9	3.6
8	6.2	16.6	7.1	41	2.2	16.6	5.9	11.2	32	19.0	12.2	3.4
9	5.2	7.7	7.8	17.3	2.2	4.7	3.6	6.9	129	7.5	9.4	3.2
10	13.0	7.0	8.4	8.1	2.4	3.5	3.5	4.6	37	35	6.8	3.3
11	174	24	5.3	6.2	2.9	2.2	3.0	6.7	20	33	7.5	3.4
12	83	7.9	10.5	5.2	2.8	2.0	2.7	4.9	10.0	21	6.0	4.7
13	12.3	9.7	6.8	4.6	2.8	31.5	2.8	3.2	7.4	77	5.1	6.8
14	7.0	5.3	14.6	4.3	101	212	6.0	5.8	5.7	132	11.0	3.4
15	5.7	4.6	13.9	4.1	113	8.2	3.0	3.3	4.5	40	8.2	3.2
16	5.0	4.1	19.0	3.8	56	4.5	2.4	2.6	3.7	13.6	4.9	10.7
17	4.6	6.3	10.1	3.6	10.3	3.5	2.2	2.4	3.5	10.3	4.4	9.4
18	4.3	9.2	5.8	3.5	7.1	3.0	2.1	2.3	26.5	8.5	4.2	6.3
19	4.0	4.6	6.8	3.4	5.0	2.8	2.0	2.2	21	10.1	9.4	12.7
20	4.0	3.9	8.9	3.3	3.5	2.6	1.9	2.2	19.1	7.6	5.2	4.8
21	4.5	3.9	5.1	4.6	3.1	2.4	1.9	2.1	27	7.2	3.9	3.9
22	6.8	6.1	16.6	3.6	2.9	2.4	1.9	1.9	6.6	28.5	3.7	3.4
23	7.4	8.3	10.8	4.9	2.7	2.6	1.8	1.9	5.7	10.6	3.5	10.5
24	4.1	13.4	5.4	3.6	2.6	2.3	1.7	a10.5	4.0	7.2	37.5	16.0
25	3.7	10.1	4.6	3.0	2.5	2.4	1.7	11.1	23.5	6.6	12.3	10.2
26	4.1	4.6	4.6	3.2	2.4	2.2	1.7	2.8	14.4	5.6	123	8.2
27	3.9	4.6	4.2	3.0	2.4	2.2	1.6	a2.2	4.5	5.2	37	5.8
28	3.4	5.9	4.3	2.9	2.3	165	1.6	a2.0	10.8	4.9	8.9	29
29	3.3	5.2	6.5	2.8	2.3	75	1.6	-	4.6	5.6	5.8	14.5
30	3.2	46	9.2	3.0	2.5	6.2	1.5	-	13.2	17.8	4.8	24
31	9.0	68	-	2.8	-	4.2	1.5	-	6.9	-	4.6	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	174	3.2	13.5	20.9	420	1,290
August	68	3.2	11.4	17.6	354	1,090
September	31.5	4.2	9.21	14.2	276	848
October	41	2.8	8.84	13.7	274	841
November	113	2.2	11.8	18.3	354	1,090
December	212	1.9	18.7	28.9	579	1,780
Calendar year 1942	800	1.9	26.2	40.5	9,540	29,310
January	69	1.5	8.89	13.8	276	846
February	123	1.9	12.2	18.9	343	1,060
March	129	1.7	15.2	23.5	472	1,450
April	132	4.9	27.4	42.4	822	2,520
May	123	3.5	15.5	24.0	481	1,470
June	29	3.2	7.72	11.9	232	710
Fiscal year 1942-43	212	1.5	13.4	20.7	4,880	14,980

a No gage-height record; discharge computed on basis of records for nearby streams.
Note.- Faulty gage-height record July 13 to Aug. 4; discharge computed on basis of records for nearby streams.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

West Wailuaiki Stream near Keanae

Location.- Lat. 20°49'20", long. 156°08'35", 500 feet upstream from Koolau ditch crossing and trail bridge and 2¾ miles south of Keanae post office.

Drainage area.- 3.6 square miles.

Records available.- January 1914 to October 1917, November 1921 to June 1943.

Average discharge.- 21 years (1922-43), 25.7 million gallons a day (39.8 second-feet).

Extremes.- Maximum discharge during year, 2,110 million gallons a day (3,260 second-feet) Dec. 14 (gage height, 9.32 feet), from rating curve extended above 420 million gallons a day; minimum, 1.65 million gallons a day (2.55 second-feet) Dec. 7, 8.
1914-17, 1921-43: Maximum discharge, 4,500 million gallons a day (6,960 second-feet), estimated, Jan. 14, 1923 (gage height, about 13.5 feet, from floodmarks), from rating curve extended above 420 million gallons a day; minimum, 0.3 million gallons a day (0.5 second-foot) July 26, 1922.

Remarks.- Records good. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.4	1.65	1.0	7.0	2.0	40
.5	2.1	1.2	10.4	2.5	73
.6	2.55	1.4	15.0	3.0	121
.7	3.4	1.6	22	4.0	270
.8	4.4	1.8	30	5.0	510

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.6	16.2	42	38	2.25	2.4	5.2	6.4	2.46	103.	42	7.4
2	3.8	5.2	24	11.1	2.15	2.4	59	15.3	2.3	75	9.2	4.6
3	3.4	4.2	10.0	16.5	2.1	2.05	46	24.5	15.9	37.5	40	4.1
4	3.2	3.4	7.3	17.3	2.05	1.92	90	6.2	7.8	92	28	4.2
5	2.95	3.25	6.0	46	2.2	1.78	58	43	6.4	20.5	9.3	5.0
6	8.5	8.0	5.9	29	2.0	1.74	14.3	162	3.9	22	14.4	6.1
7	12.8	37.5	10.3	11.0	1.88	1.70	11.5	57	3.2	30	17.8	3.9
8	6.7	25	7.8	52	1.83	15.4	8.6	15.3	50	19.9	29	3.3
9	5.4	10.3	8.6	21.5	1.74	5.4	5.9	8.8	178	9.7	12.7	3.0
10	13.9	9.0	8.4	11.2	1.92	3.55	5.0	7.1	53	38	8.6	3.0
11	216	27	6.2	8.3	2.7	2.1	4.2	9.9	27	44	9.0	3.25
12	109	10.7	11.5	6.6	2.6	1.88	3.7	6.0	16.0	28	9.1	4.1
13	17.4	13.4	11.0	5.7	2.65	32	3.85	4.6	12.5	140	8.0	5.7
14	9.1	7.3	29	5.1	132	336	8.0	7.5	9.0	140	25.5	3.0
15	6.7	5.9	22.5	4.6	127	9.9	4.1	5.2	7.0	45	11.7	2.65
16	6.5	5.0	23.5	4.2	61	5.4	3.25	3.7	5.7	17.2	6.2	8.3
17	4.8	7.5	13.5	3.9	14.1	4.0	2.9	3.2	7.4	12.1	5.0	9.0
18	4.3	9.2	8.1	3.6	8.5	3.25	2.55	2.95	45	9.7	4.6	4.8
19	4.0	5.1	8.6	3.3	6.2	2.9	2.4	2.8	22	11.1	8.2	11.1
20	4.1	4.2	12.2	3.2	4.3	2.55	2.25	2.55	40	8.6	5.3	4.8
21	4.8	4.1	7.2	5.1	3.6	2.4	2.15	2.45	24.5	8.1	3.9	3.6
22	8.2	5.8	30	3.8	3.2	2.25	2.1	2.25	11.0	33.5	3.6	3.1
23	7.7	9.4	15.0	4.3	2.9	2.3	2.05	2.15	8.8	12.6	3.25	9.6
24	8.2	16.2	7.5	3.6	2.6	2.05	1.96	17.0	6.4	8.3	41	14.2
25	5.1	13.3	6.2	2.9	2.5	1.96	1.92	20.5	33.5	7.0	14.1	10.0
26	4.8	5.6	6.0	3.0	2.3	1.88	1.88	4.2	13.1	5.9	146	8.1
27	3.7	5.4	5.5	2.65	2.2	1.83	1.88	3.2	7.0	5.2	44	6.0
28	3.25	6.2	6.4	2.5	2.1	290	1.83	2.7	15.0	4.8	11.8	26.5
29	3.25	6.1	7.2	2.55	2.0	129	1.78	-	6.9	4.5	7.6	16.2
30	3.1	59	12.6	2.6	2.3	9.8	1.78	-	16.0	15.8	6.0	25
31	8.4	90	-	2.45	-	6.0	1.78	-	14.7	-	5.4	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	216	2.95	16.4	25.4	507	1,560
August	90	3.25	14.1	21.8	438	1,350
September	42	5.5	12.7	19.6	380	1,170
October	52	2.45	10.9	16.9	338	1,040
November	132	1.74	13.6	21.0	407	1,250
December	336	1.70	28.6	44.3	888	2,720
Calendar year 1942	1,070	1.62	34.4	53.2	12,570	38,550
January	90	1.78	11.7	18.1	362	1,110
February	162	2.15	16.0	24.8	448	1,380
March	178	2.3	21.7	33.6	671	2,060
April	140	4.8	33.6	52.0	1,010	3,100
May	146	3.25	19.0	29.4	590	1,810
June	26.5	2.65	7.45	11.5	224	686
Fiscal year 1942-43	336	1.70	17.2	26.5	6,260	19,240

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Wailuanui Stream near Keanae

Location.- Concrete weir control, lat. 20°50'20", long. 156°08'30", 500 feet downstream from highway, 1.6 miles southeast of Keanae post office, and 3 miles northwest of Nahiku. Altitude of gage, 620 feet (by barometer).

Drainage area.- 1.8 square miles.

Records available.- July 1932 to March 1936, November 1938 to June 1943. Records at same site collected by East Maui Irrigation Co. March 1927 to June 1932.

Extremes.- Maximum discharge during year, 1,190 million gallons a day (1,840 second-feet) Dec. 14 (gage height, 8.09 feet), from rating curve extended above 90 million gallons a day by logarithmic plotting; minimum, 0.16 million gallons a day (0.25 second-foot) Dec. 6-8.

1932-36, 1938-43: Maximum discharge, that of Dec. 14, 1942; minimum, 0.12 million gallons a day (0.19 second-foot) Oct. 10-12, 1933.

Remarks. - Records good. Koolau ditch diverts all low flow, at altitude of about 1,200 feet, for irrigation in central Maui.

Rating table, fiscal 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.3	0.10	0.8	4.8	2.0	42
.4	.28	.9	7.1	2.5	67
.5	.69	1.1	12.1	3.0	98
.6	1.45	1.3	18.9	3.5	145
.7	2.75	1.6	27		

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.54	6.1	23.5	16.3	0.31	0.26	1.38	0.34	0.49	58	30.6	1.65
2	.45	.59	10.3	.51	.28	.25	22.5	4.7	.49	39.5	.87	.87
3	.41	.64	1.55	1.69	.28	.25	35	11.0	16.6	5.6	23.5	.69
4	.41	.49	1.28	.85	.28	.22	53	.49	2.8	65	15.4	.87
5	.38	.45	1.09	19.4	.31	.22	34	11.7	1.67	11.4	2.9	.81
6	2.6	.54	1.09	7.1	.31	.20	2.3	68	1.01	6.7	9.6	.69
7	5.4	14.3	1.79	.94	.25	.18	1.66	24.5	.81	19.4	8.3	.59
8	.69	6.3	1.18	28	.22	12.6	1.45	.81	23.5	14.8	4.7	.54
9	.59	.75	1.01	8.3	.22	.64	1.17	.69	113	1.89	1.34	.49
10	3.0	.69	2.25	1.17	.22	.28	1.35	.69	43	32.5	1.01	.54
11	86	16.2	.94	.94	.25	.22	.94	.95	13.3	27	1.16	.49
12	58	1.01	1.17	.81	.25	.20	.81	.64	3.1	13.4	.87	.54
13	3.85	8.7	4.1	.75	.22	26.5	.87	.49	2.0	50	.75	.87
14	1.17	1.26	13.0	.69	49	129	.81	1.12	1.66	88	2.65	.49
15	.87	1.01	3.95	.64	52	1.77	.69	.59	1.35	40	.76	.45
16	.81	.87	9.7	.59	30	1.01	.59	.49	1.26	4.8	.64	.81
17	.75	.94	1.82	.59	1.81	.81	.59	.45	1.17	2.15	.59	.64
18	.64	1.78	.94	.54	.79	.64	.54	.45	21.5	1.77	.54	.59
19	.64	.87	1.24	.49	.59	.59	.49	.41	12.2	1.45	.87	3.65
20	.64	.76	1.36	.49	.41	.54	.49	.41	9.7	1.35	.81	.54
21	.64	.69	1.01	.54	.34	.49	.45	.41	17.2	1.17	.54	.45
22	.75	1.68	11.4	.54	.31	.49	.45	.38	1.77	16.6	.49	.41
23	1.25	.87	2.65	.45	.28	.64	.41	.34	1.45	1.36	.41	1.07
24	.99	2.0	.94	.45	.28	.45	.41	20.5	1.26	1.01	25.5	8.1
25	.59	3.7	.87	.38	.28	.45	.38	9.8	18.4	.87	5.6	1.48
26	.75	.75	.87	.41	.25	.41	.34	.81	10.2	.81	60	.94
27	.81	.91	.75	.38	.25	.34	.34	.64	1.35	.75	21.5	.69
28	.59	1.55	.75	.34	.22	64	.31	.59	3.3	.69	1.26	14.1
29	.64	1.30	.81	.34	.22	61	.31	-	1.09	.69	1.01	5.0
30	.59	35.5	.81	.34	.25	1.09	.28	-	7.7	6.0	.87	11.2
31	.54	58	-	.34	-	.87	.28	-	1.26	-	.87	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	86	0.38	5.68	8.79	176	540
August	58	.45	5.52	8.54	171	525
September	23.5	.75	3.49	5.40	105	321
October	28	.34	3.08	4.77	95.6	293
November	52	.22	4.69	7.26	141	432
December	129	.18	9.89	15.3	307	941
Calendar year 1942	310	.18	13.8	21.4	5,060	15,490
January	53	.28	5.31	8.22	165	506
February	68	.34	5.80	8.97	162	498
March	113	.49	10.8	16.7	336	1,030
April	88	.69	17.1	25.5	514	1,580
May	60	.41	7.28	11.3	226	693
June	14.1	.41	1.91	2.96	57.2	176
Fiscal year 1942-43	129	.18	6.72	10.4	2,460	7,530

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

East Wailuanui Stream near Keanae

Location.- Lat. 20°49'25", long. 156°08'40", 125 feet upstream from Koolau ditch intake. 250 feet upstream from trail, and 2½ miles south of Keanae post office.

Drainage area.- 0.6 square mile.

Records available.- November 1921 to June 1943. January 1914 to October 1917 at site 500 feet upstream.

Average discharge.- 21 years (1922-43), 5.92 million gallons a day (9.16 second-feet).

Extremes.- Maximum discharge during year, unknown due to missing gage-height record; minimum, 0.47 million gallons a day (0.73 second-foot) Nov. 9, 10, Dec. 7, 8.
1914-17, 1921-43: Maximum discharge, 1,050 million gallons a day (1,620 second-feet) Feb. 12, 1925 (gage height, 6.96 feet), from rating curve extended above 100 million gallons a day; minimum, 0.1 million gallons a day (0.2 second-foot) Apr. 11, 1926.

Remarks.- Records good except those for periods of no gage-height record, which are fair. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.3	0.30	0.7	6.3	1.3	33
.4	.89	.8	9.2	1.5	46
.5	2.3	.9	12.5	1.8	66
.6	4.2	1.1	22		

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.93	7.4	12.9	8.9	0.65	0.65	2.0	2.1	0.96	33	18.5	3.45
2	1.45	2.05	6.6	2.8	.65	.65	14	4.8	.84	17.7	3.6	1.77
3	1.45	1.77	3.4	4.2	.59	.59	15	7.5	9.4	6.7	14.4	1.45
4	1.20	1.45	2.8	5.3	.59	.53	25	2.0	2.9	26.5	10.9	1.77
5	1.20	1.32	2.45	8.5	.65	.53	17	10	2.3	6.6	3.6	1.77
6	4.8	2.4	2.65	4.6	.59	.53	5.6	40	1.4	6.2	7.6	1.45
7	6.8	11.7	4.2	2.8	.53	.47	4.2	13	1.3	11.4	6.6	1.32
8	3.0	5.2	3.15	15.5	.53	7.0	3.4	4.5	11	9.1	3.0	1.20
9	2.45	3.9	4.3	4.9	.47	1.2	2.5	2.7	39	3.8	2.65	1.09
10	7.9	3.5	4.2	3.2	.53	.94	2.2	1.9	13.6	20	2.3	1.09
11	39	12.0	2.65	2.45	.72	.66	1.7	2.0	5.9	13.3	2.9	1.09
12	17.2	4.2	6.6	1.23	.72	.59	1.4	1.5	4.5	7.3	2.45	1.72
13	4.3	7.3	4.1	1.77	.65	12	1.45	1.2	3.4	31.5	1.77	2.9
14	2.8	3.0	3.4	1.61	12.2	60	1.61	1.5	2.8	36.5	2.05	1.20
15	2.3	2.45	5.1	1.45	12.5	2.05	1.20	1.2	2.05	19.8	1.61	1.09
16	1.93	2.05	4.7	1.32	15.5	1.45	1.09	1.0	1.93	6.3	1.45	4.6
17	1.77	3.2	4.3	1.20	2.5	1.20	.99	.94	1.77	4.2	1.45	3.8
18	1.61	4.8	2.65	1.20	2.9	1.09	.89	.90	14.4	3.6	1.32	2.35
19	1.45	2.3	3.5	1.09	2.05	.89	.89	.90	5.7	4.4	3.75	3.0
20	1.61	1.93	4.1	.99	1.32	.82	.80	.84	8.2	3.4	2.0	2.05
21	1.77	1.93	2.45	1.20	1.09	.79	.80	.80	7.1	3.2	1.32	1.61
22	3.9	3.05	6.4	1.09	1.09	.76	.80	.74	3.0	10.2	1.20	1.32
23	3.25	4.3	2.65	1.20	.99	.82	.76	.72	2.3	3.8	1.20	4.8
24	1.61	6.9	2.05	1.09	.89	.72	.72	9.2	1.93	3.0	14.3	6.5
25	1.45	4.4	1.93	.89	.80	.68	.66	5.4	12.5	2.8	6.3	4.4
26	1.77	2.3	1.61	.89	.72	.66	.82	1.3	6.8	2.45	23	3.9
27	1.45	2.45	1.45	.80	.72	.65	.62	1.1	2.65	2.05	7.9	2.8
28	1.20	3.1	2.25	.72	.65	45	.60	1.0	4.2	1.93	3.0	9.2
29	1.32	3.05	2.8	.72	.65	20	.55	-	2.45	2.1	2.3	5.6
30	1.20	20	3.75	.72	.72	2.7	.54	-	8.6	8.7	1.93	8.9
31	4.4	21	-	.72	-	2.2	.53	-	5.1	-	1.77	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	39	1.20	4.18	6.47	129	397
August	21	1.32	5.05	7.81	156	480
September	12.9	1.45	3.83	5.93	115	353
October	15.5	.72	2.77	4.29	85.8	263
November	15.5	.47	2.17	3.36	65.2	200
December	60	.47	5.45	8.43	169	518
Calendar year 1942	135	.47	6.65	10.3	2,430	7,450
January	25	.53	3.55	5.49	110	338
February	40	.72	4.31	6.67	121	371
March	39	.84	6.13	9.48	190	583
April	36.5	1.93	10.4	16.1	312	966
May	23	1.20	5.10	7.89	158	485
June	9.2	1.09	3.08	4.77	92.4	284
Fiscal year 1942-43	60	.47	4.67	7.23	1,700	5,230

Note.- No gage-height record Dec. 8-14, Dec. 20 to Jan. 12, Jan. 19-21, Jan. 23 to Mar. 8; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

West Wailuanui Stream near Keanae

Location.- Columbus-type control, lat. 20°49'40", long. 156°08'55", 150 feet upstream from Koolau ditch crossing and intake and 2¼ miles south of Keanae post office.

Drainage area.- 0.7 square mile.

Records available.- December 1913 to October 1917 and July 1922 to June 1943.

Average discharge.- 21 years (1922-43), 9.49 million gallons a day (14.7 second-feet).

Extremes.- Maximum discharge during year, 986 million gallons a day (1,530 second-feet) Dec. 14 (gage height, 5.84 feet), from rating curve extended above 130 million gallons a day; minimum, 0.56 million gallons a day (0.87 second-foot) Nov. 9, 10, Dec. 7, 8. 1913-17, 1922-43: Maximum discharge, 1,500 million gallons a day (2,320 second-feet) Aug. 12, 1940 (gage height, 6.89 feet), from rating curve extended above 58 million gallons a day; minimum, 0.2 million gallons a day (0.3 second-foot) July 16-21, 1922.

Remarks.- Records good. No diversions above station. Water used for irrigation of sugarcane in central Maui.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.7	0.42	1.1	2.95	1.5	10.5	2.0	33.5
.8	.75	1.2	4.2	1.6	13.7	2.2	49
.9	1.30	1.3	5.8	1.7	17.5	2.5	82
1.0	2.0	1.4	8.0	1.8	22	3.0	152

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.4	7.6	16.1	11.6	0.90	0.85	2.75	2.35	1.17	30.5	17.2	4.5
2	1.82	2.5	9.2	4.2	.85	.80	16.0	5.2	1.11	20.5	4.1	2.3
3	1.67	2.3	4.8	5.9	.80	.70	17.0	8.5	9.6	8.2	14.5	1.90
4	1.54	1.74	3.8	6.6	.75	.66	36.5	2.4	3.9	36	10.4	2.25
5	1.48	1.74	3.2	15.3	.90	.63	27	11.6	2.9	9.8	4.3	2.35
6	5.3	3.4	3.2	10.6	.75	.59	7.7	59	1.67	7.4	7.7	2.3
7	7.2	12.6	5.4	4.8	.66	.56	5.9	22.5	1.42	12.7	8.7	1.67
8	3.3	7.7	3.95	18.7	.63	7.6	4.5	6.5	12.9	9.7	9.3	1.48
9	2.65	5.2	4.5	8.8	.59	2.0	3.2	3.7	64	4.4	5.7	1.42
10	7.5	4.4	4.9	5.2	.66	1.48	2.85	2.75	21.5	18.2	3.8	1.42
11	59	12.5	3.2	3.8	1.03	.80	2.3	3.1	11.4	15.3	5.4	1.42
12	36	5.0	6.8	3.2	.95	.70	2.0	2.3	6.8	9.8	3.8	1.82
13	8.4	8.8	13.0	2.75	.85	13.3	2.15	1.82	5.0	37.5	3.1	3.1
14	4.5	3.7	20.5	2.5	45	104	3.6	3.65	3.95	60	10.0	1.36
15	3.45	3.1	13.6	2.3	38	5.0	1.90	1.90	3.2	22.5	5.8	1.17
16	2.75	2.75	8.3	2.1	19.5	2.65	1.60	1.54	2.65	8.4	2.95	4.5
17	2.5	3.95	6.1	1.90	4.9	1.82	1.48	1.42	2.65	5.8	2.5	4.1
18	2.2	5.3	3.7	1.74	4.1	1.48	1.36	1.30	17.0	4.7	2.3	2.5
19	2.0	2.65	5.0	1.67	3.0	1.30	1.30	1.30	9.2	5.5	4.4	5.8
20	2.15	2.3	5.8	1.54	1.74	1.17	1.17	1.17	10.2	3.95	2.7	2.1
21	2.4	2.3	3.3	2.15	1.48	1.05	1.11	1.11	13.1	3.7	1.82	1.60
22	4.4	3.8	12.3	1.67	1.36	1.03	1.11	1.00	4.6	11.1	1.60	1.42
23	7.3	4.7	6.9	1.77	1.23	1.30	1.00	.95	3.8	4.9	1.54	4.8
24	5.4	7.4	3.6	1.48	1.11	.95	.95	10.4	2.95	3.7	17.0	6.9
25	2.5	5.1	3.2	1.30	1.05	.85	.90	6.2	12.5	3.3	7.0	4.4
26	2.55	2.75	2.85	1.42	1.00	.80	.85	1.82	7.3	2.75	38.5	3.9
27	2.1	2.75	2.55	1.17	.90	.75	.85	1.48	3.1	2.5	15.0	2.75
28	1.67	3.65	3.4	1.11	.85	65	.80	1.30	5.1	2.3	5.4	9.6
29	1.74	3.1	3.65	1.05	.80	38	.70	-	2.95	2.65	3.7	5.7
30	1.67	19.6	5.3	1.11	.95	4.6	.66	-	8.7	9.2	2.95	8.8
31	4.6	35	-	1.00	-	3.1	.63	-	6.1	-	2.65	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	59	1.48	6.26	9.69	194	596
August	33	1.74	6.04	9.35	187	575
September	20.5	2.55	6.40	9.90	192	590
October	18.7	1.00	4.21	6.51	130	400
November	45	.59	4.58	7.09	137	421
December	104	.56	8.57	13.3	266	815
Calendar year 1942	310	.56	12.8	19.8	4,690	14,390
January	36.5	.63	4.90	7.58	152	466
February	59	.95	6.01	9.30	168	516
March	64	1.11	8.47	13.1	262	805
April	60	2.3	12.6	19.5	377	1,160
May	38.5	1.64	7.28	11.3	226	693
June	9.6	1.17	3.31	5.12	99.3	305
Fiscal year 1942-43	104	.56	6.55	10.1	2,390	7,340

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Taro patch feeder ditch at Keanae

Location.- Concrete Parshall flume, lat. 20°51'40", long. 156°09'00", 500 feet northwest of highway bridge over Piinaau Stream at Keanae, 4¼ miles northwest of Nahiku, and 4¾ miles southeast of Kailua. Prior to April 10, 1939, wooden Parshall flume at same site and datum.

Records available.- September 1934 to June 1943.

Extremes.- Maximum discharge during year, 17.0 million gallons a day (26.3 second-feet) Dec. 29 (gage height, 2.68 feet), from rating curve extended above 4.5 million gallons a day by logarithmic plotting; minimum, 0.97 million gallons a day (1.50 second-feet) Dec. 14.

1934-43: Maximum discharge, 19.4 million gallons a day (30.0 second-feet) Feb. 25, 1935, Oct. 8, 1941 (gage heights, 2.86 feet and 2.92 feet, respectively), from rating curves extended above 4.5 million gallons a day by Parshall flume formula and logarithmic plotting, respectively; minimum, 0.05 million gallons a day (0.08 second-foot) Feb. 28, 1935, Apr. 7, 8, 1938, Mar. 5. 6. 1939.

Remarks.- Records excellent except those for Dec. 28 and Jan. 6, which are fair.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.85	3.15	3.45	3.1	2.2	a2.1	2.45	2.1	2.15	3.5	3.05	2.35
2	2.85	2.9	3.15	2.65	2.25	a2.1	3.0	2.3	2.15	3.65	2.6	2.3
3	2.8	2.85	2.9	2.7	2.25	2.1	3.1	2.5	2.5	2.7	3.1	2.25
4	2.8	2.8	2.85	2.65	2.25	2.05	3.2	2.05	2.3	3.6	2.8	2.2
5	2.8	2.8	2.8	2.95	2.25	2.05	3.0	2.35	2.3	2.75	2.65	2.2
6	2.9	2.8	2.8	2.7	2.25	2.05	a2.7	3.3	2.2	2.65	2.85	2.25
7	3.1	3.45	2.85	2.6	2.25	2.05	2.45	2.7	2.15	2.9	2.65	2.2
8	2.9	3.15	2.85	3.25	2.25	2.3	2.4	2.25	2.7	2.8	2.55	2.15
9	2.85	2.9	2.8	2.8	2.25	2.2	2.35	2.1	4.2	2.6	2.5	2.15
10	3.05	2.9	2.85	2.7	2.25	2.15	2.3	2.0	3.05	2.85	2.45	2.15
11	5.2	3.3	2.8	2.65	2.25	2.15	2.25	2.1	2.75	3.05	2.65	2.15
12	4.5	2.95	2.85	2.6	2.2	2.15	2.25	2.1	2.6	2.7	2.59	2.15
13	3.1	3.15	2.85	2.55	2.2	2.45	f2.25	2.05	2.5	3.4	2.5	2.15
14	3.05	2.95	2.9	2.55	3.3	3.75	f2.25	2.2	2.45	4.0	2.45	2.1
15	3.0	2.9	2.8	2.5	3.55	2.65	f2.2	2.15	2.35	3.25	2.4	2.05
16	2.95	2.85	2.9	2.5	3.05	2.45	2.15	2.1	2.3	2.8	2.35	2.05
17	2.95	2.85	2.8	2.45	2.6	2.4	f2.15	2.15	2.3	2.75	2.3	2.1
18	2.95	2.85	2.75	2.4	2.45	2.2	f2.1	2.15	2.8	2.7	2.25	2.05
19	2.9	2.8	2.7	2.4	2.4	2.15	2.1	2.15	2.9	2.7	2.3	2.2
20	2.9	2.8	2.8	2.35	2.3	2.1	2.1	2.15	2.7	2.65	2.3	2.05
21	2.9	2.8	2.7	2.3	2.2	2.05	2.1	2.15	2.8	2.65	2.25	2.0
22	2.9	2.85	3.0	2.3	a2.2	2.1	2.1	2.15	2.55	2.95	2.25	2.0
23	2.95	2.9	2.75	2.25	a2.1	2.15	2.1	2.15	2.45	2.65	2.25	2.1
24	2.9	3.0	2.7	2.25	a2.1	2.1	2.1	2.45	2.4	2.65	2.85	2.15
25	2.85	3.0	2.65	2.25	a2.1	2.1	2.1	2.6	2.7	2.6	2.5	2.05
26	2.85	2.8	2.6	2.25	a2.1	2.05	2.1	2.25	2.8	2.55	3.65	1.96
27	2.85	2.8	2.55	2.25	a2.1	2.05	2.1	2.2	2.5	2.5	2.75	1.96
28	2.8	2.85	2.55	2.25	a2.1	a5.0	2.1	2.2	2.6	2.45	2.45	2.25
29	2.8	2.8	2.65	2.25	a2.1	3.95	2.1	-	2.45	2.4	2.4	2.1
30	2.8	3.65	2.55	2.2	a2.2	2.35	2.1	-	2.7	2.6	2.35	2.25
31	2.85	4.0	-	2.2	-	2.25	2.1	-	2.55	-	2.3	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	5.2	2.8	3.03	4.69	93.8	288
August	4.0	2.8	2.99	4.63	92.6	284
September	3.45	2.55	2.80	4.33	84.2	258
October	3.25	2.2	2.51	3.88	77.8	239
November	3.55	2.1	2.34	3.62	70.0	215
December	5.0	2.05	2.38	3.68	73.8	226
Calendar year 1942	5.4	1.78	2.78	4.30	1,010	3,110
January	3.2	2.1	2.32	3.59	71.8	220
February	3.3	2.0	2.25	3.48	63.1	194
March	4.2	2.15	2.58	3.99	79.8	245
April	4.0	2.4	2.87	4.44	86.0	264
May	3.65	2.25	2.56	3.96	79.2	243
June	2.35	1.96	2.14	3.31	64.1	197
Fiscal year 1942-43	5.2	1.96	2.57	3.98	936	2,870

a No gage-height record; discharge computed on basis of recorded range in stage, and records for stations on nearby streams.
f Computed on basis of partly estimated gage-height record.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

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Koolau ditch near Keanae

Location.- Concrete dam control, lat. 20°49'55", long. 158°10'30", on west side of Keanae Valley, 2¾ miles southwest of Keanae post office and 5.1 miles southeast of Kailua.

Records available.- January 1910 to December 1912 (staff gage), November 1917 to June 1943.

Average discharge.- 25 years (1918-43), 67.5 million gallons a day (104 second-feet).

Extremes.- Maximum capacity of ditch during year, limited to 141 million gallons a day (218 second-feet) by downstream conditions, was reached frequently; minimum discharge, 16.9 million gallons a day (26.1 second-feet) Dec. 7, Jan. 31.

1910-12, 1917-43: Maximum discharge, 175 million gallons a day (271 second-feet) Jan. 4, 1922 (gage height, 6.36 feet); no flow occasionally, when water was shut out of ditch.

Remarks.- Records excellent except those above 100 million gallons a day, which are good, and those for June 13-15, which are fair. Flow regulated by gates and spillways. Ditch diverts water at altitude 1,200 feet from nearly all streams from the Makapipi west to the Alo for power and irrigation in central Maui. No diversions above station except from several spillways.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	46	103	140	139	24.5	23	46	41	24.5	138	134	75
2	37	51	127	80	23	21.5	68	76	23	134	83	44
3	33	41	83	106	23	20	141	108	82	121	135	39
4	33	35	64	111	21.5	18.7	140	51	64	138	124	46
5	31	33	55	132	23	18.7	137	128	49	135	95	48
6	74	57	53	125	21.5	17.4	97	134	31	103	107	41
7	98	135	82	79	20	17.4	78	133	28	136	129	35
8	60	117	77	93	20	54	68	104	87	130	104	33
9	51	83	77	124	18.7	48	51	65	138	87	87	29.5
10	107	76	89	90	20	36	48	47	134	101	72	31
11	138	128	59	72	24.5	23	37	70	131	140	77	29.5
12	134	87	103	57	23	20	35	50	108	140	64	41
13	126	109	79	53	24.5	35	35.5	35	87	130	55	a59
14	79	64	107	46	112	89	67	61	68	131	76	a30
15	62	55	104	44	138	68	35	39	53	140	61	a28
16	51	46	114	41	111	44	29.5	31	45	137	44	81
17	46	66	100	37	80	35	28	29.5	47	111	41	76
18	41	92	68	35	67	31	26	28	85	94	39	49
19	39	51	77	35	52	28	24.5	26	122	101	76	92
20	39	44	99	33	35	26	24.5	26	124	83	55	46
21	44	40	59	37.5	31	24.5	23	26	130	76	37	37
22	68	66	79	35.5	28	24.5	23	23	76	129	35	33
23	81	80	91	39.5	26	26	21.5	23	64	100	33	76
24	53	101	57	33	24.5	22	21.5	56	48	72	91	112
25	39	97	51	29.5	23	21.5	20	92	115	64	95	95
26	44	51	48	31	23	20	20	35	105	57	138	76
27	39	46	44	28	21.5	20	18.7	29.5	57	53	136	57
28	33	67	48	26	21.5	122	18.7	26	94	48	78	126
29	33	54	65	26	20	107	18.7	-	57	51	59	112
30	33	138	82	28	23	67	17.4	-	105	119	51	118
31	65	138	-	24.5	-	48	17.4	-	83	-	46	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	138	31	59.9	92.7	1,860	5,700
August	138	33	75.9	117	2,350	7,220
September	140	44	79.4	123	2,380	7,310
October	139	24.5	60.3	93.3	1,870	5,740
November	138	18.7	37.5	58.0	1,120	3,450
December	122	17.4	37.9	58.6	1,180	3,610
Calendar year 1942	141	17.4	68.9	107	25,160	77,200
January	141	17.4	46.3	71.6	1,440	4,410
February	134	23	56.9	88.0	1,590	4,890
March	138	23	79.5	123	2,460	7,560
April	140	48	107	166	3,200	9,820
May	138	33	79.3	123	2,460	7,540
June	126	28	59.8	92.5	1,800	5,510
Fiscal year 1942-43	141	17.4	64.9	100	23,710	72,760

a No gage-height record; discharge computed on basis of records for station at Haipuaena.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Honomanu Stream near Keanae

Location.- Columbus type control, lat. 20°50'10", long. 156°11'20", 500 feet upstream from Spreckels ditch intake and trail bridge and 3 miles by trail northwest of Kaenae.

Drainage area.- 3.3 square miles.

Records available.- November 1913 to June 1943.

Average discharge.- 27 years (1916-43), 16.0 million gallons a day (24.8 second-feet).

Extremes.- Maximum discharge during year, 806 million gallons a day (1,250 second-feet) Dec. 29 (gage height, 5.52 feet), from rating curve extended above 300 million gallons a day; minimum, 0.47 million gallons a day (0.73 second-foot) Jan. 31.
1913-43: Maximum discharge, 1,770 million gallons a day (2,740 second-feet) Aug. 12, 1940 (gage height, 8.37 feet), from rating curve extended above 300 million gallons a day; minimum, 0.08 million gallons a day (0.12 second-foot) Mar. 24, 1928.

Remarks.- Records good except those for periods of no gage-height record, which are fair. No diversions. Water used for irrigation in central Maui.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.6	0.32	1.2	3.95	2.3	70
.7	.53	1.4	7.9	2.5	104
.8	.86	1.6	15.0	3.0	162
.9	1.35	1.8	26	3.5	260
1.0	2.0	2.0	41		

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.1	19.9	30	25	1.0	1.28	2.4	4.5	0.96	80	74	5.3
2	2.4	4.1	15	4.5	1.0	1.64	52	9.6	.85	96	5.6	2.65
3	2.0	6.1	5.0	7.0	.78	1.10	26	16.6	11.1	11	28	2.25
4	1.80	3.4	3.8	4.7	.74	.83	67	2.95	6.4	100	9.0	2.4
5	1.61	2.15	2.9	21	.93	.73	47	31.5	3.5	9.0	3.7	8.1
6	10.3	12.3	2.9	13	2.35	.66	7.0	110	1.80	6.4	90	4.1
7	22	39	5.4	4.3	1.35	.63	6.4	39	1.35	35	6.8	2.25
8	6.1	27	8.2	23	.91	8.1	3.25	6.3	38	20	5.4	1.80
9	3.85	5.2	3.2	10	.70	3.6	2.3	3.65	103	5.0	4.5	1.61
10	13.8	4.4	5.2	4.0	.70	1.25	2.0	2.25	38	25	3.4	1.61
11	188	24	3.5	3.0	1.58	.86	1.87	4.0	17.3	42	15.2	1.80
12	98	6.1	9.0	2.5	1.74	.76	1.68	2.4	5.3	9.4	39	2.5
13	11.4	18.8	30	2.2	2.1	29.5	1.97	1.80	5.1	16	14.5	3.85
14	4.6	4.6	22	2.0	122	158	4.0	5.0	4.6	105	8.0	2.2
15	3.05	3.4	9.0	1.9	79	4.5	1.87	3.0	2.65	50	4.3	1.54
16	2.55	2.8	6.0	1.9	18.0	2.1	1.42	1.80	2.15	13	2.9	7.4
17	2.55	3.2	5.0	1.7	6.2	1.68	1.25	1.48	10.3	7.0	2.55	7.1
18	2.4	5.1	3.3	1.6	3.7	1.35	1.15	1.25	42	4.8	2.5	3.25
19	2.25	2.7	4.5	1.6	3.1	1.75	1.06	1.15	37	5.2	5.1	9.5
20	2.5	2.4	8.0	1.5	2.0	1.30	.96	1.06	33.5	4.3	3.7	3.05
21	3.55	2.1	3.2	3.5	1.61	1.10	.86	.96	31.5	3.7	2.4	2.4
22	5.9	3.4	11	7.0	1.35	.96	.79	.83	6.8	31	2.1	1.80
23	32.5	6.4	5.4	2.5	1.20	.86	.76	.79	4.9	4.8	1.87	9.7
24	11.7	12	2.8	1.6	1.10	.79	.70	13.2	2.55	3.5	35	7.5
25	4.7	9.0	2.5	1.4	1.01	.66	.70	13.2	14.5	3.0	16.4	5.7
26	2.8	3.3	2.7	1.3	.91	.60	.66	2.0	12.7	2.7	130	7.2
27	2.55	2.9	3.1	1.2	.86	.57	.63	1.42	3.0	2.5	33	3.85
28	1.94	3.5	3.5	1.1	.79	146	.60	1.20	7.0	2.3	6.7	25
29	1.80	2.95	5.4	1.3	.73	100	.53	-	3.7	2.7	9.3	14.1
30	1.68	50	5.6	1.1	.99	6.0	.49	-	20	15	4.7	30.5
31	6.2	70	-	1.0	-	3.95	.49	-	5.0	-	2.65	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	188	1.61	14.6	22.6	453	1,390
August	70	2.1	11.7	18.1	362	1,110
September	30	2.5	7.47	11.6	224	688
October	25	1.0	5.14	7.95	159	489
November	122	.70	8.68	13.4	260	799
December	158	.57	15.6	24.1	483	1,480
Calendar year 1942	438	.45	21.6	33.4	7,880	24,190
January	67	.49	7.74	12.0	240	736
February	110	.79	10.1	15.6	283	868
March	103	.83	15.4	23.8	476	1,460
April	105	2.3	23.8	36.8	715	2,200
May	130	1.87	18.5	28.6	572	1,760
June	30.5	1.54	6.07	9.39	182	559
Fiscal year 1942-43	188	.49	12.1	18.7	4,410	13,540

Note.- No gage-height record Aug. 15-28, Aug. 30 to Nov. 4, Mar. 27 to May 10; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Haipuaena Stream near Huelo

Location.- Lat. 20°51'05", long. 156°11'30", 200 feet upstream from inflow of Spreckels ditch, 3.3 miles southeast of Kailua, and 4.7 miles southeast of Huelo. Datum of gage is 1,512.22 feet above mean sea level (East Maui Irrigation Co. bench mark).

Drainage area.- 1.1 square miles.

Records available.- October 1913 to June 1943.

Average discharge.- 27 years (1916-43), 10.3 million gallons a day (15.9 second-feet).

Extremes.- Maximum discharge during year, 1,060 million gallons a day (1,640 second-feet) Jan. 2 (gage height, 4.64 feet), from rating curve extended above 150 million gallons a day; minimum, 0.27 million gallons a day (0.42 second-foot) Jan. 30, 31.
1913-43: Maximum discharge, 6,100 million gallons a day (9,440 second-feet) Aug. 12, 1940 (gage height, 6.91 feet), from rating curve extended above 150 million gallons a day; minimum, 0.10 million gallons a day (0.16 second-foot) June 18, 1940.

Remarks.- Records fair. No diversions above station. Water used for irrigation in central Maui.

Rating tables, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

July 1 to May 12

0.0	0.48	1.0	7.8	2.2	56
.1	.78	1.2	11.0	2.4	77
.2	1.23	1.4	15.5	2.6	103
.4	2.2	1.6	21	2.8	135
.6	3.55	1.8	28.5	3.0	175
.8	5.3	2.0	40		

May 13 to June 30

0.2	0.8	1.1	7.4
.3	1.2	1.3	10.4
.4	1.5	1.5	14.5
.5	2.0	1.8	22.5
.7	3.2	2.2	38.5
.9	5.0	2.6	67

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.2	10.5	22	21	1.2	1.2	2.7	2.3	0.8	52	33	3.9
2	2.2	3.3	14.0	5.4	1.2	1.3	55	6.9	.7	54	5.0	1.7
3	1.9	4.1	4.8	7.1	1.1	1.0	18.4	11.8	6.9	15.3	12.8	1.4
4	1.8	2.7	3.7	5.9	1.1	.8	39	2.6	5.2	72	7.0	1.8
5	1.6	2.0	3.0	18.6	1.6	.7	27	16.0	3.3	9.1	3.6	3.5
6	6.6	5.7	3.0	11.2	2.3	.6	5.0	75	1.6	8.4	48	2.4
7	12.3	18.3	5.1	4.8	1.4	.6	4.4	22.5	1.2	18.6	7.3	1.4
8	5.1	12.7	4.4	22.5	1.0	3.5	2.9	4.8	27.5	11.1	6.8	1.1
9	3.6	4.2	3.6	9.6	.5	3.0	2.2	3.2	93	4.6	4.7	1.0
10	10.2	3.9	5.0	4.8	.6	.8	2.3	2.1	22	19.1	3.0	1.0
11	119	15.2	3.6	3.7	1.4	.5	1.8	4.1	11.6	22	7.7	1.0
12	55	6.2	7.0	3.2	1.7	.4	1.5	2.5	5.5	10.1	25	1.5
13	8.2	16.6	28	2.8	1.6	13.4	1.7	1.7	4.7	52	5.6	2.4
14	4.2	4.5	20.5	2.5	77	142	2.9	3.8	4.1	71	3.6	1.2
15	3.2	3.4	11.3	2.2	56	3.7	1.4	2.4	2.6	33	2.4	.8
16	2.7	2.8	6.5	2.1	13.0	1.8	1.1	1.5	2.0	8.7	1.8	4.0
17	2.5	3.4	5.4	1.9	5.2	1.6	1.0	1.2	4.3	5.4	1.6	3.7
18	2.2	5.2	3.6	1.8	4.3	1.0	1.0	1.1	43	4.1	1.5	2.3
19	2.0	3.0	4.5	1.7	3.6	1.1	.8	1.0	18.6	4.5	3.3	5.7
20	2.1	2.4	7.0	1.6	2.2	1.0	.7	.9	20.5	3.6	2.2	2.0
21	2.8	2.3	3.5	2.9	1.7	.8	.7	.8	19.2	3.2	1.4	1.5
22	3.9	3.6	9.8	5.9	1.5	.8	.6	.7	4.7	20.5	1.2	1.1
23	12.6	5.5	5.2	2.5	1.2	1.0	.6	.6	3.5	4.9	1.0	5.4
24	5.4	9.6	3.1	1.8	1.1	.8	.5	11.2	2.6	3.6	15.5	8.4
25	2.9	7.8	3.0	1.5	1.0	.7	.5	11.0	12.1	2.9	8.6	3.9
26	2.9	3.4	3.3	1.6	.9	.6	.4	1.8	10.5	2.6	62	4.8
27	2.5	8.1	3.4	1.5	.8	.6	.4	1.2	3.2	2.1	13.2	3.0
28	1.9	3.7	4.1	1.3	.8	114	.4	1.0	7.2	1.8	3.7	16.3
29	1.9	3.3	6.0	1.5	.7	108	.3	-	3.4	2.1	3.1	8.5
30	1.9	35.5	6.6	1.5	1.0	5.7	.3	-	16.1	13.1	2.5	15.1
31	5.1	60	-	1.3	-	3.9	.3	-	7.7	-	1.8	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	119	1.6	9.46	14.5	293	900
August	60	2.0	8.77	13.6	272	834
September	28	3.0	7.13	11.0	214	656
October	22.5	1.3	5.09	7.88	158	484
November	77	.5	6.29	9.73	189	579
December	142	.4	13.4	20.7	417	1,280
Calendar year 1942	247	.4	13.2	20.4	4,800	14,730
January	55	.3	5.74	8.88	178	546
February	75	.6	6.99	10.8	196	601
March	93	.7	11.9	18.4	369	1,130
April	72	1.8	17.8	27.5	535	1,640
May	62	1.0	9.74	15.1	302	926
June	16.3	.8	3.63	5.62	109	334
Fiscal year 1942-43	142	.3	8.85	13.7	3,230	9,910

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Haipuaena diversion ditch at Kolea Gulch, near Keanae

Location.- Parshall flume, lat. 20°50'50", long. 156°11'40", on Haipuaena diversion ditch, 15 feet downstream from end of tunnel in Kolea Gulch, 3.1 miles southwest of Keanae, and 3.7 miles southeast of Kailua. Altitude of gage, 1,800 feet (from topographic map).

Records available.- March 1938 to June 1943.

Extremes.- Maximum discharge during year, 21 million gallons a day (32 second-feet) Dec. 14 (gage height, 2.20 feet); minimum, 0.27 million gallons a day (0.42 second-foot) Nov. 4.

1938-43: Maximum discharge, 25.1 million gallons a day (38.8 second-feet) Aug. 12, 1940; minimum, 0.02 million gallons a day (0.03 second-foot) Apr. 29, 1941.

Remarks.- Records good. Ditch diverts water from Haipuaena Stream for East Maui Irrigation Co.'s hydroelectric plant about 1 mile downstream.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.56	1.53	2.6	2.55	0.33	0.70	0.90	0.92	0.65	4.2	3.3	1.25
2	.45	.65	1.72	.95	.31	.65	2.5	1.15	.65	4.6	1.57	1.01
3	.39	.67	.30	1.15	.31	.56	2.3	1.92	1.37	2.35	1.83	.90
4	.36	.48	.60	.95	.29	.52	3.35	.95	1.27	4.7	1.92	.95
5	.39	.39	.52	2.1	.32	.52	2.75	2.15	1.07	2.2	1.25	1.19
6	1.01	.93	.52	1.59	.40	.48	1.25	4.4	.30	1.58	1.70	1.20
7	1.75	2.35	.78	.80	.31	.45	1.19	2.6	.75	2.5	3.3	.90
8	.35	1.69	.78	2.1	.41	.82	.95	1.25	2.6	1.92	1.51	.85
9	.65	.70	.56	1.34	.52	.96	.90	1.01	4.3	1.31	1.64	.80
10	1.45	.70	.75	.89	.52	.70	.75	.90	2.7	2.15	1.19	.80
11	5.8	1.91	.60	.70	.60	.60	.75	1.17	1.88	2.85	1.01	.80
12	4.3	.85	1.02	.65	.65	.56	.75	.95	1.36	1.92	1.89	.89
13	1.19	1.80	2.05	.56	.65	1.18	.80	.80	1.25	2.75	2.5	1.01
14	.70	.75	2.05	.52	4.5	5.0	1.02	1.07	1.19	4.8	1.62	.90
15	.56	.60	1.56	.48	3.85	1.07	.85	.90	1.01	3.35	1.25	.80
16	.48	.52	1.13	.45	1.74	.80	.80	.80	.90	1.85	1.07	1.18
17	.45	.56	.90	.45	1.18	.75	.75	.75	1.28	1.45	.95	1.40
18	.45	.75	.60	.42	1.04	.75	.70	.70	2.65	1.25	.95	1.07
19	.42	.48	.35	.39	.95	.70	.70	.65	2.6	1.31	1.16	1.49
20	.45	.45	1.10	.36	.80	.60	.70	.65	2.5	1.25	1.13	.95
21	.52	.42	.65	.57	.75	.60	.65	.65	2.45	1.13	.95	.90
22	.74	.52	1.49	.71	.70	.56	.65	.60	1.31	2.45	.90	.80
23	1.54	.86	.86	.48	.65	.56	.65	.60	1.13	1.51	.80	1.44
24	.84	1.48	.60	.36	.65	.52	.65	1.38	1.01	1.19	2.1	1.51
25	.52	1.11	.65	.33	.65	.48	.65	1.75	1.78	1.07	1.75	1.25
26	.45	.56	.70	.33	.60	.48	.60	.85	1.81	1.07	5.3	1.38
27	.42	.52	.65	.33	.56	.48	.60	.80	1.07	.95	2.5	1.19
28	.39	.60	.70	.33	.60	4.3	.56	.75	1.59	.95	1.39	2.45
29	.36	.53	.97	.36	.60	4.9	.56	-	1.13	.90	1.28	1.82
30	.33	3.4	.99	.33	.65	1.38	.56	-	2.1	1.85	1.19	2.5
31	.87	4.1	-	.33	-	1.13	.56	-	1.58	-	1.01	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	5.8	0.33	0.956	1.48	29.6	91
August	4.1	.39	1.06	1.64	32.8	101
September	2.6	.52	.992	1.53	29.8	91
October	2.55	.33	.767	1.19	23.8	73
November	4.5	.29	.870	1.35	26.1	80
December	5.0	.45	1.09	1.69	33.8	104
Calendar year 1942	8.7	.27	1.27	1.96	462	1,420
January	3.35	.56	1.01	1.56	31.4	96
February	4.4	.60	1.18	1.83	33.1	101
March	4.8	.65	1.62	2.51	50.2	154
April	4.8	.90	2.11	3.26	63.4	194
May	5.3	.80	1.67	2.58	51.9	159
June	2.5	.80	1.19	1.84	35.6	109
Fiscal year 1942-43	5.8	.29	1.21	1.87	442	1,350

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Spreckels ditch at Haipuaena weir, near Huelo

Location.- Sharp-crested weir, lat. 20°51'20", long. 156°11'25", on Spreckels ditch trail between Haipuaena and Puohokamoa Streams, 3½ miles southeast of Kailua and 5.1 miles southeast of Huelo. Datum of gage is 1,470.96 feet above mean sea level (East Maui Irrigation Co. bench mark).

Records available.- April 1922 to June 1943. February 1930 to October 1935 at site 100 feet upstream.

Average discharge.- 20 years (1922-29, 1930-43), 14.8 million gallons a day (22.9 second-feet).

Extremes.- Maximum discharge during year, 93 million gallons a day (144 second-feet) Dec. 14 (gage height, 2.23 feet); minimum, 0.23 million gallons a day (0.36 second-foot) Dec. 13, Jan. 30, 31.

1922-43: Maximum discharge, 139 million gallons a day (215 second-feet) Mar. 5, 1933 (gage height, 5.03 feet); no flow at times, when water was turned out of ditch.

Remarks.- Records excellent except those for period of no gage-height record, which are fair. Regulated by gates and spillways. Spreckels ditch diverts water from all streams between the Nuaailua and the Kailua, above Koolau ditch east of the Puohokamoa and below Koolau ditch west of the Puohokamoa. About 4 million gallons a day is diverted from Spreckels ditch to East Maui Irrigation Co.'s hydroelectric plant at Kolea Gulch. Water used for irrigation in central Maui.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	8.6	23	36	34	0.97	0.83	6.4	2.85	0.76	50	42	14.7
2	3.75	7.6	28.5	13.9	.90	1.00	19.6	15.4	.69	55	14.5	5.2
3	2.4	10.4	12.6	18.0	.76	.69	25.5	23.5	16.5	27.5	27.5	3.45
4	1.80	5.4	8.2	16.7	.76	.51	44	7.0	16.2	54	18.8	6.4
5	1.47	2.7	5.8	28.6	1.57	.43	34	26	9.2	23.5	9.2	11.5
6	16.6	12.8	5.8	24	2.65	.39	14.1	49	2.4	18.0	33.5	8.7
7	26.5	32.5	13.3	12.2	.97	.35	11.7	33	1.18	32.5	19.2	3.45
8	13.9	27	11.9	28	.69	6.6	7.2	13.7	32.5	24.5	16.4	1.91
9	9.2	11.6	8.6	20.5	.35	5.7	5.2	7.7	59	12.4	12.9	1.47
10	24	11.4	13.7	11.8	.39	.55	5.3	4.1	37.5	26.5	7.6	1.36
11	64	30.5	8.2	8.2	2.0	.35	3.3	10.4	25	36.5	16.5	1.58
12	57	15.0	18.2	5.8	2.0	.27	2.15	5.7	15.7	26	29	4.2
13	21	33	24.5	4.7	1.53	6.3	3.2	2.3	13.1	29.5	21.5	10.2
14	11.0	11.8	27.5	3.45	a50	43	8.4	11.4	11.6	61	15.2	3.0
15	7.1	7.8	24	2.65	a40	6.7	1.91	5.3	5.8	42	9.2	1.18
16	5.0	5.6	18.1	2.0	a17	2.9	1.11	1.80	4.3	22.5	5.8	13.5
17	4.7	8.4	16.0	1.69	a7.6	1.58	1.04	1.18	9.4	16.0	4.8	13.8
18	3.75	15.8	9.1	1.47	a12	.97	.97	1.11	31	11.5	4.5	8.3
19	3.3	6.4	12.6	1.36	8.3	1.11	.83	1.04	27	13.8	12.5	17.8
20	3.5	3.9	19.3	1.25	3.4	.90	.76	.90	31	10.6	8.4	6.2
21	7.0	2.95	9.0	5.4	1.91	.76	.55	.83	30	9.2	3.75	3.75
22	12.8	10.0	17.0	11.8	1.25	.69	.55	.76	13.7	31.5	2.5	1.91
23	23	15.4	13.5	3.2	1.04	.97	.51	.62	10.0	14.8	1.69	16.1
24	14.9	22	6.7	1.47	.90	.69	.47	15.6	5.8	10.0	26.5	19.8
25	7.8	19.2	6.1	1.18	.76	.51	.43	20	26	7.6	21.5	15.0
26	7.5	7.4	6.4	1.18	.69	.47	.39	2.6	22	6.0	58	16.8
27	5.7	5.7	8.1	1.11	.55	.43	.35	1.18	7.6	4.5	30	10.5
28	2.35	10.2	7.1	1.04	.51	43	.35	1.04	17.9	3.3	13.4	32.5
29	2.35	7.2	14.7	1.11	.47	45	.27	-	9.1	4.4	10.6	23
30	2.45	43	17.5	1.11	.55	13.0	.27	-	30	27.5	9.2	39.5
31	11.0	53	-	.97	-	9.4	.27	-	21	-	5.2	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	64	1.47	12.4	19.2	385	1,180
August	55	2.7	15.4	23.8	479	1,470
September	36	5.8	14.3	22.1	430	1,320
October	34	.97	8.70	13.5	270	828
November	50	.35	5.42	8.39	162	499
December	45	.27	6.32	9.78	196	602
Calendar year 1942	65	.27	14.8	22.9	5,380	16,510
January	44	.27	6.49	10.0	201	617
February	49	.62	9.50	14.7	266	816
March	59	.69	17.5	27.1	543	1,670
April	61	3.3	23.7	36.7	712	2,190
May	58	1.69	16.5	25.5	511	1,570
June	39.5	1.18	10.6	16.4	317	972
Fiscal year 1942-43	64	.27	12.3	19.0	4,470	13,730

a No gage-height record; discharge computed on basis of records for stations on nearby ditches.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Koolau ditch at Haipuaena, near Huelo

Location.- Parshall flume, lat. 20°51'15", long. 156°11'15", 1,000 feet upstream from intake at Puohokamoa Stream, 3½ miles southeast of Kailua, and 4.7 miles southeast of Huelo.

Records available.- April 1932 to June 1943.

Average discharge.- 11 years, 82.2 million gallons a day (127 second-feet).

Extremes.- Maximum discharge during year, 224 million gallons a day (347 second-feet) Oct. 15 (gage height, 5.28 feet); minimum, 18.9 million gallons a day (29.2 second-feet) Dec. 7, 8.

1932-43: Maximum discharge, 226 million gallons a day (350 second-feet) Nov. 23, 1941; no flow when water was shut out of ditch.

Remarks.- Records excellent except those for Oct. 10 to Nov. 18, which are good. Flow regulated by flood gates. No diversions above station. Water used for domestic supply and irrigation in central Maui.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	52	118	169	177	29	26.5	55	44	29.5	183	169	83
2	42	55	144	85	27	26.5	78	89	28	183	89	52
3	39	50	85	111	26	23.5	155	125	91	139	155	46
4	37	41	67	113	25	22	169	55	73	183	135	52
5	35.5	39	59	145	27	20.5	162	138	58	149	99	62
6	84	64	59	142	26	19.4	103	167	39	111	152	50
7	121	165	86	80	25	19.4	85	162	34	155	137	42
8	67	134	79	113	24	63	76	108	119	143	110	37
9	55	85	79	158	23	54	55	76	183	94	94	37
10	126	80	94	94	25	40	55	52	169	112	76	37
11	183	148	63	82	28	26.5	46	79	149	176	98	37
12	183	94	108	68	27	23.5	41	59	113	155	100	44
13	131	156	104	58	28	49	42	42	89	146	77	68
14	85	67	128	52	140	107	70	65	76	190	81	39
15	67	89	127	47	170	76	41	48	59	176	71	55.5
16	59	52	122	44	140	50	35.5	39	52	149	52	87
17	52	67	103	43	100	42	34	34	61	119	50	83
18	48	98	72	41	80	35.5	31	32.5	112	99	48	55
19	44	55	87	40	59	34	29.5	31	150	103	79	102
20	44	48	111	39	42	31	28	31	149	89	65	52
21	50	46	63	42	37	28	26.5	31	155	80	46	44
22	71	70	94	41	34	26	26.5	28	80	149	42	39
23	96	82	99	45	31	30	25	26.5	71	108	39	86
24	62	118	63	42	29.5	26.5	23.5	60	55	76	118	113
25	46	104	55	37	28	25	23.5	116	136	72	113	98
26	50	55	55	40	26.5	23.5	22	44	121	63	182	80
27	46	52	52	35	25	22	22	35.5	63	59	161	63
28	39	72	57	33	26	152	22	32.5	103	55	84	150
29	39	59	75	32	23.5	129	20.5	-	63	56	70	127
30	39	174	91	34	26.5	80	20.5	-	134	142	59	136
31	77	183	-	31	-	55	19.4	-	96	-	52	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	183	35.5	70.0	108	2,170	6,660
August	183	39	86.1	133	2,670	8,190
September	169	52	88.3	137	2,650	8,130
October	177	31	68.5	106	2,120	6,520
November	170	23	45.2	69.9	1,360	4,160
December	152	19.4	44.8	69.3	1,390	4,260
Calendar year 1942	190	19.4	81.3	126	29,670	91,020
January	169	19.4	53.0	82.0	1,640	5,040
February	167	26.5	66.1	102	1,850	5,680
March	183	28	93.9	145	2,910	8,930
April	190	55	124	192	3,710	11,400
May	182	39	93.0	144	2,880	8,850
June	150	35.5	67.9	105	2,040	6,250
Fiscal year 1942-43	190	19.4	75.1	116	27,390	84,070

Note.- No gage-height record Oct. 10 to Nov. 18; discharge computed on basis of records for station at Keanae.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Puohokamoa Stream near Huelo

Location.- Masonry dam control, lat. 20°51'20", long. 156°11'25", just upstream from Spreckels ditch inflow and trail crossing, 3 miles southeast of Kailua, and 4.4 miles southeast of Huelo. Datum of gage is 1,322.04 feet above mean sea level (East Maui Irrigation Co. bench mark).

Drainage area.- 2.6 square miles.

Records available.- December 1910 to June 1943.

Average discharge.- 26 years (1917-43), 22.1 million gallons a day (34.2 second-feet).

Extremes.- Maximum discharge during year, 847 million gallons a day (1,310 second-feet) Dec. 29 (gage height, 5.59 feet), from rating curve extended above 400 million gallons a day; minimum, 1.5 million gallons a day (2.3 second-feet) Dec. 13.
1910-43: Maximum discharge, 1,600 million gallons a day (2,480 second-feet) Aug. 12, 1940 (gage height, 7.81 feet), from rating curve extended above 400 million gallons a day; minimum, 0.1 million gallons a day (0.2 second-foot) Nov. 17, 1929, site then in use.

Remarks.- Records good except those for Apr. 13, 14, which are fair. Kula pipe line diverts small amount of water above station, at altitude 4,300 feet, for domestic supply.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.7	1.4	1.2	15.8	2.1	100
.8	2.8	1.3	21	2.4	147
.9	5.0	1.5	36	2.7	205
1.0	7.8	1.7	53		
1.1	11.4	1.9	74		

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	7.8	24.5	47	39	2.7	3.0	7.2	6.4	2.7	86	63	13.9
2	5.0	7.2	30.5	11.7	2.7	2.8	73	17.5	2.4	94	13.6	7.2
3	4.3	7.8	12.7	15.0	2.2	2.4	36	28.5	14.1	28	27	5.8
4	3.9	5.6	9.6	12.7	2.1	2.1	62	6.9	10.9	121	16.4	7.0
5	3.5	4.3	7.5	29.5	3.4	1.8	44	37.5	7.5	24.5	8.9	10.4
6	15.7	12.4	7.2	21	5.1	1.8	13.6	91	3.9	16.3	77	8.8
7	33	42	12.1	10.0	2.8	1.7	10.7	34	3.2	42	17.2	5.6
8	12.7	27	11.2	34	2.2	5.3	7.8	11.0	45	28.5	13.6	4.8
9	8.9	10.0	7.7	16.4	2.1	5.9	6.4	7.2	132	13.2	11.4	4.6
10	24.5	8.5	11.9	10.3	2.2	2.4	6.4	5.3	38	34	6.5	4.3
11	182	34	7.8	7.8	3.5	2.0	5.0	12.8	23.5	49	13.1	4.6
12	103	12.3	15.6	6.7	3.9	1.7	4.6	7.0	14.5	24	23.5	6.6
13	20	36	41	5.8	3.5	15.5	5.3	4.6	12.7	f40	17.6	9.8
14	11.4	10.7	31.5	5.3	97	161	8.0	10.3	10.7	f130	12.3	5.3
15	8.9	7.8	16.2	4.8	96	8.0	4.6	6.0	7.0	65	8.5	3.9
16	7.2	6.4	12.2	4.6	23	4.8	3.9	4.1	5.8	24	6.7	14.6
17	6.7	7.2	11.0	4.1	11.8	3.9	3.5	3.5	9.5	15.8	6.1	12.7
18	5.8	11.7	7.8	3.9	9.4	3.5	3.2	3.2	56	12.3	5.8	8.6
19	5.0	6.4	9.8	3.7	8.0	3.5	3.0	3.0	39	12.7	11.3	19.2
20	5.4	5.0	15.0	3.5	5.0	2.8	2.7	2.8	29.5	10.7	8.4	7.2
21	7.0	4.8	7.5	7.5	4.3	2.7	2.5	2.7	41	9.2	5.6	5.6
22	10.3	8.3	18.1	12.5	3.7	2.5	2.5	2.5	11.8	29	5.0	4.6
23	17.4	14.8	9.9	5.7	3.5	2.7	2.5	2.2	8.5	13.6	4.6	17.9
24	11.2	23	6.4	3.9	3.2	2.4	2.4	22.5	7.0	9.6	40	16.8
25	7.0	18.3	5.8	3.5	2.8	2.1	2.2	24	21.5	8.2	24.5	12.8
26	7.0	7.5	6.1	3.2	2.7	2.0	2.2	4.8	27.5	7.0	135	15.0
27	5.8	6.4	6.7	3.0	2.5	1.8	2.1	3.7	8.2	6.1	34.5	10.2
28	4.3	8.1	7.7	2.8	2.4	132	2.0	3.2	15.6	5.6	13.6	41
29	4.1	6.7	13.1	3.0	2.4	162	1.8	-	9.2	8.2	10.3	23.5
30	3.9	71	13.2	2.8	2.7	13.2	1.8	-	34	31	8.9	39.5
31	13.1	95	-	2.7	-	8.9	1.8	-	16.8	-	7.2	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	182	3.5	18.3	28.3	566	1,740
August	95	4.3	17.8	27.5	551	1,690
September	47	5.8	14.0	21.7	420	1,290
October	39	2.7	9.75	15.1	302	928
November	97	2.1	10.6	16.4	319	978
December	162	1.7	18.3	28.3	568	1,740
Calendar year 1942	430	1.5	25.3	39.1	9,230	28,350
January	73	1.8	10.8	16.7	335	1,030
February	91	2.2	13.2	20.4	368	1,130
March	132	2.4	21.6	33.4	669	2,050
April	130	5.6	33.2	51.4	996	3,060
May	135	4.6	21.3	33.0	659	2,020
June	41	3.9	11.7	18.1	352	1,080
Fiscal year 1942-43	182	1.7	16.7	25.8	6,100	18,740

f Computed on basis of partly estimated gage-height record.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Manuel Luis ditch at Puohokamoa Gulch, near Huelo

Location.- Sharp-crested weir, lat. 20°51'50", long. 156°11'00", in Puohokamoa Gulch at lower portal of tunnel between Haipuaena and Puohokamoa Streams, 3 miles southeast of Kailua and 4.4 miles southeast of Huelo.

Records available.- December 1917 to June 1943.

Average discharge.- 24 years (1918-24, 1925-43), 6.02 million gallons a day (9.31 second-feet).

Extremes.- Maximum discharge during year, 68 million gallons a day (105 second-feet) July 11, Mar. 9 (gage height, 3.10 feet), from rating curve extended above 62 million gallons a day by weir and orifice formulas; minimum, 0.22 million gallons a day (0.34 second-foot) Nov. 8-10, Dec. 5-8, 12, 13.

1917-43: Maximum discharge, 116 million gallons a day (179 second-feet) Jan. 14, 1923 (gage height, 4.93 feet), from rating curve extended above 10 million gallons a day by weir and orifice formulas; no flow Jan. 8, 1937, Oct. 2-5, 1939.

Remarks.- Records excellent. Ditch is extension of Center ditch and picks up water at altitude of 500 feet from streams between the Kolea and the Waiakamoi. Flow regulated by gates. Water used for irrigation in central Maui.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.18	2.65	14.1	7.9	0.28	0.28	1.76	0.57	0.56	27	21.5	3.55
2	.62	.68	8.0	1.38	.28	.28	12.7	2.05	.51	30.5	2.35	1.34
3	.51	.74	2.15	1.81	.26	.26	27	3.5	5.7	4.1	5.2	.93
4	.45	.51	1.53	2.4	.28	.25	16.2	.92	2.95	43	4.0	1.53
5	.39	.45	1.23	9.2	.28	.22	9.3	3.05	2.15	5.6	1.98	1.96
6	3.05	.91	1.15	3.2	.34	.22	4.5	31	.85	3.1	20	1.44
7	8.2	4.5	2.55	1.63	.25	.22	3.1	13.6	.62	11.8	3.0	.85
8	1.78	2.85	1.87	18.2	.22	2.55	1.89	1.46	19.4	6.7	1.89	.74
9	1.13	1.22	1.59	4.2	.22	.90	1.53	.79	47	2.55	1.69	.68
10	5.0	1.12	2.35	2.15	.22	.34	1.77	.56	27	11.7	1.15	.62
11	48	7.8	1.00	1.38	.39	.28	1.08	2.3	9.6	12.7	6.7	.56
12	38.5	1.94	2.25	1.08	.39	.25	.85	.90	5.8	3.95	11.5	.68
13	3.05	14.8	10.5	.93	.26	5.4	.93	.51	3.75	7.5	4.6	1.76
14	1.65	1.74	9.5	.85	30	30	1.27	2.1	3.0	49	2.65	.68
15	1.08	1.08	2.35	.74	25.5	1.00	.74	.81	1.39	19.1	1.80	.51
16	.93	.85	3.55	.68	9.7	.56	.62	.51	1.46	4.6	1.38	2.0
17	.85	.93	1.70	.62	2.05	.56	.56	.45	1.57	3.0	1.15	2.05
18	.74	2.8	.93	.56	2.35	.55	.56	.39	11.5	2.1	.93	1.25
19	.68	.85	1.42	.51	1.43	.56	.51	.39	17.0	2.35	1.97	3.25
20	.74	.68	2.65	.45	.68	.51	.45	.34	8.9	1.89	1.75	.85
21	.74	.68	.93	.60	.56	.45	.45	.28	13.0	1.61	.85	.62
22	1.12	3.75	5.0	2.7	.51	.39	.39	.28	2.9	10.2	.68	.51
23	1.81	2.75	1.54	.74	.45	.74	.39	.28	2.25	2.7	.62	1.81
24	1.83	2.3	.74	.51	.39	.45	.34	12.4	1.61	1.53	17.2	3.7
25	.87	2.5	.68	.45	.34	.39	.34	7.7	7.5	1.23	6.8	3.1
26	1.29	.93	.68	.45	.34	.34	.28	.93	9.2	1.00	43	2.3
27	.77	.91	.80	.39	.25	.34	.28	.74	1.99	.85	7.8	1.35
28	.56	2.15	.89	.34	.28	26	.28	.28	2.5	.79	2.7	11.0
29	.56	1.15	1.74	.34	.26	28.5	.28	-	1.76	.79	1.99	3.7
30	.56	23	2.15	.34	.28	1.69	.28	-	8.1	3.15	1.73	7.8
31	.96	37	-	.28	-	1.74	.25	-	3.4	-	1.31	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	48	0.39	4.16	6.47	130	398
August	37	.45	4.07	6.30	126	387
September	14.1	.68	2.92	4.52	87.5	269
October	18.2	.28	2.16	3.34	67.0	206
November	30	.22	2.64	4.08	79.1	243
December	30	.22	3.43	5.31	106	326
Calendar year 1942	68	.22	6.10	9.44	2,230	6,840
January	27	.25	2.93	4.53	90.9	279
February	31	.28	3.18	4.92	89.1	273
March	47	.51	7.27	11.2	225	692
April	49	.79	9.20	14.2	276	847
May	43	.62	5.87	9.08	182	558
June	11.0	.51	2.10	3.25	63.1	194
Fiscal year 1942-43	49	.22	4.17	6.45	1,520	4,670

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Waiakamoi Stream above Wailoa ditch, near Huelo

Location.- Lat. 20°51'45", long. 156°11'55", 500 feet upstream from intake of Wailoa ditch, a quarter of a mile upstream from Spreckels ditch trail, and 3.8 miles southeast of Huelo. Datum of gage is 1,293.59 feet above mean sea level.

Drainage area.- 4.4 square miles.

Records available.- January 1922 to June 1943.

Average discharge.- 21 years, 16.8 million gallons a day (26.0 second-feet).

Extremes.- Maximum discharge during year, 1,150 million gallons a day (1,780 second-feet) Dec. 14 (gage height, 6.11 feet), from rating curve extended above 370 million gallons a day by logarithmic plotting; minimum, 0.65 million gallons a day (1.01 second-feet) Dec. 13.

1922-43: Maximum discharge, 4,660 million gallons a day (7,210 second-feet) Oct. 16, 1924 (gage height, 10.45 feet), from rating curve extended above 370 million gallons a day; minimum, 0.32 million gallons a day (0.50 second-foct) Feb. 3, 4, 1940, Feb. 12, 1942.

Remarks.- Records good. Haleakala ranch and Kula pipe lines divert small quantities of water above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.8	0.62	1.5	6.1	3.0	102
.9	.88	1.7	11.2	3.5	177
1.0	1.18	2.0	23	4.0	277
1.1	1.52	2.5	39		
1.3	2.9	2.6	61		

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.8	15.7	32.5	36	1.19	1.73	3.75	3.2	1.49	53	39.5	6.7
2	2.8	4.4	22	8.2	1.25	1.63	39.5	11.0	1.28	67	7.3	3.6
3	2.3	6.6	7.0	10.3	1.06	1.25	33.5	19.1	7.0	19.2	16.3	2.75
4	2.0	4.8	4.8	8.4	.94	.97	72	4.7	6.0	92	10.1	3.5
5	1.73	2.55	4.0	30	1.29	.85	61	20.5	4.4	14.3	4.7	4.0
6	7.2	8.1	3.65	19.8	3.45	.78	8.9	118	2.35	9.1	48	4.3
7	19.0	29	5.8	6.3	1.70	.72	8.4	41	1.78	27	15.5	2.55
8	7.6	27	5.9	22.5	1.12	1.50	4.7	6.1	29	18.4	12.1	2.05
9	4.8	6.4	4.2	14.9	.83	3.7	3.3	5.2	106	7.2	9.0	1.84
10	14.0	4.8	5.8	5.9	.83	1.30	3.0	3.3	32	22.5	4.5	1.78
11	202	20.5	4.3	4.3	1.44	.91	2.65	7.5	18.3	39.5	4.8	2.0
12	93	7.9	8.3	3.6	1.88	.75	2.3	5.7	9.8	16.0	6.8	2.7
13	13.1	21.5	43	2.9	1.90	3.55	2.2	2.9	9.8	26.5	7.7	4.7
14	6.8	7.0	26	2.65	112	226	4.6	7.3	6.8	96	5.5	2.9
15	4.7	4.3	18.7	2.4	95	5.3	2.4	5.2	4.3	36	4.0	1.84
16	3.75	3.45	13.0	2.05	15.1	2.65	1.84	2.65	3.3	13.6	3.05	6.2
17	3.2	3.6	9.5	1.89	9.5	2.05	1.78	2.05	5.6	7.9	2.65	7.4
18	2.75	5.6	4.8	1.73	5.2	1.63	1.84	1.69	55	5.9	2.5	4.2
19	2.4	3.45	5.1	1.52	4.3	1.94	1.52	1.73	29.5	6.1	4.6	10.0
20	2.4	2.55	11.1	1.45	2.75	1.52	1.35	1.63	29	5.2	4.1	3.9
21	2.9	2.3	5.4	10.4	2.5	1.52	1.21	1.42	35.5	4.3	2.5	2.9
22	4.9	4.2	7.9	6.6	1.89	1.19	1.15	1.28	7.8	25	2.0	2.05
23	17.1	8.8	6.2	3.7	1.68	1.41	1.09	1.18	4.7	9.3	1.78	7.6
24	12.2	11.8	3.45	2.15	1.52	1.12	1.00	16.0	3.75	5.9	25	8.3
25	5.4	10.5	2.8	1.63	1.38	1.00	.97	17.9	12.0	4.2	13.2	6.8
26	4.0	3.9	3.3	1.49	1.25	.91	.91	3.1	17.7	3.45	125	7.0
27	3.25	3.15	3.95	1.49	1.18	.88	.88	2.15	4.8	2.9	28	4.9
28	2.3	4.0	3.4	1.28	1.09	150	.65	1.94	9.6	2.65	8.2	23
29	2.15	3.5	8.6	1.49	1.03	103	.80	-	5.2	2.55	4.7	15.1
30	2.05	49	8.1	1.35	1.27	8.2	.75	-	16.7	16.0	4.2	28.5
31	4.5	86	-	1.21	-	4.8	.72	-	9.0	-	3.45	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	202	1.73	14.9	23.1	461	1,420
August	86	2.3	12.1	18.7	376	1,150
September	43	2.8	9.75	15.1	293	898
October	36	1.21	7.08	11.0	220	674
November	112	.83	9.25	14.3	278	852
December	226	.72	17.2	26.6	535	1,640
Calendar year 1942	490	.36	22.0	34.0	8,040	24,680
January	72	.72	8.74	13.5	271	831
February	118	1.18	11.3	17.5	318	976
March	106	1.28	15.8	24.4	489	1,500
April	96	2.55	22.0	34.0	659	2,020
May	125	1.78	14.0	21.7	433	1,330
June	28.5	1.78	6.17	9.55	185	568
Fiscal year 1942-43	226	.72	12.4	19.2	4,520	13,860

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Alo Stream near Huelo

Location.- Lat. 20°51'50", long. 156°11'45", just upstream from Spreckels ditch inflow and trail crossing and 3.8 miles southeast of Huelo. Datum of gage is 1,248.38 feet above mean sea level.

Drainage area.- 0.2 square mile.

Records available.- December 1910 to June 1943.

Average discharge.- 32 years (1911-43), 5.06 million gallons a day (7.83 second-feet).

Extremes.- Maximum discharge during year, 536 million gallons a day (829 second-feet) Mar. 18 (gage height, 4.15 feet), from rating curve extended above 50 million gallons a day; minimum, 0.35 million gallons a day (0.54 second-foot) Dec. 13, Jan. 31.
1910-43: Maximum discharge, 1,600 million gallons a day (2,480 second-feet) Nov. 18, 1930 (gage height, 6.90 feet), from rating curve extended above 15 million gallons a day; minimum, 0.2 million gallons a day (0.3 second-foot) Nov. 22, 23, 1932.

Remarks.- Records good except those for periods of no gage-height record, which are fair. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.5	0.35	1.0	3.5	1.5	18.5
.6	.60	1.1	5.2	1.6	24
.7	1.00	1.2	7.4	1.9	46
.8	1.55	1.3	10.2	2.2	76
.9	2.3	1.4	13.8		

Discharge, in million gallons, fiscal year July 1942 to June 1945

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.70	3.55	7.7	7.1	0.62	0.58	1.8	0.64	0.68	22	14	5.2
2	.96	1.06	6.4	1.74	.52	.52	15	2.9	.60	7.1	2.7	1.33
3	.84	1.08	2.3	2.35	.50	.48	7.0	6.0	4.7	4.2	7.0	1.06
4	.80	.80	1.78	3.55	.48	.45	12	1.78	3.55	35	4.5	2.55
5	.72	.76	1.44	5.5	1.23	.42	8.0	4.7	2.35	5.4	1.85	2.55
6	5.4	1.26	1.36	5.3	.81	.40	3.0	11.2	.96	3.0	11.2	1.48
7	7.1	5.0	4.5	2.15	.50	.40	2.8	4.9	.80	11	2.75	1.00
8	2.3	3.15	2.6	12.1	.45	2.7	1.8	1.70	19.2	7.0	1.78	.88
9	1.93	1.72	2.55	3.65	.42	.85	1.3	1.22	48	2.5	1.50	.84
10	9.1	1.87	3.7	2.55	.50	.48	1.2	1.00	14.4	9.0	1.33	.84
11	16.7	9.5	1.55	1.70	.83	.42	1.0	3.3	5.8	14	5.3	.76
12	12.2	8.8	2.9	1.33	.80	.40	.86	1.31	6.0	5.6	5.6	.84
13	3.55	16.8	1.95	1.11	.52	10.6	.82	.88	3.6	9.0	4.2	3.0
14	2.16	2.5	3.7	1.00	10.8	27.5	2.0	3.0	2.6	35	5.35	.88
15	1.55	1.78	3.55	.88	8.5	1.43	1.0	1.06	1.70	15	1.50	.72
16	1.38	1.44	2.9	.80	10.1	.88	.72	.80	1.38	5.0	1.28	3.95
17	1.16	1.99	1.70	.76	1.76	.80	.68	.72	1.82	3.3	1.11	1.95
18	1.00	6.3	1.28	.68	3.65	.64	.60	.72	19.8	2.2	1.00	2.05
19	.92	1.50	2.85	.64	1.73	.58	.58	.68	6.2	2.3	2.9	4.8
20	1.07	1.11	3.5	.60	1.00	.55	.56	.60	9.0	2.0	1.94	1.22
21	1.12	1.09	1.31	1.31	.84	.50	.52	.58	5.6	1.7	.96	.92
22	2.25	4.8	2.5	6.4	.76	.48	.50	.55	2.4	11	.84	.80
23	2.25	3.85	1.42	1.22	.68	.58	.48	.52	1.78	4.0	.80	3.1
24	1.82	4.6	1.06	.72	.64	.48	.48	11.2	1.50	2.3	14.2	5.0
25	1.34	3.2	.98	.64	.60	.48	.45	5.4	13.0	1.8	7.1	3.7
26	2.65	1.44	.92	.64	.55	.45	.45	1.06	7.1	1.4	14.7	2.75
27	1.76	1.50	.84	.58	.52	.43	.42	.88	2.0	1.1	6.6	2.15
28	.92	2.8	2.35	.58	.52	20	.42	.72	2.45	1.1	2.2	11.1
29	1.00	1.83	2.35	.55	.50	30	.40	-	1.81	1.0	1.62	5.9
30	.96	13.5	3.3	.55	.58	4.6	.40	-	14.5	4.5	1.33	5.9
31	1.25	12.9	-	.52	-	2.5	.38	-	6.3	-	1.22	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	16.7	0.72	2.90	4.49	89.8	276
August	16.8	.76	3.76	5.82	116	357
September	7.7	.84	2.54	3.93	76.2	234
October	12.1	.52	2.24	3.47	69.4	213
November	10.8	.42	1.73	2.68	61.9	189
December	30	.40	3.59	5.55	111	342
Calendar year 1942	121	.35	5.04	7.80	1,840	5,640
January	16	.38	2.18	3.37	67.6	207
February	11.2	.52	2.50	3.87	69.9	215
March	48	.60	6.83	10.6	212	649
April	35	1.0	7.66	11.9	230	705
May	14.7	.80	4.11	6.36	127	391
June	11.1	.72	2.64	4.08	79.2	243
Fiscal year 1942-43	48	.38	3.56	5.61	1,300	3,990

Note.- No gage-height record Dec. 21 to Jan. 15, Apr. 3 to May 4; discharge computed on basis of records for Puohokamoa and Waiakamoi Streams.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kaaiea Stream near Huelo

Location.- Concrete weir control, lat. 20°52'05", long. 156°12'15", 700 feet upstream from Hamakua ditch trail crossing, 2 miles southeast of Kailua, and 3¼ miles southeast of Huelo.

Drainage area.- 0.5 square mile.

Records available.- December 1921 to June 1943.

Average discharge.- 21 years (1922-43), 4.89 million gallons a day (7.57 second-feet).

Extremes.- Maximum discharge during year, 380 million gallons a day (588 second-feet) Mar. 18 (gage height, 3.84 feet), from rating curve extended above 130 million gallons a day on basis of broad-crested weir formula; minimum, 0.33 million gallons a day (0.51 second-foot) Jan. 31.

1921-43: Maximum discharge, 2,300 million gallons a day (3,560 second-feet) Nov. 18, 1930 (gage height, 7.93 feet, site and datum then in use), from rating curve extended above 50 million gallons a day; minimum, 0.28 million gallons a day (0.40 second-foot) Feb. 4, 1940.

Remarks.- Records good. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.2	0.26	0.6	4.0	1.0	15.2
.3	.60	.7	6.1	1.2	24.5
.4	1.30	.8	8.7	1.4	36.5
.5	2.4	.9	11.5	1.6	49

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.76	4.2	8.8	5.0	0.56	0.60	1.91	0.56	0.65	22	15.3	4.2
2	1.12	1.12	5.3	1.91	.56	.60	21.5	3.6	.56	9.6	3.0	1.30
3	.88	1.12	2.15	2.55	.48	.48	12.2	6.2	4.7	4.2	7.4	1.04
4	.75	.88	1.88	3.15	.44	.48	14.3	1.68	2.75	22.5	2.7	2.2
5	.70	.81	1.30	5.0	1.34	.44	8.8	5.2	1.90	5.0	1.80	2.3
6	4.7	1.39	1.30	5.5	.96	.40	2.8	11.3	.88	3.85	17.2	1.60
7	7.2	5.9	4.1	2.15	.52	.40	1.47	5.2	.75	9.0	2.8	1.12
8	2.25	3.7	2.2	11.4	.44	2.2	1.47	1.91	18.9	6.9	1.80	.88
9	1.90	1.68	2.15	3.65	.40	.96	1.30	1.30	41	2.4	1.47	.81
10	8.2	1.91	3.2	2.4	.44	.52	1.66	1.12	13.7	10.1	1.30	.81
11	20.5	9.3	1.58	1.80	.70	.44	1.12	3.1	4.8	9.7	2.85	.75
12	13.2	2.7	2.8	1.39	.88	.40	.88	1.40	5.0	5.0	2.05	.96
13	3.15	15.3	2.15	1.20	.60	13.0	.95	.88	3.15	6.3	2.3	2.8
14	1.91	2.55	3.2	1.12	11.8	21	1.52	2.75	2.15	25	2.0	1.04
15	1.58	1.68	2.05	.95	11.6	1.58	.81	1.12	1.47	12.4	1.30	.75
16	1.30	1.39	3.3	.88	6.0	1.04	.70	.81	1.20	4.2	1.04	4.0
17	1.20	1.47	1.47	.81	1.94	.88	.70	.70	1.50	2.8	.95	2.35
18	1.04	4.6	1.20	.75	3.0	.70	.65	.70	20	2.15	.88	2.05
19	.88	1.39	1.84	.70	1.91	.60	.60	.65	5.2	2.55	2.7	5.3
20	1.04	1.12	3.35	.65	1.12	.56	.56	.60	8.3	1.91	1.82	1.39
21	1.20	1.03	1.30	1.60	.95	.56	.52	.56	5.7	1.58	.95	1.04
22	2.4	3.8	2.6	2.15	.75	.58	.48	.52	2.3	7.2	.81	.88
23	2.0	3.35	1.44	1.14	.70	.98	.48	.48	1.58	2.4	.75	3.95
24	1.30	4.4	1.04	.75	.65	.65	.44	11.0	1.30	1.58	13.3	4.9
25	.92	3.15	.95	.65	.60	.56	.44	4.2	10.1	1.47	6.6	3.9
26	2.15	1.47	.88	.65	.56	.52	.40	1.12	7.7	1.20	16.6	3.0
27	1.64	1.28	.75	.60	.56	.51	.40	.81	1.80	1.04	6.2	2.2
28	.95	2.25	1.76	.56	.52	18.7	.37	.75	2.3	.95	2.15	11.9
29	.95	1.63	2.75	.60	.52	41	.37	-	1.51	1.11	1.58	5.5
30	.95	12.6	3.0	.56	.60	2.55	.37	-	13.0	9.4	1.30	5.5
31	1.72	13.0	-	.52	-	2.0	.33	-	5.6	-	1.12	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	20.5	0.70	2.95	4.56	91.5	281
August	15.3	.81	3.62	5.60	112	344
September	8.8	.75	2.38	3.68	71.5	219
October	11.4	.52	2.12	3.28	65.7	202
November	11.8	.40	1.74	2.69	52.1	160
December	41	.40	3.74	5.79	116	356
Calendar year 1942	115	.33	4.99	7.72	1,820	5,590
January	21.5	.33	2.62	4.05	81.1	249
February	11.3	.48	2.51	3.88	70.2	215
March	41	.56	6.18	9.56	191	588
April	25	.95	6.52	10.1	195	600
May	17.2	.75	4.00	6.19	124	381
June	11.9	.75	2.68	4.15	80.4	247
Fiscal year 1942-43	41	.33	3.43	5.31	1,250	3,840

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Oopuola Stream near Huelo

Location.- Concrete weir control, lat. 20°52'15", long. 156°12'30", between Kaaiea and Nailiilihaele Streams, 100 feet upstream from Wailoa ditch intake, 300 feet upstream from ditch trail, and 4 miles southeast of Huelo.
Drainage area.- 0.2 square mile.
Records available.- August 1930 to June 1943. December 1910 to June 1915, at site half a mile downstream; records not equivalent.
Average discharge.- 12 years (1931-43), 1.87 million gallons a day (2.89 second-feet).
Extremes.- Maximum discharge during year, 306 million gallons a day (473 second-feet) Mar. 9 (gage height, 4.82 feet), from rating curve extended above 20 million gallons a day by tests on model of station site; minimum, 0.14 million gallons a day (0.22 second-foot) Jan. 31, Feb. 1.
1930-43: Maximum discharge, 324 million gallons a day (501 second-feet) Jan. 18, 1932 (gage height, 5.12 feet), from rating curve extended above 20 million gallons a day by tests on model of station site; minimum, 0.09 million gallons a day (0.14 second-foot) Feb. 18, 19, 1936.
Remarks.- Records good except those for periods of no gage-height record, which are fair. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

1.6	0.05	2.0	2.35	2.4	11.2
1.7	.23	2.1	3.75	2.5	14.7
1.8	.65	2.2	5.7	2.6	18.8
1.9	1.32	2.3	8.2	2.8	30

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.72	1.46	2.6	2.75	0.19	0.23	1.03	0.20	0.28	9.0	4.1	2.05
2	.40	.40	1.91	.65	.19	.23	10.4	1.06	.25	4.0	1.38	.78
3	.36	.45	.81	1.02	.19	.21	8.2	2.25	2.0	2.0	3.6	.64
4	.32	.32	.65	1.24	.19	.20	6.9	.78	1.2	9.0	1.15	1.23
5	.28	.28	.55	1.99	.38	.18	3.75	1.52	.90	2.2	.93	1.17
6	1.97	.45	.50	2.05	.42	.16	1.18	3.4	.52	1.8	2.65	.88
7	2.55	1.50	1.53	.75	.21	.16	.87	1.88	.45	3.8	1.15	.64
8	.75	1.26	1.06	6.3	.19	1.1	.65	.75	8.0	3.2	.83	.60
9	.65	.65	1.03	1.58	.18	.50	.55	.60	20	1.1	.73	.56
10	2.9	.65	1.47	1.10	.18	.23	.86	.40	6.0	4.0	.68	.56
11	3.9	3.35	.65	.75	.35	.19	.50	1.15	2.5	3.8	.95	.53
12	3.95	1.10	.94	.60	.46	.17	.40	.58	2.7	2.2	.98	.53
13	1.10	7.1	.60	.50	.23	4.5	.45	.32	1.7	2.5	.78	1.31
14	.70	1.02	1.66	.45	4.6	9.0	.65	1.28	1.0	10	.68	.60
15	.55	.70	.91	.40	2.1	.80	.36	.50	.74	6	.60	.51
16	.45	.60	2.25	.36	4.5	.50	.28	.32	.60	2.0	.56	1.48
17	.40	.55	.70	.32	.97	.40	.28	.25	.74	1.5	.53	.95
18	.36	2.05	.55	.32	1.61	.30	.25	.23	9.0	1.1	.53	1.17
19	.32	.65	.70	.28	.87	.23	.23	.22	2.5	1.2	.99	2.0
20	.36	.50	1.42	.28	.50	.20	.23	.21	3.8	1.1	.97	.73
21	.40	.49	.60	.92	.40	.19	.23	.20	2.8	.90	.56	.60
22	.93	3.0	.60	1.15	.32	.20	.23	.20	1.3	3.0	.51	.53
23	.88	1.75	.60	.50	.28	.53	.21	.19	.85	1.1	.49	1.30
24	.76	.94	.45	.32	.25	.28	.21	3.0	.70	.75	7.0	2.1
25	.50	1.18	.40	.25	.23	.23	.19	1.0	4.5	.70	1.88	1.94
26	1.21	.60	.40	.28	.23	.21	.19	.50	3.5	.58	4.8	1.09
27	.78	.61	.32	.23	.23	.19	.18	.35	1.0	.52	2.85	.88
28	.40	1.26	.64	.23	.21	5.8	.18	.30	1.1	.50	1.03	2.95
29	.40	.76	1.05	.23	.19	18.7	.16	-	.85	.56	.83	1.90
30	.40	4.8	1.17	.23	.23	1.10	.16	-	5.0	2.15	.73	1.96
31	.36	4.6	-	.21	-	.96	.14	-	2.5	-	.68	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July*	3.95	0.28	0.965	1.49	29.9	92
August	7.1	.28	1.45	2.24	45.0	138
September	2.6	.32	.957	1.48	28.7	88
October	6.3	.21	.910	1.41	28.2	87
November	4.6	.18	.703	1.09	21.1	65
December	18.7	.16	1.55	2.40	48.0	147
Calendar year 1942	59	.16	2.04	3.16	744	2,280
January	10.4	.14	1.29	2.00	40.1	123
February	2.4	.19	.844	1.31	23.6	73
March	20	.25	2.87	4.44	89.0	273
April	10	.50	2.74	4.24	82.3	252
May	7.0	.49	1.49	2.31	46.1	142
June	2.95	.51	1.14	1.76	34.2	105
Fiscal year 1942-43	20	.14	1.41	2.18	516	1,580

Note.- No gage-height record Dec. 1-21, Feb. 18 to Apr. 29; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Nailliilihaele Stream near Huelo

Location.- Masonry dam control, lat. 20°52'30", long. 156°13'05", 200 feet upstream from Wailoa ditch intake, 700 feet upstream from New Hamakua ditch trail, 1½ miles south of Kailua, and 2½ miles southeast of Huelo.
Drainage area.- 2.8 square miles.
Records available.- December 1910 to June 1918 and August 1919 to June 1943.
Average discharge.- 22 years (1920-24, 1925-43), 24.4 million gallons a day (37.8 second-feet).
Extremes.- Maximum discharge during year, 3,030 million gallons a day (4,690 second-feet) Mar. 18 (gage height, 7.53 feet), from rating curve extended above 130 million gallons a day; minimum, 2.4 million gallons a day (3.7 second-feet) Dec. 13, Jan. 31.
1910-18, 1919-43: Maximum discharge, 4,750 million gallons a day (7,350 second-feet) Aug. 12, 1940 (gage height, 8.64 feet), from rating curve extended above 130 million gallons a day; minimum, 0.45 million gallons a day (0.70 second-foot) July 14, 1920.
Remarks.- Records good except those for periods of no gage-height record, which are fair, and those above 200 million gallons a day, which are poor. No diversions. Water used for irrigation in central Maui.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

1.8	1.30	2.4	18.6	3.3	120
1.9	2.7	2.5	24	3.6	181
2.0	4.6	2.6	31	3.9	260
2.1	7.1	2.7	39.5	4.3	390
2.2	10.2	2.8	50	4.7	560
2.3	14.0	3.0	75		

Discharge, in million gallons, 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	147	104	18.1
2	6.6	8.0	30.5	9.7	3.65	4.6	60	21	4.2	98	14.9	8.3
3	5.8	6.8	13.2	12.5	3.25	3.65	35	39.5	31	24.5	36	6.8
4	5.4	5.8	11.0	18	3.1	3.25	100	9.3	11.2	193	14.9	9.8
5	5.1	5.4	9.3	22	5.9	3.1	78	32.5	9.8	25	10.2	9.6
6	22	8.2	9.0	18	6.0	2.9	20	90	5.8	19.8	195	8.6
7	42	33	19.2	9.6	3.45	2.7	15	33	4.8	57	17.5	6.4
8	12.5	22	13.5	47	2.9	9.2	11	11.3	100	39.5	13.5	5.8
9	10.2	9.0	11.3	12	2.7	6.4	9.0	8.8	285	14.9	11.0	5.4
10	39.5	9.0	15.4	11	2.9	3.45	9.3	7.1	71	87	8.6	5.1
11	176	43	9.3	8.0	4.8	2.9	7.4	10	29.5	57	9.6	5.1
12	95	12.9	15.2	6.4	5.4	2.55	6.8	7.0	24.5	25	11.3	7.6
13	18.2	69	29.5	5.8	4.0	50	7.1	6.4	17.7	102	10.5	13.2
14	12.1	12.5	16.6	5.4	116	247	9.9	24	12.9	165	9.6	6.4
15	9.9	9.6	12.3	5.0	141	8.6	6.4	7.0	9.6	85	7.4	4.8
16	9.0	8.6	13.9	4.5	30.5	6.6	5.4	5.2	8.3	24	6.8	20.5
17	8.3	8.6	9.0	4.3	11.2	5.2	5.1	4.7	8.2	16.8	6.4	13.2
18	7.4	17.0	8.3	4.0	12.8	4.8	4.8	4.7	139	14.0	6.1	11.5
19	6.6	8.6	10.0	3.8	9.9	4.5	4.4	4.2	38	15.8	13.3	28
20	6.8	7.1	15.4	3.6	6.8	4.2	4.2	4.2	44	12.9	9.8	9.0
21	7.4	6.9	8.3	74	6.1	4.2	4.0	4.2	43	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	10	5.1	4.5	3.65	3.65	9.9	14.0	5.4	24.5
24	8.6	24	7.7	7.0	4.6	3.8	3.45	75	8.6	10.6	75	20.5
25	7.1	17.2	6.8	6.6	4.4	3.7	3.25	36	43	9.3	30	17.5
26	9.6	9.3	6.6	6.0	4.2	3.7	3.25	7.1	50	8.3	147	15.2
27	8.0	8.3	5.8	5.4	4.0	3.7	3.1	5.6	11.0	7.7	32.5	11.4
28	5.8	11.3	6.4	5.6	3.85	100	2.9	5.4	14.8	7.1	12.1	69
29	5.8	9.4	15.1	4.2	3.65	500	2.7	-	10.2	7.4	9.6	26
30	6.8	82	12.1	3.85	4.2	43	2.7	-	70	49	8.6	35.5
31	12.2	87	-	3.65	-	18	2.55	-	22	-	8.0	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	176	6.1	19.3	29.9	598	1,840
August	87	5.4	20.0	30.9	621	1,910
September	51	5.8	13.9	21.5	417	1,280
October	74	3.6	12.8	19.8	395	1,210
November	141	2.7	14.2	22.0	425	1,310
December	500	2.55	34.5	53.4	1,070	3,280
Calendar year 1942	719	2.4	33.1	51.2	12,080	37,070
January	100	2.55	14.3	22.1	443	1,360
February	90	3.65	17.0	26.3	475	1,460
March	285	4.2	37.3	57.7	1,150	3,540
April	193	7.1	46.3	71.6	1,390	4,260
May	195	5.4	27.6	42.7	857	2,630
June	69	4.8	14.5	22.4	436	1,340
Fiscal year 1942-43	500	2.55	22.7	35.1	8,280	25,420

Note.- No gage-height record Oct. 4-29, Dec. 16 to Jan. 8, Feb. 11-22; discharge computed on basis of records for Hoolawanui and Kailua Streams.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kailua Stream near Huelo

Location.- Lat. 20°52'35", long. 156°13'25", just upstream from Wailoa ditch intake, 1¼ miles southwest of Kailua, and 2¾ miles south of Huelo. Datum of gage is 1,252.99 feet above mean sea level.
Drainage area.- 3.0 square miles.
Records available.- December 1910 to June 1918, July 1919 to June 1943.
Average discharge.- 24 years (1919-43), 19.2 million gallons a day (29.7 second-feet).
Extremes.- Maximum discharge during year, 2,240 million gallons a day (3,470 second-feet) Dec. 14 (gage height, 7.66 feet), from rating curve extended above 150 million gallons a day; minimum, 1.50 million gallons a day (2.32 second-feet) Dec. 13.
1910-18, 1919-43: Maximum discharge, 4,580 million gallons a day (7,090 second-feet) Apr. 7, 1938 (gage height, 9.10 feet), from rating curve extended above 150 million gallons a day; minimum, 0.07 million gallons a day (0.11 second-foot) June 27, 1921.
Remarks.- Records good except those for periods of no gage-height record, which are fair. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

1.7	1.20	2.1	7.6	2.5	20	3.4	85
1.8	2.2	2.2	10.1	2.6	24.5	3.8	134
1.9	3.6	2.3	13.0	2.8	34	4.2	196
2.0	5.4	2.4	16.4	3.0	48	4.6	274

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.5	17.8	39	35	2.3	2.7	5.4	2.7	2.75	50	57	8.0
2	3.6	5.2	25.5	9.0	2.3	2.4	35	14.7	2.5	74	9.2	4.8
3	3.05	4.9	8.8	12.1	2.1	2.0	25	27.5	13.6	20.5	19.2	4.2
4	2.76	3.8	6.5	9.6	2.0	1.9	55	6.3	7.2	106	10.0	5.4
5	2.6	3.05	5.4	24	3.9	1.8	43	26	4.9	18.2	6.1	5.2
6	6.7	4.6	4.9	18.4	4.0	1.7	13	130	3.3	11.1	114	4.5
7	23	22.5	7.3	7.6	2.5	1.6	8.0	45	2.75	34.5	11	3.5
8	8.6	22.5	7.6	26	2.0	4.2	6.4	10.4	27.5	25	9.0	3.1
9	5.8	6.3	6.0	14.2	1.8	3.6	5.2	6.0	131	9.8	7.4	3.0
10	18.6	4.7	6.5	7.0	2.0	2.2	4.7	4.9	42	38.5	6.0	2.9
11	208	21	4.9	5.2	2.7	1.80	4.1	11.5	23.5	50	6.4	2.9
12	113	7.6	8.0	4.6	3.0	1.60	3.6	8.0	15.4	18.6	7.0	3.7
13	18.2	28.5	33	3.8	2.5	4.9	3.0	4.5	14.1	23.5	6.4	6.0
14	8.8	7.4	18.5	3.4	100	255	6.4	10.0	9.1	112	6.0	3.3
15	6.5	5.0	13.6	3.0	120	8.1	3.8	6.4	6.5	50	4.5	2.7
16	5.2	4.3	13.5	2.8	20	4.5	3.05	4.1	5.0	17.6	4.0	12
17	4.7	4.3	8.6	2.6	7.0	3.45	3.05	3.3	4.7	11.0	3.8	9.0
18	4.1	6.0	5.0	2.4	8.0	2.9	3.45	3.05	55	8.6	3.7	8.0
19	3.6	4.1	4.9	2.3	5.0	2.6	2.9	2.9	31	8.6	6.0	20
20	3.6	3.3	7.2	2.2	3.7	2.35	2.5	2.6	26	7.2	4.5	6.4
21	3.6	3.35	4.7	35	3.0	2.2	2.35	2.5	40	6.5	3.5	5.0
22	4.9	5.8	9.1	16	2.7	2.0	2.2	2.2	8.8	25	3.3	4.0
23	6.7	10.1	6.7	7.0	2.5	2.35	2.1	2.1	5.6	9.8	3.2	12.3
24	10.4	15.5	4.3	5.0	2.4	2.0	2.0	22.5	4.5	6.5	50	9.3
25	5.2	10.3	3.8	4.0	2.3	1.80	2.0	27.5	11.0	5.6	20	6.1
26	4.7	5.0	3.6	3.3	2.2	1.70	1.90	4.8	24.5	4.9	100	7.6
27	3.95	4.3	3.45	2.9	2.1	1.70	1.90	3.45	6.3	4.3	20	6.3
28	3.05	4.7	3.7	3.1	2.0	169	1.80	3.3	10.2	3.95	8.0	34.5
29	2.9	4.3	8.6	2.6	2.0	161	1.70	-	6.7	3.8	6.0	15.4
30	2.75	51	7.4	2.4	2.3	12.8	1.70	-	21.5	21	5.4	30
31	5.0	90	-	2.3	-	7.0	1.60	-	10.0	-	4.8	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	208	2.6	16.4	25.4	508	1,560
August	90	3.05	12.5	19.5	391	1,200
September	39	3.45	9.63	14.9	289	887
October	35	2.2	8.96	13.9	278	852
November	120	1.8	10.7	16.6	320	983
December	255	1.60	21.8	33.7	675	2,070
Calendar year 1942	637	1.20	25.0	38.7	9,140	28,040
January	55	1.60	8.34	12.9	259	794
February	130	2.1	14.3	22.1	399	1,220
March	131	2.5	18.6	28.8	576	1,770
April	112	3.8	26.2	40.5	786	2,410
May	114	3.2	16.9	26.1	525	1,610
June	34.5	2.7	8.37	13.0	251	771
Fiscal year 1942-43	255	1.60	14.4	22.3	5,260	16,130

Note.- No gage-height record Oct. 10 to Dec. 8, Dec. 31 to Jan. 8, May 7 to June 22; discharge computed on basis of records for Mailiilihaele Stream.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Hoolawaliilii Stream near Huelo

Location.- Concrete weir control, lat. 20°53'15", long. 156°14'35", just upstream from Wailoa ditch intake, 2 miles west of Kailua, and 2 miles southwest of Huelo.

Records available.- April 1911 to June 1943.

Average discharge.- 31 years (1911-15, 1916-43), 5.06 million gallons a day (7.83 second-feet).

Extremes.- Maximum discharge during year, 208 million gallons a day (322 second-feet) Dec. 29 (gage height, 4.04 feet), from rating curve extended above 85 million gallons a day by broad-crested weir formula; minimum, 1.23 million gallons a day (1.90 second-feet) Dec. 13.

1911-43: Maximum discharge, 787 million gallons a day (1,220 second-feet) Feb. 7, 1939 (gage height, 5.42 feet), from rating curve extended above 220 million gallons a day; minimum, 0.2 million gallons a day (0.3 second-foot) June 8, 1926.

Remarks.- Records excellent except those for period of no gage-height record, which are fair. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

1.3	0.75	1.8	8.7
1.4	1.50	1.9	11.7
1.5	2.7	2.0	15.2
1.6	4.2	2.2	24
1.7	6.2	2.4	34.5

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.86	2.5	5.0	3.6	1.74	1.62	3.15	1.62	1.98	11.4	7.5	2.85
2	1.74	1.86	4.4	2.35	1.74	1.50	10.6	2.2	1.86	5.6	3.3	2.2
3	1.74	1.74	3.45	3.2	1.62	1.50	10.1	3.0	3.35	4.8	4.4	2.1
4	1.74	1.74	3.15	3.0	1.62	1.40	13.0	2.1	2.35	14.4	3.15	2.45
5	1.86	1.62	2.85	3.3	1.86	1.40	10.3	2.65	2.1	6.0	2.85	2.2
6	1.74	1.74	2.7	3.15	1.62	1.40	5.4	5.9	1.98	4.8	21	1.98
7	f3.0	2.35	3.15	2.6	1.50	1.31	4.6	4.6	1.86	7.0	5.0	1.86
8	2.5	2.45	2.85	6.9	1.50	1.88	3.75	2.85	8.9	8.4	3.75	1.86
9	2.0	1.86	2.7	3.75	1.40	1.50	3.45	2.45	29	4.6	3.3	1.74
10	4.5	1.74	3.0	3.3	1.50	1.31	3.3	2.2	10.2	7.9	3.0	1.74
11	17	3.15	2.6	2.7	1.40	1.31	3.0	2.35	6.0	6.4	2.85	1.62
12	12	2.1	2.7	2.6	1.40	1.31	2.7	2.2	6.9	5.6	2.6	1.62
13	4.6	8.0	2.6	2.45	1.40	3.95	3.0	1.98	5.0	5.0	2.35	2.1
14	3.9	2.7	2.45	2.35	6.0	13.2	3.7	2.65	4.0	16.0	2.2	1.62
15	3.4	2.35	2.45	2.1	5.1	2.45	2.6	2.2	3.75	9.3	2.1	1.50
16	3.1	2.2	2.6	2.1	4.1	2.1	2.35	1.98	3.3	6.2	1.98	1.98
17	2.9	2.2	2.35	1.98	2.45	1.98	2.45	1.86	3.15	5.2	1.86	1.98
18	2.7	2.6	2.2	1.86	2.6	1.86	2.2	1.86	12.5	4.4	1.98	1.86
19	2.6	2.2	2.2	1.86	2.35	1.74	2.1	1.74	6.8	4.2	2.35	2.85
20	2.5	2.1	2.35	1.86	2.1	1.74	2.1	1.74	8.2	3.75	2.1	1.86
21	2.5	2.2	2.1	9.4	1.98	1.74	1.98	1.74	7.6	3.3	1.86	1.74
22	2.6	4.5	2.2	4.9	1.86	1.74	1.66	1.74	4.4	5.4	1.74	1.62
23	2.6	3.0	2.1	2.85	1.86	1.86	1.74	1.62	3.75	3.45	1.62	2.2
24	2.4	2.6	1.98	2.35	1.74	1.62	1.74	6.8	3.45	3.0	7.4	2.1
25	2.2	2.6	1.86	2.2	1.74	1.50	1.74	5.1	6.9	2.85	3.35	2.35
26	2.2	2.35	1.86	2.2	1.74	1.50	1.74	2.45	7.5	2.7	8.6	1.98
27	2.0	2.35	1.86	1.98	1.74	1.50	1.74	2.2	3.75	2.6	4.0	1.86
28	f1.9	2.45	1.98	2.1	1.62	10.0	1.62	2.1	3.6	2.45	3.0	3.8
29	1.86	2.35	2.2	1.86	1.62	30	1.50	-	3.3	2.45	2.7	2.7
30	1.74	5.6	2.2	1.86	1.74	4.0	1.50	-	8.3	3.9	2.45	2.85
31	1.86	6.7	-	1.74	-	3.6	1.50	-	4.4	-	2.35	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	17	1.74	3.27	5.06	101	311
August	8.0	1.62	2.77	4.29	85.9	264
September	5.0	1.86	2.60	4.02	78.1	240
October	9.4	1.74	2.92	4.52	90.4	278
November	6.0	1.40	2.09	3.23	62.6	192
December	30	1.31	3.40	5.26	106	324
Calendar year 1942	116	1.31	4.90	7.58	1,790	5,490
January	13.0	1.50	3.63	5.62	113	345
February	6.8	1.62	2.65	4.10	74.1	227
March	29	1.86	5.81	8.99	180	553
April	16.0	2.45	5.86	9.07	176	539
May	21	1.62	3.83	5.93	119	364
June	3.8	1.50	2.11	3.26	63.2	194
Fiscal year 1942-43	30	1.31	3.42	5.29	1,250	3,830

f Computed on basis of partly estimated gage-height record.

Note.- No gage-height record July 8-27; discharge computed on basis of records for stations on nearby streams.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Hoolawanui Stream near Huelo

Location.- Concrete weir control, lat. 20°53'15", long. 156°14'55", just upstream from intake of Wailoa ditch, 2 miles west of Kailua, and 2 miles southwest of Huelo. Datum of gage is 1,219.42 feet above mean sea level (East Maui Irrigation Co. bench mark).

Records available.- December 1910 to June 1943.

Average discharge.- 31 years (1911-15, 1916-43), 8.17 million gallons a day (12.6 second-feet).

Extremes.- Maximum discharge during year, 1,390 million gallons a day (2,150 second-feet) Dec. 29 (gage height, 4.40 feet), from rating curve based on weir rating between 100 and 375 million gallons a day and extended above; minimum, 0.90 million gallons a day (1.39 second-feet) Dec. 13.

1910-43: Maximum discharge, 2,980 million gallons a day (4,610 second-feet) Feb. 7, 1939 (gage height, 5.72 feet), from rating curve based on weir rating between 100 and 375 million gallons a day and extended above; minimum, 0.15 million gallons a day (0.23 second-foot) Oct. 25, 1917.

Remarks.- Records good except those for periods of no gage-height record, which are fair. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.3	0.48	0.8	8.5	1.4	45
.4	1.13	.9	12.1	1.6	67
.5	2.15	1.0	16.6	1.8	95
.6	3.6	1.1	22	2.1	152
.7	5.6	1.2	28.5		

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.90	3.95	9.1	6.3	1.48	1.4	3.6	1.6	2.2	17.5	20.5	4.4
2	1.68	2.0	7.2	2.8	1.38	1.3	15.9	2.8	2.1	15.3	5.4	3.1
3	1.58	1.79	4.4	3.75	1.38	1.3	12.1	4.5	4.0	8.5	8.3	2.95
4	1.48	1.68	3.6	3.6	1.38	1.2	21.5	2.5	2.5	34	5.0	3.25
5	1.38	1.48	3.45	4.4	1.71	1.2	17.4	3.7	2.2	10.7	4.4	2.95
6	2.2	1.58	3.1	4.4	1.58	1.2	8.2	9.0	1.90	8.4	88	2.65
7	4.7	3.4	3.0	2.8	1.28	1.0	6.5	8.0	1.68	13.4	8.9	2.55
8	2.65	3.6	3.6	8.3	1.13	1.7	5.2	4.0	9.6	11.6	9.0	2.25
9	2.15	2.0	3.1	4.7	1.13	1.3	4.6	3.3	45	7.0	6.5	2.15
10	5.1	1.90	3.25	3.8	1.22	1.0	4.2	2.8	13.8	18.7	5.2	2.15
11	33.5	4.9	2.8	2.95	1.22	.97	3.6	3.0	7.9	15.3	5.0	2.0
12	22.5	2.65	3.1	2.65	1.28	.90	3.25	2.7	9.1	9.6	4.6	2.15
13	7.0	10.3	3.85	2.55	1.22	4.8	3.6	2.3	6.5	16.6	4.0	2.8
14	5.2	3.1	3.1	2.4	13.4	41	5.0	4.2	5.0	32	3.8	2.0
15	4.2	2.55	2.65	2.15	32.5	2.65	3.1	2.7	4.4	18.9	3.45	1.79
16	3.6	2.25	2.55	2.15	4.4	2.0	2.8	2.2	4.0	11.4	3.25	3.15
17	3.25	2.4	2.25	2.0	3.25	1.79	2.95	2.0	3.8	9.2	3.1	3.0
18	3.1	2.8	2.15	1.90	3.1	1.58	2.65	2.0	32.5	7.3	2.95	2.5
19	2.95	2.0	2.25	1.79	2.65	1.48	2.4	1.8	8.9	7.0	3.45	4.5
20	2.8	1.90	2.55	1.68	2.15	1.38	2.25	1.8	13.0	5.9	2.95	2.5
21	2.8	2.25	2.0	14.7	1.90	1.38	2.15	1.8	11.5	5.2	2.65	2.2
22	2.95	3.75	2.65	5.4	1.79	1.28	2.0	1.8	6.2	8.8	2.55	2.0
23	2.95	3.05	2.4	2.95	1.68	1.58	1.9	1.5	5.2	5.4	2.4	3.1
24	2.65	3.65	1.90	2.25	1.58	1.22	1.9	10	4.6	4.6	10.5	3.0
25	2.55	2.8	1.79	2.15	1.58	1.13	1.9	8.0	8.9	4.4	5.5	3.3
26	2.55	2.3	1.68	2.0	1.48	1.13	1.9	3.5	9.3	4.0	31.5	2.7
27	2.4	2.3	1.58	1.90	1.38	1.13	1.9	2.5	4.8	3.8	7.9	2.5
28	2.0	3.1	1.81	2.05	1.38	28	1.6	2.3	4.8	3.6	5.0	8.0
29	2.0	2.8	2.55	1.79	1.4	102	1.3	-	4.2	3.6	4.2	4.0
30	1.90	11	2.4	1.68	1.5	5.9	1.3	-	9.9	8.2	3.6	4.2
31	1.90	16	-	1.58	-	4.4	1.3	-	5.4	-	3.45	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	33.5	1.38	4.50	6.96	140	428
August	16	1.48	3.59	5.55	111	341
September	9.1	1.58	3.09	4.78	92.6	284
October	14.7	1.58	3.40	5.26	106	324
November	32.5	1.13	3.15	4.87	94.5	290
December	102	.90	7.11	11.0	220	676
Calendar year 1942	379	.90	10.2	15.8	3,720	11,400
January	21.5	1.3	4.84	7.49	150	460
February	10	1.5	3.51	5.43	98.3	302
March	45	1.68	8.22	12.7	255	782
April	34	3.6	11.0	17.0	330	1,010
May	88	2.4	8.94	13.8	277	850
June	8.0	1.79	2.99	4.63	89.8	276
Fiscal year 1942-43	102	.90	5.38	8.32	1,960	6,020

Note.- No gage-height record Aug. 26-31, Nov. 29 to Dec. 10, Jan. 23 to Mar. 5, June 17-30; discharge computed on basis of records for Honopou and Hoolawalii Streams.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Honopou Stream near Huelo

Location.- Concrete masonry dam and weir, lat. 20°53'20", long. 156°15'05", just upstream from Wailoa ditch intake, 2¼ miles southwest of Huelo, and 2½ miles west of Kailua. Altitude of gage, about 1,250 feet.

Drainage area.- 1.0 square mile.

Records available.- December 1910 to June 1943.

Average discharge.- 30 years (1911-14, 1916-43), 3.22 million gallons a day (4.98 second-feet).

Extremes.- Maximum discharge during year, 176 million gallons a day (272 second-feet) Oct. 21 (gage height, 3.39 feet), from rating curve extended above 70 million gallons a day; minimum, 0.45 million gallons a day (0.70 second-foot) several days in October, December, and January.

1910-43: Maximum discharge, 1,220 million gallons a day (1,890 second-feet) Nov. 18, 1930 (gage height, 7.28 feet), from rating curve extended above 70 million gallons a day; minimum, 0.01 million gallons a day (0.02 second-foot) several days in 1933 and 1934.

Remarks.- Records good except those for periods of no gage-height record, which are fair. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.4	0.09	0.8	3.7	1.4	16.5
.5	.56	.9	5.3	1.7	25
.6	1.33	1.0	7.1	2.0	37
.7	2.4	1.2	11.5		

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.70	1.55	2.4	2.35	0.66	0.70	2.0	0.84	0.84	7.5	6.9	1.84
2	.56	.77	2.15	.91	.62	.65	7.5	1.55	.84	3.2	2.3	1.33
3	.56	.70	1.44	2.0	.60	.60	6.0	2.35	2.5	3.15	3.7	1.15
4	.56	.63	1.33	1.54	.60	.55	15	1.15	1.15	11.1	2.1	1.44
5	.50	.56	1.24	1.74	.80	.52	10	2.2	.91	4.3	1.86	1.15
6	.91	.56	1.24	1.60	.64	.50	4.5	5.5	.84	3.8	19.7	1.08
7	1.62	1.02	1.49	.91	.58	.48	3.5	3.3	.77	5.9	4.4	.98
8	.84	1.07	1.33	5.0	.54	1.2	2.8	1.54	7.2	5.8	3.4	.91
9	.77	.63	1.24	1.51	.52	.70	2.3	1.24	21.5	3.2	2.8	.91
10	2.15	.56	1.44	1.44	.50	.45	2.1	1.15	6.0	6.5	2.4	.84
11	8.6	1.80	1.06	.98	.50	.45	1.8	1.15	3.2	5.7	2.2	.84
12	5.4	.77	1.15	.91	.50	.45	1.76	.98	5.4	4.0	1.97	.84
13	2.2	5.8	1.06	.91	.50	3.35	2.1	.91	3.05	4.3	1.86	1.08
14	1.86	1.06	.98	.84	5.0	10.0	3.4	2.3	2.4	12.8	1.76	.77
15	1.54	.84	.91	.77	10	.98	1.65	1.06	2.2	7.0	1.65	.70
16	1.44	.77	.98	.77	2.5	.77	1.54	.91	1.97	5.1	1.44	1.08
17	1.33	.77	.91	.77	1.5	.77	1.54	.91	1.86	4.3	1.33	1.05
18	1.24	1.06	.91	.70	1.7	.70	1.33	.91	11.4	3.7	1.33	.84
19	1.15	.77	.91	.70	1.4	.63	1.24	.84	3.35	3.7	1.44	1.96
20	1.15	.70	.91	.63	1.2	.56	1.24	.84	7.2	2.9	1.24	.84
21	1.05	.86	.84	11.7	1.1	.56	1.15	.77	4.2	2.55	1.06	.70
22	1.15	2.55	.93	2.95	1.0	.56	.98	.77	2.8	4.6	.98	.70
23	1.15	1.39	.84	1.33	.90	.70	.98	.70	2.4	2.4	.98	1.21
24	1.06	.98	.77	.98	.84	.56	.91	7.8	2.2	2.1	6.0	.91
25	.91	.91	.70	.91	.78	.50	.91	2.8	5.8	1.97	2.25	1.26
26	.98	.77	.70	.91	.74	.45	.91	1.06	4.8	1.76	6.9	.91
27	.91	.77	.70	.91	.70	.45	.91	.98	2.3	1.65	2.55	.77
28	.77	1.05	.75	.98	.66	5.0	.84	.91	2.2	1.54	1.76	2.85
29	.77	.90	1.05	.84	.64	30	.77	-	1.97	1.65	1.54	1.24
30	.77	3.55	1.03	.78	.75	3.5	.77	-	6.6	3.5	1.44	1.52
31	.77	4.0	-	.70	-	2.5	.77	-	2.4	-	1.33	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	8.6	0.50	1.46	2.26	45.4	139
August	5.8	.56	1.29	2.00	40.1	123
September	2.4	.70	1.11	1.72	33.4	102
October	11.7	.63	1.61	2.49	50.0	153
November	10	.60	1.30	2.01	39.0	120
December	30	.45	2.25	3.48	69.8	214
Calendar year 1942	96	.45	3.70	5.72	1,350	4,140
January	13	.77	2.62	4.05	81.2	249
February	7.8	.70	1.69	2.61	47.4	146
March	21.5	.77	3.94	6.10	122	375
April	12.8	1.54	4.39	6.79	132	404
May	19.7	.98	2.99	4.63	92.6	284
June	2.85	.70	1.12	1.73	33.7	103
Fimcal year 1942-43	30	.45	2.15	3.33	787	2,410

Note.- No gage-height record Oct. 30 to Dec. 11, Dec. 26 to Jan. 11; discharge computed on basis of records for Hoolawanui and Hoolawaliilii Streams.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Honopou Stream at Lowrie ditch siphon, near Huelo

Location.- Concrete writ control, lat. 20°54'50", long. 156°15'10", half a mile upstream from Government Road and 1.7 miles west of Huelo. Datum of gage is 556.95 feet above mean sea level.
Drainage area.- 2.0 square miles.
Records available.- July 1932 to June 1943. Records at same site collected by East Maui Irrigation Co. April 1930 to June 1932.
Average discharge.- 11 years years, 1.47 million gallons a day (2.27 second-feet).
Extremes.- Maximum discharge during year, 496 million gallons a day (767 second-feet) Oct. 21 (gage height, 3.92 feet), from rating curve extended above 80 million gallons a day by logarithmic plotting; minimum, 0.08 million gallons a day (0.12 second-foot) Feb. 22-24, June 23-25.
1932-43: Maximum discharge, 766 million gallons a day (1,190 second-feet) Feb. 7, 1939 (gage height, 4.69 feet), from rating curve extended above 80 million gallons a day by logarithmic plotting; minimum, 0.03 million gallons a day (0.05 second-foot) Dec. 7, 1940.
Remarks.- Records good. Wailoa, New Hamakua, and Old Hamakua ditches divert most of flow above this station. Water used for irrigation in central Maui.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.1	0.02	0.6	3.75	1.2	24.5
.2	.16	.7	5.8	1.4	36
.3	.51	.8	8.6	1.6	50
.4	1.15	.9	11.6		
.5	2.2	1.0	15.2		

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.23	0.34	0.44	0.20	0.16	0.23	0.51	0.12	0.12	3.4	0.16	0.12
2	.23	.30	.34	.20	.16	.20	5.7	.12	.12	.16	.16	.12
3	.20	.26	.34	.26	.16	.20	10.4	.12	.14	.16	.16	.12
4	.20	.26	.34	.23	.16	.16	8.9	.12	.14	8.8	.16	.12
5	.20	.26	.34	.23	.16	.16	6.1	.12	.14	.20	.14	.12
6	.20	.26	.34	.23	.16	.16	2.5	.52	.12	.20	16.0	.12
7	.16	.26	.30	.20	.16	.16	1.78	.12	.12	.23	.14	.12
8	.16	.23	.26	1.59	.16	.16	1.46	.12	4.4	1.20	.12	.12
9	.16	.23	.26	.28	.16	.16	1.15	.12	38	.23	.12	.12
10	.30	.26	.26	.23	.16	.16	1.15	.12	2.65	1.27	.12	.12
11	.73	.34	.26	.20	.16	.16	1.02	.12	.34	1.27	.12	.10
12	.48	.30	.26	.20	.16	.16	.89	.10	2.85	.23	.12	.10
13	.30	1.36	.26	.20	.16	.16	.89	.10	.23	.20	.14	.10
14	.30	.30	.26	.20	3.05	7.5	1.35	.10	.16	14.1	.14	.10
15	.30	.26	.30	.20	2.1	.30	.89	.10	.16	6.0	.14	.10
16	.30	.26	.30	.16	1.96	.26	.83	.12	.14	1.11	.14	.10
17	.30	.26	.30	.16	.41	.26	.83	.10	.14	.20	.14	.10
18	.30	.26	.23	.16	.26	.23	.77	.10	24	.20	.14	.10
19	.30	.26	.20	.16	.23	.23	.77	.10	1.05	.20	.12	.10
20	.26	.26	.20	.20	.20	.23	.70	.10	.69	.20	.12	.10
21	.26	.26	.20	24	.20	.23	.70	.10	1.76	.20	.12	.10
22	.26	1.29	.20	4.8	.20	.23	.64	.10	.16	.33	.12	.10
23	.26	.30	.20	.67	.20	.23	.57	.08	.14	.23	.10	.10
24	.23	.30	.20	.37	.20	.23	.57	6.9	.14	.23	.70	.08
25	.26	.30	.16	.34	.20	.23	.51	1.25	.70	.20	.12	.08
26	.26	.30	.20	.30	.20	.23	.44	.12	2.2	.20	.85	.10
27	.26	.26	.20	.26	.20	.23	.23	.12	.20	.20	.10	.10
28	.26	.30	.20	.26	.20	2.65	.14	.12	.20	.16	.12	.10
29	.26	.30	.20	.23	.20	37.5	.12	-	.20	.16	.12	.10
30	.26	.40	.20	.20	.20	1.82	.12	-	.26	.16	.12	.10
31	.30	.44	-	.16	-	.72	.12	-	.20	-	.12	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	0.73	0.16	0.274	0.424	8.48	26
August	1.36	.23	.354	.548	11.0	34
September	.44	.16	.258	.399	7.75	24
October	24	.16	1.20	1.86	37.1	114
November	3.05	.16	.410	.634	12.3	38
December	37.5	.16	1.79	2.77	55.5	170
Calendar year 1942	115	.10	2.37	3.67	863	2,650
January	10.4	.12	1.70	2.63	52.8	162
February	6.9	.08	.408	.631	11.4	35
March	38	.12	2.64	4.08	81.9	251
April	14.1	.16	1.39	2.15	41.6	128
May	16.0	.10	.684	1.06	21.2	65
June	.12	.08	.105	.162	3.16	9.7
Fiscal year 1942-43	38	.08	.943	1.46	344	1,060

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Honopou Stream above Haiku ditch, near Huelo

Location.- Concrete weir control, lat. 20°55'05", long. 156°14'55", 110 feet upstream from new Government Road, 1½ miles west of Huelo, and 5.0 miles east of Haiku. Datum of gage is 440.76 feet above mean sea level.

Drainage area.- 2.2 square miles.

Records available.- July 1932 to June 1943. Records at same site collected by East Maui Irrigation Co. November 1926 to June 1932.

Average discharge.- 11 years, 1.68 million gallons a day (2.60 second-feet).

Extremes.- Maximum discharge during year, 156 million gallons a day (241 second-feet) Mar. 18 (gage height, 3.02 feet), from rating curve extended above 15 million gallons a day by logarithmic plotting; minimum, 0.28 million gallons a day (0.43 second-foot) Dec. 27.

1932-43: Maximum discharge, 422 million gallons a day (653 second-feet) Oct. 22, 1941; minimum, 0.08 million gallons a day (0.12 second-foot) Dec. 1, 2, 1938.

Remarks.- Records good except those for periods of no gage-height record, which are poor. Wailoa, New Hamakua, and Old Hamakua ditches divert most of flow above this station. Water used for irrigation in central Maui.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.3	0.18	0.8	3.6
.4	.40	1.0	7.5
.5	.75	1.2	13.7
.6	1.36	1.4	21.5
.7	2.3	1.6	31

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.42	0.66	1.00	0.59	0.45	0.48	0.48	0.37	0.34	4.8	0.66	0.53
2	.40	.51	.80	.40	.45	.40	5.1	.40	.32	.88	.60	.42
3	.40	.48	.66	.56	.42	.37	10.7	.42	.40	.80	.64	.40
4	.40	.48	.60	.42	.42	.37	11.6	.40	.34	10.3	.55	.44
5	.40	.48	.60	.42	.42	.34	9.6	.42	.34	.98	.51	.37
6	.42	.48	.58	.42	.40	.34	3.4	.96	.32	.82	10.4	.37
7	.42	.51	.58	.40	.40	.37	2.2	.74	.32	.92	.67	.34
8	.48	.66	.58	1.82	.40	.49	2.05	.48	2.7	2.1	.53	.34
9	.48	.55	.51	.74	.40	.42	1.63	.45	29	.75	.48	.32
10	.84	.51	.55	.48	.40	.37	1.54	.42	8.2	1.31	.45	.32
11	1.50	.89	.51	.48	.40	.34	1.30	.40	2.45	2.45	.42	.32
12	1.39	.62	.55	.42	.40	.34	1.23	.37	8.1	1.12	.42	.32
13	.84	1.82	.51	.40	.37	.35	1.34	.37	2.35	.86	.42	.36
14	.66	.61	.51	.34	2.25	6.5	1.86	.44	1.54	13.3	.40	.32
15	.62	.58	.55	.34	2.6	.45	1.30	.37	1.30	7.0	.40	.30
16	.55	.55	.55	.34	3.15	.40	1.16	.34	1.09	a1.6	.37	.34
17	.53	.48	.51	a.34	.79	.40	1.09	.32	.92	.66	.37	.34
18	.51	.48	.46	a.34	.58	.40	1.09	.32	15.3	.62	.34	.32
19	.48	.45	.45	a.34	.55	.40	1.03	.32	3.5	.62	.37	.43
20	.45	.42	.42	a.34	.48	.42	1.03	.30	2.1	.58	.34	.37
21	.45	.42	.40	a17	.48	.42	.98	.30	2.9	.55	.32	.34
22	.48	1.51	.40	a4.0	.45	.42	.92	.30	.80	1.05	.32	.32
23	.45	.51	.40	a1.3	.42	.42	.86	.30	.70	.60	.32	.34
24	.46	.48	.37	.70	.42	.40	.86	5.2	.66	.55	1.19	.34
25	.45	.48	.37	.58	.42	.40	.80	a2.2	1.20	.55	.50	.36
26	.48	.48	.37	.51	.40	.37	.71	.37	a2.7	.51	1.24	.34
27	.48	.45	.34	.48	.40	.34	.46	.37	.58	.48	.54	.32
28	.45	.54	.34	.51	.40	3.25	.37	.37	.62	.48	.48	.43
29	.45	.48	.37	.48	.40	25.5	.37	-	.56	.45	.42	.48
30	.45	.98	.34	.45	.40	1.77	.34	-	.64	.45	.40	.51
31	.45	.85	-	.45	-	.54	.34	-	.55	-	.40	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	1.50	0.40	0.556	0.860	17.2	53
August	1.82	.42	.626	.969	19.4	60
September	1.00	.34	.606	.783	15.2	47
October	17	.34	1.17	1.81	36.4	112
November	3.15	.37	.664	1.03	19.9	61
December	25.5	.34	1.54	2.38	47.8	147
Calendar year 1942	68	.28	2.34	3.62	855	2,620
January	11.6	.34	2.19	3.39	67.7	208
February	5.2	.30	.644	.996	18.0	55
March	29	.32	2.99	4.63	92.8	285
April	13.3	.45	1.94	3.00	58.1	178
May	10.4	.32	.822	1.27	25.5	78
June	.53	.30	.368	.569	11.9	34
Fiscal year 1942-43	29	.30	1.18	1.83	429	1,320

a No gage-height record; discharge computed on basis of records for Honopou Stream below Haiku ditch.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Honopou Stream below Haiku ditch, near Huelo

Location.- Concrete weir control, lat. 20°55'05", long. 156°14'50", an eighth of a mile downstream from Government Road and 1½ miles west of Huelo. Datum of gage is 383.41 feet above mean sea level.
Drainage area.- 2.3 square miles.
Records available.- July 1932 to June 1943. Records at same site collected by East Maui Irrigation Co. November 1926 to June 1932.
Average discharge.- 11 years, 5.68 million gallons a day (8.79 second-feet).
Extremes.- Maximum discharge during year, 840 million gallons a day (1,300 second-feet) Oct. 21 (gage height, 4.68 feet), from rating curve extended above 44 million gallons a day by logarithmic plotting; minimum, 0.03 million gallons a day (0.05 second-foot) Feb. 12, 13.

1932-43: Maximum discharge recorded, 2,200 million gallons a day (3,400 second-feet) Feb. 7, 1939 (gage height, 6.50 feet), from rating curve extended above 44 million gallons a day by logarithmic plotting; minimum discharge, 0.02 million gallons a day (0.03 second-foot) Nov. 27, 1933.

Remarks.- Records good except those above 50 million gallons a day, which are fair. Wailoa, New Hamakua, Old Hamakua, and Haiku ditches divert most of flow above this station.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.1	0.02	0.6	4.1	1.2	23.5
.2	.22	.7	6.1	1.4	34
.3	.67	.8	8.6	1.7	54
.4	1.41	.9	11.6	2.0	80
.5	2.55	1.0	15.1		

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.73	1.22	10.3	3.25	0.61	0.80	0.86	0.56	0.61	27	16.7	1.00
2	.67	.86	7.5	.96	.61	.80	8.4	.71	.61	21	.37	.86
3	.73	.80	461	.99	.61	.86	37	.93	.93	4.8	3.6	.86
4	.80	.80	.86	.86	.61	.86	37	.37	.73	38.5	1.04	.86
5	.80	.80	.86	3.05	.61	.86	45	.33	.67	3.8	.61	.86
6	.80	.80	.86	1.61	.61	.86	29	16.5	.67	.33	27	.86
7	1.60	1.54	.86	.92	.61	.86	18.6	23.5	.61	12.2	2.45	.86
8	.89	2.5	.92	8.0	.61	.86	f4.7	.10	14.5	18.0	.61	.80
9	.73	.92	.86	5.4	.61	.86	2.15	.06	76	.22	.56	.80
10	1.14	.86	.99	.92	.56	.80	2.55	.06	37	4.4	.61	.86
11	23.5	1.96	.92	.86	.51	.80	1.32	.04	13.6	31	.63	.80
12	28.5	1.06	.92	.80	.51	.73	1.15	.04	8.0	6.0	.55	.80
13	1.95	11.1	2.25	.73	.62	.73	1.07	.18	.33	.25	.44	.80
14	.80	.80	1.48	.73	15.1	23	1.41	.86	.33	45	.39	.86
15	.73	.73	1.22	.73	21	.51	1.07	.86	.29	39.5	.37	.86
16	.73	.67	1.53	.73	7.0	.46	1.07	.86	.29	11.0	.37	.80
17	.67	.67	.86	.73	1.62	.41	1.07	.92	.29	.25	.37	.86
18	.67	.67	.83	.73	.41	.37	1.23	.92	30	.22	.33	.90
19	.67	.73	.80	.73	.37	.37	1.15	.86	16.4	.22	.33	1.05
20	.67	.80	.80	.73	.37	.37	1.07	.80	2.85	.25	.37	.80
21	.67	.73	.80	41	.37	.33	.99	.80	17.4	.22	.33	.80
22	.67	1.20	.98	5.6	.55	.25	1.15	.73	.10	4.2	.79	.80
23	.61	.86	1.15	.84	.80	.28	1.07	.73	.10	.29	.99	.80
24	.67	.98	.92	.73	.80	.70	.99	9.4	.59	.25	10.7	1.03
25	.61	.97	.80	.67	.80	.80	1.15	11.1	2.05	.25	1.48	1.60
26	.61	.80	.80	.67	.80	.80	.86	.67	15.0	.25	30	1.24
27	.61	.80	.80	.67	.76	.80	.80	.67	1.07	.25	10.4	.94
28	.61	.80	.80	.67	.80	16.3	.73	.67	1.07	.22	.97	7.3
29	.67	f.99	.86	.67	.80	54	.73	-	1.07	.22	1.32	1.33
30	.80	11.3	.80	.61	.73	1.19	.67	-	10.6	1.48	1.29	3.45
31	.73	14.6	-	.61	-	.86	.67	-	1.34	-	.86	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	28.5	0.61	2.42	3.74	75.0	230
August	14.6	.67	2.07	3.20	64.3	197
September	10.3	.61	1.50	2.32	44.9	138
October	41	.61	2.78	4.30	86.2	265
November	21	.37	2.03	3.14	60.8	186
December	54	.25	3.63	5.62	112	345
Calendar year 1942	145	.16	5.38	8.32	1,960	6,030
January	45	.67	6.67	10.3	207	634
February	23.5	.04	2.65	4.10	74.2	228
March	76	.10	8.23	12.7	255	783
April	45	.22	9.05	14.0	272	833
May	30	.33	3.77	5.83	117	359
June	7.3	.80	1.21	1.87	36.4	112
Fiscal year 1942-43	76	.04	3.85	5.96	1,400	4,310

f Computed on basis of partly estimated gage-height record.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Wailoa ditch at Honopou, near Huelo

Location.- Lat. 20°53'20", long. 156°15'05", 100 feet downstream from intake at Honopou Stream, half a mile west of Lupi, and 2.2 miles southwest of Huelo.

Records available.- November 1922 to June 1943.

Average discharge.- 20 years (1923-43), 116 million gallons a day (179 second-feet).

Extremes.- Maximum discharge during year, 184 million gallons a day (285 second-feet) Mar. 18 (gage height, 6.08 feet); minimum, 33 million gallons a day (51 second-feet) Dec. 8.

1922-43: Maximum discharge, 188 million gallons a day (291 second-feet) June 25, 1941 (gage height, 6.06 feet); minimum, 11 million gallons a day (17 second-feet) Feb. 12, 1932.

Remarks.- Records excellent. Wailoa ditch receives the water from Koolau ditch at Alo Stream and from all streams from the Alo west to the Halehaku at altitude of about 1,200 feet. Water used for irrigation in central Maui.

Discharge, in million gallons, fimoal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	101	156	172	172	47	50	108	70	53	176	176	140
2	75	97	168	148	47	50	116	111	50	176	156	97
3	66	93	156	164	44	41	152	155	126	172	168	82
4	63	76	128	164	41	38	148	106	129	180	164	104
5	59	66	108	168	52	36.5	124	160	109	176	148	111
6	130	112	104	168	59	35	128	172	69	168	156	101
7	158	164	144	144	44	35	132	172	59	176	168	76
8	138	164	140	146	41	68	130	164	126	176	164	69
9	112	136	126	168	38	90	104	124	176	164	152	66
10	165	128	146	156	41	59	103	90	172	160	128	63
11	176	165	116	128	53	41	86	130	144	176	136	63
12	176	156	152	108	56	38	76	108	152	172	154	78
13	168	168	140	97	50	53	78	76	144	172	150	124
14	152	136	160	86	142	172	124	128	140	180	136	72
15	120	108	160	82	172	126	76	92	112	180	120	59
16	101	93	160	76	157	82	66	69	97	176	93	120
17	93	112	156	72	147	69	63	59	105	172	86	140
18	82	153	120	66	134	59	59	59	164	164	82	108
19	76	101	127	63	110	56	53	56	172	164	128	156
20	77	82	156	59	76	53	50	53	172	156	114	97
21	90	78	112	96	66	47	50	50	172	144	79	79
22	130	132	122	119	59	47	47	47	160	168	72	69
23	146	148	142	86	53	55	44	44	136	164	66	128
24	118	160	101	66	53	47	44	87	108	144	123	164
25	86	156	90	59	50	41	41	150	157	128	155	155
26	101	104	93	59	47	41	41	79	168	112	176	148
27	136	93	86	56	47	38	38	66	128	101	172	124
28	69	126	89	53	44	136	38	59	148	93	152	168
29	69	102	125	53	41	152	36.5	-	128	94	132	164
30	66	172	148	53	47	144	36.5	-	172	168	112	164
31	101	172	-	47	-	124	35	-	164	-	93	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	176	59	110	170	3,400	10,430
August	172	66	126	196	3,910	12,000
September	172	86	132	204	3,950	12,110
October	172	47	103	159	3,180	9,770
November	172	38	68.6	106	2,060	6,320
December	172	35	68.6	106	2,120	6,520
Calendar year 1942	180	32	112	173	40,820	125,300
January	152	35	78.3	121	2,430	7,450
February	172	44	97.7	151	2,740	8,400
March	176	50	133	206	4,110	12,620
April	180	93	158	244	4,750	14,580
May	176	66	133	206	4,110	12,620
June	168	59	110	170	3,290	10,100
Fisoal year 1942-43	180	35	110	170	40,050	122,900

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

New Hamakua ditch at Honopou, near Huelo

Location.- Concrete control, lat. 20°53'30", long. 156°15'10", 15 feet upstream from tunnel portal, 600 feet downstream from Honopou Stream crossing, and 2.1 miles southwest of Huelo.

Records available.- January 1918 to June 1943.

Average discharge.- 25 years, 29.1 million gallons a day (45.0 second-feet).

Extremes.- Maximum discharge during year, 120 million gallons a day (186 second-feet) Mar. 18 (gage height, 5.86 feet); minimum, 0.28 million gallons a day (0.43 second-foot) Dec. 6-8, 11-13.

1918-43: Maximum discharge, 143 million gallons a day (221 second-feet) Feb. 27, 1932 (gage height, 5.90 feet); no flow at times, when water was shut out of ditch.

Remarks.- Records good. Ditch diverts water from streams between the Waiakamoi and the Halehaku above Center and Lowrie ditches. Flow regulated by gates and spillways. Water used for irrigation in central Maui.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.92	55	97	95	0.62	0.51	1.78	1.70	0.82	99	101	27.5
2	.52	1.13	87	18.3	.52	.43	18.5	39.5	.56	102	23.5	1.38
3	.47	.62	13.2	35.5	.58	.39	80	66	40	82	79	1.18
4	.39	.55	1.65	25	.58	.90	34.5	4.3	3.6	104	60	1.86
5	.36	.47	1.45	76	.66	.76	15.3	65	15.6	99	8.3	3.9
6	9.6	.61	1.31	73	.66	.36	15.5	99	.92	41	49	2.5
7	60	79	7.9	5.3	.51	.28	14.9	83	.66	102	77	1.13
8	14.6	73	27	36	.43	13.2	6.2	17.3	48	97	33.6	1.02
9	.71	3.85	2.05	70	.43	11.1	2.15	3.5	104	26.5	21.5	.97
10	68	1.70	29.5	9.6	.43	.47	2.5	.97	102	33.5	1.78	.92
11	102	68	1.08	1.52	.43	.28	1.78	15.9	97	102	22.5	.82
12	101	16.1	31	1.13	.66	.28	1.52	3.55	74	99	29	.76
13	74	82	25.6	1.02	.43	7.6	1.45	.71	61	80	19.9	6.3
14	6.6	5.5	47	.97	62	85	13.2	14.6	15.2	104	7.4	1.02
15	1.18	1.31	46	.92	100	13.8	1.52	1.50	2.65	102	3.35	.82
16	.97	1.08	53	.87	51	.97	1.18	.66	2.25	101	.82	21
17	.87	1.02	17.1	.82	32.5	.76	1.13	.66	2.1	61	.71	29.5
18	.76	30	1.40	.76	5.8	.62	1.02	.66	64	25	.66	1.58
19	.71	1.13	3.3	.71	3.8	.58	.92	.58	92	32	15.5	48
20	.66	.82	46	.71	.92	.55	.87	.58	101	12.9	7.6	1.13
21	.71	.95	1.02	29.5	.76	.55	.82	.55	100	2.45	.82	.71
22	1.22	30	15.5	17.5	.66	.51	.72	.51	19.6	68	.65	.66
23	17.5	28	27.5	2.3	.66	.66	.66	.47	6.4	47	.62	31.5
24	15.9	45	.76	1.06	.62	.51	.66	25	2.55	5.4	49	54
25	1.15	41	.66	.92	.58	.47	.58	63	63	1.85	42	37
26	1.06	1.26	.62	.97	.47	.43	.58	1.38	71	1.52	105	9.9
27	1.58	1.08	.58	.82	.47	.39	.55	1.02	4.5	1.31	99	5.6
28	.62	5.0	.60	.76	.43	50	.55	.92	37.5	1.18	27	78
29	.55	1.18	29	.75	.43	68	.51	-	5.9	1.18	1.93	62
30	.62	87	8.8	.76	.51	33.5	.51	-	75	74	1.78	60
31	17.0	101	-	.66	-	5.8	.47	-	54	-	1.31	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	102	0.36	16.2	25.1	502	1,540
August	101	.47	24.7	38.2	764	2,350
September	97	.58	20.8	32.2	624	1,920
October	95	.66	16.4	25.4	509	1,560
November	100	.43	8.96	13.9	269	824
December	85	.28	9.67	15.0	300	920
Calendar year 1942	106	.21	26.8	41.5	9,800	30,070
January	80	.47	7.18	11.1	223	683
February	99	.47	18.3	28.3	513	1,570
March	104	.66	40.9	65.3	1,270	3,890
April	104	1.18	57.0	88.2	1,710	5,240
May	103	.62	28.7	44.4	889	2,730
June	78	.65	16.4	25.4	493	1,510
Fiscal year 1942-43	104	.28	22.1	34.2	8,070	24,740

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Old Hamakua ditch at Honopou, near Huelo.

Location.- Parshall flume, lat. 20°53'30", long. 156°15'05", in Honopou Gulch, 400 feet downstream from Honopou Stream and Wailoa ditch trail crossing, 2.0 miles southwest of Huelo, and 5.0 miles east of Haiku.

Records available.- January 1918 to June 1922, November 1936 to June 1943.

Average discharge.- 10 years (1918-22, 1937-43), 3.05 million gallons a day (4.72 second-feet).

Extremes.- Maximum discharge during year, 39 million gallons a day (60 second-feet) Oct. 21 (gage height, 2.79 feet); no flow Dec. 19-22, May 11-18.
1918-22; 1936-43: Maximum discharge, 58 million gallons a day (90 second-feet) Jan. 16, 1921 and Feb. 7, 1939 (gage heights, 3.25 and 3.55 feet, respectively, different sites); no flow for short periods.

Remarks.- Records good except those for periods of no gage-height record, which are poor. Wailoa and New Hamakua ditches divert most of flow above this station. Water used for irrigation in central Maui.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.02	0.36	3.8	2.8	0.01	0.01	0.02	0.01	0.02	11.7	9.0	0.10
2	.01	.03	2.7	.10	.01	.01	.12	3.15	.02	10.1	.07	.02
3	.01	.02	.05	.07	.01	.01	.28	1.89	.28	2.2	4.0	.02
4	.01	.01	.02	.04	.01	.01	.28	.05	.04	19.8	.09	.02
5	.01	.01	.02	1.15	.01	.01	.25	.20	.03	4.5	.03	.03
6	.01	.01	.02	.78	.01	.01	.20	10.1	.02	.10	4.0	.02
7	1.00	.12	.02	.04	.01	.01	.20	6.8	.02	8.2	6.0	.01
8	.08	.82	.05	5.6	.01	.02	.05	.09	8.7	10.0	.01	.01
9	.02	.03	.02	1.74	.01	.02	.04	.03	22	.09	.01	.01
10	.49	.02	.04	.05	.01	.01	.04	.02	15.8	4.2	.01	.01
11	18.2	1.60	.02	.03	.01	.01	.03	.02	16.3	12.9	0	.01
12	13.1	.05	.03	.02	.01	.01	.02	.02	10.2	3.65	0	.01
13	1.13	7.7	.17	.02	.01	.54	.03	.02	2.25	.77	0	.02
14	.04	.05	.17	.01	7.6	21.5	.03	.03	.06	11.4	0	.01
15	.02	.02	.08	.01	11.1	.34	.03	.03	.04	4.1	0	.01
16	.02	.02	.38	.01	2.25	.02	.02	.02	.04	2.7	0	.02
17	.01	.01	.02	.01	.12	.01	.02	.01	.03	.10	0	.03
18	.01	.04	.02	.01	.04	.01	.02	.01	3.5	.05	0	.01
19	.01	.03	.02	.01	.03	0	.02	.01	7.1	.04	.01	.05
20	.01	.02	.05	.01	.02	0	.02	.01	7.6	.04	.01	.02
21	.01	.02	.02	3.55	.01	0	.01	.01	9.5	.03	.01	.01
22	.02	1.01	.01	.61	.01	0	.01	.01	.10	4.2	.01	.01
23	.02	.05	.08	.07	.01	.01	.01	.01	.04	.27	.01	1.0
24	.03	.13	.02	.02	.01	.01	.01	7.1	.04	.04	3.0	3.5
25	.02	.09	.01	.02	.01	.01	.01	4.8	2.7	.03	2.5	.10
26	.02	.04	.01	.02	.01	.01	.01	.04	7.5	.02	8.0	.02
27	.02	.03	.01	.01	.01	.01	.01	.03	.05	.02	7.0	.01
28	.01	.03	.01	.02	.01	20.5	.01	.02	.05	.02	.35	7.0
29	.02	.03	.04	.02	.01	7.4	.01	-	.05	.02	.01	6.0
30	.02	3.65	.02	.02	.01	.40	.01	-	7.2	1.0	.01	5.0
31	.01	8.5	-	.01	-	.04	.01	-	.46	-	.01	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	18.2	0.01	1.11	1.72	34.4	106
August	8.5	.01	.792	1.23	24.6	75
September	3.8	.01	.264	.408	7.93	24
October	5.6	.01	.545	.843	16.9	52
November	11.1	.01	.713	1.10	21.4	66
December	21.5	0	1.64	2.54	51.0	156
Calendar year 1942	26.5	0	1.88	2.91	687	2,110
January	.28	.01	.060	.093	1.85	5.7
February	10.1	.01	1.23	1.90	34.5	106
March	22	.02	3.93	6.08	122	374
April	19.8	.02	3.74	5.79	112	345
May	9.0	0	1.42	2.20	44.2	135
June	7.0	.01	.770	1.19	23.1	71
Fiscal year 1942-43	22	0	1.35	2.09	494	1,520

Note.- No gage-height record Apr. 30, May 1, 3, 6, 7, May 22 to June 11, June 13-30; discharge computed on basis of records for stations on nearby ditches.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Lowrie ditch at Honopou Gulch, near Huelo

Location.- Concrete control, lat. 20°54'55", long. 156°15'05", a quarter of a mile downstream from siphon across Honopou Stream and 1.6 miles west of Huelo. Datum of gage is 598.0 feet above mean sea level.

Records available.- February 1930 to June 1943. January 1910 to March 1927 at site 1½ miles downstream.

Average discharge.- 29 years (1910-26, 1930-43), 32.6 million gallons a day (50.4 second-feet).

Extremes.- Maximum discharge during year, 73 million gallons a day (113 second-feet) Jan. 3 (gage height, 5.18 feet); minimum, 1.59 million gallons a day (2.46 second-feet) Jan. 7.
1930-43: Maximum discharge, 88 million gallons a day (136 second-feet) Mar. 21, 1937 (gage height, 5.44 feet); no flow at times.

Remarks.- Records excellent. Lowrie ditch diverts water from all streams between the Kailua and the Halehaku. Flow regulated by gates. Water used for irrigation in central Maui.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	8.4	35.5	53	46	6.9	5.7	13.5	5.0	8.9	52	49	29.5
2	6.7	18.5	50	39	6.7	5.0	22.5	17.3	8.2	53	29	11.2
3	8.1	7.6	40	29	6.1	3.7	35.5	34	24	48	25.5	9.4
4	5.6	6.5	25.5	16.8	5.9	4.0	3.75	30.5	25	56	16.8	12.5
5	5.2	5.9	13.5	43	6.1	4.0	2.7	33	18.5	56	8.2	10.8
6	10.4	6.1	12.5	43	6.1	4.0	1.80	53	8.7	40	22	10.5
7	36	38.5	15.2	13.5	5.4	3.9	6.6	50	7.8	53	22	8.4
8	33	48	24	25	5.0	7.9	13.5	22	31	53	2.7	7.8
9	9.4	11.6	12.0	50	4.8	12.8	13.5	19.2	59	38	2.55	7.2
10	43	8.4	15.3	46	5.0	4.7	15.5	23	57	29.5	2.45	5.2
11	53	38	9.8	15.3	5.2	3.25	15.5	17.1	56	53	8.3	6.1
12	53	40	14.6	12.2	5.2	3.9	14.2	11.2	56	53	11.1	6.1
13	46	50	19.9	11.0	4.8	3.8	14.2	6.9	53	29.5	8.9	9.8
14	35.5	43	46	10.3	28	41	15.5	15.5	43	19.2	2.55	5.0
15	19.2	13.7	35.5	9.6	53	13.7	12.5	10.0	48	15.0	2.45	5.2
16	10.3	9.4	38	9.1	30.5	6.9	11.0	6.1	40	23	2.35	8.5
17	9.4	9.4	13.8	8.7	38	5.9	10.8	3.9	22	27	2.25	19.3
18	8.9	18.0	10.3	8.2	32	5.6	7.8	3.9	44	27	2.25	5.4
19	8.2	9.6	11.0	7.8	19.1	5.2	8.9	5.0	53	27	2.25	26.5
20	8.2	8.0	22	7.4	8.9	9.3	8.7	5.2	53	23.5	1.91	8.4
21	8.2	7.4	10.0	22	7.8	27	11.5	5.2	56	2.9	1.73	6.3
22	9.6	32	13.7	29	6.9	7.9	9.8	5.0	38	29.5	1.73	5.6
23	10.8	17.4	17.3	16.8	6.5	6.8	13.0	4.8	33	8.4	1.68	14.3
24	32	27	7.4	11.5	6.1	5.2	12.5	18.6	35.5	3.45	22	10.9
25	13.0	27.5	7.8	9.8	5.9	4.3	9.3	43	46	3.2	31.5	2.25
26	9.4	10.3	7.8	9.8	5.6	4.0	8.3	32	46	3.05	33.5	5.5
27	10.0	9.4	7.4	8.7	5.4	3.75	5.2	19.2	28	2.8	33.5	5.6
28	7.2	15.5	7.2	8.4	5.2	35	5.0	10.0	35.5	2.7	21	35
29	7.2	8.3	18.1	8.2	5.0	24.5	4.8	-	35.5	2.55	2.35	44
30	7.6	46	10.5	7.8	5.4	16.6	4.8	-	43	12.8	3.9	32.5
31	8.6	53	-	7.4	-	15.5	4.7	-	35.5	-	32	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	53	5.2	17.4	26.9	539	1,650
August	53	5.9	21.9	33.9	680	2,090
September	53	7.2	19.6	30.3	589	1,810
October	50	7.4	19.0	29.4	590	1,810
November	53	4.8	11.4	17.6	342	1,050
December	41	3.25	9.83	15.2	305	935
Calendar year 1942	58	3.05	21.6	33.4	7,900	24,220
January	35.5	1.60	10.9	16.9	337	1,030
February	53	3.9	18.2	28.2	510	1,560
March	59	7.8	37.0	57.2	1,150	3,520
April	56	2.55	28.2	43.6	847	2,600
May	49	1.66	13.2	20.4	409	1,260
June	44	2.25	12.5	19.3	375	1,150
Fiscal year 1942-43	59	1.66	18.3	28.3	6,670	20,460

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

ISLAND OF MAUI

Haiku ditch at Honopou Gulch, near Kailua

Location.- Concrete restriction in ditch, lat. 20°55'05", long. 156°14'55", on right side of Haiku ditch and west side of Honopou Gulch, 160 feet below new Government Road, 2.5 miles northwest of Kailua, and 5 miles east of Haiku. Datum of gage is 421.54 feet above mean sea level.

Records available.- February 1940 to June 1943. January 1910 to October 1914, at site at Peahi weir on old Haiku ditch. October 1914 to December 1928, at site in Manawai Gulch, 2.9 miles downstream. February 1930 to February 1940, at site in Kapalalaea Gulch, 0.9 mile downstream.

Average discharge.- 31 years (1910-28, 1930-43), 25.3 million gallons a day (39.1 second-feet).

Extremes.- Maximum discharge during year, 88 million gallons a day (136 second-feet) Oct. 21 (gage height, 3.67 feet); minimum, 0.44 million gallons a day (0.68 second-foot) Oct. 20, Dec. 24.

1910-28, 1930-43: Maximum discharge, 195 million gallons a day (302 second-feet) Mar. 23, 1937 (gage height, 5.80 feet, site and datum then in use); no flow occasionally.

Remarks.- Records good. Haiku ditch diverts water from all streams between the Kailua Stream and the Maliko Gulch. Flow regulated by gates. Water used for irrigation in central Maui.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.77	11.7	54	42	1.32	0.87	2.1	2.2	1.39	65	66	2.95
2	.65	1.25	44	2.65	1.25	.65	7.2	8.8	1.25	74	6.0	1.19
3	.62	.83	2.65	2.55	1.19	1.42	21.5	13.9	9.3	29.5	51	1.01
4	.54	.62	1.81	1.13	1.13	.89	14.4	2.2	1.60	73	45	1.46
5	.54	.58	1.39	23.5	1.13	.71	4.5	2.55	1.60	46	26	.95
6	.89	.58	1.25	18.5	1.13	a.60	11.2	39	1.13	6.2	42	.83
7	28.5	22.5	1.46	1.32	1.01	a.50	15.6	26.5	1.07	45	41	.71
8	3.7	32.5	2.7	20	.95	a1.6	15.6	3.35	35.5	51	34	.65
9	1.32	1.07	1.25	25	.89	1.89	11.0	2.1	74	5.9	27.5	.62
10	15.9	.77	4.1	3.2	1.01	1.13	10.1	1.95	71	13.7	34	2.1
11	61	30.5	1.95	1.46	1.07	1.68	4.2	2.4	51	71	16.5	.89
12	65	3.7	1.81	1.13	.95	.77	3.4	1.95	34	41	18.5	.83
13	14.6	42	13.9	1.22	.77	.77	3.85	1.32	11.4	15.1	16.4	1.13
14	2.2	2.55	19.1	.89	31.5	33.5	6.2	1.39	7.7	76	12.1	2.35
15	1.74	1.60	10.3	.77	63	2.65	3.15	.95	6.5	76	9.9	1.13
16	1.46	1.19	13.4	.65	16.3	1.19	2.65	1.08	5.6	54	8.4	1.32
17	1.32	1.13	1.07	.58	20.5	1.07	2.65	2.75	4.8	16.8	7.7	2.4
18	1.19	1.39	.83	.54	2.65	1.01	4.0	2.75	28	8.3	7.3	2.55
19	1.13	.95	.95	.51	2.2	.95	2.65	1.67	49	22.5	10.4	7.1
20	1.13	.71	1.01	.48	1.60	1.07	2.25	.82	33	16.0	11.6	.95
21	1.07	.65	.77	15.4	1.46	1.07	2.1	.62	62	19.0	7.7	.62
22	1.25	11.9	5.8	17.6	1.13	1.19	5.5	.58	6.9	45	6.3	.54
23	1.13	1.25	5.5	5.8	.77	1.08	2.35	.58	5.9	36.5	5.7	.98
24	3.0	4.0	1.93	3.15	.71	.48	2.1	16.7	4.7	31.5	36	5.7
25	1.19	3.05	.65	2.45	.65	.83	7.5	33	23	24	12.2	16.0
26	1.32	.89	.62	2.1	.65	.77	3.3	2.25	39.5	24	76	6.6
27	1.13	.77	.54	1.81	.62	.71	2.75	2.2	3.8	12.8	66	2.6
28	.95	1.39	.54	1.81	.58	14.3	2.6	1.60	4.1	11.8	3.6	42
29	.83	4.4	.98	1.74	.58	20.5	2.45	-	4.4	11.2	10.2	17.5
30	.65	49	.58	1.60	.65	4.3	2.2	-	44	38	8.6	34
31	.65	67	-	1.46	-	2.45	2.05	-	8.2	-	1.25	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	65	0.54	7.01	10.8	217	667
August	67	.58	9.76	15.1	302	928
September	54	.54	6.56	10.1	197	604
October	42	.48	6.55	10.1	203	623
November	63	.58	5.31	8.22	159	489
December	33.5	.48	3.31	5.12	103	316
Calendar year 1942	84	.37	13.4	20.7	4,890	15,020
January	21.5	2.05	5.91	9.14	183	562
February	39	.58	6.33	9.79	177	544
March	74	1.07	20.5	31.7	635	1,950
April	76	5.9	35.3	54.6	1,060	3,250
May	76	1.25	23.4	36.2	725	2,230
June	42	.54	5.32	8.23	160	490
Fiscal year 1942-43	76	.48	11.3	17.5	4,120	12,650

a No gage-height record; discharge computed on basis of records for stations on nearby ditches.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

MISCELLANEOUS DISCHARGE MEASUREMENTS

Measurement on the island of Maui at other than regular gaging stations is listed below:

Miscellaneous discharge measurements on Maui during fiscal year July 1942 to June 1943

Date	Stream	Tributary to--	Locality	Discharge	
				Second-feet	Million gallons a day
July 1	Tunnel flow	Koolau ditch	Just below Nahiku weir at Nahiku	1.22	0.790

Waiakea Stream at middle flume house, near Mountain View

Location.- Parshall flume and concrete dam control, lat. 19°38'25", long. 155°10'35", at middle flume house, 800 feet upstream from Olaa Sugar Co.'s main flume and 7½ miles northwest of Mountain View.

Records available.- September 1930 to June 1943.

Average discharge.- 12 years (1931-43), 7.25 million gallons a day (11.2 second-feet).

Extremes.- Maximum discharge during year, not determined due to faulty gage-height record; minimum, 0.14 million gallons a day (0.22 second-foot) Dec. 22, 23, 27.
1930-43: Maximum discharge, 166 million gallons a day (257 second-feet) Mar. 14, 1942; no flow at times, when tunnels and stream cease flowing during very dry periods.

Remarks.- Records good except those above 15 million gallons a day, which are fair, and those for period of faulty gage-height record, which are poor. No diversions above station. Large part of flow comes from three tunnels. Water is used for fluming sugarcane.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.0	0	0.5	1.70	1.6	9.9
.1	.18	.6	2.25	2.0	14.6
.2	.42	.7	2.85	2.5	23.5
.3	.78	.9	4.1		
.4	1.21	1.2	6.4		

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.8	1.86	3.15	3.4	4.3	1.36	1.98	1.14	1.70	7.2	8.7	5.8
2	3.65	1.80	3.5	3.6	4.1	1.21	2.2	.94	1.46	6.8	5.5	5.2
3	3.35	1.60	3.2	3.6	3.85	1.17	a16.9	6.1	1.36	7.2	4.8	4.9
4	3.1	1.55	3.2	3.85	3.5	1.08	a12.7	3.05	1.69	10.0	4.3	4.7
5	2.85	1.41	2.95	4.2	3.4	.91	10.9	2.85	1.36	9.0	3.85	4.4
6	2.75	1.46	2.75	3.95	3.2	.82	10.4	5.8	1.17	8.6	3.65	4.2
7	2.6	1.46	2.75	3.65	3.05	.71	9.9	7.0	1.08	9.4	3.85	3.95
8	2.45	1.46	2.55	4.2	2.85	.67	9.4	7.2	1.59	9.4	3.9	3.65
9	2.35	1.91	2.75	12.5	2.6	.67	9.0	7.1	3.15	9.0	3.9	3.35
10	2.3	2.6	2.95	9.4	2.45	.49	8.1	7.2	3.3	8.6	4.1	3.2
11	3.55	2.95	3.45	9.4	2.25	.40	7.6	7.6	3.1	8.6	4.4	3.35
12	8.0	2.65	3.55	9.4	2.1	.37	6.8	7.2	2.95	8.1	5.0	3.65
13	6.0	2.45	3.8	9.0	1.92	.30	6.4	7.2	5.5	7.6	5.2	4.8
14	4.8	2.25	a10.1	8.6	2.2	.30	6.0	6.8	6.0	8.3	6.5	4.3
15	4.3	2.1	a12.7	8.1	4.7	.30	5.6	6.0	5.5	7.6	5.6	3.95
16	3.85	1.92	12.0	7.6	3.8	.25	5.1	5.6	5.4	7.2	5.4	3.85
17	3.65	1.81	9.9	6.4	3.65	.37	4.7	5.0	5.9	6.8	5.4	5.8
18	3.8	1.86	9.4	5.6	3.4	.32	4.3	4.3	7.2	6.4	5.2	6.5
19	3.6	1.86	9.0	5.0	3.2	.20	4.1	3.95	6.8	5.6	5.6	7.2
20	3.4	1.65	9.0	4.6	3.05	.18	3.7	3.8	6.4	5.4	5.6	6.8
21	3.25	1.60	8.1	4.2	2.85	.16	3.4	3.45	6.0	4.7	5.2	7.2
22	3.15	1.60	7.6	3.9	2.65	.14	3.15	3.2	5.5	4.3	4.8	6.8
23	3.05	1.46	6.8	3.65	2.5	.27	2.95	2.95	5.0	4.0	4.4	8.0
24	2.95	2.3	6.0	3.25	2.35	.18	2.3	2.8	4.6	3.7	4.2	8.2
25	2.8	1.86	5.3	3.06	2.25	.18	2.1	2.55	4.3	3.35	4.1	14.1
26	2.6	1.76	4.7	2.8	2.15	.16	1.81	2.3	3.9	3.1	4.4	14.6
27	2.45	1.70	4.3	2.55	1.92	.78	1.60	2.15	3.7	2.85	6.0	14.0
28	2.3	1.76	4.2	2.35	1.81	1.19	1.46	1.92	3.45	2.6	7.1	16.0
29	2.2	1.90	3.85	a5.1	1.65	.96	1.31	-	3.7	2.45	6.4	15.8
30	2.1	1.92	3.6	6.0	1.55	.81	1.12	-	10.1	2.85	6.0	17.6
31	1.92	3.3	-	5.0	-	1.47	.95	-	6.8	-	5.4	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	8.0	1.92	3.32	5.14	103	316
August	3.3	1.41	1.93	2.99	59.8	183
September	12.7	2.56	5.57	8.62	167	513
October	12.5	2.35	5.42	8.39	168	515
November	4.7	1.55	2.84	4.39	85.2	262
December	1.47	.14	.593	.918	18.4	56
Calendar year 1942	77	.14	5.89	9.11	2,150	5,600
January	16.9	.95	5.42	8.39	168	515
February	7.6	.94	4.54	7.02	127	390
March	10.1	1.08	4.19	5.48	130	398
April	10.0	2.45	5.36	9.84	191	585
May	8.7	3.65	5.11	7.91	158	486
June	17.6	3.2	7.23	11.2	217	665
Fiscal year 1942-43	17.6	.14	4.36	6.75	1,590	4,880

a Faulty gage-height record; discharge computed on basis of engineer's notes.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Wailuku River above Hilo Boarding School ditch intake, near Hilo

Location.- Lat. 19°42'55", long. 155°09'10", 1,000 feet upstream from intake of Hilo Boarding School ditch, three-quarters of a mile west of reservoir 1, and 4 miles west of Hilo. Altitude of gage, 1,060 feet (by barometer).
Drainage area.- 124.5 square miles.
Records available.- July 1928 to June 1943.
Average discharge.- 13 years (1929-40, 1941-43), 182 million gallons a day (282 second-feet).
Extremes.- Maximum discharge during year, 12,440 million gallons a day (19,250 second-feet) Sept. 15 (gage height, 19.32 feet), from rating curve extended above 3,400 million gallons a day by logarithmic plotting; minimum, 3.5 million gallons a day (5.4 second-feet) Dec. 22.
1928-43: Maximum discharge, 41,000 million gallons a day (63,400 second-feet) Aug. 11, 1940 (gage height, 28.6 feet, from floodmarks), from rating curve extended above 3,400 million gallons a day by logarithmic plotting; minimum, 0.16 million gallons a day (0.25 second-foot) Mar. 9, 1941.
Remarks.- Records good except those for periods of no gage-height record, which are poor. Hilo Water Works diverts about 1 million gallons a day above station for domestic supply, and water passing station is used for power by Hilo Electric Light Co.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

1.6	3.1	2.3	24	4.0	130	9.0	1,100
1.7	4.9	2.5	33	5.0	233	10.0	1,490
1.8	7.1	2.7	43	6.0	370	11.0	2,020
1.9	9.9	3.0	58	7.0	534	12.0	2,690
2.1	16.5	3.5	90	8.0	774		

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	27.5	19.3	76	40	102	12.2	241	11.2	8.2	80	446	70
2	26	18.2	61	65	83	12.9	126	41	7.4	67	141	48
3	29	17.2	48	56	50	20.5	2,510	1,640	7.0	58	80	43
4	25.5	18.2	38	80	46	17.2	622	287	10	315	78	40
5	21.5	21	36.5	73	56	12.5	300	148	8.0	179	116	40
6	19.0	18.6	30.5	58	50	9.9	164	337	7.0	101	204	35
7	16.5	20	33	46	48	9.1	208	413	6.5	127	252	27
8	15.5	35	35	216	43	12.8	159	255	10	312	186	23.6
9	15.8	49	56	1,400	35	30	189	191	25	121	161	21
10	23	56	73	334	28.5	14.2	149	139	18	83	141	20
11	145	60	64	210	24.5	9.3	184	97	12	67	210	35
12	433	46	50	130	21.5	7.7	180	73	20	61	80	70
13	105	32.5	130	94	20.5	6.9	97	56	70	96	668	147
14	61	26.5	696	80	47	8.8	80	43	66	182	305	90
15	48	23.5	1,550	64	498	11.2	58	35	30	120	208	53
16	38	21	465	70	162	8.5	48	29.5	22	70	113	48
17	37.5	35.5	233	50	108	6.9	40	25	50	53	130	133
18	65	38	149	46	61	5.6	36	22.5	130	43	90	338
19	66	33	109	40	50	4.9	33	21	100	38	113	248
20	43	43	109	35.5	40	4.7	29	22	35	53	113	139
21	38	27	80	283	32.5	4.2	25	32	50	37.5	97	233
22	33.5	28.5	76	76	27.5	4.0	23	23	36	28	64	90
23	35.5	25	64	64	26	25	21	18.2	62	24.5	53	80
24	80	146	50	50	23	15.5	16.8	15.5	125	22.5	46	158
25	40	64	43	40	20.5	11.2	15.5	14.2	152	19.3	88	767
26	34	40	38	34.5	18.2	7.7	13.5	12.2	70	17.6	89	884
27	28	30.5	33	32.5	16.5	9.7	11.9	10.2	48	15.8	74	388
28	23.5	26	48	99	15.2	56	11.6	8.8	40	13.9	126	370
29	21	24.5	40	239	13.9	64	9.9	-	36	12.9	67	534
30	17.2	30.5	31	86	13.2	64	9.6	-	560	33	56	642
31	17.6	170	-	50	-	94	8.2	-	108	-	43	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	433	15.5	52.6	31.4	1,630	5,000
August	170	17.2	40.1	62.0	1,240	3,820
September	1,550	30.5	152	235	4,540	13,950
October	1,400	32.5	137	212	4,240	13,020
November	498	13.2	59.4	91.9	1,780	5,460
December	94	4.0	18.7	28.9	581	1,780
Calendar year 1942	5,850	4.0	133	206	48,530	148,900
January	2,510	8.2	181	280	5,620	17,250
February	1,640	8.8	144	223	4,020	12,340
March	660	6.5	62.2	96.2	1,930	6,920
April	315	12.9	81.0	125	2,430	7,460
May	668	43	149	231	4,630	14,200
June	884	20	194	300	5,810	17,840
Fiscal year 1942-43	2,510	4.0	105	162	38,450	118,000

Peak discharge.- Sept. 14 (6 p.m.) 4,310 m.g.d. (6,670 sec.-ft.); Sept. 15 (6 p.m.) 12,440 m.g.d. (19,250 sec.-ft.); Oct. 9 (10 a.m.) 5,030 m.g.d. (7,780 sec.-ft.); Jan. 3 (7:30 a.m.) 5,730 m.g.d. (8,870 sec.-ft.); Feb. 3 (7:30 a.m.) 6,100 m.g.d. (9,440 sec.-ft.); May 13 (4:30 p.m.) 8,990 m.g.d. (13,900 sec.-ft.).
Note.- No gage-height record Jan. 18-23, Mar. 1-21; discharge computed on basis of rainfall and discharge records for Waiakea Stream.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kapehu ditch near Hilo

Location.- Soil Conservation Service type H (De Fabritis) flume, 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 1943. July 1941 to June 1942 (unpublished).

Extremes.- Maximum discharge during year, 10.3 million gallons a day (15.9 second-feet) Sept. 14 (gage height, 2.27 feet); no flow Feb. 27 to June 30, when water was shut out of ditch.

1938-43: Maximum discharge, 28 million gallons a day (43 second-feet) Jan. 31, 1939 (gage height, 3.51 feet); no flow at times, when water was shut out of ditch.

Remarks.- Records excellent except those for periods of no gage-height record, which are poor. Water used to supplement the municipal supply of Hilo during dry periods.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.68	1.53	0.63	0.82	0.19	1.29	1.25	1.22				
2	1.68	1.19	.56	.84	.14	1.29	1.31	1.25				
3	1.64	.77	.50	.82	.13	1.29	1.77	1.58				
4	1.64	.79	.45	.86	.13	1.29	1.22	1.10				
5	1.64	.77	.45	.82	.13	1.32	1.19	1.13				
6	1.60	.77	.40	.77	.12	1.32	1.16	1.24				
7	1.60	.78	.42	.77	.11	1.25	1.25	1.22				
8	1.56	.84	.45	1.05	.10	1.22	1.18	1.19				
9	1.56	.87	.80	1.07	.09	1.22	1.19	1.19				
10	1.56	.88	1.00	.35	.09	1.22	1.19	1.16				
11	1.61	.88	1.00	.25	.15	1.19	1.25	1.16				
12	1.52	.86	.96	.20	.15	1.16	1.19	1.16				
13	1.39	.82	.96	.18	.30	1.13	1.16	1.16				
14	1.36	.82	1.62	.17	.50	1.10	1.16	1.16				
15	1.32	.79	1.13	.24	1.22	1.10	1.16	1.16				
16	1.32	.79	1.05	.17	1.22	1.10	1.16	1.16				
17	1.32	.79	1.02	.14	1.22	1.08	1.16	1.16				
18	1.36	.79	.99	.13	1.22	1.08	1.16	1.16				
19	1.32	.77	.96	.12	1.22	1.08	1.13	1.16				
20	1.32	.77	.96	.29	1.22	1.08	1.13	1.16				
21	1.32	.77	.96	.26	1.22	1.08	1.13	1.16				
22	1.29	.77	.93	.15	1.22	1.10	1.19	1.16				
23	1.36	.77	.88	.14	1.22	1.10	1.22	1.16				
24	1.39	.86	.86	.12	1.22	1.19	1.22	1.16				
25	1.46	.79	.86	.12	1.25	1.22	1.22	1.13				
26	1.49	.79	.86	.12	1.25	1.19	1.22	1.08				
27	1.49	.57	.86	.12	1.25	1.19	1.22	0				
28	1.49	.30	.84	.53	1.29	1.29	1.22	0				
29	1.49	.31	.82	.42	1.29	1.22	1.22	-				
30	1.49	.34	.82	.20	1.29	1.22	1.22	-				
31	1.53	.90	-	.16	-	1.19	1.22	-				

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	1.68	1.29	1.48	2.29	45.8	141
August	1.53	.30	.788	1.22	24.4	75
September	1.62	.40	.833	1.29	25.0	77
October	1.07	.12	.400	.619	12.4	38
November	1.29	.09	.758	1.14	22.2	68
December	1.32	1.08	1.19	1.84	36.8	113
Calendar year	-	-	-	-	-	-
January	1.77	1.13	1.21	1.87	37.6	116
February	1.58	0	1.10	1.70	30.7	94
March	0	0	0	0	0	0
April	0	0	0	0	0	0
May	0	0	0	0	0	0
June	0	0	0	0	0	0
Fiscal year 1942-43	1.77	0	.644	.996	235	722

Note.- No gage-height record Aug. 6-10, Aug. 31 to Sept. 11, Nov. 11-19, Feb. 27 to Mar. 21; discharge computed on basis of engineer's notes, rainfall records, and records for Wailuku River and Waiakea Stream.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Waiilikahi Stream near Waimanu

Location.- Lat. 20°07'40", long. 155°39'55", 30 feet upstream from Waimanu trail bridge, 1.7 miles upstream from confluence with Waimanu Stream, 1.9 miles southeast of the head of Awini ditch, and 2.2 miles southwest of Waimanu. Altitude of gage, 2,740 feet (by barometer).

Drainage area.- 0.4 square mile.

Records available.- March 1939 to June 1943.

Extremes.- Maximum discharge during year, 207 million gallons a day (320 second-feet) Apr. 14 (gage height, 3.68 feet), from rating curve extended above 10 million gallons a day by test on model of station site; minimum, 0.52 million gallons a day (0.80 second-foot) Dec. 21, 22, Jan. 28 to Feb. 3.

1939-43: Maximum discharge, 410 million gallons a day (634 second-feet) June 30, 1941 (gage height, 4.54 feet), from rating curve extended above 10 million gallons a day by test on model of station site; minimum, 0.19 million gallons a day (0.29 second-foot) Feb. 4, 1940.

Remarks.- Records fair. No diversions above station.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)
(Shifting-control method used Mar. 24 to June 30)

0.4	0.30	0.8	3.2	1.7	30
.5	.69	1.0	6.3	2.0	47
.6	1.28	1.2	10.7	2.3	66
.7	2.1	1.4	16.8	2.6	87

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.43	2.0	16.4	1.90	6.5	0.66	0.96	0.52	0.65	4.2	44	6.1
2	1.02	6.8	17.6	1.50	3.95	.56	.85	.52	.66	9.4	6.3	2.45
3	.91	2.1	2.6	1.08	.91	.56	2.2	33	6.1	3.8	3.5	2.75
4	.80	3.1	1.43	4.5	.65	.56	11.7	1.92	11.5	22.5	7.7	17.5
5	.69	1.60	1.16	5.6	.80	.56	12.6	2.9	1.41	8.7	2.5	3.15
6	.65	2.85	.96	4.2	1.15	.56	1.54	14.5	.85	2.8	1.66	1.50
7	.60	4.8	1.20	1.50	.80	.56	1.98	5.0	.65	19.9	1.43	1.15
8	.60	5.4	2.0	20	.60	1.16	.96	1.59	2.75	18.1	1.35	.91
9	.60	26	14.2	22.5	.56	1.61	3.0	1.58	8.9	2.5	1.21	.80
10	1.58	13.8	7.0	8.2	.56	.60	2.45	1.21	11.7	19.5	2.15	.80
11	25	27.5	4.2	4.3	6.8	.56	1.08	.88	6.4	41	2.95	10.9
12	16.6	12.3	8.8	1.76	2.1	.56	.69	1.46	4.9	20	15.8	15.9
13	4.2	7.0	28	1.15	1.58	.56	.60	.74	9.5	16.8	14.0	15.5
14	2.45	2.9	12.2	.96	9.0	.59	.65	9.6	3.3	69	4.0	3.0
15	1.35	6.4	7.5	.85	4.2	1.86	.65	2.5	1.72	33	2.4	1.43
16	1.02	4.7	3.4	2.1	1.70	1.12	.74	1.15	1.08	7.6	1.74	1.70
17	1.02	7.6	3.8	1.15	1.70	1.06	2.65	.80	3.15	4.4	3.2	22.6
18	.80	4.9	2.15	1.02	1.08	.60	1.17	.60	11.7	2.55	2.55	6.3
19	.69	2.0	2.1	.74	3.3	.56	.69	.60	18.5	1.93	3.15	17.0
20	.60	1.43	2.9	.69	2.3	.56	.60	.60	13.3	7.7	3.3	2.85
21	.69	1.37	1.80	.69	.96	.52	.60	.60	11.6	2.2	1.66	1.83
22	2.0	2.45	1.15	1.29	1.62	.79	.56	.56	5.4	1.86	1.21	1.43
23	12.0	1.68	.91	.88	1.50	1.08	.56	.56	12.5	5.1	.96	2.65
24	6.8	26.5	.85	.69	.80	1.00	.56	3.95	12.3	2.9	11.6	12.8
25	1.35	3.8	.74	.60	.69	.60	.56	16.9	7.0	1.66	7.1	19.5
26	3.25	1.72	.80	.56	.66	.56	.56	1.26	8.2	1.28	3.25	6.2
27	8.0	1.28	3.7	.56	.60	11.6	.56	.85	3.9	1.21	14.9	6.7
28	1.97	1.28	12.8	.56	.60	20	.52	.96	2.3	1.08	7.9	7.1
29	3.7	1.08	3.8	.56	.60	3.7	.52	-	7.7	1.54	1.75	4.5
30	1.58	2.1	1.84	.56	.60	1.50	.52	-	28.5	48	1.21	8.6
31	3.25	29.5	-	.56	-	1.84	.52	-	3.4	-	1.08	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	25	0.60	3.46	5.35	107	329
August	29.5	1.08	7.19	11.1	223	684
September	28	.74	5.60	8.66	168	616
October	22.5	.56	3.01	4.66	93.2	286
November	9.0	.56	1.96	3.03	58.9	181
December	20	.52	1.89	2.92	58.5	180
Calendar year 1942	211	.33	8.65	13.2	3,120	9,570
January	12.6	.52	1.74	2.69	54.0	166
February	33	.52	3.83	5.93	107	329
March	28.5	.56	7.14	11.0	221	680
April	69	1.08	12.7	19.6	382	1,170
May	44	.96	5.73	8.87	178	545
June	22.5	.80	6.82	10.6	204	628
Fiscal year 1942-43	69	.52	5.08	7.86	1,850	5,690

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kaimu Stream near Waimanu

Location.- Lat. 20°08'30", long. 155°59'40", 300 feet upstream from Waimanu trail, 1.3 miles southeast from head of Awini ditch, 1.4 miles upstream from mouth, and 1.5 miles west of Waimanu. Altitude of gage, 1,980 feet (by barometer).

Drainage area.- 0.5 square mile.

Records available.- March 1939 to June 1943.

Extremes.- Maximum discharge during year, 495 million gallons a day (766 second-feet) Apr. 14 (gage height, 3.25 feet), from rating curve extended above 7 million gallons a day by test on model of station site; minimum, 0.15 million gallons a day (0.23 second-foot) Jan. 31, Feb. 1.

1939-43: Maximum discharge, 3,050 million gallons a day (4,720 second-feet) June 30, 1941 (gage height, 9.6 feet, from floodmarks), from rating curve extended above 7 million gallons a day by test on model of station site; minimum, 0.15 million gallons a day (0.23 second-foot) Feb. 16, 17, 1942, Feb. 1, 1943.

Remarks.- Recorde fair. No diversions.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.44	1.50	10	1.7	6.0	0.41	0.91	0.15	0.57	3.25	22.5	4.5
2	1.03	5.3	11	1.5	2.0	.31	.75	.19	.41	6.8	6.2	2.35
3	.85	1.72	3.3	1.0	.90	.31	1.64	16.6	4.9	4.0	3.75	2.5
4	.80	2.85	1.9	3.0	.64	.25	8.7	1.65	8.4	12.6	6.5	11.7
5	.80	1.34	1.4	4.2	.80	.23	9.1	1.81	1.38	7.1	2.7	3.1
6	.75	1.90	1.2	4.5	1.0	.23	1.56	9.6	.80	2.8	1.68	1.52
7	.70	3.3	1.3	1.9	.70	.23	1.97	4.8	.65	12.8	1.28	1.03
8	.80	3.45	1.9	13	.50	1.27	.97	1.35	2.35	9.2	1.21	.80
9	.80	12.4	9.0	14	.33	2.06	1.55	1.08	8.9	2.6	1.09	.70
10	1.26	9.4	6.4	7.0	.33	.53	2.15	.85	9.9	25	1.54	.70
11	22.5	13.9	4.5	4.2	5.8	.37	.97	.65	6.3	23	1.86	5.4
12	6.9	8.2	6.2	2.0	2.3	.28	.70	1.03	8.4	13.1	10.3	9.0
13	3.25	6.1	12	1.3	1.7	.23	.57	.61	9.2	11.2	8.0	9.7
14	1.99	2.85	11	1.1	8.8	.23	.57	7.7	4.0	65	3.4	2.65
15	1.34	3.25	6.6	1.0	3.4	1.21	.75	2.5	2.2	18.1	1.96	1.21
16	1.12	3.7	3.6	2.2	1.4	.85	.65	1.03	1.28	6.7	1.21	.91
17	1.0	5.2	4.2	1.6	1.3	1.03	1.73	.70	4.8	4.5	2.3	10.7
18	.86	4.3	2.3	1.5	.90	.53	.84	.57	8.9	2.8	1.86	5.5
19	.74	1.81	2.1	.90	2.6	.34	.45	.49	11.4	2.15	2.0	9.9
20	.70	1.39	2.6	.70	2.3	.25	.34	.49	9.6	4.6	2.6	2.6
21	.70	1.34	2.0	.70	.80	.21	.28	.45	8.1	2.05	1.21	1.60
22	1.5	2.2	1.4	.64	2.05	.50	.25	.37	5.9	1.52	.85	1.21
23	9.0	1.61	1.1	.58	1.84	1.19	.23	.31	11.3	3.25	.70	1.78
24	4.5	13.8	.94	.48	.70	.80	.21	3.75	6.8	2.25	5.8	7.6
25	1.5	3.15	.90	.45	.53	.49	.19	11.7	3.95	1.35	5.8	11.2
26	1.1	1.78	.85	.40	.45	.34	.29	1.28	5.5	1.09	2.8	5.0
27	3.2	1.34	1.7	.37	.37	8.9	.31	.80	3.2	.97	8.6	3.7
28	1.7	1.2	7.0	.33	.34	13.8	.19	.80	1.96	.85	6.6	5.4
29	2.6	1.2	3.5	.33	.31	3.1	.19	-	5.4	1.78	1.68	3.75
30	1.39	2.3	1.6	.40	.37	1.48	.17	-	15.6	25.5	1.09	4.6
31	2.35	16	-	.33	-	1.60	.15	-	3.25	-	.97	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	22.5	0.70	2.62	4.05	81.2	249
August	16	1.2	4.51	6.98	140	429
September	12	.85	4.12	6.37	123	379
October	14	.33	2.36	3.65	73.3	225
November	8.8	.31	1.75	2.71	52.5	161
December	13.8	.21	1.40	2.17	43.6	134
Calendar year 1943	665	.17	10.4	16.1	3,810	11,700
January	9.1	.15	1.27	1.96	39.3	121
February	16.6	.15	2.62	4.05	73.3	225
March	15.6	.41	6.65	8.74	175	538
April	65	.85	9.26	14.3	278	853
May	22.5	.70	3.87	5.99	120	368
June	11.7	.70	4.41	6.82	132	406
Fiscal year 1942-43	65	.15	3.65	5.65	1,330	4,090

Note.- No gage-height record July 17-29, Aug. 28 to Nov. 18; discharge computed on basis of records for stations on nearby streams.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Punalulu Stream near Waimanu

Location.- Lat. 20°08'50", long. 155°39'40", 200 feet upstream from Waimanu trail, 1.0 mile southeast from head of Awini ditch, 1.5 miles upstream from mouth, and 1.5 miles west of Waimanu. Altitude of gage, 1,870 feet (by barometer).

Drainage area.- 1.4 square miles.

Records available.- March 1939 to June 1943.

Extremes.- Maximum discharge during year, 152 million gallons a day (235 second-feet) July 11 (gage height, 3.67 feet), from rating curve extended above 4 million gallons a day by test on model of station site; minimum, 0.08 million gallons a day (0.12 second-foot) Jan. 31, Feb. 1.

1939-43: Maximum discharge, 980 million gallons a day (1,520 second-feet) June 30, 1941 (gage height, 4.90 feet), from rating curve extended above 4 million gallons a day by test on model of station site; minimum, that of Jan. 31, Feb. 1, 1943.

Remarks.- Records good except those for June 23-30, which are fair. No diversions.

Rating tables, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

July 1-28		July 29 to June 30					
1.4	13.7	0.1	0.04	0.6	1.93	1.4	13.7
1.7	21.5	.2	.11	.7	2.85	1.7	20.5
Note.-		.3	.29	.8	4.0	2.0	28
Same as		.4	.68	1.0	6.6	2.4	42
following		.6	1.22	1.2	9.9		
table below							
1.4 feet.							

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.10	1.04	9.4	1.20	4.4	0.27	0.54	0.08	0.39	2.2	20.5	3.1
2	.83	4.2	10.4	1.04	1.66	.17	.42	.09	.27	5.1	4.8	1.62
3	.68	1.23	2.35	.73	.54	.17	.92	15.1	4.1	3.2	2.4	1.68
4	.59	2.15	1.41	2.1	.39	.14	10.4	1.20	7.1	11.1	4.7	10.3
5	.50	.93	1.04	3.0	.60	.13	5.4	.97	1.12	5.4	1.70	2.45
6	.46	1.41	.88	3.25	.68	.13	.99	8.2	.59	1.86	1.10	1.16
7	.42	3.0	.93	1.22	.46	.12	1.08	3.95	.42	10.9	.93	.83
8	.42	3.1	1.41	9.7	.33	1.33	.54	.96	1.46	7.6	.83	.68
9	.39	14.4	7.4	10.7	.24	1.22	.73	.68	10.0	1.86	.68	.59
10	.57	10.2	5.1	5.3	.24	.27	1.23	.54	8.9	19.3	.78	.54
11	17.9	14.7	3.5	3.05	5.0	.17	.54	.39	5.2	23.5	.99	4.2
12	9.0	8.8	5.0	1.48	1.41	.14	.36	.59	8.6	12.9	9.4	8.0
13	2.8	6.8	10.7	.99	1.10	.13	.29	.36	7.4	9.3	6.7	8.5
14	1.55	2.75	9.9	.83	6.4	.14	.29	7.8	3.25	39.5	2.45	1.98
15	.99	2.3	5.5	.73	2.65	.71	.33	1.84	1.74	17.6	1.28	1.04
16	.78	3.0	2.7	1.46	1.04	.54	.33	.73	1.04	5.4	.93	.73
17	.68	4.3	3.05	1.13	1.02	.68	.79	.46	3.85	3.2	1.49	9.5
18	.54	3.6	1.77	1.09	.63	.27	.55	.33	7.7	1.93	1.22	4.6
19	.42	1.55	1.59	.63	1.69	.16	.24	.27	9.2	1.41	1.20	9.0
20	.39	1.10	1.93	.50	1.54	.13	.16	.27	7.0	2.55	1.77	2.05
21	.39	1.26	1.35	.50	.59	.11	.13	.24	6.4	1.35	.83	1.22
22	.88	1.64	.93	.46	1.34	.37	.11	.19	4.5	.99	.63	.99
23	7.7	1.10	.73	.42	1.52	.76	.11	.16	4.8	1.62	.50	a1.5
24	3.65	13.0	.63	.36	.59	.46	.10	4.6	6.0	1.41	5.2	a7.0
25	.93	2.75	.59	.33	.39	.24	.10	11.5	2.8	.88	4.8	a10
26	g.68	1.35	.54	.29	.33	.16	.17	1.08	4.2	.68	1.95	a3.5
27	g2.4	.99	1.07	.27	.27	7.9	.18	.59	2.2	.59	7.5	a2.5
28	g1.2	.93	6.1	.24	.24	10.7	.10	.50	1.41	.54	5.4	a4.0
29	1.98	.88	2.7	.24	.22	1.77	.09	-	5.4	.67	1.28	a2.5
30	.99	1.77	1.15	.29	.44	.88	.09	-	13.8	23	.83	a3.0
31	1.45	15.1	-	.24	-	1.08	.08	-	2.25	-	.73	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	17.9	0.39	2.04	3.16	63.3	194
August	15.1	.88	4.24	6.56	131	403
September	10.7	.54	3.39	5.25	102	312
October	10.7	.24	1.73	2.68	53.8	165
November	6.4	.22	1.26	1.95	37.8	116
December	10.7	.11	1.01	1.56	31.4	97
Calendar year 1942	201	.11	5.54	10.1	2,380	7,320
January	10.4	.08	.884	1.37	27.4	84
February	15.1	.08	2.27	3.51	63.7	195
March	13.8	.27	4.62	7.15	143	439
April	39.5	.54	7.25	11.2	218	668
May	20.5	.50	3.08	4.77	95.5	293
June	10.3	.54	3.63	5.62	109	334
Fiscal year 1942-43	39.5	.08	2.95	4.56	1,080	3,300

a No gage-height record; discharge computed on basis of records for stations on nearby streams.
g Computed from graph based on gage readings.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Waiaalala Stream near Waimanu

Location.- Lat. 20°09'05", long. 155°39'55", 0.7 mile east from head of Awini ditch, 1.3 miles upstream from mouth, and 1.8 miles west of Waimanu. Altitude of gage, 1,880 feet (by barometer).

Drainage area.- 0.2 square mile.

Records available.- March 1939 to June 1943.

Extremes.- Maximum discharge during year, 21 million gallons a day (32 second-feet) Apr. 14 (gage height, 1.68 feet), from rating curve extended above 1.0 million gallons a day by test on model of station site; minimum, 0.11 million gallons a day (0.17 second-foot) Jan. 24-26, Jan. 29 to Feb. 3.

1939-43: Maximum discharge, 67 million gallons a day (104 second-feet) Feb. 22, 1940 (gage height, 3.83 feet), from rating curve extended above 1.0 million gallons a day by test on model of station site; minimum, that of Jan. 24-26, Jan. 29 to Feb. 3, 1943.

Remarks.- Records fair. No diversions.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.1	0.03	0.5	1.53	0.9	6.4
.2	.14	.6	2.4	1.0	8.2
.3	.40	.7	3.5	1.1	10.9
.4	.89	.8	4.8		

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.24	0.21	1.9	0.30	0.59	0.14	0.30	0.11	0.23	0.45	2.1	0.30
2	.24	.52	1.41	.27	.24	.14	.23	.11	.21	.58	.96	.30
3	.23	.21	.75	.27	.21	.14	.40	1.41	1.08	.40	.76	.30
4	.23	.21	.69	.30	.21	.14	1.7	.14	1.11	1.04	.90	1.06
5	.23	.21	.60	.45	.23	.14	1.2	.15	.27	.55	.60	.40
6	.23	.21	.55	.59	.21	.14	.50	.85	.23	.40	.55	.30
7	.23	.24	.50	.30	.21	.14	.54	.48	.23	1.12	.50	.30
8	.23	.23	.50	1.69	.21	.54	.30	.17	.34	.89	.45	.27
9	.23	2.2	1.11	1.53	.21	.21	.35	.15	3.45	.45	.40	.27
10	.23	.98	.57	.78	.21	.14	.45	.14	1.98	1.75	.40	.27
11	1.70	2.5	.55	.50	.67	.14	.20	.15	1.11	8.7	.40	.30
12	.56	1.67	.79	.40	.21	.13	.16	.14	4.2	2.65	1.68	.69
13	.30	1.90	1.69	.35	.19	.19	.14	.13	1.75	1.55	.55	.62
14	.24	.78	.79	.35	.69	.14	.14	2.8	.89	10.0	.45	.27
15	.23	.60	.92	.35	.27	.40	.14	.35	.60	3.7	.40	.27
16	.24	.50	.60	.35	.21	.28	.14	.21	.45	1.34	.40	.24
17	.23	.50	.72	.42	.21	.30	.13	.17	1.31	.95	.45	.64
18	h.23	.43	.50	.40	.21	.18	.13	.15	1.03	.78	.45	.40
19	h.23	.40	.55	.30	.19	.15	.13	.15	1.40	.69	.40	1.39
20	h.23	.35	.50	.27	.15	.13	.12	.14	.74	.69	.40	.40
21	h.23	.69	.45	.27	.14	.12	.12	.14	.69	.60	.40	.35
22	h.23	.49	.40	.27	.15	.23	.12	.14	.88	.55	.35	.30
23	h.81	.60	.40	.24	.14	.45	.12	.14	.61	.50	.35	.35
24	.36	1.66	.35	.24	.14	.32	.11	1.93	.60	.50	1.05	.80
25	.23	.40	.35	.24	.14	.19	.11	3.4	.40	.45	.61	.99
26	.23	.40	.30	.23	.14	.15	.16	.50	.40	.45	.40	.50
27	.30	.45	.35	.23	.14	1.3	.13	.35	.35	.40	.68	.40
28	.23	.40	.30	.23	.14	1.7	.12	.27	.35	.40	.57	.35
29	.23	.35	.30	.23	.14	.65	.11	-	.79	.50	.35	.35
30	.21	.50	.27	.23	.17	.45	.11	-	1.32	2.9	.30	.35
31	.21	2.6	-	.23	-	.50	.11	-	.45	-	.30	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	1.70	0.21	0.315	0.487	9.78	30
August	2.6	.21	.755	1.17	23.4	72
September	1.9	.27	.656	1.01	19.7	60
October	1.69	.23	.413	.639	12.8	39
November	.69	.14	.232	.359	6.97	21
December	1.7	.12	.322	.498	9.97	31
Calendar year 1942	50	.12	1.54	2.38	561	1,720
January	1.7	.11	.281	.435	8.72	27
February	3.4	.11	.535	.828	15.0	46
March	4.2	.21	.950	1.47	29.4	90
April	10.0	.40	1.53	2.37	45.9	141
May	2.1	.30	.599	.927	18.6	57
June	1.39	.24	.458	.709	13.7	42
Fiscal year 1942-43	10.0	.11	.586	.907	214	656

h Computed from staff-gage readings.

Note.- No gage-height record Aug. 29 to Sept. 1, Dec. 14 to Jan. 15; discharge computed on basis of records for stations on nearby streams.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

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Paopao Stream near Waimanu

Location.- Lat. 20°09'05", long. 155°40'05", 150 feet upstream from Waimanu trail, 0.6 mile east of intake to Awini ditch, and 1.9 miles west of Waimanu. Altitude of gage, 1,910 feet (by barometer).

Drainage area.- 0.6 square mile.

Records available.- February 1939 to June 1943.

Extremes.- Maximum discharge during year, 97 million gallons a day (150 second-feet) Apr. 10 (gage height, 2.99 feet), from rating curve extended above 8 million gallons a day by test on model of station site; minimum, 0.14 million gallons a day (0.22 second-foot) Jan. 28 to Feb. 2.

1939-43: Maximum discharge, 264 million gallons a day (408 second-feet) Feb. 22, 1940 (gage height, 4.53 feet), from rating curve extended above 8 million gallons a day by test on model of station site; minimum, 0.14 million gallons a day (0.22 second-foot) Feb. 8, 1940, Jan. 28 to Feb. 2, 1943.

Remarks.- Records good. No diversions.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.15	0.10	0.5	1.48	1.2	13.1
.2	.20	.6	2.4	1.4	18.4
.25	.34	.7	3.65	1.7	28.5
.3	.49	.8	5.1	2.0	41
.4	.89	1.0	6.7	2.5	68

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.49	0.34	4.9	0.46	1.41	0.26	0.28	0.14	0.34	0.83	11.6	1.09
2	.43	1.56	5.3	.43	.56	.20	.26	.14	.28	2.05	2.45	.64
3	.40	.40	.94	.34	.28	.20	.45	6.7	2.85	1.56	1.19	.73
4	.40	.76	.68	.65	.23	.16	4.9	.46	4.0	5.3	2.55	5.5
5	.37	.34	.57	1.07	.26	.16	3.1	.28	.56	2.05	.80	.86
6	.34	.40	.49	1.44	.34	.16	.49	3.5	.40	.76	.64	.57
7	.34	1.02	.49	.58	.28	.16	.37	2.55	.34	6.5	.57	.43
8	.34	.72	.57	1.97	.23	1.35	.31	.43	.57	3.1	.53	.37
9	.28	6.0	3.6	6.0	.20	.64	.28	.31	10.2	.80	.49	.34
10	g.30	4.0	2.0	1.86	.20	.23	.28	.28	6.2	17.2	.49	.34
11	g6.6	8.0	1.25	.95	2.7	.20	.26	.26	3.35	65	.46	.94
12	g2.2	4.5	1.82	.57	.49	.18	.23	.28	10.4	39	5.7	3.25
13	g.94	4.3	3.35	.46	.34	.22	.23	.26	4.8	15.4	1.37	3.0
14	g.57	1.15	2.5	.40	2.55	.23	.20	7.2	1.73	40	.76	.57
15	.43	.80	1.68	.40	.81	.20	.20	.94	.92	17.5	.53	.43
16	.37	.68	.92	.57	.34	.20	.20	.46	.64	2.85	.46	.37
17	.37	1.11	1.44	.59	.34	.58	.20	.37	3.5	1.34	.49	3.75
18	.34	1.00	.72	.84	.26	.23	.18	.31	3.65	.99	.46	1.50
19	.34	.53	.65	.37	.58	.16	.18	.28	5.0	.84	.43	4.2
20	.34	.43	.76	.34	.54	.16	.16	.26	2.6	.80	.43	.70
21	.31	.73	.53	.31	.28	.16	.16	.23	2.35	.68	.40	.53
22	.31	.83	.46	.31	.65	.40	.16	.23	1.92	.60	.34	.46
23	4.4	.52	.40	.28	.67	.52	.16	.20	1.14	.57	.34	.46
24	.93	7.6	.37	.23	.28	.23	.14	4.4	1.76	.53	3.55	2.95
25	.40	.80	.34	.26	.23	.18	.14	9.3	.98	.49	1.53	4.6
26	.43	.57	.34	.26	.20	.16	.19	.64	1.14	.46	.72	1.29
27	1.65	.49	.37	.26	.20	4.6	.20	.46	.72	.43	4.0	.82
28	.49	.49	1.16	.23	.18	5.6	.14	.40	.60	.40	2.1	1.02
29	.60	.43	.90	.23	.18	.59	.14	-	4.0	.99	.53	.77
30	.40	.74	.43	.26	.26	.37	.14	-	6.6	14.2	.43	.67
31	.34	8.7	-	.23	-	.37	.14	-	.84	-	.40	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	6.6	0.28	0.853	1.32	26.4	81
August	6.7	.34	2.00	3.09	61.9	190
September	5.3	.34	1.33	2.06	39.9	123
October	6.0	.23	.748	1.16	23.2	71
November	2.7	.18	.536	.829	16.1	49
December	5.6	.16	.608	.941	18.9	58
Calendar year 1942	90	.16	3.15	4.87	1,150	3,520
January	4.9	.14	.467	.723	14.5	44
February	9.3	.14	1.47	2.27	41.3	127
March	10.4	.28	2.72	4.21	84.4	259
April	65	.40	8.11	12.5	243	746
May	11.6	.34	1.51	2.34	46.7	143
June	5.6	.34	1.44	2.23	43.2	133
Fiscal year 1942-43	65	.14	1.81	2.80	660	2,020

g Computed from graph based on gage readings.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kukui Stream near Waimanu

Location.- Lat. 20°09'10", long. 155°40'10", 300 feet upstream from Waimanu trail crossing, 0.4 mile east from head of Awini ditch, and 2.1 miles west of Waimanu. Altitude of gage, 1,940 feet (by barometer).

Drainage area.- 0.4 square mile.

Records available.- February 1939 to June 1943.

Extremes.- Maximum discharge during year, 51 million gallons a day (79 second-feet) Apr. 10 (gage height, 3.07 feet), from rating curve extended above 1.8 million gallons a day by test on model of station site; minimum, 0.15 million gallons a day (0.23 second-foot) Jan. 29 to Feb. 2.

1939-43: Maximum discharge, 116 million gallons a day (179 second-feet) Oct. 23, 1941; minimum, 0.15 million gallons a day (0.23 second-foot) Jan. 25, 26, Feb. 6, 7, 1940, Jan. 29 to Feb. 2, 1943.

Remarks.- Records fair. No diversions.

Rating table, fiscal year 1942-43 (gage height, in feet, and discharge, in million gallons a day)

0.1	0.06	0.5	1.45	1.2	7.8
.2	.24	.6	2.05	1.4	10.5
.3	.54	.8	3.6	1.7	15.2
.4	.94	1.0	5.5	2.0	21

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	a0.51	0.33	3.05	0.45	0.65	0.24	0.24	0.15	0.33	0.86	5.7	0.62
2	a.45	.94	2.85	.45	.45	.22	.24	.15	.30	1.45	1.83	.51
3	a.39	.36	.94	.39	.33	.20	.33	3.65	1.86	.82	1.19	.54
4	.39	.39	.74	.54	.30	.20	2.1	.36	2.15	2.95	1.91	2.8
5	.36	.33	.66	.75	.33	.20	1.69	.24	.61	1.26	.86	.70
6	.36	.33	.58	.92	.33	.19	.45	1.83	.39	.78	.74	.54
7	.30	.57	.58	.51	.30	.19	.36	1.35	.36	3.25	.66	.48
8	.24	.42	.58	2.75	.27	.94	.30	.39	.57	2.55	.62	.45
9	.24	4.2	1.83	3.35	.24	.45	.27	.27	5.5	.86	.58	.45
10	.24	2.0	1.32	1.29	.27	.22	.27	.24	4.0	7.6	.54	.42
11	3.35	4.5	.90	.82	1.32	.20	.24	.24	2.05	12.8	.51	.54
12	1.34	2.8	1.16	.58	.42	.19	.22	.24	8.1	5.2	2.75	1.72
13	.62	2.85	2.5	.51	.30	.31	.22	.20	3.25	3.1	.93	1.63
14	.45	1.04	1.55	.48	1.27	.24	.22	4.5	1.57	16.8	.70	.54
15	.36	.78	1.08	.48	.56	.20	.20	.65	.94	6.8	.54	.45
16	.36	.66	.82	.54	.33	.20	.20	.39	.74	2.3	.51	.42
17	.33	.74	1.01	.52	.30	.24	.22	.33	2.55	1.40	.54	1.76
18	.33	.70	.66	.60	.30	.20	.22	.27	2.25	4.09	.51	.92
19	.30	.51	.62	.45	.33	.19	.20	.24	2.95	.94	.51	2.65
20	.30	.48	.62	.39	.33	.17	.20	.24	1.76	.90	.48	.70
21	.30	.91	.54	.39	.24	.17	.19	.24	1.61	.74	.45	.54
22	.30	.86	.51	.36	.37	.23	.19	.22	1.38	.70	.45	.51
23	1.71	.50	.48	.36	.39	.29	.19	.22	1.11	.66	.45	.54
24	.61	4.0	.45	.33	.24	.19	.17	4.0	1.33	.62	2.1	1.60
25	.33	.78	.42	.33	.22	.17	.17	4.5	.82	.58	1.08	2.65
26	.33	.62	.39	.30	.22	.17	.22	.62	.86	.54	.58	1.07
27	.74	.58	.42	.30	.22	.84	.20	.45	.74	.54	1.94	.66
28	.39	.54	.62	.30	.20	2.75	.17	.39	.62	.51	1.27	.70
29	.36	.54	.59	.27	.20	.45	.15	-	1.52	.65	.54	.62
30	.33	.62	.42	.33	.32	.33	.15	-	4.3	7.4	.48	.54
31	.30	5.1	-	.27	-	.30	.15	-	.86	-	.45	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	3.35	0.24	0.546	0.845	16.9	52
August	5.1	.33	1.29	2.00	40.1	123
September	3.05	.39	.966	1.49	29.0	89
October	3.35	.27	.655	1.01	20.3	62
November	1.32	.20	.385	.596	11.6	35
December	2.75	.17	.357	.552	11.1	34
Calendar year 1942	41	.17	1.81	2.80	661	2,030
January	2.1	.15	.334	.517	10.3	32
February	4.6	.15	.952	1.47	26.7	82
March	8.1	.30	1.85	2.86	57.3	176
April	16.8	.51	2.89	4.47	86.6	266
May	5.7	.45	1.05	1.62	32.4	99
June	2.8	.42	.942	1.46	28.3	87
Fiscal year 1942-43	15.8	.15	1.02	1.58	371	1,140

a No gage-height record; discharge computed on basis of records for Paopao Stream.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Awini ditch at East Honokaneiki Gulch, near Niulii

Location.- Lat. 20°09'55", long. 155°43'10", at flume across East Honokaneiki Gulch, 4½ miles southeast of Niulii.

Records available.- October 1927 to June 1943.

Average discharge.- 14 years (1928-38, 1939-43), 11.9 million gallons a day (18.4 second-feet).

Extremes.- Maximum discharge during year, 30 million gallons a day (46 second-feet) Apr. 10, 11 (gage height, 3.55 feet); minimum, 0.76 million gallons a day (1.18 second-feet) Dec. 22, 23.

1927-43: Maximum discharge, 34 million gallons a day (53 second-feet) Jan. 9, 1935 (gage height, 3.76 feet); no flow when ditch was dry or water was turned out.

Remarks.- Records good except those for periods of no gage-height record, which are poor. Awini ditch diverts water at altitude 2,000 feet from all streams between the Waikaloa and the Honokane. Flow regulated by head gates and spillways. Water used for irrigation in vicinity of Kohala.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	8.0	7.4	25	10.3	7.0	1.93	7.5	0.83	5.6	14.3	27	9.8
2	5.8	12.4	25	9.7	8.0	1.44	5.3	.97	4.2	19.6	19.0	10.3
3	4.9	8.0	17.4	6.9	3.5	1.54	4.9	17.4	11.9	15.3	14.3	10.3
4	4.4	10.8	13	11.3	4.0	1.22	10.1	10.4	20	25	19.0	24.5
5	3.85	6.4	9.0	13.6	5.4	1.10	19.3	6.9	10.1	22	15.0	16.3
6	3.4	6.2	8.0	17.3	4.8	.97	9.5	23	6.4	14.3	11.0	9.7
7	3.1	12.9	7.5	7.0	4.5	.86	8.6	20.5	4.8	20	9.1	6.9
8	2.95	13.6	11.0	8.0	4.0	.87	6.9	9.8	4.5	23.5	8.0	5.8
9	2.8	20.5	16.6	25	3.0	15.4	4.4	6.9	15.3	15.0	7.4	5.0
10	3.0	24	21.5	20	2.0	4.8	7.7	5.2	12.2	17.3	6.9	4.5
11	21	27	19.0	17	3.5	2.85	6.4	4.2	12.2	25	6.4	11.1
12	21	25	21	13	5.0	1.98	4.4	5.1	17.1	22	14.0	25
13	14.3	24	18.2	9.0	2.5	1.54	3.35	4.1	19.0	20	20	25
14	9.7	16.6	19.6	7.0	11	1.54	4.5	16.3	16.6	25	17.0	11.1
15	7.4	13.6	23	4.8	9.8	1.77	6.0	14.9	11.6	21	11.0	8.6
16	5.9	13.6	18.0	4.3	9.2	2.55	4.7	7.4	7.7	18.9	8.6	6.4
17	4.9	15.8	13.6	4.0	10.8	2.9	9.1	5.4	13.8	17.4	9.7	18.2
18	4.2	16.6	12.0	3.8	6.0	2.65	8.3	4.2	18.2	13.6	9.1	25
19	3.55	11.0	8.6	3.6	8.5	1.88	4.5	3.55	19.0	11.6	9.7	25
20	3.3	8.0	8.0	3.3	10.3	1.39	3.2	3.4	20	14.3	11.8	17.0
21	3.15	8.1	7.4	3.2	5.7	1.05	2.55	3.1	18.2	11.0	8.6	11.6
22	4.0	13.3	6.9	3.1	4.1	.83	2.1	2.65	15.0	9.1	6.9	9.1
23	8.2	7.4	5.9	3.1	9.3	8.0	1.82	2.3	11.0	9.7	5.8	10.3
24	15.2	23	5.2	3.0	4.8	4.2	1.63	7.3	14.2	9.7	9.1	17.0
25	8.0	16.6	4.7	3.0	3.3	3.05	1.44	21.5	11.4	8.0	17.5	27
26	6.4	11.0	4.5	2.8	2.65	1.98	1.38	10.6	21	6.9	12.2	23
27	14.6	7.4	4.5	2.7	2.2	5.2	1.88	6.9	16.6	6.4	17.8	17.4
28	9.1	6.9	15.5	2.4	1.88	20	1.26	7.4	13.6	6.0	18.0	22
29	10.3	6.4	19.5	2.2	1.68	14.1	1.10	-	17.8	6.2	10.3	19.6
30	7.4	11.0	9.1	2.0	1.66	9.1	.97	-	25	24.5	7.4	15.6
31	7.4	26	-	2.5	-	9.2	.86	-	16.6	-	6.4	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	21	2.8	7.46	11.5	231	710
August	27	6.2	13.9	21.5	430	1,320
September	25	4.5	13.3	20.6	398	1,220
October	25	2.0	7.38	11.4	229	702
November	11	1.66	5.34	8.26	160	491
December	20	.83	4.13	6.39	128	392
Calendar year 1942	27	.83	10.5	16.2	3,830	11,750
January	19.3	.86	5.02	7.77	156	478
February	23	.83	8.29	12.8	232	715
March	25	4.2	13.9	21.6	430	1,320
April	25	6.0	15.8	24.4	473	1,450
May	27	5.8	12.1	18.7	374	1,150
June	27	4.5	14.9	23.1	446	1,370
Fiscal year 1942-43	27	.83	10.1	15.6	3,690	11,320

Note.- No gage-height record Sept. 4-7, Oct. 7 to Nov. 15; discharge computed on basis of records for East Honokaneiki intake and nearby streams.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

East Honokaneiki intake to Awini ditch at East Honokaneiki Gulch, near Niulii

Location.- Sharp-crested weir, 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, and 4½ miles southeast of Niulii.

Records available.- October 1927 to June 1938, July 1939 to June 1943.

Average discharge.- 12 years (1928-36, 1937-38, 1939-40, 1941-43), 1.22 million gallons a day (1.89 second-feet).

Extremes.- Maximum discharge during year, 9.1 million gallons a day (14.1 second-feet) Jan. 4 (gage height, 1.54 feet); no flow Sept. 25-27.
1927-38, 1939-43: Maximum discharge, that of Jan. 4, 1943; no flow occasionally.

Remarks.- Records good except those for periods of no gage-height record, which are poor. Intake diverts water from East Honokaneiki Gulch to Awini ditch for irrigation in vicinity of Kohala. Flow regulated by head gates.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.29	0.26	2.2	0.29	1.26	0.02	0.41	0.02	0.35	0.79	5.0	0.41
2	.20	.66	2.05	.35	1.27	.02	.29	.02	.26	1.50	2.5	.38
3	.14	.32	1.01	.12	.29	.02	.48	3.0	.51	1.09	1.55	.32
4	.12	.32	.52	.38	.14	.02	1.89	2.0	.40	4.2	2.3	3.85
5	.08	.20	.35	.60	.29	.02	.77	1.4	.17	3.0	1.21	.94
6	.08	.14	.26	1.18	.23	.01	.38	4.7	.14	1.06	.64	.38
7	.06	.70	.26	.38	.12	.01	.48	3.15	.14	2.7	.48	.23
8	.04	.60	.32	1.56	.06	1.15	.72	1.2	.12	3.1	.41	.17
9	.04	4.3	.94	3.05	.04	1.88	.42	.7	2.05	1.21	.35	.12
10	.06	4.2	2.5	1.50	.03	.29	.83	.5	2.6	2.2	.32	.10
11	3.95	5.7	1.35	1.30	3.1	.12	.48	.35	1.75	2.46	.32	1.22
12	3.75	3.8	1.50	.44	.79	.06	.26	.32	2.2	1.35	1.91	4.2
13	1.46	3.35	.75	.23	.41	.04	.23	.28	1.70	1.21	1.85	4.0
14	.56	1.06	1.06	.14	5.0	.03	1.29	3.05	1.2	1.91	1.06	.71
15	.29	.75	1.96	.10	1.3	.06	.97	1.63	.97	1.02	.75	.32
16	.17	.52	1.03	.10	.84	.06	.41	.56	.79	.64	.60	.20
17	.12	.71	.41	.08	.84	.04	2.05	.32	.92	.56	.60	3.15
18	.10	.97	.29	.06	.29	.04	1.05	.23	1.25	.52	.44	3.3
19	.08	.41	.14	.04	.44	.03	.38	.23	2.7	.52	.41	4.6
20	.06	.26	.10	.03	.48	.02	.20	.20	5.1	.52	.60	1.07
21	.08	.42	.06	.03	.20	.02	.14	.17	4.2	.56	.41	.60
22	.08	.86	.04	.04	.12	.72	.10	.14	2.35	.52	.38	.38
23	1.32	.26	.02	.10	.44	1.43	.08	.10	1.76	.44	.23	.58
24	1.88	4.6	.01	.03	.20	.29	.06	1.46	2.95	.38	.88	1.92
25	.41	1.16	.01	.02	.10	.14	.04	3.5	1.53	.32	1.02	4.7
26	.35	.41	0	.01	.06	.08	.04	1.0	3.3	.29	.71	2.4
27	.83	.23	.02	.01	.03	1.03	.04	2.0	1.25	.26	1.23	1.15
28	.38	.17	1.32	.01	.03	1.99	.03	2.5	1.01	.23	1.02	2.6
29	.41	.12	1.62	.01	.02	.92	.03	-	1.73	.29	.60	1.66
30	.29	.35	.29	.01	.02	.56	.03	-	4.4	5.6	.35	1.06
31	.23	3.0	-	.02	-	.92	.02	-	1.25	-	.26	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	3.95	0.04	0.578	0.894	17.9	55
August	5.7	.12	1.32	2.04	40.8	125
September	2.5	0	.746	1.15	22.4	69
October	3.05	.01	.394	.610	12.2	38
November	5.0	.02	.615	.952	18.4	57
December	1.99	.01	.388	.600	12.0	37
Calendar year 1942	6.7	0	.988	1.53	361	1,110
January	2.05	.02	.471	.729	14.6	45
February	4.7	.02	1.24	1.92	34.7	107
March	5.1	.12	1.65	2.55	51.0	157
April	5.6	.23	1.35	2.09	40.4	124
May	5.0	.23	.980	1.52	30.4	93
June	4.7	.10	1.56	2.41	46.7	143
Fiscal year 1942-43	5.7	0	.936	1.45	342	1,050

Note.- No gage-height record Nov. 14, 15, Jan. 27 to Feb. 5, Feb. 8-13, 26-28, Mar. 14; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kohala ditch at Pololu, near Niulii

Location.- Lat. 20°10'20", long. 155°44'15", on open section of ditch in Pololu Valley just downstream from boundary between land of Honokane and land of Pololu, 2¾ miles upstream from mouth of Pololu Stream, and 4 miles south of Niulii.

Records available.- August 1927 to June 1943.

Average discharge.- 14 years (1928-38, 1939-43), 25.5 million gallons a day (39.5 second-feet).

Extremes.- Maximum discharge during year, 59 million gallons a day (91 second-feet) Jan. 4 (gage height, 3.67 feet); minimum, uncertain due to faulty gage-height record. 1927-43: Maximum discharge, 76 million gallons a day (118 second-feet) Dec. 2, 1932 (gage height, 4.33 feet); no flow occasionally, when water was shut out of ditch.

Remarks.- Records good except those for periods of faulty or no gage-height record, which are poor. Flow regulated by head gates. Kohala ditch receives flow of Awini ditch at Honokane Gulch and diverts water at altitude of about 1,200 feet from all streams west of the Honokane. Water is used for irrigation in vicinity of Kohala.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	24	23	43	25	17.4	16	30	12.2	20	28	39	23
2	22	27	46	25	22	14	27	13.0	18.3	31	30	24
3	21	24	34.5	22	9.5	13	26	30.5	24	29	29	23
4	20	26	23	28	12.6	13	36.5	26	39	36.5	36.5	32.5
5	20	22	26	28	17.4	12	45	23	25	34.5	28	29
6	19.2	21	24	31	16.5	12	43	39	20	29	24	22
7	19.2	26	23	26	15.6	12	40	34.5	17.4	32.5	23	20
8	19.2	28	26	27	14.7	12	37	25	18.3	32.5	22	18.3
9	18.3	36.5	29	46	8.7	43	35	22	31	27	20	17.4
10	19.2	41	39	36.5	5.4	20	37	20	39	29	19.2	17.4
11	30	48	34.5	36.5	10.8	17	32.5	18.3	34.5	36.5	20	22
12	41	41	36.5	29	18.3	14	27	19.2	34.5	36.5	31	39
13	34.5	39	34.5	24	6.8	13	26	18.3	39	36.5	32	39
14	28	31	36.5	21	28	13	34.5	29	34.5	43	30	29
15	24	29	39	19.2	22.5	14	39	31	28	39	25	23
16	23	28	36.5	20	7.6	15	28	23	23	32.5	21	21
17	21	30	29	20	31	16	31	20	27	34.5	17.5	34.5
18	20	32.5	28	19.2	23	15	24	18.3	34.5	29	21	39
19	19.2	27	24	18.3	22	14	19.2	17.4	34.5	26	21	39
20	19.2	22	23	17.4	14.7	13	17.4	17.4	34.5	32.5	23	32.5
21	19.2	20	22	17.4	13.0	12	17.4	17.4	32.5	26	21	26
22	19.2	26	21	17.4	11	12	16.5	16.5	31	21	19.2	23
23	20.5	21	20	16.5	25	35	15.6	15.6	31	20	18.3	24
24	34.5	42	20	16.5	20	25	15.6	18.9	34.5	22	22	31
25	26	34.5	19.2	16.5	19	20	15.6	39	28	20	30	41
26	24	26	19.2	15.6	17	15	14.7	28	36.5	19.2	28	39
27	29	22	19.2	13.8	16	25	15.6	26	32.5	18.3	36.5	31
28	26	22	30	10.6	15	48	14.7	29	29	18.3	36.5	36.5
29	26	22	34.5	11.1	15	41	14.7	-	31	19.2	25	34.5
30	24	26	25	9.8	14	34.5	13.8	-	34.5	39	21	29
31	24	44	-	11.1	-	32.5	13.0	-	28	-	19.2	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	41	18.3	23.7	36.7	734	2,250
August	48	20	29.3	45.3	908	2,790
September	46	19.2	29.0	44.9	870	2,670
October	46	9.8	21.7	33.6	673	2,070
November	31	5.4	16.3	25.2	490	1,500
December	48	12	19.7	30.5	611	1,880
Calendar year 1942	48	0	22.7	35.1	8,290	25,450
January	45	13.0	25.9	40.1	802	2,460
February	39	12.2	23.1	35.7	648	1,990
March	39	17.4	29.8	46.1	924	2,840
April	43	18.3	29.3	45.3	878	2,690
May	39	17.5	25.4	39.3	789	2,420
June	41	17.4	28.7	44.4	860	2,640
Fiscal year 1942-43	48	5.4	25.2	39.0	9,190	28,200

Note.- Faulty gage-height record Nov. 22 to Dec. 26, no gage-height record Jan. 5-10; discharge estimated on basis of records for Awini ditch.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kehena ditch near Kohala

Location.- Three sharp-crested weirs, lat. 20°07'25", long. 155°45'05", at old Honokane weir, near head of West Branch of Honokanenui Gulch, and 8½ miles southeast of Kohala.

Records available.- December 1917 to November 1919, April 1928 to June 1943.

Average discharge.- 15 years (1928-43), 7.57 million gallons a day (11.7 second-feet).

Extremes.- Maximum discharge during year, 45 million gallons a day (70 second-feet) Jan. 17 (gage height, 1.18 feet); minimum, 0.10 million gallons a day (0.16 second-foot) Apr. 29.

1917-19, 1928-43: Maximum discharge, 86 million gallons a day (133 second-feet) Jan. 27, 1918 (gage height, 2.16 feet, datum then in use); no flow during dry periods.

Remarks.- Records good except those below 2 million gallons a day, which are fair, and those for periods of no gage-height record, which are poor. Flow regulated by several gates above station. Intake on Honokanenui Stream 2 miles upstream from station, at altitude of about 4,200 feet. No diversions. Water used for irrigation in vicinity of Hawi.

Discharge, in million gallons, fiscal year July 1942 to June 1943

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.41	3.45	18.3	4.9	10	0.72	4.4	0.61	4.1	4.8	30.5	3.6
2	.98	3.45	23	4.6	12	.50	3.25	.61	2.1	22.5	8.9	3.4
3	.84	2.45	6.3	4.1	2.0	.40	2.95	22.5	5.3	5.0	5.1	2.7
4	.61	1.90	3.25	7.0	1.2	.40	22	11.0	20.5	30.5	23	6.5
5	.50	1.41	2.45	9.0	2.5	.40	26	5.5	5.2	19.6	7.8	5.5
6	.40	1.29	1.90	9.7	2.0	.40	9.2	28	2.65	6.1	2.8	3.0
7	.40	4.3	1.90	5.6	1.5	.40	10.9	19.5	1.73	12.7	2.4	2.0
8	.30	7.6	3.05	3.25	1.4	.53	5.5	7.4	1.57	23.5	2.85	1.5
9	.30	14.8	8.8	26	1.3	17.6	3.25	4.9	10.9	7.2	1.90	1.1
10	.61	17.8	17.0	15.4	1.2	3.7	12.6	3.25	19.3	10.3	1.41	1.0
11	15.9	25	9.4	13.7	20	2.1	8.8	2.1	12.2	32.5	1.46	4.0
12	30.5	15.2	14.9	7.0	5.0	1.41	4.3	1.90	7.1	13.9	14.4	7.0
13	13.1	6.2	12.5	3.9	3.0	1.26	2.85	1.41	21.5	13.5	22	6.0
14	6.2	3.25	16.0	2.85	25	.98	12.2	8.1	10.3	19.8	10.7	3.6
15	2.95	4.5	8.4	2.25	10	2.8	30	7.8	3.7	14.3	3.45	2.2
16	1.73	10.2	10.1	1.90	7.0	3.05	15.2	3.25	2.25	9.9	2.26	1.7
17	1.26	6.4	6.8	1.90	6.0	2.25	26	2.1	1.73	4.6	2.25	5.0
18	.84	6.8	5.4	1.73	2.5	1.73	20.5	1.41	13.0	2.1	2.45	6.0
19	.61	3.25	3.25	1.41	3.5	1.41	6.4	1.61	23.5	1.73	5.5	7.0
20	.50	1.90	3.05	1.26	4.0	1.12	1.99	3.25	25.5	14.1	9.3	4.5
21	.61	1.26	3.05	1.26	1.8	.98	1.41	1.90	23.6	3.55	4.2	3.7
22	1.26	2.1	2.25	1.12	1.26	.84	1.12	1.26	12.2	1.26	2.45	3.0
23	6.8	1.57	1.90	1.26	1.26	.84	.98	.84	10.0	2.25	1.7	3.7
24	14.0	18.5	1.57	1.26	.98	.98	.84	2.55	20	2.1	4.5	5.0
25	3.8	7.6	1.41	1.1	.72	.98	.72	24.5	9.0	.98	4.8	7.0
26	2.1	3.1	1.26	1.0	.61	.98	.72	4.6	23	.61	4.1	5.0
27	4.4	1.57	1.26	1.0	.61	1.36	.72	16.3	11	.40	5.6	4.3
28	2.45	1.26	9.6	1.0	.50	26.5	.61	18.8	9.3	.30	5.0	5.4
29	3.05	.98	15.2	1.0	.40	17.7	.61	-	23	.20	4.0	4.7
30	2.45	2.1	4.8	1.0	.50	10.1	.61	-	7.6	21	3.5	4.2
31	4.0	21.5	-	2.0	-	5.8	.61	-	4.4	-	2.2	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	30.5	0.30	4.03	6.24	125	383
August	25	.98	6.54	10.1	203	622
September	23	1.26	7.28	11.3	218	670
October	26	1.0	4.53	7.01	140	431
November	26	.40	4.32	6.68	130	398
December	26.5	.40	3.56	5.51	110	338
Calendar year 1942	33	0	6.28	9.72	2,290	7,030
January	30	.61	7.65	11.8	237	728
February	28	.61	7.39	11.4	207	635
March	25.5	1.57	11.2	17.3	347	1,070
April	32.5	.20	10.0	15.6	301	925
May	30.5	1.41	6.53	10.1	202	621
June	7.0	1.0	4.11	6.36	123	378
Fiscal year 1942-43	32.5	.20	6.42	9.93	2,340	7,200

Note.- No gage-height record Oct. 9, Oct. 25 to Nov. 21, Mar. 24-27, May 23 to June 30; discharge computed on basis of records for Kohala ditch.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

MISCELLANEOUS DISCHARGE MEASUREMENTS

Measurements of streams on the island of Hawaii at other than regular gaging stations are listed below:

Miscellaneous discharge measurements on Hawaii during fiscal year July 1942 to June 1943

Date	Stream	Tributary to--	Locality	Discharge	
				Second-feet	Million gallons a day
Apr. 18	Kakaauki	Waihilau	At altitude 2,930 feet, near Waimanu.	3.07	1.98
Nov. 17	do	do	do	1.75	1.13
Jan. 16	do	do	do	.937	.606
Mar. 11	do	do	do	3.93	2.54
May 16	do	do	do	.976	.631
Aug. 18	Lahomene	do	At altitude 3,250 feet, near Waimanu.	5.20	3.36
Nov. 17	do	do	do	2.14	1.38
Jan. 16	do	do	do	.766	.495
Mar. 11	do	do	do	6.92	4.47
May 16	do	do	do	1.30	.840

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